

SUMMARY

Iron Age occupation on the east bank of the River Wey dating possibly from the sixth century BC provides the setting for the discovery earlier this century of the Weybridge Bucket, a Mediterranean bronze import found in the river at this spot (see Fig. 1 and Pl. VIII). Occupation continued until the time of the Roman Conquest. The site probably formed part of a larger Iron Age settlement; the features discovered include an ironworking establishment with areas for smelting and forging respectively, pits of different types, and the ring gully of a house.

Saxon material dating probably to the eighth century AD was not associated positively with any structure, but occurred in the same general area as one of the five or six buildings enclosed by a ditch and palisade which formed a small medieval estate.

The capital message of the medieval estate was an example of a distinctive class of lightly framed timber building, comparable to Ellington, Huntingdonshire and Newstead, Yorkshire. Documentary evidence links the estate with the Broc, Brok or Brooke family, and the medieval period is dated tentatively 1150 or 1175 to the first quarter of the 14th century.

Although there are gaps in the occupation of the site, these may be more apparent than real, due to the fact that excavation could not be continued beyond the allotted time. A Neolithic flint axe and a small miscellany of worked flints suggest that the spur of higher ground projecting above the flood plain had previously attracted human activity.

In this report we have adopted a technique of 'continuous narrative', so that most of the excavated material, which is often the best evidence for both the chronology and the interpretation of the site at any given period, is considered in its proper context rather than being relegated to a heterogeneous appendix at the end of the paper. There are some instances, however, where the excavated material lends itself most readily to an environmental or economic assessment of the site, or where the contrast between one period and the next has been invoked. These specialist contributions will be found in the final section.

While the report was in preparation Dr. J. F. Potter made contact with us, because his research on the iron carbonates present in the Bracklesham Beds had led him to the conclusion that these ores were exploited in prehistoric times (Potter, J. F. in press). His observations are given on pp. 22-3.

ACKNOWLEDGEMENTS

The writers acknowledge with grateful thanks the help that they have received from many quarters, especially to Mr. R. A. Bromley, Engineer, Surveyor and Planning Officer of the former Walton and Weybridge UDC, to Mr. Bryan Blake, former Curator, Weybridge Museum, Mrs. Avril Lansdell, his successor, and her Assistant Curator, Mrs. Morag Barton, together with their husbands, Mr. Howard Lansdell, for photography, and Mr. G. Barton for site supervision; Dr. Joanna Close Brooks for advice, encouragement and comment, together with all contributors to the report, and those whose help is acknowledged in the text. Mr. J. W. Lindus Forge, Mr. George Greenwood and the late Mr. Tony Martin all gave of their specialist skills. Mr. John Hurst, Mr. A. J. Clark, and many others of the Department of the Environment gave personal as well as technical help, likewise Mr. John Hampton and Mr. R. Farrar of the Royal Commission on Historical Monuments National Monuments Record. At a time when the site appeared scarcely worth attention Mr. C. D. Crook, Mr. P. J. Leach and Mr. R. E. Loveday gave unreserved time and care which ensured the subsequent full investigation of the site. Site supervision was carried

out by Mr. Jim Shenton and Mr. Vincent Gregory, and volunteers too many to name, both in excavation and in processing, as well as a small team of semi-permanent workers are thanked for their considerable exertions in what were often arduous conditions. Our thanks are also due to Miss G. M. A. Beck, Mr. J. Brookes, Mr. E. E. Harrison, Dr. D. P. S. Peacock, Mr. C. J. Sage, and Dr. A. N. Insole. After excavation, the nucleus of the processing team was as follows: Miss Clare Smith, recording, Miss J. A. Cowie, pottery drawing, Miss Ina Godman, metal conservation and storage, Mrs. Geraldine Done, bones.

Very particular thanks are due to Clare Smith. She was present throughout the six years of the second excavation, as deputy to the director, initially as site supervisor and treasurer, later in the processing team, and finally during the drafting, typing and checking of the report. We have drawn very heavily upon her help and encouragement.

At every stage we have had cause to be grateful for the pioneer research of our predecessor, Eric Gardner, whose work we have tried to bring to its logical conclusion. — 'We are as dwarfs mounted on the shoulders of giants, so that we can see more and further than they; yet not by virtue of the keenness of our eyesight, nor through the tallness of our stature, but because we are raised and borne aloft upon that giant mass' (Bernardus Silvestris, c. 1125).

INTRODUCTION

Documentation

The Surrey Feet of Fines for the year 1195-96 show Eva del Broc as the owner of Brooklands. In 1294 the Assize Rolls list William de la Brok as the owner. Both these documents are in the Public Record Office. After 1294 there is a gap in the documentation until 1535, when it formed part of Oatlands Manor and was held by Isabel Reed. At that time it was annexed by Henry VIII to the honour of Hampton Court (*VCH* 3, 479). From then onwards the site is well documented and the place name, associated with the first known medieval owner, but probably dating from Saxon times, has survived virtually unchanged (Broc=O.E. for "marshy land"). In 1650 a Survey was carried out by the Parliamentary Commissioners (*PRO* E.317 Surrey 67), and Brooklands farmhouse is described there as 'a tyMBER house covered with tyles'.

Previous Work on the Site

Brooklands Farm first attracted attention as an Early Iron Age site in 1907. During the construction of Brooklands motor track a workman sinking a shaft for one of the piers of the famous inclined bridge over the river Wey found a cordoned bronze bucket (Smith 1908a, 165). Now in the British Museum, it is dated to the 6th century BC, one of a series of such buckets found in various localities in northern Europe which were long thought to be Venetic exports (see Pl. VIII). This one is currently thought to have been made in the eastern alpine area (Stjernquist 1967, 1, 71; 2, 30; Pl. XIII. 5; XLII: 1; Hawkes 1969, 371; Harbison and Laing 1974, 10).

In 1909, Dr. Eric Gardner collected what he described as 'the shattered remains of a cinerary urn' from workmen laying a sewer at the site of the present excavation (probably from Pit 79 — Gardner 1911, 50). From then until his death in 1951, Dr. Gardner was the constant observer and historian of Weybridge and its neighbourhood. He recognised the importance from the Bronze Age onwards of the land lying between the rivers Mole, Wey and Thames. More specifically he concluded that the Brooklands fields were connected with the hill fort at St. George's Hill, 2 km to the south-east, by a track which

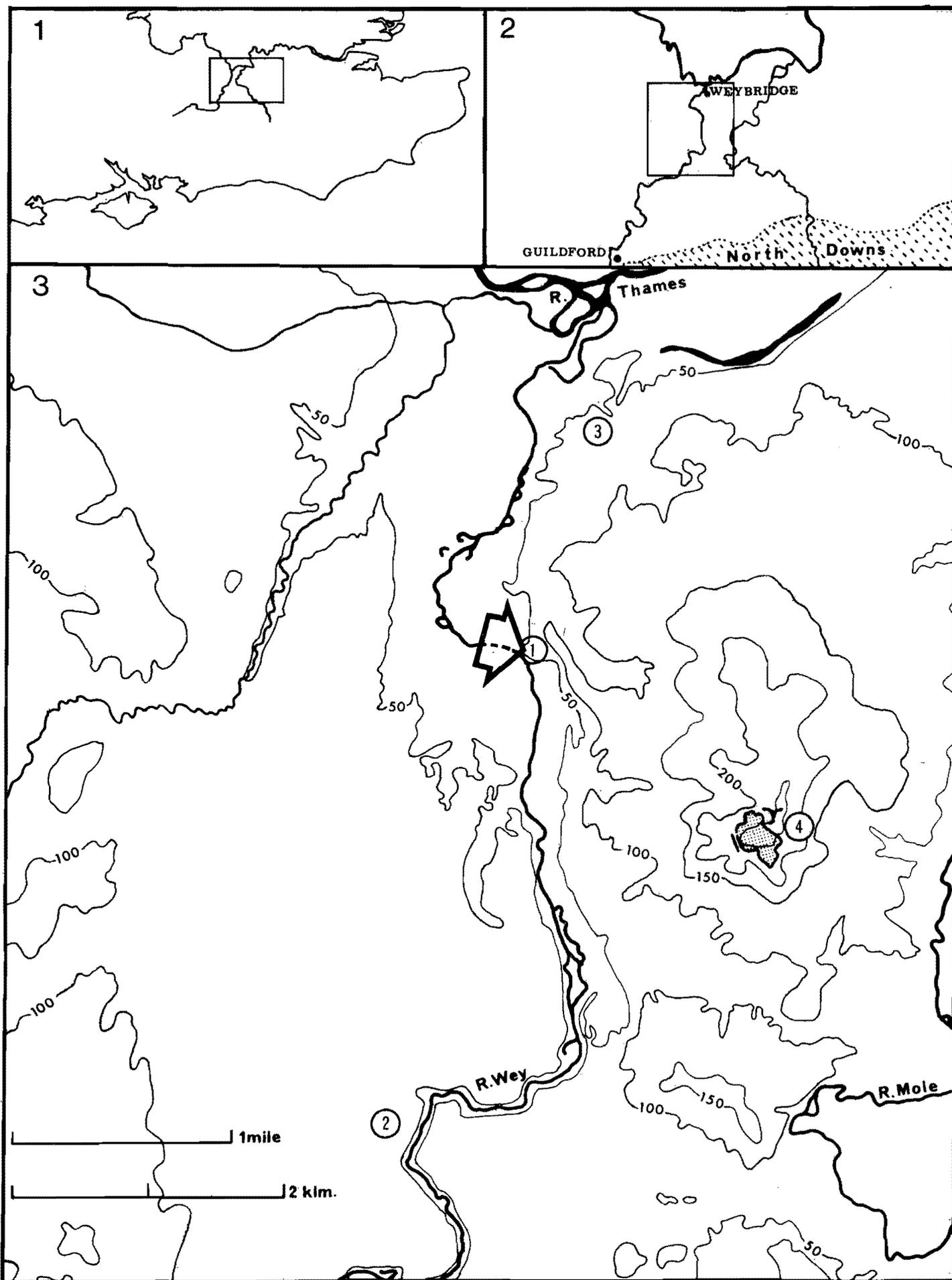


Fig. 1. Location Map A, showing Iron Age sites on the Lower Wey: 1 Brooklands; 2 Wisley; 3 Weybridge (Museum site); 4 St. George's Hill (hillfort). Based on the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office. Crown Copyright reserved.

ran thence to the ford across the river just downstream from the present Wey bridge (Gardner 1911, 1912, 1915 and 1924). Later he came to the conclusion that a large part of the ground enclosed by the Brooklands Motor Track had formerly been an Iron Age settlement, Brooklands Motor Track is now the headquarters of the Commercial Aircraft Division of the British Aircraft Corporation. Motor racing ceased there at the outbreak of war in 1939.

In 1962 D. J. Tomalin noticed both Iron Age and medieval pottery sherds in the upcast from the field where the 'cinerary urn' had been found (TQ 068632). By now the field was threatened by a possible use as a sewerage works for the Walton and Weybridge Urban District Council and as a result he carried out trial excavations in 1964 and 1965.

In 1969 A. J. Clark of the Ministry of Public Buildings and Works (now DOE) Ancient Monuments Laboratory, carried out a geophysical survey. When his results were compared with air photographs taken in 1955 by the Royal Commission on Historical Monuments National Monuments Record, they tallied sufficiently to suggest a considerable archaeological potential over a wide area.

Early in 1970 the Walton and Weybridge Local History Society were informed that it was intended to start construction on the site in the coming June. The society asked for assistance from the Surrey Archaeological Society and with the help of a grant from the then Ministry of Public Buildings and Works a rescue excavation was organised under the direction of Rosamond Hanworth. In the event sewerage construction did not start until 20 April 1971, and between 30 March 1970 and 19 April 1971 it was possible to carry out a total of sixteen weeks' work.

After excavation was completed in 1971, contact was established with the first excavator (D. J. Tomalin) and as

the results of the two excavations are complementary they are presented as a joint paper; D. J. Tomalin's contribution is represented by pp. 6-8, 44-5, 79-85; Rosamond Hanworth's by pp. 9-19, 24-37, 42-7, 49-54, 60-72.

DESCRIPTION OF THE SITE

Two fields and a flooded gravel pit, now a nature reserve, are enclosed by a triangle of railway lines: the main line from London to the South-West on the south-east side, the branch lines to and from Chertsey on the north and west sides. In the Parliamentary Survey of Brooklands Farm of 1650 (PRO E. 317 Surrey 67), the fields are named Great Cross Land and Calves Close respectively. Their boundaries have changed since then; parts of five other fields have been added to the western one, Calves Close, but these names are used here for convenience (see Figs. 1 and 2).

Great Cross Land, the excavation site, is a small promontory of Bagshot Beds sand sloping steeply down from Conduit Hill into the alluvial flood plain of the river Wey which flows through the railway triangle to join the Thames 5 km further north. Bands of gravel alternate with the sand very close to the surface of the field. A former ox-bow in the river was straightened out in recent times as part of a flood relief plan, so that two acres of the original settlement now lie south of the river, undamaged, beside the nature reserve (Calves Close Mead).

Because it stands higher, around the 50 foot contour, Great Cross Land is not liable to flooding, but its neighbours Calves Close and Rushie Field were probably always boggy and were made worse when the railway embankments interrupted natural drainage. Even so, groups of possible pits show up in them on the air photographs. The

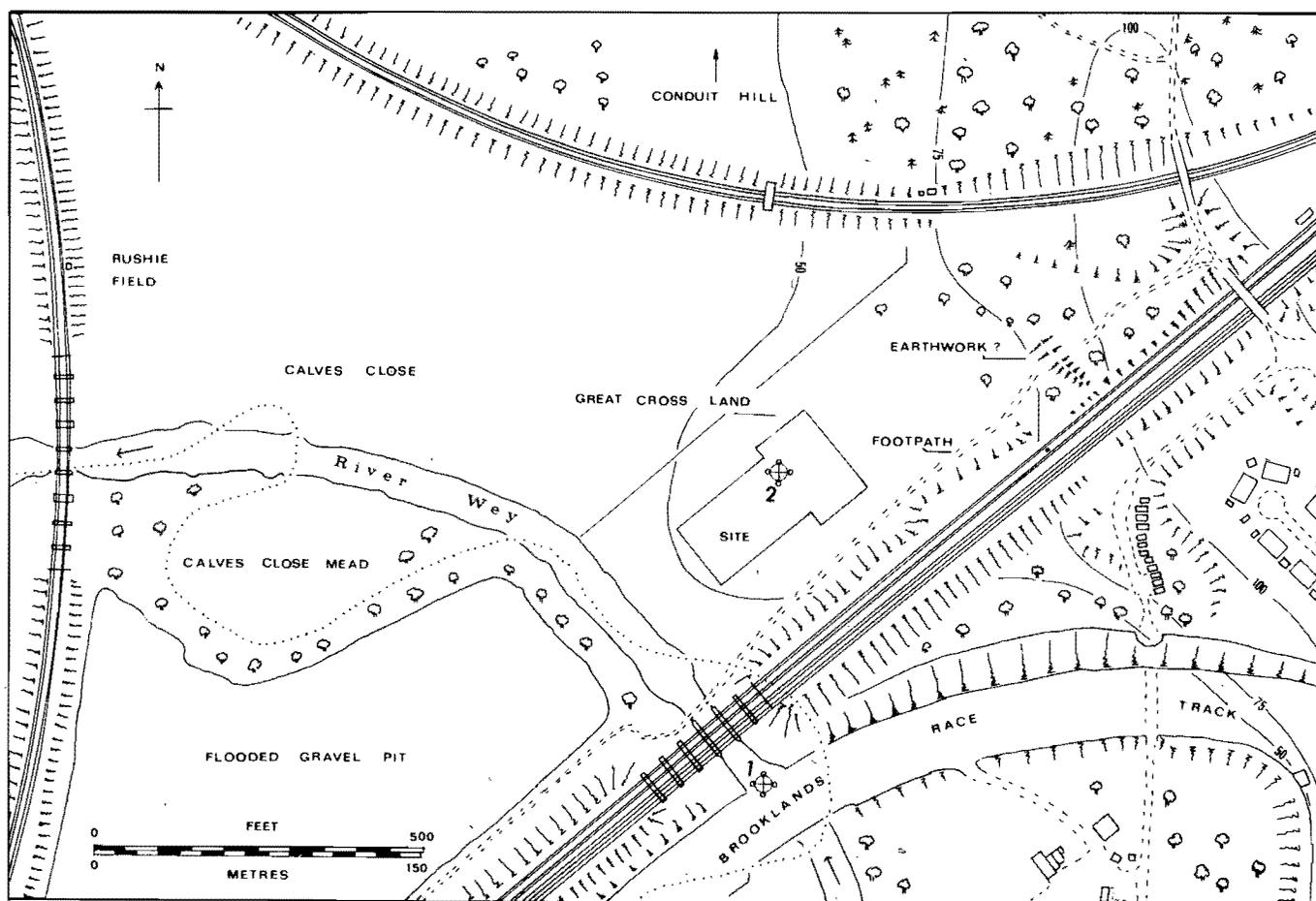
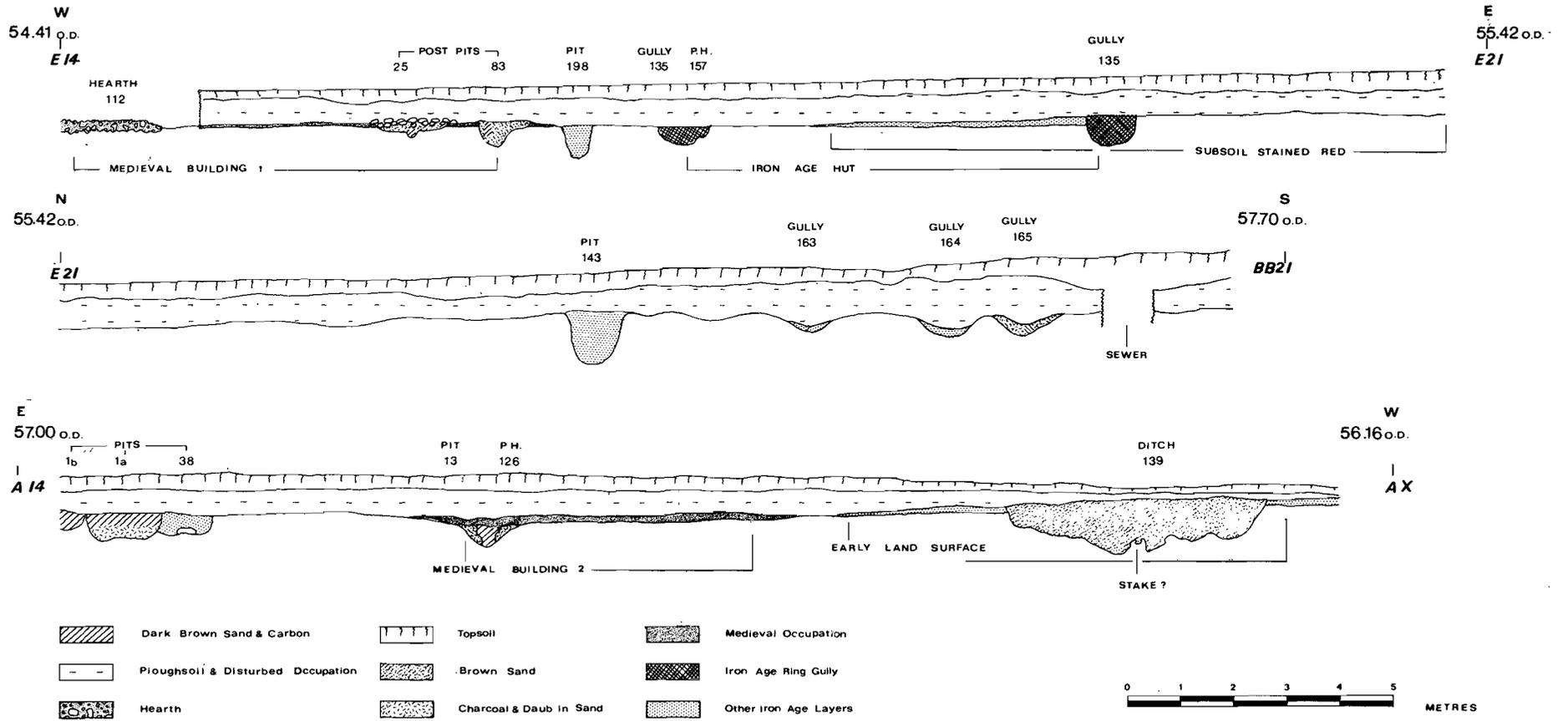


Fig. 2. Location Map B, showing approximate find spot of the Weybridge Bucket (1) and the 'cinerary urn' (2). Based on the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office. Crown Copyright reserved

Fig. 4. Site Sections.



Calves Close groups looked the most promising for excavation, but a trial trench there had to be abandoned because of the high water table.

On entering Great Cross Land from Conduit Hill the footpath used to pass through a high earth bank with mixed oak and chestnut growing on it. It gave the impression of a possible defensive earthwork, although it did not seem to continue southwards on the far side of the main line railway cutting. After the excavation was finished it was possible, by courtesy of the contractors, to spend a day examining a rough section which they cut by bulldozer through the bank. It was made up of unstratified sandy subsoil without ditch or revetting. On the one hand the tree cover on the bank was thought to be too mature to have grown up on soil dumped from the railway cutting, and the elongated bank-shape did not look natural; on the other hand nothing was found to prove that it was an Iron Age defensive earthwork, so its origin remains unsolved.

Great Cross Land was previously owned by Brooklands Technical College and was said to be well known to

naturalists because of the unusual wild plants that grew there. It was a place of strong contrasts; to the south the noise of aircraft production and railway traffic, elsewhere the quiet of copse and water-meadow and the nature reserve where crested grebes nested in the spring. The townspeople of Weybridge had used the field for many years as a recreational open space; they continued to exercise their dogs and ride their bicycles across the site during the periods of excavation to demonstrate their justifiable indignation that it was being taken from them, and a semi-delinquent teenage playgroup also pursued their activities on what had been their territory, so that any feature uncovered had to be fully excavated and recorded on the day of discovery, or else buried again to avoid destruction. Effective fencing for so large an excavation was not possible within the limits of time and budget. But there were some who understood the aims of the rescue excavation and helped in every way they could; to these we extend our grateful thanks.

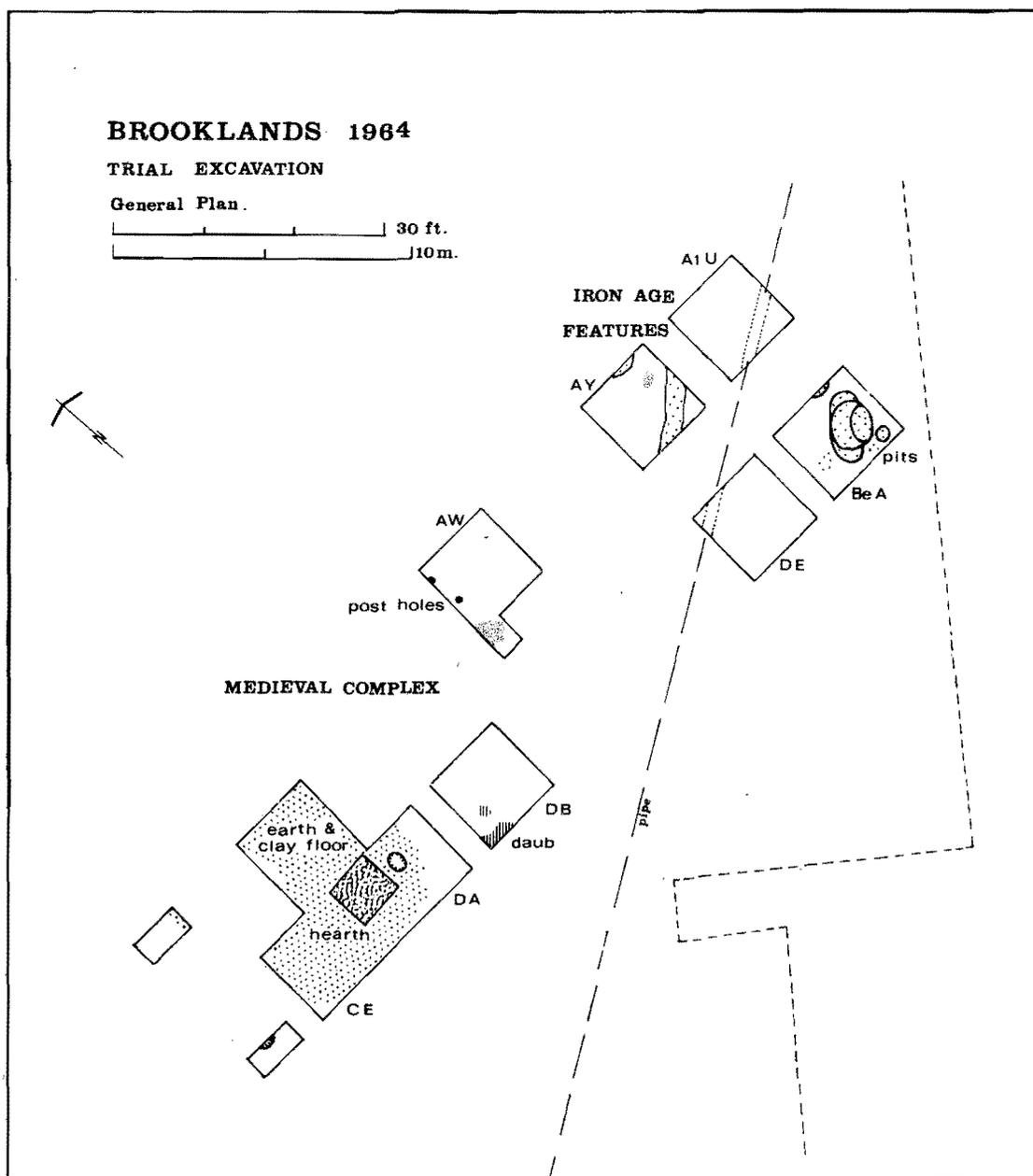


Fig. 5. 1964-5 excavations—general plan.

THE 1964-65 EXCAVATIONS—by D. J. Tomalin

A trial trench was first cut close to the spot where the Iron Age pottery had been found in the pipe trench in 1909. A grid square of 140 ft (43 m) was then laid out at right-angles to the field boundary using a manhole cover as a base (Grid E marked with a triangle on all plans). Eight trenches each 10 ft (3 m) square were cut and five extensions added. The main features revealed in this excavation are summarised below (see Fig. 5).

Iron Age

Close to the east pipe-line trench, a ditch (Gully 164) and the top of three Iron Age pits were revealed. Only one pit (205a, Fig. 7) was examined in detail and this proved to be oval, 1.16 m deep with sloping sides. (The layer numbers given here refer to Fig. 7). A half section revealed a single lump of raw clay at the bottom lying against the side, and a small featureless fragment of bone 24 cm from the bottom. The pit had been filled with grey sand (L1) which had leached into very thin iron pan veins at regular intervals. These horizontal veins did not continue into the walls of the pit and it seemed possible that this natural phenomenon may have resulted from a succession of sand layers being individually deposited in the pit. Similar sterile sandy deposits may be observed in the circular latrine pits dug by the Ila of Zambia. These pits are about 1.2 m deep and are covered with a clay and wattle floor with a small central hole over which the user may squat. The floor is usually enclosed by a lattice shelter or woven grass screen. The decay of the clay floor produces a scatter of clay lumps similar to the Pit 205a example and additional lumps associated with Pits 5, 7 and 37. This point is further discussed on pp. 13 and 23 (Fig. 6).

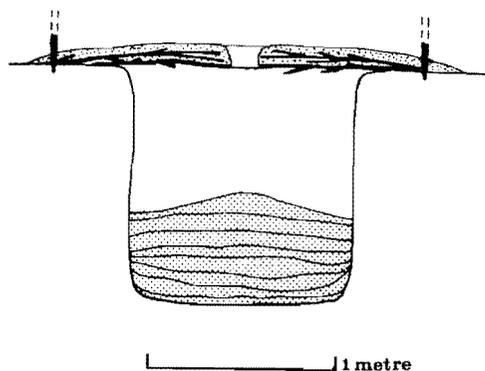


Fig. 6 Ila latrine pit showing sand sediments, clay and wattle floor and base of brushwood lattice shelter. Basanga. Kafue Flats, Zambia, 1975.

The top 60 cm of the pit had apparently been re-excavated to accommodate a furnace (205b). The lining (L2) comprised red and black hardened sand, some 7 cm thick containing broken Iron Age pottery and an occasional blackened pebble and lump of burnt clay. The remainder of the furnace was filled with a light grey sand (L3) capped with a layer of blackened sand (L4). The east side of the furnace had later been removed by another pit (205c) containing a grey sand filling (L5), which became

reddened at the base. The purpose of this smaller pit is not certain. Cleere does not consider it to be necessarily connected with iron, though it looks to him like a distinct feature (personal communication). East of the furnace another small pit (262) was encountered, approximately 60 cm in diameter and 40 cm deep. It contained grey sand topped with a thin deposit of blackened sand containing a small fragment of a Lower Greensand rotary quern (see p. 81).

F 260 and F 261 were the remains of two small furnaces (see Table 3, p. 17).

Medieval

1. *Hearth*. (F 112. Building 1). The hearth lay at a depth of 53 cm beneath soft sterile sand. It was almost square measuring 1.75 m x 1.81 m and was constructed with perforated roofing tiles, set without mortar on edge (Pl. VII). The central tiles were blackened and considerably weakened by thermal fractures, but the outer tiles and particularly those on the south side remained in good condition. 30 cm from the south side of the hearth lay a single tile showing no evidence of burning (Fig. 32a). It had apparently been dislodged in antiquity and lay flat on the clay floor. No gap however was observed in the tile layout of the hearth and in view of its unusual size (16 cm wide) it was considered that it may have fallen from a tile-hung screen or reredos. Tiles of similar size were found at Alsted, Site 3 (Ketteringham 1976, Fig. 11a). All the remaining tiles were of a uniform type measuring 19.5 cm x 33.5 cm x 1.8 cm provided with two 1.1 cm diameter peg-holes to facilitate hanging (Fig. 32b). They represent the earlier part of a long persistent tradition, and some very similar examples slightly reduced in size (15 cm x 25 cm) and inscribed with the date 1750 are preserved in the Curtis Museum, Alton. Extending a maximum of 40 cm from the north edge of the hearth was a deposit of blackened sand and fine tile particles derived from the surface of the hearth. This may represent occasional overspill from the fire or, alternatively, an area covered by periodic sweepings. The practice of clearing the hearth was attested by a similar material deposited in a pit 50 cm in diameter close to the eastern edge of the tiles (F 108).

2. *Floor*. Surrounding the hearth was a clay floor which had been laid level with the surface of the tiles. It averaged 2.5 cm in thickness near the hearth but its consistency soon became irregular and elsewhere it was largely replaced by well-compacted earth. Finds from the surface of the floor were few: twelve fragments of a bridge-spouted jug of Surrey Ware were found west of the hearth (part of pot 82, Fig. 41) and 1 m to the north lay a gilt bronze enamelled harness pendant which had apparently been trodden into the floor (p. 76 and Fig. 46, No. 27). Near the pendant but 1.2 m above the floor was a bronze mount (see p. 76 and Fig. 46, No. 28). It may have been associated with the destruction of the building. A little disturbed clay, perhaps representing the edge of the floor, was found in a small trial section cut on the western side of the main trench. On the eastern side in trench DB a quantity of collapsed daub was found (1970-1 Cutting 42). Further east on the same level in trench AW a substantial and very widely scattered quantity of burnt flint nodules overlay a small area of burnt clay (F 192) and the top of Pit 196. (For medieval demolition of Iron Age features, see p. 17).

Because of continual vandalism on the site it was decided to make no attempt to determine the outline of the building. Backfilling of the site was begun by hand and arrangements were made for mechanical assistance. Unfortunately it was not possible to supervise the completion of the work, and the backfilling remained unfinished.

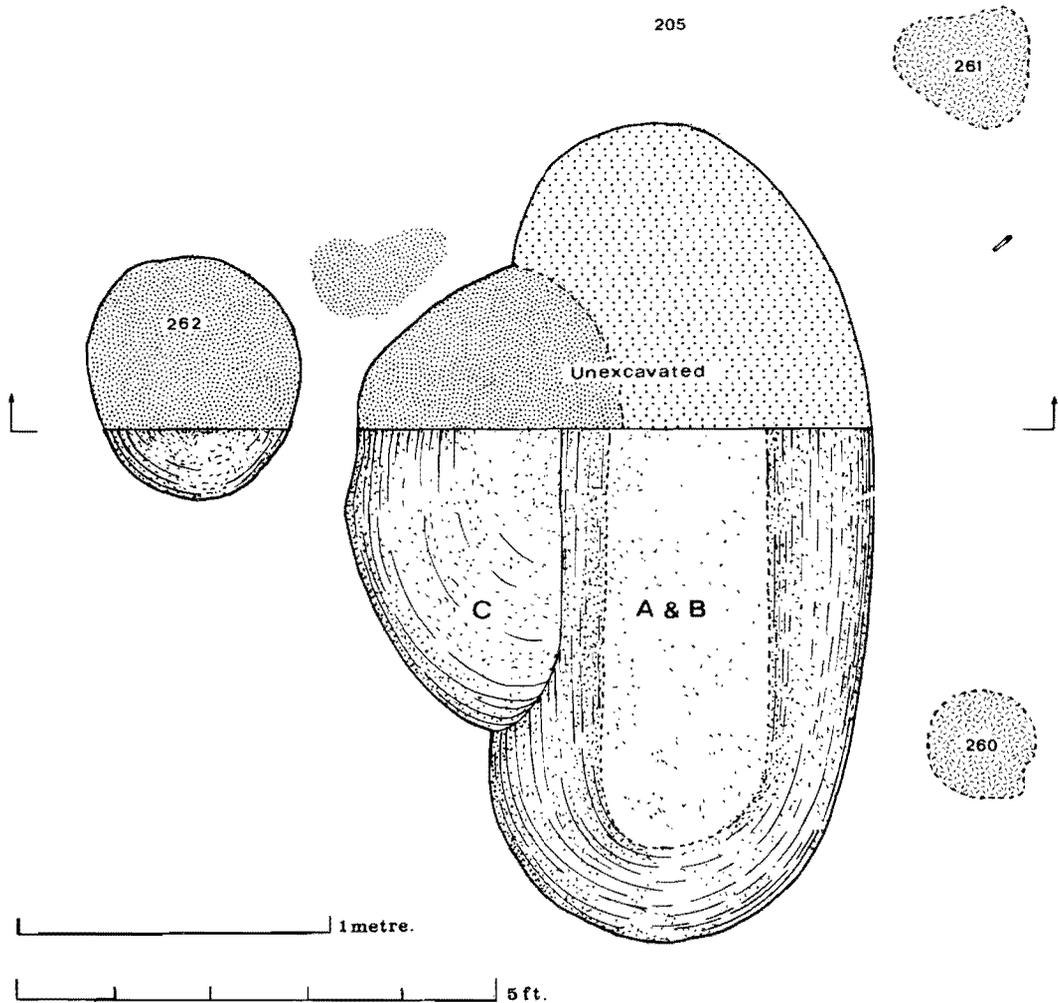
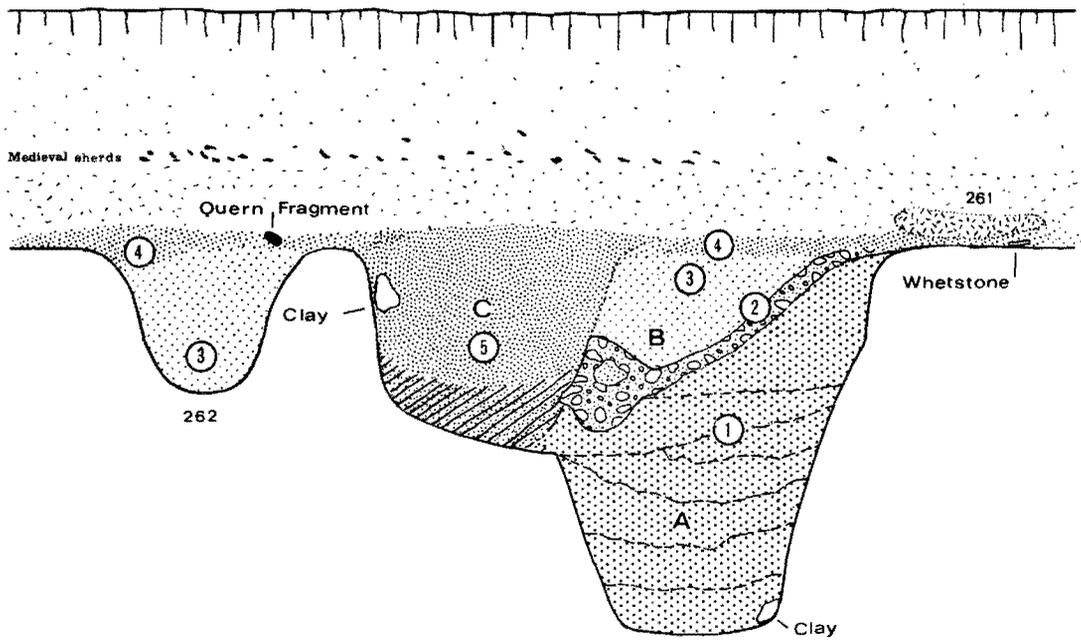


Fig. 7. 1964-5 Excavations: Iron Age pits and furnaces, with whetstone and Feature 261 projected into section.

EXTENT AND METHOD OF EXCAVATION IN 1970-71—by Rosamond Hanworth

It was decided to excavate as wide an area as possible in the time available because of the variety of previously recorded finds, and 3,012 square metres were stripped of topsoil mechanically using a JCB hydraulic digger-loader with tracks. A wheeled machine was tried first, but its wheels sank too deeply into the sand. In the event, time ran out before the northern trench, C, was completed. The area shown in the Key Plan (Fig. 3) north of the outermost broken line was stripped of topsoil and ploughsoil only; the archaeological layers were not penetrated. Dutch shovels were used for manual stripping of the layers, giving a cleaner finish than any other tool, even trowels.

Flotation techniques were not used on the site, but one or more small soil samples were taken from each feature. At the start of the excavation a value judgement had to be made as to whether to try and establish a reasonable plan of the maximum area, or to concentrate on research in a very small space. It is doubtful whether the latter would have been meaningful.

A datum line was laid out over Clark's original survey which had used the manhole cover as a fixed point (Grid E). The datum line spanned what had originally been a small knoll jutting up from the general east-west downhill gradient. Intensive cultivation within the area enclosed by the medieval ditch had pushed the soil downhill to pile up against the reverse slope of this knoll, so that east of the datum line and inside the ditch the ploughsoil was a minimum of 52 cm and a maximum of 1 m deep, while west of the datum and outside the ditch, in Trench A, it was only a few centimetres. This made mechanical earthmoving hazardous, and meant far more manual stripping than was anticipated. Wherever ploughing had taken place, stratigraphy had been destroyed.

A 4-metre grid system was planned for the trenches, but as the marker posts were pilfered repeatedly, this was abandoned after the first month, and measurement was then done from a series of fixed points painted at 10-metre intervals along the concrete cover of the sewer pipe running east from point E. The difficulties of excavating in soft sand are well known. In dry weather it was very hard indeed to distinguish features as this was done by observing only slight changes in colour. As the year went by and we grew more practised, it was very obvious that our trenches had only taken a small sample of the river bank's history of continuous occupation; but if development had not been postponed for a year and there had only been the originally planned thirty days' excavation, practically nothing of the settlement's true nature would have been revealed.

Trench A had only three important features: the buried early land surface, cut through by the Medieval Ditch, F 139, and a shallow patch of clay, c. 8 x 8 m, and apparently about 15 cm deep, at the trench's south-western edge. This was interpreted as something to do with the building of the bridge and railway line; but the intention was to return to it had time allowed. It is to be regretted that it could not be investigated, as it is just possible that it could have had some connection with the eroded early land surface (see below). Elsewhere the natural sand lay immediately below the turf, and the greater part of Trench A is omitted from all plans except the reduced outline at the side of the Key Plan, Fig. 3, because there was nothing else to record after complete excavation. Its relationship to the other trenches and to the site in general can be seen in the air photograph, Pl. I.

Trench B was 24 m x 30 m with 4-metre baulks separating it from its neighbours. The baulks were removed at an early stage, as can be seen on the plans, Figs. 3, 8 and 30. A small post-medieval wooden shed had existed

in Trench B. Some of its timber was found during bulldozing, but it must have been very flimsy for no foundations penetrated below the topsoil and there was virtually no associated occupation material, but see Fig. 44, Nos. 147 and 148.

Trenches C and D were both planned to be 26 m x 24 m with a baulk of 5 m between them where a footpath ran through the field. In the end a large part of Trench C had to be left unfinished. A strip 3 m wide was left down the south side of Trench D because of risk of collapse from the spoil heap. The baulk between D and C was removed and fully excavated in the last ten days, when the Iron Age house was discovered.

Three sewers flowing downhill through Trenches B and D converged at the manhole cover E and then continued as a single one towards the river. Their positions are marked by dotted lines on all the plans. Two shallow parallel gullies were found across Trench C, aligned in the general direction of the manhole cover; they are thought to be the beginnings of trenches for sewers, abandoned at some time before pipes were inserted. They held no dating material apart from displaced sherds of the other periods.

When sectioning pits, the most important consideration was that the excavator should work in the best possible light, and the orientation of the sections (see Figs. 9, 12 and 31) was governed by the position of the sun at the time the work was done. On easier soils it would be possible to standardise the direction from which sections are cut.

THE IRON AGE

In view of the general lack of evidence for any firm dates for this period, an attempt has been made to build a sequence by the classification of rim and body sherds of pottery (see Table 7 and p. 41). The results have been plotted on two plans, Figs. 25 and 26. Fig. 25 shows the distribution of features where the latest wares are fine fabrics known to belong to the earliest Iron Age, or which have only coarse wares without the addition of any other distinguishable sherds. Fig. 26 shows the distribution of features which have smooth dark ware, black burnished ware, or exceptionally, Belgic material in them. In the case of the possible 7-post structure (see p. 17) it is shown on Fig. 26 in its entirety on the grounds that one of its post holes contained late fabrics. The conclusions which might be drawn from the evidence presented in this manner are extremely tentative and cannot amount to proper dating; for this reason the term 'sequence' has been adopted when discussing the two phases, A and B which seem to be revealed. At best the phases may denote the passage of time; they cannot be associated with historical events. Smooth dark ware and black burnished ware are defined on p. 24.

The material evidence for phase A, which may at least in part have been contemporary with the Weybridge bucket, consists of two stratified groups of pottery, one from the buried early land surface, the other from Pit 177 in the Eastern Iron-Working area, which is described on p. 14. Other early sherds were scattered over the site in later features or in the plough soil. It is just possible that one iron working furnace, F 247, might be included in the earliest phase; arguments for and against this are given on pp. 17 and 40.

Phase B material was found in the house, one gully, the majority of the pits, and several other features of the Eastern and Western Iron-Working areas (see p. 17).

The Buried Early Land Surface

The buried early land surface started in Trench B and extended into Trench A, to one side of the crest of the

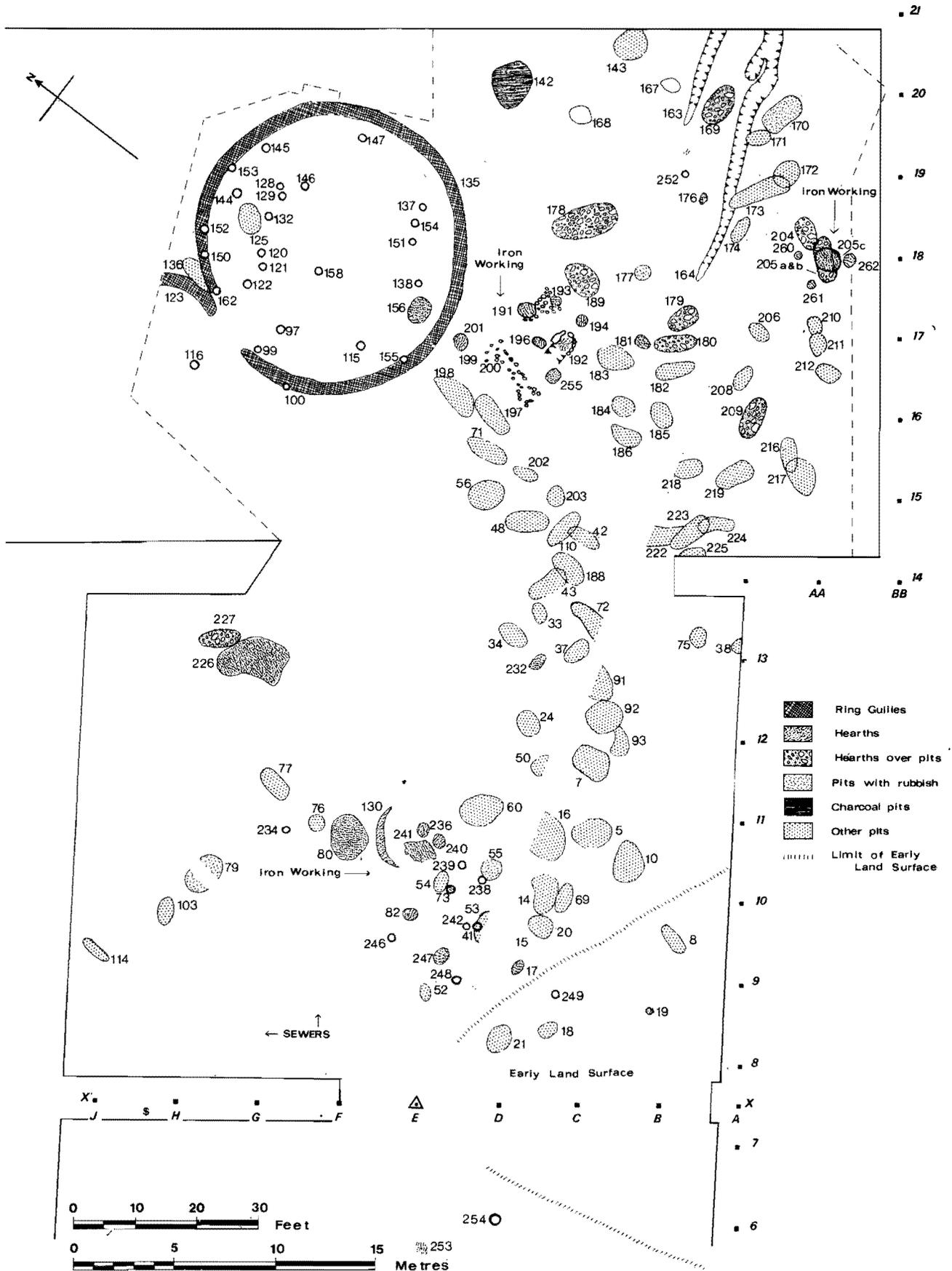
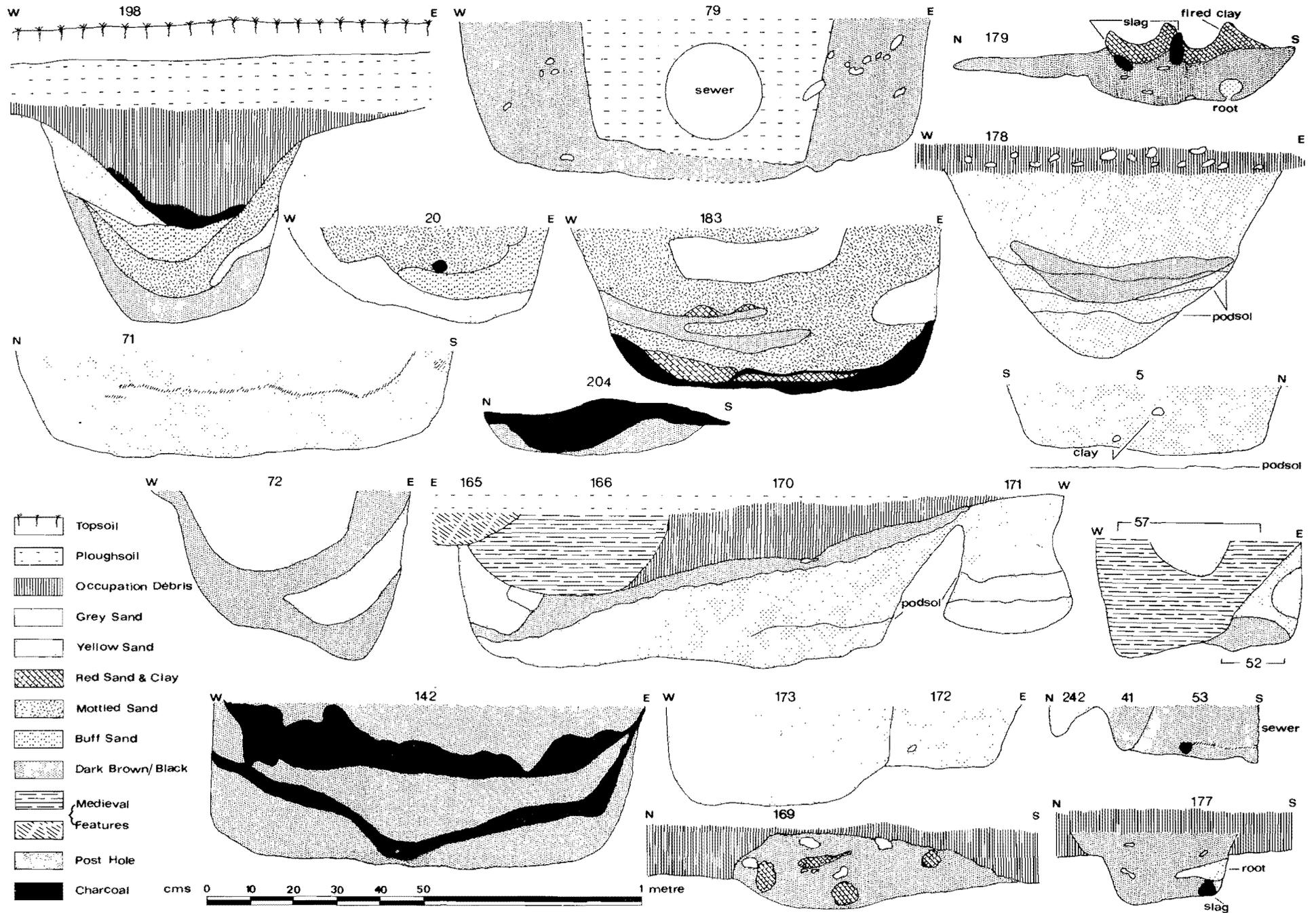


Fig. 8. Iron Age features.

