could equally have been involved.

In F129 the casting jets are likely to attest directly the nature of production. One (46) is from casting a socketed axe of class A, B or D, the other (90) possibly from a socketed gouge. This, in conjunction with the miscast sickle (81) and the relative frequency of small tool fragments, could imply a concentration on tools and especially on non-axe types. The more fragmented scrap seen in this cache would be consistent with such a production emphasis because it would more readily be accommodated in small crucibles (cf the large capacity crucible for weapon casting at Dainton (Needham 1980b, 88).

Petters is one of two sites in the Egham area which have yielded a wealth of evidence regarding Late Bronze Age metalworking. At Runnymede Bridge by-products of metalworking occur amongst a large settlement assemblage of bronzes (Needham 1980a, 23–4; Needham & Longley 1980, 405). The later excavations on that site produced a number of clay mould fragments, which await full study. Already it is clear that production was varied, probably including razors, axes, spearheads and swords.

At Petters, in contrast, no clay refractories have survived. This is most likely due to the complete destruction of occupation levels which at Runnymede are well protected beneath fluvial silt. However, the recovery of the hoard, other scattered metalwork and a fragment of durable stone mould, followed by comprehensive metal analysis, has shed considerable light on other facets of the industries responsible. The nature of metalworking and its place in the settlement sequence at Petters may now be summarised.

It was not until the large ditch (F117) had received its primary fill and most of a secondary fill (middle and final silting — see 4.3) that metalworking first left its mark in the archaeological record. By this stage the ditch would still have been a visible surface feature, but its original function may already have become redundant. The ditch profile was probably stable, vegetated and subject only to slow silting. Consequently although the metalwork evidence has a narrow vertical distribution, its accumulation need not have been of particularly restricted duration. The nature of the eight metalwork finds concentrated in the ditch terminal provides, in seven cases, circumstantial evidence for local metalworking. Three pieces are unalloyed copper material and four are small fragments of socketed axes likely to have resulted from scrapping. This suggests that the environs of the ditch terminal were a focus of metalworking activity at this time resulting in losses of small material which survived undisturbed in the ditch fill.

The two caches of the hoard were deposited side by side during this period of metalworking, or not far removed from it. It would not be unreasonable therefore, especially in view of the metallurgical components in the hoard, to connect it generally with the metalworkers practising in the environs. It should, however, be borne in mind that metalworking activity could have spread over a larger area than is apparent. We may note the copper lump in pit F409 and the stone mould fragment from earlier excavation of a pit a short distance away (Johnson 1975, 12). These various finds may appear to be isolated due to the sporadic survival of evidence in protected sub-surface features, but could in fact belong to a broad spread of activity.

As far as the evidence of the ditch fill goes, the adjacent metalworking had essentially ceased before the accumulation of layer 1. This could of course be a local feature with metalworking continuing elsewhere on the site. The occupation represented by post-built structures close by probably started prior to the horizon of metalworking debris, although only a little domestic rubbish was retrieved from the underlying ditch silts. In contrast, however, the ultimate fill was rich in pottery although this may have been secondary rubbish redeposited over a short span of time. Pottery and C14 dates would place this phase around the transition from bronze- to iron-working, circa 7th–6th century BC, which might provide an explanation for the cessation of Late Bronze Age metalworking. This would, furthermore, be a convenient and attractive explanation for the non-retrieval of the hoard, for such stocks of bronze scrap would lose much of their utilitarian and strategic value once an iron-based economy had been established.

4.8 BAKED CLAY OBJECTS (fig 40) by Martin O'Connell

Five spindle whorls were identified (1–5), two of which had not been completed (4 and 5). All five examples were made by drilling holes into broken potsherds from both sides, a technique paralleled at Runnymede Bridge (Longley 1980, 31) and Staple Howe (Brewster 1963, fig 74, 8). The two unfinished objects are similar to the Runnymede example. The drill holes in one of these (5) did not exactly correspond and for this reason it may have been abandoned.

Parts of three rectangular perforated baked clay slabs or plaques were identified (6–8). Clay slabs with a number of perforations have been found in Late Bronze Age contexts in South-East England and various interpretations have been put forward including cooking or ventilation (Champion 1980, 237–8). Similar examples have been discovered at Mucking (Jones & Jones 1975, fig 48) and at Runnymede Bridge (Longley 1980, fig 17: and 58).

Six fragments of perforated baked clay objects (9–14) could have come from loomweights or slabs but were too small for adequate identification or reconstruction. The catalogue is on Microfiche 20.

4.9 THE POTTERY

4.9.1 *Introduction*

This section inevitably draws heavily on the recently published material from Runnymede Bridge (Longley 1980, 33–74) which lies only 400m to the north-east of Petters Sports Field and close to the southern bank of

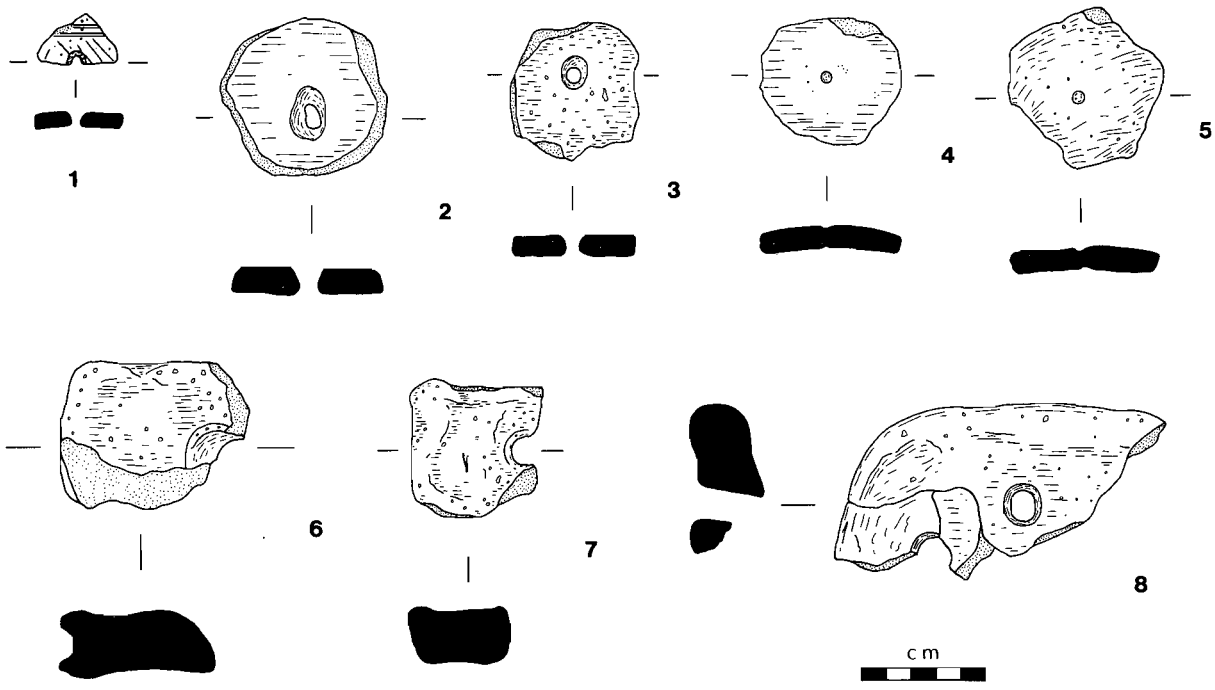

Fig 40 Baked clay objects; Spindle whorls 1–5 and Perforated slab fragments 6–8

the Thames. A large pottery group was found in association with more closely dateable metalwork at that site where occupation in the Late Bronze Age was limited to one period and has been assigned to the 9th or 8th centuries BC (Longley 1980). Settlement at Petters can be divided into more than one period but the bulk of the pottery (see below) belongs to a contemporaneous assemblage. The principal phase of occupation signified by that pottery could be as much as two hundred years later in date than that at Runnymede Bridge but the many similarities detectable in the two assemblages indicate that both sites were working in the same tradition of pottery manufacture. Consequently much of the comparative material discussed by Longley is relevant to Petters and a similar approach has been adopted although as far as possible needless repetition has been avoided.

4.9.2 *Stratigraphy*

89% of the pottery (fig 41, 8 to fig 55, 248) came from the ultimate fill (117.1 117.7 and 117.8) of the large ditch (F117) excavated in Area 1. Analysis of this group in terms of fabric, typology and decoration has demonstrated that it is a contemporaneous one, thus providing us with a standard by which to assess the remaining pottery from the site.

A relatively small quantity of sherds was recovered from the silt layers of the same ditch (F117). Illustrated material (fig 41, 2–7) comes from F117.2, the layer sealed by the ultimate fill of the ditch and the same layer into which the hoard of bronzes had been concealed. A near complete profile was provided by one vessel (fig 41, 1) found at a lower level within the ditch fill (F117.3).

The remainder of the identifiable sherds was produced by 3 rubbish pits, F405 (fig 55, 249–66) 409 (fig 56, 267–9) and 476 (fig 57, 272), and 2 postholes, F420 (fig 57, 270) and 424 (fig 57, 271) excavated in Area 4. There is no evidence to suggest that this small group from the occupation area is not contemporary with the larger group obtained from the ultimate fill of F117.

4.9.3 *Fabric and manufacture*

Visual examination of the sherds has been enhanced by neutron activation analysis of a representative sample of the total assemblage. This work has been undertaken by Richard Mann at the University of Bradford and includes material from Runnymede Bridge and the Iron Age site at Brooklands, Weybridge. A preliminary report (unpublished) on his findings is particularly useful for our interpretation of the pottery from Petters (Longley and Mann pers comm). It appears that apart from one vessel the samples form a distinct and closely knit group, the prevailing characteristic being the sandy nature of the fabric, and it is probable that one particular clay source was utilised. The only variant is the bowl from F117.3, already referred to above, which is stratigraphically earlier than the main assemblage. This vessel was made in a rough flint-gritted fabric and may have been the product of a different clay source.

Visual examination demonstrates that it is the sandy quality of the pottery that sets it apart from the

