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An Early Neolithic Settlement and Late Bronze Age Burial Cairn near Bolam Lake, Northumberland: fieldwalking, excavation and reconstruction

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ABSTRACT

A field near Bolam Lake produced a surface scatter containing Early Neolithic flints and pottery. Subsequent excavation over this area revealed a series of archaeological features consistent with a small transitory settlement. Radiocarbon determinations dated this settlement to the early fourth millennium BC. A reconstruction of the dwelling structure was attempted and this revealed that the timber frame could have only supported a light covering such as hides. A Late Bronze Age cairn was also discovered on the site and this had three pits beneath, each containing a cremation. One of the cremations was radiocarbon dated to the beginning of the first millennium BC.

INTRODUCTION

During the late summer of 1997 a small excavation was undertaken in Sandyford Quarry Field (NZ 075 817) near Bolam Lake, Northumberland (fig. 1), in response to the discovery of a surface artefact scatter recorded during previous fieldwalking by John Davies. Repeat visits to this field had demonstrated that it contained a significantly higher density of lithics than many of the surrounding fields (see below) and included narrow blade lithics readily attributed to Late Mesolithic-Early Neolithic traditions. However, it was the discovery of some fragmentary pottery sherds that led to excavation on the site. This pottery was identified as

belonging to the Early Neolithic Grimston Ware series, which supported the dating suggested by the lithics. What was particularly compelling about this assemblage of finds was that they were recovered from a field that had been rarely ploughed, and certainly not to any depth. As this sort of pottery does not survive for many years in the ploughzone, the implication was that the recent ploughing episodes on the field had truncated in-situ Neolithic deposits, resulting in artefacts being brought into the ploughzone. Therefore, it was considered a priority that the lithic/pottery scatter be investigated by excavation so that any surviving archaeological remains could be fully recorded before further ploughing destroyed the surviving deposits.

The archaeological work was directed by Clive Waddington with assistance from John Davies, Gordon Moir, Barbara Esslemont and Chris Bond of the Northumberland Archaeological Group (NAG). The workforce comprised a range of volunteers including experienced NAG members, local volunteers and students from the Department of Archaeology, University of Newcastle upon Tyne. The fieldwork was carried out during September 1997 over a two-week period. The excavation archive and small finds are deposited with the Museum of Antiquities of Newcastle upon Tyne.

PREVIOUS ARCHAEOLOGICAL WORK

Other than fieldwalking and a walkover survey (see below), no previous archaeological

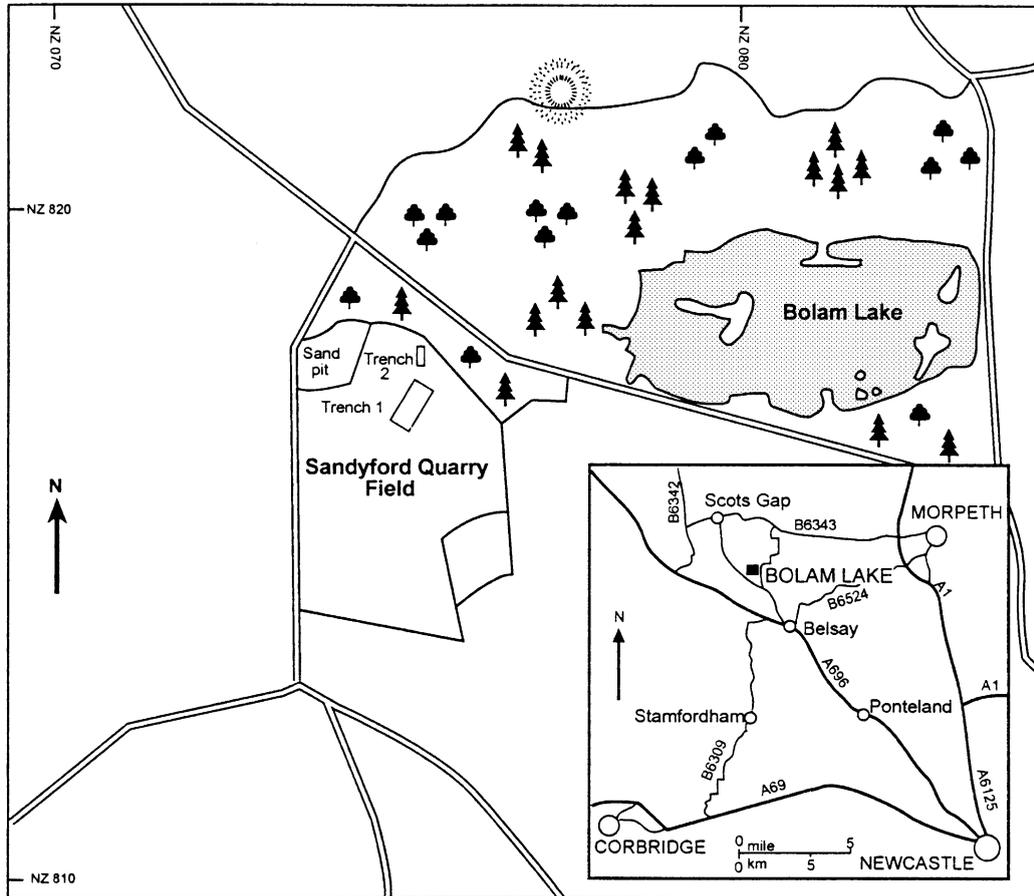


Fig. 1 Location map of the Sandyford Quarry Field site.

investigation had taken place on the site. However, other archaeological work that had taken place in the vicinity of the site included eighteenth-century antiquarian diggings by Warburton in the large barrow with standing stone known as the Poind and His Man (Hodgson 1827, 349), and the excavations on the early Iron Age – Romano British enclosed settlement at Huckhoe, 2 km to the north (Jobey 1959; 1968a). Other archaeological sites of significance in the immediate area include the cup and ring marked rocks discovered by Davies in the area between Middleton Bank Top and Shaftoe

(Davies and Davidson 1990), a number of standing stones and round barrows similar to the Poind and His Man at Shortflatt and Bolam, and a plethora of enclosed settlements such as Slate Hill. The Devil's Causeway Roman road runs in a north-eastwards direction towards the Roman fortlet at Hartburn and passes next to the Poind and His Man on the way. Rectilinear Romano-British settlements are located along this route including those at Edgehouse, Ferney Chesters and one at Bolam Low House 1 km to the east of the Neolithic site in Sandyford Quarry Field.

FIELDWALKING

In 1985 a programme of systematic field survey was instigated that set out to record archaeological remains over an area of 35 sq. km in the area around Sandyford Quarry Field. The results of this project, which included small scale surveys and records of small finds, was a gazetteer published in *Northern Archaeology* (Davies and Davidson 1990). After this report was published a second survey was commenced. One site, a cairnfield, was resurveyed together with two new sites that included a hillfort with associated field system and a deserted medieval village (Davies 1995).

During 1995 the survey was extended to include assessment of surface artefact scatters in an attempt to assess prehistoric activity at a landscape scale. A 40% sampling regime, which comprised line-walking at 5 m intervals with observation limited to 1 m either of the line, was employed. The transects were mainly walked in the winter, the only exceptions being where the autumn sown crop was rape seed, or when pasture was ploughed out for re-seeding during the summer. By 1999 a total of 56 fields had been sampled and a further 8 had been partially sampled (as parts of the latter fields were 'set-aside'). Some of the 56 fields were sampled on more than one occasion, with up to 100% coverage achieved; this was undertaken

to ascertain the drop in yield that would probably occur with subsequent ploughing episodes. Lithics were also collected in the unploughed uplands from erosion scars or tracks. The finds from the fieldwalking were mainly lithics but also included Romano-British finds of glass bangles, jet, worked shale, rotary querns and two fragments of bronze. The results of this field survey programme have been tabulated, drawn and are described in detail elsewhere (Davies in press).

Sandyford Quarry Field was visited three times during the winter-spring of 1995–6 and walked at 5 m intervals (40% coverage) producing 238 lithics and 26 pottery sherds (fig. 2). The field was revisited once during winter-spring 1996–7 and walked at 2 m intervals (100% coverage), producing a further 144 lithics and 42 pottery sherds. In both 1997–8 and 1999–2000 rapid crop growth prevented a full search of the field. The 1999–2000 search overlapped the area where all the finds of prehistoric pottery have been made in previous searches. The results of these searches are shown in Tables 1 and 3, and in the catalogue on page 38; the total volume of finds from these surveys is 382 lithics and 68 sherds of pottery. The pottery distribution was clustered in the north-east corner of the field just above the lip of the sandstone ridge. As already indicated the

Table 1 Lithic densities for various walks over Sandyford Quarry Field.

| Year | Fieldwalking | Finds per ha. | Coverage | Calculated to notional 100% density figure |
|-----------|-------------------------------|----------------|----------|--|
| 1995–6 | 1st search in poor conditions | 2.6 | 40% | 6.5 |
| 1995–6 | 2nd search in good conditions | 3.4 | 40% | 8.5 |
| 1995–6 | 3rd search in good conditions | 3.2 | 40% | 8.0 |
| 1995–6 | Partial search only | Not calculated | | |
| 1996–7 | 1st search in good conditions | 2.6 | 100% | 2.6 |
| 1997–8 | Partial search only | Not calculated | | |
| 1998–9 | 1st search in good conditions | 1.9 | 100% | 1.9 |
| 1999–2000 | Partial search only | Not calculated | | |