Fig. 9. Sections of Iron Age pits. (Note: for F 7, 8, 24, 37, 48 and 110 see Fig. 31)



knoll (Fig. 8) between Grids A5 and A11. Originally it must have covered a much wider area. Downhill it would have been eroded away, in the centre it was cut by the medieval ditch, and uphill from that it had been ploughed up. The finds in the deposit consisted of Phase A pottery and charcoal, and are reported fully on p. 25 and 28-9. Pits 8, 18 and 21 and PH 249, which lay in this area are probably rather later. They cannot be dated by their contents to this earliest phase (see Table 7, p. 42). PH 254, which was nearby in Trench A is reported on p. 17. Hearth 19 held no dating evidence (see Table 3, p. 17).

The House (Figs. 4 and 8 and Pl. V)

The Iron Age House, in Trenches C and D, was represented by the base of a ring gully, F 135, 60 cm to 80 cm wide and 30 cm to 41 cm deep from the base of the ploughsoil. Its internal diameter was 12.8 m (42 ft), with an entrance gap of 3.10 m (10 ft 2 ins) facing west. Ring gullies have been found at other sites in the immediate neighbourhood, at Leigh Hill, Cobham (Smith 1909, 141), Sandown Park, Esher (Burchell and Frere 1947, 245), Heathrow (Grimes 1961, 25) and Bedfont (Farrant 1961, 305; Alexander and Farrant 1972), and have been interpreted as ditches surrounding freestanding walls which have since disappeared. The presence of post holes inside the ring gully here (PH 153, 152, 150, 162 and 155, reading from north to south), and the proximity of PH 99 to the entrance gap, raises the possibility that the gully itself is a bedding trench for a stave-built wall. Further, the gully is narrow for a drainage trench and shows no sign of a recut, nor would a drainage trench be needed in this position, where the sandy soil is extremely well drained. The posts are most dense on that side of the house which faces the prevailing wind, which might indicate that they had already rotted at a time when the house was dismantled; any posts drawn out whole from the trench would leave no trace in the sand. This interpretation of the function of a ring gully has been argued for the Bronze Age by Avery and Close-Brooks (1969, 345) and can be paralleled at Weston Wood, Albury (Harding, J. 1964, 12).

The house had no external entrance porch, but PH 162,

122, on the north and 97 and 99 on the south, could form an internal one. A latch lifter (Fig. 27, no. 2) was found in the entrance. A circle of post holes, PH 97, 115, 138, 137, 147, 144 and 122 reading anti-clockwise, stands about 1 m inside the ring gully.

The Hearth, 156, was placed in the south, between the ring of post holes just described and the ring gully. If the ring gully does represent a wall, PH 138 would have been uncomfortably close to it as far as fire risk is concerned. It was an open hearth, consisting of a thick deposit of black ash with reddened sand below. One sherd of pottery was found in it. Pit 125 was inside the house, it contained only 12 very small scraps of pottery. Pit 136 was cut into by the ring gully, and is therefore earlier than the house. A floor level, of dark brown sand with pottery in it, extended over about two thirds of the house, but was ploughed out to the west (see pp. 31-2 and 40).

F 123 seemed to be the start of another ring gully of smaller diameter. It could not be examined further because of lack of time. It might have been expected to reappear in the corner of Cutting 61, but the ground there had been thoroughly disturbed when the medieval house was built, especially by Pit 124. The other post holes inside the Iron Age house imply some internal arrangements, but they cannot be interpreted. Four triangular loom-weights were found in or near the house (see Table 1). No evidence was found for the use of daub in the house's construction.

From about the centre of the house to the edge of Trench D the subsoil was stained red (see Fig. 4). This could possibly have been the result of burning, but it was thought to be natural.

Sequence

Neither ring gully, F 135 nor F 123 had any black burnished ware in it, the latest fabrics being smooth dark wares. By contrast, a fair quantity of black burnished ware was found on the floor of the house; so it is probable that the house was built before the advent of black burnished wares, and had a long enough life for them to accumulate as rubbish. The posts in PH 146 and 116 (outside) would seem to be later than the rest. Singularly few post holes held any pottery.

TABLE 1 — DISTRIBUTION OF IRON AGE LOOM-WEIGHTS AND SPINDLE WHORLS

Cutting No.	Feature No.	Remarks
1. EARLY LAND SURFACE		
58	—	Spindle whorl (Fig. 27, 7)
46	—	Loom-weight (with slag)
2. IN PITS, OR HEARTH		
57	79	Loom-weight
52	60 (Bottom)	Loom-weight
47	7	Loom-weight
53	226	Spindle whorl (Fig. 27; 6)
53	226	Loom-weight
32	225	Loom-weight
41	216	Loom-weight (Fig. 27; 10)
27	180	Spindle whorl (Fig. 27; 5)
36	142	Loom-weight
3. IN OR NEAR HOUSE		
56	100	Loom-weight in Ring Gully
56	—	Loom-weight near door
35	—	Loom-weight*
25	—	Loom-weight
*Found with iron ring, or buckle No. 3 (p. 46) and six whetstones		
4. BY WEST IRON-WORKING AREA		
57	241	2 Spindle whorls under the feature (Fig. 27; 8 and 9)
5. NOT IN A FEATURE		
42	—	Loom-weight
53	—	Loom-weight

TOTALS: Loom-weights 14; Spindle whorls 5

The Pits (Figs. 8, 9 and Pl. III and IV)

(We are much indebted to Mr. Peter Reynolds for help and advice in this section.)

Eighty-four Iron Age pits were found. They belonged to the following of Bersu's types (Bersu 1940):

A (Round hole and perpendicular wall, his non-storage type)	7
B (Oval hole, undercut)	1
C (Oval hole, perpendicular sides)	76

Bersu interpreted his Type A as for water storage. This would not be necessary at Brooklands, where the river supplied any such needs.

Much consideration has been given to the function of the pits; the majority of them do not appear to be suitable for bulk corn storage, among other reasons because of their small capacity (see Table 2) (Bowen and Wood 1967, 1-14; Reynolds 1974, 118-31), and only three pits have yielded cereal grains in their soil samples: nos. 14 (one grain), 142 (one grain) and 183 (a small quantity). Even allowing for the fact that the tops of many of them have been ploughed away, only thirteen, or one sixth of those which can be calculated, have an apparent capacity of over 1.5 cu. metres. The sides of the pits were in a fresh, unweathered condition. Stake marks and carbonised organic material, which might provide evidence of basketry lining, were sought for during excavation, but were not found. Of course such evidence could have disappeared if a pit had been cleaned out after it had been used for storage. The fill was normally a pale grey sand, only a few shades darker than the surrounding subsoil, and consequently they were hard to detect in dry weather. As can be seen in Table 2, the majority held very little more than the odd sherd of pottery which might have been lying in the topsoil at the time when they were dug. The scraps of quernstone found on the site are interpreted as part of the day-to-day activity of the inhabitants (see report on the quernstones, p. 81). The bands of podsol mentioned on p. 1 in connection with Pit 205 were common to several of them. In view of the high phosphorus content of material from the pits weight should be given to Potter's suggestion (see p. 23) that some if not all the pits served as latrines and periodically fresh sand was thrown in and stamped down to keep them clean. This practice has been observed by D. J. Tomalin in Africa (see p. 7).

Raw clay was found in four pits, where it could have been stored before being worked up into furnace superstructures (see below). Pits 5, 7 and 205 had lumps of it in their fill, and some fist-sized lumps lay beside Pit 5. In Pit 37 there were three patches, each up to 25 cm across, which might alternatively have been the remains of a clay seal; they lay some distance below a subsequent medieval hearth (see p. 52). For the remainder nothing indicating a seal was found, other than the hearths now to be described.

The impression one got was that the pits had been filled back almost at once, and several of them were covered by a hearth made up of a solid amalgam of burnt flints, burnt clay with wattle impressions, and some clinker. It seemed as though the important part of the feature was the hearth and its fired clay cover, rather than the pit under it. Perhaps the bare surface of a back-filled pit was the obvious location to choose for building a hearth. Pits with such hearths over them are shown in Fig. 8. They are nos. 169, 179, 180, 189, 204 and 205. They are grouped around the eastern iron-working area, and where the topsoil is deepest. As this is displaced ploughsoil, it may have preserved them, for many more pits could have belonged to this category, their overlying hearths which probably lay flush with the original land surface, having been scattered. The presence of stones and fired clay in the

ploughsoil was a common indication during excavation of the presence of the truncated remains of a pit below. It is suggested that most of them had some unexplained function in connection with iron-working. Bersu and others have reported plenty of features which are potential hearths, for example at Bampton (Calais Farm), Oxon. (Bradford 1942, 59), where slag was found in a pit dug into gravel at a riverside site.

Table 4 gives an analysis of the broken-up lumps of fired clay found on the site. These differed from the continuous spreads found over some of the iron-working features, which seemed to have collapsed *in situ*. The broken-up material lay in some instances on top of the stone hearths mentioned above, but was also found in other pits, and on the surrounding ground. There are several interesting points about the fired clay lumps. A great number of wattle impressions, and a very few squared lath ones, were found in clay which had been fired hard and bright red and which often had a concave or flat inner surface on the side away from the impressions. The curve of these convex pieces could not be measured, but it was in excess of diameter 30 cm. A lot more clay, only poorly fired, rough and lumpy, showed no surface and only a few impressions. The size of the wattle twigs is considered by Reynolds to be too small for hurdling or use in buildings, and his interpretation is that we have here the remains of the curved clay domes of kilns, or, more likely, the upright flues of furnaces (Cleere 1972, and see p. 19), baked hard on the inside, poorly fired and weathered away on the outside. The Iron Age charcoal report (see p. 77) indicates that the wattles at least in Pit 189 may have been of birch. Pits 169, 179, 180, 189, 204 and 205 can be seen by their position and contents to be connected with iron-working rather than the possible alternative of pottery manufacture; and no pottery wasters were found on the site although pottery might have been made locally. (See petrological note, p. 44-5). No stoke holes were found, nor presumably would have been necessary. Pits 178, 209 and 227 could belong to the same category; they held very many stones (in the case of 178 in the ploughsoil above the pit), but no fired clay (see Pl. III).

By contrast a small group of deep pits, 48, 71, 183, 198 and 217 had bands of dark humic material in them. As these probably represent fill lines, the pits are likely to have been filled in more than one operation. More rubbish was found in pits 55, 79, 171 (not much) and 177. Pit 171 was the only pit whose sides had been undercut. The section, Fig. 9, shows an even gentle curve, which makes it likely that this shape was dug deliberately rather than that the sides fell in accidentally; in that case, in the soft soil, a large, lop-sided profile could be expected. But the purpose in digging an undercut pit in sand is not immediately clear unless, although it yielded none, it was intended for corn storage. Perhaps this is an exception which proves the rule.

Pit 191 was a small pit full of black ash, clinker and burnt stones, clearly something to do with iron working, while 142, a large and deep circular pit was packed with a dense black fill of soot and charcoal and one carbonised cereal grain. The thick layer of ploughsoil above it was almost equally black, and it has been interpreted as a charcoal burner's clamp because of the reducing conditions which had clearly created the feature and its fill. No other feature of this kind was found. It had a few sherds of late pottery (see Fig. 23). Where it could be identified, the charcoal was of blackthorn, whereas the main fuel recovered in the soil samples from the iron working areas was oak (see Iron Age Charcoal Report, p. 77). Blackthorn, while a good hard wood, is a surprising fuel to meet in a charcoal burner's clamp; possibly it represents hedge trimmings.

It will be recalled that Dr. Gardner claimed to have recovered 'the remains of a cinerary urn' from workmen

digging a sewer trench. To get this idea about their discovery, the workmen may have found some obvious traces of burning; although he scrupulously records burnt bones in other contexts, Gardner makes no mention of them here, (Gardner 1911, 48 and 50; 1912, 130, 131, 132; 1924, 1-29), so maybe it was soot that gave them the idea, and it is suggested that Pit 79, which was filled with rubbish and black sticky ash may have been the location of the 'cinerary urn'. Within the limits of the area excavated no evidence was found for any burial, and no other pit cut into by the sewers had a black fill. (See Fig. 23 for pottery recovered from Pit 79).

Five pits, nos. 76, 77, 91, 92 and 93 could not be excavated as they were found in the last week, and one, 133 in the south corner of Cutting 41, not shown on the plan, was buried under a collapse of baulk before it could be plotted or measured. Pit 177 may be likened to two isolated pits found in an area of Anglo-Saxon settlement at New

Wintles Farm, Hanborough, Oxford. These were of 'smaller proportions than usual Iron Age storage pits or rubbish pits in the region, as if they had been dug solely to contain the pottery fragments that were deposited in them' (Harding, D. 1972, 80-81). The only difference is that Pit 177 is not isolated, Pit 55 may have been another. Its section could not be drawn, as it was dug clandestinely by the teenage play-group, who then brought us its contents.

The pits look as though they have been dug in groups with a general north-south alignment, and it seems that there is a path between them leading to the eastern iron-working area (see Fig. 8).

The sections of the pits are not all included in the report. They are recorded in the site notebooks, but the unpublished ones are of a uniform dullness, and reveal nothing. For further comment on the pits, see the pottery report, p. 40.

TABLE 2 — ANALYSIS OF IRON AGE PITS

Abbreviations: FC—Fired Clay; P—Pottery

Pit No.	Shape	Dimensions in metres (longest axis first)	Depth in centimetres	Approx. capacity in cu. m.	Fill
5	Oval	2.00 x 1.60	32	1.02	P, clinker, raw clay
7	Oval	1.88 x 1.50	72	2.00	P, raw clay, FC, slag and loom-weight Iron Age pit with medieval on top
8	Elongated ellipse	1.75 x 0.88	32	4.93	Empty
10	Oval	2.00 x 1.70	56	1.91	P, FC, whetstone chips, charcoal
14	Irregular ellipse	1.95 x 1.20	27	0.63	P, slag, one charred cereal grain
16	Oval	1.60 x 2.10	53	1.78	P, FC, 3 slag
18	Small oval	1.00 x 0.80	32	0.26	P, stones
20	Oval	1.36 x 1.20	44	0.71	P, stones, slag
21	Oval	1.45 x 1.10	23	0.37	P
24	Oval	1.60 x 1.00	31	0.50	P
33	Small oval	1.05 x 0.65	13	0.89	Empty
34	Oval	1.40 x 1.10	16	0.25	P
37	Oval	1.45 x 0.90	28	0.37	P, raw clay, bone, 1 nail Iron Age pit with med. on top
38	Half oval	0.58 x 0.75	60		P, FC
42	Elongated ellipse	1.80 x 0.65	16	0.19	P, 1 flint
43	Elongated ellipse	2.10 x 1.00	16	0.33	P
48	Elongated ellipse	2.20 x 1.00	63	0.32	FC, 2 dark brown humic bands
50	Half oval	1.20 x 0.74	36		P, dark brown humic band
52	Small oval	0.90 x 0.60	47	0.25	Bronze, FC, P
53	Half oval	1.60 x 0.45	26		P
54	Small oval	0.70 x 0.64	10	0.45	P
55	Round	1.10 x 1.05	14	0.16	P, punch?, nail, FC, slag
56	Elongated ellipse	1.85 x 1.42	38	1.00	P
60	Oval	2.10 x 1.60	Not recorded		Half whetstone, loom-weight. Med. pit cuts into Iron Age
69	Small oval	1.55 x 0.80	34	0.42	P, 4 slag
71	Elongated ellipse	2.17 x 0.82	50	0.89	Dark brown humic bands
72	Elongated ellipse	1.90 x 1.20	77	1.76	P, Med. pit cutting into Iron Age
75	Oval	1.10 x 0.85	63	0.59	P, FC, clinker
76	Round	0.85 x 0.80			Not excavated
77	Elongated ellipse	1.65 x 0.90			Not excavated
79	Elongated ellipse	2.10 x 1.40	75	1.22	P, loom-weight
91	Half oval	1.60 x 1.00			Not excavated
92	Round	1.85 x 1.60			Not excavated
93	Irregular ellipse	1.40 x 1.00			Not excavated
103	Oval	1.30 x 0.83	30	0.32	P
110	Elongated ellipse	2.05 x 0.90	26	0.48	Empty
114	Small elongated ellipse	1.41 x 0.54	40	0.24	Empty
133		Baulk fell in before measured			
136	Elongated ellipse	2.00 x 0.90	24	0.43	P
142	Round	2.45 x 2.05	75	3.76	P, slag, FC, charcoal, loom-weight, one charred cereal grain, tile fragment
143	Round	1.75 x 1.75	1.16	3.54	P, stones
167	Small oval	1.00 x 0.70	44	0.31	P, slag, FC
168	Oval	1.18 x 0.95	30	0.34	Empty
169	Elongated ellipse	2.20 x 1.40	15	0.46	P, FC, stones
170	Elongated ellipse	2.20 x 1.20	85	2.51	P, stones, slag, FC
171	Small oval	1.20 x 0.80	67	0.64	P, whetstone chip, iron, flint
172	Oval	1.40 x 1.20	29	0.49	Empty
173	Elongated ellipse	3.20 x 1.05	32	1.07	P

TABLE 2—continued

Abbreviations: FC—Fired Clay; P—Pottery

Pit No.	Shape	Dimensions in metres (longest axis first)	Depth in centimetres	Approx. capacity in cu. m.	Fill
174	Small oval	1.45 x 0.75	17	0.18	Empty
177	Small round	0.85 x 0.85	66	0.48	P, tooth, nail, FC, slag
178	Elongated ellipse	3.05 x 1.55	1.05	4.96	P, slag, stones
179	Elongated ellipse	1.50 x 1.00	27	0.41	FC, quern fragment, tooth, P, slag, charcoal, clinker
180	Elongated ellipse	2.00 x 0.90	33	0.59	P, iron tool, FC, spindle whorl, pyrites, slag
182	Elongated ellipse	1.90 x 0.82	39	0.60	P, FC
183	Oval	1.90 x 1.20	76	1.73	P, FC, slag, small quantity of charred cereal grains
184	Oval	1.21 x 1.10	47	0.63	Empty
185	Oval	1.40 x 0.95	16	0.21	Empty
186	Irregular oval	1.60 x 0.85	31	0.42	P, whetstone
188	Elongated ellipse	1.95 x 1.15	86	1.93	Empty
189	Oval	2.00 x 1.25	86	2.14	P, tooth, tapslag, whetstone, FC, iron object
191	Small round	0.80 x 0.70	22	0.12	P, clinker, pebbles, FC, slag
197	Elongated ellipse	2.30 x 1.00	50	1.15	P, rubbing stone
198	Elongated ellipse	2.65 x 1.20	60	1.91	P, dark humic bands
202	Small elongated ellipse	1.35 x 0.65	49	0.43	Empty
203	Oval	1.07 x 0.95	12	0.12	Empty
204	Elongated ellipse	1.55 x 0.98	25	0.38	Slag, metal scrap, FC
205	Elongated ellipse	2.60 x 1.70	74	3.27	P, whetstone, metal scraps, raw clay, bone fragment, slag
206	Oval	1.10 x 0.70	22	0.17	P
208	Small elongated ellipse	1.25 x 0.75	16	0.15	P
209	Elongated ellipse	2.15 x 1.05	34	0.77	Stones only
210	Oval	1.00 x 0.70	37	0.26	Empty
211	Oval	1.20 x 0.80	37	0.35	P, stone
212	Oval	1.30 x 0.85	22	0.24	P
216	Small elongated ellipse	1.80 x 0.85	23	0.35	P, loom-weight
217	Oval	2.00 x 1.25	65	1.62	P, FC, humic bands, charcoal
218	Elongated ellipse	1.35 x 0.90	43	0.52	P
219	Elongated ellipse	2.00 x 1.20	Not recorded		Empty. Med. bedding trench over it
222	Elongated ellipse	1.40 x 1.10	16	0.25	P, FC
223	Elongated ellipse	2.25 x 1.00	42	0.95	P
224	Elongated ellipse	1.80 x 0.80	20	0.29	P
225	Half oval	1.25 x 0.40	78		P, loom-weight
227	Elongated ellipse	2.10 x 0.80	30	0.50	P
262	Round	0.60 x 0.60	40	0.14	Quern fragment

Note. In some cases it was not possible to calculate the approximate capacity, as only part of the pits remained.

The Gullies, Features 163 and 164 (Figs. 3, 4, 5 and 8)

Two gullies ran parallel from east to west in the south-east corner of Trench B. They seem to have started from a point beyond the trench which it was not possible to locate in the time available. When they were levelled they were both found to be deeper uphill, at the edge of the trench than at their tips, no. 163 by 25 cm no. 164 by 3 cm. So they were not dug for drainage, and their purpose is not known. Gully 164 cuts through Pit 173 and is therefore later (see Fig. 8).

Gullies 165 and 166 are medieval and marginally shallower. They are discussed on p. 53.

The Western Iron-Working Area

(See detailed drawing, Fig. 10, as not all the features are numbered on the Key Plan, Fig. 3).

There were two main concentrations of iron-working and the structures described here were sited in Trench B, Cuttings 52, 57 and 55.

1. Five small round furnaces, F 73, 82, 236, 240 and 247. Their dimensions are given in Table 3. F 82 showed only as a circular patch of burnt red sand, the bases of the others survived and sections are shown in Fig. 12. Associated with F 240 was F 241, crushed fired clay, flints and some charcoal, partly overlying F 240 and spreading west of it for about 2 metres. Just north of F 236 were spread out a number of oddly-shaped lumps of clay, interpreted as daub, but they could also have been raw clay prepared for a superstructure but not fired. F 247 was the most complete example of a furnace on the site. The bowl-shaped base was covered by the superstructure of dense red clay and from one side of it issued an arc-shaped stain 150 m long and 15 cm wide. This could have been caused by the tapping of molten slag, and may be com-

pared to F 130 (see below). The sand below the hearth was stained bright red—as this was always the case it was taken as evidence for those hearths which had been destroyed, see Table 3. Furnace 247 belonged to type A.2 of Cleere's classification (Cleere 1972, 21-23). Its clay walls had been strengthened by the insertion of sherds of Pot 152 (Fig. 19). This pot had been so extensively burnt through that it has lost its former texture and feels like friable pumice. (Small sherds of pottery which have been reduced to the same texture are present among the material in the British Museum from Sandown Park, Esher, and it is suggested that whenever pottery is found in this condition it could be a clue to furnaces of this nature.)

2. Several features, in line with Furnaces 236 and 240. Reading from left to right on the plan (Fig. 10), they were: F 235, part of Complex F 80 and therefore not shown separately on the Key Plan; a patch of red-and-black burnt clay, with jagged edges, which show it was disturbed prior to excavation; F 80, a square to oblong patch of bright red dense clay 45 cm x 20 cm, surrounded by and overlying an area of burnt flints; directly south of it and clearly part of the same feature, a spread of charcoal, about 1 m x 0.5 m. Smaller patches of red clay were scattered around the edges of F 235 and F 80, and the whole thing might be interpreted as a hearth with collapsed superstructure, but no furnace was found underneath the red clay. F 130, a semi-circular stain of very burnt sand concentrated in the south and west and growing fainter to the north and east. It looked very much like a channel down which hot slag had flowed, burnt flints and slag lay in its course, but again, no hearth was found, only some burnt clay at the south end. Beyond the furnaces, to the right on the plan (Fig. 10), were two dense patches of pebbles. They are not shown on the Key Plan. One was east of PH 239, the other partly overlying Pit 55, and therefore presumably later. The large charcoal clump shown west of the stones cannot have been part of

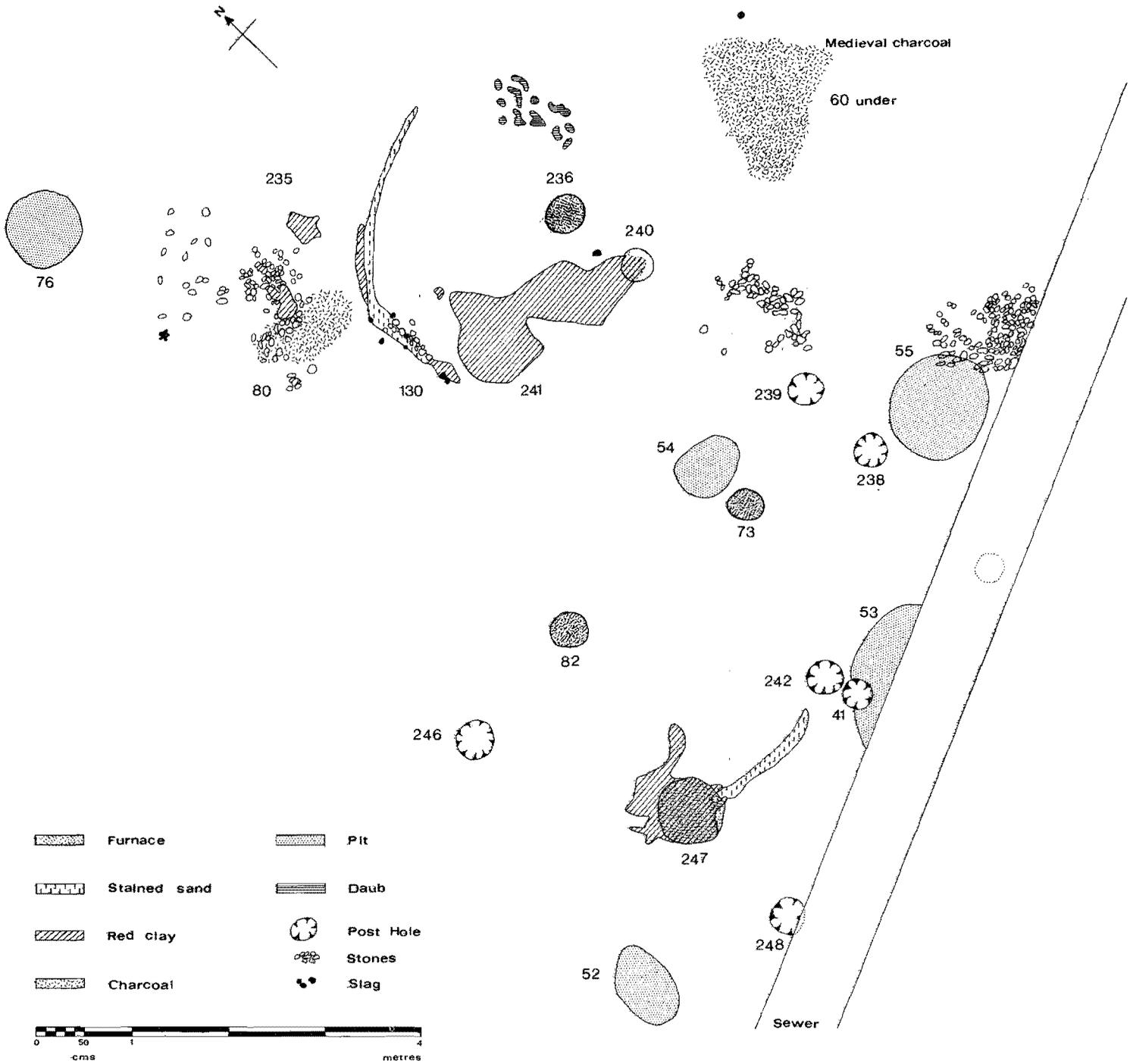


Fig. 10. Plan of the Western Iron-working area.

the Iron-working complex, as it overlay the foundations of the medieval shed, where it may have been stored; but it gives the location of Iron Age Pit 60 (see p. 53).

3. Four pits, nos. 52, 53, 54 and 55, whose direct association with the ironworking is not established. Pit 52 contained a curious small decorated bronze object (Fig. 27), whose origins are uncertain, and the contents of Pit 55 are discussed on pp. 32 and 41 onwards.

4. A possible 7-post structure. It is possible to visualise this by linking together post holes 246, 239, 238, a missing one in line with the latter two, in the area now cut by the modern sewer, the double post hole 242 and 41, then 248. Such a structure, approximately 5 m x 4 m would seem to be open to the west or the north, and Furnace 247 would have lain inside it if they were contemporary. PH 242 and PH 246 both had coarse pottery only in them, but the latest ware comes from PH 248, which had a black burnished sherd, and accordingly the whole structure is assumed to belong to phase B. This assumption must, however, be extremely tentative, since either the absence of later pottery in some features could have been fortuitous, or the latest ware could have entered a feature when a post was pulled out of its socket on demolition. The furnace, 247, might have been very early if the sherds of pot 152 are used to date it, see pp. 34 and 40, but in spite of the large number of sherds from this pot, the possibility exists that they were rubbish survival.

No explanation is offered for three post holes which seem isolated from any structures: 254 in Trench A, 234 and 249 in Trench B.

The Eastern Iron-Working Area

(See detailed drawing, Fig. 11 as not all the features are numbered on the Key Plan, Fig. 3.)

This was situated in Trench D, Cutting 22. It consisted of a main hearth, F 195, with several attendant features.

F 195 was a circular area of about 1 m diameter surrounded by a semicircle of stones, a heap of slag and stones mixed, and a patch of bright red burnt clay, F 192, probably collapsed superstructure, lying over another semicircle of smaller stones. In the centre were five small

lumps of slag. When the features had been recorded and removed there remained in the centre a small blackened circle, 17 cm in diameter. F 190, a gully, 90 cm wide, started at the mouth of the hearth and was traced for 1 m westwards (Section B-A, Fig. 11), ending in a heavily blackened patch, F 255. Three lumps of slag were found in the gully, surrounded by purple burnt sand (F 263, also encountered in 1964), probably a residual furnace (see Table 3, below). On the north side of the hearth there was a small pile of ash, F 196, 32 cm in diameter. Under it the sand was burnt bright red, and the base of an Iron Age pot had been sunk in the ground near it, upright (Pot 199, Fig. 22). Further north stone, slag and fired clay covered both Pit 191 and Hearth 193, the former was full of charcoal and black ash. To the east, also under stones and slag, lay F 194, possibly the remains of another furnace. One metre away was the large Pit 189, which was remarkable for the quantity of fired clay it contained—15.470 kg while a further 6.825 kg was found scattered over Cutting 22 (see Table 4).

All the features in this area looked as if they had been deliberately levelled at some time, and, it seemed, Cutting 22 had subsequently been cobbled over with flints. Fragments of this were still *in situ*, and more were recorded in 1964 (see p. 7). It was put there at a time when the iron working area had gone out of use, as it overlay the features, and this could well have been when Medieval Building 1 was erected (see p. 53).

The western half of Cutting 22 was sited over one of the 1964/65 trenches, whose edge came at the line A-B, but which did not go deep enough to remove F 190, F 196 and F 255 (Fig. 11).

In general the slag debris at Brooklands was very meagre, and Dr. Spratling has commented 'on the whole very little metalworking debris, even where smiths' hearths are present, survives on prehistoric sites. There can be no doubt, as far as I can see, that the bulk of such debris does *not* survive for the archaeologist to be able to recover and that there is no reason to conclude that what does survive is in any measurable or estimable way proportionately representative of the output of the industry'

TABLE 3 — EVIDENCE FOR POSSIBLE FURNACES

Feature	Remarks	Depth	Diameter (in cm)	Interpretation	Fig. Nos.	
					Plan	Section
1. Western Iron-Working Area						
17	Cutting 47 outside area	—	30	Red stain, possible	8	—
19	Cutting 48	—	30 x 27	Red stain, possible	8	—
73	Cutting 57	10	35	Very probable	10	12
82	Cutting 57 with burnt bone	—	40	Red stain	10	—
240	Cutting 57	19	36 x 34	Very probable	10	12
236	Cutting 55	11	35 x 40	Very probable	10	12
247	Cutting 59	29	80	Very probable	10	12
253	Trench A outside area	28	65 x 80	Very probable	8	12
2. Eastern Iron-Working Area						
176	Cutting 23	—	20 x 40	Red stain, possible	8	—
180	Hearth within Pit	—	—	Probably part of general feature	—	—
181	Cutting 28	—	30 x 60	Red clay, possible	8	—
193	Cutting 22	—	30	Red stain, possible	—	—
194	Cutting 22 with bone	26	52	Very probable	11	—
195	Cutting 22 Main hearth	20	100	Very probable	11	11
201	Cutting 25	—	60 x 70	Red stain and fired clay, possible	8	—
252	Cutting 23	31	65 x 70	Very probable	8	12
263	Inside Gully 190	—	25 x 30	Possibly earlier than gully	11	11
3. 1964 Excavations in Eastern Iron-Working Area						
205b	Cutting 38	60	—	Very probable	6	6
260	Cutting 39	—	25 x 38	Red stain, very possible	6	—
261	Cutting 39	8	35 x 47	Red stain, very possible	6	—
262	Cutting 38	40	60	Very probable	6	6

Note 1. Feature 232 though small, was a stone hearth, not a furnace. It was outside the area, in Cutting 49, and is not included here.

Note 2. Likely furnaces are shown in plan and section, possible ones in plan only as they are residual.

TABLE 4 — DISTRIBUTION OF FIRED CLAY AND WATTLE IMPRESSIONS

Note. Diameters and weights in this table relate to broken lumps. Continuous spreads of collapsed superstructure associated with Features 37, 80, 236 and 247 were noted but not retained.

Nos.	Approximate Diameter of Wattle Impressions in cms.									Un-measur-able	Flat back	Corner piece	Con-cave back	Finger		Con-convex back	Weight grams
	Less than 0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.0+					Lath im-pression	tip im-pression		
A. In Iron Age Pits																	
7			2		1									1			505
10												1					115
38			3						1								1735
48																	45
55																	∞
75											1						160
167			1														40
169		1		1										4			2160
170				1										1			255
177																	1935
179	8	37	34	10	3	4	3	1		17	7	2	3	3	2		2545
180	1		1	2	1						2						625
182			3														230
183				1							3						60
189	33		109		1	11	1	5	1	8	8	3	16	4	4	3	15470
191			3		1	2				2			1				455
217					3	3				12	4			6			1535
222			1			1				2							200
B. In other Iron Age features																	
80	4										2	1	1				855
130																	140
135	1	1															340
176																	30
190		5	2	4	1				1	2			3				1765
193																	∞
226																	70
241	2	3	12	3	3	3			1	9	2		2		2	1	1990
252											1						185
1964 Excavations, including Pit 205 (Could not be measured because clay had been washed)																	2135
C. Not in features																	
Cutting																	
22	4	2	21	6	13	10	2			21	8		14	2	1		6825
23					1	1				3	1						270
24																	40
25																	185
26		4	7		1					8	1		1				625
27	1	1															90
29																	30
31		2	7		2	2	2			9	1						585
33						1											210
34										1							370
35																	∞
36			1														130*
38																	255
39				1		1					2						310
41	2		2	2	1	2				4	2						485
42										1							110
43			2						1								100
45																	140
46		2															255
51												1					110
53					1	1					1						85
54					2												70
55								1									340
57			3		1												140
60																	90
Bulldozing		2	1		1					1							340
D. In Medieval features																	
Feature																	
No.																	
9																	20
140		2	2							1			1				845
187																	60
220	2	9	15			11		6									1025
221	2	1	8			1											855
Building 1																	170

*Fabric same as red-gritted coarse pottery

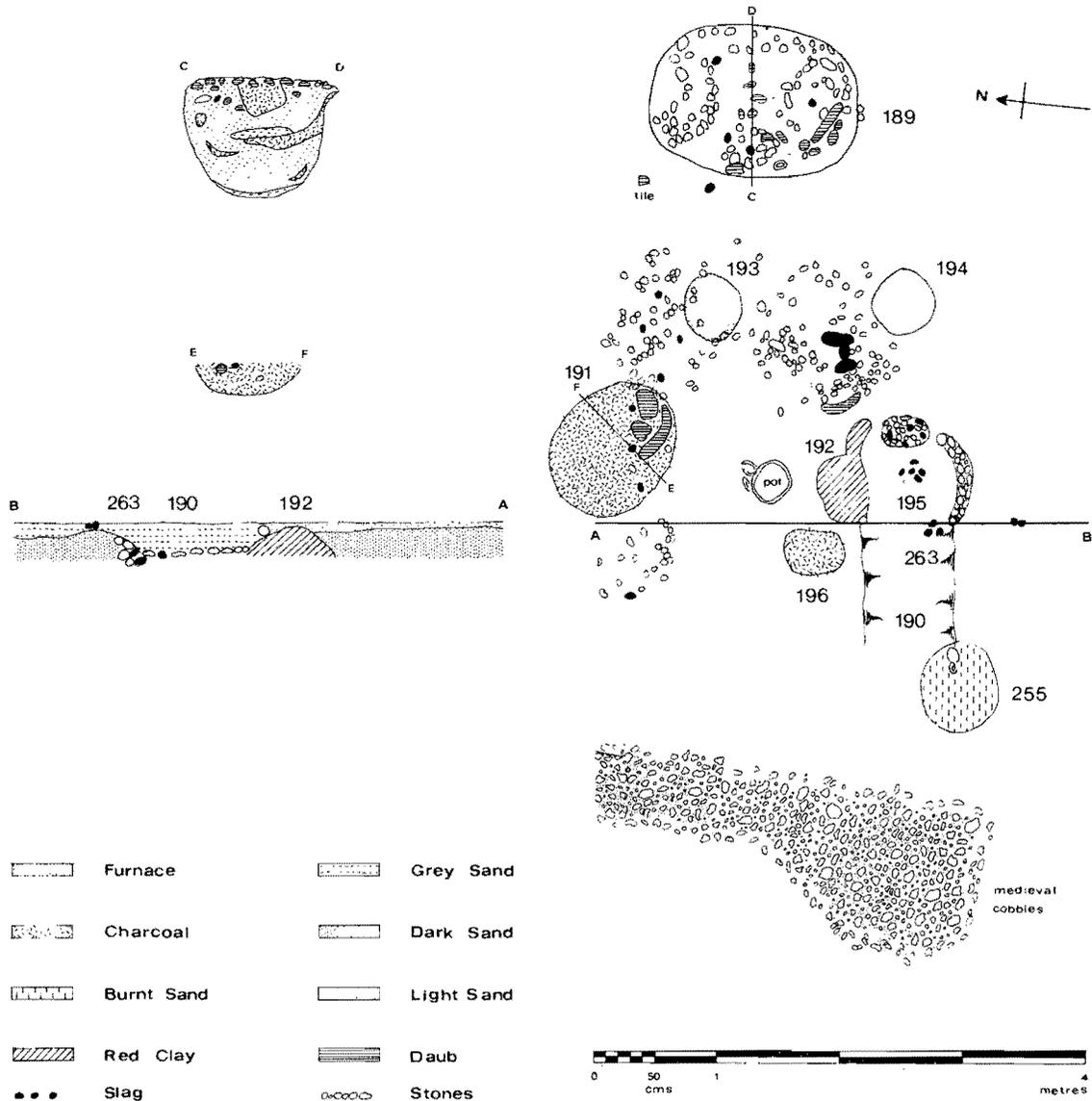


Fig. 11. Eastern Iron-working area—section and plan.

(Personal communication, Dr. Mansell Spratling). This should, perhaps, be borne in mind when considering Table 5.

The evidence for iron-working in Pit 205, excavated in 1964, and Pit 204, excavated in 1970 is treated as a southern extension of the general complex here described.

Sequence

The latest wares in Features 169, 171, 173, 176, 178, 186, 190, 191 and 196 belong to phase A; but again, the separating out of the features by this criterion might be misleading, and it may be equally valid to argue that all the features in each Iron-working area are contemporary with one another regardless of the rubbish found in them. More work is needed on Iron Age sites comparable to Brooklands before the claim of iron-working in the earliest phases can be established beyond doubt.

Comments on the Iron-working Activities—by H. F. Cleere

The Brooklands site gives a very clear and comprehensive picture of ironmaking and ironworking technology in the pre-Roman Iron Age; it is the most complete establishment of its kind that has yet been excavated from this period and contains features of special interest.

The two ironworking areas (western and eastern) appear

to have been devoted to the two major processes of smelting and forging respectively. The former has a concentration of five smelting furnaces (Features 236, 240, 247, 73 and 82) grouped together, with an outlier (F 253) some 10-15 m away from them. To these should be added F 205b discovered in the 1964 excavation. The eastern area comprises a number of features associated with heat, charcoal, and baked clay, but with no clear evidence of smelting activities. It would appear, therefore, that the iron ore was smelted in the western area and the reduced iron was then transported to the eastern area for working up into artefacts. No pieces of unaltered ore were found on the site.

Iron Smelting

The smelting furnaces would appear to be of the so-called 'bowl' type (Fig. 12). However, the present author has argued in a paper on the classification of early smelting furnaces (Cleere 1972, 8-23) that open bowls of the type described extensively in the literature are in fact not feasible from the point of view of smelting efficiency; it is very unlikely that they could have been worked in such a way as to result in the production of metallic iron.

The extensive spreads of burnt clay found in association with Features 80, 236 and 241 would support the view that

the remaining bowls represent only the below-ground portions of more elaborate structures. There was clearly no provision for the tapping off of molten slag, and so this would have collected in this below-ground section. This was surmounted in all probability by a low cylindrical clay shaft, which was fed from the top with charcoal and crushed ore. As reduction proceeded (the requisite heat and reducing gas being supplied by means of a bellows inserted into the lower part of the shaft), the iron bloom slowly coalesced in a spongy form on top of the slag cake (or 'furnace bottom') in the bowl; several of these cakes were found during the excavation.

To remove the bloom at the end of the smelt, the clay superstructure was in all probability broken down, since it would have become firmly fixed to the inside wall of the shaft. The presence of slag cakes elsewhere on the site implies that these were pulled out when cold (since their structure shows them to have cooled slowly), so that a new shaft could be constructed, permitting another smelt to be carried out. The large amount of baked clay fragments on the site supports this view.

This type of *non-slag tapping furnace*, designated type A.2 in the present author's classification (Cleere 1972) has hitherto appeared to have an exclusively eastern European distribution: Iron Age examples are known from Austria, Hungary, Czechoslovakia, Poland, Pomerania, and Schleswig-Holstein (Pleiner 1974, 84-6). The furnace structure at Purberry Shot, Ewell (Lowther 1947, 13, Figs. 4 & 9) appears from the somewhat inadequate drawing in the report to have been a forging hearth rather than a smelting furnace, though Tylecote has rightly drawn attention to the existence of furnace bottoms on this site, implying that smelting was carried out there (Tylecote 1962, 198). Iron Age furnaces from the Siegerland in Germany (Tylecote 1962) are all of the *slag-tapping* type, as are early first century AD examples from the Weald (Tebbutt and Cleere 1973, 27-40, and Money 1964, 8). However, the

well-known furnace from Kestor, Devon (Fox 1954, 21-62) usually described as a bowl furnace, should probably be interpreted in the same way as the Brooklands one.

It is interesting to see that both the ironmaking traditions known in Early Iron Age Europe were present in Britain. It is regrettable that the amount of work carried out on ironmaking sites of this kind in western Europe is so perfunctory by comparison with the prolonged and detailed surveys that have been made in eastern Europe, notably in Poland. In the present sketchy state of our knowledge it is unfortunately impossible to equate the introduction of the two techniques into Britain with particular cultural movements, the more so since they seem to represent two distinct cultural streams.

Mr. Alan Hall of the University of Surrey has carried out a detailed metallographic and analytical study of one of the slag cakes (known as Schlackenklotze to Continental workers). This reveals a characteristic vesicular morphology and the presence of phases associated with the bloomery process and slow cooling, as would be expected. This paper will be deposited in Guildford Museum with the other site records.

Iron Working

The product of the bloomery was a spongy lump of iron, its interstices filled with slag. This required repeated heating and hammering in order to expel the entrapped slag and to consolidate the metal. At Weybridge this process appears to have been carried out in the eastern area, close to the hut.

The features in this area (with the dubious exception of F 194) do not resemble smelting furnaces of the type known from the western area. They tend to be larger (especially F 195) and lack the bowl profile that F 247 displays so well. Moreover, the slag from this area is clearly the product of forging.

During this process, the entrapped slag tended to sink

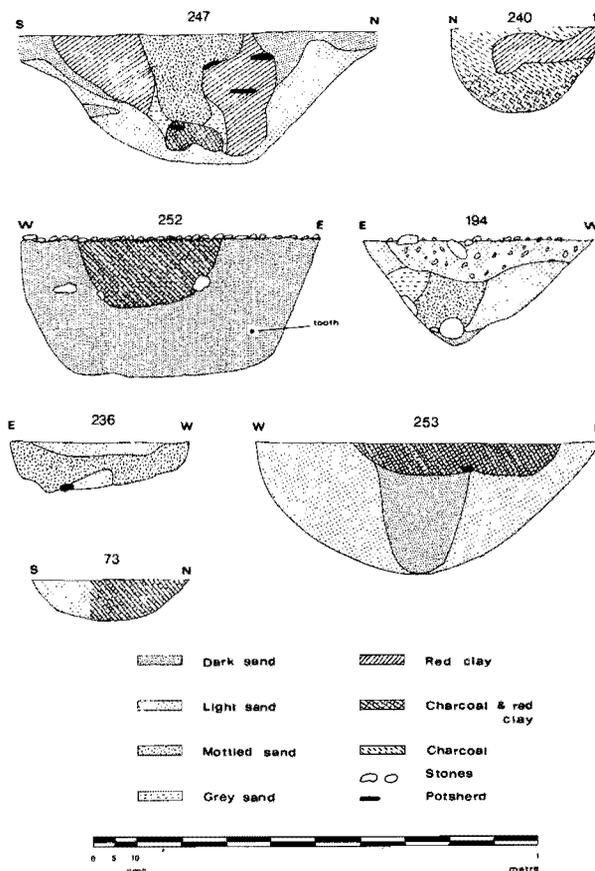


Fig. 12. Sections of Iron-working Furnaces.

TABLE 5 — DISTRIBUTION OF SLAG

Location (Cutting nos.)	Feature Nos.	kg	Description (Comment by A. Hall, Department of Metallurgy, University of Surrey)
22	189	0.737	
	190	0.694	
	191	0.099	
	—	0.198	
23	252	0.370	Probably furnace bottom
	177	2.961	
24	—	0.057	
25	—	0.284	
26	170	0.057	
27	179	8.105	
	—	0.113	
28	180	0.071	
	183	0.213	Could be bits taken off furnace
29	187	0.057	
30	165	0.043	With Molar embedded, see p. 85 and Table 15
32	200	1.445	Slag which has been allowed to settle (not in a furnace, possibly medieval)
33	163	0.907	Slag, apparently formed round a square wooden lath
	—	0.113	
34	—	0.128	
	178	0.071	
35	—	1.700	
36	—	—	Tapslag, small piece, large pieces of possible roasted ore
38	205	1.119	Tapslag and 1 slag with some furnace lining. Some from 1964 excavation
40	214	0.014	
41	—	0.071	
43	7	0.836	Slag and furnace bottom
44	75	0.028	
	—	0.198	
45	3	0.071	
46	—	0.312	
46/7	5	0.156	
47	14	1.280	Slag with impressions of 8, possibly 9, squared wooden laths. Another slag with 2 impressions
	20	1.091	2 slag, one probably a furnace bottom
	69	0.298	
48	—	0.184	
49	—	0.170	
50	—	0.050	
51	—	0.822	Slag, possibly tapslag, large piece probably sinter
	25	2.154	Large lump of slag from furnace
	66	0.156	
	—	0.751	
52	—	0.298	Could be sinter
	—	0.071	
53	—	0.439	
54	141	0.184	
	—	1.020	One piece tapslag, one heavier, could possibly be slag with a fair percentage of iron
56	—	1.573	Slag, heavy but not iron, 2 lumps
57	80	0.609	Some tapslag, others not molten
	55	0.071	Slag
	130	1.700	Mainly slag, probably bottom of a channel
	140	0.496	
	241	1.955	Slag, apparently formed round a small lath, finger-sized, square in section. Part of vitrified clay lining of furnace, some tapslag, rest ordinary clinker
	—	0.425	
58	139	0.241	One slag with the impression of something round which it formed, one clinker, obviously gas has been given off and subject to heat, has iron inside
59	247	0.085	
60	—	2.975	
	—	2.160	The subject of a paper by S. J. Rutherford, part of a BSc Thesis at the University of Surrey. A copy has been deposited at Guildford Museum
61	135	0.170	
	—	0.325	Slag and vitreous material
Bulldozing Trench D	—	0.170	Possibly ore
	—	1.360	Slag with favalite and charcoal, S.F. 34, analysed by J. F. Potter (see Table 6). The subject of A. Hall's report, a copy of which is deposited at Guildford Museum
1964 Excavations	—	2.275	One slag with a drilled hole in it, hole too big to be gaseous

down into the charcoal bed on the hearth, to mix with flakes of scale formed on the surface of the iron during prolonged heating. The temperatures needed for consolidating the bloom (1100°C and above), which could only have been achieved with the help of bellows, would result in this material being melted and becoming homogeneous. At the same time gas bubbles would tend to form, giving a characteristic "foamy" structure. Lumps of this mater-

ial would be pulled out of the hearth from time to time when the fire had to be relit, and a considerable amount was found on the site. It seems reasonable, therefore, to describe this area with some confidence as an iron working area, as opposed to a smelting area.

The physical separation of these two processes is well attested on other early sites; for example the raw blooms produced in the early first century furnace at Pippingford

Park, Sussex (Tebbutt and Cleere 1973) seem to have been taken to the nearby Garden Hill defended site (Money, private communication) for working up. The smelting process produces a good deal of disagreeable fumes (though surprisingly little smoke), and there can be spectacular eruptions of sparks when the furnace charge suddenly drops. It is thus prudent to site smelting furnaces some distance from dwellings. Forging is also something of a fire risk, though it can be controlled more easily than the bloomery process, and its waste gas is less noxious since there is complete combustion of charcoal to harmless carbon dioxide rather than carbon monoxide. There is no reason, therefore, why the forging installation should not be located alongside the hut (although the large amount of burnt clay in and around F 189 does suggest at least one disaster from incautious blowing of the forging hearth!).