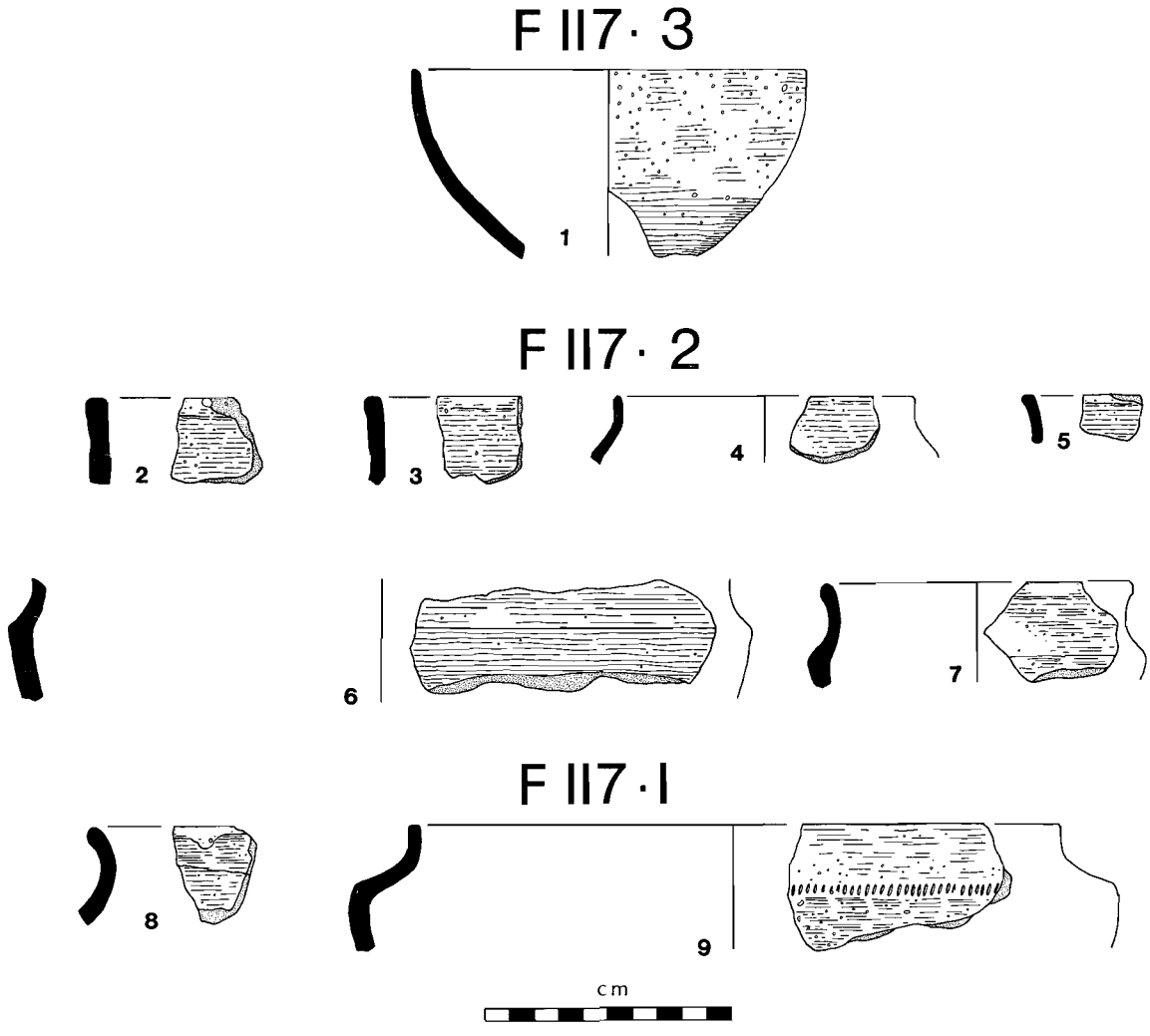

Fig 41 Late Bronze Age/Early Iron Age pottery 1–9

Runnymede Bridge assemblage. Nevertheless much of what Longley says concerning the fabric and manufacture of the ware at that site can be applied to Petters. The same colour variations occur and the same distinction between the heavily gritted coarse wares and the finer virtually gritless wares which are often lightly burnished. However, at Petters the proportion of large flint grits (5–7mm) is much lower and the majority of the sherds are tempered with a mixture of medium (2–4mm) and fine (1mm or less) flint grits. A fairly large proportion of the vessels contained grog inclusions which were much less common at Runnymede Bridge.

The pottery had been hand made and evidence of slab building was noted (eg fig 41, 6). The application of bases as separate clay slabs has been discussed by Close-Brooks (Hanworth & Tomalin 1977, 24) and Longley (1980, 65). The splayed effect that results from this method together with the heavily gritted bases where the pot has been left to dry on crushed flint were also found at Petters (fig 54, 233). Grass or straw appears to have adhered to one base (fig 53, 216) in a fine smooth fabric but the random nature of the impressions suggests that this had occurred accidentally. Vegetable smearing is paralleled at Runnymede Bridge (Longley 1980). A grain impression (cereal emmer) was found on one vessel (fig 53, 229). A handle was also identified (fig 52, 195) but it is not certain how, or to what type of vessel it was affixed.

4.9.4 *Typology*

Needham and Longley's review of the evidence from Runnymede Bridge (1980, 397–436) contains a comparative assessment of the pottery assemblages from a number of Late Bronze/Early Iron Age sites in the Lower Thames Valley, including Petters Sports Field. The occurrence and relative frequency of Runnymede pottery types at Petters is presented in the form of a histogram (fig 58) and the figures are based on the entire body of illustrated sherds, allowing 50% to be classified. As there is no significant variation in terms of typology between the various elements of the site assemblage, the decision not to exclude any of the smaller groups is a valid one.

The pottery classification adopted in that report is a modification of the type series presented in the excavation report on the 1976 season at Runnymede Bridge (Longley 1980, 65–70) and several types have been amalgamated (Longley, pers comm). It should be noted that it is the modified typology that is followed

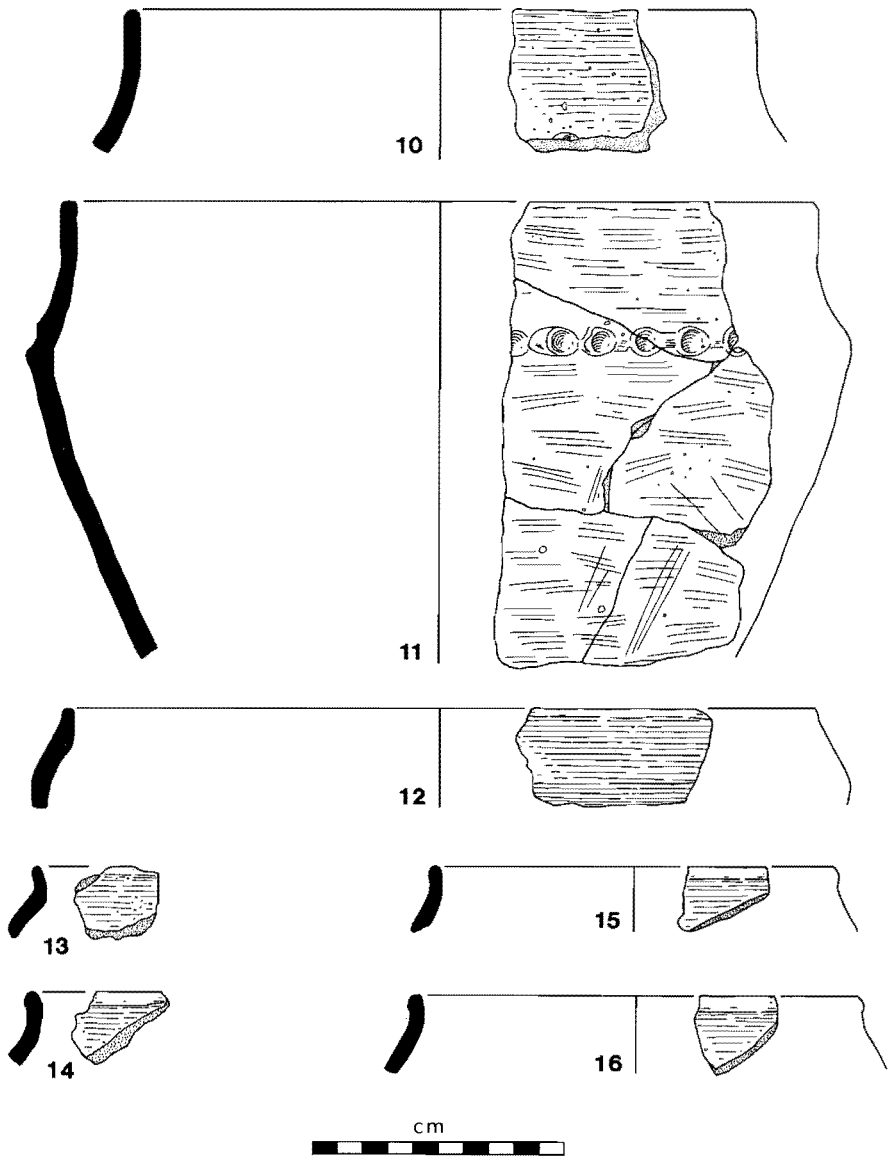

Fig 42 Late Bronze Age/Early Iron Age pottery 10–16

is this report. One form that appears at Petters (fig 46, 56 and fig 54, 240) but not closely paralleled at Runnymede Bridge is the tripartite jar. This jar type occurs in the Early All Cannings Cross group identified by Cunliffe assigned to the 8th or 7th century BC (Cunliffe 1978, 33) and is also included in Cunliffe's Kimmeridge/Caburn group which has a date range of *c* 750–500 BC (op cit, 35–6). Tripartite jars at Long Wittenham are considered by Longley to be a development of the bucket jar tradition (Longley 1980, 68), which now come under Runnymede Bridge Type 12 (Needham & Longley 1980, 407).

When the typology of the pottery from the two sites is closely compared it is clear that a smaller range of vessels is apparent at Petters. Most of the Runnymede Bridge types belong to the fine jar and bowl series at that site (Types 11 and 10 respectively). Cups or beakers (Type 1) are not represented at all. The most obvious distinction is the preponderance of biconical bowls (Type 4) at Petters and the relatively low precentage of this form at Runnymede. While slack shouldered jars (Type 15) are more numerous at Petters, the high shouldered variety (Type 12) is almost equally represented at the two sites.

The full significance of the disparity between the two sites will be considered in 4.9.7.

4.9.5 *Decoration*

25% of the sherds had been decorated (19–22% at Runnymede Bridge). Finger-tipping and finger-nail impressions were the commonest type of decoration occurring on 21% of the pottery (9–13% at Runnymede Bridge) frequently found on Type 12 jars and to a lesser extent on Type 15 jars. The rims and shoulders of the large jars had been decorated in this way while finger-tipping could occur on the rim and shoulder of the same jar (cf Ivinghoe Beacon; Cotton & Frere 1968 and Staple Howe; Brewster 1963). A cable effect was noted on the rims of some vessels. Applied cordons with slashed decoration were found on two sherds (fig 52, 194 and fig 55, 246). This type of decoration is paralleled at Ivinghoe Beacon (Cotton & Frere 1968, fig 20,