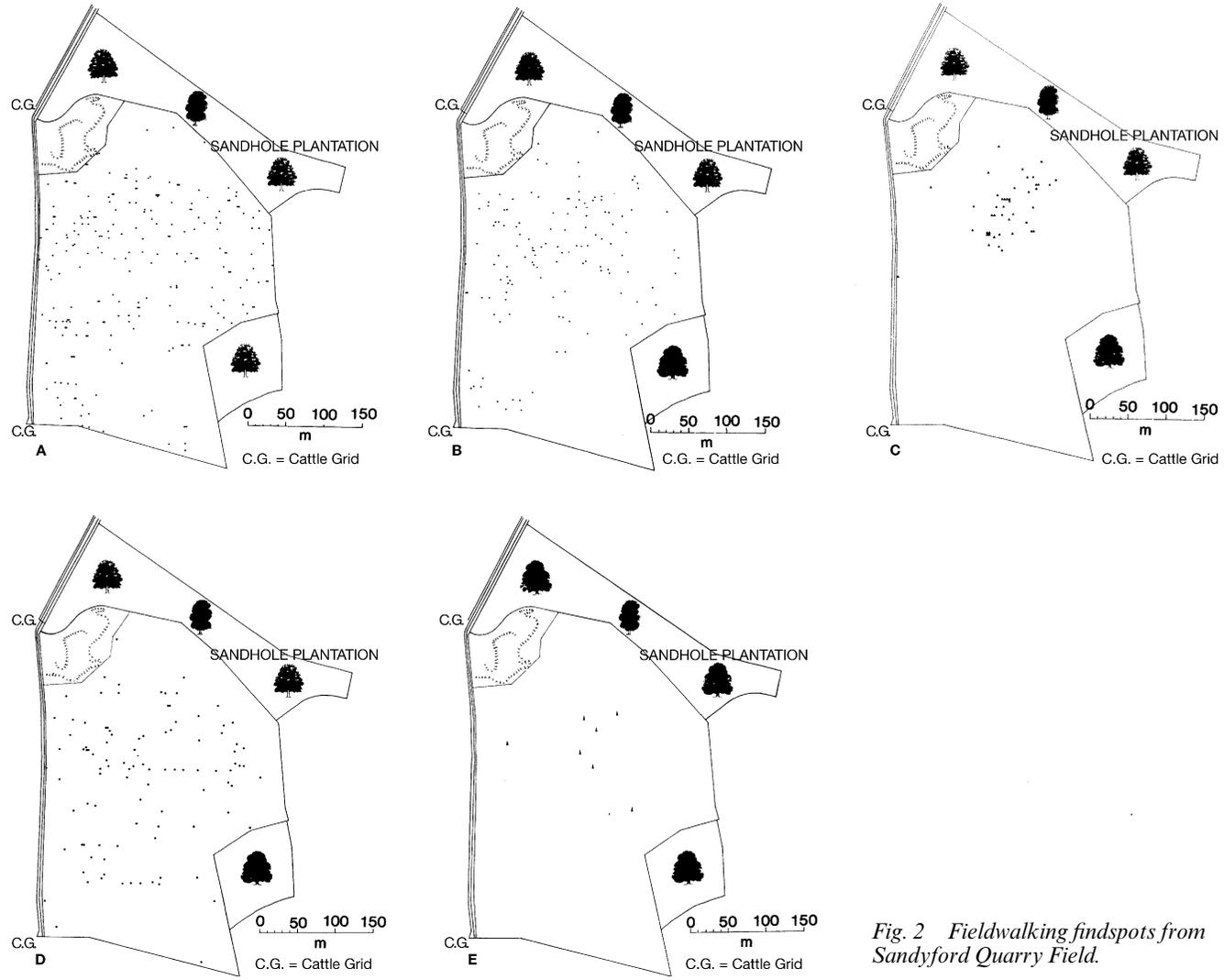


Fig. 2 Fieldwalking findspots from Sandyford Quarry Field.

pottery belonged to the Early Neolithic Grimston Ware series, while diagnostic lithics included predominantly Early Neolithic forms, though a quantity of Late Mesolithic material has also been identified (figs. 23–26).

Table 2 indicates that the majority of the material from the field was made up of flakes and blades (62.3%). A high proportion of these 316 lithics were thermally damaged. A further 105 flakes and blades were retouched or utilised, accounting for 20.7% of the assemblage. There were also many lithics that were definitive tools (11.2%), albeit many of them broken. This gives a combined total of 31.9% of the assemblage as being utilised pieces, which is a very high ratio within any type of lithic assemblage. The proportion of scrapers was 5.9% and this was the highest proportion for any of the single recognisable artefact types, other than the ubiquitous flakes and blades. Such high concentrations of tools and cores are typical of assemblages from occupation sites (Schofield 1991, 119).

Table 2 Breakdown of fieldwalking lithics by type from Sandyford Quarry Field.

| Type | No of Lithics |
|-----------------------------|---------------|
| Pebbles and nodules | 3 |
| Cores and core fragments | 17 |
| Possible cores | 7 |
| Flakes | 262 |
| Blades | 54 |
| Retouched flakes and blades | 42 |
| Utilised flakes and blades | 63 |
| Scrapers | 30 |
| Microliths (inc. possibles) | 7 |
| Miscellaneous | 22 |
| Total | 507 |

The assemblage was multi-period with examples of Mesolithic material (e.g. microliths and scrapers), Neolithic material (e.g. a spearhead, arrowhead and scrapers) and possibly

some Late Neolithic-Early Bronze Age pieces (e.g. two scrapers). The majority of flakes were undiagnostic although the blade forms clearly belonged to a narrow-blade tradition suggesting a Late Mesolithic – Early Neolithic date.

The Pottery Scatter

The pottery finds recorded for the 1995–6 winter were only recovered during the third and fourth searches as previous searches were not conducive to the recognition of pottery. It was noted that conditions considered ideal for the recovery of lithics – after a light shower of rain – were not conducive to the recovery of pottery. Ideal recovery conditions for the latter occurred when the soil was dry and when the generally dark colour of the pottery contrasts with the lighter sandy soil. Most of the pottery found was dark brown though there were some sherds that had a redder hue. All the pottery sherds except one were plain, undecorated pieces belonging to the Grimston Ware series. They were heavily gritted with crushed quartz and sandstone inclusions. A single sherd had a lighter coloured rim and was decorated with an incised chevron pattern.

Table 3 Number of pottery sherds found on each search.

| Year | Total No. sherds | No. rims |
|-----------|------------------|----------|
| 1995–6 | 22 | 2 |
| 1996–7 | 43 | 3 |
| 1997–8 | 14 | 2 |
| 1998–9 | 7 | 0 |
| 1999–2000 | 17 | 2 |
| Total | 103 | 9 |

The north-east section of the field, where the pottery scatter was concentrated, lies on the shoulder of the sandstone ridge before it slopes away to the south. It is relatively level and the artefacts were thought to be close to their original point of discard having not been shifted far by the plough.

At present there are no pottery finds from any of the other three Neolithic flint-scatter sites at Middleton Bank Top and Shortflatt though, like Sandyford Quarry Field, they are all near former or existing wetlands which may have been purposely selected for their supplies of raw materials, game, fish and freshwater. All have a large number of scrapers as well as single leaf arrowheads but at Sandyford the proportion of blades and flakes is higher than any of the other three sites. It seems probable that the lithics from one field at Shortflatt are comparable with those from Sandyford Quarry Field, having material that includes Late Mesolithic and Early Neolithic material; the other two sites are probably later but still contain some Mesolithic pieces. Apart from Sandyford Quarry Field, which has a south-facing aspect, all the other sites have a north-facing slope and also share light-medium free-draining soils providing conditions suited to early cultivation technology.

THE EXCAVATION SITE

The site lies less than 350 m, as the crow flies, to the south-west of Bolam Lake on the Blyth valley side of the Wansbeck-Blyth watershed just above the 130 m contour. It is located on the tail end of the Fellsandstone ridge that runs eastwards from Shaftoe Crags, which lies 2.5 km away to the west. The area occupied by the Neolithic settlement enjoys extensive views down the valley towards Whalton in the east; to the north, west and south, views are curtailed by the high ground of the sandstone escarpments. The soil cover over the site consists of brown sands and has a light loamy texture. The nearest freshwater sources are Bolam Lake to the north and the How Burn 500 m to the south of the site where another small wetland is located. Although the present Bolam Lake is a modern construction the area is likely to have been a wetland since the early Holocene. Winter wheat had been grown on the field and excavation took place while a short cover of stubble remained on the field surface.

EXCAVATION

Two trenches were opened over the area of the pottery scatter (fig. 1) with the smaller of the trenches, trench 2, located over a hump in the ground. On excavation this hump proved to be part of the natural sandstone ridge with no archaeological remains visible in the trench. Trench 1 was located on the basis of the distribution of the surface pottery finds, though its precise positioning was laid out by the use of dowsing rods as time was limited and the pottery scatter fairly extensive. In the event this technique proved extraordinarily effective in defining the area occupied by the settlement. A series of archaeological features were observed cut into the sandy till deposits and on one occasion (F5) into the sandstone bedrock below (see fig. 3 for plan, and fig. 8 for sections). The topsoil was removed by machine and the truncated subsoil (context 3) cleaned back by hand. The trench measured 44 m long by 18 m wide (figs. 3 and 4), although a strip measuring 5 m wide running east-west down the trench was not cleaned back to the archaeological horizon for lack of time. The topsoil consisted of a free-draining dark-brown sandy loam measuring 0.3 m deep. This soil has been repeatedly ploughed, resulting in the complete truncation of any archaeology within this horizon. Below the ploughzone a thin subsoil measuring between 0.04 and 0.12 m deep, survived discontinuously across the site and comprised a medium brown fine sandy loam; this contained a greater number of artefacts than the soil above. The indistinct shadow of archaeological features were recognisable in this layer. This 'smudging' appears to have resulted from a combination of disturbance by burrowing animals, bioturbation and soil development processes. This soil horizon is probably part of the ancient land surface that covered the site and archaeological features had been cut through this layer. This relict land-surface was found to contain an abundance of flints and broken pottery sherds (figs. 20 and 15), all of comparable form and fabric to that recovered by the fieldwalking and from the excavated

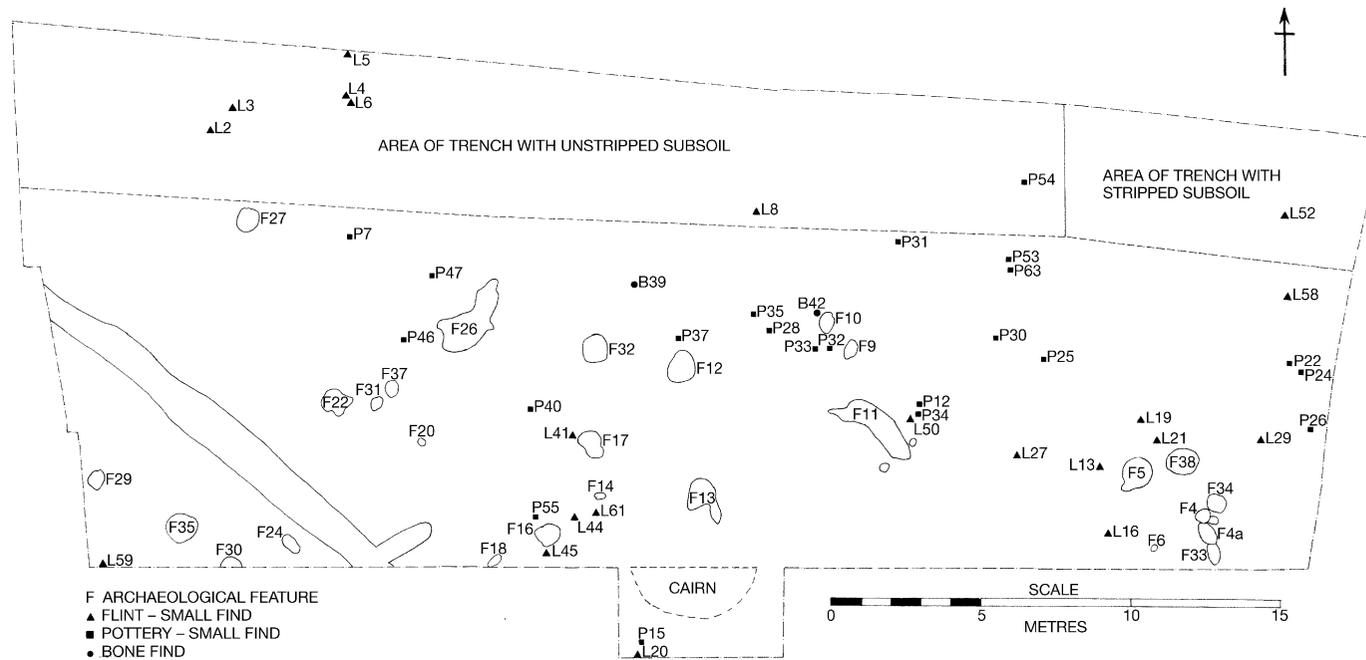


Fig. 3 Plan of trench after initial cleaning showing location of finds from the truncated land surface above the archaeological deposits (1:250).