It is a little difficult to interpret the features in this area with certainty. F 195 would appear to have been the main forging hearth, on which the raw blooms were heated up. The semi-circle of stones suggests that this was the base of a low baffle wall, the working side being represented by the patch of burnt clay (F 192). The hearth would have been blown with bellows located on this side—i.e. blowing away from the hut. The other features, such as 191, 193, 194 etc. may represent subsidiary operations, such as the production of steel for cutting edges, or earlier phases of the site. It is also possible that a small hearth may have been used in preference to the large main hearth (F 195) for miscellaneous blacksmithing operations at a time when there was no bloom-forging in progress.

Discussion

The scale of operations on this site must have been small; there would appear to be little justification for any claims that this was a major iron-producing centre. There is little evidence of there ever having been a slag heap of any magnitude, comparable with those at the *Classis Britannica* sites in the Weald (Cleere 1974) for example.

The furnaces are unlikely to have produced more than 5-10 kg of metal from each smelt, and the nature of the process is such that individual furnaces would hardly have been used more than four or five times. A maximum production of, say, 200 kg of iron during the lifetime of the excavated area should be accepted; but if other features, revealed by air photography but which could not be excavated, are taken into account, the figure might be doubled. There is, of course, no evidence as to how this was processed into artefacts: 200 kg could represent a goodly number of swords, spearheads, axes, or ploughshares.

Nevertheless, other evidence seems to imply that iron was the main business of the settlement; agriculture seems to have played little, if any, part in its life. Little is known about the role and life of the ironworker before the Roman period, and so one can only conjecture. It is perhaps justifiable to describe this as the homestead of a specialist ironworker or smith and his family, attracted by the readily available iron ore with plenty of light woodland in the vicinity for use as charcoal. Iron was smelted and converted into tools and weapons, which would have been traded by river for food and other goods.

If this is, indeed, the correct interpretation, Brooklands may be said to be a very significant site, because of the light it throws on the social organization of the Early Iron Age. The existence of the Purberry Shot settlement in the same area hints at some degree of technological specialization in this region during the period. It is to be hoped that similar sites will be excavated, both in Britain and across the Channel, which will provide more information about the cultural and technological implications of the Brooklands settlement.

Geological Observations on the Use of Iron and Clay at the Site—by J. F. Potter

Local Occurrence of Iron Ore

The Geological Survey (Dewey and Bromehead 1915) in their Memoir for the Windsor and Chertsey area, indicate the presence of an ironstone "of sufficient purity to be worked" in eroded hollows at the base of their Eocene, Bracklesham Beds and best illustrated at St. George's Hill, Weybridge. They describe (p. 51 and pl. IV) this ironstone as seen in Fir Grove brickyard (TQ 082633) from which a specimen was analysed and "found to contain 33.46% of Fe_2O_3 , free from titanitic acid". The brickyard has now been levelled and built over. An ironstone pan, again at the base of the Bracklesham Beds is also recorded (p. 50) from the Hatch Brickyards, Woburn Hill (TQ 053655) and the authors describe this as being "similar to the pan" at St. George's Hill.

References to the St. George's Hill iron ore have been made by a number of subsequent authors (Gardner 1921; Hillier 1951; Sherlock 1954; and Lansdell 1975) and it is to be noted that Gardner appears to have misquoted the iron content as 23%.

Although the Institute of Geological Sciences have mislaid the original iron ore sample from Fir Grove brickyard, it seems evident that Dewey and Bromehead observed in the field a true iron pan of hydrated iron oxides which had been deposited at the junction of rocks of two distinct lithologies. Such an iron pan, relatively low in iron content, would have been an inadequate ore for Iron Age smelting processes.

Recent exposures at Redhill, on the A3, London-Portsmouth Road (TQ 084598), have revealed (Potter, in press) a fairly complete section of Lower Bracklesham Beds in which iron carbonate (sideritic mudstone) bands occur. In a succession of dark pyritous clays a lower lenticular band, and a thicker, more persistent (6-8 cm), sideritic ironstone were recorded, approximately 1 m and 3.5 m respectively above the base of the Bracklesham Bed sequence. Three separate analyses of these iron carbonates (Table 6) give a minimum of 58% and an average of 60.5% Fe_2O_3 . The iron carbonates do not appear to have been previously identified or observed in modern times. No doubt the weathering of such carbonates and the pyritous clays by ground waters could give rise to the iron pan deposits which have been described at the base of the Bracklesham Bed sequence. From the original description it is evident that the Bracklesham clays at Fir Grove brickyard were deeply weathered.

Dr. Gardner (1911, 47) noted the presence of 'parallel trenches' which 'may be iron workings' on the northern slopes of St. George's Hill. With the discovery of a 'late-keltic' knife he suggested (1915) that the trenches might have been worked in 'prehistoric times'. The earliest reference to trenches on St. George's Hill is made in the Parliamentary Survey of 1650 (see p. 7). Today, parallel diggings can still be observed with difficulty at a number of localities where the lowest part of the Bracklesham Beds were once present.

It seems certain that the Bracklesham Bed iron carbonates afforded the Iron Age workers at Brooklands a suitable iron ore for smelting. The nearest trenches are within a distance of one kilometre from the Brooklands site. It is, of course, possible that some ore may have been extracted for smelting in more recent times and this suggestion, advocated by several recent authors, is a matter to be discussed in a further paper elsewhere. The absence of records of iron ore from the Brooklands site could well be explained by the difficulty of identifying sideritic mudstone fragments in the field.

Of the many slag samples, a portion of one (S.F.34) was subjected to chemical analysis and the results are recorded

in Table 6. This is the same slag which was metallurgically examined by A. Hall and the report of which is deposited in the Guildford Museum.

Local Occurrence of Clay for Pottery

It would seem understandable that the inhabitants of the Brooklands site, in extracting iron ore from the lower Bracklesham Beds, would have used the adjoining clays for making pottery. Dewey and Bromhead (1915, 41) observe that the lowest portion of the Bracklesham Beds is 'well adapted for brick-making'. No other clays suitable for brick or pottery making occur elsewhere in the vicinity.

Two separate samples of the grey pyritous clays which occur between the two sideritic ironstones at Redhill were roughly moulded and subjected to baking in an electric kiln at 800-900°C and 1080°C respectively. Unoxidised broken portions of this modern kiln baked ware closely resemble sherds from the Iron Age site. In particular, more oxidised fragments of clay incorporated in the moulds showed a more red coloration than the remainder of the matrix. Such red fragments give an uneven texture to the Iron Age sherds. It is probable that the Iron Age pot fragments that were examined had been fired at about 900°C in the reducing atmosphere of a wood kiln (D. E. Collins, pers. comm.), they being only moderately oxidised in the process. The sample of clay taken from the same level in the Bracklesham Beds, that is, between the ironstones, on analysis, compared closely with that of the pottery. The analyses differed in only one important aspect, in that the sherds contained a relatively high P₂O₅ content.

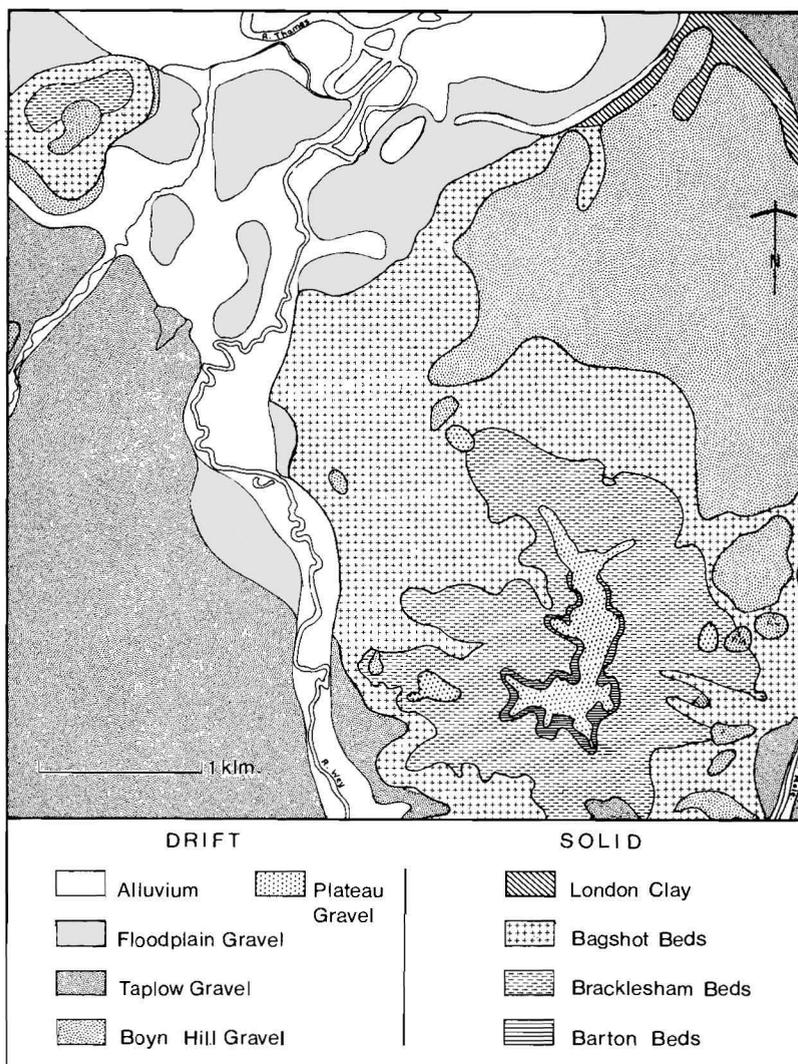


Fig. 13. Geological Map. Based on Geological Survey material and reproduced by permission of the Controller, HMSO.

Increase in Content of Phosphorus of Site Samples

It is of interest that both the pot sherd and to a lesser extent the iron slag listed in Table 6 exhibit an increase in phosphorus content over the raw material from which they were probably derived. A further Iron Age sherd, W71(270), that was analysed contained as much as

6% P₂O₅. Such an increase in phosphorus could reflect the use of the original pots, for instance, as cinerary urns (cf. Gardner 1911), but it would seem more likely that the contamination is the result of absorption from urine. This evidence might suggest that some of the pits, so extensively distributed throughout the Brooklands site, served no more important purpose than that of temporary latrines.

TABLE 6 — ANALYSES OF IRON AND CLAY SAMPLES

Sample	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃ †	MgO	CaO	Na ₂ O	K ₂ O	TiO ₂	S	P ₂ O ₅	CO ₂ *	H ₂ O*
Upper Sideritic Ironstone	10.5	2.00	65.0	0.31	0.60	0.02	0.40	0.28	0.10	0.07	26.98	2.22
„	14.0	2.90	58.5	0.42	0.75	0.05	0.55	0.36	0.20	0.08	25.96	2.42
Lower Sideritic Ironstone	17.0	3.40	58.0	0.40	0.70	0.05	1.30	0.42	0.11	0.06	23.29	4.96
Iron Age Slag SF34	19.0	2.3	76.0	0.19	0.68	0.03	0.55	0.15	trace	1.63	0.00	2.21
Clay	59.0	17.60	7.5	1.70	0.15	0.15	4.25	1.10	0.35	0.05	0.02	9.16
Iron Age pot sherd W70 (45) (Fig. 19:145)	58.5	15.80	10.0	0.80	0.80	0.15	1.80	1.20	0.00	2.30	0.41	11.21

XRF Analyses by R. Hardy and D. Hirst (University of Durham)

*Analyses by D. Hirst and R. Lambert (University of Durham)

†Total Fe expressed as Fe₂O₃

Iron Age Pottery*Abbreviations used in descriptions of Iron Age and Medieval pottery*

- OS—Outer surface
 IS—Inner surface
 C—Core
 BB—Black burnished ware
 FN—Finger nail decoration
 FT—Finger tip decoration
 R/BSG—Red to brown surfaced sandy ware with a grey core
 SD—Smooth dark ware

Definition of terms used in the Iron Age pottery descriptions

The term Smooth Dark Ware is used in the sense expounded by Brailsford at Little Woodbury (Brailsford 1948, 3) for a medium grain dark or brown fabric with a smooth or burnished outer surface. The term Black Burnished Ware is applied to fabrics which are relatively gritty and granular in fracture; they have been fired in a reducing atmosphere, most probably intentionally, to produce a characteristic black glossy surface. The fabric is harder than Smooth Dark Ware, and the forms are usually, though not always, different. The colour can sometimes be altered to a dull red by subsequent firing in an oxidising atmosphere. At Weybridge it is in the same general tradition as, but not necessarily ancestral to the familiar Romano-British wares frequently described by Gillam (e.g. Gillam 1960-1), and Farrar (e.g. Farrar 1973).

*Unstratified Pottery arranged typologically**Series A (Fig. 14)*

1. Bishop form 3 (Bishop 1971, 3-11) OS light brown, IS buff to grey, very pitted, C dark grey, large grits. Very coarse fabric. Three rows of FT, or possibly stamped, impressions, the centre one simulating a cable (cf. Gallant 1966, 169.)
2. Expanded rim with FT impressions. Burnt sherd. OS buff, very rough and uneven; IS reddish buff, C light grey with red tempering. Unstratified.
3. O and IS dark grey-brown. Much medium and fine flint tempering, also some red. Burnished underneath. Cutting 51.
4. Bishop form 1. O and IS dark brown to black, very heavily gritted. Cutting 53.
5. Bishop form 3. O and IS and C grey, with oxidisation, sand tempered; rim folded inwards. Diagonal cord (?) impressions. Unstratified.
6. Bishop form 2. OS black, IS grey, C brown. Cutting 55.
7. Bishop form 2. O and IS red-brown, with grey patch on outer surface, C dark grey, coarse red tempering. Cutting 36.
8. FN impressions. OS light brown, smooth, IS light brown to black, smooth, C dark grey, heavily tempered with coarse grits, Cutting 43.
9. FN impressions. Bishop form 3. O and IS dark grey, core grey. Cutting 54.
10. FT impression. OS red. IS dark grey, C grey. Mineral and organic tempering.
11. Bishop form 2. O and IS grey, with light brown patina. C grey, heavily tempered with large grits. Cutting 53.
12. FN impressions. O and IS dark brown, C brown and red, heavily tempered, some of it organic. Made in layers. Cutting 37.
13. Sharp carination, slashed. OS light red-brown, IS dark grey, C dark grey. Fine tempering. Cutting 49.

14. FN impressions. Bishop form 3. O and IS brown, C grey. Heavily tempered with large grits. Cutting 60.
15. FT impressions. Bishop form 3. OS brown, uneven and lumpy, IS brown to grey, C brown. Very coarse tempering and some red grits. Unstratified.
16. FT and FN impressions. OS reddish brown, IS dark grey, C light grey. Flint and red tempering. Cutting 51.
17. FN impressions. O and IS light brown, C grey. Cutting 51.
18. Bishop form 9. OS dark brown with red grits, IS black, C light brown. Unstratified.
19. OS purplish red, IS black with burnishing marks, C grey, sandy. Cutting 59.
20. OS brown, lightly burnished, IS dark brown with coarse flint tempering, C dark grey. Cutting 43.
21. Bishop form 7. O and IS buff to dark grey, much fine flint tempering, C grey. Cutting 38.
22. FT impressions. OS pink to grey, IS dark grey, C same. Fine tempering. Western iron-working area but not in a feature.
23. Base, OS light brown, liberally encrusted with pounded flint, many of the larger pieces of which have rubbed off, leaving pitted impressions. IS red-brown, with very coarse grits, C dark grey. Flint-rich bases are common to several other sherds found at Weybridge. Mrs. M. U. Jones, in a personal communication, states that pot bases which seem to have been sat, during their making, on a heap of pounded flint, have been recognised at Mucking, Essex, where they are characteristic of the Hillfort pottery which may be late Bronze Age. They are present, but not commented upon, in the Ivinghoe Beacon series (Waugh 1968, 219-34), and in unpublished material from Weston Wood, Albury, now in Guildford Museum (Accession No. RB 1343), which is another late Bronze Age-Iron Age transition site. Cutting 57, close to Iron Age House.
24. O and IS buff, oxidised, some mica present. C light grey. Fine tempering. Cutting 51.
25. Angle uncertain. O and IS dark grey, burnished, C grey, very fine tempering. Cutting 42.
26. Bishop form 10. O and IS and C brown, with red patches on outside. Fine tempering. Cutting 48.

Series B (Fig. 15)

27. O and IS brown, oxidised in places on outside. C dark grey, sandy, no tempering. Cutting 44.
28. OS purple-red slip, IS grey, pitted, C black. Cutting 34.
29. Bishop form 6. O and IS and C pale grey-buff. Very coarse sandy fabric, some fine tempering. Cutting 54.
30. SD, cf. 183 for form.
31. Bishop form 6. O and IS dark grey, burnished under rim on outside, C grey, with very fine tempering and some red grits. Cutting 32.
32. Bishop form 6. OS light buff, eroded, IS dark grey, C grey. Coarse tempering. Cutting 49.
33. Bishop form 6. O and IS smooth, red, C dark grey. Cutting 44.
34. OS dark brown, slightly burnished, IS oxidised red-brown, C brown, sandy, no tempering. Cutting 54.
35. OS light brown, oxidised, IS light brown to grey, C dark grey, sand tempered. Cutting 54.
36. Bishop form 6. SD. Cutting 51.
37. Bishop form 6. Burnt fabric, probably originally SD, OS red, IS light grey, C pale blue-grey. Cutting 47.
38. SD, highly burnished. Red tempering. By medieval hearth, 112.
39. OS brown, burnished, IS black, C dark brown. Some coarse tempering. Cutting 53.
40. O and IS dark brown, C grey with red tempering. Cutting 54.

41. SD oxidised brown, Cutting 30.
42. Incised chevron pattern, OS brown, IS grey, C brown. Sandy ware with fine tempering. Cutting 57.
43. Sherd with three parallel scribed marks. Reddish brown ware with red and flint tempering. Cutting 54.
44. BB. Lid seated rim. Cutting 30.
45. SD, shallow tooled cross-hatching on a burnished background. (Cf. Lowther 1945, Fig. 1, 1.13) Cutting 43/4.
46. Red, oxidised sherd, core dark grey sandy with some fine tempering. Cutting 54.
47. Oxidised grey fabric, Medieval Pit 2.
48. SD, oxidised pale pink-brown, Cutting 60.
49. BB. Cutting 55.
50. OS black, IS brown, C red. Mica present inside and out. Sandy fabric, tool scribings on base. Cutting 55.
51. SD. Cutting 54.
52. O and IS and C brown-black, vertical tool marks outside. Coarse fabric, red tempering. Cutting 36.
53. O and IS and C brown. Fine flint tempering, and some red grits. Cutting 34.
218. SD. Medieval Pit 95.

Early land surface (Figs. 16 and 17)

54. FT and FN impressions. O and IS and C brown, slightly blackened inside. Very coarse tempering.
55. Flat topped rim. OS brown, IS light reddish brown, C grey; porous, with red tempering.
56. O and IS black, with burnishing, C grey. Some coarse tempering.
57. O and IS and C greyish brown. Massive flint and some red tempering.
58. High bulging shoulder, grass wiped surface. OS and inner rim pinkish buff, IS elsewhere dark grey, C grey. Medium and coarse flint tempering.
59. Even fine stab pattern and groove above carination. OS red brown, IS brown. Sandy ware, fine tempering.
60. Uneven shallow stab pattern. O and IS pinkish grey, C dark grey. Fine tempering. Thin in section. Two other fragments, unstratified, not illustrated.
61. Sharp carination. O and IS black, slightly burnished, C grey. Very fine tempering, some red.
62. Sharp carination at fracture. O and IS and C grey-brown with medium tempering.
63. Identical fabric to 56.
64. O and IS brown to grey, oxidised pink at inner base. C black. mostly organic tempering.
65. OS red-brown, slightly burnished, IS dark grey, slightly burnished, C dark grey, some coarse tempering.
66. O and IS and C black, slightly burnished with horizontal striations on inner surface. Fine tempering.
67. OS brown, slightly burnished, IS black, C brown. Medium tempering.
68. OS brown, slightly burnished with fine tempering, IS and C black. Heavily gritted.
69. O and IS and C pinkish buff. Grass wiped, blackened inside. Very sandy fabric.
70. Bi-conical rim sherd with diagonal slashing. O and IS brick red with striations inside, C grey. Medium and coarse tempering.
71. O and IS brown, burnished, C black. Fine tempering.
72. O and IS grey, slightly burnished. Fine tempering.
73. OS pinkish buff, IS buff, C black. Medium tempering.
74. OS brownish red, IS grey, C brown. Very fine tempering.
75. OS red-brown, IS brown. Fine tempering.
76. Large sherd with very sharp carination at fracture. Identical to 71 in fabric and form but greater diameter.
77. Shoulder sherd with top of rim missing. OS brown, porridgy, IS light brown, smooth, C grey, little tempering.
78. Very close-set FN impressions. OS grey to brown, IS black, C brown, fine tempering.
79. FT. OS red to buff, IS black, C black. Organic tempering.
80. O and IS buff, C black, no tempering.
81. Sherd with deep slashing in simulation of FN impressions on the carination. OS brown, IS grey, C grey-brown. Coarse tempering.
82. Sherd with groove pattern. Angle uncertain. SD.
83. O and IS red-brown, burnished, C pinkish brown. Very little tempering.
84. Bi-partite bowl. O and IS dark brown, burnished, C brown. Finely tempered.
85. Slashed and FN and FT. O and IS dark brown, rough, C grey. Medium and organic tempering. Identical fabric to 186 from Pit 177, therefore cross-dating.
86. O and IS brown, C grey. Smooth and sandy.
87. O and IS light brown, C brown with fine tempering. Very hard.
88. Burnished dark ware, angle uncertain.
89. Burnished brown ware.
90. FT impressions. O and IS dark brown, C black, with fine tempering.
91. FT impressions. O and IS and C dark grey, gritty.
92. OS light brown, IS dark grey, C black, rough coarse tempering.
93. O and IS dark grey, C light brown, fine tempering.
94. OS dark brown, burnished, IS light brown, C dark brown. Fine tempering.
95. FT impressions on shoulder and top of rim. OS reddish brown, IS grey, rough, C dark grey. Some coarse tempering.
96. Burnished brown ware.
97. Angle uncertain. OS red-brown, IS grey-brown, C grey. Fine tempering.
98. OS black, some mica present, IS brown to black, sooty, C black with medium tempering. Lamp?
99. Grass wiping. OS pinkish buff, IS brown-grey, C pale grey. Coarse tempering.
100. O and IS grey, rough, medium tempering, C black.
101. OS red, IS chocolate brown, C red. Coarse flint tempering.
102. O and IS black with burnishing. C grey, fine tempering.

Note. Many of the sherds from this group are made in fabrics closely resembling those from Ivinghoe Beacon (Waugh 1968, 219, 34). This is particularly noticeable in fabrics which have very coarse grits. Samples of sherds from both sites have been analysed, and preliminary conclusions, which might be worthy of a more detailed study, are given in the petrological report, p. 44-5.

House foundations (Fig. 17)

103. OS chestnut red, patchy, much eroded and battered. Band of brown burnish under and extending over rim. IS dark grey to black, burnished. C dark grey. Coarse sandy fabric, little tempering. Very many more sherds found, not articulating. Gully 135.
104. Sherd with cordon, angle uncertain, but carination at lower break. Black ware, with burnishing, light grey core with one red grit. Gully 135.
105. SD. PH 100.
106. Base sherd from a large pot (Cf. 23) O and IS red, C light brown, flint tempering. Underside very

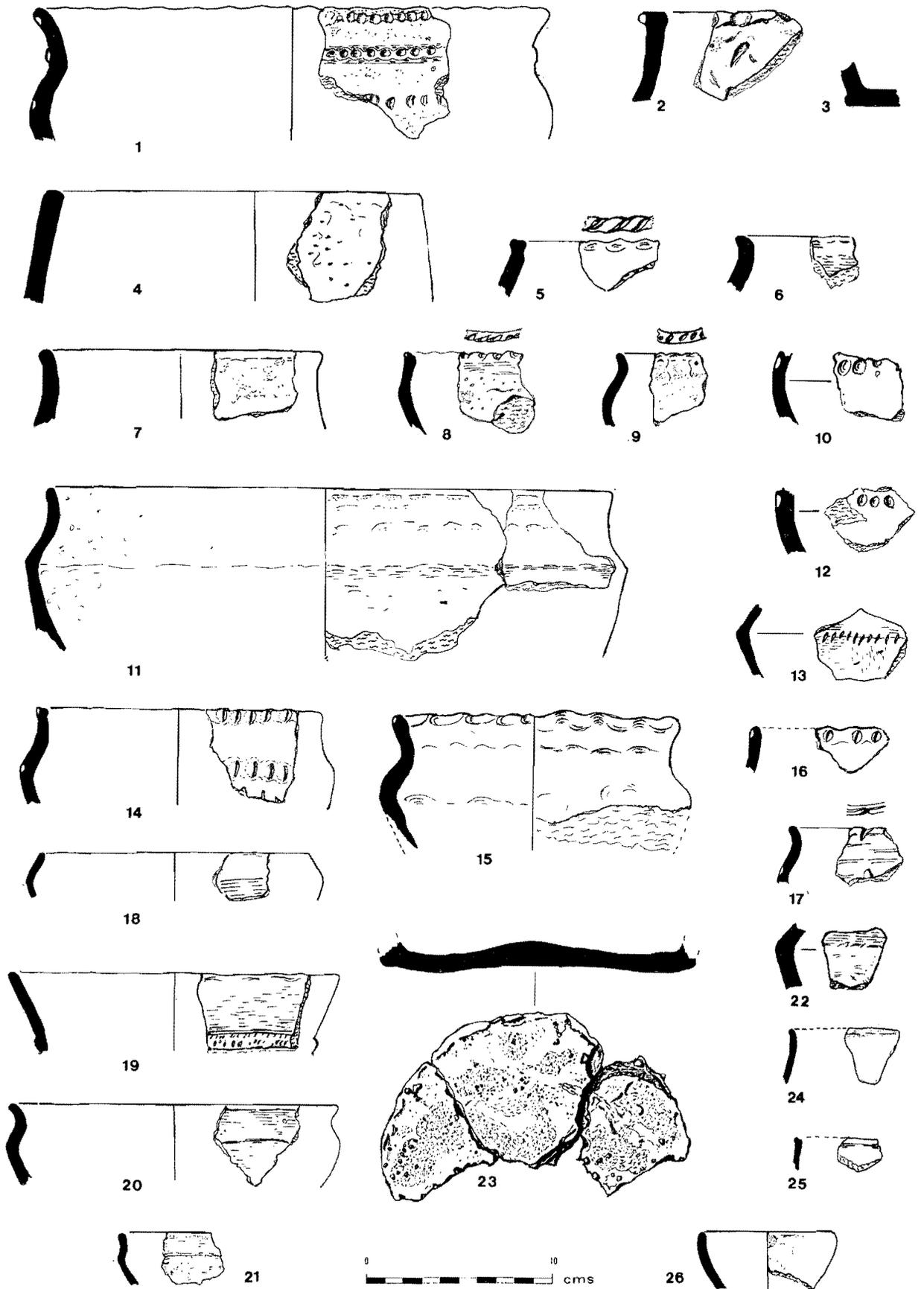


Fig. 14. Unstratified Iron Age pottery arranged typologically, Series A. Nos. 1-26.

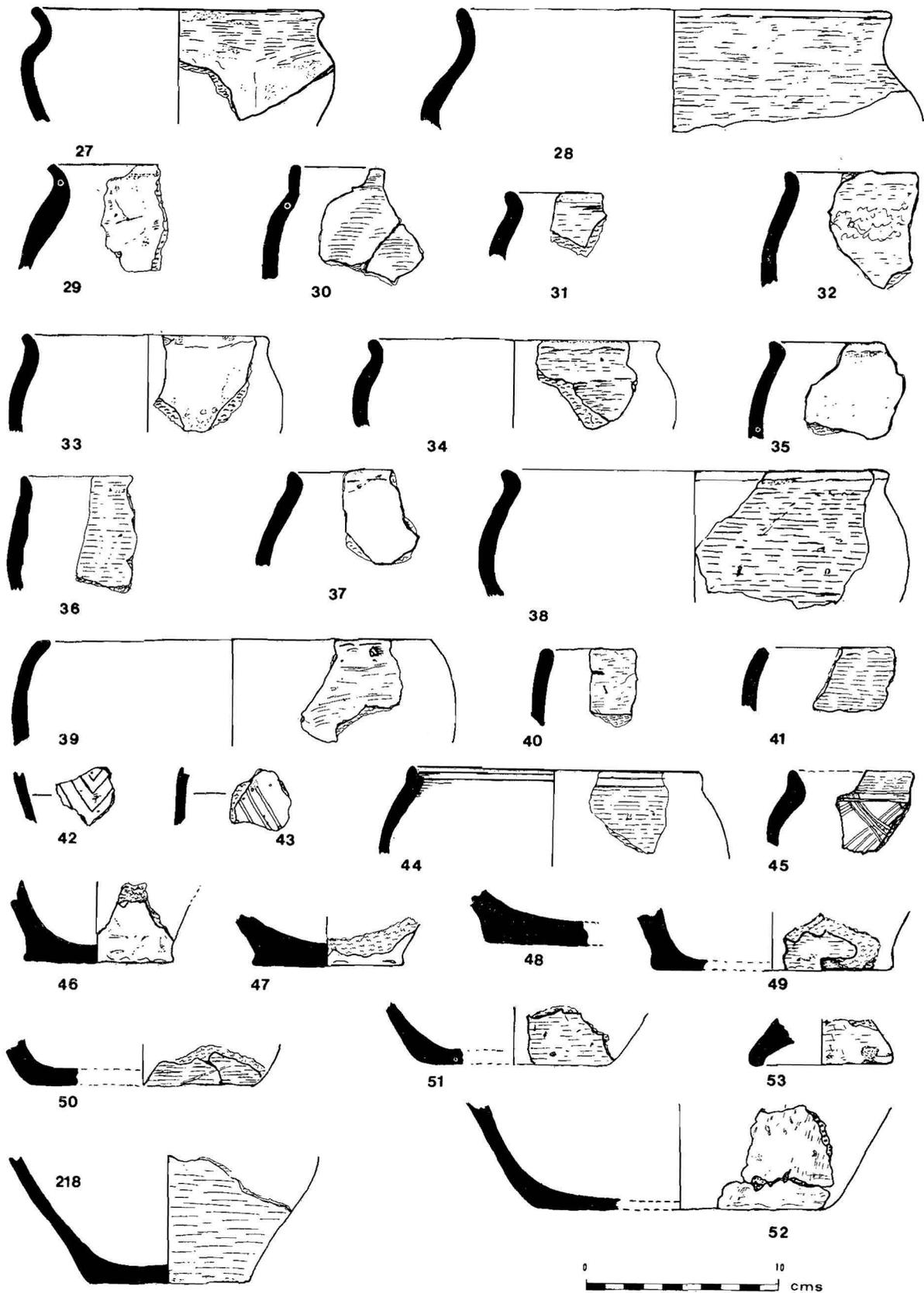


Fig. 15. Unstratified Iron Age pottery arranged typologically, Series B, Nos. 27-53 and 218.

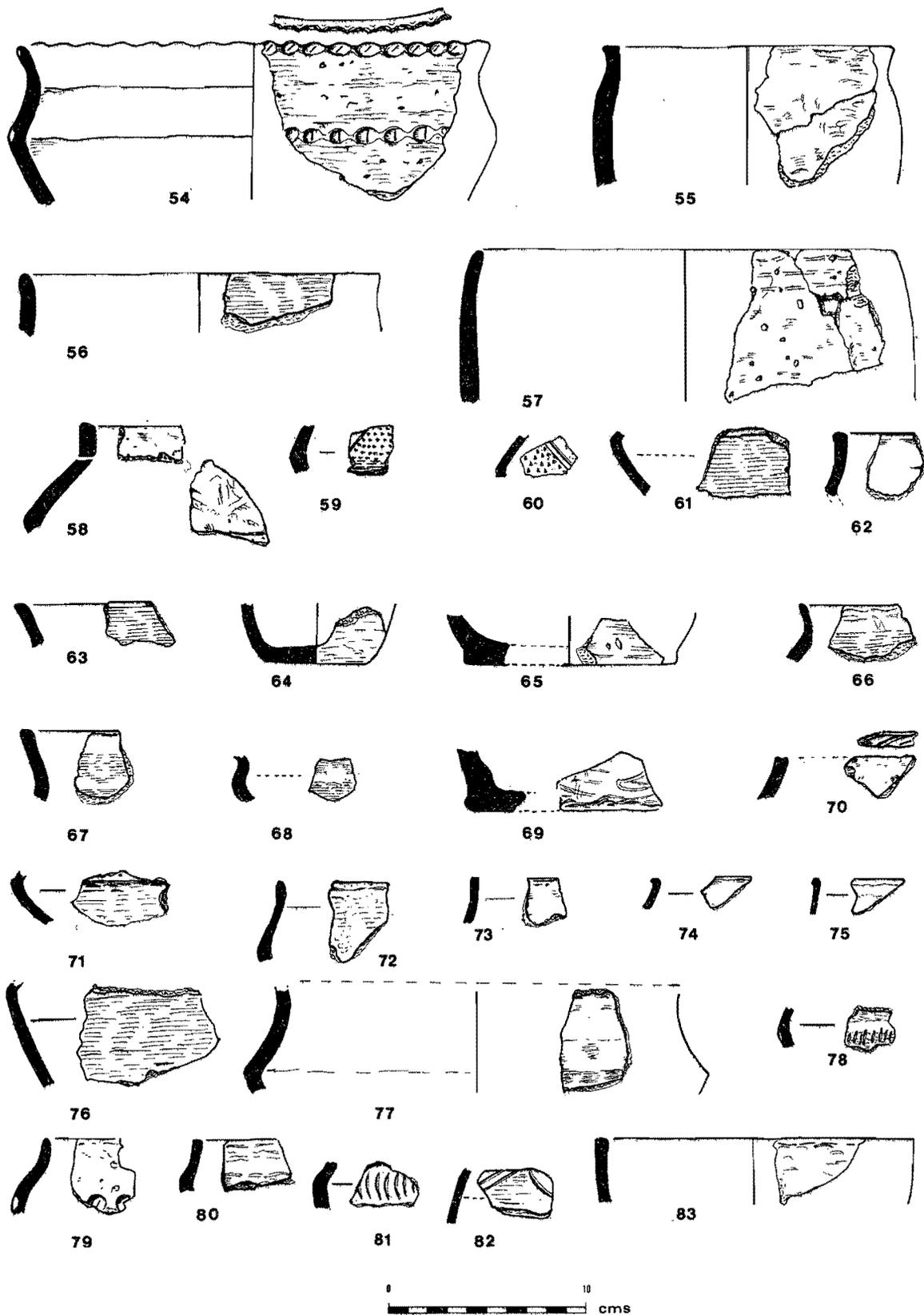


Fig. 16. Iron Age pottery from Early Land Surface (1). Nos. 54-83.

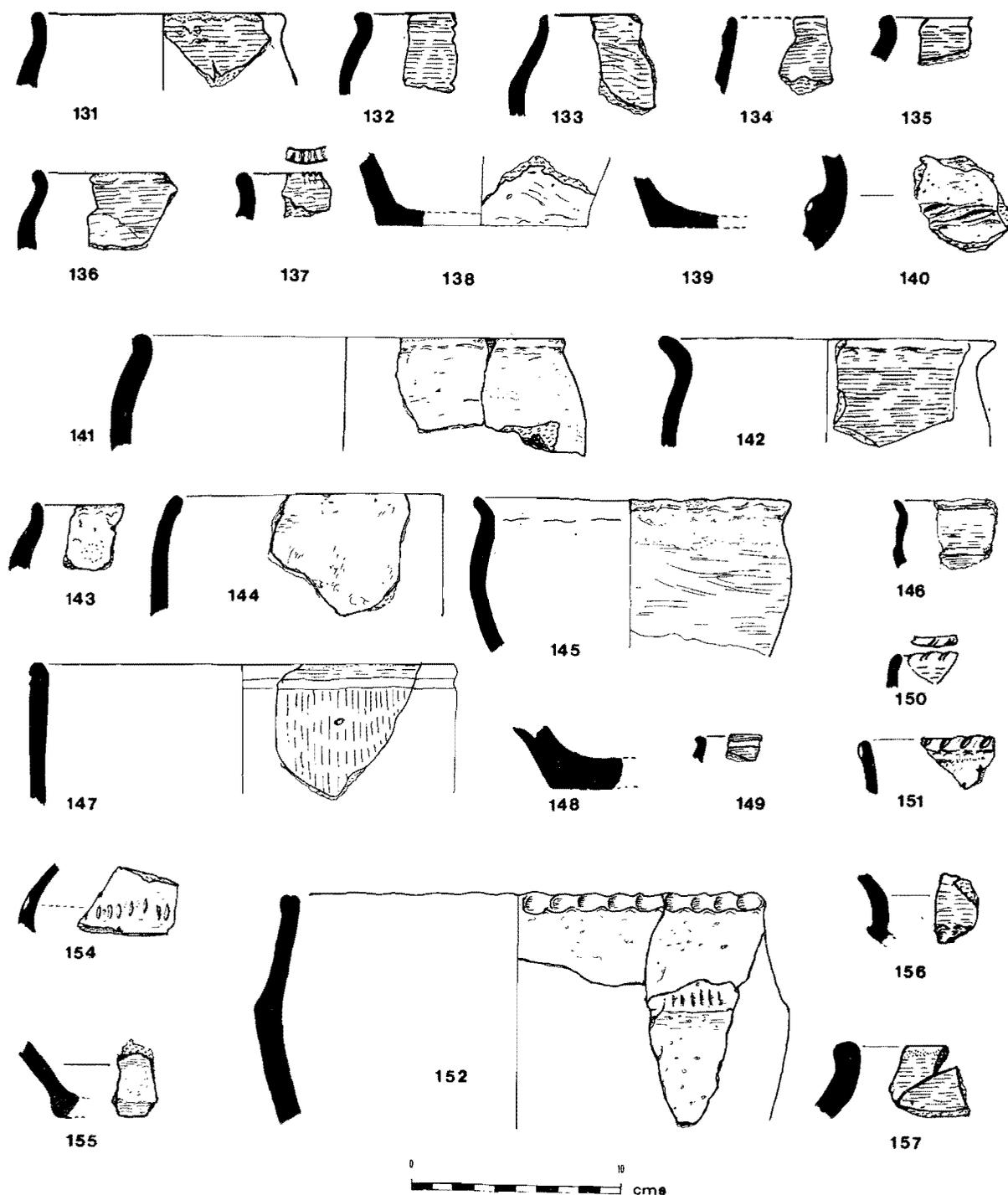


Fig. 19. Iron Age pottery from Western Iron-working area, (1). Nos. 131-157.

thickly covered in large flint grits. Not illustrated. Gully 135.

In addition, 73 coarse sherds were recovered from the ring gully. F 135, none suitable for illustration; three had organic tempering.

Gully 123 (Fig. 17)

107. SD, slightly oxidised. Some red and white tempering.

108. SD.

109. OS dark grey, with groove at base, IS brown, generously coated with coarse tempering which has been levelled off. C grey with relatively little, and finer, tempering.

Inside House (Fig. 18)

110. SD, burnished with deep tool marks inside and out. Fired red-brown in places, especially rim. At least half of pot survives.

111. SD.

112. SD, burnished scribing inside.

113. SD.

114. SD.

115. Base, sagging and relatively thin. SD.

116. O and IS dark grey, C grey, very heavily tempered with medium grits.

117. SD. Identical fabric to 110.

118. Highly burnished dark ware with three tooled grooves on outside. C grey, heavily tempered.

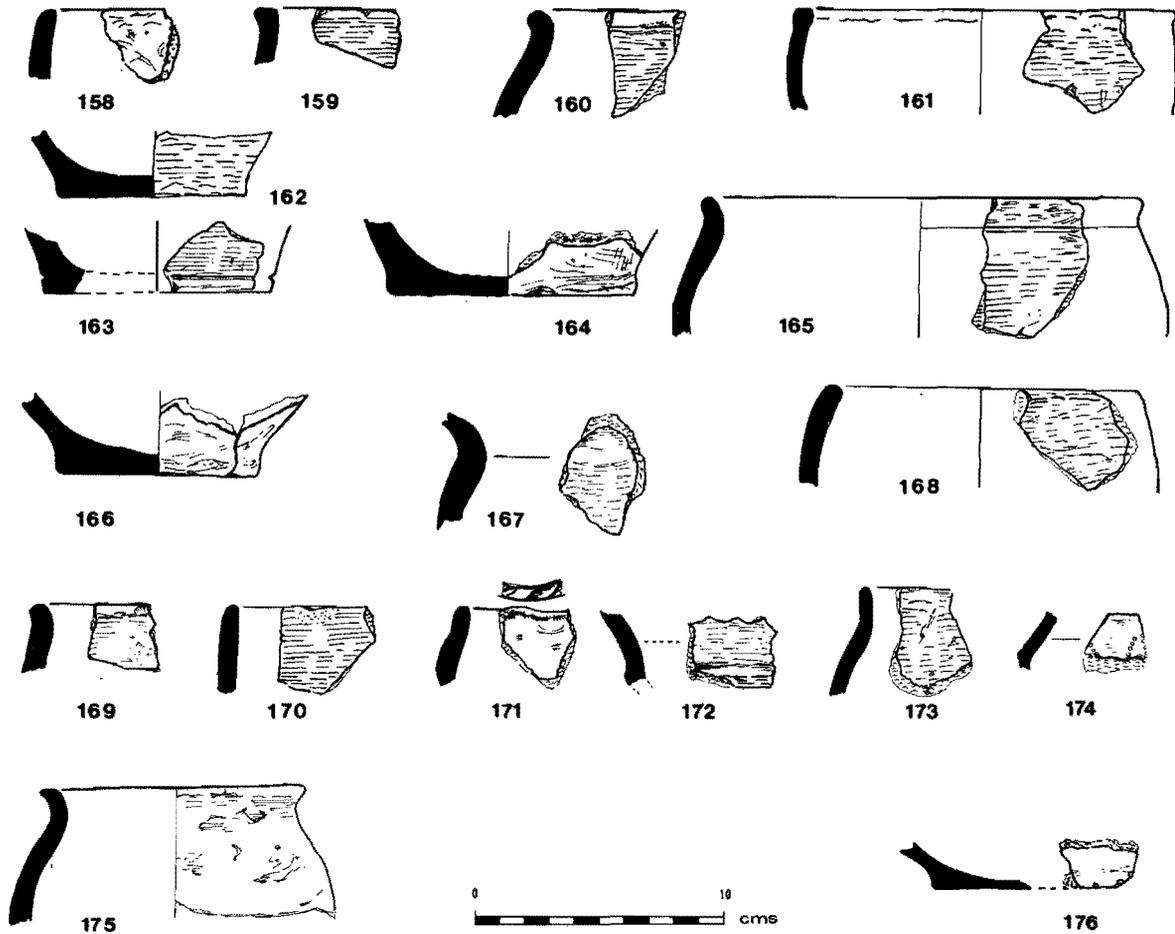


Fig. 20. Iron Age pottery from Western Iron-working area (2). Nos. 158-176.

- 119. Plain grey-brown fabric.
- 120. FT impressions. OS grey, IS black, burnished, C grey with medium tempering.
- 121. Shallow applied cordon of stab-marked chevron. OS light grey-brown, IS dark grey, C grey.
- 122. FT and FN impressions. OS dark grey and red with coarse red tempering, very rough, IS grey, C grey-brown. (Rim and base may represent separate pots, though found together).
- 123. SD, oxidised.
- 124. FN impressions on shoulder and slashed rim. O and IS buff, C dark grey. River pebble and red tempering. Soft fabric. This jar has not got secure stratification, from top layers over house.
- 125. Same fabric as 124.
- 126. FN impressions on edge and slashed top. O and IS reddish-buff, C buff, heavily tempered.
- 127. OS reddish-buff, IS dark grey, C dark grey.
- 128. Body sherd with lug. OS black, burnished, IS red-brown, C black, with coarse tempering.
- 129. Lid (?) OS brown-grey, IS dark grey, C grey. Red tempering showing on outer face. Compare fabric with 214.
- 130. O and IS black, oxidised red patch on outside and slight burnishing inside. Fine tempering.

In addition, 159 coarse, 2 fine A and 3 grass-tempered sherds.

Western iron-working area (Figs. 19 and 20)

From Pit 55

- 131. BB.
- 132. BB.
- 133. O and IS black, slightly burnished, C grey with much fine flint tempering.
- 134. OS black, soapy, IS red, C grey.
- 135. BB.
- 136. OS red to black, with burnishing. IS grey, lumpy, C black, red tempering.
- 137. Slashed rim. OS black, IS red, C dark grey.
- 138. BB, oxidised red, some mica present.
- 139. BB, oxidised red, some mica present.
- 140. Raised cordon (imitation cable) OS grey, IS buff, C grey, very heavily tempered, several red grits. Another sherd of the same pot, not illustrated, from the early land surface.
- 141. SD, OS oxidised red. Some mica present.
- 142. BB.
- 143. O and IS buff to dark grey, C grey, some red tempering.
- 144. O and IS dark grey, C red-brown, lumpy. Coarse and fine tempering, some red.
- 145. SD, rather roughly made. Coarse red tempering. This sherd features in Dr. Potter's analysis, see p. 23.

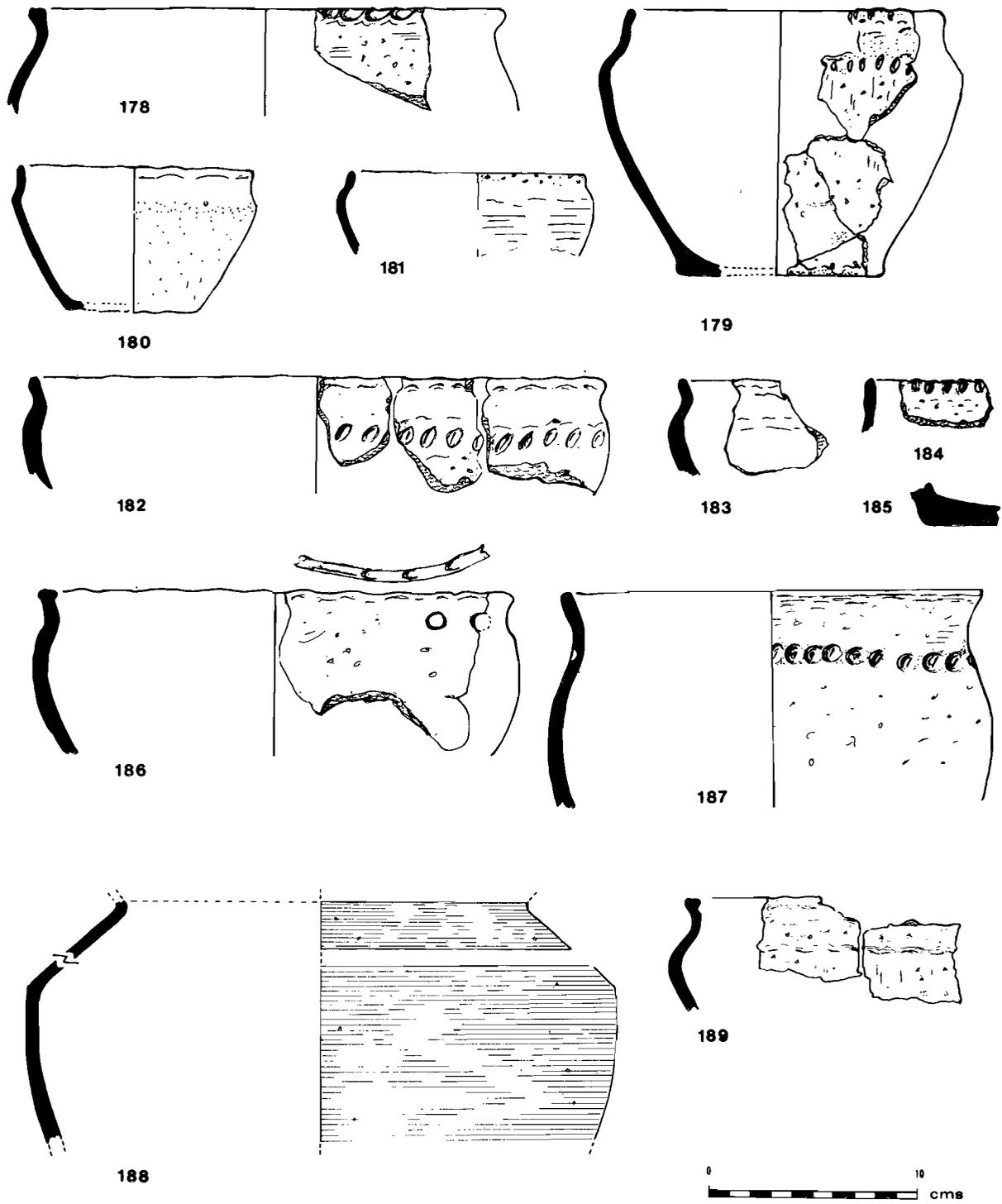


Fig. 21. Iron Age pottery from Eastern Iron-working area (1). Nos. 178-189.