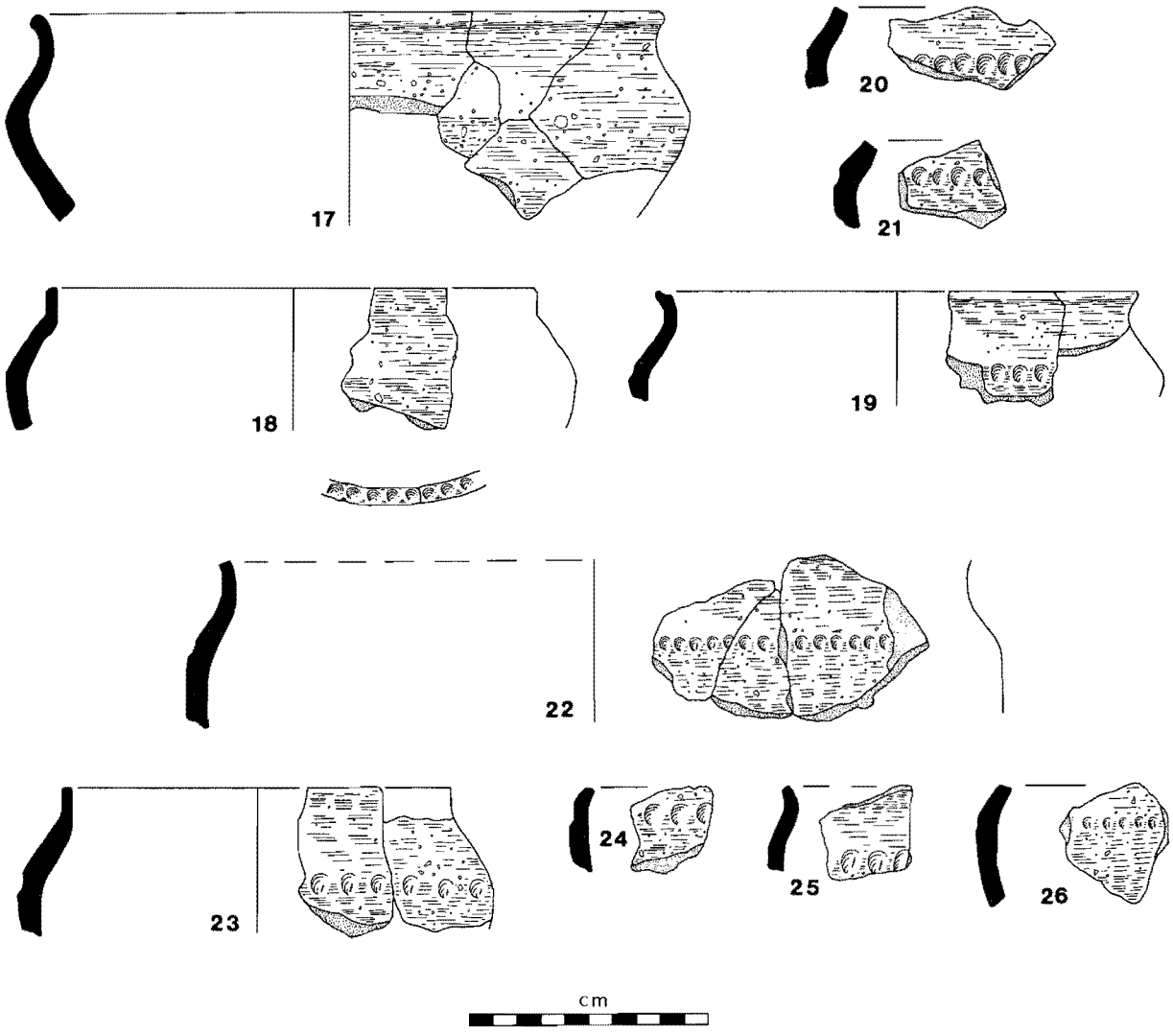

Fig 43 Late Bronze Age/Early Iron Age pottery 17–26

140); Minnis Bay (Worsfold 1943 fig 8, 3); Castle Hill, Scarborough (Challis & Harding 1975, fig 44,2), and at Weybridge (Hanworth & Tomalin 1977, fig 18, 121 and fig 19, 140). Overall finger-tipping was found on nine vessels. This type of decoration is commonly found on Late Urnfield pottery in the Low Countries (Harding 1974, 136) but is comparatively rare in Britain. Examples have been found at Ivinghoe Beacon (Cotton & Frere 1968, fig 20, 118 and 131); West Harling (Clark & Fell, 1953, fig 12, 26 and 27; fig 14, 40); Heathrow (Canham 1978, fig 16, 42, 43); and possibly at Weybridge, (Hanworth & Tomalin 1977, fig 17, 85) and at Chalke Wood, Wattisfield, Suffolk (Wacher 1961 1–28) although Petters has produced a much higher proportion of vessels with this decoration. Vertical finger-tipping on one sherd from outside the main assemblage (fig 57, 270) is closely paralleled at West Harling (op cit fig 12, 27). Harding considers that this type of finger-tipping is derived from the vertical rivets of a sheet-bronze situla (Harding 1974, 140). A single row of finger-tipping was noted on the body of several vessels but two sherds were too small to make it certain whether they belonged to pots with overall finger-tipping. The use of finger-tipping has been discussed by Barrett (Barrett 1975, 107) and Alcock (Alcock 1973, 119–20) and is a technique that originates in the Middle Bronze Age but is not common in the early part of the first millennium BC. This form of decoration is widely used after the 7th century BC (Barrett 1975, 107) and reaches a high watermark at Staple Howe where over 40% of the vessels are decorated in this way (Brewster 1963) while a similar proportion is found at West Harling (Clark & Fell 1953). Finger-tipping continues to be employed into the Iron Age but gradually becomes less common (compare the frequency of finger-tipping at Kimmeridge II with the comparative minority of the technique in the ensuing phase at Eldon's Seat II (Cunliffe & Phillipson 1968).

A number of small sherds, in a smooth, sometimes gritless fabric, had been decorated with a single horizontal or vertical incised line. The only example of a biconical bowl with incised decoration (fig 56, 259) came from outside the main assemblage. There is evidence for the appearance of biconical bowls with incised decoration in the Middle Thames Valley by the 8th century BC and the same bowl form with decoration is attested at an earlier date in the Thames estuary at Mucking (Barrett 1980, 307–8). One small fragmentary sherd which had been re-used as a spindle-whorl was decorated with incised horizontal and oblique lines.