Fig. 4 Trench under excavation looking to the west.

deposits below. The lithics included a leaf-shaped arrowhead and a steeply retouched end scraper, together with many narrow parallel-sided blade forms. The pottery was of a black gritty fabric with thick walls.

Dwelling Structure

The main structure that appeared to form the focus of the site was defined by the four largest and most obvious of the postholes F11, F12, F17 and F32 (figs. 5, 6 and 8) which are set in a triangular arrangement. Each of the postholes was filled with a sandstone packing set in a brown sandy loam matrix; none of these pits produced any artefacts or ecofacts and all are structural. Remains of post pipes could be discerned in pits F11 (fig. 7), F12 and F17 and all measured 0.12 m across; this indicates the use of young slender trees or branches as the

uprights for the structure. The pits averaged 0.26 m deep below the beginning of the archaeological horizon. When the overlying subsoil and topsoil are added to this it gives a posthole depth of *c.* 0.6 m from the ground surface. If we accept the convention that a third to a quarter of a post is buried in the ground, then it can be assumed that the posts originally stood *c.* 1.2 to 1.8 m above the surface. However, the packing in one of the holes (F11) was very substantial, and included two boulders set immediately around the post-pipe of the pole, suggesting it may have stood slightly higher than the other posts.

A small shallow pit with 9 stakeholes in its base (F14) arranged in a slight arc of two rows, was discovered 1.5 m south of posthole F17. Some other stakehole features (F18 and F27) similar to this were found elsewhere on the site but their function remains speculative.

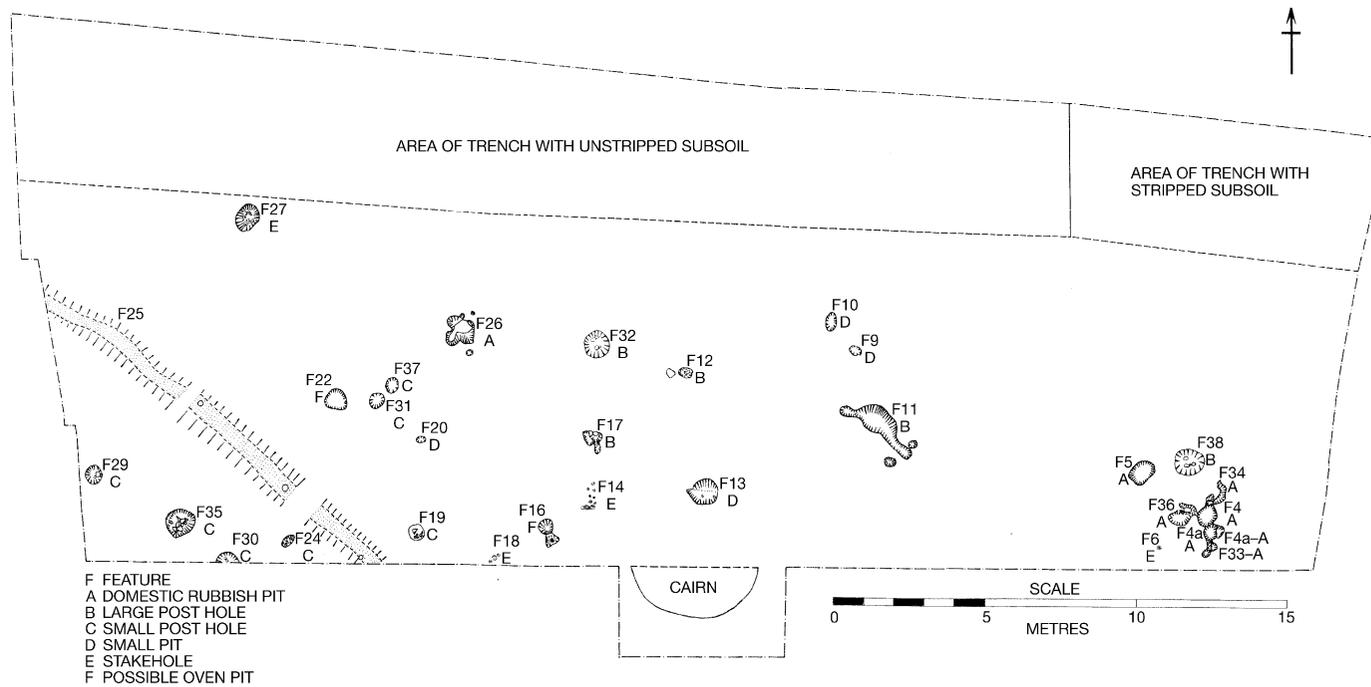


Fig. 5 Plan of trench showing archaeological features after excavation (1:250).



Fig. 6 Dwelling structure with excavators stood in each of the postholes forming a triangular shape in plan.

However, the proximity of the features to the main structure leaves open the possibility that they may have fulfilled some kind of pegging-out role, the shallow stakeholes resulting from successive hammering in of wooden stakes a few centimetres away from their predecessors. Also associated with the main structure were two small pits (F9 and F10) at its north-east end. Both pits were ovoid in shape and quite shallow, being 0.16 and 0.2 m deep below the start of the archaeological horizon respectively. They had a brown sandy fill and both contained small sherds of Grimston Ware series pottery and charcoal; F10 also contained a tiny indeterminate fragment of burnt bone. These are interpreted as domestic pits associated with the main structure. Indeed their positioning within 2 m of one of the long axes of the triangular frame suggests they may have been located *within* the structure supported by the timber

frame. A small pottery and lithic scatter was observed when trowelling back the subsoil above the area occupied by the main posthole feature (fig. 3). This is probably significant as it suggests domestic activity and, together with the material from pits F9 and F10, allows the feature to be interpreted as a probable dwelling structure.

Domestic Pits

A series of pits, some intercutting, was located in a tight cluster to the east of the dwelling structure (Pits F4, F5, F6, F33, F34, F36). The pits were of various sizes (table 4, fig. 8) but averaged 0.3 m deep and over 0.5 m across; all were oval in shape. Pits F4, F4a, F33 and F34 all intercut with F4 being the last in the sequence. All the pits had similar fills consisting of a dark brown loamy sand matrix containing



Fig. 7 Post pipe visible in the section across posthole F11.

broken sherds of Grimston Ware pottery (figs. 16–19), flints (fig. 21), charcoal, charred hazelnut shells; one pit, F5, contained a broken Group VI ground and polished stone axe (fig. 22). Another of the pits, F4a, contained a flake from a ground and polished axe that was also of Group VI Langdale tuff. Although this

flake could not be refitted to the F5 axe, it is likely that it was originally part of it. With the exceptions of pits F5 and F6 all pits contained a jumble of fire-reddened stones indicating they had been heavily heat-affected. Pits F4 and F33 also contained some botanical remains of emmer wheat (see below, p. 43). The contents

Table 4 *Sandyford Quarry field feature descriptions (see fig. 8 for sections).*

| Feature (context) | Length (m) | Width (m) | Depth (m) | Description | Finds |
|--------------------------------------|------------|-----------|-----------|---|--|
| Posthole F 11 (25) | 2.6 | 0.8 | 0.25 | Elongated pit with steep edges and flat base. Contained mass of packing stones including two large boulders in centre of fill with post pipe 0.12 m wide still visible. Fill matrix consisted of dark brown sandy loam. Formed one end of occupation structure. | |
| Posthole F12 (45) | 0.3 | 0.26 | 0.26 | Subcircular post hole containing large quantity of sandstone packing stone with post socket visible measuring 0.12 m across. Matrix consisted of dark brown sandy loam. Some of the packing stones were heat reddened. Formed part of occupation structure | |
| Posthole F32 (47) | 0.28 | 0.27 | 0.28 | Subcircular post hole containing large quantity of sandstone packing. Matrix consisted of dark brown sandy loam. Formed part of occupation structure. | |
| Posthole F17 (41) | 0.8 | 0.7 | 0.26 | Subcircular post hole containing large quantity of sandstone packing stone with post socket visible measuring 0.12 m across. Matrix consisted of dark brown sandy loam. Some of the packing stones were heat reddened. Formed part of occupation structure. | |
| Posthole F38 (75) | 0.80 | 0.75 | 0.25 | Subcircular posthole containing mass of sandstone packing. Matrix consisted of dark brown sandy loam. Situated next to the domestic pits. | |
| Pit F9 (29) | 0.45 | 0.33 | 0.2 | Small concave pit with grey-brown sandy fill containing some fragments of domestic debris. Pit probably lies inside structure represented by postholes F11, 12, 17 and 32. | Grimston Ware pottery Charcoal |
| Pit F10 (43) | 0.6 | 0.36 | 0.16 | Small concave pit with dark brown sandy fill containing some fragments of domestic debris. Pit probably lies inside structure represented by postholes F11, 12, 17 and 32. | Grimston Ware pottery Tiny bone fragment Charcoal |
| Stakehole Pit F14 (39) | 0.75 | 0.6 | 0.19 | Shallow pit with stakeholes in base set in in two roughly parallel rows with largest at one end. These 9 stakeholes possibly associated with main structure represented by postholes F11, 12, 17 and 32. | |
| Domestic Pit F5 (17, 19) | 0.84 | 0.69 | 0.25 | Oval pit cut through till into sandstone bedrock with flat bottom and steep sides. Around edge of pit was a thick black wet cardboard textured 'mat' that appeared to be remains of a wattle lining. Fill consisted of medium brown mottled sand with large stone in centre pit and contained mass of Neolithic domestic debris. No evidence for placement in pit – randomly scattered. | Grimston Ware pottery Flints Stone Axe Hazelnut shell (4880 ± 80bp) Charcoal |
| Domestic Pits F4, F33, F34, F36 (21) | 0.45 | 0.58 | 0.34 | Subcircular and irregular intercutting pits with steep sides and flat bases. Fills consisted of dark brown loamy sand. All contained domestic debris and heat affected stones randomly scattered. As all pits intercut their individual sizes were not known except for the last pit whose measurements are given. They average 0.3 m deep. | Grimston Ware Pottery Flints Stone axe flake Hazelnut shell (4910 ± 70bp) Charcoal Cereal residues |
| Domestic Pit F6 (23) | 0.08 | 0.06 | 0.12 | Slight basal remains of heavily truncated concave pit next to other domestic pits. Filled by dark grey fine sand. | Charcoal |