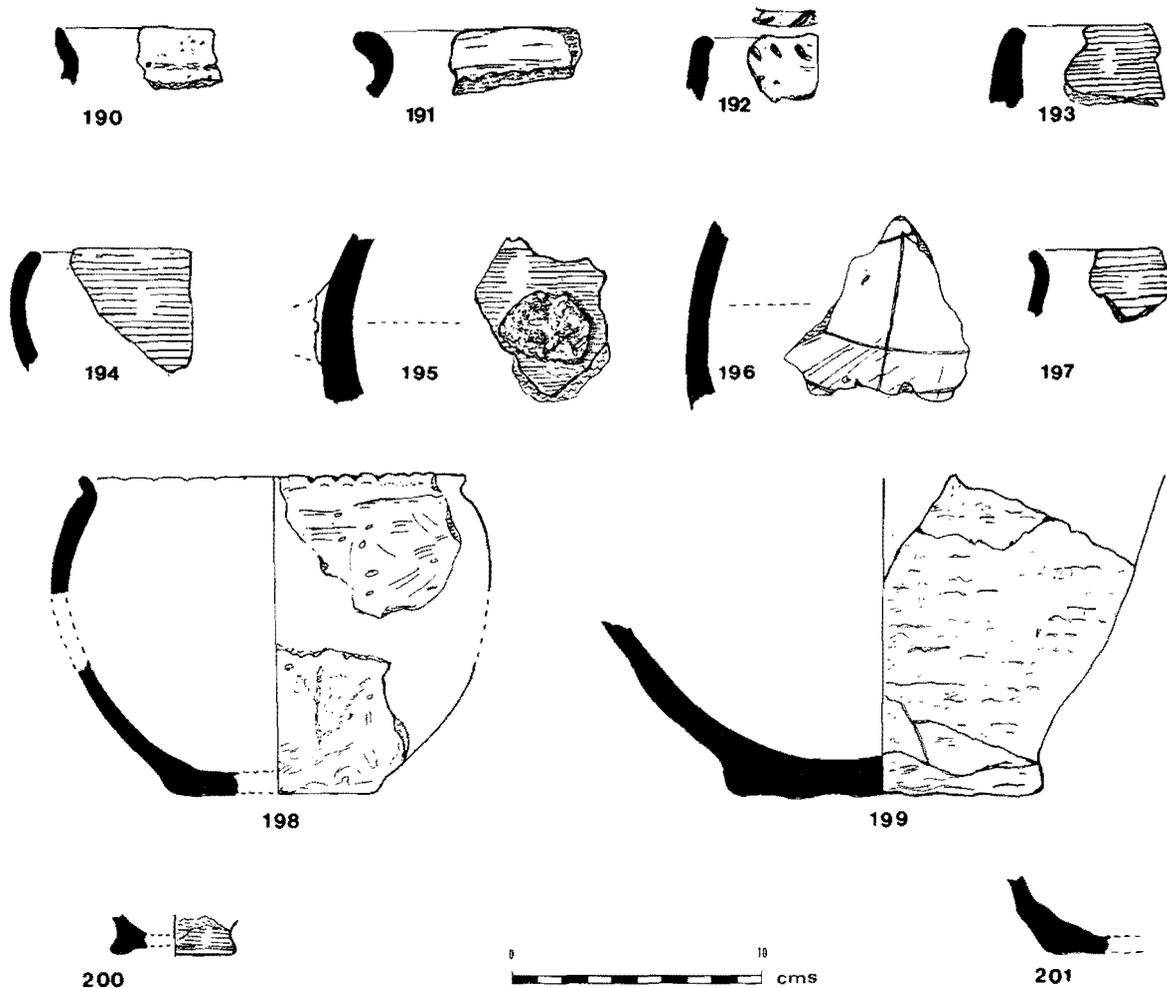


Fig. 22. Iron Age pottery from Eastern Iron-working area (2). Nos. 190-201.

Elsewhere in the area:

- 146. O and IS dark brown, highly burnished, C grey.
- 147. SD with vertical burnish marks. Hearth 80.
- 148. BB, oxidised. Hearth 80.
- 149. OS black with burnishing, IS dark grey, C grey. Furnace 236.
- 150. Rim with slashing. O and IS brown, C grey, a little fine tempering. Furnace 236.
- 151. FT and FN impressions. OS black, IS grey, C grey, mainly fine tempering, but some very coarse. Furnace 240.
- 152. Applied cordon. Finger pinching on rim, FN impressions at shoulder (vestigial). OS pale, yellow-buff, very pitted, no surface, inner face buff, crackled, C pale grey, some medium flint tempering. This pot has been subjected to intense heat, it was built into the walls of the furnace. 16 sherds found, but disarticulated because of warping. Furnace 247.
- 153. Large sherd of dark ware. Furnace 247. Not illustrated.
- 154. FN impressions. O and IS light brown, C grey. Furnace 247.
- 155. O and IS black, C grey, sandy, Furnace 247.
- 156. O and IS and C grey, with coarse red tempering. Furnace 247.
- 157. BB. PH 248.
- 158. Barrel. OS dark grey, IS grey-brown, C buff with fine tempering.
- 159. BB.
- 160. BB, eroded
- 161. O and IS black, lumpy but highly burnished, C brown with coarse tempering, some red.
- 162. BB.
- 163. BB.
- 164. OS red-brown, IS brown, C brown, Coarse sandy ware.
- 165. SD.
- 166. O and IS brown. C black, sandy.
- 167. SD, oxidised on OS.
- 168. OS black, burnished, some mica present, IS dark grey, C dark brown, sandy. Red tempering.
- 169. BB.
- 170. OS dark grey, burnished, IS red-grey, C red, sandy.
- 171. FT impressions. O and IS grey, C brown. Mostly fine but some coarse tempering.
- 172. BB.
- 173. BB, very eroded.
- 174. Deep vertical-pricked pattern. O and IS and C brown. Break at carination.
- 175. OS dark brown, sooty, IS light brown with soot adhering, C dark grey, sandy.
- 176. OS orange to pink, oxidised, probably originally black, IS black, with burnishing, pitted inside, C grey. Fine tempering.
- 177. Romano-British base. Hard grey fabric with wheel circle on underside. Not illustrated.

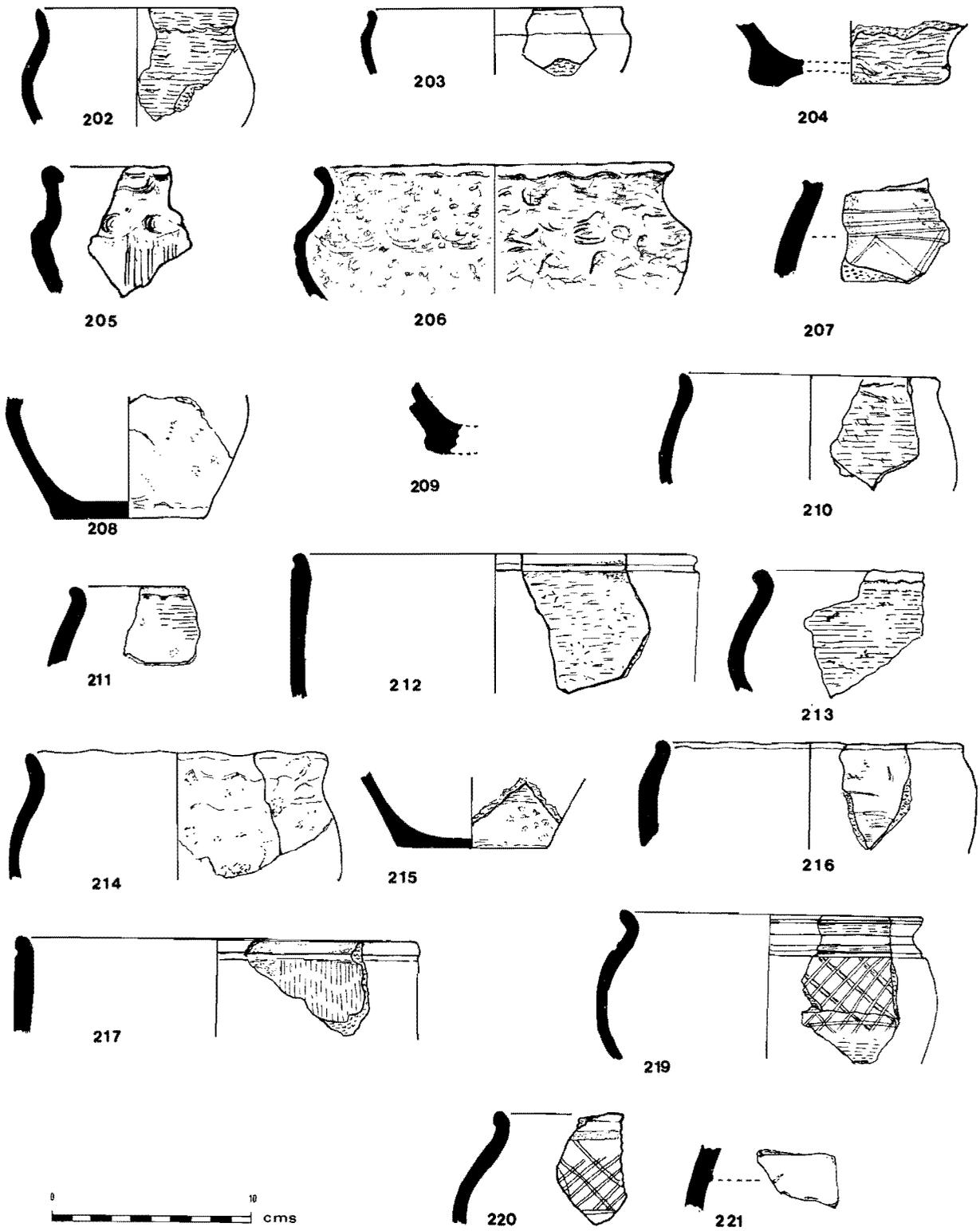


Fig. 23. Iron Age pottery: Pit Groups 38-42. Nos. 202-221.

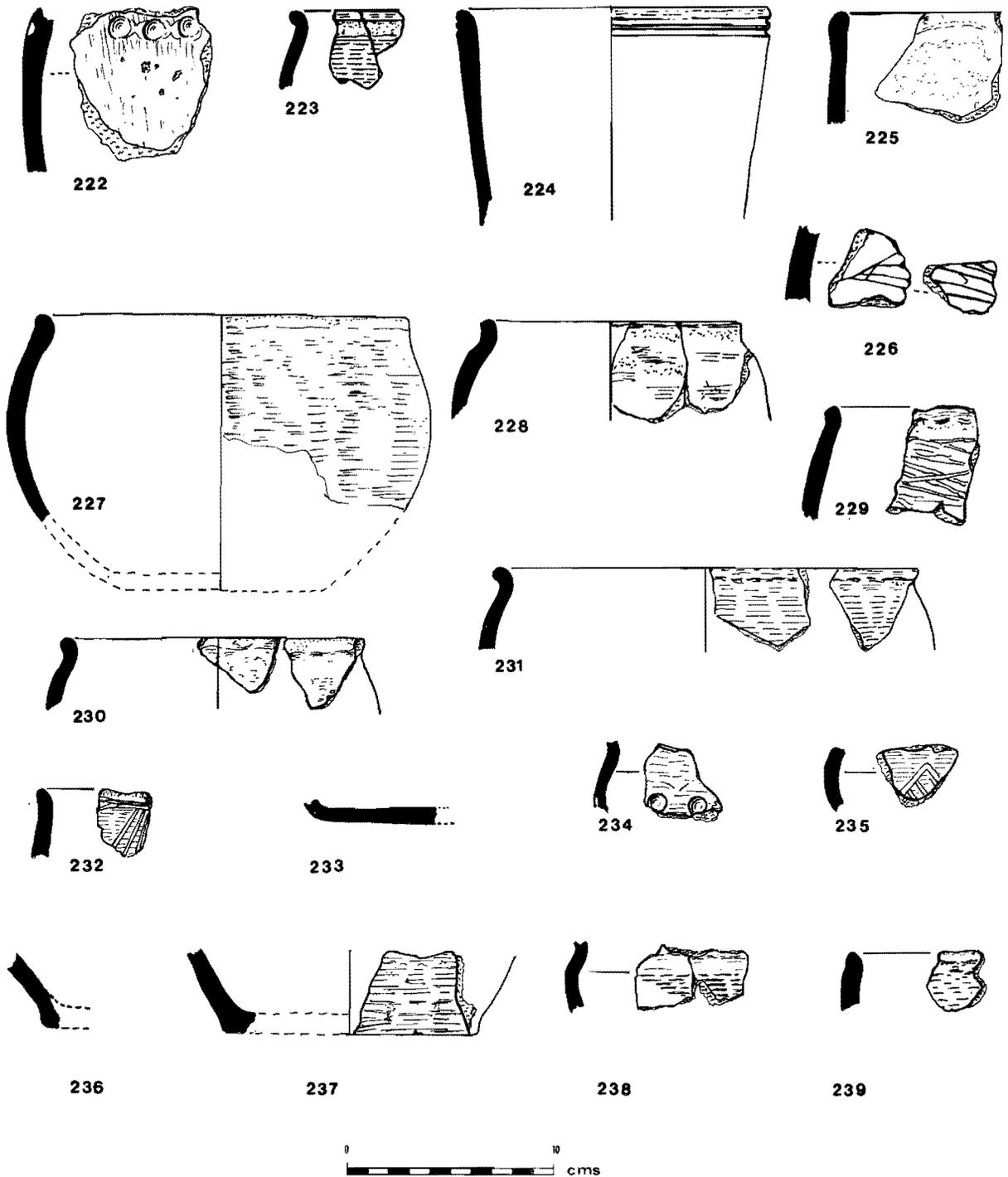


Fig. 24. Iron Age pottery. Pit Groups 143-208, Nos. 222-239.

Eastern iron-working area (Figs. 21 and 22)

From Pit 177

Note. Material from Pit 177 is very similar in fabric to wares taken from the buried early land surface and to those from Ivinghoe Beacon (Waugh 1968, 219-34) where, for example, the brown fabrics can be paralleled. (See petrological report, p. 44-5).

- 178. FT impressions on edge of rim. OS dark grey, lumpy, IS dark brown, C grey. Coarse flint tempering.
- 179. FN impressions on shoulder. O and IS red to brown, rough below shoulder, smooth at neck, C dark grey, with coarse flint tempering.

- 180. OS grey-brown, smooth, IS grey, slightly burnished, C grey. Moderate amount of medium flint tempering.
- 181. OS dark brown, smooth, IS red-brown, C brown. Fine flint tempering.
- 182. FN impressions on shoulder (three sherds). OS brown, lumpy, IS blackened, lumpy, C dark grey. Flint and red tempering.
- 183. OS red-brown, smooth, sooted on the inside, C brown. Fine flint tempering and some large grits.
- 184. FN impressions on edge. O and IS and C grey, lumpy. Tempering mostly coarse, but a few fine flints.
- 185. Flint-rich base. Sole very heavily gritted. OS reddish brown, IS brown, C dark grey.

186. Finger-flattening on top of rim, which is turned inwards. Holes pierced at neck at green-hard stage before firing. O and IS and C grey-brown, lumpy and very rough outside. Some organic and some moderately fine flint tempering. Cf. 85.
187. FT impressions on neck. O and IS dark grey, lumpy outside and rough inside, C grey with much flint and some red tempering. Cf. Jar from Minnis Bay, Kent (1940) Brit. Mus. Access. No. 734.
188. Two large sherds of fine ware angular jar. OS light brown slightly oxidised, very smooth, IS and C light brown. Very fine grits and some largish organic ones. For form cf. Harding, D. 1972, Plate 50E.
189. O and IS lumpy grey-brown, C brown with coarse flint tempering. Fabric very similar to 178 and 179.

Elsewhere in the Area

190. O and IS buff, C grey. Very heavily flint tempered. Pit 189.
191. SD, abraded. Pit 189.
192. Rim, slashed on top and below. Red smooth ware with very coarse flint tempering. Pit 189.
193. SD, uneven surface inside, Pit 189.
194. SD. Pit 189.
195. Sherd with broken protrusion, probably handle or lug. Angle uncertain. SD. Red tempering. Pit 189.
196. Body sherd with incised hatching. O and IS pinkish-buff to grey, C grey, with iron or 'grog' inclusions. Pit 189.
197. SD. Pit 189.
198. FN impressions on rim. Very roughly made pot. OS ginger-brown, IS light brown to grey, C dark grey with red tempering. Pit 189.
199. (Featured in Plan, Fig 10) OS light red-brown, IS light brown, C dark grey, smooth white and red grits. Lop sided. Between F 191, 192 and 196.
200. BB. Pit 205
201. OS brown, very lumpy, IS black, C red with coarse tempering. Pit 205.

Pit groups (Figs. 23 and 24)

202. BB. Pit 38.
203. O and IS brown, C dark grey. Pit 38.
204. BB, oxidised red. Pit 7, lower half.
205. FT impressions on shoulder and rim. Heavily burnt red-grey fabric, C pale grey. Grass wiped (?) vertical lines. Pit 7, lower half.
206. Very rough lumpy fabric, OS red-brown, IS brown, C black. Red tempering. Pit 7, lower half.
207. Body sherd with cross-hatching. Shallow tooled lines on a burnished background. O and IS light red-brown, C light brown. Pit 14.
208. O and IS red-brown, C black. Pit 16.
209. O and IS and C grey-black with river-pebble tempering. Pit 20.
210. BB. Pit 24.
211. SD. Pit 50.
212. SD, eroded. Pit 52. (Associated with decorated bronze object, see p. 46.)
213. Probably part of 38. SD, highly burnished. Red tempering. Pit 56.
214. OS brown-grey, IS dark grey, C grey. Reddish tempering. Pit 60. Cf. 129 of the same fabric.
215. SD, oxidised. Pit 60.
216. O and IS and C black. Coarse sandy ware. Pit 79.
217. SD. Pit 79.
218. See p. 25 above.
219. Groove below neck and shallow burnished cross-hatching. Two matt hands, one above the decoration, the other just below the rim. BB. Pit 142.
220. Burnished cross-hatching on a matt background. BB, oxidised brown. Pit 142.

221. Body sherd of Roman Amphora. Pit 142.
222. FT impressions. O and IS red-brown, C grey, sandy fabric. Pit 143.
223. BB. Pit 170.
224. SD, badly abraded. Pit 170.
225. SD, oxidised red, very sandy. Pit 171.
226. Body sherds with groove ornament. O and IS grey. C pink with red tempering. Pit 172.
227. SD, oxidised. Pit 179.
228. OS brown, IS light brown, C grey. Red tempering. Pit 179.
230. Bishop form 6. O and IS dark red-brown, very rough, C brown, with much fine tempering. Pit 180.
231. BB, oxidised brown. Pit 180.
232. Decorated with burnished lines. BB. Pit 180.
233. Base with tool marks underneath. BB oxidised brown. Pit 180.
234. Chevron grooves above circular stamped dimples. OS red-brown, burnished, IS red-grey, C grey with fine tempering. Pit 180 (Elsdon 1975, 18 and Fig. 5).
235. Chevron pattern. BB. Pit 180.
236. BB. Pit 180.
237. BB. Pit 198.
238. Body sherd. BB. Pit 198.
239. Rim. O and IS dark brown, C light grey, sandy. Pit 208.
240. Bead rim, Charlton Type E.22 (Kenyon 1959, 58). Rubbish survival in medieval post pit 64. Not illustrated.

Discussion of the Iron Age Pottery—by Joanna Close-Brooks

The Iron Age pottery sequence for Surrey is imperfectly understood because of the lack of published stratified groups. A number of sites have produced a quantity of pottery, but rarely has any single group come from a context that allows us to regard the sherds as contemporary. Even the promising-looking pit groups from Hawk's Hill, Leatherhead, turn out on inspection to contain sherds of at least two if not three distinct periods (Cunliffe 1965, 13-39; Bishop 1971, 14; 16). As a result attempts have had to be made to construct a pottery sequence on typological grounds, and not surprisingly such sequences differ considerably (Cunliffe 1965; Harrison, E. 1968, 133-8; Bishop 1971, 1-30; Cunliffe 1974, 43). Because of uncertainty over the sequence in Surrey, the Brooklands material will be compared here with the Upper Thames sequence recently proposed by Harding (1972).

Brooklands does provide a few groups which may be deposits of contemporary pottery, but much of it occurred as scattered sherds in pits, or came either from the plough soil or from medieval features, and thus is no help except as indicating the length of occupation of the site and the possible date of some Iron Age features. All sherds from the site with distinguishable features, except for some small rim sherds of uncertain angle, have been illustrated. In addition, the various body sherds from Iron Age pits have been roughly classified by fabric.

The pottery falls reasonably neatly into two main classes, corresponding to Iron A and B in the Upper Thames (Harding, D. 1972) or Periods 2 and 3 of Bishop's classification (Bishop 1971, 15-19), with a few later pieces. The terms Brooklands A and B are here preferred, and no more detailed terminology seems appropriate at present.

Brooklands A

Two stratified groups of Iron A sherds were found at Brooklands, while other A sherds were scattered over the site in later features or in the plough soil. One group came from an old soil horizon in one area of the site

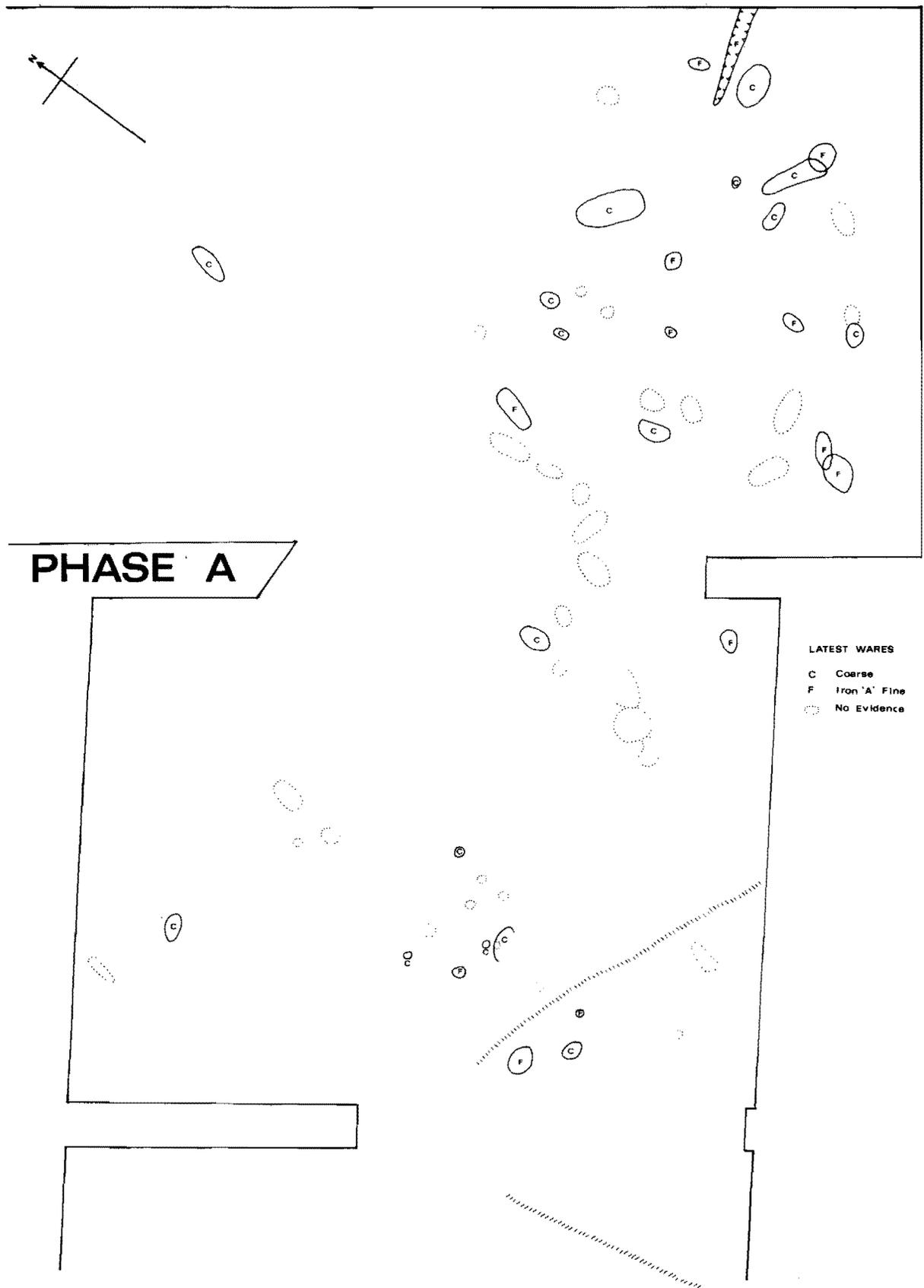


Fig. 25. Plan, showing latest types of pottery found in Iron Age pits—Phase A.

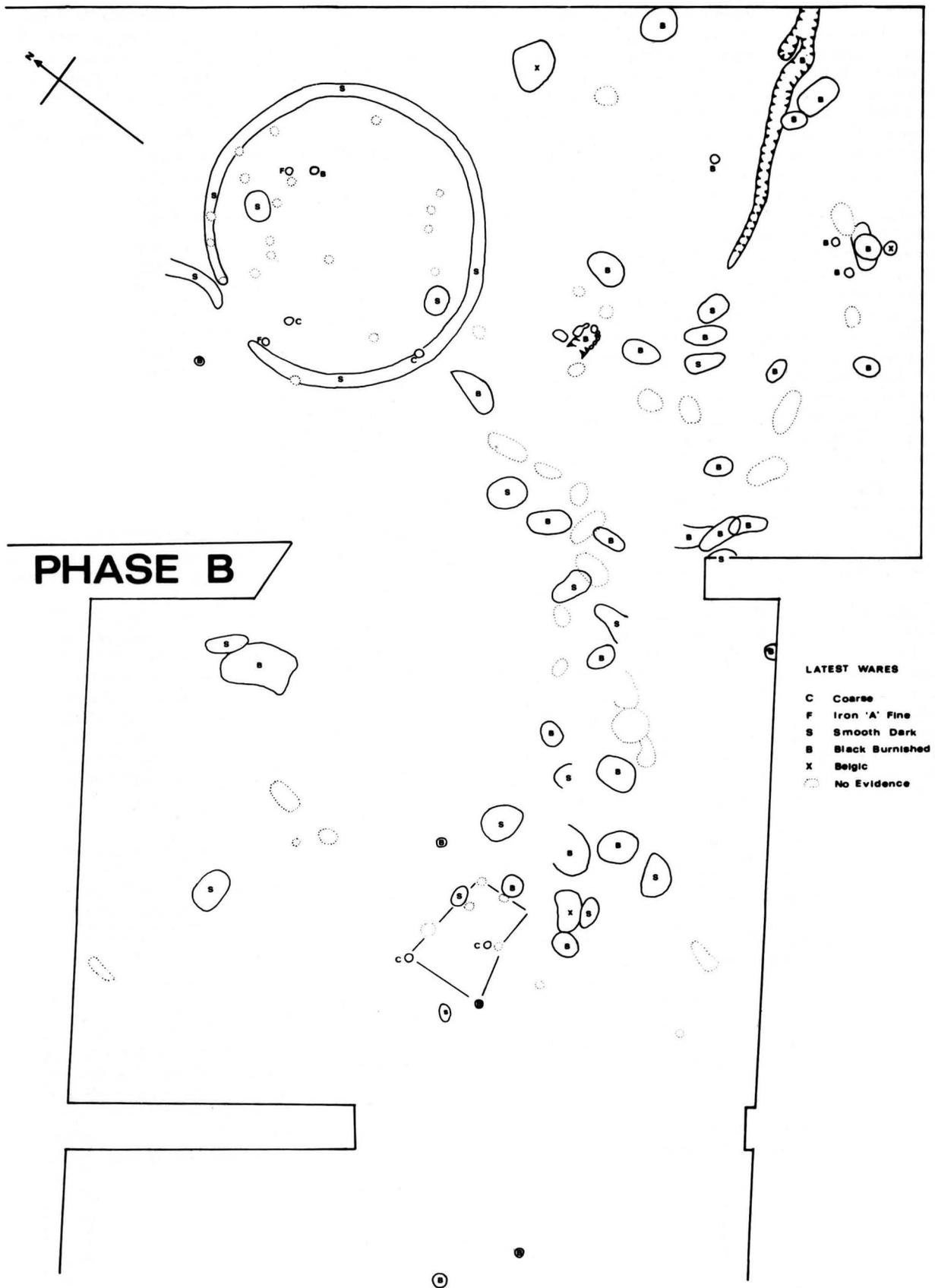


Fig. 26. Plan, showing latest types of pottery in Iron Age Pits—Phase B.

only (Fig. 8 "Early Land Surface"), the other group from Pit 177 in the Eastern Iron-working Area.

The buried soil contained sherds (Figs. 16 and 17) from a variety of forms in a considerable range of sizes. For the most part the pots represented are either coarse ware jars or fine ware bowls. The jars generally have upright necks and more or less angular shoulders, the rims are thickened or flattened on top and finger-tip or nail impressions on rim or shoulder or both are frequent. The surface of the jars is generally uneven, and is often bumpy with protruding grits which have been smoothed over but not burnished. The bowls include both bipartite (84) and tripartite (86) forms, and are made in a thin hard brown or black ware, burnished inside and out. Many are represented only by small rim or shoulder fragments, and the correct angle for the illustration was often hard to determine. Another form present is the simple barrel-shaped jar (57), a shape that persists over a long period. Harding (1972, 84-5) has discussed an early example from Kirtlington, Oxon. The tall rim sherd 97 in a fine burnished ware appears to belong to one of the carinated jars with flaring rims characteristic of the Angular Horizon in the Upper Thames (Harding 1972, 86-96). The two sherds of angular bowls with stabbed decoration in panels on the shoulder, 59, 60, resemble bowls from Chinnor, Oxon. (Harding 1972, Pl. 56) and could be of the same date as the rim sherd 97.

Pit 177 (Fig. 24) is the only pit on the site that can be confidently attributed to the Iron A occupation. It is marked out from all the other pits by its neatly circular shape and by the unusual amount of pottery it contained, some one hundred and fifty sherds in all. The contents present some contrasts to the material from the buried soil. There are none of the wide, sharply carinated burnished bowls, but instead two unusually small deep bowls, 180, 181. Five coarse ware jars with finger-tip impressions are represented by substantial pieces, 178-9, 182, 186-7. Their fabric is similar to the coarse wares from the buried soil with the same bumpy surface. The jars from the pit seem on the whole to have less angular profiles than those from the buried soil, but the number of reconstructable pots is too small for any weight to be placed on the apparent difference. The most distinctive pot in Pit 177, represented by numerous sherds, is the jar 188 with sharply carinated neck and shoulder angles, made in a hard, well-burnished fabric, the type most characteristic of the Upper Thames 'Angular Horizon' and closely comparable to vessels from Long Wittenham (Harding 1972, Pl. 51 D, E.)

Pit 177 also contained a quantity of slag and burnt daub, attesting iron-working in this early phase of the occupation. One other iron-working feature had material of this date, namely Furnace 247. Numerous sherds of a carinated, finger-tipped Iron A jar 152 had been built into the walls of the furnace and heavily burnt, while a body sherd of thin burnished A ware was found in the fill. However, it is possible to argue that both jar and sherd were rubbish survivals in a later feature.

The A sherds found in other parts of the site, either unstratified in the plough soil (1-26) or scattered through later pits and features are of the same types as the sherds from the buried soil and from Pit 177, generally coarse ware jars, but with a few sherds from burnished bowls (18). The rim sherd, 19, from a jar with flaring rim and a slashed cordon at the neck angle may be related to the carinated jar from Pit 177; it can also be paralleled at West Harling (Clark and Fell 1953, Fig. 17, no. 110). The dumpy pedestal base, 53, may be from a carinated bowl of the type found at Chinnor, Oxon. (Harding 1972, Pl. 57), or it could belong to a slightly later S-sided bowl (Cunliffe 1974, 321, no. 4). Another sherd which may belong to the Angular Horizon is the body sherd with a shoulder lug, 128, from within the house defined by ring gully 135. This is paralleled at Woodeaton (Harding 1972, Pl. 55 A).

The Brooklands A pottery is similar to that found on other sites of the same period in Surrey. These are listed by Bishop (1971, 15-18) in discussing the pottery of his Period 2. From his comments it can be seen that coarse ware jars, with or without finger-tip decoration and fine ware carinated bowls have parallels on many Surrey sites, though applied finger-tipped cordons as on sherds 1, 121 and 152 from Brooklands are less common (Bishop 1971, 15). The sharply carinated jar, 188, from Pit 177 is so far unique in Surrey. It is not unreasonable to suppose that others may yet be found, since they may well be contemporary with the flaring-rim, footed bowls that Bishop (1971, Fig. 6) illustrates from sites in or near the Thames and from Wisley, a site which lies some 4 km south of Brooklands along the River Wey.

Two sites in Surrey have produced unusual forms, apparently outside the general run of local Iron A pottery. The ditched enclosure at Queen Mary's Hospital, Carshalton (Lowther 1946, 56-74; Harrison 1968, 133-8) yielded handled jars and some odd deep bowls. The pits at Hawk's Hill, Fetcham (Hastings 1965) produced sharply carinated bowls and numerous sherds of one or more large ovoid jars with incised decoration, both types haematite-coated and both burnt. They may belong to an early occupation, possibly a burnt house, cut through later by the pits, which all have B material in their fill. There are some reasons to suppose that these two different-looking groups are early in the Surrey Iron A sequence, though they may not date to the same stage. None of the unusual forms on these two sites were found at Brooklands. However no conclusions can be reached as to the chronological significance of this until more stratified groups are published.

In our present state of knowledge, Pit 177 at Brooklands may be considered to equate with the Angular Horizon on the Upper Thames and to date to the 5th century BC. The material from the buried soil and the sherds scattered across the site in later features probably cover a wider span of time, and may be in part earlier than Pit 177, perhaps going back to the 6th century. Some part of the Brooklands A occupation may therefore be contemporary with the deposition of the Weybridge bucket (see p. 1.)

Brooklands B

Iron B pottery is represented by a number of sherds from well made burnished jars and bowls of rounded forms, occasionally with bead rims, and accompanied by a few larger jars also in rounded shapes. These forms probably cover a certain time span, but there is little stratigraphical evidence to help distinguish chronological variations.

One associated group of sherds, 110-130, comes from the area of the house defined by ring-gully 135, and most of it from a level that probably represents the make-up of the floor. The types represented in this group are simple rounded forms in a well-made burnished fabric with no true bead rims and no decoration. A few small rim sherds with finger-tip impressions and one with a slashed cordon may be rubbish survival (120-1, 126; 124 came from a higher level). However the finger-tipped pot 122 came from the same context as the rest of the sherds. It is in the heavily gritted, bumpy-surfaced ware typical of finger-tipped pottery from A contexts, and would seem to indicate the occasional survival of this general type into the first phase of B pottery (though it could be argued that it is simply a rather larger example of rubbish survival). The sherd 118 with three grooves below the rim might be mistaken for a sherd from a saucepan pot. It is more likely to be from a simple barrel-shaped jar (cf. Hawk's Hill, Hastings 1965, Fig. 12, no. 26).

From ring-gully 135 itself came several fragments of a large chestnut-red burnished bowl, 103. The illustrated piece is burnt and has lost much of its outer surface, but other sherds show the original burnish. The bowl shape

and the expanded rim are reminiscent of the 'cauldrons' that Harding (1972, 75-7, Pl. 44) distinguished in the Upper Thames, but his examples are of coarse, unburnished ware and have finger-tip impressions on the rim. He suggests a sixth-century date and a derivation from Hallstatt D bronze cauldrons. The bowl from gully 135 seems to be later than this, and to be associated with the rest of the B pottery from the floor make-up. The sherds may have been incorporated in the gully either when the house was constructed or at some later date, perhaps when it was destroyed or dismantled and the timbers removed. Bowls somewhat similar to 103 were found at Hunsbury, presumably in an Iron B context (Fell 1936, 87, Fig. 10, Cl. 2, 4). A small fragment of a carinated bowl, 104, in a fine, well-burnished dark ware with a slight raised cordon was also found in gully 135, and is not easy to identify. The choice seems to be between an A carinated bowl (cf. West Harling, Clark and Fell 1953, Fig. 16, no. 89) or a Belgic form. If the latter, it is best explained as a later intrusion via one of the numerous mole holes on the site, rather than as a vital piece of dating evidence for the house. The concentration of sherds in the house area, some 73 body sherds in gully 135 and 150 body sherds in the floor make-up, emphasise the domestic nature of the structure and contrast with the small numbers of sherds recovered from most of the pits. Most of the sherds are coarse ware.

Simple Iron B pottery occurs on other parts of the site, in particular in the western iron-working area, where Pit 55 contained another group 131-145. Stray sherds came from unstratified contexts, 27-41, and from many pits and some other features. The simple forms without true bead rims and without decoration that they mostly represent may come early in the B sequence. They seem to be earlier than the main local groups of decorated B pottery distinguished by Cunliffe (1974) and may be compared with the early group of B pots from Pit A at Findon Park in Sussex, found with a La Tène brooch which may date to the late 4th century or early 3rd century BC (Wolseley, Smith and Hawley 1927, Figs. 11 and 12; Fox and Wolseley 1928, Fig. 4; on dating, Hodson 1964, 137).

A form generally considered to be late within the B sequence is the saucepan pot, examples of which came from Pit 20 (not illustrated), Pit 52 (212), Pit 79 (217), Pit 170 (224) and possibly Pit 180 (232), but few other sherds were associated with them. A rim of another saucepan, 147, came from hearth 80 in the western iron-working area. A base sherd from a saucepan pot and a rim from another, 109, 108, were found in gully 123. This gully is likely to be of different date from gully 135, and the saucepan sherds suggest it is later. The form of the Brooklands saucepans is generally straight-sided with a groove below the rim. Bishop (1971, 18) has listed the other four published Surrey sites on which saucepan pots have been found, while Harding's map (1972, Pl. 7) shows that Surrey is on the eastern edge of the distribution of the type. Their exact date is uncertain, but may centre on the 2nd century BC. Dumpy globular bowls of 'goldfish bowl' form, of which the pot 227 from Pit 179 is a good example, and 35 probably another, may be contemporary with saucepan pots, as Harding (1972, 114) has argued.

Only a limited number of pits on the site produced rim or body sherds that could be identified by shape. The body sherds from the pits were therefore grouped by fabric in an attempt to provide data for a larger number of pits. The wares were classified by visual inspection only. The divisions used are as follows: (1) coarse wares; (2) sherds with finger-tip or nail impressions; (3) Iron A fine wares; (4) smooth dark ware; (5) black burnished ware. Three of these categories need further explanation. The Iron A fine wares are made in a thin, hard fabric, generally well-burnished both inside and out, often dark-brown but with a considerable colour variation across the sherd, and with an irregular surface under the burnish. Smooth dark ware is the term adopted in this report to cover the Iron B fine

which at Brooklands is thicker than A fine ware, with a more regular, smooth surface, again well-burnished and generally dark brown to black in colour. Black burnished ware is used here for a fabric distinguished by its coarse sand gritting, which gives an abrasive effect to any broken or weathered surfaces, and also by a deep black glossy burnish on unweathered sherds. In a few cases sherds of this ware are partly reddened by oxidisation during firing. The term black burnished is not intended to imply any connection with Roman BB wares (see Table 7 and Figs. 25 and 26).

In the list below, pits with smooth dark ware only have been separated from those with black burnished wares as well. This is not intended to imply that black burnished ware is necessarily later, indeed they seem to be largely contemporary. It may be, however, that black burnished ware survived longest, for the few Belgic sherds from the site are in this fabric, as is the unstratified lid-seated jar, 44, that may also be a late form.

An analysis of the contents of the pits based largely on this classification of body sherds, but also incorporating the illustrated sherds, gave the results shown in Table 7. Six pits were unexcavated, and 17 pits had no pottery in their fill. Of the remaining 62 pits, many of which held only a few sherds, 12 had only coarse pottery. Nine pits had coarse pottery and/or sherds with finger-tip decoration or Iron A fine ware sherds. The remaining pits all contained Iron B sherds, often with a few coarse sherds or A sherds as well. Sixteen pits had sherds of smooth dark ware, while another 23 had black burnished sherds and sometimes smooth dark ware as well. Finally two pits had the Belgic sherds discussed below. In total therefore, 34 pits were definitely dug in Iron B times, while 21 pits with coarse pottery or Iron A wares only might have been dug earlier, although this is only certain for Pit 177. For the rest, many contain few sherds, often fewer A sherds than were found in other pits with B sherds also. The evidence suggests that the greater number of the pits, perhaps indeed most of the pits, were dug at a time when Iron B pottery was in use on the site. Since the pits seem to be linked with iron-working activities, this also must have been most important in the Iron B phase, at least on the part of the site excavated. (See Fig. 26).

Body sherds from other features on the site were also examined, but there were not many of these. In the two iron-working areas a few features held dateable sherds, and one or two pits seemed to be connected with these areas. In the Western Iron-working Area, B pottery was found in Pits 55 and 187, and in PH 248, also in Furnace 236 and F 80, the sherds associated with the latter including part of a saucepan. In the same area a large sherd of burnt A pottery was built into Furnace 247, and another sherd was found in Furnace 240. There is thus a possibility that some of the smelting activity in this part of the site is connected with the Iron A occupation deposit, as is Pit 177 in the Eastern Iron-working Area. Other features in that area produced Iron B pottery, namely Pits 189, 183, 180, 179 and 205.

Bishop (1971) has discussed the few Surrey sites with Iron B pottery, which he places in his period 3. Most sites had globular jars, his form 6, of which many examples were found at Brooklands, and four sites had saucepan pots, his form 12. He lists only two tubby globular bowls, nos. 52 and 53 of his form 11, the type referred to as goldfish bowls; they are represented at Brooklands by the bowl 227 from Pit 179 and probably by 35, 38, 165 and 213 which can be compared with numerous examples from the Upper Thames and some from the South Midlands (Harding 1972, 110, Pls. 63G, 67, 68).

Decoration on the B sherds from Brooklands is rare. It is virtually confined to two small sherds from Hearth 180 with shallow tooling 232, 235 and two unstratified sherds 43, 45. The decoration on the last may be compared to a jar from Wisley (Lowther 1945, Fig. 3, I, 30). It is

TABLE 7 — CLASSIFICATION OF BODY SHERDS OF IRON AGE POTTERY

1. IN PITS

The following pits were empty: 8, 33, 71, 110, 114, 168, 174, 184, 185, 188, 202, 203, 204 (no pottery), 209, 210, 219, 262 (quern fragment only)

The following pits were not excavated: 76, 77, 91, 92, 93, 133

Pit	Phase						Notes
	Coarse	FT	SD	BB	A Fine	Other	
<i>Pits with Finger Tipping (FT), including Finger Nail and Slashed Decoration, and no Smooth Dark Ware (SD)</i>							
167	2	1	—	—	?	—	
172	3	1	—	—	5	—	2 with incised ornament
177	Parts of 13 pots plus 110 sherds	6	—	—	?	—	
<i>Pits where FT was in association with SD or Black Burnished (BB)</i>							
7	7	1	1	1	—	—	
10	5	1	3	—	—	—	
55	4	1	18	4	—	—	Including 1 raised cordon
142	35	1	5	6	—	—	1 Roman amphora and 2 Belgic
143	26	2	—	1	—	—	2 burnt and therefore unidentifiable
171	5	1	1	—	—	3	1 grass wiped, 1 burnt
180	34	1	—	5	—	—	
189	7	3	3	3	—	—	1 incised ornament
198	47	4	1	3	—	—	1 raised band FT. 1 Chevron pattern
212	15	2	—	6	—	—	
218	24	2	1	1	—	—	
225	12	1	1	—	—	—	
<i>Pits with no FT, but with SD or BB</i>							
5	7	—	3	3	—	—	
16	7	—	5	1	—	—	
24	—	—	—	1	—	—	
37	7	—	8	2	—	2	
42	1	—	3	3	—	—	
43	6	—	5	—	—	1	1 burnt
48	3	—	—	2	—	—	
50	12	—	1	—	—	—	
52	3	—	1	—	—	—	Saucepan pot
54	—	—	1	—	—	—	
56	5	—	2	—	—	—	
60	53	—	7	—	—	—	
69	—	—	3	—	—	—	
72	3	—	4	—	—	—	
79	1	—	1	—	—	—	1 saucepan pot
125	10	—	1	—	—	—	
170	50	—	1	17	—	—	Includes 1 saucepan and 5 BB with burnished grooves
179	44	—	4	—	—	—	
183	2	—	—	1	—	—	
205	10	—	3	1	—	—	
208	2	—	—	1	—	—	
222	10	—	1	3	—	2	
223							
224							
227	1	—	4	—	—	1	
<i>Pits with Coarse Ware but no FT or SD</i>							
14	3	—	—	3	—	—	2 Belgic groove decoration
18	1	—	—	—	—	—	
20	13	—	—	1	—	1	Saucepan pot in BB
21	3	—	—	—	2	2	
34	—	—	—	—	—	2	Burnt
38	9	—	—	2	—	2	Grass wiped
53	5	—	—	—	—	—	
75	12	—	—	—	1	—	
103	1	—	—	—	—	—	
136	1	—	—	—	—	—	
169	4	—	—	—	—	—	
173	2	—	—	—	—	—	
178	26	—	—	—	—	—	
182	20	—	5	—	—	—	
186	6	—	—	—	—	—	
190	1	—	—	—	—	—	
191	11	—	—	—	—	—	
197	6	—	—	—	2	—	
206	30	—	—	—	1	6	6 burnt
211	4	—	—	—	—	—	
216	14	—	—	—	5	—	
217	—	—	—	—	1	—	

N.B. BB can include wares which are oxidised red

TABLE 7 —continued

SUMMARY: Latest ware in pits

Coarse (Twelve)	FT or Phase A Fine (Nine)	SD (Sixteen)	BB (Twenty-three)	Belgic (Two)
18	21	10	5	14
34	75	43	7	142
53	167	50	16	
103	172	52	20	
136	177	54	24	
169	197	56	37	
173	206	60	38	
178	216	69	42	
186	217	72	48	
190		79	55	
191		125	143	
211		171	170	
		179	180	
		182	183	
		225	189	
		227	198	
			205	
			208	
			212	
			218	
			222	
			223	
			224	

2. IN FEATURES OTHER THAN PITS

Feature	Coarse	FT	SD	BB	A Fine Phase	Other	Notes
80	8	—	1	1	—	1	Includes 1 burnt
97	2	—	—	—	—	—	
99	3	—	—	—	4	—	
116	1	—	—	1	—	—	
123	31	—	15	—	3	—	
128	2	—	—	—	2	—	
146	1	—	—	1	—	—	
155	4	—	—	—	—	—	
163	4	—	—	—	1	—	
164	41	2	—	17	1	—	
176	1	—	—	—	—	—	
181	—	—	—	—	2	—	
190	65	1	2	3	—	—	
196	1	—	—	—	—	—	
226	59	1	3	6	2	—	
236	—	1	—	1	1	—	
240	—	1	—	—	—	—	
241	1	—	—	—	—	—	
242	10	—	—	—	—	—	
246	6	—	—	—	2	—	
247	1	17	—	—	2	—	
248	—	—	—	1	—	—	
249	1	1	—	—	5	—	
252	1	—	—	1	—	—	
253	9	—	—	1	4	—	
254	4	—	—	1	—	—	
Early Land Surface	397	2	—	—	60	2	2 very coarse gritted

Note. Figures for Iron Age House are given on pp. 17, 31 and 32.

TABLE 7 —continued

3. UNSTRATIFIED, BY CUTTINGS

Cutting	Coarse	FT	SD	BB	Phase A Fine	Other	Notes
22	54	1	—	5	1	2	1 Patch Grove, 1 organic tempering
23	5	—	—	—	—	—	
24	8	—	—	8	—	—	
25	118	2	5	14	13	—	
26	5	—	1	—	2	—	
27	22	4	—	5	2	—	
29	25	—	—	1	—	1	1 organic tempering
30	14	—	—	—	—	—	
32	9	—	1	—	1	—	
33	31	—	—	1	2	—	
34	34	—	—	—	9	—	
35	41	—	1	8	1	—	
36	18	1	—	—	—	—	
37	11	—	—	—	7	1	
38	12	—	—	—	—	—	
39	10	—	1	2	1	—	
41	5	—	—	—	—	—	
42	25	1	2	1	5	—	
43	5	—	3	—	1	—	
44	8	1	1	—	2	1	
45	8	—	—	2	—	—	
46	9	—	4	3	—	—	
47	13	—	8	9	—	—	
48	100	3	4	8	6	10	3 very coarse gritted, 5 angular, 1 grass wiped, 1 organic
49	21	1	4	5	2	3	1 angular, 1 organic tempering
50	5	—	—	2	1	3	1 saucepan, 1 decorated, 1 grass wiped
51	81	2	4	9	11	—	
52	67	1	22	5	2	—	
53	42	1	1	8	9	—	
54	36	2	1	2	4	1	1 organic tempering
55	21	—	3	7	4	—	
56	103	3	2	13	17	—	
57	109	2	8	15	5	2	1 very coarse gritted, 1 organic temper
58	109	1	4	2	25	—	
59	65	—	4	21	7	1	1 very coarse gritted
60	14	—	1	4	—	—	
61	21	—	—	1	—	—	
Trench A	84	—	7	5	9	17	16 very coarse gritted, 1 base chipped to form a disc
No prov- enance	42	—	1	2	6	4	4 burnt
1964	142	5	3	5	17	—	

probable that there was a phase in Surrey, as in other parts of Southern Britain, perhaps in the late 2nd to early 1st centuries BC, when decorated pottery was popular, but a site dating to this phase has yet to be discovered. The B pottery from Brooklands must fit into Harding's 'post-angular period'; he suggested this started shortly after 300 BC, and one could even argue for an earlier start within the 4th century; Bishop (1971) on the other hand argued for a start in the mid-2nd century. Clearly there is no certainty here, nor is it possible to decide how long the forms persist. The rarity of decoration and of true bead rims (such as Hastings 1965, Fig. 8, nos. 26, 31) at Brooklands may indicate that there is little of the latest B pottery on the site, so perhaps a broad 3rd to 2nd century date is the best that can be suggested.

Belgic

Two pits on the site contained Belgic sherds, Pit 14 held sherd 207 and another body sherd; Pit 142, which may be a charcoal burner's clamp (see p. 13), contained sherds 219, 220, two body sherds with similar lattice decoration, one sherd of Roman amphora, 221, and fragments of tile. The Belgic sherds are all in hand-made black burnished ware, in one case oxidised red-brown, and are decorated

with lattice patterns of burnished lines. On sherd 207 the lattice is wide-spaced. The two pits with Belgic sherds are at opposite ends of the site.

No exact parallels for these types have been found, but they fit well enough into the general picture. The lattice pattern is found on Durotrigan pottery, but the shapes of the Brooklands pots and the high position of the lattice pattern below the neck are both foreign to Durotrigan types. Geographically Brooklands is close to the boundary between the Catuvellauni and the Atrebates, with the Cantiaci to the east (Cunliffe 1974, maps on pp. 91, 92). Most probably Brooklands lies in the territory of the northern Atrebates, but comparative pottery from Surrey is sadly lacking. The pottery found not far from Brooklands at Leigh Hill, Cobham, seems to have been of Aylesford-Swarling type, in so far as one can judge from the reconstructions published (Smith 1908, 1909). The pottery from Farnham (Lowther 1939, 208-215) is more similar in general style, but the pots represented there are large jars, not bowls, and there is no close-spaced lattice pattern. The Brooklands sherds could be either pre- or post-Roman conquest; if the former, then the sherd of the Roman amphora is one more example of a pre-conquest import, and in a less exalted context than many (Peacock 1971).