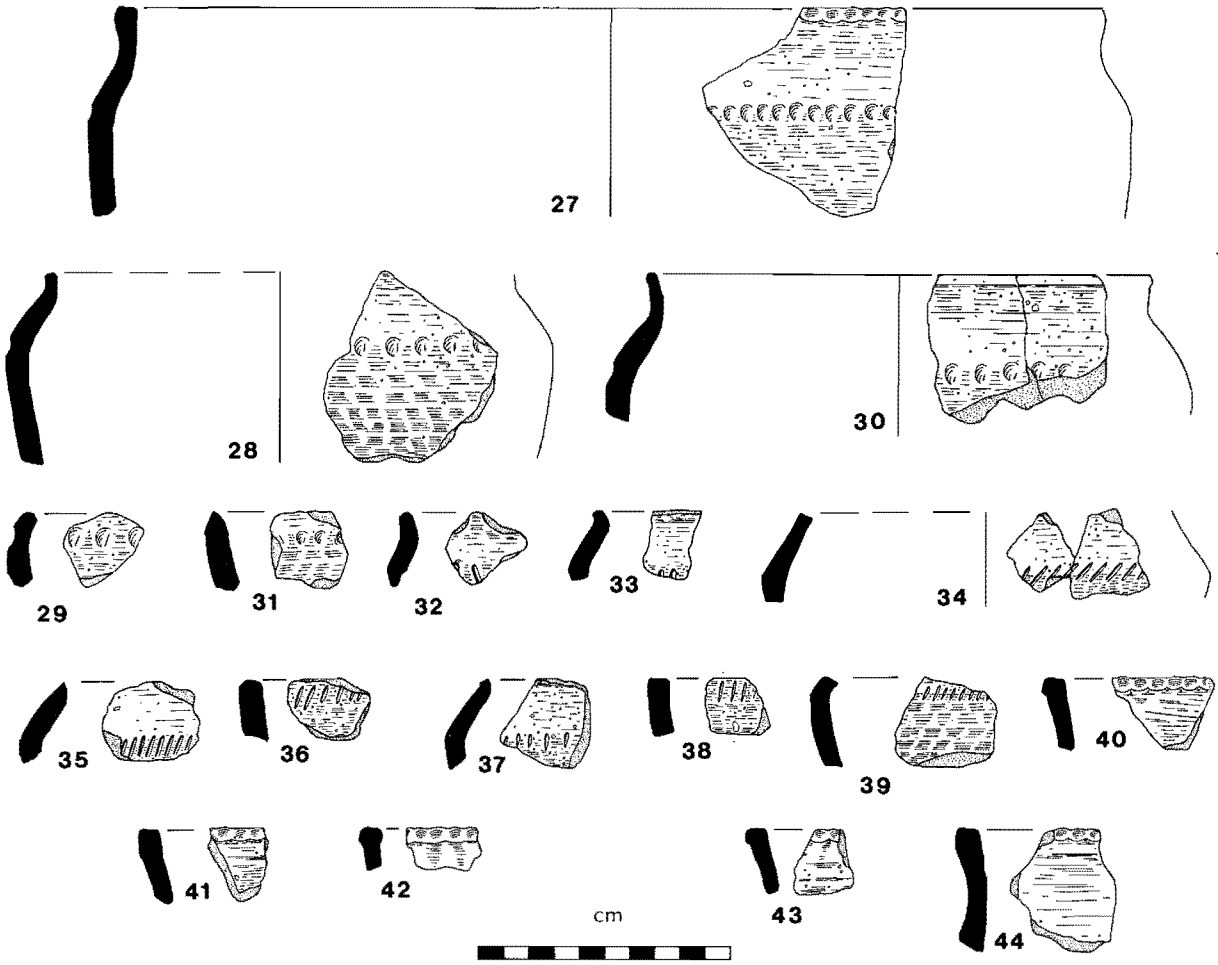

Fig 44 Late Bronze Age/Early Iron Age pottery 27–44

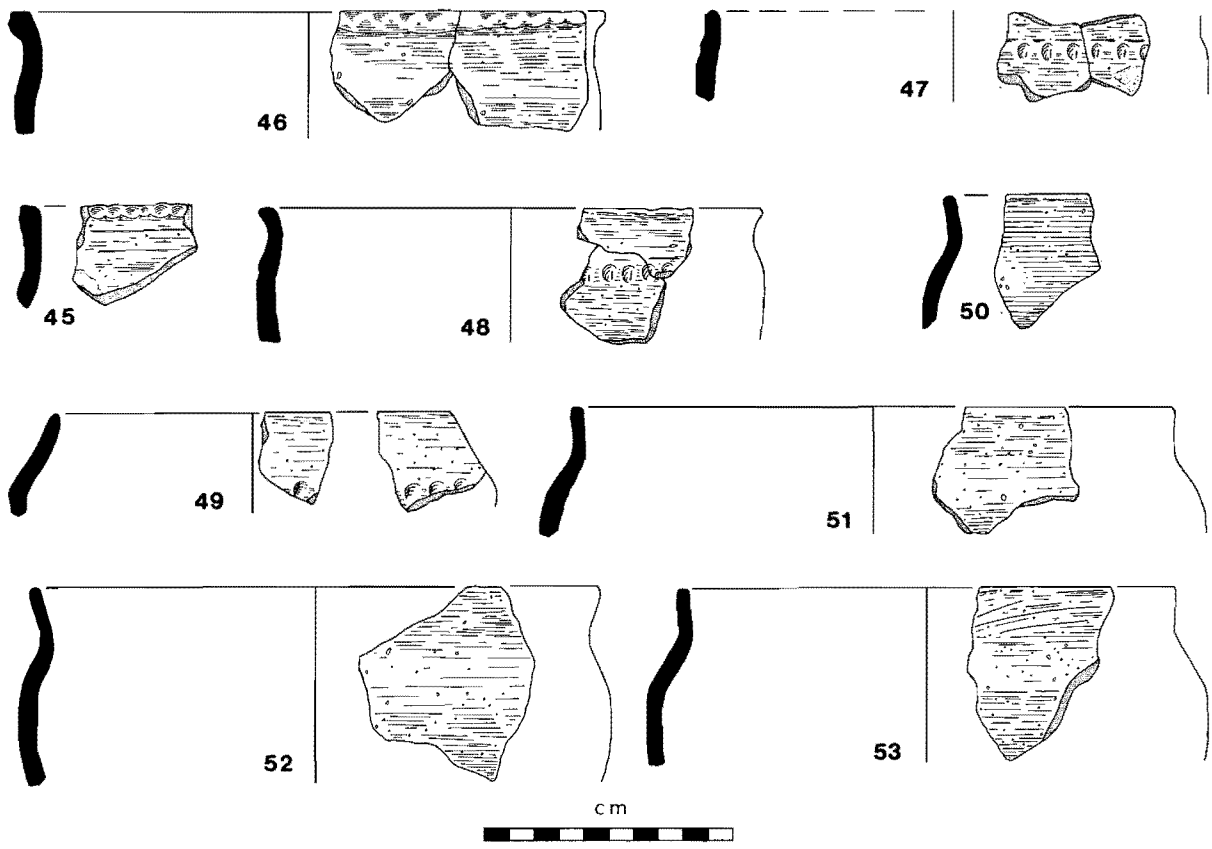

Fig 45 Late Bronze Age/Early Iron Age pottery 45–53

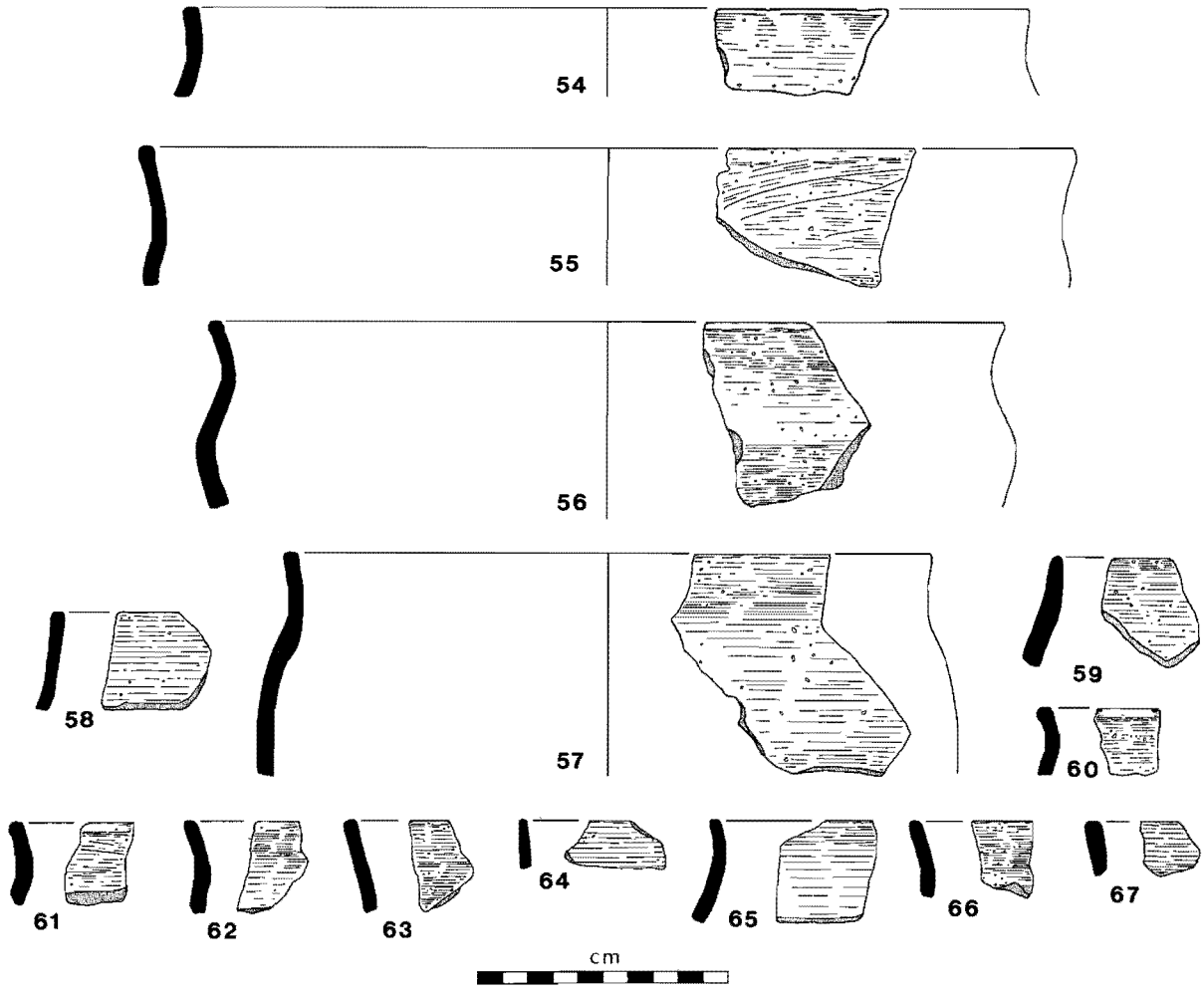

Fig 46 Late Bronze Age/Early Iron Age pottery 54–67

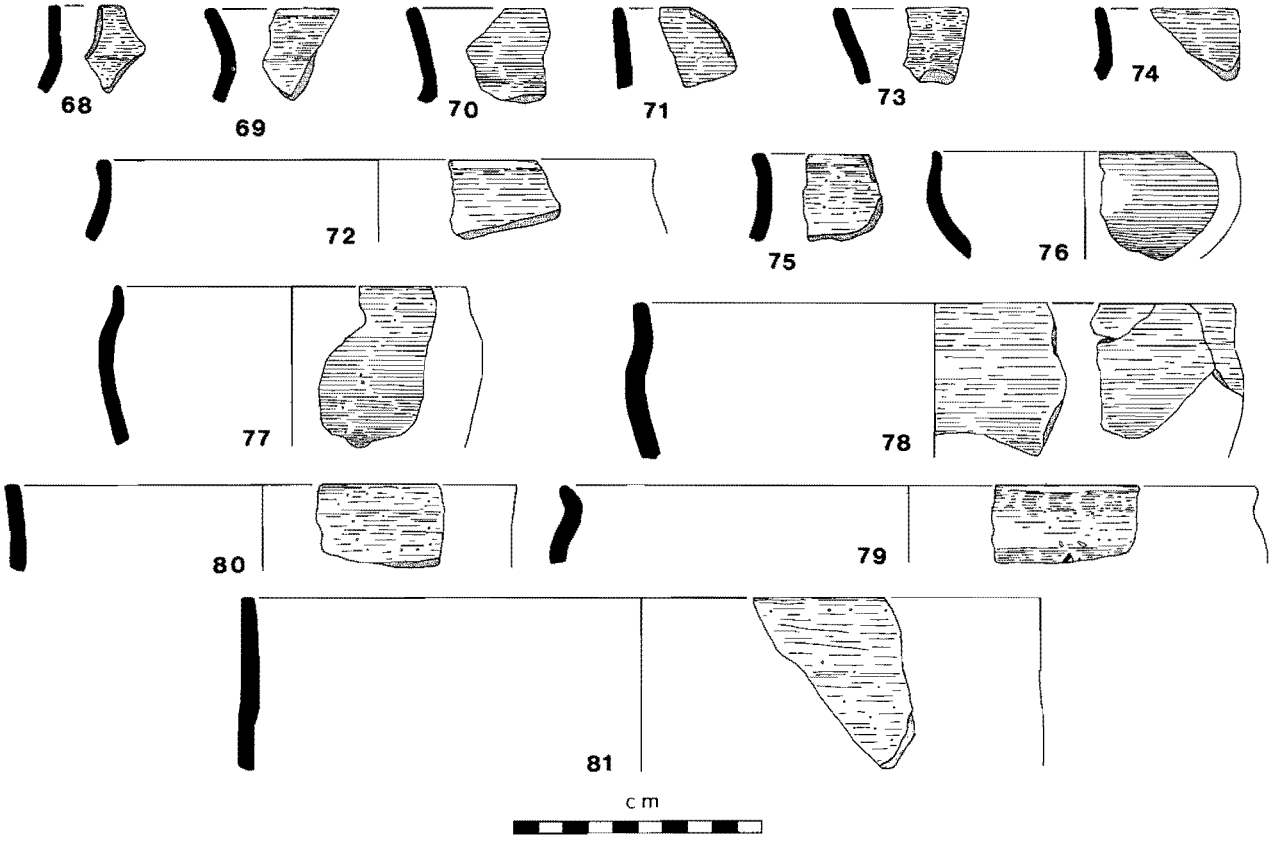

Fig 47 Late Bronze Age/Early Iron Age pottery 68–81

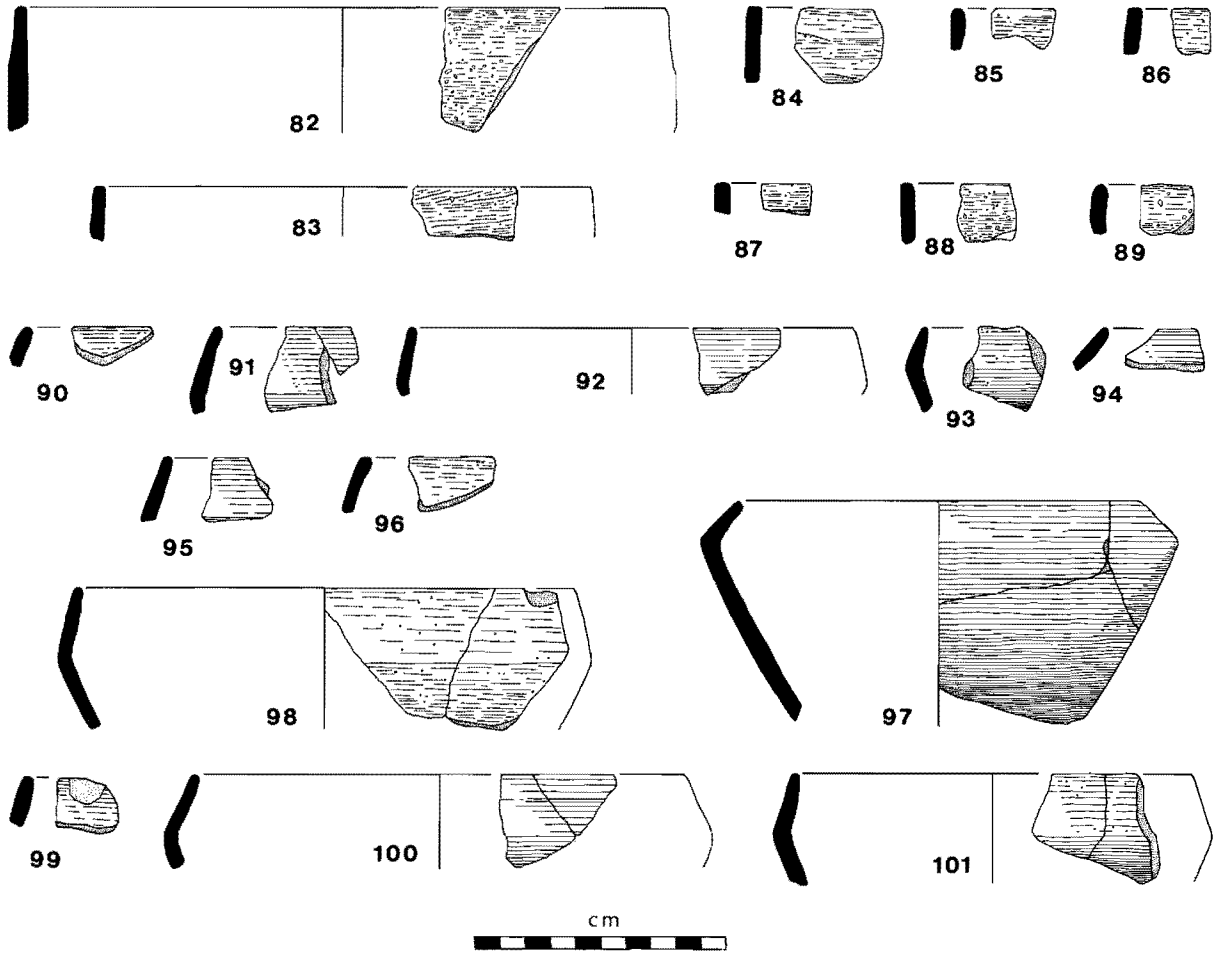

Fig 48 Late Bronze Age/Early Iron Age pottery 82–101

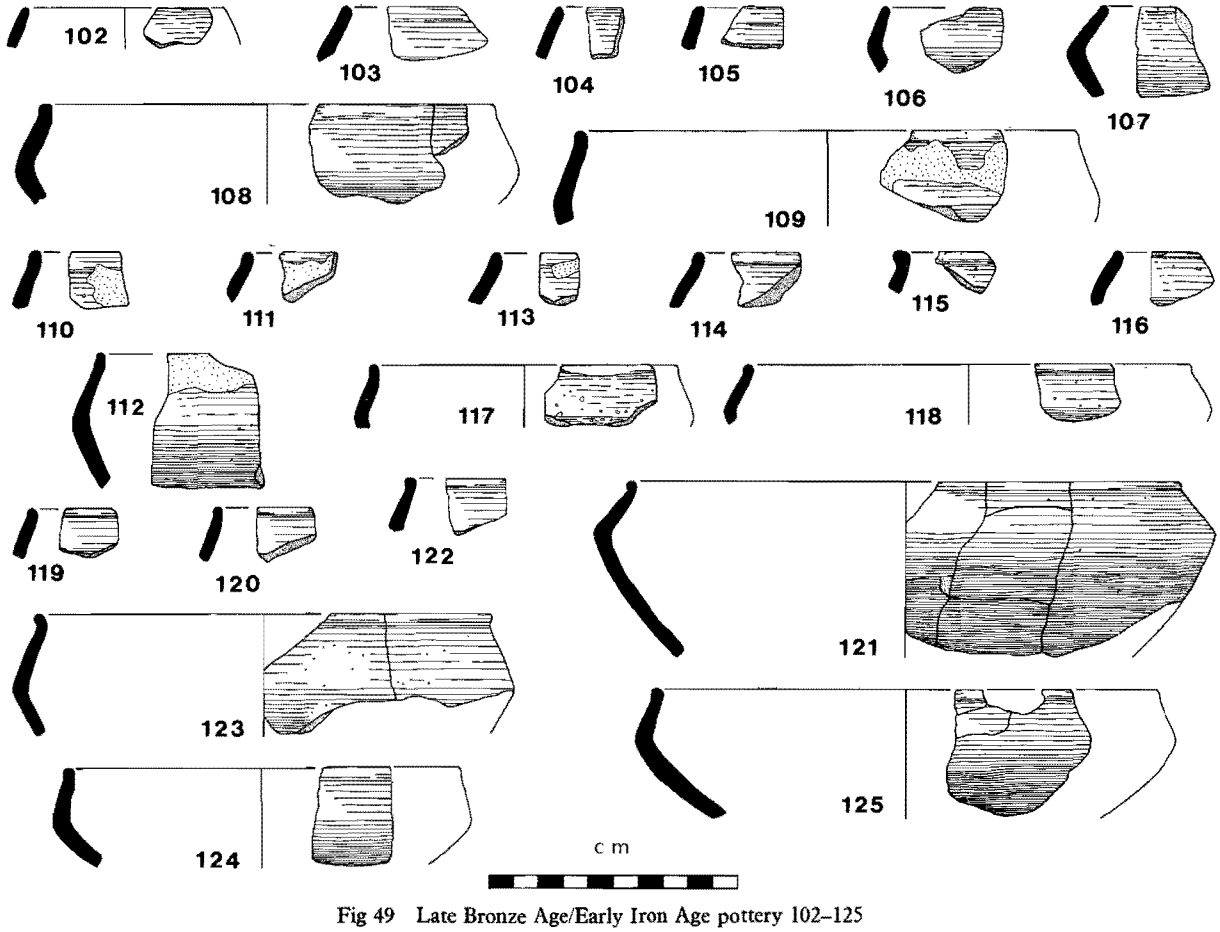

Fig 49 Late Bronze Age/Early Iron Age pottery 102–125

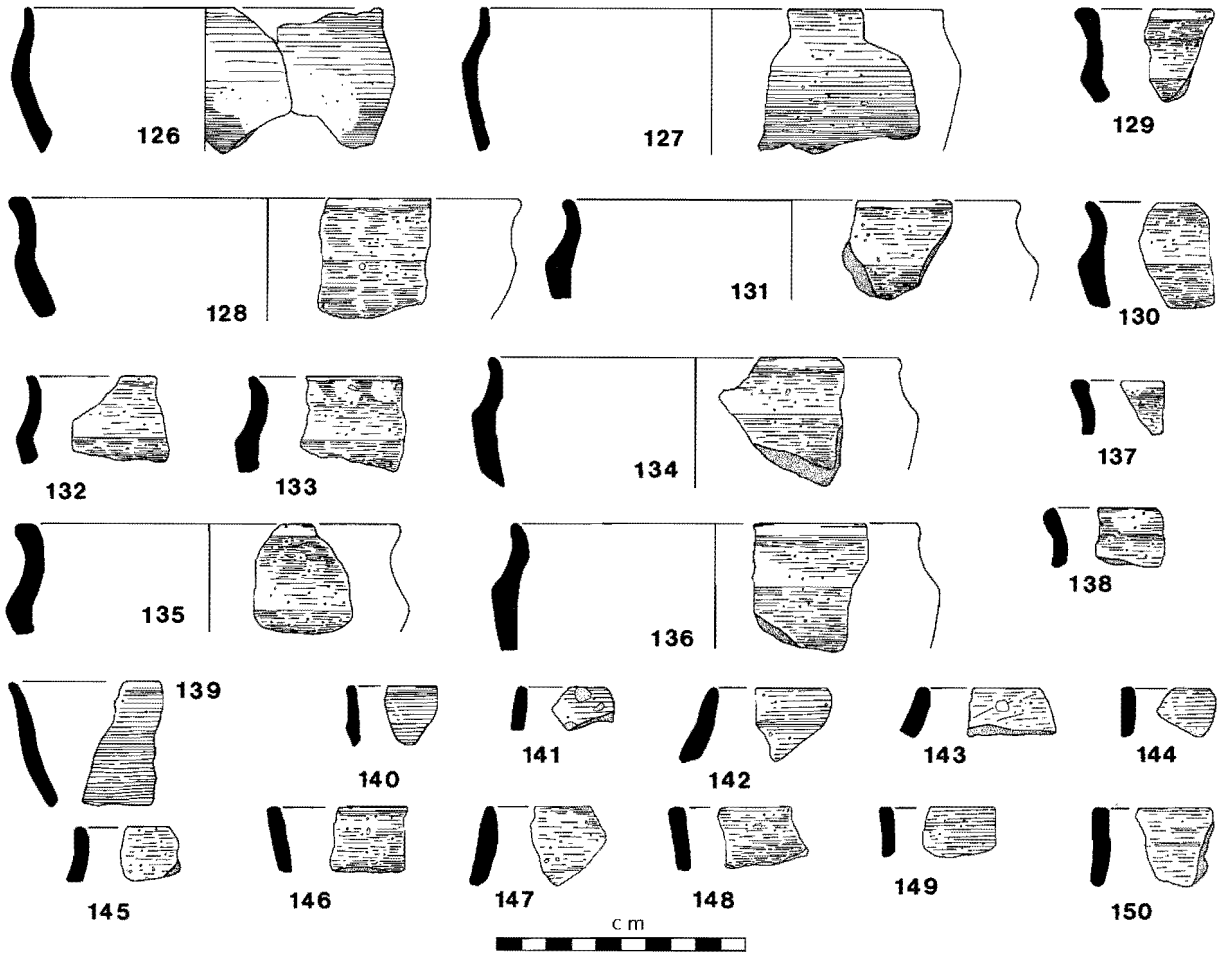

Fig 50 Late Bronze Age/Early Iron Age pottery 126–150

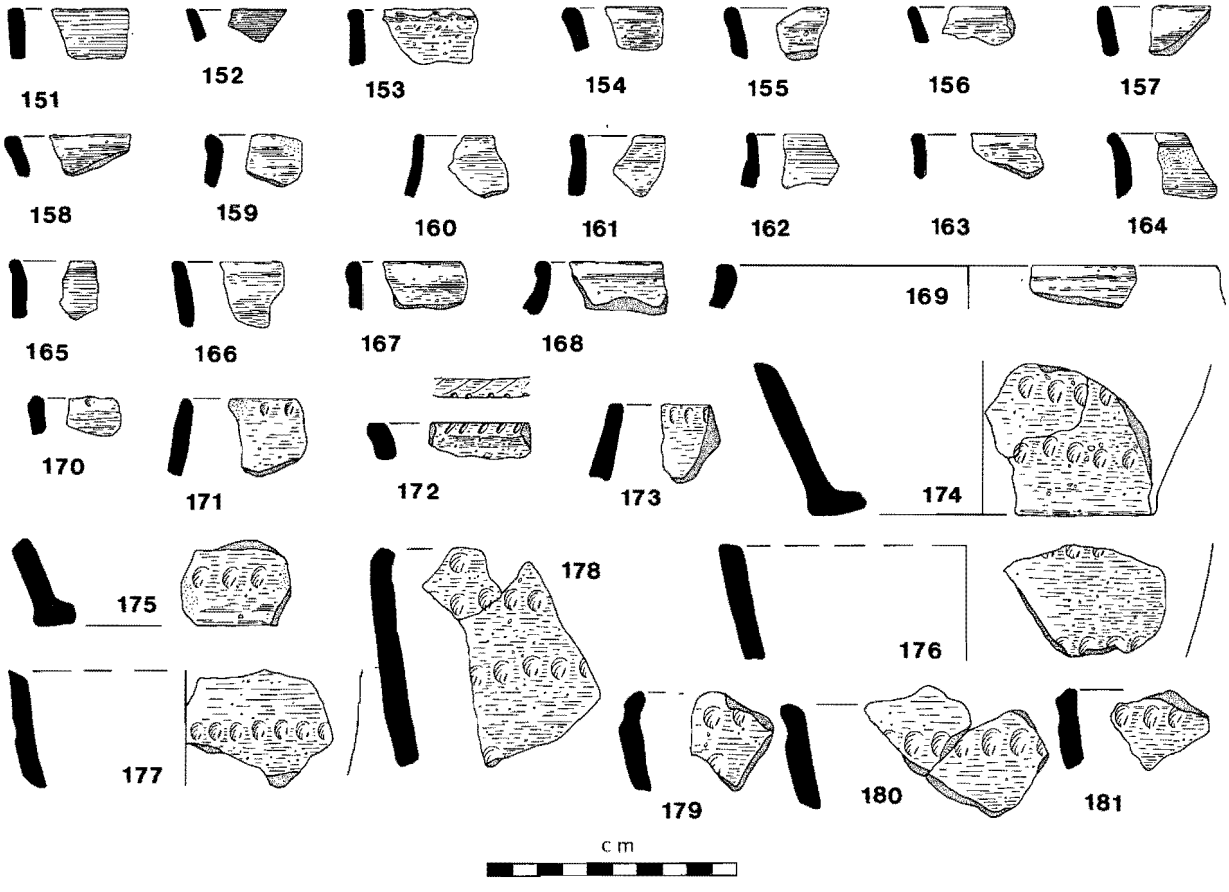

Fig 51 Late Bronze Age/Early Iron Age pottery 151–181

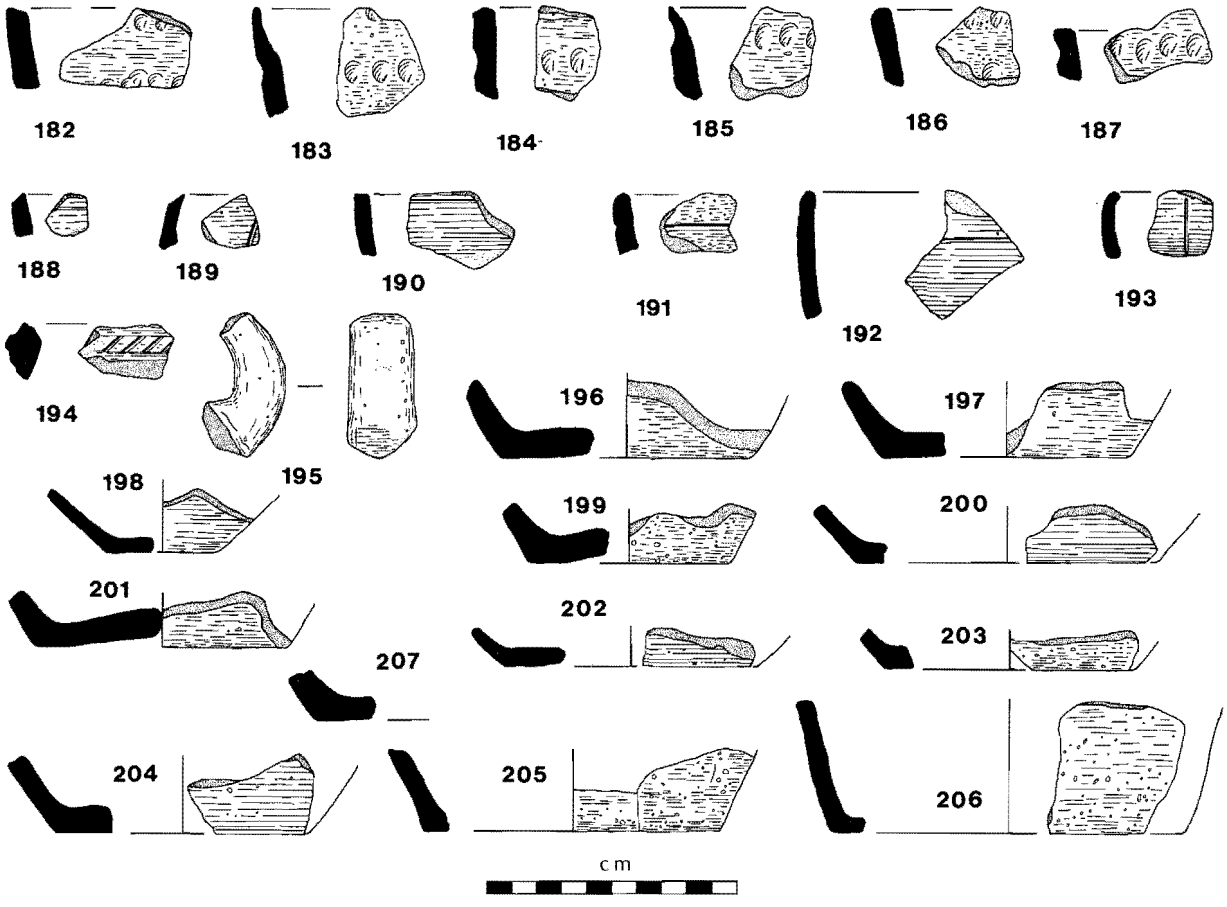

Fig 52 Late Bronze Age/Early Iron Age pottery 182–207

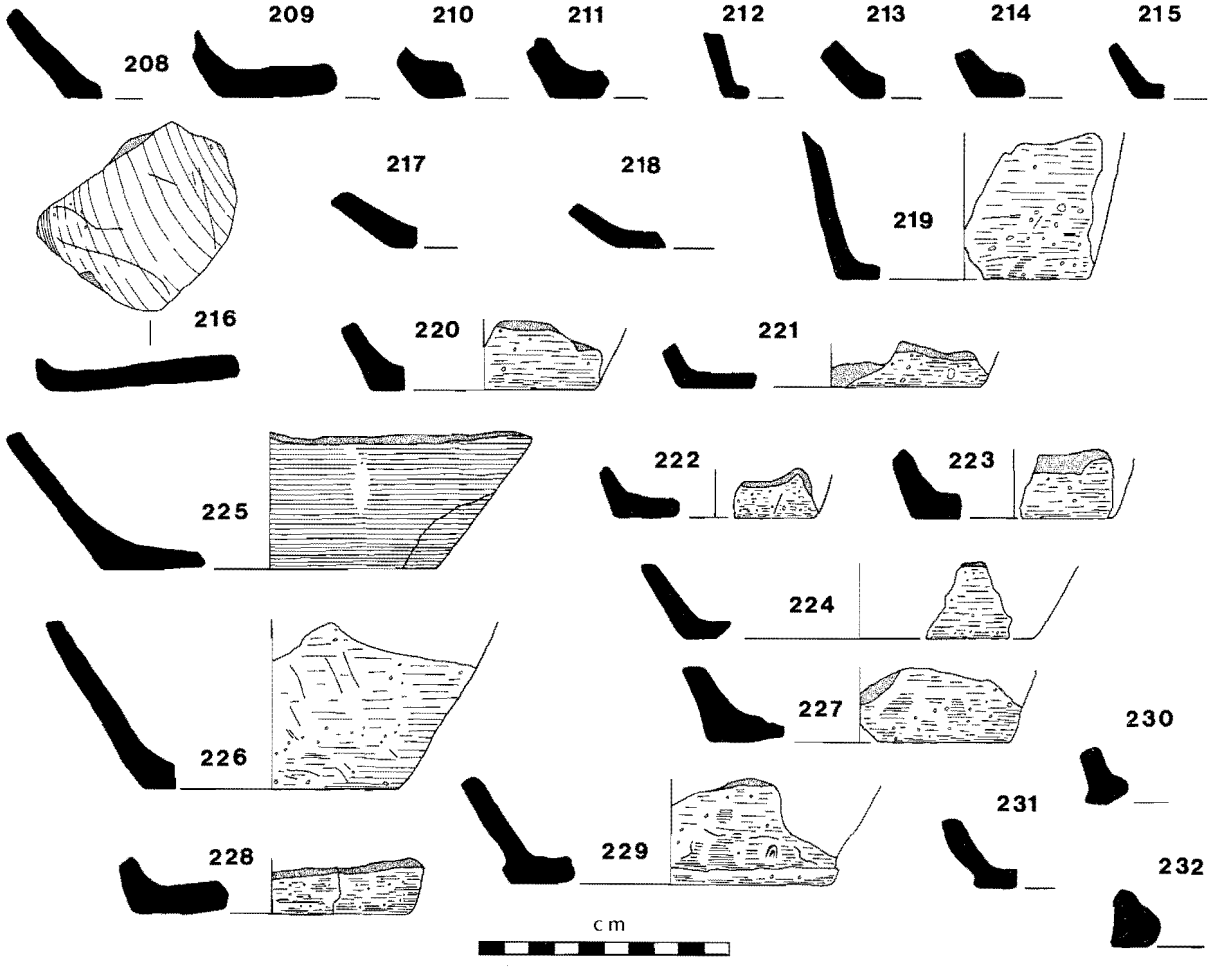

Fig 53 Late Bronze Age/Early Iron Age pottery 208–232

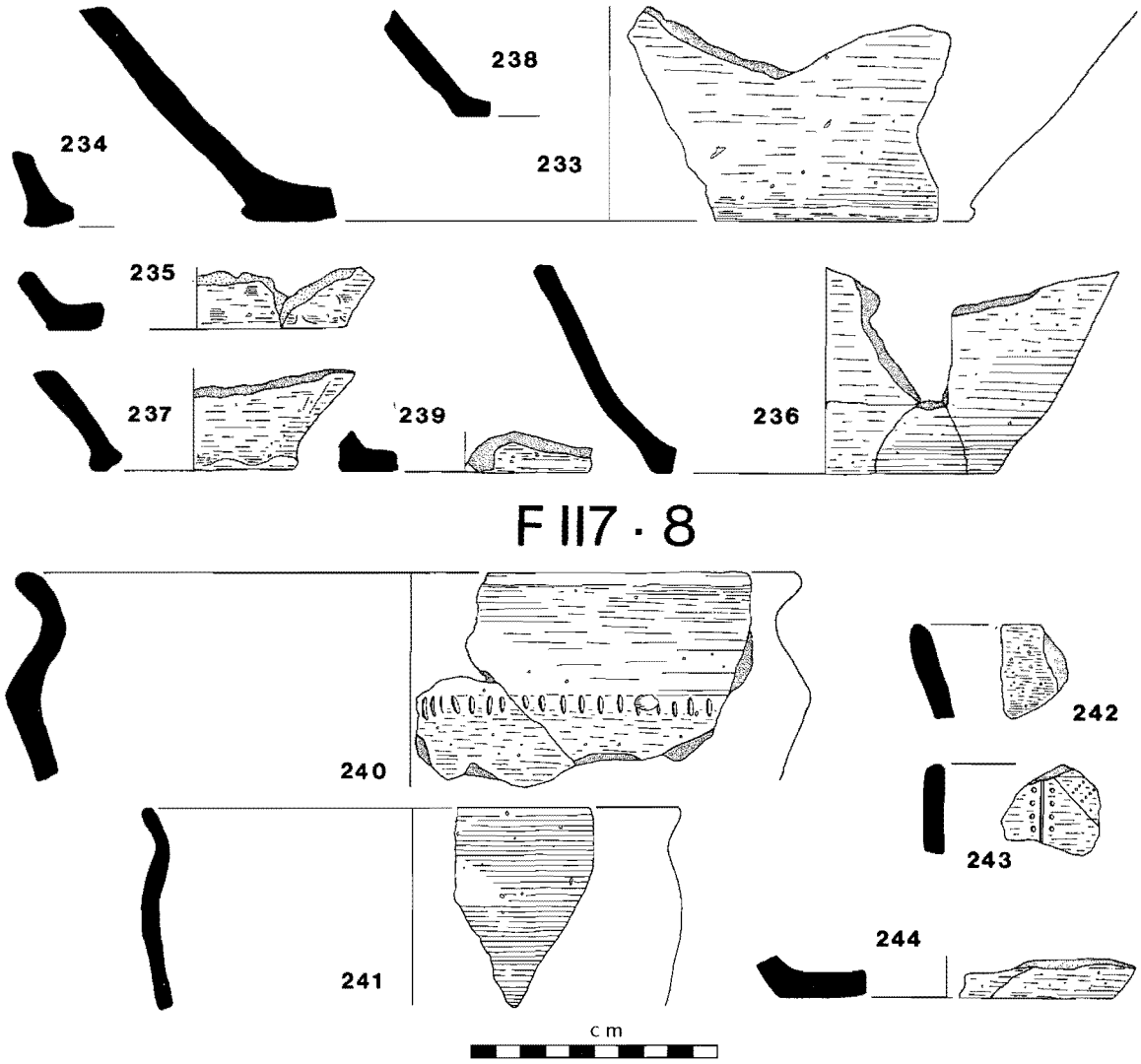

Fig 54 Late Bronze Age/Early Iron Age pottery 233–244

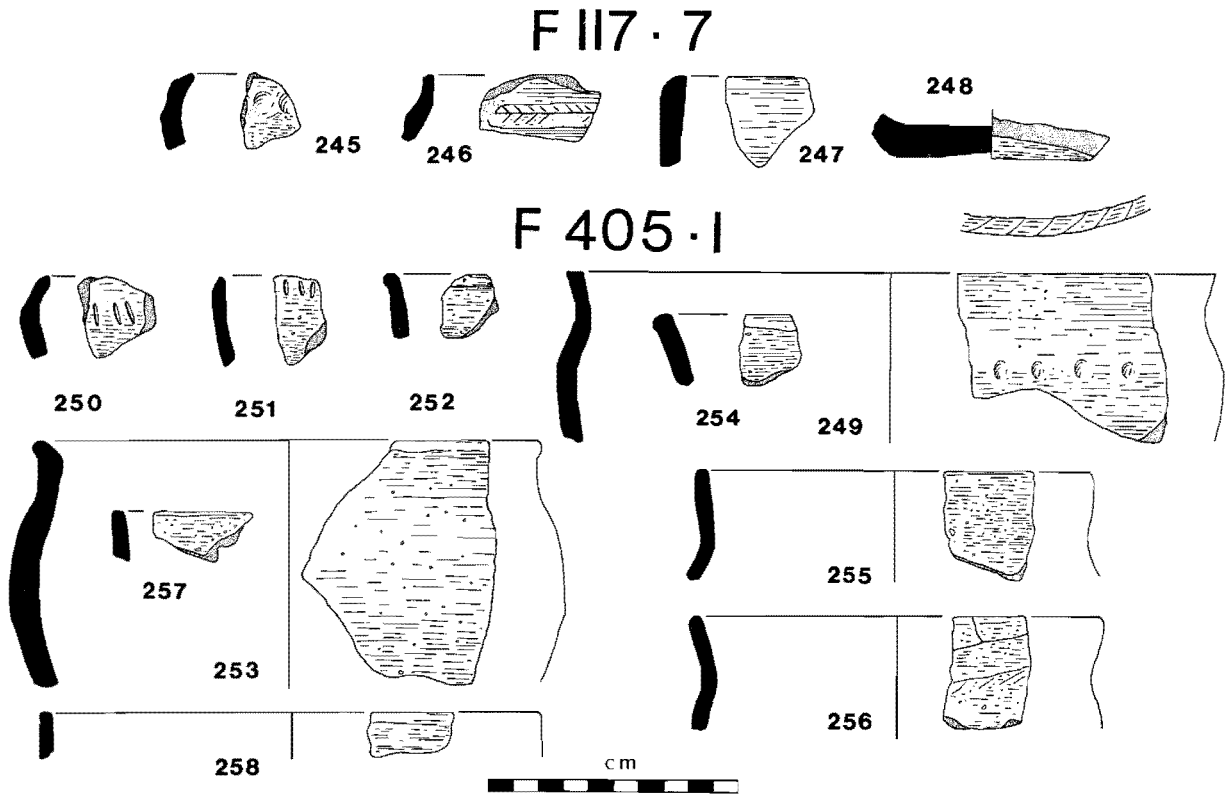

Fig 55 Late Bronze Age/Early Iron Age pottery 245–258

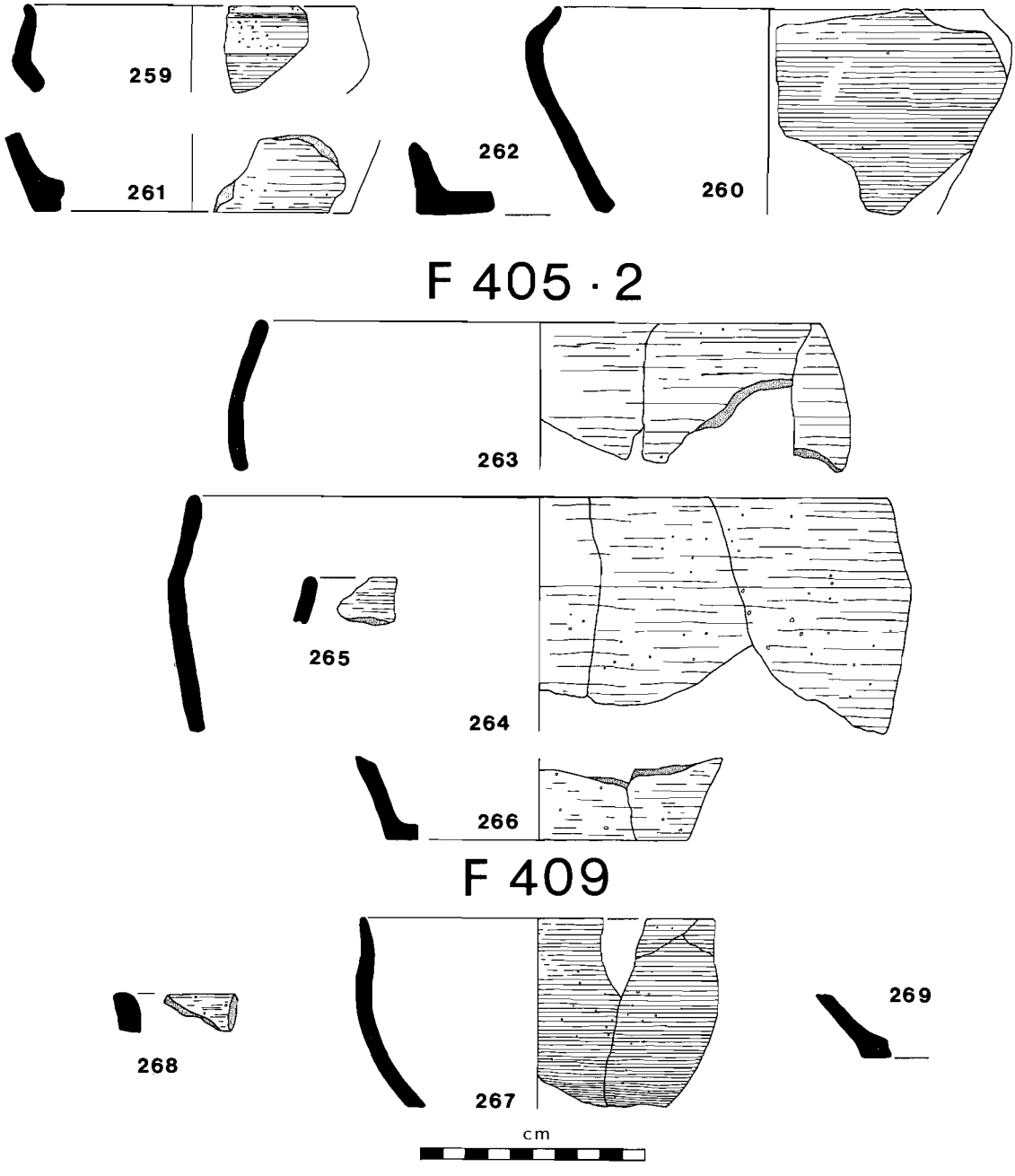

Fig 56 Late Bronze Age/Early Iron Age pottery 259–269

Similar decoration occurs at Ivinghoe Beacon (op cit, fig 16, 8 and fig 18, 55 and 56); Kimmeridge (op cit, fig 23); Rams Hill (Barrett 1975, fig 3: 6), and possibly Runnymede Bridge (Longley 1980, fig 36, 387). A solitary body sherd was decorated with an incised vertical line edged with punched dots and an incised triangle containing stabbed impressions (fig 54, 243). Infilled geometric designs are found at Knights Farm (Bradley *et al* 1980, fig 35); Kimmeridge op cit, fig 23; Rams Hill (Barrett 1975, fig 3: 6). All Cannings Cross (Cunnington 1923) and Weybridge (op cit, fig 16, 59 and 60). One vessel at All Cannings Cross had been ornamented with lightly impressed lines edged with punched dots (Cunnington 1923, pl 35, 3) but the combination of the two techniques at Petters is so far unparalleled.

4.9.6 *Chronology*