Table 4 (continued)

| | | | | | |
|-------------------------|-----------------|------|------|---|--|
| Pit F20 (61) | 0.36 | 0.33 | 0.17 | Small shallow truncated pit with concave profile filled by dark brown loamy sand. | Charcoal |
| Pit F26 (65) | 0.75 | 0.7 | 0.2 | Subcircular pit with steep sides and concave base. Fill consisted of dark brown loamy sand containing domestic debris and heat affected stones randomly scattered. | Flint Charcoal |
| Pit F31 (71) | 0.33 | 0.38 | 0.17 | Small shallow truncated pit with concave profile filled by dark brown loamy sand. | Charcoal |
| Pit F37 (73) | 0.3 | 0.37 | 0.06 | Small shallow truncated pit with concave profile filled by dark brown loamy sand. | |
| Burning Pit F22 (59) | 0.55 | 0.4 | 0.08 | Burning pit/hearth containing mass of charcoal with burnt stones possibly in-situ. Filled by dark brown loamy sand with much charred debris. | Charcoal |
| Stakehole Pit F27 (37) | | | | Shallow pit with 7 stakeholes cut from its base. Filled with medium brown loamy sand and some sandstone packing including one fire reddened stone. Situated to the north-west of the main structure beyond pit F26. | Charcoal |
| Post Alignment F29 (55) | 0.55 | 0.5 | 0.24 | Post pit filled by dark brown loamy sand with evidence of post socket at base and containing sandstone packing. Forms line with F30 and F35 parallel with fenceline F25. | Tiny bone fragments Charcoal |
| Post Alignment F30 (67) | ? | 0.42 | ? | Post pit filled by dark brown loamy sand with evidence of post socket at base and containing sandstone packing. Located partly under trench edge, therefore not fully excavated. Forms line with F29 and F35 parallel with fenceline F25. | Charcoal |
| Post Alignment F35 (69) | 0.77 | 0.85 | 0.22 | Post pit filled by dark brown loamy sand with evidence of post pipe and containing abundant sandstone packing. Forms line with F29 and F30 parallel with fenceline F25. | |
| Fence Post F19 (51) | 0.45 | 0.58 | 0.25 | Post hole situated at the end of a spur running off the fenceline F25 at a right angle. Central stone-packed posthole in centre with post pipe 0.08 m diameter with stakeholes around it. Packing consisted of fire-reddened stones. | |
| Stakehole Pit F24 (49) | 0.53 | 0.36 | 0.22 | Shallow pit with a single stakehole cut from its base. Filled with dark brown medium sand and positioned in between fenceline F25 and post alignment F29, F30, F35. | |
| Fenceline F25 (35) | Visible for 15m | 0.9 | 0.25 | A linear feature with packing slot and running along base of slot a series of stakeholes with occasional small postholes situated 1.5 m apart. | Flint Charcoal |
| Stakehole Pit F18 (33) | 0.44 | 0.4 | 0.06 | Shallow pit with 3 stakeholes cut from its base. Filled with medium brown loamy sand. Situated in a line with posthole F19 and burnt feature F16. | |
| Charred Wood F16 (31) | 0.88 | 0.8 | 0.08 | Shallow pit feature with large lump of burnt/carbonised? Wood at one end in-situ. Perhaps a rotted post. Other fill consisted of medium brown loamy sand. | Charcoal |
| Burnt Spread F13 (53) | 0.83 | 0.75 | 0.16 | A shallow irregular pit containing large quantity of charred debris with light brown sandy fill. Situated immediately next to projected extent of cairn F1 and thought to be associated. | |
| Cairn F1 (7, 9, 16) | ? | 4.0 | 0.3 | Circular low stone cairn half-sectioned by first machine scoop so only half survived. Comprised 3 pits each with a cremation in cut into the substrata with a circular cairn of sandstone piled over them. Burnt animal bone fragments found in the cairn material directly above the cremation pits. | Human cremations Burnt animal bone Charcoal (2730 ± 70bp) |

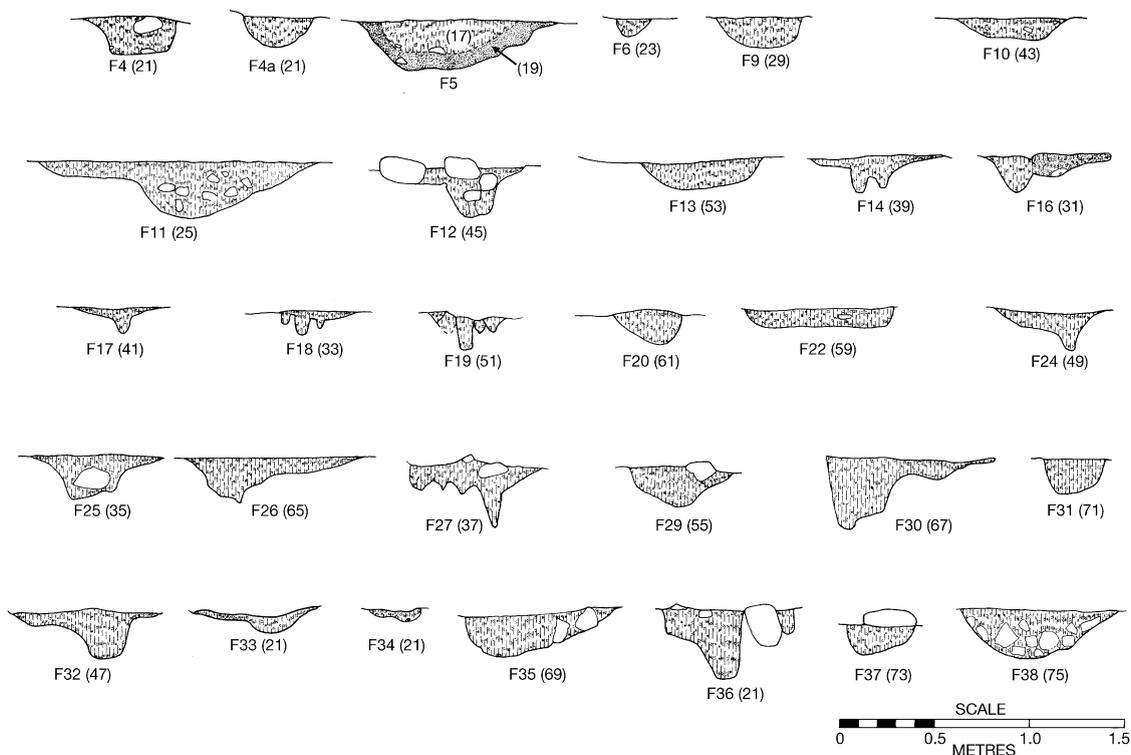


Fig. 8 Sandyford Quarry Field feature sections (1:40). Each feature is identified by its number (F4, etc.), followed by its context number in brackets. Feature F5 has two context numbers: these are indicated individually.

of these pits are consistent with the domestic debris frequently encountered in Neolithic pits such as those at Thirlings (Miket 1987) and Yeavinger (Harding 1981). None of the domestic debris contained in these pits showed any sign of having been deliberately placed but rather appeared to be randomly scattered throughout the fills. With no overt evidence for structured deposition the pits are understood to be rubbish pits filled with broken domestic artefacts and fire/cooking debris. It is also important to note that they are positioned downwind, in a cluster and away from the main structure and this is in keeping with an area used for disposal. This is not to say that there was no ritual aspect to the deposition of the contents but on the basis of the archaeological evidence, such an interpretation can only remain speculative.

Pit F5 was more curious than the others as it was located in a position where the sandstone till was thin, and as a result, had been cut down further into the sandstone bedrock. Furthermore the pit contained a dark textured 'soft cardboard' deposit around its edges and base which was evidently the heavily degraded residue of a lining. The material had mineralised, though it remained quite thick (30 mm) and, given its texture, appeared to be a wicker or reed lining. Being cut into bedrock the pit would have remained cool and, together with the presence of a lining, this suggests that it was originally used for storage before being finally backfilled with domestic debris. It was also the pit chosen for the disposal of the broken stone axe and this could be of significance in terms of depositional practice. The last pit in this cluster, F38, was a post-pit located at the north end of

the group, measuring 0.8 by 0.75 m with a maximum depth of 0.25 m; it contained a mass of sandstone packing set in a dark brown sandy loam matrix. The pit is located on almost the same axis as one of the long sides of the dwelling structure and could, therefore, be associated in some way. However, the gap of 10 m to the nearest structural feature is considered too far for this post to have formed part of the main frame proper.

Features to the West of the Dwelling Structure

A series of shallow pit features were observed to the west of the main dwelling structure. Pits F20, F22, F31 and F37 may be related given their spatial proximity. Of these pit F22 had an irregular shape and contained a mass of charred material and burnt stones that appeared to have been heated in-situ, as the charcoal was fused around some of the stones and against the edge of the surrounding till. This feature is thus evidently a heating/burning pit, likely to have been associated with cooking activities in an earth oven or fire pit. The three small shallow pits, F20, F31 and F37, were located to the east of the burning pit (F22) all containing a dark brown loamy sand fill; charcoal flecks were also noted in F20 and F31. There was no obvious indication as to their use and no artefacts or ecofacts were recovered from them but their spatial positioning implies a connection with the heating/cooking activities indicated by pit F22. A larger pit, F26, located 3 m west of the nearest post of the main dwelling structure, contained domestic debris comprising charcoal, flint and heat-affected stones. It is unlikely this pit was ever inside the dwelling structure but more probable that it was located immediately outside it. Further to the north-west, a single pit, F27, was discovered that had a series of stakeholes cut into its base; this was similar in form to F14. This roughly circular stakehole pit measured on average 0.5 m diameter and was filled by a brown loamy sand that contained sandstone packing including one fire-reddened stone and some charcoal fragments. The function of these stakehole pits is not clear but, at this distance from the main

structure, it is likely that they were used to hold some kind of supporting guy.