Petrological Note on the Pottery Fabrics from Brooklands and Ivinghoe—by D. J. Tomalin

Fresh surfaces of three sherds of Brooklands A and three sherds from Ivinghoe were examined at X35 under a stereo microscope. A summary of observations is set out below:

	BROOKLANDS (sherds 5; 187; 251)	IVINGHOE (sherds: A/V.2; AIII 2; AVII 2)
TEMPERING AGENT		
Fresh crushed white quartz	10%	7–10%
Max. particle size (mm)	2	1.75
Min. particle size (mm)	0.25	0.25
OTHER INCLUSIONS		
Iron oxide particles	1–3%	—
Particle size (mm)	0.4–0.5	—
Incidental (?) quartz sand grains (mm)	1	0.25–0.5
2% Grog AIII 2 only)	—	0.5
CLAY FABRIC		
Depth of oxidization of outer surface (mm)	0.5–2.5	0–2.5
Munsell colour of exterior	5 YR 6/6 Reddish Yellow	10 YR 7/6 Yellow

All sherds show a common choice of white quartz tempering crushed to a particle size ranging from 0.25 to 2 mm nominal sectional diameter. The amount of added tempering, calculated by the Shvetsov method, is around 10% in both groups. Other inclusions, probably belonging to the parent clays, are well sorted transparent quartz sand grains with roundness values of R7-8 on Power's scale. Iron oxide particles in the Brooklands sherds no doubt represent the high iron content in the parent Bracklesham Beds observed by Dr Potter.

For a reliable assessment of these fabric characteristics we must await the examination of a far greater sample of wares of this period. In the meantime, we may observe that the typological affinities between the Brooklands and Ivinghoe vessels are followed by the selection, proportion and treatment of the tempering agent and perhaps also by the firing procedure for oxidizing the outer 0.5 to 2.5 mm of the clay.

Iron Age Small Finds (Fig. 27)

Iron Objects

1. Blade tip. From F 255, Eastern Iron-working Area.
2. Latch lifter. From the doorway of the House (see p. 12). One was found at Purberry Shot (Lowther 1949, 21).
3. Possibly a buckle. Iron buckles are practically unknown in the Iron Age. It is terret-shaped but it is too fragile to be one. From Cutting 35, just outside the House, in association with a triangular loom weight and six possible whetstones, but since they were on a land surface, rather than in a stratified feature, the possibility of subsequent deposition should not be ruled out.
4. Pointed ferrule. Too large to be a spear butt. From the burnt layer at the top of Pit 180, Cutting 28.

Nails (Not illustrated)

Nails were identified in the following places:

- Cutting 22, among fired clay, one
- Cutting 23, Pit 177, one
- Cutting 49, Pit 37, one
- Cutting 57, Pit 55, one

They are rare in the Iron Age.

All the iron objects were seen by Christopher Saunders, and his comments are incorporated into the text.

Clay

5-9. Spindle whorls. For distribution see Table 1.

10. Loom weight. This one from Pit 216; for distribution see Table 1.

Shale

11. Fragment of a bracelet. Diameter 10 cm. Width 1.3 cm. Cutting 53.

Copper Alloy

12. Stud or attachment, decorated with a leaf and tendril pattern, not unlike Jacobsthal's P. 121 (Jacobsthal 1944, Pl. 265). From Pit 52, which is cut into by medieval Pit 57. This object has been seen by Prof. Megaw and Dr. Spratling, and Mr. Cherry has seen a drawing. All of them have expressed varying degrees of doubt about it, so its origin is not established. (See Fig. 9).

Discussion of the Iron Age

Three aspects of the excavation might now be considered: chronology, the nature of the settlement, and the relationship with St. George's Hill fort.

Chronology. Pottery sherds of Phase A from the buried early land surface and from Pit 177, where they are associated with iron slag may be tentatively correlated with sherds from the hill fort at Ivinghoe Beacon, where the metal was exclusively bronze, of the Ewart Park phase (Burgess 1974, 220). This would place the earliest phase at Brooklands within the period of transition from late Bronze to Iron Age and would accord with the claim of the excavators at Ivinghoe for the unity of an area stretching from the Chilterns to the Sussex Downs. When angular pottery is established on the site, very close links are demonstrated with the upper Thames valley, and these are maintained during the phase when globular bowls and saucepan pots were made in smooth dark ware.

Settlement. Gardner thought that the site was part of a larger settlement extending into Brooklands Race Track, and this is backed up by the faint indications of the air photograph. Cleere's hypothesis of a specialist ironworker's homestead may be valid for the larger area; since the race track and the sewage works cover the whole of the east bank of the river this cannot now be proved one way or the other, but by analogy with the known density in the upper Thames valley and with the proximity of the site at Wisley, one might expect occupation to be spread thickly down the Wey and down other tributaries of the Lower Thames. Indeed the importance of the river to the settlement would seem paramount; for instance the most direct route between Brooklands and Ivinghoe would be due north by the Wey, the Thames, the Colne and up the valley of the Gade, a route used in part by the Grand Union Canal.

The relationship with St. George's Hill. This was first worked out by Gardner and has been corroborated by Potter's discovery of the source of the iron ore. The siting of the hillfort could, as at Hunsbury, be due to the presence of the iron. The meagre ceramic evidence from St. George's Hill can be paralleled both in the early and later periods by finds from Brooklands. The fort's possible ranch boundary might be an indication of very early beginnings, which would be consistent with the known density of Bronze Age material close at hand. Its triple bank and wide ditch at the west, together with the quern and Belgic pottery may carry the relationship on to the end of the era.

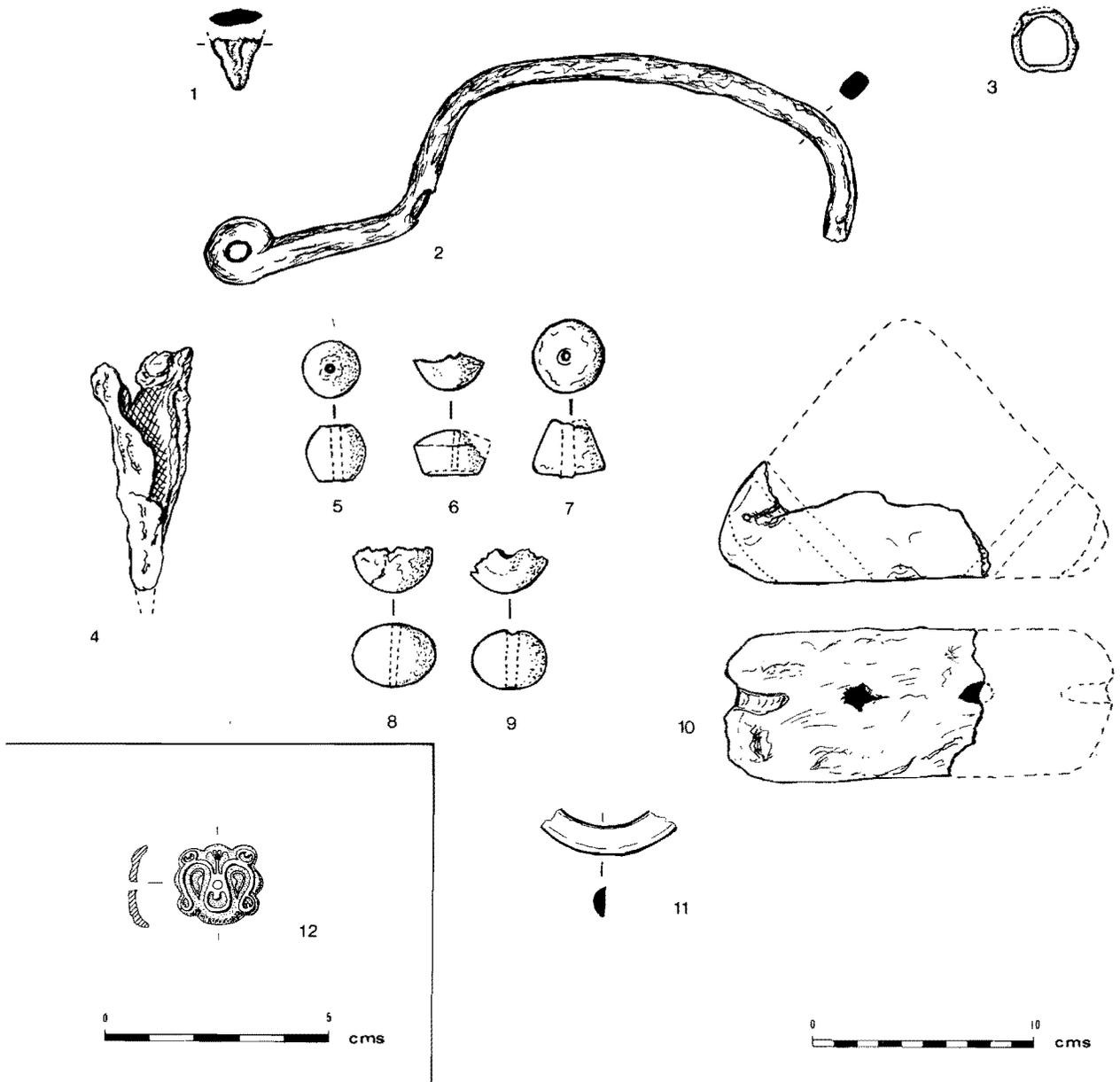


Fig. 27. Iron Age Small Finds.

Hallstatt bronze swords, votive iron plough shares and La Tène daggers have been dredged from the reaches of the Thames not far from Weybridge and local manufacture has been postulated for all of them (Cowen 1967, Allen 1967, Jope 1961). Perhaps the excavation of more sites of this sort may point towards a solution of their place of origin.

THE SAXON PHASE

The Saxon evidence consisted chiefly of two classes of pottery, gritty and grass-tempered, and loom-weights. Although a careful examination was made of all pottery sherds, it was not found possible to state with certainty that all the gritty wares isolated were truly Saxon, since their fabric and grits closely resembled some Iron Age wares. In all, 143 sherds were selected, 85 of which were grass-tempered. Their distribution was almost wholly around that part of Trench B in which Medieval Building 2 was sited, and the area in the vicinity of the Medieval Kitchen (see Fig. 28). Although it is likely to be rubbish survival, or a scatter from some undiscovered structure immediately south of Trench B, the question also arises

whether this pottery was still in use at the time when Building 2 was erected (see Table 8). If so, then annular loom-weights would also have to be accorded a longer life than is generally thought.

Table 9 shows the distribution of loom-weights of this phase. There were two types, annular, normally dated to Pagan Saxon times, and here associated with grass-tempered pottery, and bun-shaped, here associated with early medieval pottery and concentrated in or near the Medieval Kitchen. Their significance is discussed on p. 48.

It is not suggested that Building 2, which has grass-tempered sherds in its foundations, was a Saxon structure, although it could possibly have been earlier than Building 1, and Rigold suggests it had two phases, see pp. 55 and 76. The artefacts suggest either a focus of Saxon material near to or even under the railway embankment and a possible continuity of settlement from one period to the next, or that they survived longer into the early medieval phase than is usual.

There is a hint of something going on in the S.E. corner of Trench B which might just possibly have been part of an earlier structure—the section of Pit 1a (Fig. 4) shows that it was a bedding pit for a beam or post, and the same applies to Pit 74 (section not illustrated). (This would give the same alignment as the rest of the medieval buildings.)

The Saxon Pottery (Fig. 28)

1. OS black, burnished, IS dark grey, C pink to grey. Heavily grass-tempered. Cutting 43.
2. OS red-brown, IS grey, C brown. Hard sandy fabric with slight grass tempering. Cutting 53.
3. OS almost like a slip, light brown with horizontal burnishing which continues over the top of the rim. IS and C dark grey, heavily grass-tempered. Cutting 60.
4. Rim sherd with slight finger-pinching inside and out. O and IS brown with a black patch, C dark grey. Slightly sandy ware very heavily grass tempered. Pit 1.
5. O and IS and C bright light orange. Very heavily grass-tempered with a very few small white grits. Cutting 43.
6. OS grey-brown, slightly burnished, IS and C dark grey. Fairly hard fabric, grass-tempered. Cutting 56.
7. O and IS almost completely eroded away. Where they remain they are light red-brown and very gritty.

8. O and IS grey-brown, but showing red on the outside where abraded, C black. Harsh sandy fabric with grass tempering and one (?) grog inclusion. One sherd in Pit 1, the other in Cutting 43.
9. O and IS light red-brown, smooth outer surface is fairly hard, C black, grass-tempered. Cutting 43.
10. O and IS purplish buff, C black, grass-tempered. The rim is lid-seated.

All these sherds have been examined by J. Hurst. On the basis of very similar wares from Northolt he points out that the starting date for them could well be the eighth century, and there is now increasing evidence for settlement centres to shift in this period (cf. Cunliffe 1973, 1-12). Drewett (1974, 9) provides a recent discussion of the occurrence of these wares in Surrey. Further recent discoveries, as yet unpublished, include Petters Sports Field, Egham; Eden Walk, Kingston-upon-Thames, and Wraysbury, Middlesex.

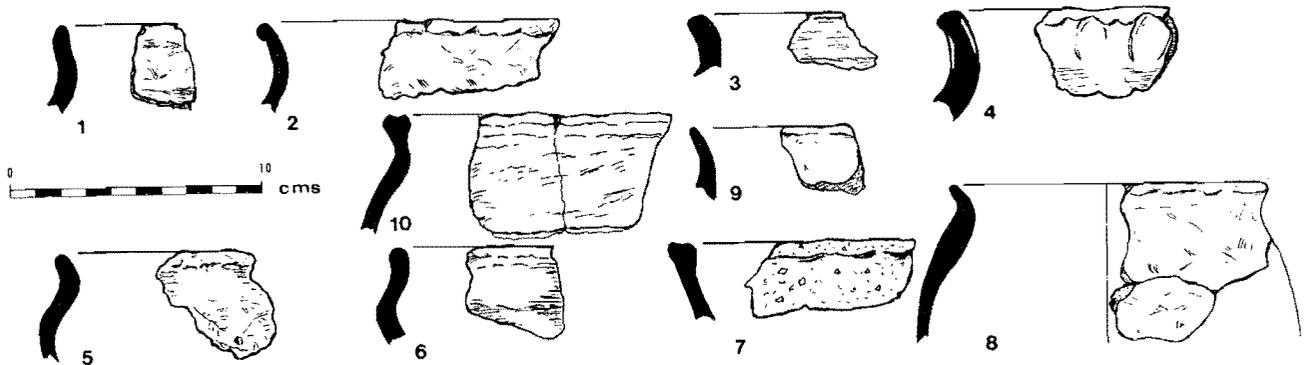


Fig. 28. Saxon pottery: Nos. 1-10.

TABLE 8 — DISTRIBUTION OF SAXON POTTERY

Feature and/or Cutting No.	No. of sherds		
	Gritty	Grass-tempered	
1. Area Around Building 1			
Cutting 22	—	1	
Cutting 42	—	2	
Cutting 51	—	1	
Cutting 56	1	4	
Cutting 61	1	2	
2. Foundations, Building 2			
F 2	2	11	
F 7	4	4	
F 13	1	2	
F 37	—	1	
F 72	—	1	
3. Area Around Building 2			
Cutting 43	—	12	
F 1	—	14	
Cutting 44	9	8	
Cutting 49	—	1	
F 74	—	1	
Cutting 50	1	9	
4. Area Around Kitchen			
F 141 (Midden)	14	—	
Cutting 54	4	2	
Cutting 55	1	—	
Cutting 57	1	—	
Cutting 60	5	4	
5. Elsewhere			
F 165 (Gully)	—	2	
Cutting 32 (Near Building 3)	—	2	
Trench A	12	1	
Cutting 53	—	1	
Cutting 56	—	1	
			Total 143

Note. Some of the gritty wares in Trench A are likely to be Iron Age. See note on p. 49 for sequence of feature nos.

Comment on the Loom-Weights—by J. L. Nevinson

Reports of excavations during the last twenty years show that the finding of loom-weights has a sort of fascination for archaeologists. Once it was realised that early man was not scantily dressed in skins alone, it remained to be decided what clothes he wore and what they were made of. The answer to the second question was wool, which needs to be spun and then woven into cloth. Woollen garments, however, are unlikely to survive unless they have been submerged in bogs, though small fragments of cloth may be preserved if they come into contact with bronze. The finding of spindles in an occupation area is evidence that wool was being spun, but the spinster can walk along holding a distaff as she minds the livestock in the fields. But when loom-weights are found, this is conclusive evidence of a regular settlement, of the existence of a house, in or beside which the weaving of cloth took place. The discovery of loom-weights on the Brooklands site is the first substantial find in Surrey (apart from the singular group of sixteen or more serving as vaulting to the flue of an Iron Age oven at St. Martha's Hill, Guildford (Lowther 1935).) though weights in larger numbers have been found at Old Erringham in Sussex, at West Stow in Suffolk and above all at Mucking in Essex (Med. Arch. 9 (1965), 175; 13 (1969) 5; (Mucking) 11 (1967), 264; 13 (1969), 231; 14 (1970), 155; 15 (1971), 125—see note at end of section).

The loom-weights are of three types, triangular, annular, consisting of thick rings formed from clay kneaded with the thumbs, and bun-shaped, where the clay lump is pierced with a stick or knife before firing. The triangular are regarded as Iron Age, and the bun-shaped type is usually considered to be the latest. The clay weights of southern England are practically indestructible, they may not disintegrate even if they are made of green clay, as in one instance at Mucking. An early twelfth century kiln for loom-weights was found at Rochester (Harrison, A. C. 1972, 121-57).

The loom on which they were used consisted of a frame with two stout vertical posts, an adjustable beam on which the finished cloth could be rolled and two horizontal timbers to complete the rigid rectangle. The warp threads, which will run the whole length of the cloth need to be carefully spaced as they hang over the beam and they are kept taut by being tied in carefully counted groups each with its own weight hanging just clear of the ground. The horizontal weft is inserted between alternate warp threads, which the weaver raises by loops, and is beaten upwards with a wooden stick or sword to form a plain cloth. The history of this type of weaving, which has continued, for example in Iceland, to the present day, and the process and technique are fully described and illustrated in Hoffmann 1964. A loom has been reconstructed and is on exhibition

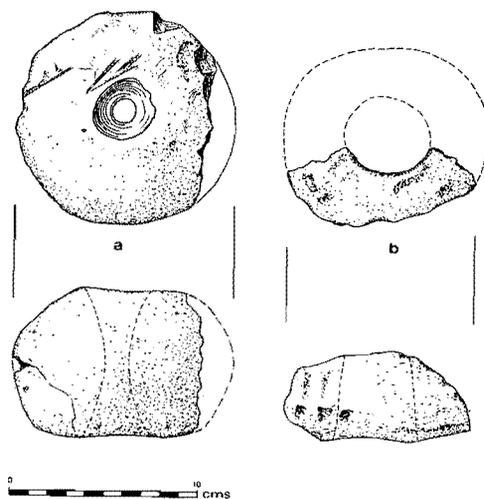


Fig. 29. Loom-weights
(a) bun-shaped
(b) annular

at the Weald and Downland Open-Air Museum, West Dean, Sussex.

The warp-weighted loom was portable and when in use was inclined at an angle of five degrees from the vertical; it may have had slots in the ground to steady the uprights, while the top of the frame rested against a rafter, but any regular post-holes found on sites would not be related to it. Weaving would have been carried out in day-light in the open-air, or in an open sided shed. The weavers' hut sometimes mentioned was used for dry storage of the looms when not in use, for the weights, the spun wool, and the finished cloth; these may have been stored on racks supported by posts. The women weavers also would sleep in the hut, called *Textrinum* or *Genicium* (*Gynaecium*, originally from the Greek) and Carolingian law imposed a fine on anyone sleeping with a maiden in it.

The Brooklands house is unlikely to have had a special shed entirely devoted to weaving or the storage of apparatus, and while the bun shaped weights do not give a final date for the use of the warp-weighted loom, the annular weights associated with grass-tempered pottery confirm the accepted opinion that these are of the earlier type.

(Rather than load this section with footnotes, it is perhaps better to direct those interested in loom-weights to the Indexes of the first fifteen volumes of *Medieval Archaeology* in which more than fifty references will be found).

TABLE 9 — DISTRIBUTION OF ANNULAR AND BUN-SHAPED LOOM-WEIGHTS

Cutting	Feature	Quantity	Notes
1. Annular			
39	—	1	Fig. 29: b
42	Building 2	1	Associated with grass-tempered pot
43	Building 2	2	1 associated with grass-tempered pot
44	Building 2	1	
	Total	5	
2. Bun Shaped			
39	Overlying Pit 204	1	Found in 1964
51	Building 1	1	
53	Building 1	1	
54	Kitchen, Midden	1	
55	Kitchen	8	
56	Near Building 1	1	Fig. 29: a
60	Kitchen, Hearth	2	Fragments
	Total	15	

THE MEDIEVAL PERIOD

Note. In the following sections the sequence of the feature numbers shows the run of a wall, and is not necessarily in numerical order.

Five structures, possibly a sixth, and three additional gullies, the two ends of a surrounding ditch, and some pits belong to this period, and together they may represent, though small and primitive, the central buildings of a medieval estate.

Building 1 (Figs. 4, 30, 31, 33 and 34)

This measured 19 m x 6.50 m (62 ft 4 ins x 21ft 4 ins). Its foundations on three sides were posts, frequently paired and often set in pits, but on the southern, or downhill side, there were three horizontal beam slots with close-set posts in them (PH 65, 49, 51, 29, 28 and 31 and the pair at 40). (PH 70 in Iron Age Pit 188 is slightly out of line and looks like a later addition). These and several other pits still retained a dark brown deposit, indicating the presence of sill beams. When sectioned they seemed to show that the posts had been driven through prepared holes, for their tips protruded below the sill beams (see Fig. 31, PH 59, 68, 25, 61, 67, 66 a and b). An alternative suggestion has been made, that the beams were themselves split logs whose projecting branches had been trimmed short but kept to serve as tenons on the underside. Certainly either of these methods would help to stabilise the foundations in the loose sand, but the former seems preferable because the post holes were very regularly spaced. The fact that the posts were set so close together there might mean that the southern end of the house stood higher than the rest.

The Hearth (F 112) (see Pl. VI and VII)

This was discovered in 1964 (see p. 7) and was observed to be undisturbed. Its dimensions were 1.75 m x 1.81 m. The trench in which it stood unfortunately remained open until 1970, by which time the tile arrangement was almost entirely kicked away. In 1971 the foundations were excavated and found to consist of a matrix of pebbles set in clay, which was roughly triangular, with the longest side on the north, 2.40 m long, the western side 2 m long and the third side, not well defined, somewhere towards the east. Seven stake or dowel-holes were set in the clay along the north side; they could have held stakes to keep the tiles in position when the hearth was being built, or possibly have secured a tile-hung backing or rereuos. The single unburnt tile found separately in 1964 may possibly have fallen from such a structure. In spite of the different shape, the triangular matrix did not appear to have been laid and used as an earlier hearth, to be succeeded by the up-ended tiles, because if that had been the case one might expect some traces of a layer of ash or charcoal in between them, whereas the sequence was as follows:

- a. The remains of the top layer of tiles.
- b. Close-set pebbles in clay.
- c. Sand.
- d. Bottom layer of up-ended tiles protruding through the sand.

The hearth was cleared, measured, and plotted into the site note-book on 31st March, 1971, and preliminary photographs were taken; it was then left overnight to be sectioned the next morning. Appropriately enough on 1st April it was found to have been completely wrecked by vandals.

Construction

No tiles were found apart from those originating at the hearth and the solitary fallen one found in 1964. This is particularly interesting in view of the peg holes provided in the tiles for hanging them (see Fig. 32). This negative

evidence may indicate a thatched or shingled roof and reflect perhaps the building's status. Although plenty of fired clay was found elsewhere, mostly in Iron Age contexts, the only daub related to Building 1 was that found in 1964, so the building may have been mainly close-boarded. Relatively few nails were found, see Table 12, so pegs may also have been used. A strip of lead sheeting was found in the topsoil in Cutting 51, some 50 cm north of the line of posts 68, 26, 27 and 46; it might have come from the roof, it was roughly central in the building. Clay and pebbles were observed in several post holes and post pits, and interpreted as packing material. The protruding posts in the sill-beam construction described above appear to have been packed around the base with stones. PH 25 had an unusually large number of packing stones, some above the assumed floor level, and including broken pieces of dressed stone (see Table 11, Analysis of Building Materials). The average diameter of the carbonised posts was 25 cm to 35 cm. In the Medieval Charcoal report on p. 77 Mrs. Keepax has drawn attention to the presence of alder as well as oak in three of the post holes of Building 1. They are nos. 27, 47 and 59. As they are all situated quite close together a simple explanation might be that an alder tree was felled when clearing the site for the construction of Building 1 and that chip-pings from the felled tree were used as wedges to pack the main post, or even got swept into the hole as the post was being erected. Alder, being a soft wood, is not very suitable for building construction, where stability is required. The sections (Fig. 31) show evidence for some renewal of posts and the thin irregular deposit of clay recorded near the hearth in 1964 (Fig. 5) might perhaps represent a re-levelling of the floor in this area. A further spread was found in 1970 between the rows of posts 65-31 and 35-39.

The house might have been divided into three bays, the dividing line being represented by the following rows of posts: 46, 27, 26, 68; 106, 94, 109, one missing, or possibly 84; and a sub division on the northern bay: 111. (three posts) 117.

On the eastern side there are external posts, 84, 83, 59, 58, 45, 44, in that order, and there is an uneven row farther out, 131, 157, 199, 200. The two triangular settings, 59-56, on the east and 66 on the west could be for doors, and door furniture was found by F 231 (see p. 73, No. 21).

PH 228, 229, 230, 233, 250 and 78 on the western side do not group themselves easily into any recognisable shape, but large sherds of pottery were found in the occupation layer here, and at PH 231 the charred remains of a fallen beam lay on the ground. Perhaps PH 233, 230 and 229 were for the side wall of an open shed parallel to the path, facing north, and the others, PH 250, 78 and 228, were for the uprights to support its roof. The association of a meat-hook with bones and jugs here suggests a larder. One of these jugs, part of which was found in 1964 (see p. 7 and Fig. 41) was No. 82. The heavy parts, handle and spout lay very likely where they fell, in the larder, the remainder were spread eastwards, right up to the hearth, and almost the whole of the pot was recovered. This is important because it implies an open door between the larder and the hearth place (see Fig. 34i). From the posts just mentioned to the north-east corner of the Kitchen the ground had a hard compacted surface of reddish clay, and this is interpreted as a path. It ran between Grids E 14 and J 12.

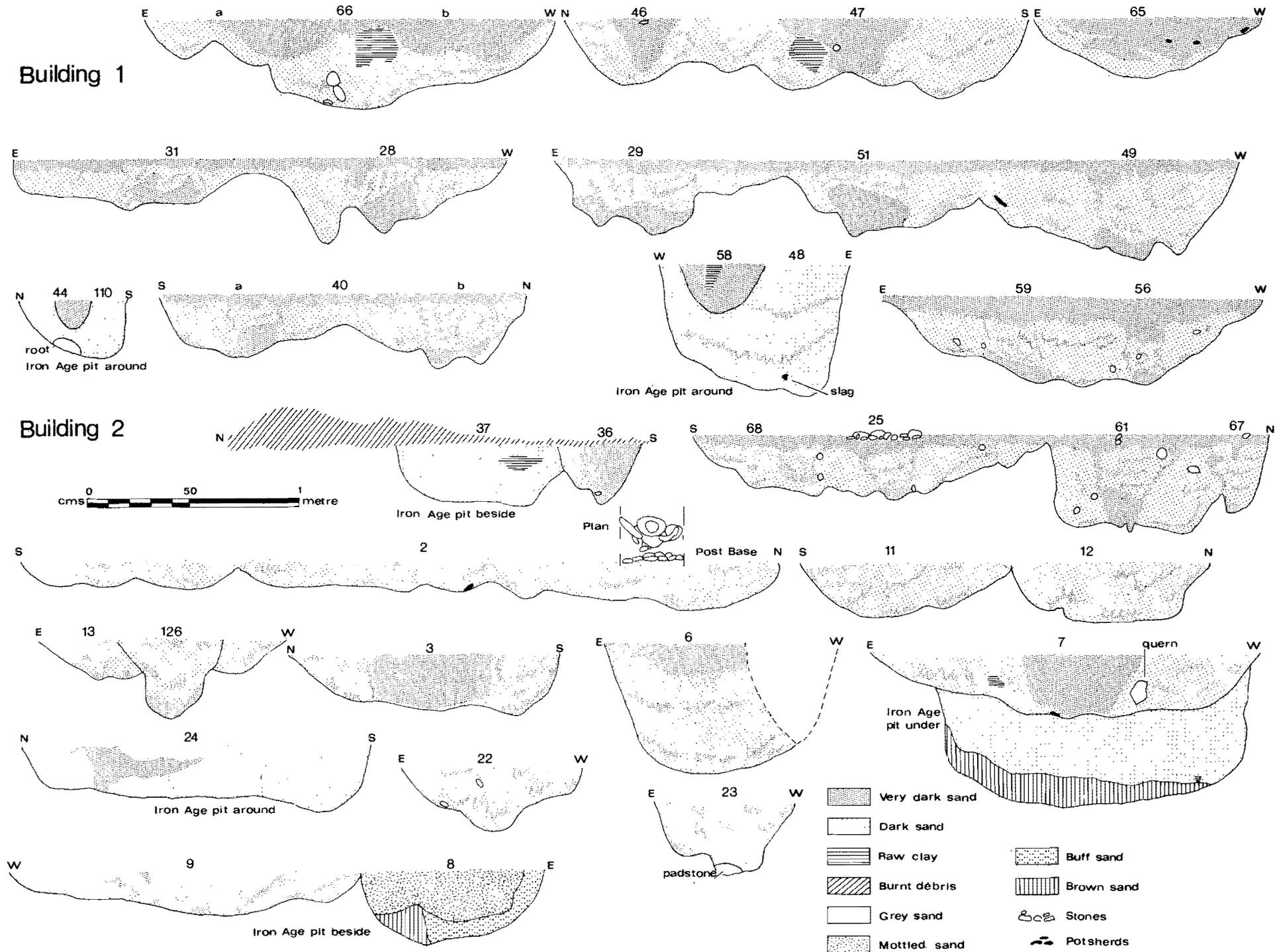
Building 2 (Figs. 4, 30, 31 and 33)

This building was recognised in two parallel rows of foundation pits:

A. East. Pits 72 (with PH 39), 2, 11, 12, 13 (with PH 126) Pit 2 is clearly three small ones cutting into each other;

B. West: PH 35, Pits 24, 7, 6, 4 (with PH 127), and possibly Pit 3, which is out of line.

Fig. 31. Sections of medieval features. (Note: For F 57, 165, 166, see Fig. 9).



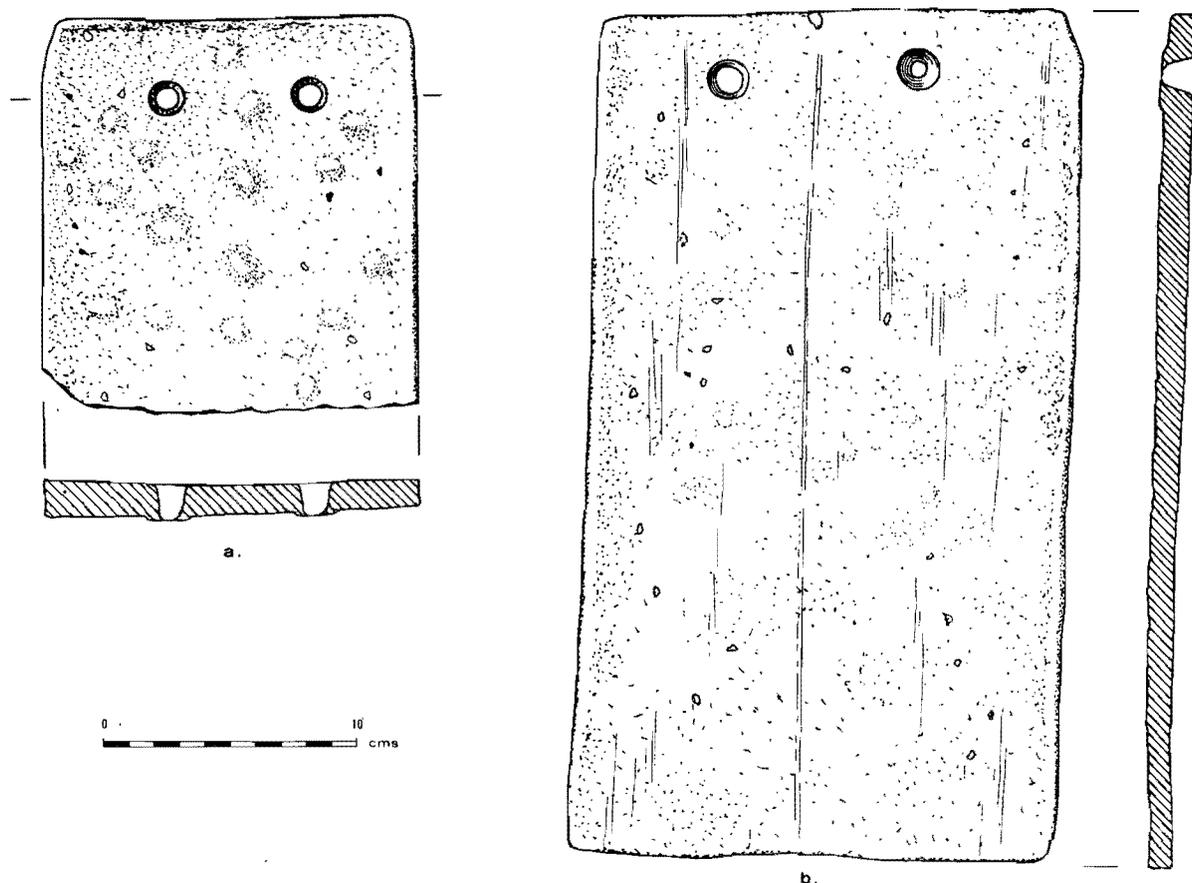


Fig. 32. Medieval tiles: (a) 16 cm wide; (b) 19.5 cm wide.

There are two alternative lines for the north wall; either the post holes 39 to 35, or a line through PH 36, which lies below F 37 (see below) to PH 22 and 23, in which case a post appears to be missing between PH 35 and 24. Rigold suggests that these two lines represent two phases (see p. 55). There is an element of doubt about Pit 24. It contained only Iron Age pottery and its fill was the pale grey sand common to pits of that date; but the section does show a dark intrusion looking like a post (see Fig. 31) and to omit it from the medieval plan would leave an awkward gap. PH 22 and 23 are the largest medieval post holes on the site, which might indicate the presence of something like a hay loft over this end of the building. PH 22 was 85 cm in diameter and 28 cm deep, PH 23 was 75 cm in diameter and 32 cm deep, with a lump of dressed stone, burnt and broken, wedged flat at the bottom of the hole. At F 37 there was a spread of mottled red burnt clay containing medieval pottery, found immediately beneath the topsoil (see section, Fig. 31). Its dimensions were 1 m x 1.35 m spreading out in all directions, its depth was irregular, but averaged 50 cm. It lay above medieval PH 36 and Iron Age Pit 37 (see p. 13); it could have been a late hearth, but is more likely to represent the burnt remains of Building 2 at the end of its life.

The approximate width of the building could be either 4.7 m or 5.4 m depending on whether the line of the west wall is taken to be through the centres of Fit 4, PH 127 and Pit 7, or the centres of PH 35, Pit 24 and Pit 3. Twelve metres of the building's length have been exposed. At the most it cannot be more than about 1.5 m longer, or it would stand too close to the ditch, F 139.

Pit 2 held a strange erection of decomposed sandstone on the inner edge of the northernmost of the three small pits of which it is made up; this was a pile of four lumps of stone, the top one having a hole, 6 cm in diameter, big

enough to hold a stake or small post. It was reminiscent of the holes at the back of Hearth 112 in Building 1. In Pit 7 there were two broken halves of a very large quernstone, (see p. 81) possibly for packing a beam.

Table 10 records the depth of the foundation pits. Their shallowness was taken to mean that they held sleeper beams, and this was borne out by their fill which was stained very dark brown, like the sill-beam pits in Building 1. But there were no protruding posts, except those clearly marked in the plan, and the pits were wider and more irregular. Pit 3 had a timber 50 cm wide in its centre, and lumps of carbonised wood in the fill. Pit 6 was 62 cm deep and is therefore not primarily a sleeper pit. Pit 7 (see section, Fig. 31) was a sleeper beam pit cut into an Iron Age pit. The Medieval Charcoal report on p. 77 notes the presence of blackthorn fragments in Pit 3. The same explanation is offered as before, namely that blackthorn may have been present when the ground was prepared for construction and got swept into the pit as a natural tidying-up operation.

The construction of Buildings 1 and 2 is seen to be very different, either because one was earlier than the other, or because they were intended for different uses. It is suggested that Building 2 could have been a stable. It might have had some other purpose at some time in its life, because of the quantity of pottery found here, but the west wall gives the impression of being less continuous than the east one, and a possible reconstruction might be a close-boarded east wall with the roof sloping down to the western, more open, side; the two big posts at the north end to support the roof paired possibly by two more lying just outside the edge of Trench B at about Grid 11. The evidence for flooring was a sloping layer of grey-brown soil tilting towards the baulk, and thus following the contour. It had lumps of raw clay in it.

TABLE 10 — DEPTH OF PITS AND POST HOLES IN BUILDING 2

Note. Depths are measured from the base of the modern plough-soil. The medieval ground level here cannot be estimated, but will probably have been higher.

	Feature No.	Depth in cm.	Remarks
East	PH 39	48	
	PH 72	37	Iron Age pit beneath it
	Pit 2	12, 14 and 24	Three small joined pits
	Pit 11	24	
	Pit 12	26	
	Pit 13	30	
West	PH 126	37	
	Pit 3	27	
	Pit 4	21	
	Pit 6	62	Not a foundation pit
	Pit 7	30	Iron Age pit beneath it
North	Pit 24	30	
	PH 23	32	
	PH 22	28	
	PH 36	28	
	PH 35	26	
	PH 39	see above	

The Shed (Figs. 30 and 33)

Three foundation trenches, Pits 60, 62 and 63 lay about 3.5 m west of Building 1. Together they would make an open-sided shed or animal pen, measuring 4 m x 1 m. The widest, open, side faced east with a squared post hole, 237, roughly central. The southernmost foundation, Pit 60, lay over the Iron Age pit of the same number. There were no significant associated finds except for the spread of charcoal mentioned on p. 55 (see Fig. 10). Perhaps it was kept there in a sack at some time, though it could possibly be the remains of the shed if that was burnt down.

The Kitchen (Figs. 30 and 33)

One of the first features to be found in Trench B was a substantial and well-laid clay floor, F 140. It was about 5 to 10 cm thick and had one stylobate of 'firestone' probably from the Merstham, Reigate or Gatton quarries (see Building materials, p. 59 and Table 11). This was set roughly in the centre, F 148. At the western edge there was a patch of very bright burnt clay extending under the floor, clearly a hearth, F 243. The floor was cut through by one of the modern sewer trenches, and the north-east corner had disappeared, probably through early ploughing. Elsewhere the edges of the floor ended quite abruptly, as shown on Figs. 3 and 30 by a line of dashes, the missing corner being reconstructed by a dotted line. In spite of very careful searching, no foundations or post holes could be found associated with the floor apart from Gully 81, 40 cm wide and parallel to and 2 m away from the eastern edge of the floor. This gully might be the only foundation trench the structure possessed, or it could be an eavesdrip gully. If, as is more likely, because of the good drainage on the site, it represents the foundation trench for the eastern wall of the building, then the dimensions would be 9 m x 7 m, the area of the clay floor being 9 m x 5 m. A 30 cm length of fallen charred beam lay on the floor in the middle of the western side and there were a few smaller lengths of charred wood, possibly roof timbers. The large quantity of medieval pottery lying on and around the floor, together with the iron knives and other utensils (see p. 73) made it evident that this was the site of the medieval kitchen and this was corroborated by a large midden, F 141, lying just outside the floor and beside the path, between the Kitchen and Building 1.

The lack of recognisable walls for the structure posed a considerable problem of interpretation until the publication in *Current Archaeology*, No. 35, November 1973, of a medieval cob-walled building, probably a kitchen, at Wallingford Castle, which had no footings but whose walls had by good fortune been preserved to a height of 6 ft.

(2 m). Its dimensions are given as 8.50 m x 12.50 m and it is described as having three rooms. It is clear from the accompanying photograph that there is a longitudinal internal partition, creating a room of the same proportions as the clay floor at Brooklands. The parallel is thus sufficiently striking to substantiate a claim that our building too is a cob-walled kitchen, probably with a timber roof and a central post resting on the stylobate F 148 (see also Beresford and Hurst 1971, 91).

Parts of eleven bun-shaped loom weights were found in and near the kitchen (see p. 48 and Table 9). Four came from the same find spot, in the narrow room-space between the clay floor and gully 81. Again, there are no signs of post holes here for a loom, but fixed uprights would not have been necessary if a small portable loom of the Scandinavian type had been used (Hoffman 1964). Such a loom is displayed in the Saxon weaving hut at the Weald and Downland Museum, Singleton.

The Medieval Gullies and Building 3 (Figs. 4, 9 and 30)

There are five medieval gullies to be considered, and of these two, F 214 and 221 are laid out exactly parallel to Buildings 1 and 2. Although they are not associated with any post holes, it is thought that they represent foundations of a structure, Building 3. It would be 5 m wide and over 8.5 m long. Like the foundations of Building 2, they consist of a series of linked pits rather than a continuous level trench, their average depth is 27 cm. The open, northern end could have been closed by hurdles. Presumably the walls were of wattle and daub because almost the whole of Cutting 32 was overlaid by a dump of burnt rubbish, F 118 (see Fig. 30, not shown on the key plan). It was 4 m x 2.85 m and 3 cm thick, including fired clay, a whetstone, a lump of slag and small sherds of shell-gritted pottery. It lay well above the level of the foundation trenches and probably represents the end of the building. (F 215, a shallow medieval pit above F 214 was at this level, and is therefore taken to be later than Building 3.)

F 187, close to and uphill from Building 1, but not quite parallel to it, had clearly been cut more than once. Bones were found in it (see p. 85). This gully started from the edge of the cobbling which covered Cuttings 22 and 25 (see p. 17) and if, as is suggested, they are contemporary, they would make for a dry surface around the door of Building 1.

At the eastern edge of the site Gullies 165 and 166 are sited close to the Iron Age gullies, in fact 166 cuts across them at right angles. Gully 166 had in it survivals from both Iron Age and the Saxon phase, and in view of the amount of material, this gully has probably obliterated an Iron Age feature.

Possible Sixth Structure (Fig. 30)

In view of the layout of a parallel series of buildings, it could be just possible that Gully 166 has a twin, beyond the limits of Trench D, which would make it into something of the same sort as Building 3. But if so, Gully 165 has got to be explained away, and one cannot do more than note the possibility.

The Medieval Ditch (Figs. 4 and 30)

A small ditch, F 139, 1.08 m deep from the bottom of the modern plough soil and on average 3.2 m wide ran west-east from Trench A diagonally across the site, disappearing into the baulk at Cutting 48; it just reappears on the north in Cutting 60 (F 105). It was re-cut at least three times; it is interpreted as a medieval boundary ditch surrounding the homestead. There are two medieval post holes placed centrally in the gap between the ditch-ends in Cutting 59, PH 244, with a square-ended post in it, and PH 245. The finds from the ditch were carefully

examined with the possibility in mind that it might have been an Iron Age ditch re-cut in the medieval period. No rapid silt had survived the cleaning out, but neither was any Iron Age material found which could not have been derived from the old land surface when the ditch was cut through it.

If one assumes that the area enclosed by the ditch is sub-rectangular with rounded corners, and bears in mind that it lies outside the eastern edge of the excavated area, then the minimum size of the enclosure is something in the order of 41 m x 59 m (134 ft 6 in x 193 ft 6 in) and it may be that this is a feature which appeared very faintly on the air photographs taken by the RCHM mentioned on p. 3.

There is enough evidence to suggest the possibility that there was a pallsade connected with the ditch; first there is a scatter of nails near it, and secondly the section (Fig. 4) shows what looks very like a stake hole. Several lumps of broken dressed stone were found in the vicinity of the ditch (see Table 11).

TABLE 11 — ANALYSIS OF BUILDING MATERIALS

<i>Feature</i>	<i>Cutting</i>	<i>Geological Museum No.</i>	<i>Remarks</i>
BUILDING 1			
Hearth 112	42	—	Tiles in quantity
Post Pit 25	42	9 and 10	3 lumps dressed sarsen, one semi-circular lump of Kentish Rag, whetstone and very large flints used as packing, also one flint with a large hole which could have been used as a pivot.
Around Hearth 112	42	14 and 15	Ragstone (?)
Post Hole 59	42	13	Kentish Ragstone
	51	—	Sheet of lead, possibly off roof, 20 cm wide, the strip is folded sides-to-middle and the final width is 11cm. Cut and torn diagonally, one side is 23 cm long, the other, 10 cm.
BUILDING 2			
	44	16	Flint and Ragstone (?)
	50	18	Ragstone (?)
KITCHEN			
	57	1	Brick fragment and large sarsen
	60	4	Burnt Merstham, Reigate or Gatton stone
	60	3	Burnt Merstham, Reigate or Gatton stone
	60	2	Burnt Merstham, Reigate or Gatton stone, showing signs of having been dressed. These are probably all from the Stylobate No. 148.
SHED			
Beam Slot 60	52	—	Tile
PATH			
Flint pebbles in quantity			
BUILDING 3			
	32	17	Tile
	48	7	Top layers, but close to Ditch, (F 139), tile fragments, brick, and triangular lump of sarsen broken from a squared stone
	22	8	Sarsen
	25	11	Sarsen (?)
	47	—	Tile
1964-5 EXCAVATIONS			
112	42	—	Tiles of two sizes (see p. 7 and Fig. 32)
	—	—	2 tiles with splashes of vitreous glaze
	—	5	Dressed Sarsen
	—	6	Dressed burnt Sarsen

The End of the Period (Fig. 30)

Between Hearth 112 and PH 26 of Building 1 the ground was stained bright red, caused by fire. This could be explained away by the practice of spreading ashes at night, but at Brooklands they had pottery curfews to cover the unattended fires (see Fig. 39:69 and 41:87). The post in PH 27 had fallen southwards, and the one in PH 26 westwards. So intense must the fire have been that the sherds of pottery lying around, including residual Iron Age smooth dark wares were oxidised by it. There was no burning south of Hearth 112 in Building 1, the fire must have spread north-eastwards and burnt the house down. A dull red staining which was continuous on the subsoil from Cutting 25 to Cutting 35 was interpreted as due to the

presence of iron in the sand, rather than to the effect of violent burning in the medieval or any other period.

Buildings 2 and 3 probably burned down in the same fire, the evidence for this is contained in F 37 and F 118, the two dumps of burnt material (see Charcoal Report, p. 77).

There is no evidence for rebuilding on the site, yet the pottery sequence does not show a sudden interruption. It may well be that the house was rebuilt in the close vicinity although outside the area excavated. By the time of the Parliamentary Survey the 'tymber house covered with tyles' had been standing for some one hundred years on its present location, 400 m to the north (see p. 1).

The dating of the medieval period is discussed on p. 76.

Discussion of the Medieval Buildings—by S. E. Rigold

The Kitchen

This presumably lasted until the end of the occupation and shows no sign of re-siting. It was oriented with the long axis SSW, catching the prevailing SW wind, so that smoke could have escaped through a gablet on a roof that was probably hipped and easily spanned at about 5 m in width (the stylobate, F 148 would have carried a partial staging, not a ridge-post). The floor was defined but there was no trace of walling. This, it has been suggested, might have been of cob or clay-lump; if so, this might yet have stood on a rough footing of stone, which could have been totally salvaged, and the same consideration would have applied had it been timber-framed on a rough ground-wall, or even of rubble to some height. In any case, the fire was clear of the walls under S to W winds. The door was evidently opposite the hearth, on the SE side, and only when the wind came from this direction would there have been trouble from draught and overheating the walls.

Building 2 and the 'Shed'

The 'shed' is arguably coeval with the first stage of Building 2. There is nothing from the filling of the rough pits that define both structures to confirm this, but, with the possible exception of F 39, these pits are similar in depth and contain no certainly contemporaneous post-holes or 'post-pipes'. It appears that the pits were either clumsily dug, or, more usually, clumsily dug out to recover massive posts and, perhaps, rough sunken stylobates, as found in F 23. This would suggest that F 22, 23 and perhaps 36, belong to the same complex, while 126, 127 and perhaps 35 and 39 may represent a later structure on the site, unless the last two formed a terminal outshot to Building 1, or a linking bay.

The area of Building 2 was certainly one of early occupation; grass-tempered sherds and annular loom weights were available, or at least lying around when the pits were dug, or dug out. While it is just possible that the pits represent a structure of the 'grass-tempered' age, it is more likely that they represent the immediate predecessor of the building, that probably extended from F 39 to 126, and would have been aligned and presumably contemporary with Building 1. Both phases suggest a stable or byre rather than a dwelling, but in series with a dwelling, as appears to have been the case in the first phase at East Haddlesey, Yorks (Le Patourel 1973, 71-82), where the out-building consisted of lean-tos on both sides of a straight central frame. The earlier building at Brooklands also had a well set-out east wall, extending into F 72 but a little out of parallel with Building 1. It had earth-fast posts, well spaced, about 4 ft (1.2 m) apart and the suggestion of ground-slots seems deceptive. The west side, as represented by F 3, 4, 6, 7, etc. seems to have been open and irregular, perhaps a row of lean-to sheds, forming a little farmyard with the other 'shed'.