Although the ultimate fill (F117.1, 7 and 8) of the ditch is stratigraphically later than the deposition of the hoard there is no indication that the interval in time between them was a prolonged one. The contents of the hoard are regarded as 7th century BC in date, that is late within the Ewart Park Phase (see 4.7). From the ultimate ditch fill a series of radiocarbon measurements were obtained which cumulatively give a fairly reliable estimate of date, indicating that the layer in question was deposited some time in the 7th or 6th century BC (see 4.12). Earlier excavations at Petters Sports Field (Johnson & Needham 1974) produced a pit containing an axe mould in association with a small group of pottery. The mould (Needham 1981, 9–10) had been used to produce bronze axes of the Stogursey type (one of the components of the hoard) while the

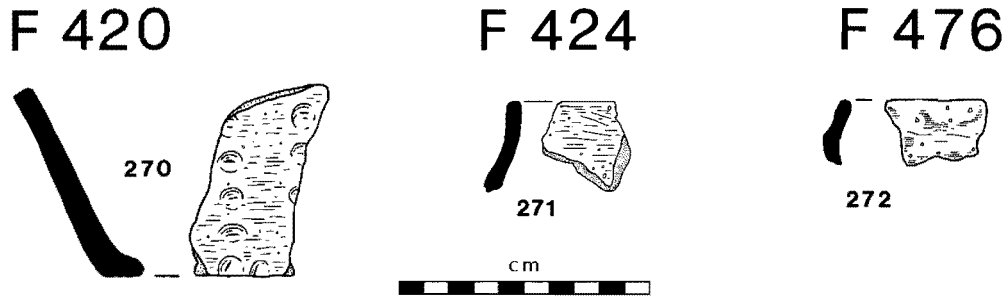

Fig 57 Late Bronze Age/Early Iron Age pottery 270–272

pottery on the basis of fabric, typology and decoration would not have been out of place in the main assemblage at Petters.

It should also be noted that pottery from F117.2, a layer associated with the metalworking phase on the site (see 4.3.1), is indistinguishable from the greater part of the Petters assemblage in terms of typology and fabric. However, a close similarity between a small and a large Late Bronze Age pottery group is not a sure indicator of contemporaneity because many of the commonest types of vessel and decorative motifs have a long currency in that period, in some cases surviving into the Early Iron Age (see 4.9.7). Nevertheless, only one sherd at Petters is unique in terms of fabric, namely the bowl (fig 41,1) found in the lower silt of the ditch F117.3. The relationship between the construction and initial use of the ditch and the occupation of Area 4 has already been noted while on the basis of both fabric and typology this bowl could be as early as material from Runnymede Bridge.

4.9.7 *Discussion*

In view of the chronological but not apparently cultural distinction between Runnymede and Petters, close comparison of the pottery groups from the two sites is of particular importance to our understanding of ceramic development in the lower Thames Valley. Barrett's recent paper on Late Bronze Age pottery (1980, 297–319) as well as Longley's comparative analysis of pottery from sites within the lower Thames Valley (Needham & Longley 1980, 410–3) obviate the need for lengthy discussion in this report, however.