Fence and Post Alignment

A linear feature (F25) could be clearly seen tracking across the south-west corner of the trench (fig. 5) and, on excavation, this proved to be a shallow ditch, 0.9 m wide, containing closely packed stakeholes along its centre, interspersed with occasional sockets for light posts that had a maximum diameter of 0.1 m (fig. 9). A broken microlithic flint was recovered low down in the fill of this linear ditch. Some charcoal was also recovered. This structure, although not flimsy, was certainly not robust enough to be considered defensive. The mass of stakeholes suggest a light fence made by driving sticks (averaging 30 mm across) into the base of a previously-cut linear ditch and then packing them in with upcast. More solid uprights were spaced every few metres between the smaller sticks, as evidenced by larger post-holes, and this indicates that more substantial supports were placed along the fence where necessary to ensure stability. Hurdling between the uprights may have been employed above ground but there is no direct evidence for this. This structural form suggests a speedily-erected wooden fence that had been made using unmodified, easily available, resources. Being a maximum of 0.25 m deep from the beginning of the archaeological horizon it is considered unlikely that this fence attained a height much above 1.2 m above ground. At the south end of the fence a short spur ran off at right angles to the main axis of the fenceline; this contained a socket and packing for a wooden post (F19) 0.08 m in diameter at its terminal. Two other features that may be associated with this post are another stakehole pit (F18) and a pit with a mineralised, or possibly charred, piece of wood (F16). Together these three pits formed a line and it is possible that they may represent another stretch of light fencing but this is only inferred from their positioning. Of more certain association, though, is the alignment of post-pits (F29, F35 and F30); these pits were sub-circular in shape averaging over 0.5 m across and



Fig. 9 Fenceline feature F25 after excavation.

all contained significant quantities of sandstone packing. Post sockets were visible in pits F29 and F30 while a post pipe still survived in F35. These posts formed a line parallel to that of fence F25 and are, therefore, thought to be part of the same boundary, or perhaps an earlier or

later version of it. A small pit, F24, was located between the fenceline (F25) and the alignment of post pits (F29, F30 and F35) consisting of a small shallow pit with a stakehole at its base and this is also probably associated with the boundary structure.

Cairn

The first cut made by the digger on the basis of the reactions obtained from the dowsing rods cut straight through a small unsuspected round cairn (F1). This left the cairn visible in section along the south side of the trench. This area was boxed out and the remaining cairn then cleaned back and excavated (fig. 10). Below the cairn three pits had been dug through the sub-soil into the sandy till and cremations of what appear to be separate individuals placed in each (see below, p. 44). Charcoal from the cremation in pit 1 was submitted for radiocarbon dating and this returned a Late Bronze Age date (see below, p. 19). A low cairn comprising irregular sandstone rocks (0.3 m high at its maximum) was erected over the cremation pits and this appeared to have the cremated remains of some animals thrown on to it, directly above where the cremation pits were located, as the cairn was being constructed. The cairn did not have a formalised kerb although it had a distinctive edge which gave it a diameter of some 4 m. As the cairn material was not compacted, and still had its highest point near the centre, it is thought that the feature had not experienced much truncation and was therefore always rather low. It appears, then, to be an example of a flat cremation cairn. To the north of the surviving area of cairn was a spread of burnt material, F13. This spread was contained in a shallow irregular pit with a light sandy fill measuring 0.83 m by 0.75 m, with a maximum depth of 0.16 m below the start of the archaeological horizon. When projecting the circumference of the cairn to the north this feature would have been located either partly under, or immediately next to, the cairn. Its position close to the cairn implies that it may have been the area where the cremations took place.

Radiocarbon Dates

Three radiocarbon dates were obtained from the archaeological deposits which are summarised in Table 5. The results are conventional radiocarbon ages (Stuiver and Polach 1977) and have been calibrated using OxCal v2.18

(Bronk Ramsey 1995). Ranges have been rounded outwards to 10 years (Mook 1986). $\delta^{13}\text{C}$ values are quoted to one significant figure without an error. All the dates are standard radiometric dates.

The radiocarbon dates from the Sandyford Quarry Field site are of particular significance with regard to understanding the chronology of Early Neolithic settlement in the region, as well as the date ranges associated with various Neolithic pottery and lithic types. The settlement activity, as represented by the dates from the two domestic pits, date the Early Neolithic occupation of the site to the early fourth millennium B.C.; the determinations are particularly compelling as they come from secure and integral deposits on short-lived charred residues. The two dates are statistically indistinguishable and compare closely with the radiocarbon dates from the Early Neolithic settlement site at Coupland in north Northumberland. These dates, from two of the domestic pits, also establish an Early Neolithic date for the presence of the emmer wheat which was identified in the pit fills (see below, p. 43) and hence provide evidence for early agriculture in this part of Northumberland.

No material could be recovered which would directly date the main settlement structure but, given its proximal spatial location to the pits and the location of Grimston Ware series pottery and blade-based lithics in the surviving lenses of the buried land surface (context 3) above and immediately around the structure, it is considered that this structure was contemporary with the domestic pits.

A charred twig sample from cremation 1 below the cairn produced a Late Bronze Age determination dating to the beginning of the first millennium BC. Little is known about funerary practices in the later Bronze Age in this region as, indeed, is also the case for Iron Age disposal of the dead. This finding is therefore of significance as it shows that cremations and their disposal underneath small flat stone cairns (so typical of the Early Bronze Age in the Borders) continued, at least in some areas, into the Late Bronze Age. It is perhaps relevant to note, however, that not one of the cremations

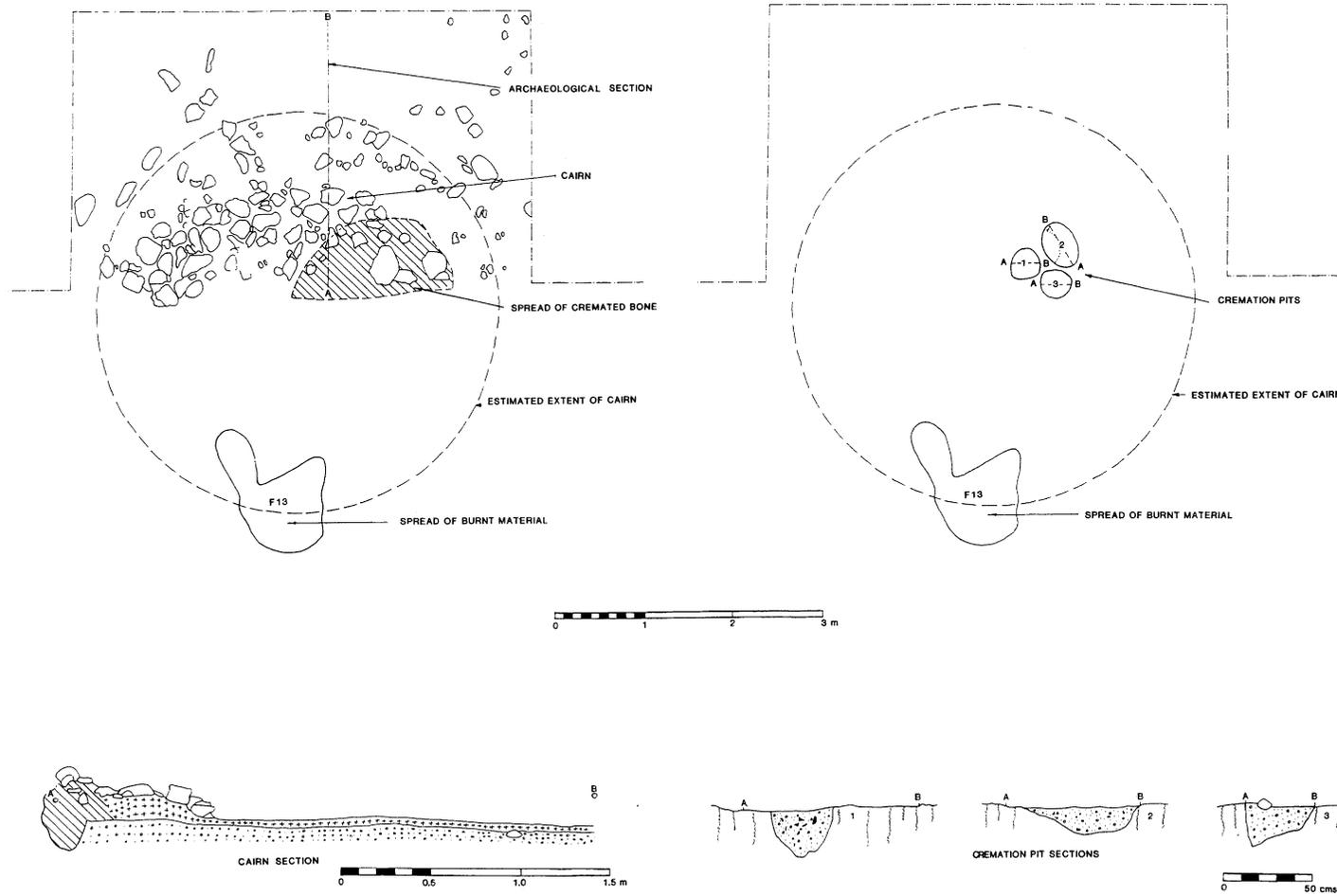


Fig. 10 Plans and sections of the cairn and cremation pits.

Table 5 Radiocarbon Dates from Sandyford Quarry Field.

| Context | Material | Lab No | C ¹⁴ Age BP | δ ¹³ C (‰) | Cal BC 2σ (95%) |
|----------------------|------------------------|-------------|------------------------|-----------------------|-----------------|
| Domestic Pit F4 (21) | Charred hazelnut shell | Beta-117290 | 4910 ± 70bp | -25.0 | 3940–3520 |
| Domestic Pit F5 (17) | Charred hazelnut shell | Beta-117291 | 4880 ± 80bp | -25.0 | 3930–3380 |
| Cremation 1 (16) | Charred twig | Beta-117289 | 2730 ± 70bp | -25.0 | 1040–790 |

was accompanied by grave goods or ceramic vessels as was common practice in the Early Bronze Age.

THE EXPERIMENTAL RECONSTRUCTION

During 1999 a reconstruction of the Sandyford Quarry Field Neolithic settlement was attempted at the Brigantium Archaeological Centre in Redesdale, Northumberland. The reconstruction was undertaken by C.W. together with a class of undergraduate students from the Department of Archaeology, University of Newcastle upon Tyne. A video was made documenting the project ('Four Post-Holes and a Reconstruction') by Roger Burgess and the University's Audio Visual Centre, copies of

which are held by the Department of Archaeology and by Brigantium.