Building 1

This was undoubtedly the capital message of the settlement. It had a few signs of replacement but was essentially of one build and evidently durable if well maintained, having lasted apparently from the late 12th to the late 13th century, when it was destroyed by burning. During the lifespan of this house, and indeed somewhat earlier, proper heavy-framed structures, with sole plates on ground-walls and posts on stylobates are already attested in belfries, bridges, halls and barns of high quality. This house is at least the third completely recorded example of what seems to be emerging as a widespread class of rural houses built during the same period, well above 'peasant' level, but not heavy-framed or of similar structural quality. However the class may ultimately be defined, it shows recurrent features

in plan (some of which might also occur in heavy-framed or masonry houses) and recurrent features in fabric expressed in round post-holes, or pile-holes, and to a lesser degree in ground-slots. Such footings would be vulnerable to damp, despite the evidence for a century or so of occupation.

In contrast with the sandy, near-podsol ground of Brooklands, the two other completely excavated examples, from which most parallels are cited, are both on clay: Ellington, Huntingdonshire, moated during or more probably after an occupation lasting (not to put too fine a point on pottery dates) from the third quarter of the 12th century to the later 13th (Tebbutt et al 1971), and Newstead, a little west of York, where the first phase, moated from the start, may not have begun before the later 13th century (Le Patourel 1973, 56-58). These, like Brooklands, though ill-documented, were verging on manorial status and assuming its trappings, yet were no less 'vernacular' in construction. Whether the well-integrated plans were also vernacular, or more adventurous and more related to those of higher status, needs wider comparative study.

Plan

The Brooklands house, like the other two, was set out with its long sides remarkably straight and parallel. The occasional misaligned post-hole does not obscure the intended line. Each house was close to 20 ft (6 m) broad, which was a standard length of tie-beam in later, moderately large halls; but the post-holes, though well apart, did not respond to each other in regular bays. And each house was long; ignoring all possible adjuncts and outshots, Brooklands was at least 60 ft (18 m), Ellington 66 ft (20 m) and Newstead 78 ft (24 m). All were considerably longer than normal late-medieval hall-houses of the same breadth, but not 'longhouses' in the usual sense, including byre or barn. At Brooklands alone Building 2 in series and possibly contiguous with Building 1, might be taken with it to constitute a 'longhouse'. The transverse elements are various and sometimes hard to identify, but even a partition need not always define a structural bay. The roof, of necessity, was independent of divisions in the wall-structure, as in the subsequent equal-scantling 'trussed-rafter' tradition.

The plans of the whole class can thus be contrasted with other recurrent early patterns; with 'boat-shaped' plans, where the setting-out shows a deliberate bulge or entasis at points of outward thrust;¹ with strongly bayed structures, whether bayed from ground to apex as in cruck buildings or merely bayed up to the tie-beam (the archetypal box-frame, early exemplified in bridges);² with aisled buildings, a special case of the last-named, and the best attested in early contexts, where the baying is primarily on an endoskeleton and the whole proportionately much wider. External outshots or the occasional inset post do not affect these generalisations.

Between the parallel walls these houses include recognisable elements or rooms in series, but not necessarily in the same order or proportion. The division is tripartite but does not resolve itself into service, hall and parlour (or solar-undercroft) in the way that is already apparent in the later 13th century in such houses as Salisbury Old Deanery. Perhaps it is better to adduce the three requirements in the 12th century leases of St. Pauls (Hale 1858, 122-39) *camera* or *thalamus*, *aula* and *domus* or *domus privata* (sometimes between them, but more than a passage or a garderobe), and to find them precociously forced into a single building but thought of as separate. If so, it is debatable which of the three, even the *domus*, is the heated room; a hall is often referred to as a 'house-place'. Entrances and cross-passages may not yet be in established positions, but each building has a distinct front (west at Brooklands, south at the others), and a back, where adjuncts and outshots accumulate. The only exception is the horn-shaped projection from the front of

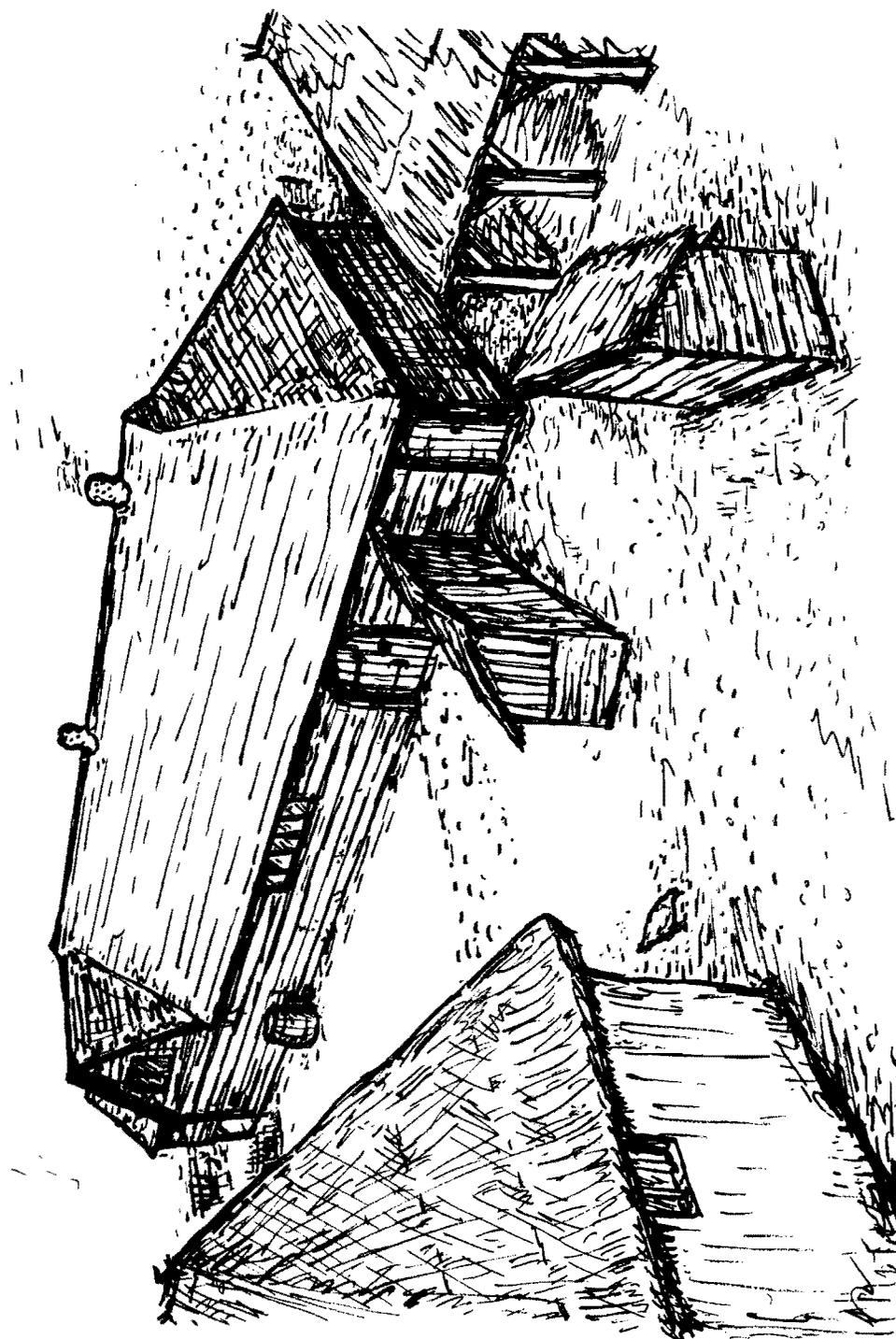


Fig. 33. Reconstruction drawing of the medieval buildings.

Brooklands (F 78, 228-231, 233, 250) which has been plausibly explained as a north-facing larder, but seems to be matched at the other side.

Reading northward from Building 2 the compartments of Building 1 (see Fig. 34 i) are:

A. A possible terminal outshot bounded by the lines of F 35-39 and F 65-31, but it is far more likely that the area was a passage, covered or uncovered, between the two buildings, and still less likely that F 23, 22 and 36

were ever part of Building 1.

B. A room some 7 m long and thus nearly square, ending at the equidistant PH 46, 27, 26 and 68, which almost certainly represent a partition either fully filled or more probably comprising two filled spaces and a central gap. The path from the Kitchen gives the general position of the main entrance, one side or other of this partition. It will be argued below that it was more probably on the further side, but there is also a suggestion of a door

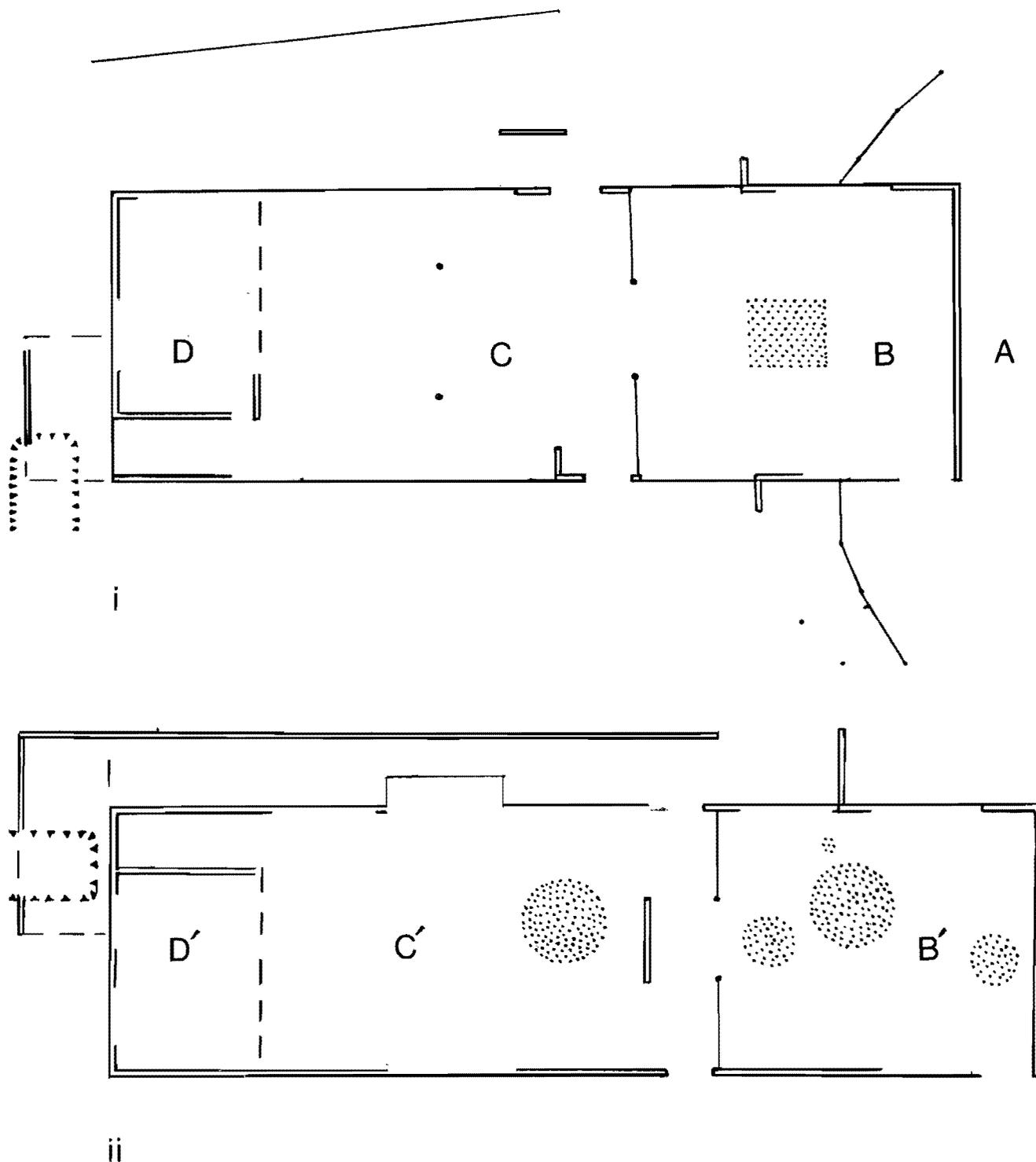


Fig. 34. Schematized plans: (i) Brooklands; (ii) Ellington.

towards the south-west corner of the room (the hasp in F 231 may belong to this, or to the supposed larder (see p. 73, no. 23 and Fig. 45), and possibly another on the east side. It is difficult to envisage an outshot on the east, but the strange oblique row of post-holes F 58-44 is matched by one side of the 'larder' (F 229-233) which might suggest a symmetrical pair of wind-screens (see p. 49). This room had a rectangular hearth of pitched tiles, a material that would suggest it was a relatively late construction, and, though there was a lower level of pitched tiles, the excavator's evidence is against a prolonged and intensive use of the hearth. There were traces of a light screen or fire-back facing the prevailing wind.

C. A longer room 8.5 m in all, but divided into two quasi-bays by inset post-holes which would have been at a suitable distance from the side-walls to suggest an aisled form if only they had been matched by holes (a) on their transverse axis in the side walls and (b, and more significantly) on their longitudinal axes, to support arcade-plates. The posts seem rather massive to carry low speres; an alternative explanation is that, despite the lack of evidence for a hearth, they carried a louver or smoke-hood. The concentration of paired holes and slots, F 66, 67-68, at the south end of compartment C, which, it is suggested below, were to carry heavy elements in the wall, such as door-durns, would point to the main doors having been in this position opposite each other, to imply a proper cross-passage, and even provided with a porch or 'baffle' (F 83-84) on the exposed east side. F 131-200 suggest that there was also a deep lean-to outshot on this side, not necessarily at the same time as the supposed porch.

D. A short compartment (3.5 m, but projecting farther in its western half), with a concentration of double and triple post-settings, suggesting that these were particularly load-bearing, and a distinct internal passage along the west side. There is little doubt that this was a floored compartment and that the stairs to the upper chamber were either within the lateral passage or external and supported by the post-setting F 159-161. If the former this setting could have carried a projecting garderobe. The chamber may have been jettied, but in any case was narrow enough to have done without internal support if the joists ran longitudinally.

It is safer to keep to the letters than to assign names to the rooms; a *domus* might be seen in either the heated compartment (B), the house-place, or the floored one (D), but C is probably the hall (*aula*). The position of the integrated high-end solar-and-undercroft (C) is forward-looking enough; the low-end room (B), more than a mere service-room and apparently with a single, central opening, has parallels not only in the grand late 12th century hall-complex at Farnham Castle, Surrey, but in much later and humbler examples in the west, such as 'Old Post Office' at Tintagel, Cornwall (Rigold 1973, 247). It seems that the overall plan is a persistent one, while the use of each part might change or vary. The slightly older plan of Ellington matches that of Brooklands in nearly every major element, as will appear from the schematised plans of both (Fig. 34, i, ii) in which Ellington (ii) is shown in mirror-image to emphasise the correspondence, and walls with sturdier footings whatever their superstructure may have been, are shown by double lines. But the distribution of hearths suggests that the rooms had been turned to different purposes.

Reading Ellington (Fig. 16, ii) from the west (which corresponds to the south at Brooklands), there is no equivalent to A, if it existed, but the area was not fully explored. B', just over 7 m long, corresponds with B, and is again bounded by a partition (less regular) with nearly equidistant posts. The excavators called it a kitchen, and several hearths, together with a mass of kitchen rubbish point to this as its final function; but it may have replaced an external kitchen. C is matched by C', 9 m long, which the excavators, probably correctly, called the Hall. A

cross-passage, *within* the room, is well defined, running between the partition and (opposite the presumed opening in that) a reedos sheltering a neat circular hearth, several times remade and finally surfaced with quarry (not pitched) tiles. The rest of the hall was very clean and a pentice, narrower than that suggested at Brooklands, ran along its rear wall. This was thought to be open to the hall for at least part of its length, thus forming an integral aisle, but the relative widths are not those of a typical aisled building. Corresponding to D is D', rather more than 3.5 m long, which likewise had a lateral passage but at the rear (pentice) side, and was extended longitudinally on that side for about half its width but reinforced throughout to carry an upper floor. At Ellington the evidence for the position of the stair (in the lateral passage) and the garderobe (in the extension with a clearance-pit, cf. F 124 at Brooklands) is clearer, and, such is the parallelism, it can be taken as valid for both.

At Newstead, where there seems to have been more than one phase, not easy to separate, the parallelism was much less marked. There may have been an internal aisle along the whole rear wall, in which case what might appear as a lateral passage came within it, whereas at Ellington it was within the main body. The hall was relatively even longer and the denser timbers, which suggest support for floors, occurred at both ends—in the short compartment (cf. D) and also the longer (cf. B), which seems to have had at least a partial floor, supported on a central post with a stylobate. There was no trace of a hearth anywhere. The house had a long, three-cell plan but beyond this the resemblances are largely in structural detail.

Structure

The ground-features at Brooklands may be classified thus:

1. Isolated post-holes, a few of which at least in the original Building 2, contained 'sunken stylobates', while the rest were very tight, without distinct 'pipes', so that the posts had probably been driven.

2. Pits in which posts had been set in pairs (a trio in F 85) to leave distinct 'pipes' and then packed, but needing to be joined at higher level to achieve full stability.

3. Holes in pairs (trios in F 111 and F 159-161), but set further apart and joined by shallow slots containing the carbonised remains of short plates.

Type 3 is best explained as a purely foundation feature, in which the apparent posts were short bearing-piles that supported the plates, giving a firm base on the shifting soil for an independent superstructure, but did not pass through them. It is arguable that in Type 2 the 'posts' were also bearing-piles, with broader plates at slightly higher level, to spread heavier loads concentrated in smaller areas within them. This would have allowed F 67-61 and F 25-68 to carry door-durns with a threshold longer than the interval between F 61 and F 25, but positive evidence is lacking. The remainder, Type 1, may well have been projecting piles, i.e. true earth-fast posts, since they are too far apart to spread a load. These classes indicate three grades of superstructure: 1 implies light walling, 2 heavier, but regular walling, 3 points of great compression in a weak soil. The last may be identified as F 85 and F 88, the extremities of the upper chamber, possibly jettied on three sides; F 66 and F 67-68, probably door-durns *and* the posts carrying the heaviest tie; F 64 and presumably F 56, another truss, with a smoke hood (?). What form the walls took is less clear; it certainly included posts at key-points and intervals in the running walling, and there is not enough residual clay to account for cob, clay-lump, or even a heavily daubed frame. There is also no trace of a continuous, or regularly interrupted plate to carry a normal frame or to form a trough for some stave-like form of upright planks. Unless a low

ground-wall has been totally removed, the probabilities point to a structure of posts and fairly light studs at long intervals, with most of the strength in stalwart horizontal planking, perhaps applied on both sides of the elementary frame.

At Ellington the pattern was different; though at one point there was a feature resembling a Type 2 pile-footing and there were several pairs of holes, much of the external walling was based on long slots, pressing against but not carried on whatever was in the generally closer-set post-holes. The slots were interpreted as carrying an independent wall of fairly light stave or stud-and-panel type, essentially vertical, and almost wrapped round the structural posts like a close-set fence, as at Cherhill barn, in a later phase (Rigold 1968, 58-65). Something of this kind is also possible at Brooklands if the sills have been totally obliterated. At Newstead, though the settings in general were also closer and the position points to a largely clay wall, there are two elements that also occur at Brooklands, the close-set pairs as in Type 1, and the sunken stylobates in separated holes, as in Building 2.

Each of these houses, despite the tiled hearths, had a 'soft' roof of thatch, shingle, or, particularly in view of the possibility that the lateral strength of the walls at Brooklands was provided by horizontal planking, a boarded covering of the type often recorded in inventories on subordinate buildings — *cooperta cum bordis* and such phrases as in an inquest of 1308-9 about Framlingham Castle, Suffolk (PRO E 368/79, LTR Mem. R. 2 Ed. II, M. 17a). In the roof we must posit lap-board; in the walls probably edge-to-edge, as it occasionally survives in barns. It might be claimed that the careful collection and analysis of nails does not allow enough of them for extensive use of planking. There are certainly not enough of them to suggest that there was much lath-work in the building, but planking does not need many nails and any objection would be more from shortness than from the fewness of the nails found. Wattle and normal framing would need no iron nails at all and a three-quarter inch riven or sawn oak plank could give great rigidity if secured by a few nails twice that length. Such a boarded 'sheeting' with few nails occurred on one of the bridge-trusses at Eynsford Castle, Kent (Rigold and Fleming 1973, 87-116, especially 95 and Pl. iv). Most of the nails would have left the site when what remained of the boarding was removed for fuel.

To sum up, the most plausible reconstruction of the house (Fig. 33) is as a long, straight, hungalow-like structure, clap-boarded or edge-boarded on the sides and perhaps on the roof as well, with its rough and partly earth-fast frame completely concealed. The walls were probably low, the roof at least no steeper than a late-medieval peg-tiled roof in the area and probably even-ridged. It would be hipped at the south end and weather, plus the garderobe, would hardly permit a gable at the north end either. The upper chamber would be little more than a garret, but lighting might have called for a gable at the north end of the west front and possibly another to light the hall (gables were used freely in early halls). There is no positive evidence for perforated chimney-pots, but this is the sort of house that had them. Buildings of comparable quality (and appearance?) are still with us from the 1914 war, admittedly of softwood, but nearing the end of their useful life. When the Brooklands house was burnt down after apparently a hundred years it may not have been regretted; it may even have been deliberate.

Building 3

This is beyond analysis, but too irregular for a proper slot-structure.

Notes

1. Allowance for subsequent movement and differential shrinkage of thin posts cut athwart the grain does not completely dispel the appearance of intentional bulging in such a controversial example as Baguley Hall, near Manchester, to say nothing of Little Moreton Hall, Cheshire. The bulging need not be confined to one point; at Cherhill barn, Wilts (Rigold 1968, 58-65) the base-cruck frames bulged beyond the aisled ones. There is no need to invoke the Vikings for this practical adjustment.
2. A complete study of medieval bridge-frames found in moats is in preparation for *Medieval Archaeology*.

The Building Materials—by F. G. Dimes and Martyn Owen, The Geological Museum, London

It should be noted that many of the specimens have been burnt and in some instances because of the changes that have occurred, led to difficulty in suggesting a provenance for the stone.

Nos. 1, 5, 6, 7, 8, 9 and 11 (see Table 11—Sarsen (sometimes called 'greywethers' or 'bridestones') are usually formed of hard, quartzitic sandstone. Their origin is somewhat problematical as they have never been seen in bedded formation. They appear to be residual blocks, more or less in their original position, commonly being too massive for the ordinary geological processes of weathering and transport to remove.

Nos. 2, 3, 4—tentatively assigned to Merstham, Reigate or Gatton Stone. Some beds of Merstham, Reigate or Gatton were (and still are, geologically) known as fire-stone, named from their property of resisting heat without decrepitating. These specimens are deeply weathered and show evidence of having been subjected to considerable heat. Merstham, Reigate or Gatton Stone was taken from the Upper Greensand, Cretaceous in age, from around those towns. It is a fine-grained, calcareous sandstone with some mica and glauconite. The stone was considerably quarried for building. Indeed, the quarries were considered so important that during the reign of Edward III they were kept in the possession of the Crown. These specimens cannot definitely be stated to be of the Merstham, Reigate or Gatton Stone as they are now so considerably altered and appear to have been decalcified presumably by the heat to which they have been subjected and subsequent weathering.

Nos. 10, 14, 15, 16 and 18—Glauconitic sandstone with ? sponge spicules. Again these specimens appear to have been subjected to heat and they are also considerably weathered and altered. They are assigned to possibly Lower Greensand, Cretaceous in age. No provenance is suggested but in some respects they match some varieties of Kentish Ragstone.

No. 13—Kentish Ragstone. Kentish Ragstone constitutes the main part of the Hythe Beds division of the Lower Greensand which is Cretaceous in age. The division is made up (especially in North Kent) of alternating layers of sandy limestone (ragstone) and soft, compact, grey, calcareous sand or argillaceous sandstone (hassock). The layers range in thickness from 6 inches to 2 or 3 feet. The ragstone is prone to much local variation. It may contain over 90 per cent calcium carbonate or it may contain much sand in the form of quartz grains. Grains of the mineral glauconite (a hydrous silicate of iron and potassium with magnesium and aluminium) are usually fairly abundant. Kentish Ragstone has been used at least since Roman times for building, especially in the South of England.

The Medieval Pottery

All the published pottery has been examined by Messrs. J. Hurst, D. J. Turner, F. Holling and M. Lyne, and the Surrey wares by Mrs. M. Smith, and their comments are incorporated here. It is greatly to be regretted that the site lacks good stratigraphy: the most effective dating evidence therefore is from the foundations of the structures. In cases where a reconstruction has been made from a small proportion of the vessel's circumference, the measurement is given, but it is omitted where the diameter could be measured and drawn with a fair degree of accuracy. A scale of one third has been adopted for the pottery drawings instead of the usual one quarter in order to allow for more detail, which may be particularly important in the small fragments of stratified material, e.g. from the foundations of buildings.

Types

The main pottery types found were as follows:

A. Grass-Tempered Wares

These are discussed fully on p. 47 and Table 8.

B. Pimply Wares

Hard dark-grey to black fabrics with grits standing out just under the surface, giving an effect similar to that found in Romano-British Derbyshire ware, reminiscent of goose-flesh. These fabrics seem related to Hurst's Early Medieval group at Northolt (Hurst 1961), where the colour, hardness and forms are similar. If this is accepted, the date range could follow too, i.e. c. 1050 to 1150, e.g. 3, Fig. 31.

C. Scratch-marked wares (none illustrated)

Only 10 such sherds were recorded, six from the Kitchen, two from Building 2 and the other two in close proximity with Building 1. At Guildford (Holling 1969) scratch-marked pottery was found in association with material broadly dated 12th to early 13th century. The marks on the Weybridge sherds were bold, up to 1.5 mm in width, and shallow, on the outer surface only.

D. Shelly Wares

Three types of Shelly fabric can be distinguished at Weybridge. Due to the acid soil the shell is usually leached out on the surface and edges, but can be seen in fresh fractures in Classes 1 and 2.

1. Saxo-Norman Black Fabric with a grey core, in olla-shaped vessels, e.g. 7. The conventional date range would be 1050 to 1150, but the question of primitive survival for this form, as at Laverstock (Musty 1969) ought to be considered. The fabric is not plentiful and is apparently soon superseded by
2. Red to Brown Shell Tempered ware with a grey core. This fabric, which has very large shell tempering, is very common on the site, second only to Red/Brown Sandy ware with a grey core (see below). It is well represented in the foundations of Building 1, where the examples appear to be early. Shell tempered fabrics are discussed by Turner (1967). The main occurrence of the ware appears to be between the years 1150-1250, but it could be present in a much diminished proportion for another quarter century in West Surrey.
3. Vesiculated Wares. This name has been given to a class of fabric in which the dissolved tempering, presumably shell, and which is not visible in fresh fractures, has left pits varying in size from small specks to irregular cavities up to, exceptionally, 4 mm

across; thus the majority of them are far smaller than in other shell tempered wares, and the colour range of the fabrics is different, often dun-coloured. Finger printing is usually present on the rim. In general the fabrics feel abrasive to the touch, in contrast to Red to Brown Shell Tempered ones, which are soapy. The fabric occurs in similar positions to the Red to Brown ones. Class D.2. For example many body sherds were found in the foundations of Building 2, so their date range is probably parallel.

E. Red to Brown Surfaced Sandy Wares with a Grey Core (Referred to in the text as R/BSG)

These were identified and discussed by D. J. Turner at Merton (Turner 1967, 56) and Reigate (Turner 1970, 29-36). They are by far the commonest fabrics on the site. The current date range is 1150 to 1275. There seems to be a sub-class at Weybridge, not common elsewhere, of dun-coloured fabrics, for example the fire cover, 87.

Brown-surfaced grey ware is another sub-class and seems very similar to Hurst's Developed Early Medieval Group at Northolt (Hurst 1961), for example 70 and the Reigate examples (Turner 1970, Fig. 1, 3-9), but the dates may be later than at Northolt, as the fabric is also found in the cream-slipped jug series at Merton dated to 1250-1350 (Turner 1967).

There seems to be a relationship between both Red to Brown Shell Tempered and Vesiculated wares with R/BSG, as some examples of the latter show these two distinctive temperings, for example, 6, 7, 15, 18 and 21. R/BSG with Shell Tempering is already known in east Surrey.

On most Surrey sites R/BSG gives way to Hard Grey Sandy Wares. No such fabrics occurred at Weybridge.

F. Surrey Wares

This is an umbrella-term for various 'white' wares whose colours vary from pale grey to cream and buff. Known kilns range from the Ash-Aldershot-Farnham group (Holling 1968, 139-42), and the Cheam-Kingston group to suspected ones in North Hampshire outside the Ash-Aldershot-Farnham area. No examples of the wares from the recently-discovered Kingston kiln (Canham 1970) have been found at Weybridge. The Kingston wares are harder and finer and the forms appear to be later than the Weybridge ones. The Ash-Aldershot-Farnham group could be a source for the cooking pots, but the jugs from known sites in that area lack the bridge spouts and elaborate forms of applied decoration seen on the Weybridge jugs. A source from somewhere in Sussex may have furnished the elaborate style of decoration, cf. the jugs from Tarring, in West Sussex Ware (Barton 1964, 10-27). The jugs from Bentley, Hants. (Wade 1944) in a very similar fabric to the Weybridge ones, would seem to have Sussex affiliations.

On general association with other known examples, the Weybridge 'Surrey' wares seem to start early, say 1250 and run up to the last quarter of the 13th or first quarter of the 14th century. For example, the Guildford pot (Dunning 1937b, Fig. 2, 5), is dated by association with polychrome ware to the period 1275-1320, yet at Weybridge there are parallels to it in R/BSG and the Shell-Tempered ware D.2; and secondly one can argue backwards from the products of the Kingston kiln which Turner has dated tentatively to 1250-1350 or 1400 (Turner, in Canham 1970). Since the Weybridge examples are demonstrably earlier than the Kingston ones Turner's earliest date would be the most appropriate. Surrey wares were less common on the site than R/BSG or Red to Brown Shell Tempered wares.

G. Cream-slipped Jug Series

These have been discussed by Turner (1967, 56). No examples of Turner's Class C, grey, reduced fabric, 13th-14th century, were found at Weybridge, so they may come too

late for this sample. A question is raised by the Weybridge jugs. If white was a sufficiently fashionable surface colour for a cream slip to be applied to a fabric, why was it subsequently covered with a brown paint? For example, no. 102. The whole series is possibly dated approximately 1250 to 1350, but in view of the absence of Fabric C the Weybridge series might end at least a quarter century earlier.

Note: For abbreviations used in the pottery descriptions see p. 24.

Kitchen (Figs. 35-38)

1. Saxo-Norman form, black shell-gritted. At Laverstock Group B Cooking pot with Type I rim (Musty 1969, 100). Possibly before 1150.
2. Saxo-Norman form. Coarse-gritted, OS grey-brown, IS and C brown. Diameter of base 17 cm. Cf. Laverstock, Fig. 9 19.
3. Laverstock Type I rim. Rough-tempered, with pimples, O and IS and C grey-brown. Knife trimming on under-side of rim.
4. Laverstock Type I rim. Coarse flint-grit ware. OS dark grey, IS brown, C grey. Hand-made.
5. Smooth, black, vesiculated. Very soft fabric.
6. Laverstock Type I rim. Vesiculated, dun-coloured R/BSG (Turner 1967), some flint grits. Probably hand-made. Late 11th-early 12th century.
7. Hard, slightly vesiculated R/BSG. 5.5 cm of rim.
8. Rough-textured fabric with pimples. O and IS and C black. Related to scratch-marked pottery. Possibly 12th century.
9. Red, soapy, shell-gritted. 5.5 cm of rim.
10. Laverstock Type III rim, R/BSG. 3 cm of rim.
11. Rough-textured, with pimples. O and IS brownish-grey, C dark grey, coarse sand grits.
12. Flat-topped rim. R/BSG. Soft. ?c. 1250 plus. 5.4 cm of rim.
13. Slightly vesiculated sandy ware.
14. R/BSG. OS with uneven knife trimming. Fine dark grits. Cf. Court Gardens, Hants (unpublished site, personal communication, R. Jefferies).
15. Smooth, slightly vesiculated R/BSG. 8.5 cm of rim.
16. R/BSG. 6 cm of rim.
17. R/BSG.
18. Laverstock Type III rim. R/BSG, rough and vesiculated, 7 cm of rim.
19. Laverstock Type III rim. Vesiculated, very fine ware. Same fabric as 95. 6 cm of rim.
20. R/BSG.
21. R/BSG. Slightly vesiculated.
22. R/BSG. Dark green-brown glaze. The red outer layer is thick and pronounced, as in East Surrey examples.
23. Laverstock Type III rim. Vesiculated sandy ware. Knife-trimmed on shoulder. 9.5 cm of rim.
24. Surrey ware. Part of a large cauldron or cooking-pot. Cf. Laverstock, Fig. 11: 48 and very similar vessels with an elbow handle in a similar fabric from Leadenhall Market (London Museum Catalogue, Fig. 74).
25. Surrey ware. 7 cm of rim. First quarter of 14th century.
26. Surrey ware. Stained outside. Early 14th century. 7 cm of rim.
27. O and IS pinkish buff with white patches, C cream to red. Possibly misfired Surrey ware. Early 14th century. 7.5 cm of rim.
28. Jug decorated by vertical lines of overlapping scales between diaper rouletting on raised bands. OS cream with pale green-brown glaze. C and IS pale buff.
29. Surrey ware. Bentley type fabric (Wade, 1944). Traces of brown paint under glaze.
30. Jug. Surrey ware. Bentley type fabric. Green glaze. Decorated with girth grooves below the rim and wave combing.

31. Surrey ware. Green glaze, stab pattern.
32. Surrey ware, Bentley type fabric. Group of at least four FT impressions. Traces of green glaze. Probably 14th century.
33. Red shell-gritted. Decorated with applied puckered strips, an effect which has not been obtained by finger indentation, rather by alternating pressure during application. Note similarity of form to 81.
34. Saxo-Norman form, Laverstock Type I rim. Black shell-gritted ware.
35. Laverstock Type I rim. Smooth vesiculated ware. Cf. 91.
36. Probably a dripping pan of elliptical form, because diameter of sherd would be 40 cm if reconstructed as a circle. R/BSG, shell-gritted.
37. R/BSG. Unusually upright rim angle. 8 cm of rim.
38. R/BSG. 5.5 cm of rim.
39. Smooth, vesiculated. Knife trimming at shoulder. 9 cm of rim.
40. Water pipe. OS brown-buff, IS brick red, C red. Mixed grits. Cf. Laverstock, Fig. 25. 197-201.
41. Dun-coloured R/BSG.
42. Surrey ware, green glaze.
43. Pan with spout, R/BSG. Very roughly made. Stab pattern on top of rim and spout.
44. Skillet. R/BSG. Shallow grooving on rim.
45. R/BSG. Mid 13th century.
46. Handle. R/BSG, heavily painted with brown paint. Not illustrated.

Building 1—Foundations (Fig. 39)

47. Red-to-black shell-gritted. Flat-topped expanded rim. 7 cm of rim. Pit 56.
48. Red, soapy shell-gritted. Flat topped expanded rim. 6 cm of rim. Pit 66. Cf. 107. This sherd suggests the flat flange arrived at Weybridge earlier than proposed by Rigold at Eynsford (Rigold 1973, 87-116).
49. Red shell-gritted. 8 cm of rim. Pit 64, PH 64b.
50. Black, early, shell-gritted. Flat topped expanded rim. 2.2 cm of rim. Pit 64, PH 64b.
51. Black, early, shell-gritted. 3 cm of rim. Pit 64, PH 64b.
52. Red, soapy, shell-gritted. 6 cm of rim. PH 49.
53. Red shell-gritted. 3.5 cm of rim. PH 65.
54. Sandy ware. O and IS red, C grey. 2 cm of rim. PH 65.
55. Dark grey pimply ware. 5 cm of rim. PH 65.
56. Black, shell-gritted ware. Stained black inside. 5 cm of rim. PH 65.
57. Dun-coloured R/BSG. Upright rim, 4 cm of rim. PH 49.
58. Black, shell-gritted. 2.5 cm of rim. PH 94.
59. R/BSG. 3.5 cm of rim. PH 94.
60. Black, shell-gritted. Flat topped expanded rim. 3 cm of rim. PH 94.
61. Dun-coloured R/BSG. Heavily blackened outside. PH 46 and 47.
62. Hard, smooth, vesiculated. O and IS brown, C reddish-brown, 5 cm of rim. Beam slot 28-31.
63. R/BSG. Soot encrusted outside. Laverstock Type II Two-stepped rim, here developed almost beyond recognition. PH 46.
64. Red to black shell-gritted. Flat topped expanded rim. 3.5 cm of rim. Beam slot 40.
65. Surrey ware. Bentley type fabric. PH 228. This sherd is later than anything else in the foundations and demonstrates that PH 228 is a later addition.

Building 1—Material representative of the occupation levels (Figs. 39 and 40)

66. Lamp, R/BSG. IS heavily sooted. Cutting 49.

67. R/BSG. Faceted inner and outer edges of rim. 4 cm of rim. Cutting 56.
68. Fine R/BSG. Brown and green glaze. Cutting 53.
69. Fire cover or curfew, R/BSG. Cutting 56.
70. Vesicated ware, related to R/BSG. OS dull red, IS dun brown, C dark grey. Cutting 51.
71. Sandy ware. O and IS and C brick red. Yellow glaze. Rilling on neck. Cutting 51.
72. R/BSG. Cutting 42.
73. Surrey ware, Bentley type fabric. Combed pattern, green glaze. Cutting 51.
74. Foot, R/BSG. Shallow vertical combing. Cuttings 53-4.
75. Surrey ware. Green glaze. Grooved and ridged pattern. Cuttings 53-4.
76. Hard, smooth vesicated ware. O and IS light brown, C light grey, small flint grits. 1964 Excavation.
77. Surrey ware. Soot encrusted. Green and brown glaze at base of IS. Cutting 56.
78. Surrey ware. Laverstock Type III rim. Heavily sooted outside. Cutting 51.
- 79 and 80. Scale pattern. O and IS brick red, C pale grey. Yellow glaze on 79. Brown slip on OS. Much eroded. Cf. 108. Cutting 51.
81. Surrey ware. Applied strap pattern ending at the neck. Heavily sooted on the outside. Traces of brown paint and glaze under rim. Splashes of glaze inside. Cutting 56. Cf. Dunning 1959, Fig. 27:7 and Dunning 1937b, Fig. 145. 5.

'Larder' (Fig. 41) (See p. 52 and also sherd 65)

82. Globular jug with bridge spout and plain strap handle. Surrey ware. Applied decoration forming inverted Vs. Glaze on upper half of body varying from yellow to green. Three groups of three thumb impressions at base. Cf. Holling 1964, Fig. 5: 8. Sherds of this jug were found in 1965 and plotted by D. J. Tomalin spreading up to the hearth. They articulate with those found in 1970.
83. Sandy ware. O and IS dull red, C grey-buff. Yellow glaze.
84. Bridge spout, Surrey ware. Fabric similar to Bentley or Court Gardens, Hants. Whole fabric pinkish buff. Metallic green glaze.
85. R/BSG. Brown paint in the indentations, traces of yellow-green glaze. Shallow FN lunate pattern.
86. A pale version of R/BSG closely resembling Surrey ware. O and IS pinkish buff, C grey. Olive glaze. Very deep grooves on handle and pie-crust indentations at edges.
87. Fire cover. Hard sandy ware. Applied strap pattern at top and faint traces down the side.
- 88 and 89. R/BSG with cream slip. Fabric A of Turner's Cream Slip Jug series at Merton Priory (Turner 1967). For similar decoration on cream slipped jugs see also Turner 1975.

Building 2 (Fig. 42)

- (90-93 from foundations, the remainder from occupation level)
90. Rough-textured grey-black fabric with pimples. O and IS and C grey-black. Laverstock Type I rim. Cf. Early Medieval Ware from Northolt (Hurst 1961, 216). PH 36.
 91. Smooth R/BSG ware with vesiculation. Black staining. Cf. 35. Pit 7.
 92. Sandy ware. O and IS brown, C grey. 3 cm of rim. Pit 7.
 93. Vesicated ware. Pit 7. Not illustrated.
 94. Hard rough sandy ware. O and IS brown C pink-buff. 7 cm of rim, Cutting 44.

95. Vesicated very fine ware. O and IS brown, C dark slate-grey. Laverstock Type III rim. Cf. 19. 4 cm of rim. Cutting 44.
96. Surrey ware, Bentley type fabric. 4 cm of rim. Cuttings 44-5.
97. Lamp, sandy ware. OS brick red, IS heavily stained black, C grey. 4 cm of rim. Cutting 44.
98. Surrey ware, Bentley type fabric. Green glaze. Cutting 44.
99. Soft smooth sandy ware. Cream slip blobs with a brown slip or thick paint over all, pink oxidised fabric. Cf. 128. Cutting 44.
100. Surrey ware. Splashes of green-yellow glaze. Cutting 44.
101. R/BSG. Traces of yellow glaze on outer surface. Cf. Merton Priory (Turner 1967) ? 1250-1350. Cuttings 43-54.
102. Fine sandy ware. Pinkish buff surface, brown paint and green glaze. Very pale buff core. Cutting 45.
103. Rod handle, Surrey ware, Bentley type fabric. Green glaze. Cutting 44.

Between Buildings 1 and 2 (Fig. 42)

104. Bridge spout. Fabric B of Turner's Cream Slip Jug Series at Merton Priory (Turner 1967). Traces of brown paint over scales. Specks of green glaze elsewhere. Possibly from the same source as 125 and 135, but different fabric.
105. R/BSG.
106. Brown to grey-surfaced shell-gritted. Flat topped expanded rim.
107. Necked storage jar with flat topped squared-off rim in R/BSG shell-gritted ware. The form is unlikely to be earlier than the late 13th century. Cf. for example Eynsford, (Rigold 1972) and Northolt (Hurst 1961) suggesting that some of the 'primitive' fabrics persisted until this date, as is borne out at Laverstock (Musty 1969). But see 48.
108. R/BSG. Scale pattern. OS covered with a brown slip. From the shed.
109. Shell-gritted.
110. Surrey ware, OS soot stained.
111. Slightly vesicated R/BSG. OS stained black. Possibly a dripping pan. At the angle the IS shows a small sharp indentation, the rudimentary beginning of a spout. Since the angle is 120°, the plan could be reconstructed as a hexagon.

Not in any Feature (Figs. 43 and 44)

112. Saxon grass-wiped fabric, hand-made. O and IS varying shades of brown. Soft grits, possibly grog and sand. Cutting 25, north of Building 1.
113. Red soapy shell-gritted. Flat topped expanded rim. Cutting 43, over Building 2.
114. Laverstock Type I rim. Same fabric as 11. Parallel at Northolt (Hurst 1961) for form. Early Medieval, 1050-1150.
115. Vesicated sandy ware. O and IS brick red, C grey, very many small flint grits. Cf. 118. Cutting 53.
116. R/BSG. Knife slashing on rim. Parallel at Northolt (Hurst 1961, Fig. 67: 30, 31, 35). 1100-1200 at Northolt but in East Surrey 1100-1250. Cutting 43 over Building 2.
117. R/BSG. Top of rim faceted, 5 cm of rim. Cutting 22.
118. Vesicated sandy ware, OS brown, IS grey, C dark brown. Small flint grits. Cuttings 53-4.
119. R/BSG. Rim folded over on inside. 4 cm of rim. Cutting 53.
120. R/BSG. Soot on outside, 13th century. Cutting 48.

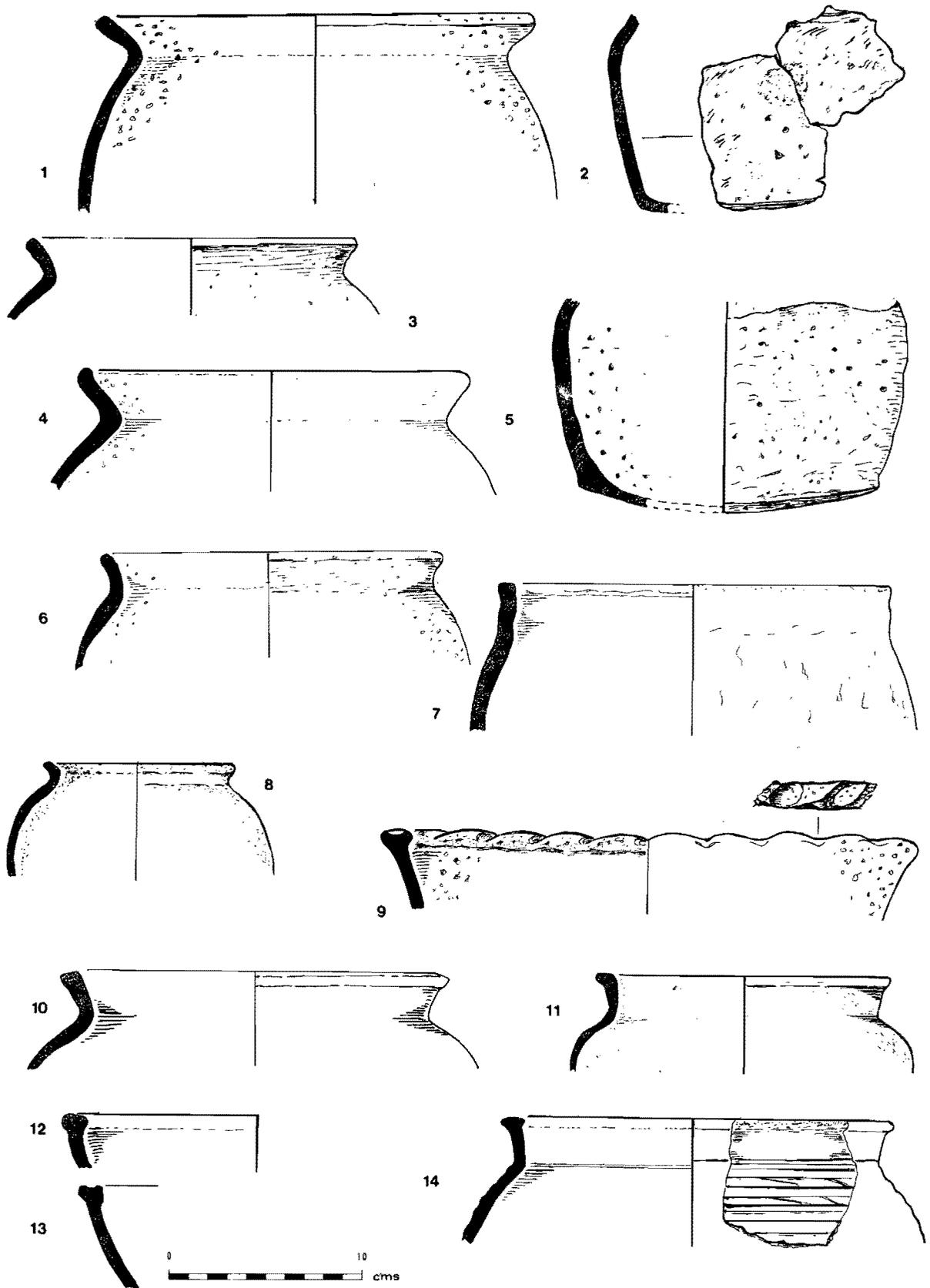


Fig. 35. Medieval pottery from the Kitchen (1) Nos. 1-14.

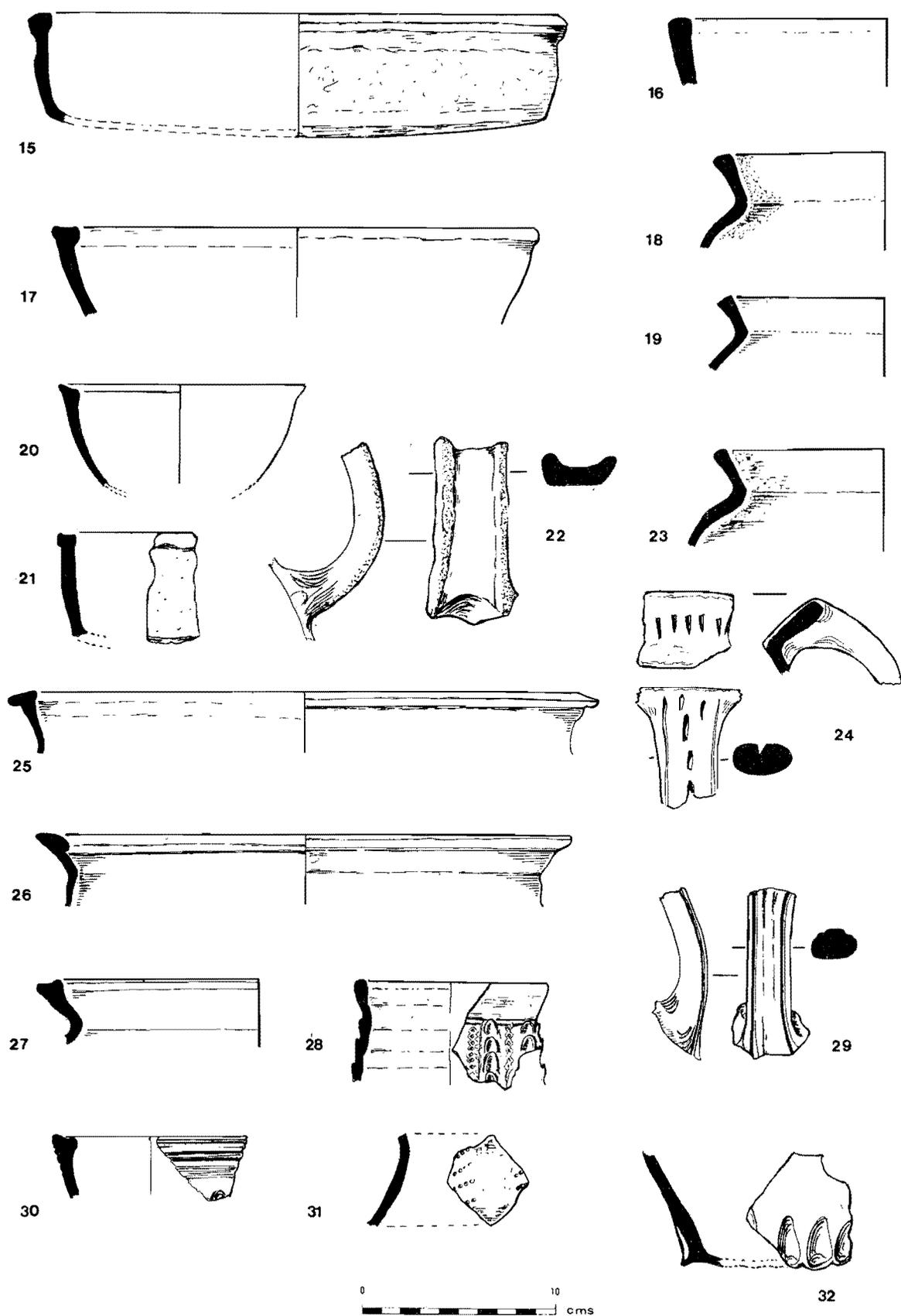


Fig. 36. Medieval pottery from the Kitchen (2), Nos. 15-32.