A useful summary of the main characteristics of the Petters material can be achieved by following Barrett's method of classification (1980, 302–3) which relates in particular to vessel function, thus combining the three elements of fabric, shape and decoration. This approach also serves to highlight some of the more important distinctions between Petters and Runnymede. Accordingly it appears that the large jar form in a coarse fabric, often with applied decoration (Class 1) is the major component (63%) of the Petters assemblage. The next element in terms of importance (26%) is the fine bowl form (Class IV) while bowls in a coarser fabric (Class III) are much less common (11%). Jars in finer fabrics (Class II) and cups (Class V) are not represented although both occur at Runnymede.

That some of the differences in the assemblages from Runnymede and Petters are of chronological significance has been suggested by Longley (Needham & Longley 1980, 412–3) who identifies three elements in the group from Petters as possible developments in pottery manufacture:

1 The less pronounced use of flint grits and tendency towards a generally sandier fabric.

2 The biconical bowl form with developed rim (Type 4b) (Longley 1980, 73).

3 The increasing use of certain decorative techniques.

This last element is discussed in broader terms by Barrett (1980, 302–19) and is important to the distinction he draws between the two traditions that can be observed in ceramic production during the Late Bronze and Early Iron Age, namely the 'plain-ware' and the 'decorated'. Runnymede is considered to be a development for the former, earlier tradition, while Petters is thought to be more typical of a 'decorated' assemblage.

Taking into account the disparity in status between Runnymede and Petters, evident in the archaeological record, it would be surprising if the differences in the two pottery groups were explicable solely on chronological grounds although the importance of the latter in this respect makes it difficult to quantify the extent to which economic factors are reflected by the variations in the two assemblages. However, the