Using the plan of the four post-holes and timbers with maximum diameters of 0.12 m, based on the excavated evidence, a timber frame was designed (fig. 11). The timber used was all locally-acquired birch wood and all lashings were made using sisal plant fibres. The structural design consisted of a tall 2 m high timber with forked end set in the largest post-hole F11, that had also contained the most substantial packing material. Two diagonal cross-braces were lashed to this upright. Shorter 1.2 m high posts were set in the other postholes, also with forked ends, as supports for further cross-braces. A ridge pole was then laid across, resting on the tallest of the forked uprights at one end and on the cruck formed by the two diagonal cross braces at the other

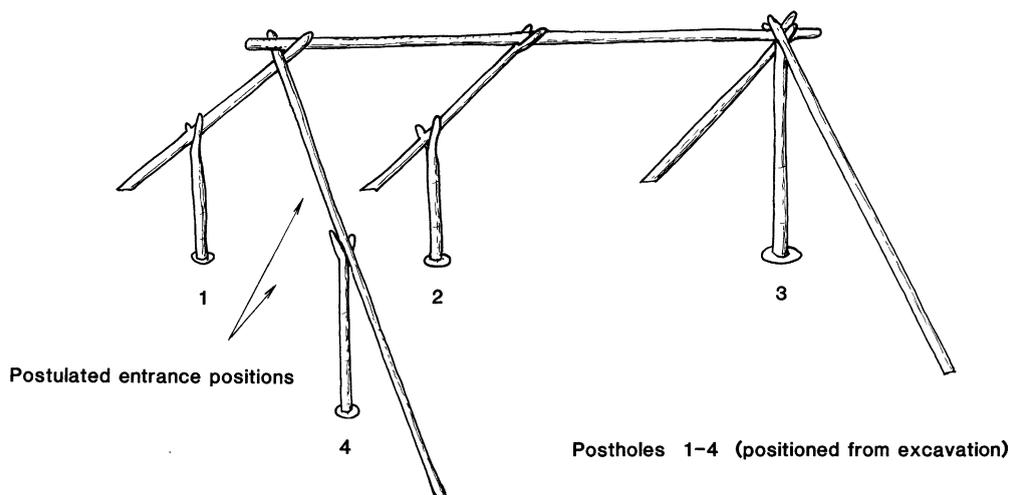


Fig. 11 Sketch of timber-frame related to the posthole plan used for the reconstruction.



Fig. 12 Turfing over the frame of the structure at Brigantium.

(fig. 11). This formed a frame for a rectangular ridge-shaped structure. Preparation of the frame, including felling and trimming the timbers with a stone axe, was accomplished by the group of 8 in less than a day. It would have been too expensive to cover the structure with hide, so it was decided to use turf instead, and test whether such a covering was a viable option. As the turf needed further support, a series of hurdle panels were made and lashed to the ridge pole, with a line of supporting sticks underneath resting on the ground surface (these would have left no archaeological trace). Turfs were then cut and placed over the structure (fig. 12). A doorway was made into the structure between the two nearest posthole uprights giving access along one of the long sides. The interior was divided up using willow hurdles and this created storage space down the sides of the structure as well as an insulating gap

between the centre and outer walls of the construction. It took three days for the group to complete the hurdle frames and turfing. Finally a hurdle fence made from hazel and willow poles was constructed around the structure in a similar fashion to that evidenced at the site (fig. 13) and this took a further day to complete.

Within a few weeks the structure began to collapse, due to the weight of the sods on the hurdle frames. This rapid deterioration was further exacerbated by the additional weight caused by rainfall that collected in the turf and by the weight of snow that built up on it. Some sheep struck out on their own independent quest to graze on the hut only to find themselves either falling through or becoming stuck in the roof. From these events it can be confidently concluded that the excavated structure did not have a turf covering, as it proved too



Fig. 13 The completed reconstruction with entrance along one of the long sides with low hurdle fence around.

impractical on a frame as light as the one indicated by the evidence. So what are the options for the original roofing material?

Although the structure could have had a light thatch cover this would have required as much time as the cutting and laying of the turf, because it would also have needed a hurdle frame, or 'withies', on which to tie the thatch. Instead the most plausible option, and one that is most in keeping with the transient nature of the site, is a covering of the timber frame with hides. As the timber frame could have been easily put up in a day, as demonstrated by the experiment, it follows that securing hides over it would also have been achieved the same day, so making the shelter ready for immediate habitation. Indeed a group of half a dozen or so who knew what to do, and were adept at the various tasks, could no doubt have put the structure up in several hours at most, together

with the fencing around the site. The presence of the stakeholes noted in the original excavation, presumably for some sort of pegging-out purpose, provides further argument for accepting the logical conclusion that we are dealing here with a hide covered structure that in essence is a Neolithic tent.

DISCUSSION

This site has added significantly to the scanty picture of Early Neolithic settlement in the region. Although recent work has increased dramatically the number of Early Neolithic settlement sites known (see Table 6 below) none has produced such a discrete group of structural features – with the exception, perhaps, of the unpublished site at Thirlings (see Miket 1987). An interpretive plan has been produced

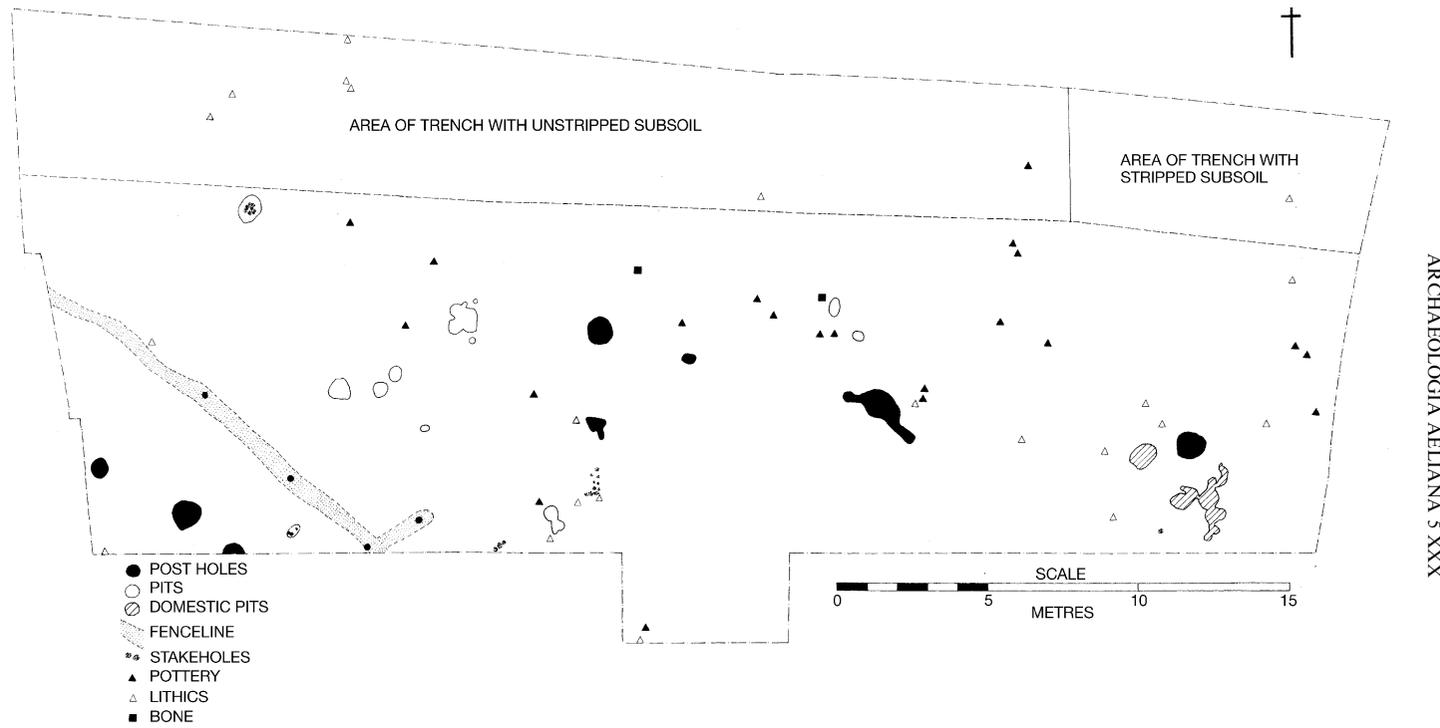


Fig. 14 Interpretive site plan (1:250).

Table 6 Excavated Neolithic settlement sites in Northumberland.

| Site | OS Grid Reference | References |
|-----------------------------|-------------------|--|
| Sandyford Quarry Field | NZ 075 817 | Waddington and Davies 1998; this paper |
| Coupland | NT 945 331 | Waddington 1999; Forthcoming |
| Lindisfarne (possible site) | NU 126 420 | Archaeological Practice 1996 |
| Thirlings | NT 955 322 | Miket 1976; 1987 |
| Woodbridge Farm | NT 943 325 | Waddington 2000 |
| Yeavinger | NT 929 304 | Hope-Taylor 1977; Harding 1981; Ferrell 1990 |

to simplify the features present on the site (fig. 14).

The post arrangement and experimental reconstruction argue that the main structure was ridged and supported by a slight timber frame that could have supported a light covering; such a light form might not have been intended for permanent occupation. The triangular shape defined by the postholes for the main structure are not as unusual as they may appear at first glance: Miket's excavations at the Neolithic settlement site at Thirlings for example revealed a trapezoidal arrangement of postholes indicating a structure with sides 6.4 m long and its ends 3 m and 5 m wide respectively (Miket 1987, 37–9). The Thirlings timbers were also slender and in relatively shallow postholes which are again consistent with a light framed structure rather than parts of a sturdy permanent dwelling. The size of the timber uprights and the shape of the structure are certainly not indicative of the traditional concept of the 'Neolithic long-house', common in Europe but rarely in evidence in the British Isles (Thomas 1996). Rather, it suggests a temporary structure with a light frame that could be erected very quickly, in a matter of hours at most, probably supporting a tent-like dwelling. Indeed the structural remains are more oriented to traditional concepts of Mesolithic settlements – that is transient residences – rather than the idea of permanent dwellings that have usually been associated with concepts of Neolithic farmers (e.g. Megaw and Simpson 1988;

Barclay 1997). This is not to say that permanent dwellings did not exist in Neolithic Britain, Skara Brae and Lismore Fields being two good examples, but rather that the character of Neolithic settlement varied across different regions and probably reflected variations in topography, geology, vegetation and resource availability as well as, perhaps, different social traditions. The evidence currently available for Northumberland suggests groups pursuing mobile patterns of residence. In the case of the site at Bolam the fence implies livestock-keeping while the typically sparse remains of cereals suggests only small-scale cultivation. Based on structural form and its landscape position on the upland – lowland fringe, the Bolam site poses as a prime candidate for identification as a temporary, herders' settlement situated on a transhumance route. Although such short-lived settlements currently dominate our understanding of Neolithic settlement in Northumberland, patterns of residential mobility/stability may differ in other areas of the region, such as the resource-rich coast or fertile river valleys. The variation in Neolithic 'domestic' architecture across the British Isles clearly reveals that one pattern does not fit all. Rather, different environments, different topographies and different cultural expressions appear to have influenced the variation in types and patterns of residency visible in the archaeological record.

The relatively small number of domestic pits and the volume of waste at Bolam would

suggest that this settlement was not occupied for prolonged periods. As the rubbish pits were intercut and the fence-line also had intercutting slots made by stakes pushed into the ground, the evidence points towards repeat visits to this location and its use as a fenced temporary settlement. The rubbish pits contained many burnt stones, which were often fire reddened and heat-cracked, together with charred material including hazelnut shells, testifying to the proximity of hearths (probably for cooking).