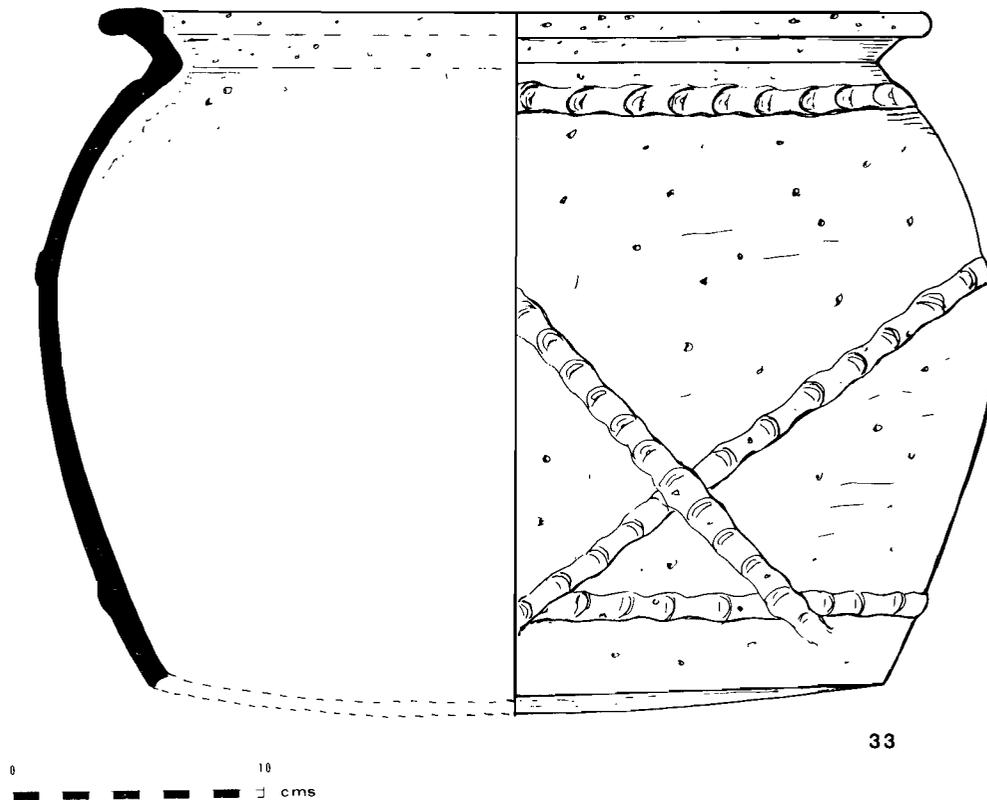


Fig. 37. Medieval pottery from the Kitchen (3). No. 33.

121. Hard rough sandy ware. OS pink, IS and C buff. Stab marks on top of rim, 3 cm of rim. Cutting 51, Topsoil over Building 1.
122. Shell-gritted, soot stained, Cutting 53.
123. Lamp, R/BSG heavily sooted. Cf. Laverstock (Musty 1969, Fig. 24). c. 1250.
124. Shell-gritted, soapy surface. Laverstock Type IV rim. Cutting 54.
125. IS brick red, OS dull green glaze over red, giving buff effect; over this a slightly raised diaper-pattern decoration in white slip retaining traces of glaze.
126. R/BSG, Guildford type rim. Note similarity of form to 81. Outside NE corner of Building 1.
127. Surrey ware, Bentley type fabric, Stabbing on handle, green glaze, Cuttings 53-4.
128. R/BSG. Splash of green glaze, Cutting 50, NW corner of Building 2.
129. Unknown object, possibly fragment of a tail. O and IS including edge, grooved. Pale buff fabric, pale grey C. Traces of green glaze. Found in 1964 excavations.
130. Surrey ware, Bentley type fabric. Groove decoration, green glaze. Not the same pot as 73. Cutting 48.
- 131 and 132. Surrey ware, Bentley type fabric. Groove decoration, green glaze. 131 from spoil heap, 132 from Cutting 48.
133. Hard smooth sandy ware. OS pale red, C pale buff. Splashes of yellow-green glaze. Cutting 57.
134. O and IS and C pinkish buff, grooved decoration. Yellow-green glaze. Cutting 50, NW corner of Building 2.
135. OS cream slip, traces of dark brown paint, green and orange glaze, IS grey, with the slip from OS extending just over rim, C pale grey. Cf. 99. Trench A.
136. Surrey ware. Very deep knife slashes, green glaze. Cutting 53.
137. R/BSG, OS heavily scored. Angle uncertain. Cutting 58.
138. Very fine hard fabric. Cream throughout, yellow glaze. Cuttings 53-4. Rim form Cf. Brill. (Jope 1942, 1945, 1953).
139. Surrey ware. Slash pattern, green glaze. Traces of brown paint, Cuttings 53-4.
140. Surrey ware, Group I of Hurst's types (Hurst 1963, 295-98) i.e. firmly thumbed underneath and only lightly at sides. Traces of green glaze inside and out. The potter's finger prints are clearly visible. Trench D, bulldozer clearing.
141. Surrey ware, with black inclusions. Finger impressions in groups of three, Trench D, Bulldozer clearing.
142. O and IS pink, C buff. Cutting 54.
143. Surrey ware. Flat rim. Cutting 48.
144. Water pipe. Cf. 40.
145. Surrey ware, soot stained outside. Probably West Surrey because skillets have not been found in East Surrey. Trench C.
146. No temper, a little fine sand in clay. O and IS red, C pale grey-buff. Traces of yellow glaze. Between Building 2 and shed. Cutting 50.
147. Post-medieval. Olive green glaze on cream fabric, c. 1475. Cutting 57.
148. Post-medieval pipkin rim. Olive-green glaze on cream fabric, 17th century. Cutting 50.

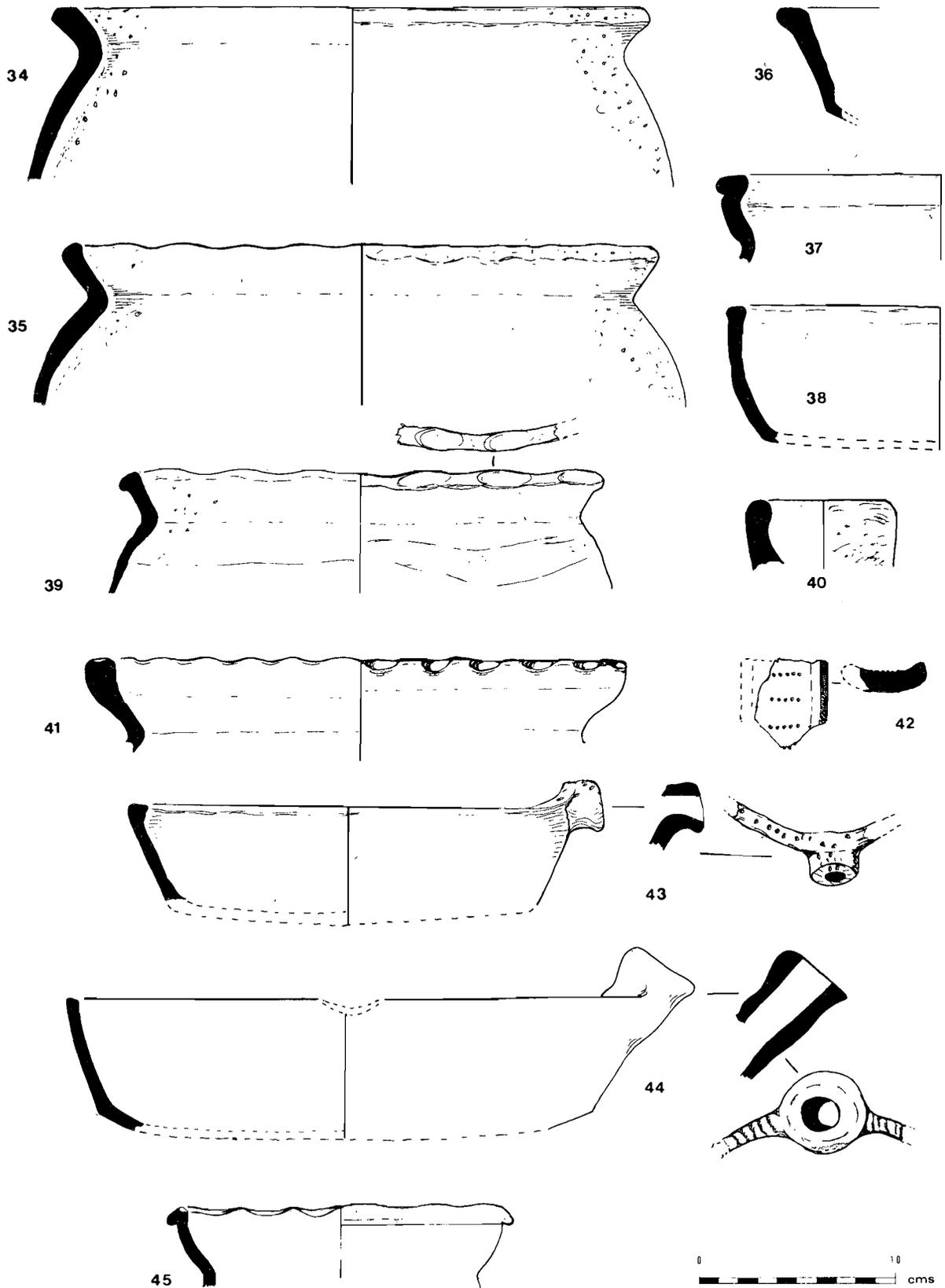


Fig. 38. Medieval pottery from the Kitchen (4). Nos. 34-45.

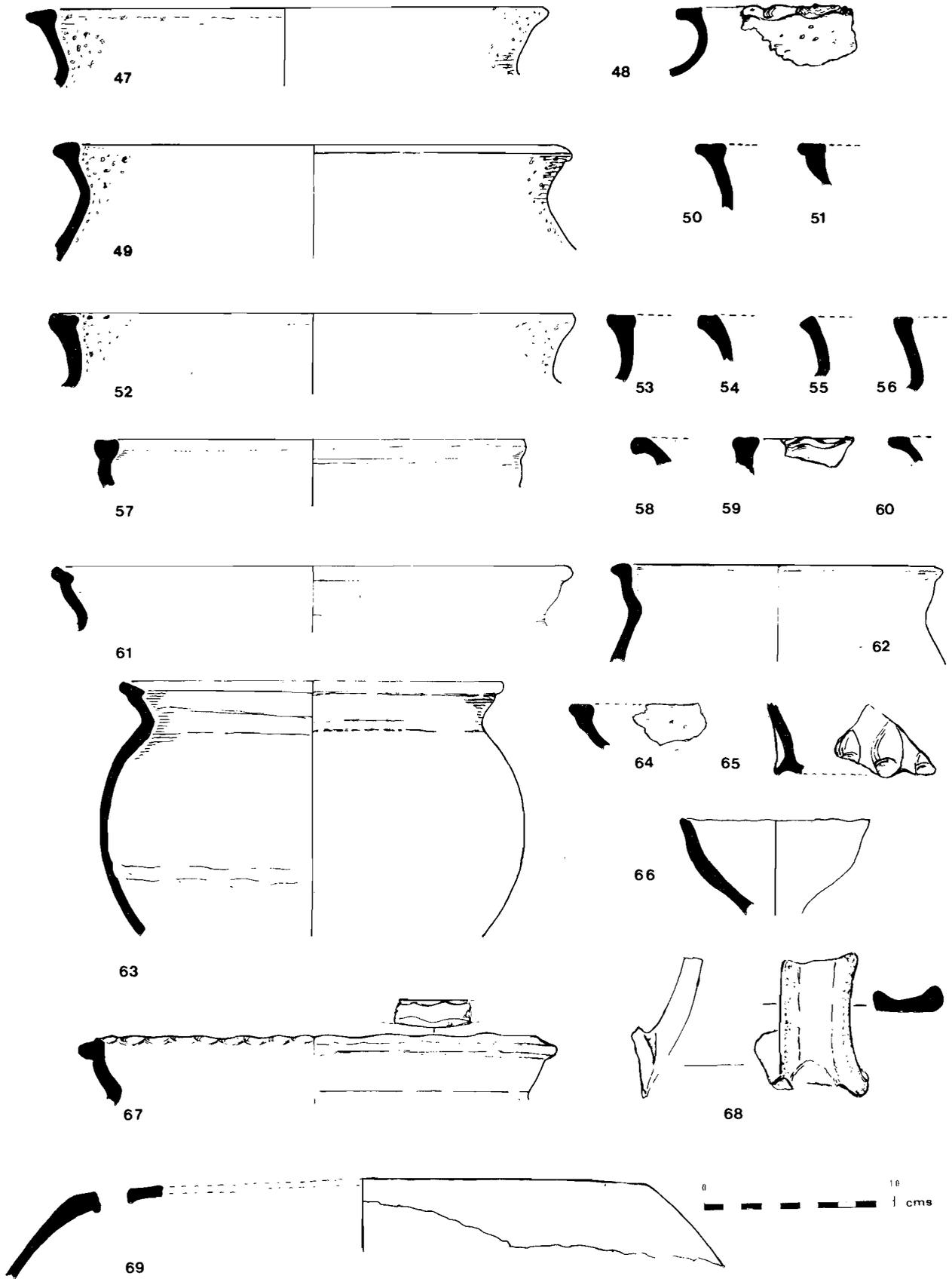


Fig. 39. Medieval pottery from Building 1 (1) Foundations, Nos. 47-65; Occupation, Nos. 66-69.

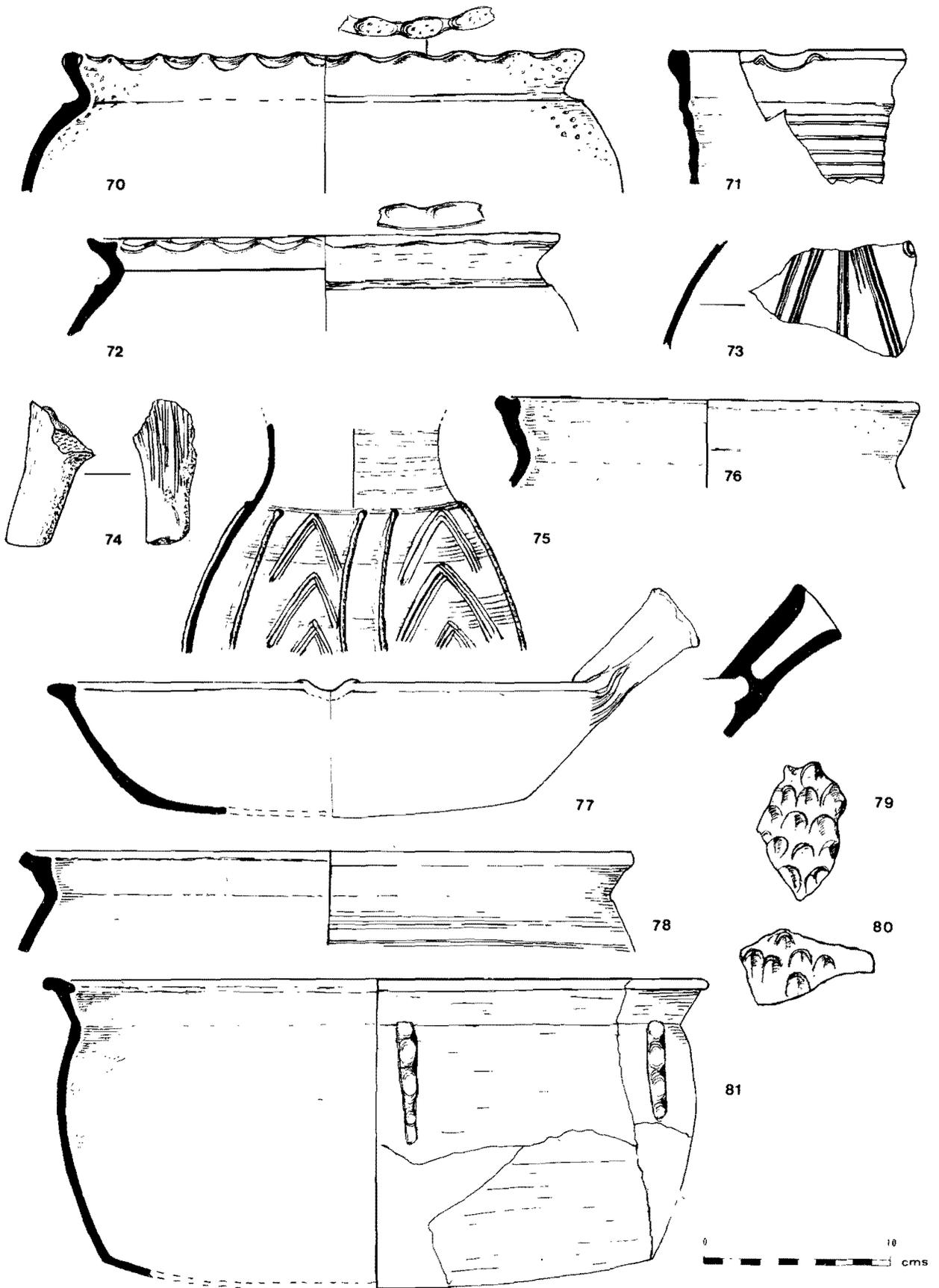


Fig. 40. Medieval pottery from Building 1 (2) Occupation, Nos. 70-81.

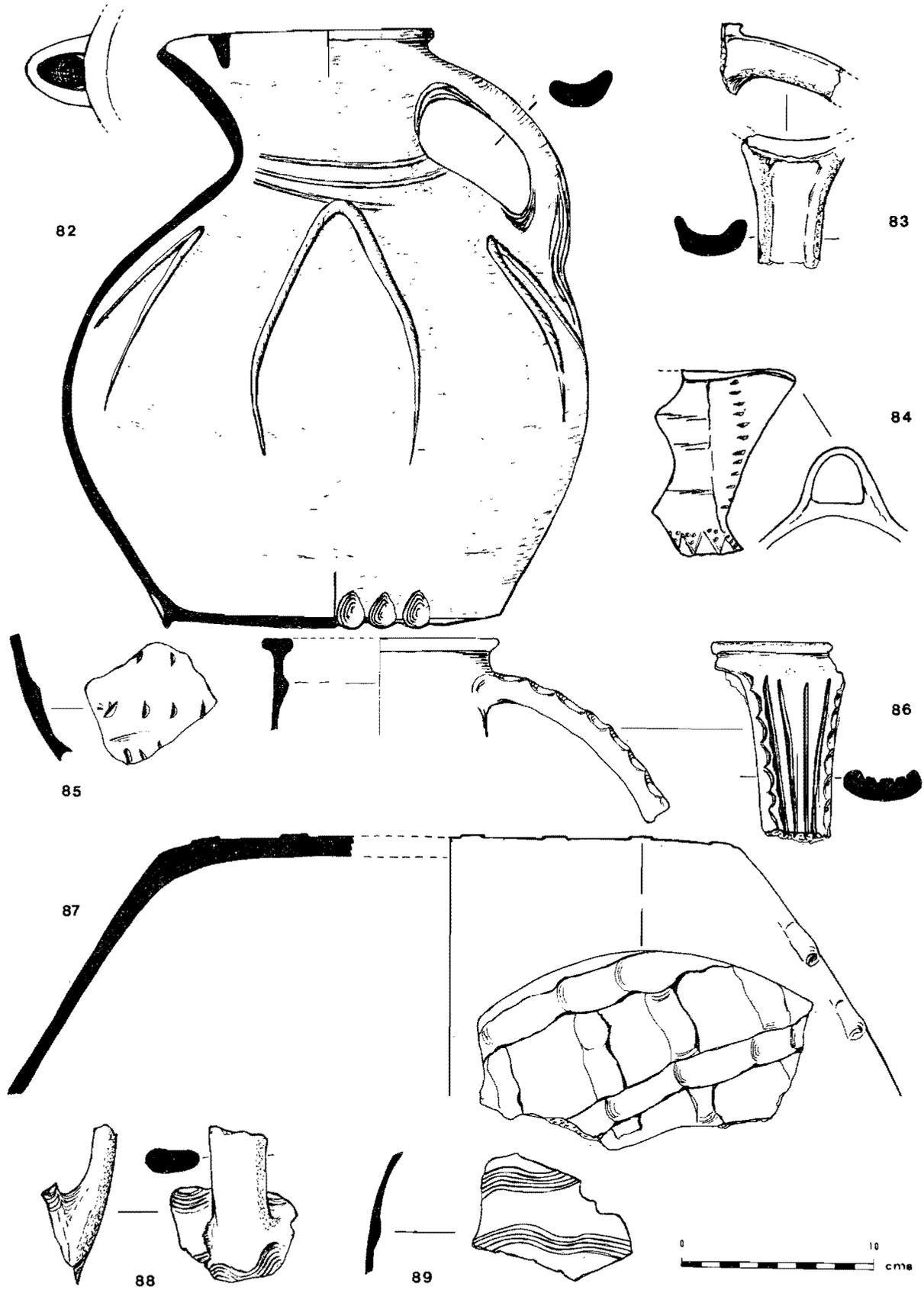


Fig. 41. Medieval pottery from Building 1 (3) 'Larder' Nos. 82-89.

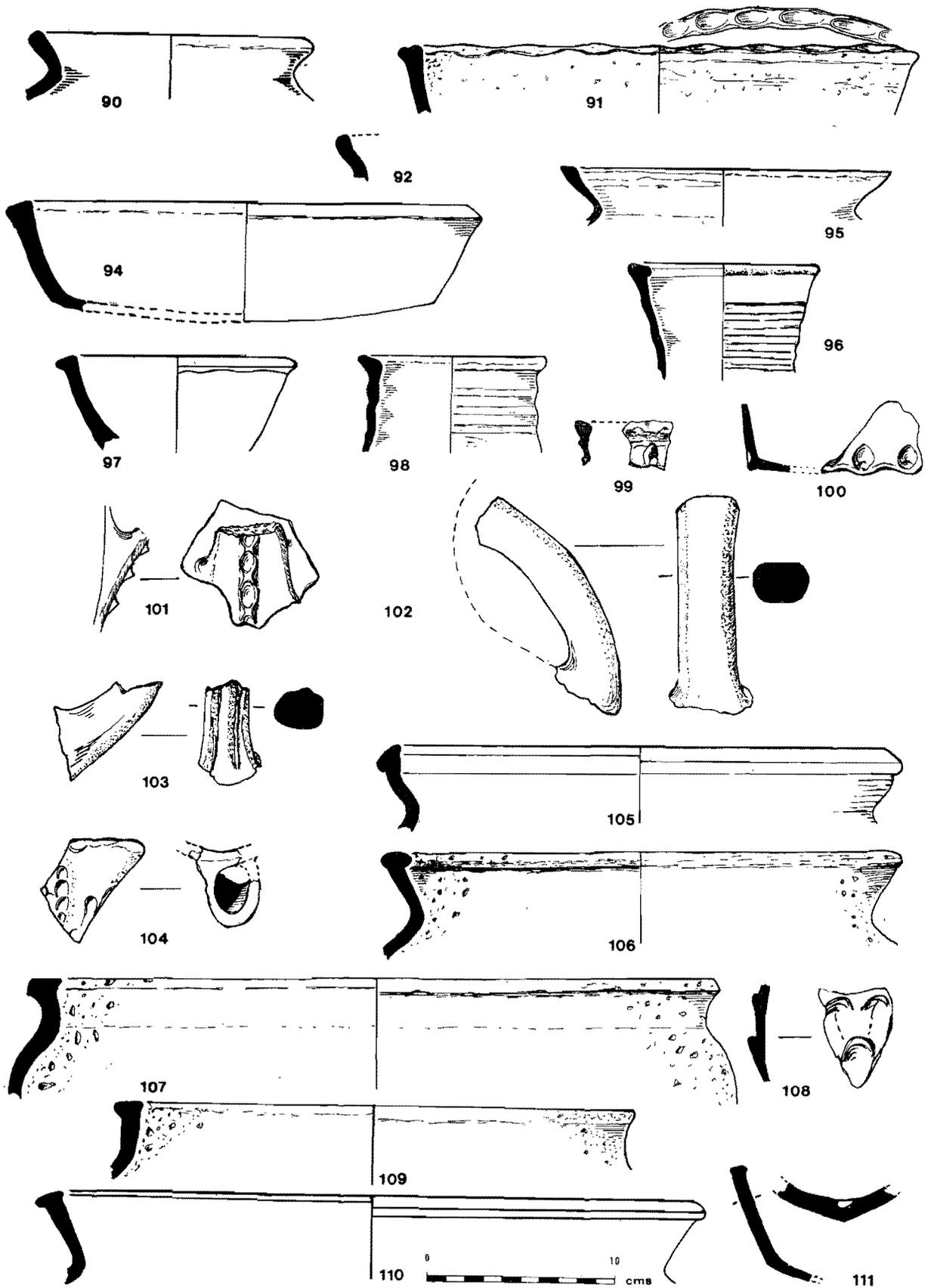


Fig. 42. Medieval pottery from Building 2, Nos. 90-111.

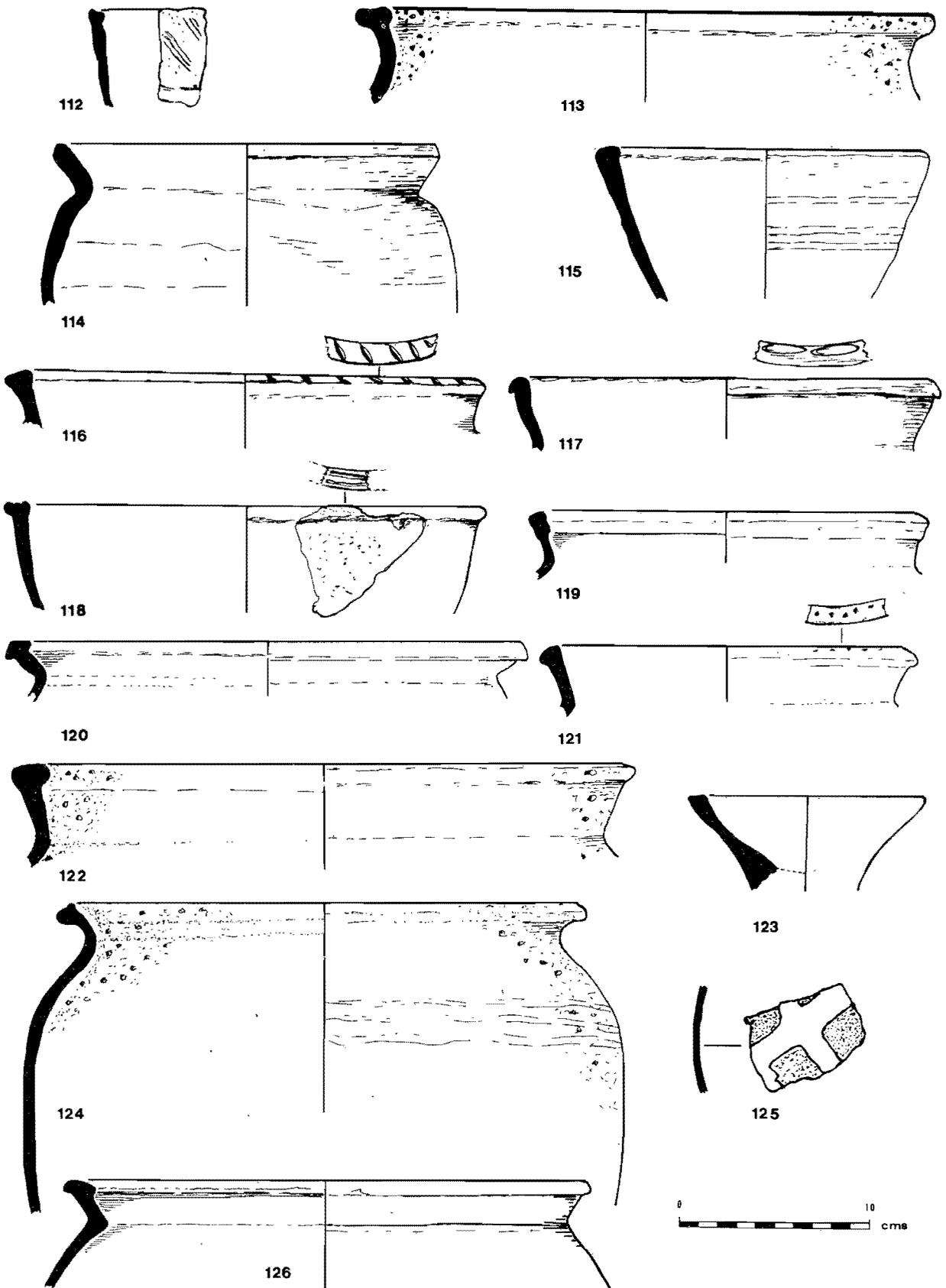


Fig. 43. Medieval pottery: not in any feature (1). Nos. 112-126,

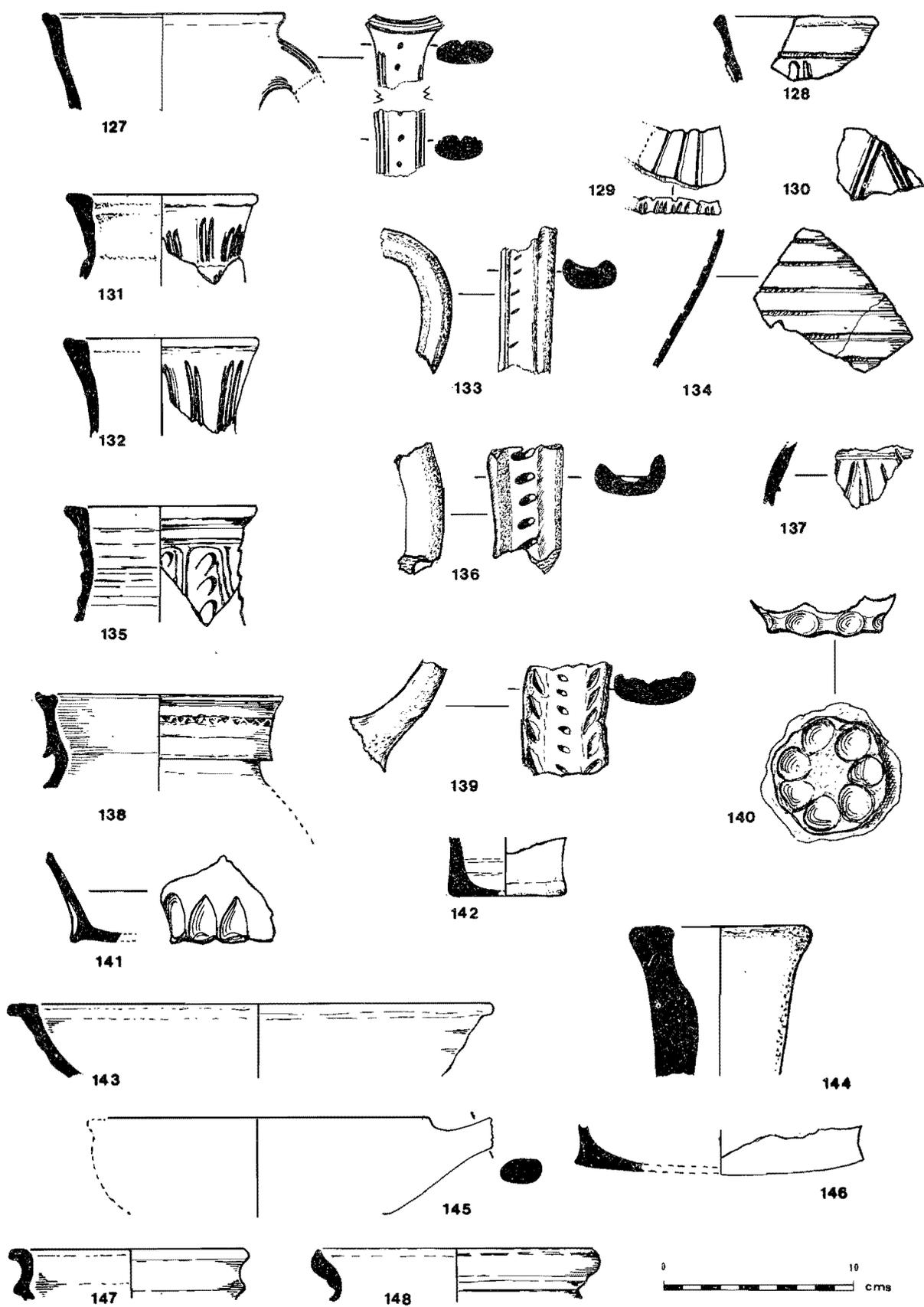


Fig. 44. Medieval pottery: not in any feature (2), Nos. 127-148.

Medieval Iron Objects—by Ian H. Goodall (Spur, by Blanche Ellis) (Fig. 49)*Knives*

1. Knife, back and cutting edge taper equally until the back angles sharply down to the tip. A similar knife comes from a context of c. 1250-75 at Clough Castle, Co. Down (Waterman 1954, 137, Fig. 11.9). Cutting 53, Path. (This knife was examined by R. H. Kenyon as part of his work for a BSc degree at the University of Surrey. His paper, on the techniques involved in the manufacture of the blade, is among the site documents to be deposited in Guildford Museum).

2. Knife, blade and tang incomplete. The back and cutting edge taper equally towards the tip. This is the most common type of knife and is found throughout the medieval period. Cutting 44, Building 2.

3. Knife with angled back, tip lost. A similar knife is known from a context of c. 1150-1250 at King's Lynn, Norfolk (excavated by Dr Helen Clarke). Cutting 55, Kitchen area.

4. Incomplete knife, convex back to blade. Two plates, the front of iron, the rear of copper alloy, survive at the junction of blade and tang. Three knives found mingled with the masonry of the ruined keep of Duffield Castle, Derbyshire (Cox 1887, 173, the knives are in Derby Museum and Art Gallery) have heater-shaped copper alloy plates set in a similar position. The largest also has a convex back. Duffield Castle is said to have been built by Henry de Ferrers (died 1089), but the stone keep is 12th century, and occupation perhaps continued until Robert de Ferrers' attainder in 1266 (Renn 1973, 174-76; Manby 1959, 1-21). The function of the metal plates, generally interleaved with others of organic material, was to provide a decorative front to the handle of the knife. Cutting 25.

Horse Furniture

5. Spur, by Blanche Ellis.

Fragment of a small iron prick spur, overall length 6.2 cm, length of neck about 4 cm. The neck is short and straight, swelling into the quadrangular base of the goad which terminates in a broken point. The lower part of the goad is rusted away. A small part of one of the spur sides (5 cm) and the stump of the other point forwards and downwards when the neck is horizontal, showing that when complete the sides would have curved under the wearer's ankle. Severe corrosion makes it impossible to tell the original section of the neck and sides. Where the original surface is not corroded away traces of non-ferrous plating occur, especially on the longer side where there is a slight indication of a lozenge pattern. The plating may be silver or tin. Tin was frequently used for plating iron spurs throughout much of their history (Jope 1956, 35-42).

All the features of the shape of this spur are typical of spurs in common use in England and Europe during the 13th century. Contemporary illustrations include the spur worn by the Donor Knight of the Beaumont Family in a stained glass window at Chartres Cathedral, France. An iron spur of the same type was found in a shallow pit with late 13th century pottery at Tetsworth, Oxfordshire (Robinson 1973, 101, Fig. 24: 12). Cutting 42, Building 1, F 112.

6-12. Horseshoes

Nos. 6 and 7 are examples of the normal early medieval type of horseshoe which was succeeded by the type exemplified by no. 10. Whilst some examples of the earlier type are known from 14th century contexts (Biddle 1962, 176, Type li nails; Barton and Holden, forthcoming) it does appear that this type was being supplanted during the 13th century (Waterman 1954, 138, 140, Fig. 11: 16, Fig. 12: 10-12; Biddle, Barfield and Millard 1956, 984, Fig. 19: 28).

6. Incomplete horseshoe arm with wavy edge, countersunk

nail-holes, fiddle-key nail and calkin. Cutting 44, East of Building 2.

7. Horseshoe arm with three countersunk nail-holes and wavy edge. Cutting 44/5, Building 2.

8. Horseshoe tip with calkin, from shoe similar to nos. 6 and 7. Cutting 51, Building 1.

9. Fiddle-key horseshoe nail, complete. Cutting 49, PH 65, Building 1. A fiddle-key nail came from Cutting 51, Pit 66, Building 1 Foundation, one came from Cutting 24, beside Gully 166, another was associated with Ditch 139, and one worn to a T-shape came from Cutting 28-9, Building 3.

10. Incomplete horseshoe arm broken across a nail-hole, but with two others, one of which retains a nail with an eared trapezoidal head which expands in side view. The edge of the horseshoe is plain, and it has no calkin. Cutting 31.

11. Fragment of horseshoe arm with one nail-hole. Cutting 60, Kitchen hearth, F 243.

12. Horseshoe tip with turned up calkin, broken across a plain nail-hole. Cutting 44, Building 2.

13. Incomplete link from mouthpiece of bridle bit, comparable with one from Rest Park, North Yorkshire (Goodall in Le Patourel 1973, 93, Fig. 36: 3). Both may have been from two-link mouthpieces. Cutting 44, Building 2.

Tools and Fittings

14. Spoon bit, octagonal section stem thinning to a flattened terminal. Other large bits include those from Clough Castle, Co. Down and Castle Neroche, Somerset (Waterman 1954, 135-37, Fig. 11: 1, 2; Davison 1972, 41, Fig. 18: 1). Cutting 49, Building 1.

15. U-shaped staple, arms incomplete. Cutting 54/60.

16. Incomplete pin of triangular and lozenge-shaped section. Cutting 30, F 165.

17. Steel or strike-a-light, incomplete. A similar example comes from a medieval context at Pleshey Castle, Essex (excavated by Philip Rahtz). Cutting 43/4, Building 2.

18. Two, perhaps originally three, armed fleshhook, tang and one arm incomplete. Other comparable fleshhooks include that from North Elmham, Norfolk (Rigold 1963, 98, Fig. 35: 10). Cutting 53, outside Building 1, F 231.

Lancehead and Arrowhead

19. Lancehead of square section, tip lost, socket circular. A similar but longer lancehead is known from a late 13th, early 14th century context at Goltho, Lincolnshire (Goodall in Beresford 1974, 87, Fig. 41: 98). Cutting 55/7.

20. Socketed arrowhead, barbs incomplete. Cutting 48.

Keys and Hasp

21. Padlock key with rectangular bit. The stem, which has a small rear locating nib, expands into a flattened pierced handle. This type of key, with the bit in the same plane as the handle and stem, was drawn along a slot in the padlock case. Examples are known from Seacourt, Oxfordshire (Berkshire) and Brandon Castle, Warwickshire (Biddle 1962, 180, Fig. 31: 1; Chatwin 1955, 83, Fig. 12: 5). Cutting 53, outside Building 1, F 231.

22. Key with ring bow and solid moulded stem which projects beyond the incomplete bit. A deposit of copper alloy on the bit seems too thick to be plating. Mouldings are not common on medieval keys. Cutting 54/60, Midden, F 141.

23. Hasp from a padlock or from a door-mounted embossed lock. When complete the angled arm extended further and was matched by a narrower straight arm at the opposite end of the cross arm. The lower hole in the angled arm probably held one end of a U-shaped staple in which the sliding bolt of the lock engaged. U-shaped hasps are known from a 16th century context at Hadleigh Castle, Essex (Goodall in Drewett 1975, 141, Fig. 28: 340), and

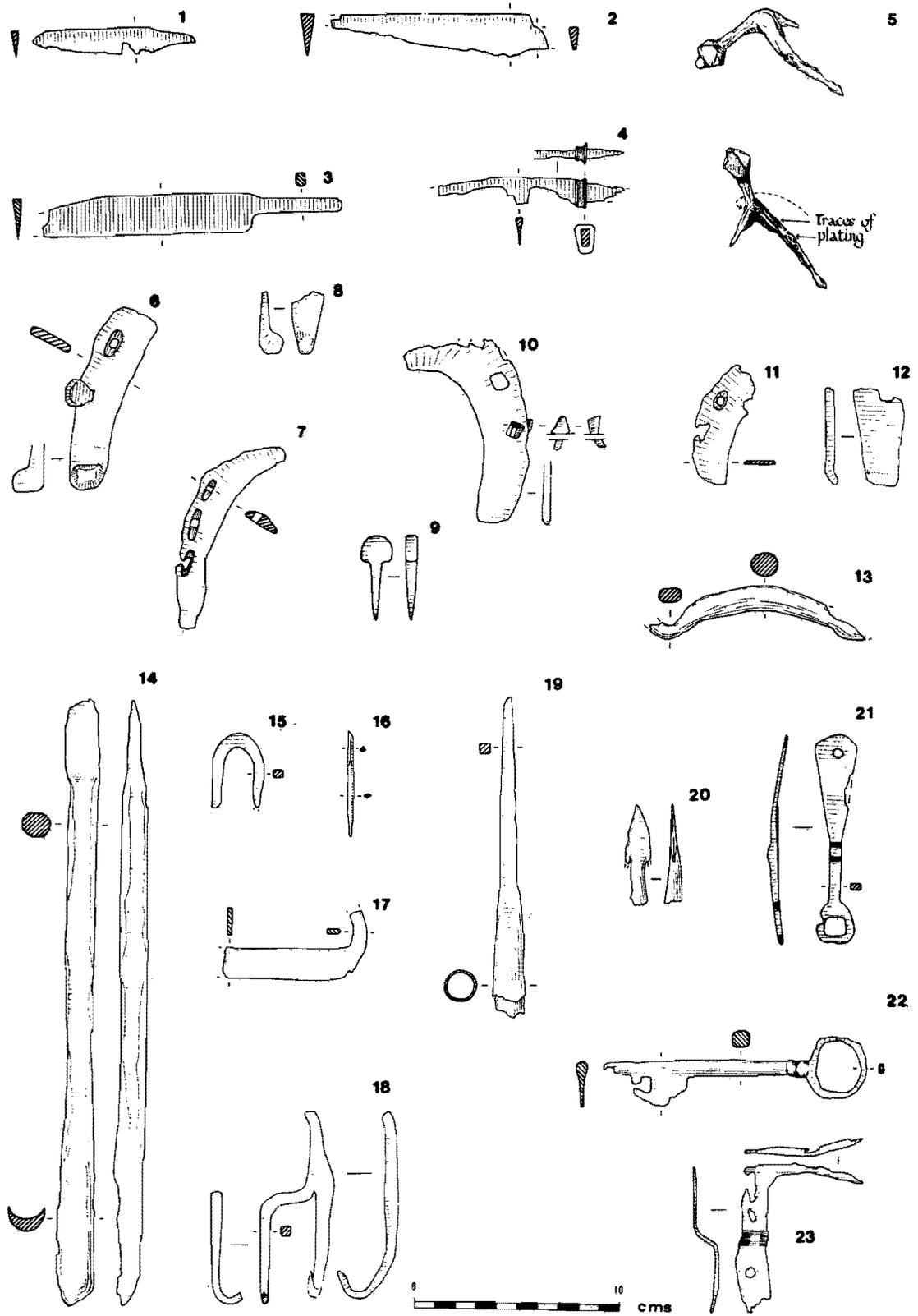


Fig. 45. Medieval Iron Objects.

from Cropton, Leicestershire (Clarke 1952, 42), a site with material principally of 16th and 17th century date. Similar hasps in an 18th century context come from the Fortress of Louisbourg, Nova Scotia, Canada (Dunton 1972, 165-67, Fig. 77: 12-16). Cutting 51, Building 1.

Nails (Fig. 46)

Virtually all the timber nails were incomplete, and all had square or rectangular section shanks.

Type A: Flat rectangular head, corners often rounded. Heads from 9 x 5 mm to 21 x 17 mm, longest nail 62 mm incomplete.

Type B: Slightly raised, long rectangular head. Heads from 9 x 7 mm to 12 x 10 mm, longest nail 86 mm incomplete.

Type C: Long, narrow rectangular head. Heads from 11 x 5 mm to 18 x 7 mm, longest nail 50 mm incomplete.

Type D: Figure-eight head. Heads from 14 x 5 mm to 14 x 6 mm, longest nail 46 mm incomplete.

Type E: Long, narrow rectangular head rising to a cross-ridge. Heads from 8 x 3 mm to 16 x 9 mm, 3 to 5 mm deep. Longest nail 103 mm, near complete.

Type F: Faceted head. Head 15 x 12 mm, 6 mm deep, length 90 mm incomplete.

Type G: Cowled head. Head 13 x 13 mm, 11 mm deep, length 145 mm near complete.

Type H: Small studs, rounded rectangular heads. Heads 24 x 21 mm and 20 x 22 mm, 4 and 10 mm thick. Longest stud 50 mm incomplete.

TABLE 12 — MEDIEVAL NAIL TYPES AND THEIR OCCURRENCE

Type	A	B	C	D	E	F	G	H	Total
Building 1	3	—	1	2	1	1	—	1	9
Building 2	3	—	—	—	—	—	—	—	3
Kitchen	6	5	2	—	—	—	—	—	13
Shed	2	—	—	—	—	—	—	—	2
Associated with Ditch 139	3	1	—	—	1	—	—	—	5
From Medieval levels	4	—	1	—	2	1	1	1	10
Total	21	6	4	2	4	2	1	2	42

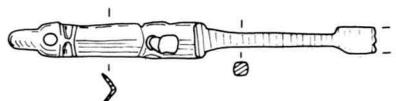
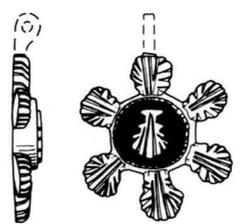
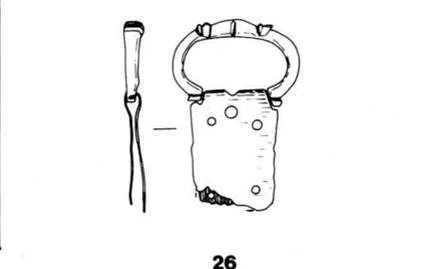
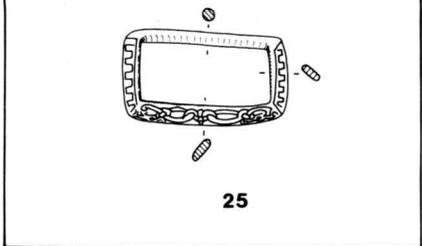
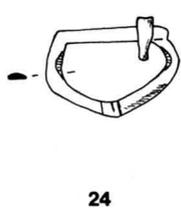
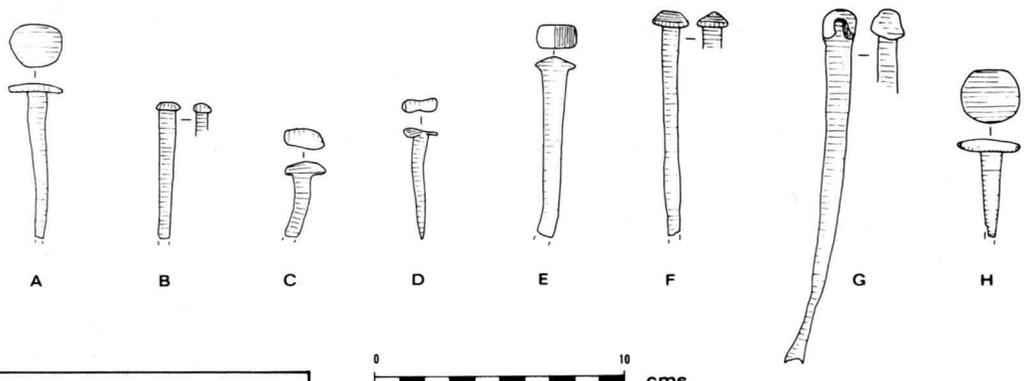


Fig. 46. Medieval nails and copper alloy objects.

Medieval Copper Alloy Objects—by Ian H. Goodall (Fig. 46)

24. Buckle with raised bar against which the now incomplete pin rested. Compare with a strap-end buckle from a later 13th-14th century context at Seacourt, Oxfordshire (Berkshire) (Biddle 1962, 168, Fig. 28:6). Cutting 24.

25. Rectangular buckle frame with incised decoration on three sides which are of canted section. The fourth, which carried the lost pin, is of circular section. The two short sides are decorated with a row of crenellations below a line, the long side with a fleur-de-lis between entwined bands. Cutting 45, Building 2.

26. Strap-end buckle, pin lost. Side of Hearth 243, Kitchen.

27. Harness pendant, support loop broken off. The central roundel bears an escallop on a red enamel field surrounded by a border of pellets; radially placed around it are six escallops. Dr. E. A. Gee comments that the escallops may be an heraldic device—certainly at a later date some Brooke families bore these charges (Burke 1842, see under Brooke). However the escallop (or scallop shell) was also the most universally recognized of all pilgrim signs—the emblem of pilgrimage itself, as well as of the patron saint of pilgrims, St. James of Compostella (Spencer in Renaud 1968, 139).

Medieval harness pendants took a variety of forms (London Museum 1967, 118-22). Others similar to that from Brooklands come from Winterbourne Earls, Wiltshire (Prideaux 1911, 234, Fig. 8) as well as from Chesterford, Essex and London (both in British Museum, London Acc. Nos. 96, 5-1, 61 and 56, 7-1, 2988 respectively. Information kindly given by John Cherry), although these all have eight rather than six lobes. Cutting 42, Building 1, F 112.