absence of certain Runnymede types at Petters, namely the fine jar and bowl series (Type 11 and 10 respectively) and cups (Type 1) could be significant in assessing the economic status of the two communities. Types 10 and 11 are paralleled in other 'decorated assemblages' (cf Barrett 1980) while examples of Type 1 vessels can be found in the pottery group from Sandown Park, Esher, a site associated with Iron Age material (Burchell & Frere 1947). Cups are not commonly found in site assemblages (Barrett 1980, 302–3) and the rarity of this form may be a reflection of its intrinsic value or signify a specialised function.

It would appear then that, bearing in mind the possibility of certain discrepancies due to economic considerations, the material from Runnymede and Petters represents a sequence within the development of

ceramic traditions during the later Bronze Age. For an appreciation of subsequent changes in pottery production it may be profitable to examine pottery from the Iron Age site at Brooklands (Hanworth & Tomalin 1977). That site lies about 10km south of Petters and the material from the 'Early land surface' is of particular interest in this context because it derives from the earliest phase of occupation identified there. Many of the elements in that group would not be out of place at Petters and the main distinction between the two assemblages is the less obvious preference for Class IV over Class III bowls (Barrett 1980, 302) at Brooklands together with a higher frequency of decorated vessels. The possible significance of fabric variations between the two sites in terms of chronology is discussed by Longley (Needham & Longley 1980, 413). The catalogue of pottery is on Microfiche 21.

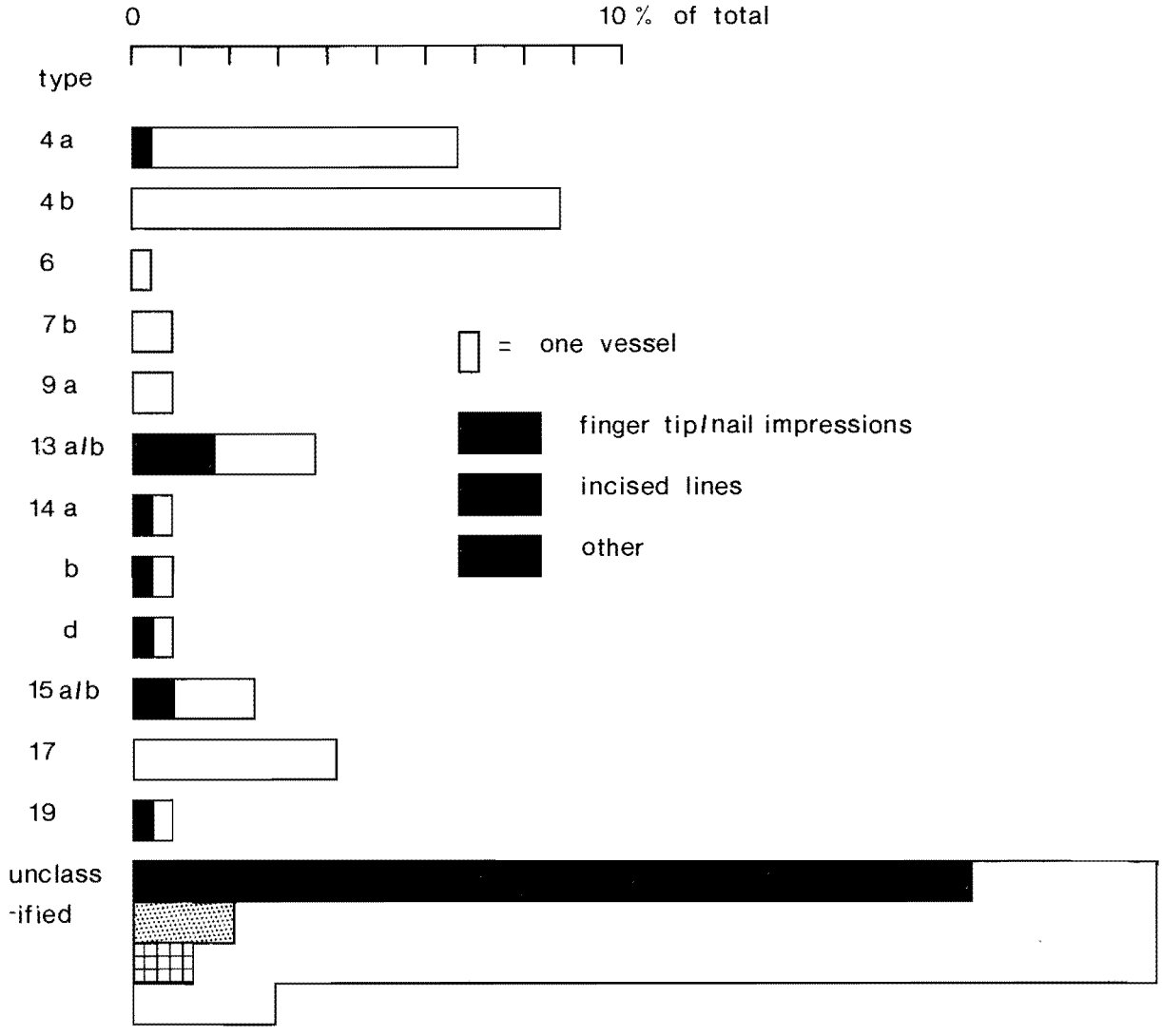

Fig 58 Histogram to show the relative frequency of Runnymede pottery types at Petters Sports Field

4.10 THE ANIMAL BONES by Geraldene Done

Five hundred and sixty bone fragments were examined, the material being in a reasonably good state of preservation though friable enough to suffer some post-examination damage. It was possible to classify 52% of pieces, many of the rest being parts of large animal (ie horse, ox or red deer long bones) lacking diagnostic features.