The presence of charred hazelnut shells offers further evidence that occupation at this site may well have been seasonal, perhaps extending into late summer and autumn. If this is the case, then it seems likely the site represents a seasonal encampment for a herding group, engaged in grazing stock on the higher parts of the valley sides and the interfluvies, probably during the summer months before movement down to the lower ground for over-wintering. This pattern of exploitation on the sandstone fells is similar to that envisaged for the sandstone escarpment around the Milfield basin in north Northumberland (Waddington 1999). Further comparisons with the Milfield evidence are apparent when it is observed that Davies' recent surveys around the Sandyford Quarry site have revealed a number of previously unrecorded cup and ring marked outcrop rocks and 'portables' on the sandstone ridge (Davies 1995 and forthcoming).

The Sandyford Quarry Field site is located just below a crest at the tail-end of a sandstone ridge which affords some protection against the prevailing winds. In addition the site is also located above the break in slope where the land drops away on a medium slope to an old wetland some 200 m away. Although this wetland is now boggy land supporting a dense tree-dominated vegetation, coring in this area revealed at least 1.5 m depth of organic deposits, interleaved in some places with layers of coarse-grained non-organic sediments, suggestive of inundations of hillwash material into this wetland environment. It is highly likely, therefore, that during the mid Holocene this boggy area was a small lake or wetland. The position of the settlement therefore provided the type of

ecological and geological environment that appears to have been favoured by other Early Neolithic groups such as those inhabiting the Milfield basin (see Waddington 1999).

The burial cairn represents a later phase of activity on this ridge dating to the beginning of the first millennium BC. No other remains associated with this phase of activity were observed in the trench although it is likely that other flat cremation cairns exist elsewhere along the ridge. Although it could not be determined whether pit 1 held more than the one individual, pit 2 appeared to have held the remains of a woman and a neonate, perhaps mother and child. Pit 3 contained the remains of a single adult. The cracking of the bones indicates that the corpses were cremated 'fleshed', and may have been wrapped in clothes fastened with bronze dress pieces, presumably on a pyre nearby. The truncated remains of a substantial burning pit on the edge of the cairn area (F13) is the most likely candidate for the location of the pyre. The burial process appears to have followed the following sequence:

1. The corpses of several individuals were burnt.
2. Three pits were excavated for the burial of the cremated remains.
3. The cremations were placed in the separate pits.
4. A low sandstone cairn was thrown up over the pits with the cremated bones of ovine animal/s scattered above where the cremation pits were as the cairn material was being piled up.

The burial of a probable neonate with its mother may tell us something of Late Bronze Age attitudes. If the neonate died at child, or soon thereafter, it may not have been considered a separate human entity at that point, distinct from its mother, and hence their joint burial. Alternatively, it may simply reflect a desire for the baby to rest close to its mother where both could find peace and security in the presence of the other. It is also interesting to note that the radiocarbon date from this cremation deposit indicates that the practice of cremation, and the subsequent burial of the

cremated remains in the ground below cairns, continued into the beginning of the first millennium BC. The Early Bronze Age practice of cremation is well attested across the region and these are frequently found below cairns but usually accompanied by, or are set inside, pottery vessels of one type or another. In the Bolam case, however, the cremations were not accompanied by funerary urns and the cairn was even smaller than most of the Early Bronze Age cairns of the region. These changes in practice suggest transformations in the way people thought about and enacted the disposal of the dead, although the continuity of the cremation rite, and their burial below cairns, represents an important strand of thinking and practice linking Late Bronze Age communities with their Early Bronze Age ancestors.

Finally, from a methodological viewpoint this investigation has underlined the value of fieldwalking as a method for establishing patterns of stone-age settlement in this part of Britain – as well as for identifying precise locations of settlements. In addition, this work has also demonstrated that, in geomorphologically-stable hill-top locations such as this, where deep ploughing has not taken place, the surface distribution of artefactual material can be a valid indicator of sub-surface remains. Indeed the excavation of a site such as this should give us greater confidence in opening up sizeable trenches on the basis of fieldwalking data as well as in the use of dowsing in archaeological fieldwork (see Bailey 1988 *et al* for in-depth discussion of the latter). In addition the presence of Neolithic pottery sherds in the ploughsoil, no matter how small and abraded the pieces may be, should be seen as an important indicator of the presence of Neolithic deposits below the ploughing horizon.

SPECIALIST REPORTS

POTTERY

Clive Waddington

Sixty sherds of Early Neolithic pottery were recovered from the excavations. They included

material from the truncated land surface, the excavated fills of the domestic pit group and occasional sherds from other pit features associated with the main dwelling structure. All of the material is fragmentary and abraded. As well as ceramic sherds there were also many tiny fragments of ceramic fabric that were too abraded to be characterised; these latter have not been included in the pottery analysis.

The fabrics of all the ceramics are similar, with crushed stone inclusions (usually quite angular) and including sandstone and quartz. The fabric is hard and well-fired though many sherds are heavily abraded. The dark cores and blotchy surfaces suggest short and effective open-firings. Fractures along coil breaks on some of the sherds indicate their hand-made method of manufacture. The ceramics are usually burnished on both their internal and external surfaces. The sherds are all from irregular bag-shaped carinated bowls of Early Neolithic type. Carinations are visible on a number of sherds indicating an S-shaped profile for these vessels while other sherds, such as 63, suggest rounded bases. The rims are all simple, everted or slightly rolled-over and are irregular in profile. None of the sherds is decorated and all appear to be from plain vessels. The presence of crushed stone, including the local sandstone, as well as the proximity to clay deposits in the nearby glacial tills and localised lacustrine wetlands, makes localised production of this pottery likely; this would correlate with Gibson's findings (1986) from his study of diatoms in Early Neolithic pottery in the Milfield basin, north Northumberland.

The surfaces of open-fired fabrics can vary considerably in colour, making the estimation of minimum number of vessels problematic. Pit F4 produced 17 sherds representing at least five separate pots with rim thicknesses ranging from 23 mm to 7 mm indicating large, medium and small vessels. Pit F5 produced nine sherds and a further four small heavily abraded fragments of core representing at least six different ceramics. Pit F9 produced one small sherd whereas pit F10 nearby produced four sherds representing three different vessels. The five sherds from pit F36 represent at least three

different pots. The sherds from the truncated land surface totalled 24 pieces with at least six different vessels represented. No joins could be found across the different contexts although sherds 18, 90 and 84 from pit F4, pit F36 and the truncated land surface respectively may be from the same pot. This would give a potential total of 22 different vessels.

The pottery forms a coherent assemblage of Early Neolithic undecorated carinated bowls which can be ascribed to the Grimston Ware series of bowls associated with the Yorkshire long barrows. As such, it is directly analogous to the material recovered from elsewhere in Northumberland at Broomridge (Newbigin 1935), Yeavinger (Hope-Taylor 1977), Thirlings (Miket 1976; 1987), Yeavinger henge (Harding 1981), Coupland (Waddington 1996; Gibson 2001) and Woodbridge Farm (Waddington 2000). The generally slack globular forms with rounded carinations are typical of the Early Neolithic Northumbrian pottery and it is noteworthy that the sharper carinations found on the earliest Neolithic pots (Herne 1988) further south are not present. This need not mean that the Northumbrian material is necessarily later in sequence, since such rounded carinations may be a regional variation of incipient Neolithic ceramic forms specific to the Borders area.

As all the sherds are from heavily truncated deposits it is not known whether they were deposited in the pits as full assemblages of broken pottery or whether there was some deliberate selection as to which sherds were deposited. However, the presence of broken fragmentary sherds, of directly similar form to those from the pits, in the truncated land surface (context 3) indicates that broken pottery was discarded on the ground as well as in pits. The spatial patterning of this material from the land surface indicates a higher density of material scattered across the ground around the settlement site typifying the presence of waste material. The material in the pits, consisting of broken pottery, lithics and domestic refuse (charred hazelnut shells and heating debris) appears to represent similar waste that has been cleared up and discarded in pits.

The presence of these robust bag-shaped ceramics, some with evidence of being heavily heated, is consistent with domestic material associated with settlement activities such as cooking, eating and storage. The use of such pottery implies new types of cooking practices compared to previous Mesolithic practices, while the S-shaped profiles may hark back to the use of leather storage bags suggested by Piggott (1954). The presence of pottery vessels, together with the lined rock-cut pit F5, may also point towards food-storage strategies employed by the inhabitants of the site.

CATALOGUE OF POTTERY FROM THE EXCAVATION

Context 3 Truncated Land Surface (fig. 15)

11. Body sherd with burnished dark grey-brown outer surface and lighter core and gritty inner surface with rounded carinated profile. Fabric contains crushed stone inclusions and averages 10 mm thick. Possibly from the same vessel as 30.
12. Tiny hard sherd with grey burnished outer surface with no inner surface surviving. Fabric contains crushed stone inclusions.
15. Small hard sherd with medium brown burnished but gritty outer surface and brown inner surface. Fabric contains crushed stone inclusions and averages 6 mm thick. Possibly from the same vessels as 26, 28, 44, 47 and 48.
18. Small body sherd with distinctive orange-brown burnished but gritty outer surface, dark grey core and blotchy grey brown gritty inner surface. Fabric contains crushed angular stone inclusions (< 4 mm) and averages 12 mm thick. Probably from the same vessel as 84 from pit F5.
22. Small hard sherd with medium brown burnished outer surface and grey inner surface. Fabric contains crushed stone inclusions and averages 11 mm thick. Possibly from the same vessels as 24, 25, 31 and 54.
24. Small hard sherd with brown-grey burnished outer surface and grey inner surface. Fabric contains crushed stone inclusions and averages 10 mm thick. Possibly from the same vessels as 22, 25, 31 and 54.
25. Small hard sherd with grey-brown burnished outer surface and brown inner surface with evidence of a coil break. Fabric contains crushed stone inclusions and averages 10 mm