28. Mount, distorted but drawn straight. From the moulded, elongated terminal, which retains one of two rivets, runs a narrow rod which expands to a broken plate. The form of the terminal tip resembles that of another medieval mount from Doonmore, Co. Antrim (Dunning in Childe 1938, 130) and the Brooklands mount may have come from a casket. (Pinder-Wilson and Brooke 1973, 261-305). Cutting 42, Building 1, F 112.

Dating of the Medieval Period

Because the site lacks closely datable artefacts and coins as well as good stratigraphy, this period can only be dated by consideration of the clues given by the following: the pottery, the metal objects, the documentary evidence and the structures themselves. The evidence from the pottery shows that the bulk of the wares was manufactured between about 1150 and 1325. Some of the earliest might have been made from 1050 onwards, but this could be accounted for either by rubbish survival, or old-fashioned types persisting in what appears to be a rather modest establishment. The latest fabrics, the Surrey Wares and the Cream-slipped jug series stop short of their known full ranges, so that 1275 to 1325 seems reasonable for them; in fact the weight of the pottery evidence seems to show a natural break around 1325.

Most of the metalwork would fit well within the c. 1150 to 1325 date range, but where a type has a life outside this, it more commonly predates rather than postdates it. This is particularly so with horseshoes Nos. 6 to 8, which are to be found at least as early as the 11th century, if not earlier, with fleshhook no. 18, for which there are pre-Conquest dates, and key, no. 22.

The later material on the site, for example post-medieval sherds 147 and 148, goes to show the continuous use of the land, as does the iron lock-hasps, no. 23, whose parallels belong to the 16th and 17th centuries.

When one looks at the house itself, Building 1, there is the evidence of replaced timbers (e.g. Fig. 31 Section 28)

and the addition of the 'larder' or horn-shaped projection, to argue for a longish life, and it is suggested that this could be phased as follows:

Period I. From 1150 or 1175 until 1200
Building 2 first structure, and shed.

Period II. 1200 to, say, 1325
Building 1, Building 2 second structure, shed and the others.

This brings us back to the documentary evidence—that the Brooke family owned the land in 1195 and continued to do so until the close of the 13th century (see p. 1).

SPECIAL REPORTS**Iron Age Soil Samples—by T. P. O'Connor**

Samples containing cereal grains (charred) (one in each).

Soil Sample No.	Pit No.
43	14
30	142

Samples containing charcoal and charred bone fragments.

Soil Sample No.	Pit No.
38	5
79	16
80	21
52	37
48	48
81	79
63	143
65	172
16	178
68	185
26	218

Samples containing charcoal.

Soil Sample No.	Pit No.	Soil Sample No.	Pit No.
58	5*	56	103
33	24	30	142
35	33	82	142*
36	34	28	143*
40	37	45	173
42	38	14	178*
47	43	12	189
57	48	59	205
37	50	46	206
50	52	64	206*
53	53	34	208
32	54	51	209
49	75	27	211

Samples containing nothing of any archaeological relevance.

Soil Sample No.	Pit No.
44	20
60	38
39	53
55	75
23	167
19	168
41	170
15	178
25	185
10	189*
54	203
29	212
31	212*

*More than one sample, from different layers

Charcoal—by Carole A. Keepax*Iron Age*

Ref No.	Feature No.	Description and Report
---------	-------------	------------------------

Western Iron Working Area

S.S.83	—	Numerous small fragments of oak (<i>Quercus</i> sp) charcoal from fairly large timbers.
--------	---	--

S.S.21	247	Several small fragments of oak charcoal from fairly large timbers, and a few unidentifiable fragments.
--------	-----	--

Eastern Iron Working Area

S.S.77	—	Mainly unidentifiable, mostly probable oak.
--------	---	---

Pits

S.S.70	79	One fragment of oak.
--------	----	----------------------

S.S.67	142	All <i>Prunus</i> sp. (cf. <i>spinosa</i> L., blackthorn)
--------	-----	---

S.S.84	142	The sample consisted mainly of amorphous charcoal mixed with the sandy deposit. A few tiny fragments of wood charcoal were present. These were mainly from very small twigs, and were unidentifiable.
--------	-----	---

S.S.87	183	A small amount of charred grain was mixed with the sandy deposit.
--------	-----	---

S.S.9	189	All birch (<i>Betula</i> sp.)
-------	-----	--------------------------------

S.S.88	217	A large quantity of oak charcoal (from fairly large timbers).
--------	-----	---

Cutting 26

S.S.89	—	One fragment of oak charcoal from a fairly large timber. (From fired clay, at ground level).
--------	---	--

Ditch

S.S.86	139	Several fragments of broom (<i>Sarothamnus scoparius</i> (L.)), and blackthorn (<i>Prunus</i> (cf. <i>spinosa</i> L.)) twig were present. There were also a few fragments of willow twig.
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*Medieval**Building 1*

S.S.72	27	Alder (<i>Alnus glutinosa</i> (L.)), and oak.
--------	----	--

S.S.71	47	Alder and oak.
--------	----	----------------

S.S.73	59	Mainly oak, and one fragment of alder (?).
--------	----	--

S.S.74	85	All oak.
--------	----	----------

S.S.76	88	All oak.
--------	----	----------

Building 2

S.S.69	2	All oak.
--------	---	----------

S.S.85	3	Numerous fragments of oak charcoal from fairly large timbers, and a few fragments of <i>Prunus</i> sp. (cf. <i>spinosa</i> L., blackthorn) were present.
--------	---	--

S.S.90	126	A few fragments of oak charcoal from fairly large timbers.
--------	-----	--

Building 3

S.S.22	118	Many fragments of oak charcoal from fairly large timbers.
--------	-----	---

S.S.66	214	All oak.
--------	-----	----------

Kitchen

S.S.5	—	Mainly willow (<i>Salix</i> sp.), with a few very small twig fragments of hawthorn-type (?) (<i>Crataegus</i> / <i>Pyrus</i> / <i>Malus</i> / <i>Sorbus</i> sp.), and one elm (<i>Ulmus</i> sp.) fragment.
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Shed

S.S.75	60	All oak.
--------	----	----------

S.S.78	—	All oak. (Charcoal associated with the shed, Cutting 47).
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N.B. Some of the post holes contain more than one species, therefore cannot be a single post burnt in situ alone.

The Flints—by Rosemary Rendall

The worked flints were obtained from the right bank of the River Wey during excavations. The finds were grouped by colour and texture to clarify the possible sources and suggest the use made of specific material. Whilst realising that local conditions such as exposure or staining must affect similar material, five divisions were made. The illustrated finds are numbered, and those not illustrated are lettered (Fig. 47).

I. Transparent ochreous flint with smooth, ironstained cortex.

- a. A coarse plane re-using old patinated material.
- b.c.d.e. Four little retouched flakes.

II. Grey-brown lustrous flint with fossils, with a smooth cortex, from which comes the greater part of the material.

- 1 and f. Two fine three-platformed micro-cores, with flakes removed halfway round a flat single flaked platform.
- g. A basal disc from a similar core.
2. A small curved blade from a micro-core with fine steep flaking at the oblique concave point.
3. A curved trapezoidal segment with serrations on the dorsal concave edge and transverse facets at the corner of the truncated edge.
- h. A spall from a micro-core, with tiny opposing facets removed from the tip.
4. A thin semi-transparent flake, the serrated concave knife edge backed by six overlapping flakes to a final graver facet meeting the steep retouch flaking on the platform.
5. A possible transverse burin on a cortex-backed blade, with damage the length of the edge.

Three surface finds,

6. With glossy blue patination. A core axe with four lamellar flakes rising from a lateral interrupted flake below, and cut across above, by flakes descending from half-way round a retouched platform. Below the left side of the top invading flake, retouching produces a hollow for hafting.
7. With similar patination, a narrow carinated scraper on a flat detached blank, with two further narrow burin-like edges.
- i. Similar to 7, but broken.
- j. Plane tool on waste, 2 cm flakes rising to a single flaked top.

k and l. Scraper core waste

- m. Interesting, as it points to working on the site; a stained flint nodule fitting the hand easily, broken and battered by earlier conditions, with a pecked hollow suggesting its use as a fabricator.
- n. Differing from the above cores, of fine dark glossy flint. A spurred scraper flaked in the manner of a disc core.

III. Grey fossilised flint

- o. Three utilized trimming flakes from a larger core.
- p. A steep convex scraper on a shattered piece, with trimming flakes rising 2 cms.
- q. A small flake scraper with small pressure flakes to the right of the convex top.
- r. Three pointed pieces on flakes—three pointed pieces on blades, suggest arrows
- s. Plain and utilized blades.
- t. Two burin-like small tools.
- u. A thick flake, obliquely snapped, perhaps an end-scraper on a long flake made from core waste.
- v. Utilized wide shallow disc flake.

IV. Matt light flint

8. A knife, backed by blunting retouch, with similar retouch on the concave hafting area, with marginal serrations and wear along the blade to the oblique point.

- 9. A small flake with marginal serrations to the convex tip.
- 10. Utilized piece. A concave scraper on the side, with retouch at the ends, and suggests preparation to remove a convergent flake as 11.

V. Chert

- 12. A short core tool of dark chert, from the surface, with a triangular section. A step along the base, combined with a hollow on the back ridge and side indentations suggest hafting. The original work edge appears damaged. It has similarities in form to 6. Length 6 cm x width 4.5 cm x height 3.3 cm.

There is no reason to assume the finds are of the same date, but rather put to a similar use. Small axes, scraper and burin type tools might be used to work wood, bone or antler, in a riverine setting comparable with Ham, further down the river (Lacaille 1966, 34-5). Only 2 qualified for steep retouch; the blades trimmed by edge pressure, and no real saws.

Work on the site is suggested by the micro-cores j and f, with a variety of methods as 10 and n. Some flakes, as o, suggest larger nodules than could be dug from the surrounding gravels.

I am indebted to Mr. F. G. Dimes of the Geological Museum, London, for information as to the material used in 12. Whilst suggesting no provenance, he speaks of characteristics not dissimilar from chert found in carboniferous limestone. Chert was certainly distributed from the Portland beds in S. England during the mesolithic (Palmer 1970, 82-115) though chert could be obtained locally in the Barton beds at St. George's Hill (Sherlock 1960, 36).

Note is made of an area on the left bank of the 1897 6 in geological survey map, sheet 17953, marked 'many neolithic implements', on the flood plain gravel, bordered to the left by the Taplow terrace. No reference to these flints occurs at the Ordnance Survey. I am grateful to Mr. F. A. Hastings for the note of a polished axe just inside Brooklands racetrack at TQ 06886299, and a flint flake by the footbridge. Both these are now in the Weybridge Museum.

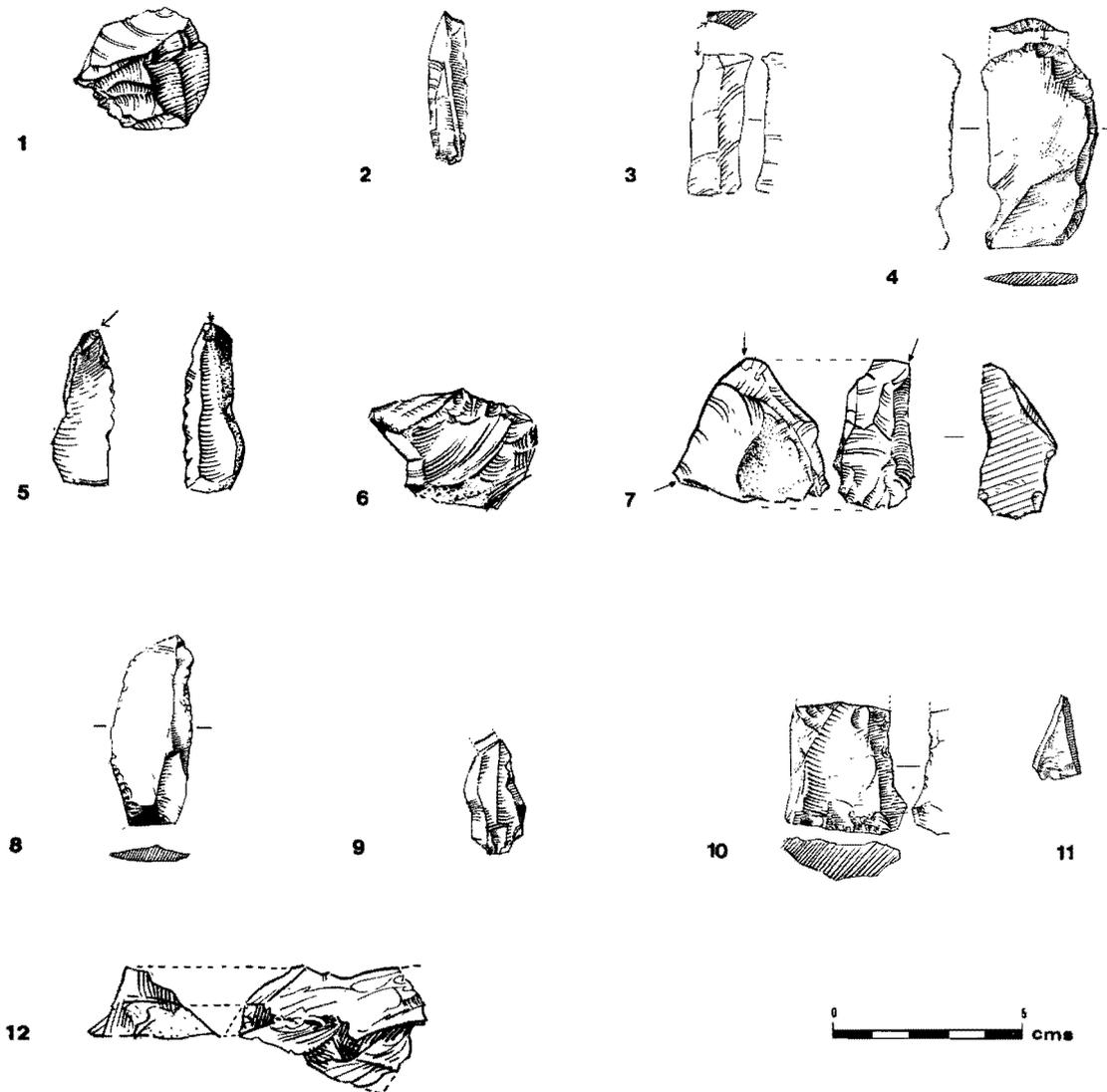


Fig. 47. The Flints.

The Whetstones—by D. J. Tomalin

The 13 whetstones illustrated from the site (Figs. 48 and 52 and Table 13) may be grouped as follows:

(1) Ferruginous Sandstone

Three examples (177, 491 and 544) are brown naturally shaped tabular fragments with rounded waterworn edges. The natural flattened surfaces of these stones make them ideal for sharpening. Signs of use are barely discernible as darkened areas with a slight gloss. Stones of this type are readily available in the nearby floodplain gravels of the Wey and are probably derived from the base of the local Bracklesham Beds.

A fourth example (347) is a finer grained variety possibly shaped by sawing. One surface is a flat plane well polished by use.

(2) Indurated Quartzite

Two naturally shaped reddened grey rectangular blocks (378 and 484) may have been used for sharpening purposes. 484 displays a slight gloss along one of its coarse banded surfaces. Both specimens appear to have been fractured by heat.

(3) Pale buff Orthoquartzite

Two fragments (161 and 266) both represent carefully shaped square sectioned rods. Two faces on the smaller specimen (266) have been incised and probably represent point sharpening. The groove on one surface would not be incompatible with needle grinding.

A sample of the stone submitted to Mr F. G. Dimes and Mr R. W. Sanderson is described as a weakly cemented orthoquartzite composed of compacted grains of slightly strained quartz, some feldspar (? microcline) and frayed flakes of muscovite moulded around the larger grains. Average grain size is c. 0.18 mm. A very sparse clayey matrix occurs which is relatively coarsely crystalline. The stone is possibly a sarsen and may be compared with tertiary surface stones of North Wiltshire and a Romano-British whetstone of Ellis type IIIa (3) from Hurstbourne Tarrant (Ellis 1969, 167-8).

(4) Fine-grained Subgreywacke

Whetstone 213 is the broken end of a rectangular section rod. Three faces have been very carefully ground and the fourth retains a 0.5 cm wide flash where the stone has been sawn and snapped from a larger block. A thin section prepared by Mr. Dimes shows more or less equant grains of quartz and some feldspar (oligoclase-andesine) moulded upon one another, with a thin layer of iron-stained matrix between the grains. Grains measure up to 0.15 mm across and average 0.06 mm. Chloritized books of biotite and flakes of muscovite of similar size are fairly common. Bluish tourmaline and rare sphene occur as accessories. The matrix is composed of iron-stained clay. This rock is comparable with Ellis's type IIB (b)ii and is probably derived from the Culm Measures of Devon (Ellis 1969, 162, and comments by Mr. Dimes). Of the ten whetstones of this group listed by Ellis, all are pre-Saxon in date, with

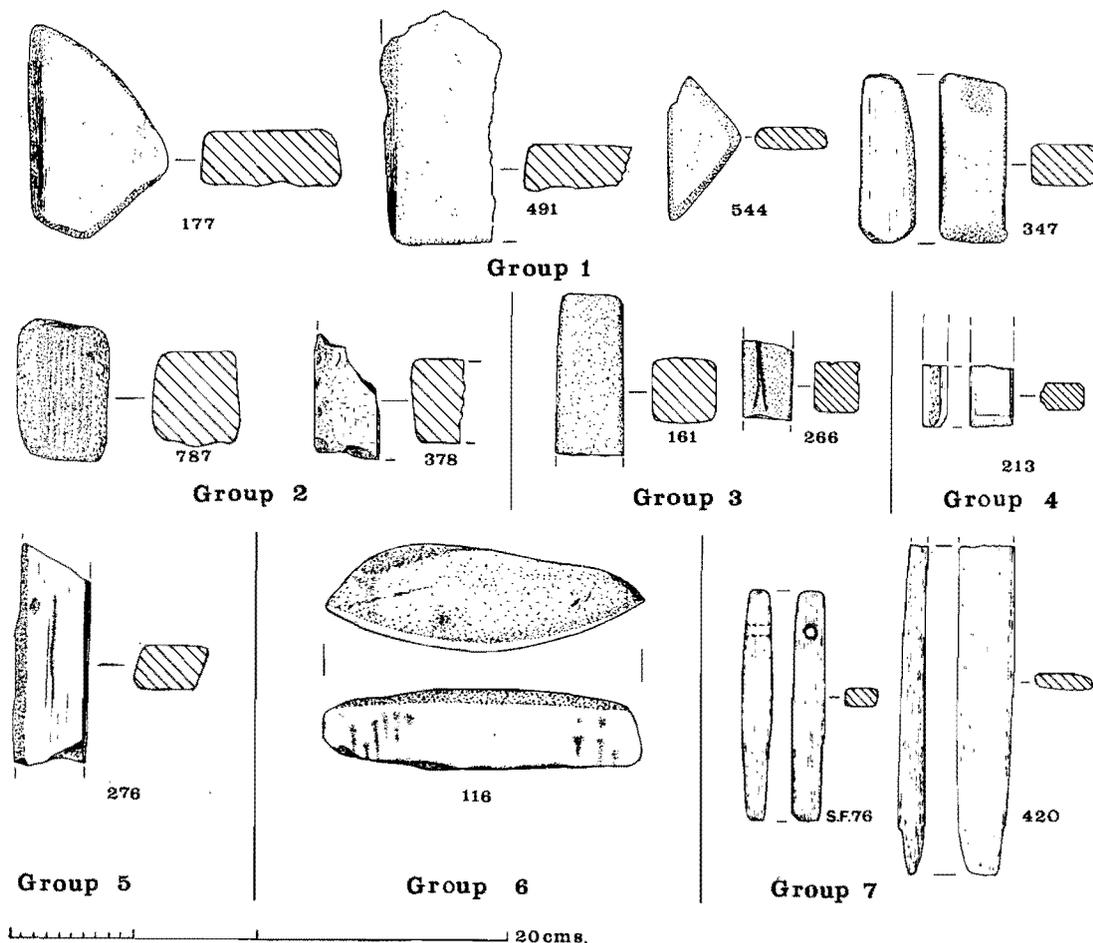


Fig. 48. Whetstones.

the exception of three post-medieval examples from London Wall.

(5) *Fine-grained grey-green metamorphosed greywacke*

This is represented by a single rectangular sectioned specimen (276) 8.5 cm long with evidence of wear on three surfaces. A polished sheen survives on one edge. A thin section of this stone has been made by Mr. Dimes and reveals subequant and elongate interlocking grains of quartz up to 0.12 mm across, with frayed flakes of mica, some blue-green and brown tourmaline, zircon and opaque ores. Yellowish-green chlorite crystals may represent original clastic biotite. Rock fragments and feldspars are absent. An abundant re-crystallised sericite-chlorite-leucoxene matrix binds, and shows intergrowth with, the clastic grains. The re-crystallisation indicates that the rock has undergone a degree of regional metamorphism (to low chlorite grade). Mr. Dimes cites material of this type in situ between the Harlech Dome and Anglesey, and also in the southern uplands.

(6) *Fine-grained Granite*

116 is a large green/brown abraded pebble 11 cm long with a flat well-polished plane 2.5 cm to 3 cm wide consistently curved along its longitudinal axis to form a projected diameter of 2.5 cm. Some large transverse score marks across the plane suggest that this may be a specialised tool intended for use on a carefully shaped concave surface. A visual inspection reveals quartz feldspar and hornblende to be the main constituents of the rock with muscovite and biotite as accessories, indicating an igneous source outside south-eastern England. The stone could have been deliberately transported to the area, but its rolled condition suggests that it may well be a fluvio-glacial erratic collected from the Thames gravels.

(7) *Schist*

Two specimens (94 and 420) were recovered from the site. Fresh surfaces reveal both specimens to be a grey mica

quartz schist with muscovite and biotite accessories. Both stones are comparable with Ellis type Ia(i) for which a source in the Eidsborg region of Southern Norway is suspected. Schist hones of this type were introduced by Viking settlement about AD 900 and were in common use until about AD 1300, after which their use declined. The nearest neighbour to Brooklands is a perforated whetstone possibly buried before AD 1036 with an inhumation burial at Mount Street, Guildford (Dunning 1937a, 684). The wear marking on Brooklands specimen 94 may best be compared with the similar perforated whetstone from the 12th century midden at Luccombe, Isle of Wight (Dunning 1937a, 685).

Summary and dating of the Whetstones

During the Iron Age occupation of the site irregularly shaped fragments of local sandstone and quartzite (Brooklands groups 1 and 2) were utilized for honing. Probably towards the end of this period the first professionally made pieces of Brooklands groups 3 and 4 (Ellis IIIA(3) and IIB(b)ii) were introduced. Group 3 is dated by fragment 266 found in Iron Age pit 189, and by petrographic analogy with the Romano-British whetstone from Rag Copse, Hurstbourne Tarrant. A similar date for group 4 is implied by the seven Iron Age and Romano-British whetstones of the rare group from Blackbury Castle, Devon, Studland, Dorset, and Rag Copse, Hurstbourne Tarrant (Ellis 1969, 160). The Brooklands specimen comes from an isolated position in Cutting 58, from the top of Ditch 139, and while it may have been derived from the old land surface through which the ditch is cut, the possibility of a Tudor date, like the Ellis IIB(b) ii specimens from London Wall, should also be considered.

In the absence of associated finds it is suggested that the change to specially manufactured whetstones may coincide with the appearance of Belgic pottery and quernstones on the site. The general distribution and the possible source of Ellis IIIA(3) sarsen whetstones would accord well with

TABLE 13 — DISTRIBUTION OF WHETSTONES

	<i>Bag No.</i>	<i>Provenance</i>
1. Ferruginous Sandstone	177	Trench D, Bulldozing
	544	Cutting 33
	491	Cutting 53
	347	Medieval Building 3
2. Indurated Quartzite	378	Cutting 38-9
	484	Pit 60, Bottom
3. Pale Buff Orthoquartzite	161	Unprovenanced
	266	Pit 189
4. Fine-Grained Subgreywacke	213	Medieval Ditch 139
5. Fine-Grained Grey-Green Metamorphosed Greywacke	276	Cutting 31
6. Fine-Grained Granite	116	Medieval Building 1
7. Schist	94	Cutting 38-9
	420	Medieval Building 1
8. Additional ferruginous sandstone fragments of Group 1, with inconclusive evidence of use. (Not illustrated)	627	Pit 10
	390	Pit 25
	435	Pit 123 (? Ring Gully)
	272	Pit 171
	324	Pit 186
	584	Pit 197
	585	Pit 222
	592	Cutting 35
	432	Cutting 47
	125	Cutting 53
	624	Cutting 60
	114	Cutting 61
	203	Medieval Midden (two)
	639	Medieval Kitchen Area
	623	Medieval Ditch 139

internal trade organised by the Atrebates. Sarsens are, however, also known in Surrey (Dines and Edmunds 1929, 46).

The exclusively igneous and metamorphic origins of the medieval whetstones probably exemplifies the extensive trade connections accessible to the site via the Thames and London. The irregular surfaces remaining on the single specimens of groups 5 and 6 should however be remembered when considering the possibilities of an erratic source. The Ellis IA(i) schist whetstones of Brooklands group 7 provide well attested evidence of North Sea trade in the 12th and 13th centuries and are an appropriate complement to the similarly exotic quernstones of the site (Fig. 52).

The Quernstones—by D. J. Tomalin

The quernstones from the site may be conveniently divided on petrographic and chronological evidence into two main groups (see Figs. 49 and 52 and Table 14):

(1) Iron Age rotary querns from the Hythe Beds

(a) Kentish Ragstone. Three specimens of this stone were recovered from the site and are illustrated in Fig. 49. The large perforated fragment from Pit 7 is 9.5 cm thick and

varies from buff to red in colour. Fragment 616a from the Iron Age land surface is red in colour and bears a curved tooled upper (?) surface. Samples of these stones were submitted to Mr F. G. Dimes who reports as follows: 'A specimen from a known geological horizon and which was considered to be similar to the same original stone as the Brooklands specimens was subjected to the heat of a Bunsen burner for about four hours. On inspection the test specimen was found to present an appearance similar to the Brooklands specimens.' As a result of visual inspection, the heat test, and comparison with other specimens in the Geological Museum, Mr Dimes has assigned the samples to the sandy limestone layers of the Hythe Beds known as Kentish Ragstone.

(b) From Pit 262 excavated in 1964 comes a single unburnt fragment (76) of a lower stone of glauconitic sandstone, also assignable to the Hythe or Bargate Beds of the Lower Greensand Beds. It is grey-green in colour and finer and more compact than the previous specimen. This stone is assigned to sub-group I in the provisional petrological classification of Surrey Lower Greensand querns appended to this report.

(2) Medieval rotary querns of Mayen/Niedermendig Lava

The source of this distinctive grey vesicular lava lies in the Eifel region of the Rhine Gorge. At Brooklands some

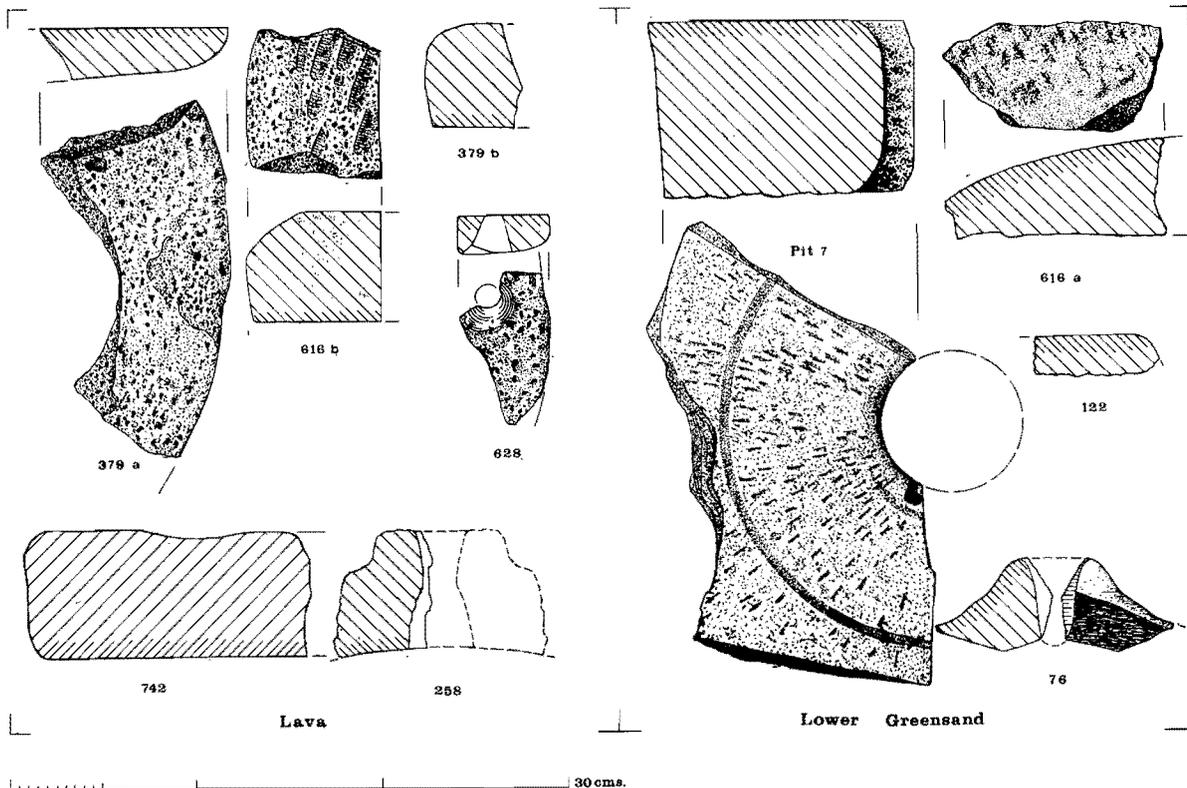


Fig. 49. Quernstones.

TABLE 14 — DISTRIBUTION OF QUERN FRAGMENTS

	<i>Bag No.</i>	<i>Provenance</i>
1. Iron Age	616a, 212	Early Land Surface
	—	Medieval portion of Pit 7; Building 2
	SF. 76	Pit 262
	274	Hearth 179
2. Medieval	742, 308	Building 1
	385, 406, 421, 423, 628	Building 2
	342, 379, 403, 534, 624, 639	Kitchen Area, 20 large and many scraps
	203, 206	Midden
	92	PH 244 Entrance to Settlement
	258	Cutting 24, 2 pieces
	740	Cutting 34
	655	Cutting 39
	463	Surface find
	616b	Early Land Surface

Note. It is assumed that the heaviness of the medieval stone 616b caused it to fall to the Early Land Surface.

50 fragments of these imported querns were recovered, mostly from the medieval kitchen area and buildings 1 and 2. A representative selection of fragments is shown in Fig. 49. Fragment 616b bears the narrow tooling of the mason's chisel and 628 contains a dowel-hole where the stone was apparently secured to a wooden base.

Despite their number, none of the pieces could be reassembled and it is evident that the fragments represent at least a dozen extensively shattered stones. Sufficient of the material survived however to show that, with the exception of fragment 258, the grinding surfaces were of the flat medieval type. Fragments 379a and 628 are 2.5 and 2 cm thick respectively and may represent the thin lower members of Röder Type 7 querns (Röder et al. 1955, 69).

Fragment 258 which is 6.2 cm thick and contains an hour-glass perforation may also belong to this class. A number of similar thin fragments have not been illustrated. About AD 1000 the thicker quernstones of Röder Type 8 were introduced. Bevelled edges resembling the upper stones of this type may be seen on fragments 616b and 379b. Taken as a whole the evidence suggests the use of German lava querns at Brooklands during the overlap of Röder types 7 and 8. At Northolt Manor apparently only thin Mayen quernstones were in use between 1150 and 1300, and may have continued until 1350 (Hurst 1961). This persistence of thin lower quernstones would accord well with the evidence from the Brooklands site.

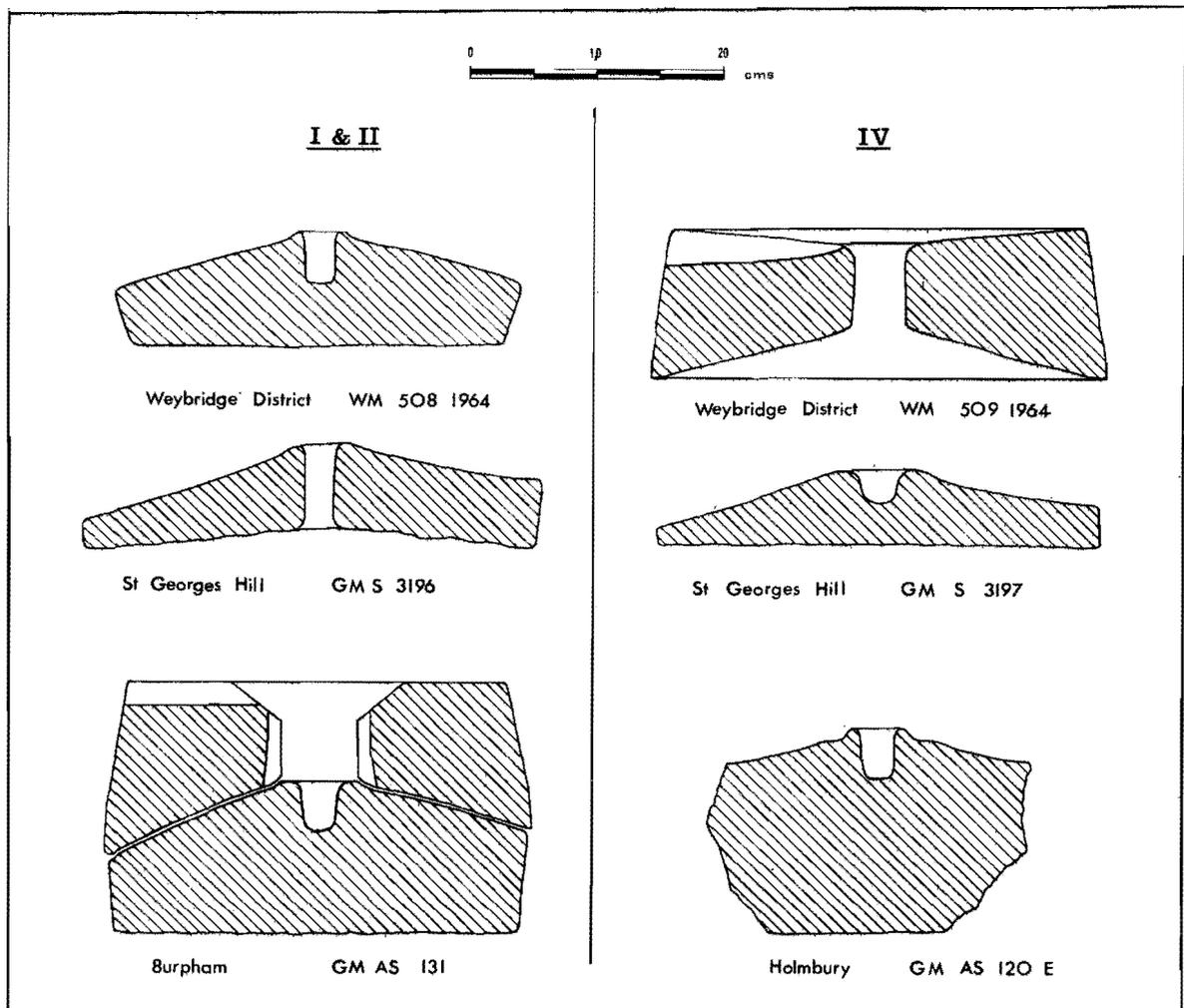


Fig. 50. Lower Greensand quernstones from the Weybridge district and related stones of provisional sub-groups I, II and IV.

Implications

Evidence for the general dating of sub-groups I-II (set out in the petrological note below) suggests that, like the sherds from pits 14 and 142, fragment 76 provides a further indication of Belgic activity at Brooklands. The sparse distribution of Belgic features suggests that the centre of the community may have been moved during this period, and we are reminded of Dr Gardner's observations of Iron Age settlement within the adjacent race-track circuit. In a broader context the Brooklands querns draw attention to a Belgic trade extending from the northern edge of the Weald into the Thames Valley. A search for further quernstones, particularly in higher reaches of the Thames, might provide a useful indication of regional trading patterns in this ill-defined area of Belgic settlement.

Like the medieval whetstones, the lava querns illustrate the variety of exotic stone goods available to the modest community at Brooklands. Considering the size of the excavation and the large number of fragments recovered, it would appear that German querns were used exclusively on the site. The presence of both Röder types 7 and 8 suggests that replacements were readily available during the occupation. For a regular turnover of imported goods

we should seek a major medieval market, and the excellent river communications at Brooklands point to London as the source of our supplies. Quernstones would constitute a substantial cargo and a search for these items in other tributaries of the Thames would provide an interesting insight into upstream navigation at this period.

Note on the petrology and possible sources of querns in the Lower Wey Valley

A preliminary local survey shows the Lower Greensand quernstones at Brooklands to be part of a number of similar local finds distributed along the banks of the Thames and Lower Wey (see Fig. 50). All emanate from the Hythe or Bargate Beds, the nearest source of which may be found in the Surrey Weald (Fig. 51). Although the closest outcrop of these Beds lies only 13 km south of Brooklands, the source or sources of the quernstones are probably situated further afield. Evidence for specialised Lower Greensand quernstone quarries at Pen Pits, Penselwood, Somerset; Little Coxwell, Berkshire; and Waverley, Surrey (Pitt Rivers 1884; Crawford 1953, 100-5) suggests that a search for modest industries on the Lower Greensand of Surrey could well be rewarding. In an attempt to

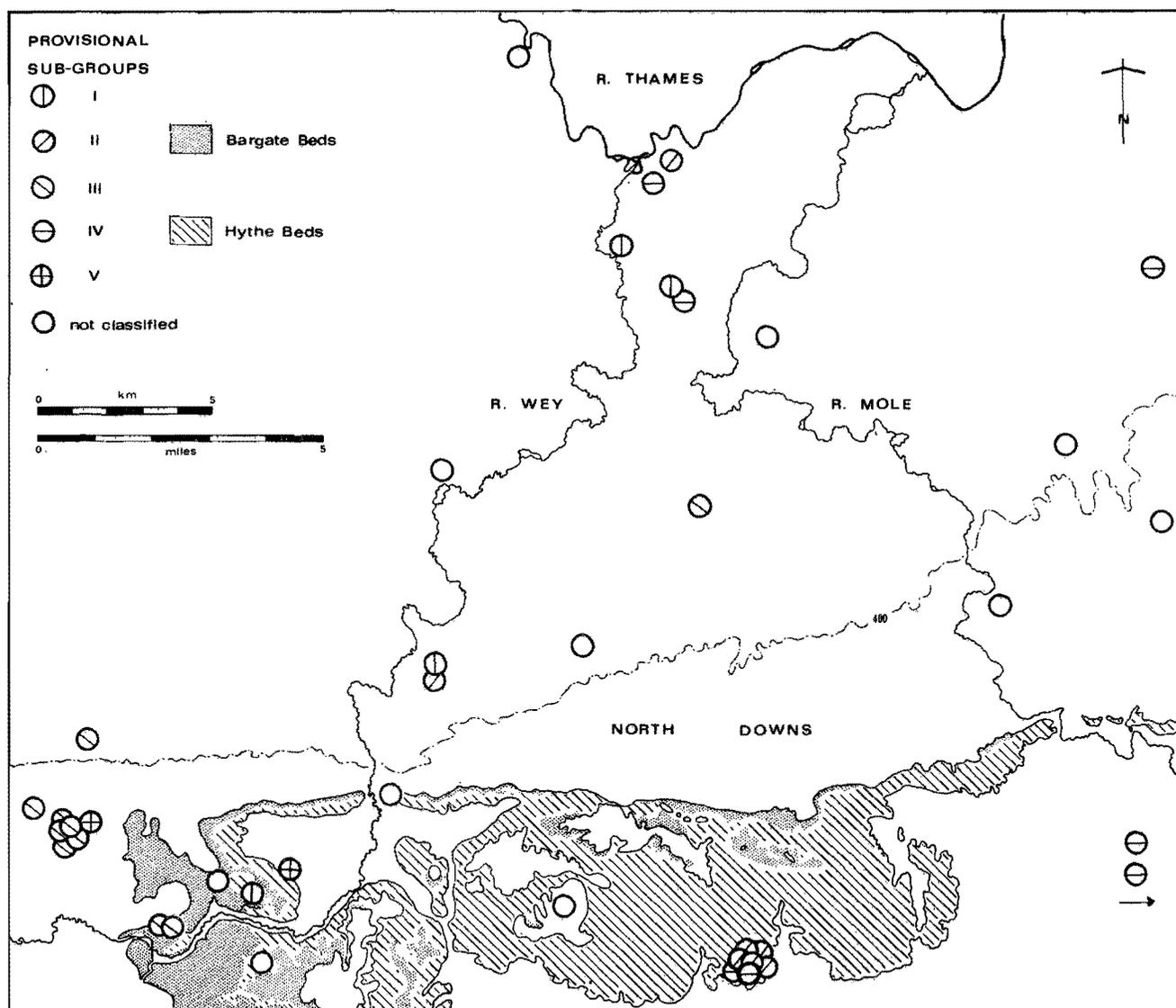


Fig. 51. Distribution of Lower Greensand Querns in Surrey showing provisional petrographic subdivisions. (N.B. "not classified" includes those superficially examined and those not yet examined at all).



Fig. 52. Multi-period diagram showing sources and suspected sources of whetstones and quernstones at Brooklands. Broken line denotes sources with possible erratic connections. Numbers refer to whetstone groups in text.

narrow the field the writer has made a preliminary petrological examination of thirty-five Iron Age and Romano-British querns in the county. Variations in the lithology of these querns suggest that they may originate from perhaps as many as five different sources in the Hythe and Bargate Beds. The variations are however of only a minor nature, and it must be stressed that this approach is very subjective.

The object of this account is to view the Brooklands querns in the trading pattern of the district. Where relevant the implications of other similar Surrey querns are summarised. Where museum accession numbers are given, GM and WM refer to Guildford and Weybridge Museums respectively. Distinction has been made between the grinding surfaces of the querns, 'Convex and concave grinding profiles' refer to the grinding surface as seen in the cross-section through the lower stone. It is hoped that a full account of Surrey querns may be given when further work is complete. Until sufficient thin sections have been prepared, it would be unwise to define the following sub-groups too closely.

Petrographic Sub-groups I and II. Lower stone fragment 76 from Pit 262 at Brooklands closely matches a complete lower stone from St George's Hill (GM: S.3196). Both stones, which are of sub-group I, have concave grinding profiles and show a marked lip around the central socket. The Brooklands fragment is far too small to show many helpful details but the St George's Hill specimen with its relatively thin cross-section, rough concave base and central perforation shows all the sophistication of an improved Romano-British quern similar for instance to that found at Hassocks, Sussex, and attributed to the 2nd century (Curwen 1937, Fig. 18). Concave grinding profiles, which assist the development of thinner and lighter querns, seem to make their first appearance in Surrey in pre-Roman times. An early example appears to be the heavy 16.5 cm thick lower stone (GM AS.120E) found amongst the convex profiled querns in the north ditch of Holmbury Hillfort (Winbolt 1936, 162-3, 168) (Not illustrated.)

Intrinsic in any consideration of our querns is the complete specimen with convex grinding profile found many years ago in a sandpit at Burpham (GM AS 131). The upper and lower stones are of sub-groups I and II respectively. Allowing for the subjective parameters of our sub-groups it seems likely on this evidence that the source of both sub-group I and sub-group II products lie as adjacent facies in the same quernstone quarry. Sub-Group II at present comprises a total of eight stones found mostly at Holmbury but also recorded in 'West Surrey' and at Weybridge (WM 508, 1964, Precise find-spot unknown). Some further circumstantial evidence for a common source is provided by the 4 cm chisel marks which appear on the Burpham lower stone and also lower stone GM G5838, from Holmbury. (During the dressing of the quernstones only the corner of the chisel is usually used and although cutting marks often survive in abundance they seldom betray the full width of the blade.)

Petrographic Sub-group IV. An upper stone from the Weybridge district (WM 509, 1964) closely approaches a match with a lower stone with concave grinding profile from St George's Hill (GM S3197). These stones belong to Curwen's 'flat-topped Early Romano-British type' as do further examples of this group from Purberry Shot and Titsey. This thin scatter across the east of the county suggests that our source may be somewhere east of the Mole Gap. At present too few examples of this group have been studied and speculations are likely to be premature. There is a considerable variation in grain size between the various querns and this could perhaps indicate that more than one source is covered by this group. Further indications may be provided by the two Iron Age group IV querns found in the hillfort ditch at Holmbury. One of these (GM G5937) is an unfinished roughout suggesting the proximity of a local source, the other is illustrated in Fig. 50 (GM AS 120).

A stone not grouped but possibly related to sub-group IV is the Kentish Ragstone cited by Mr Dimes from which Brooklands specimens 616, 122 and P7 are derived. It is best developed in the Hythe Beds of Kent and south eastern Surrey. The burnt condition of these stones prevents detailed comparison with other quern samples. A lower quernstone with concave profile from Mixnam's Pit, Thorpe, examined in 1963 also resembles the Hythe Beds of this region.

Dating. The dating of our local querns is unhelpful. The two stones from St George's Hill were presented by A. W. G. Lowther to Guildford Museum in 1949, with Iron Age pottery of Bishop's period 2 and Belgic sherds. In a note on the pottery however (Lowther 1949), no mention is made of the querns. Romano-British pottery was also collected from the hill and it is possible that the querns were found with the latter material. The Mixnam's Pit quernstone was recovered from the gravel pit by a dragline. Pottery ranging from Iron Age to Roman is also known from the site. The most helpful evidence is provided by a quernstone from Old Woking which was found in association with Belgic pottery on the Hockering Estate (Gardner 1912). This stone, previously exhibited in the old Weybridge Museum was examined, but not sub-grouped, by the writer in 1963. Its present whereabouts is unknown. Little new information is provided by the Brooklands pieces. The large burnt perforated fragment of Kentish Ragstone was associated with medieval disturbance in Pit 7. Unlike the other examples, its grinding surface appears to be horizontal and it probably belongs to the medieval phase. Fragment 76 was unassociated in the top of pit 262.

Conclusion. The quernstones of Brooklands and the Lower Wey provide evidence of a trade probably emanating from at least two sources on the Surrey Lower Greensand outcrop. The products of sub-groups I-II are well represented at Holmbury, and may perhaps have been quar-

ried in the neighbourhood of that hillfort. A roughout of sub-group IV from Holmbury suggests that the remainder of the Lower Wey quernstones may also have come from this locality although the possibility of a source further east must also be considered. Production at both sources began in Iron Age times and improvements in sub-group IV stones suggest that these, at least, were developed during the early Romano-British period. The value of the petrological sub-divisions must be treated with caution until further progress is made in locating the sources. It is notable that the querns of the Lower Wey were apparently obtained quite independently from compact sub-group III industry operating upstream in the Godalming area and shown in Fig. 51.

The Bones—by Geraldine Done

The skeletal material was small in amount and poorly preserved, being fragmentary, much eroded and very fragile (Table 15).

The Iron Age areas produced 66 pieces of bone and a small deposit of very small burnt fragments, including some cranial bone from Hearth 82. Ox and sheep/goat were identified. The western iron-working area yielded a collection of small bones. This included 6 vertebrae of a small mammal, probably water vole, and 5 long bone and

pelvic fragments, a mandible, petrous temporal and palate and upper jaw of rabbit. These may be regarded as intrusive. Corbet lists the rabbit (*Oryctolagus*) as a 13th century introduction (Corbet 1964). Rabbit is noted by Phillipson at Hawks Hill without further comment (Carter et al in Hastings 1965, 40-42). The remaining identifiable material consists mainly of tooth fragments.

The nature of the medieval material was similar to that from Iron Age areas, and consisted chiefly of tooth-fragments. Species present were ox, sheep/goat and pig. An ox femur, damaged proximally and considerably eroded was small (roughly 250 mm long) though apparently mature. It was found in F 187 with teeth of a young bovine. Part of a young molar of ox or possibly horse was found embedded in slag in Gully 165. From the foundations of Building 1 came a herbivorous molar of extreme old age, worn down to the root, probably ox but worn almost beyond classification. From Building 2 came a section of ox femur which had been neatly sawn out of the parent bone, producing a smooth cylinder 125 mm long, 40 mm external diameter. This could have been done either as part of a butchering operation or with a view to subsequent use or manufacture in some way.

Identified bone from areas of uncertain date was that of ox, sheep/goat and pig, again much eroded except for one complete sheep/goat metacarpal.

TABLE 15 — DISTRIBUTION OF BONES

	Ox	Sheep	Pig	Small Mammal	Unidentified	Total
<i>1. Iron Age</i>						
Early Land Surface	4	—	—	—	23	27
Hut 135	1	2	—	—	—	3
<i>W. Iron-Working Area</i>						
Central Features	1	—	—	15	2	18
F 241	—	—	—	—	1	1
F 82	—	—	—	—	∞	∞
<i>E. Iron-Working Area</i>						
F 252	—	1	—	—	—	1
F 177	12	—	—	—	—	12
F 189	1	—	—	—	—	1
Cutting 33	—	—	—	1	—	1
Cutting 48	—	—	—	1	—	1
Cutting 53	—	—	—	—	1	1
<i>2. Medieval</i>						
<i>Building 1</i>						
Post Hole 49	1	—	—	—	—	1
F 231	1	—	9	—	1	11
Cutting 51	—	—	—	—	1	1
<i>Building 2</i>						
Foundations	—	—	—	—	1	1
Cutting 43	1	—	—	—	—	1
Cutting 44	—	—	—	—	1	1
Kitchen	—	1	—	—	4	5
Midden	6	—	—	—	15	21
Midden area	1	—	—	—	—	1
Gully 165	1	—	—	—	—	1
Gully 187	7	—	—	—	—	7
Ditch 139	—	1	—	—	1	2
<i>3. Date Uncertain</i>						
Trench D	1	—	—	—	—	1
Cutting 44*	∞	—	—	—	—	∞
Cutting 50	—	1	—	—	1	2
Cutting 53/54	2	—	—	—	2	4
Cutting 56	2	—	—	—	6	8
Cutting 61	11	—	—	—	7	18
Pit 60	—	—	1	—	—	1

*Ox or sheep tooth fragments, very many, very small.

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