4.10.1, Table 4 sets out the fragment distribution. Bones from Romano-British and Medieval features are few and unremarkable. The report deals, therefore, with the Late Bronze Age material from F.117 and 405, a total of 236 identified, plus *c* 200 unclassified pieces. Horses, cattle, sheep, pigs, red and roe deer are present.

Horse

Five horse bones from F.117 Area 1, included a complete radius (right) and first phalanx; measurements appear in 4.10.2. There were also a well-worn cheek tooth, a second radius (left) probably from a second

horse, and a third phalanx. The complete radius indicates a good-sized pony standing 1.37m (13 hands 3in) at withers. This matches very closely the estimated height of a horse from the nearby Runnymede Bridge site (Done, in Longley 1980) and also that of an animal reported at Minnis Bay (Jackson 1943).

Cattle

At least six adult cattle are represented (right distal humeri) and it is possible by taking into account wear on 54 loose teeth, to increase them to nine, but the method is probably too imprecise to be taken seriously.

Measurements are given in 4.10.2. 4.10.3 ranks complete metapodials from Runnymede Bridge and Petters Sports Field according to length and shows well what great diversity of conformation existed in the population as a whole.

Sheep

Sheep bones form an insignificant part of the sample, which probably does not reflect properly the sheep's status. However, it is in line with the analysis of Runnymede where the sheep was the least important species in terms of food supply.

Pig

The bones reveal little as to size, shape, wildness or domestication, but include a fragment of a large ulna. It is unmeasurable but somewhat bigger than the largest of the Runnymede series. Three of the postulated minimum number of four had been killed at *c* 18–24 months — the most popular age for killing for meat.

Butchering

A study of bone frequencies shows no notable preferences or deficiencies. Some weighting in favour of forelimbs of cattle depends on the distal humeri. The architecture of this extremity is such that it invariably survives well so may be a source of bias.

Four distal ox metacarpals had been split lengthwise, possibly for manufacture. Cut marks are present on radial shafts of ox and sheep, and on tibial shafts of ox. There are also a few gnawing marks; no bones of carnivores were identified but omnivores such as man or pig might equally well be responsible for some of them.

Comment

It is hard to avoid comparing the Petters Sports Field bones with the Runnymede Bridge bones (op cit) but difficult to judge how far a comparison may be pressed. Both collections indicate the paramount importance of cattle, the usefulness of the pig and the relatively small contributions made by the sheep in terms of meat production. Taken together, the bones emphasise variation in the size of cattle and confirm the presence in the area of pigs of large size, though not necessarily wild.

A possible 5 horses shared between bone collections from two sites in close proximity in time and space suggests that the horse was a familiar domestic animal, though there is no available anatomical reason why the bones at Petters Sports Field should not belong to the Runnymede Bridge horses, and vice versa. The Petters site lacks bone or antler artefacts though it is possible that the split ox metapodials referred to under 'Butchering' have been an early stage of manufacture. Both sites hint at the use of ox metapodials but no confirming artefacts have been found. There is no sign of disease. Tables 4–7 are on Microfiche 39–43.

4.10.5 *Addendum*

The analysis of the soil samples (4.11.2) resulted in the discovery of several bone fragments. These were one unidentified fragment from F405.1 and one rodent tooth, together with fragments thought to be the remains of crab shell (Porter pers comm) from F117.1.

4.11 THE ENVIRONMENTAL EVIDENCE

Due to the acidity of the natural subsoil (see 4.7.3) the results from environmental sampling are disappointing and add little to the picture of the site during the Late Bronze Age period of occupation. For this reason the details of this section are not contained in the published text but can be found on Microfiche 44–7.

4.12 RADIOCARBON MEASUREMENTS by R Poulton, A J Clark and D Haddon-Reece

Six samples of charcoal were submitted to the British Museum for radiocarbon measurement. Five came from F117.1 and one from F405.1. The results are shown in Table 8. The principles advocated by Ward & Wilson (1978) were used to check the consistency of the dates and to combine them, and calibration to calendar years is in accordance with Clark (1975), to which papers the reader should refer for the statistical details.

Table 8. Radiocarbon dates and calibration of possible groupings. Asterisks indicate level of acceptability of the groupings. Calendar dates are given as spans at the 95% confidence limits.

	Sample	Context	^{14}C date bc	Group	Mean date bc	Calendar date BC	
a	BM-1620	F117.1	410 ± 90				
b	BM-1621	,,	405 ± 55	a-d	450 ± 45	435-720	**
c	BM-1623	,,	510 ± 80	a-e	480 ± 55	435-795	*
d	BM-1624	,,	500 ± 65	a-f	510 ± 60	445-820	
e	BM-1622	,,	770 ± 105	e-f	740 ± 75	788-1093	**
f	BM-1625	F405.1	720 ± 90				

BM-1620, 1621, 1623 and 1624 (a-d) form a highly consistent group (T = 1.3; chi-squared = 7.8). The addition of BM-1622 (e) to the group reduces but does not destroy the consistency (T = 7.8; chi-squared = 9.5); and the further inclusion of (f) (T = 12.0; chi-squared = 11.1) is just beyond the limit of acceptability. (e) and (f) form a highly acceptable combination (T = 0.1; chi-squared = 8.8).

Although calibration produces broadly similar results for the first three possible groupings, BM-1622 and 1625 do stand out in contrast with the rest. Thus extended occupation or two phases are possible, with some intrusion of earlier material into the later. However, the pottery (4.9) from the site suggests a broad contemporaneity, and the results are not so disparate that the early ones could not be explained as due to the residuality of the type caused by the burning of heartwood from old trees.

4.13 DISCUSSION

During the prehistoric period the site was occupied from the Neolithic period until the end of the Bronze Age, although continuity of settlement is not suggested. The division and, therefore, probably the utilisation of the land differed with each successive phase. The principal period of occupation occurred in the later Bronze Age during the 7th or 6th centuries BC and land use prior to this is characterised for the most part by enclosure ditches. Some at least of these could have served to control stock or have formed field boundaries although the size of F117 indicates that it probably fulfilled a much more important function and is certainly too large for a simple field ditch. This feature would have provided a substantial barrier to movement, animal or human, when first constructed and it is regrettable that we have such a limited amount of information relating to its length and direction.

It is clear that occupation of the site in the later Bronze Age extended outside the limits of the excavated area but not certain how the concentration of activity in Area 4 related to the rest of the settlement. Neither Hut 1 nor the postholes in Area 1 are closely dateable and need not have formed part of the same phase of occupation. Towards the end of the Bronze Age the ditch (F117) would have been half silted but could nevertheless have provided a convenient boundary for settlement on that part of the site. There is reason for supposing that metalworking was practised within the vicinity of this feature and the siting of such an industrial activity on the outskirts of the inhabited area would have been governed by practical considerations. The material found in F117.1 suggests that the ditch provided a convenient point for the casual disposal of waste, both industrial and domestic and in this context it is interesting to note that the only substantial rubbish pit (F405) from the settlement was close to the ditch.

No feature enclosing the settlement has been found, although the field boundaries discovered about 45m to the south of Area 4 (Johnson 1975, 12) would have limited expansion in that area. Close to these ditches, Johnson uncovered other evidence of occupation including part of a large pit containing quantities of domestic refuse as well as a mould for a Stogursey socketed axe. The feature resembles one investigated at Aldermaston which was interpreted as a pond situated on the outer limits of the occupation site (Bradley *et al* 1980, 290).

Expansion to the north-east would have been limited by an old river channel perpetuated in the line of the County Boundary and separating Runnymede Bridge from Petters Sports Field (Needham & Longley 1980, 42). The disparity in wealth and status between the two communities is evident from the material remains although it should be noted that there is an imbalance in the quantity and quality of the material evidence from the two sites. There are no surviving occupational deposits from the occupied area at Petters and it is impossible to assess how much environmental evidence has been lost due to the acidity of the subsoil. The Runnymede settlement was abandoned due to flooding probably before the main phase of occupation at Petters and it would not be surprising in view of their proximity if some shift of settlement inland took place. General similarities amongst certain elements from the two sites, such as the pottery assemblages, are important in this context.

The economic importance of the river to the site is obvious and the axe mould and hoard contents indicate trading contact and movement both upstream and downstream, as far afield as Wessex and beyond (Needham & Burgess 1980, 466). Metalworking is implied by the artefactual evidence but no physical remains of a workshop have been discovered. Metal could have supplied the settlement's needs in terms of basic tools and implements although it should be remembered that any articles made of wood would not have

survived in the acid subsoil. No contemporary worked flints were identified and furthermore there is no evidence for the use of bone to produce artefacts.

How important metalworking was to the existence of the site can only be surmised but Barrett & Bradley's observations (1980, 265) on the replacement of bronze workshops by iron working centres at the end of the Bronze Age are relevant, particularly if Weybridge was a natural successor to Egham as a metal producing complex. The potential of the river as a food source does not appear to have been realised, however, although the presence of crab shell suggests a limited interest in seafood.

Other activities evidenced at Petters fit into the general pattern of settlement in this period. Local pottery production was suggested at Runnymede because of the uniformity of the fabric (Longley 1980, 1) and the same argument could be applied to Petters with the corollary that a single clay source was utilised for the bulk of the material. The relative frequency of Class IV bowls probably reflected the role of feasting and drinking at the site, two activities which are regarded as of increasing importance during this period, (Barrett 1975, 116). Spinning of yarn is attested but no loom weights have been identified which would have indicated actual cloth production. However, the same system of keeping sheep for wool rather than meat content was practised at Runnymede and Petters (4.10).

To a large extent the bone evidence from both sites presents a similar picture of the stock maintained and there is some indication that pastoralism played a more important role in the economy of this area than agricultural production, (Needham & Longley 1980, 402–3) although the sparsity of the environmental record from Petters does little to substitute or detract from this argument. Satisfactory storage pits for grain are noticeably absent, though cereal emmer has been found on the site and the presence of two sickles amongst the hoard contents might indicate agricultural activity (Needham & Longley 1980, 403). The field boundaries already referred to could point to some degree of land utilisation for cultivation purposes while vegetables formed part of the diet.

Hunting and gathering played a very minor role in supplementing the meat intake and the deer bones identified are perhaps of most significance for the light they throw on the environment of Egham in this period. The only information on food preparation relates to butchering techniques although in this context it is interesting to note that the clay plaques could have been used for cooking.

The incompleteness of our picture of occupation at Petters during the later Bronze Age is disappointing but when considered together with the growing body of evidence from the Lower Thames Valley, particularly from sites such as Runnymede Bridge, Weybridge and now Stanwell (O'Connell 1986) adds substantially to our understanding of this period in Southern England.

CHAPTER 5 PHASE 4 ROMAN

5.1 PHASE 4a

5.1.1 *The ditch* (F124/200/406, F1, Trial trench 1 and Machine trenches A, B & C) (figs 2, 3, 4, 6, 9, pl 20). The ditch and palisade trench (5.1.2) were a continuation of the two features excavated by Johnson and Barker (Johnson 1975, 12–14). The ditch ran north-south, gently curving in a north-westerly direction. In Area 2 where the ditch had been cut into brickearth with gravel it was fairly uniform with V-shaped profile (Section 15). In Areas 1 and 4 where the subsoil was predominantly gravel it was wider reaching a maximum width of 2.50m and depth of 0.92m while the profile had a less accentuated V-shape (Section 11, fig 59). A gradual natural silting appears to have taken place followed by a more rapid infilling when some building debris was thrown into the ditch. In Trial Trench 1 (Section 18) and machine trenches A, B and C, where the natural subsoil consisted of pure brickearth there was noticeable variation in profile and depth:

	TT I	A	B	C
Max width, Metres	1.56	1.10	1.70	1.12
Max depth, Metres	0.73	0.64	0.70	0.76

The profile in Trial Trench 1 and Trenches A and C was V-shaped, but in Trench B had a more rounded wider bottom. The fill was fairly homogeneous consisting of only two layers, primary silt and ultimate fill which contained flecks of charcoal. The uniformity of the fill in this area might suggest a deliberate infilling of the feature although it may only reflect the differential weathering and silting of a ditch cut into brickearth as opposed to gravel.

The finds from the ditch were limited but indicated a date in the latter half of the 1st century AD for the infilling of the feature. The few abraded sherds of prehistoric pottery found were presumably residual. Late Bronze/Early Iron Age material was identified in the silt layers of the ditch where it had cut a Late Bronze/Early Iron Age pit (F405) and subsequent weathering of the ditch side had caused material from the feature to fall into the ditch. The catalogue of ditch-fill is on Microfiche 48.