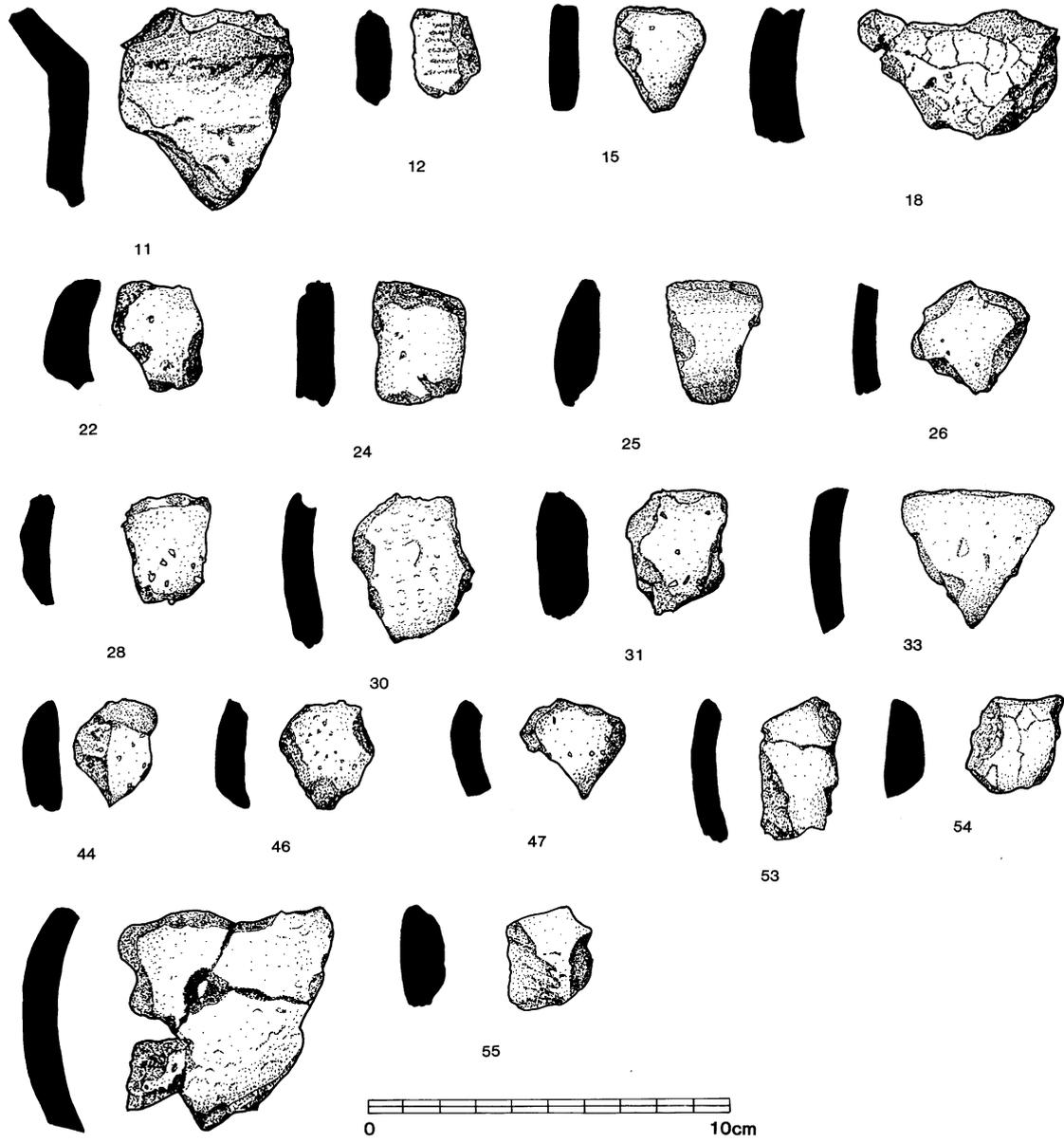


Fig. 15 Selected pottery from the truncated land surface (context 3) at half size.

- thick. Possibly from the same vessels as 22, 24, 31 and 54.
26. Small hard sherd with medium brown burnished but gritty outer and inner surfaces. Fabric contains crushed stone inclusions and averages 6 mm thick. Possibly from the same vessels as 15, 28, 44, 47 and 48.
 28. Small hard sherd with medium brown burnished but gritty outer surface and brown inner surface. Fabric contains crushed stone inclusions and averages 6 mm thick. Possibly from the same vessels as 15, 26, 44, 47 and 48.
 30. Body sherd with burnished grey-brown outer and inner surfaces. Fabric contains crushed stone inclusions and averages 8 mm thick. Possibly from the same vessel as 11.
 31. Small hard sherd with grey-brown burnished outer and inner surfaces. Fabric contains crushed stone inclusions and averages 12 mm thick. Possibly from the same vessels as 22, 24, 25 and 54.
 32. Tiny thin sherd with grey burnished inner and outer surfaces. Fabric contains fine crushed stone inclusions and averages 3 mm thick.
 33. Small hard sherd with burnished grey-brown outer surface, dark grey core and brown gritty inner surface. Fabric contains crushed stone inclusions and averages 7 mm thick.
 34. Tiny hard sherd with a burnished medium brown coloured outer surface, dark grey core and medium brown gritty inner surface. Fabric contains crushed stone inclusions and averages 7 mm thick.
 35. Tiny hard sherd with dark grey inner and outer surfaces. Fabric contains crushed stone inclusions and averages 6 mm thick.
 37. Tiny hard sherd with medium brown burnished outer and inner surfaces. Fabric contains crushed stone inclusions and averages 7 mm thick.
 43. Tiny hard sherd with grey burnished outer surface with inner surface not surviving. Fabric contains crushed stone inclusions.
 44. Small hard sherd with medium brown burnished but gritty outer surface and dark grey inner surface. Fabric contains crushed stone inclusions with a coil break evident and averages 8 mm thick. Possibly from the same vessels as 15, 26, 28, 47 and 48.
 46. Small hard sherd with brown-grey burnished but gritty outer and inner surfaces. Fabric contains crushed stone inclusions and averages 7 mm thick. Possibly from the same vessels as 15, 26, 28, 44, and 47.
 47. Small hard sherd with medium brown burnished but gritty outer surface and smooth dark grey inner surface. Fabric contains crushed stone inclusions and averages 7 mm thick. Possibly from the same vessels as 15, 26, 28, 44, and 48.
 53. Two rejoined sherds with burnished buff coloured outer surface and dark grey inner surface. Fabric contains occasional crushed stone inclusions and averages 7 mm thick.
 54. Small hard sherd with grey-brown burnished outer surface and grey inner surface. Fabric contains crushed stone inclusions and averages 10 mm thick. Possibly from the same vessels as 22, 24, 25, and 31.
 55. Small sherd with brown gritty outer surface and grey gritty inner surface. Fabric contains fine grits and averages 13 mm thick.
 63. Four rejoined sherds with burnished blotchy grey inner surface and brown gritty outer surface that may form part of the rounded base of a bowl. Fabric contains crushed stone inclusions and averages 9 mm thick.

Pit F4 (figs. 16 and 17)

64. Thick rolled-over rim sherd belonging to a large vessel (rim chart suggests 0.42 m diameter) probably the same one as 72 and 73. The sherd is burnished over the rim and has a buff coloured surface and an orange-brown core. Fabric is friable and contains crushed angular sandstone inclusions. The rim measures 24 mm thick at its greatest extent.
65. Small hard rim sherd with distinctive orange-brown burnished but gritty surface and slightly rolled-over rim. Fabric contains crushed stone inclusions (< 3 mm) and averages 11 mm thick. Probably from the same vessel as 67, 70, 71, 75 and 78.
66. Small hard rim sherd with medium brown burnished surface and very slightly everted profile. Fabric contains crushed stone inclusions and averages 7 mm thick. Probably from the same vessel as 69.
67. Small hard rim sherd with medium brown burnished surface and very slightly everted profile. Fabric contains crushed stone inclusions and averages 7 mm thick. Probably from the same vessel as 69.
68. Tiny hard rejoined rim sherd with orange-brown burnished but gritty surface with slightly everted profile. Fabric contains

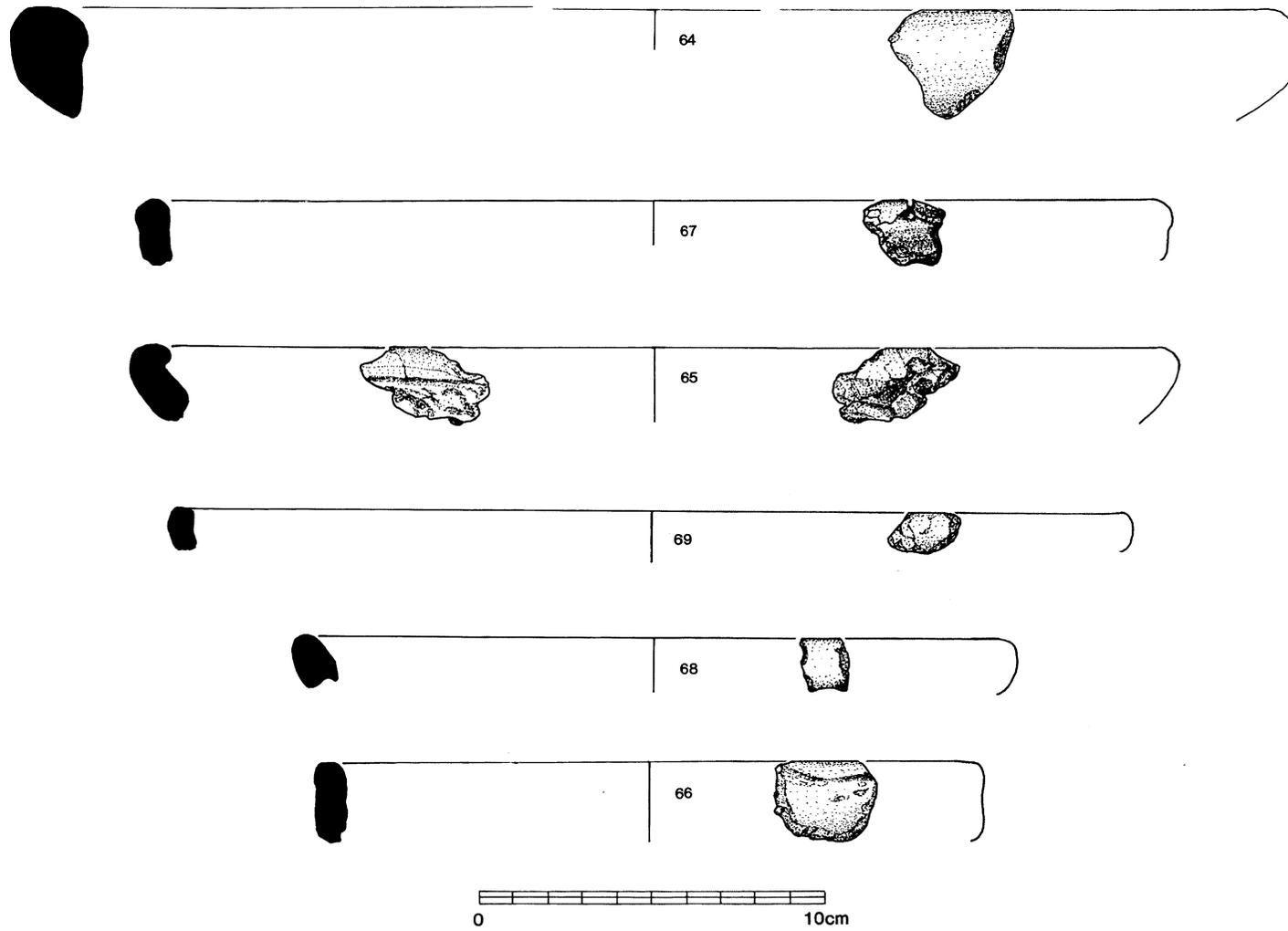


Fig. 16 Rim sherds from pit F4 at half size.

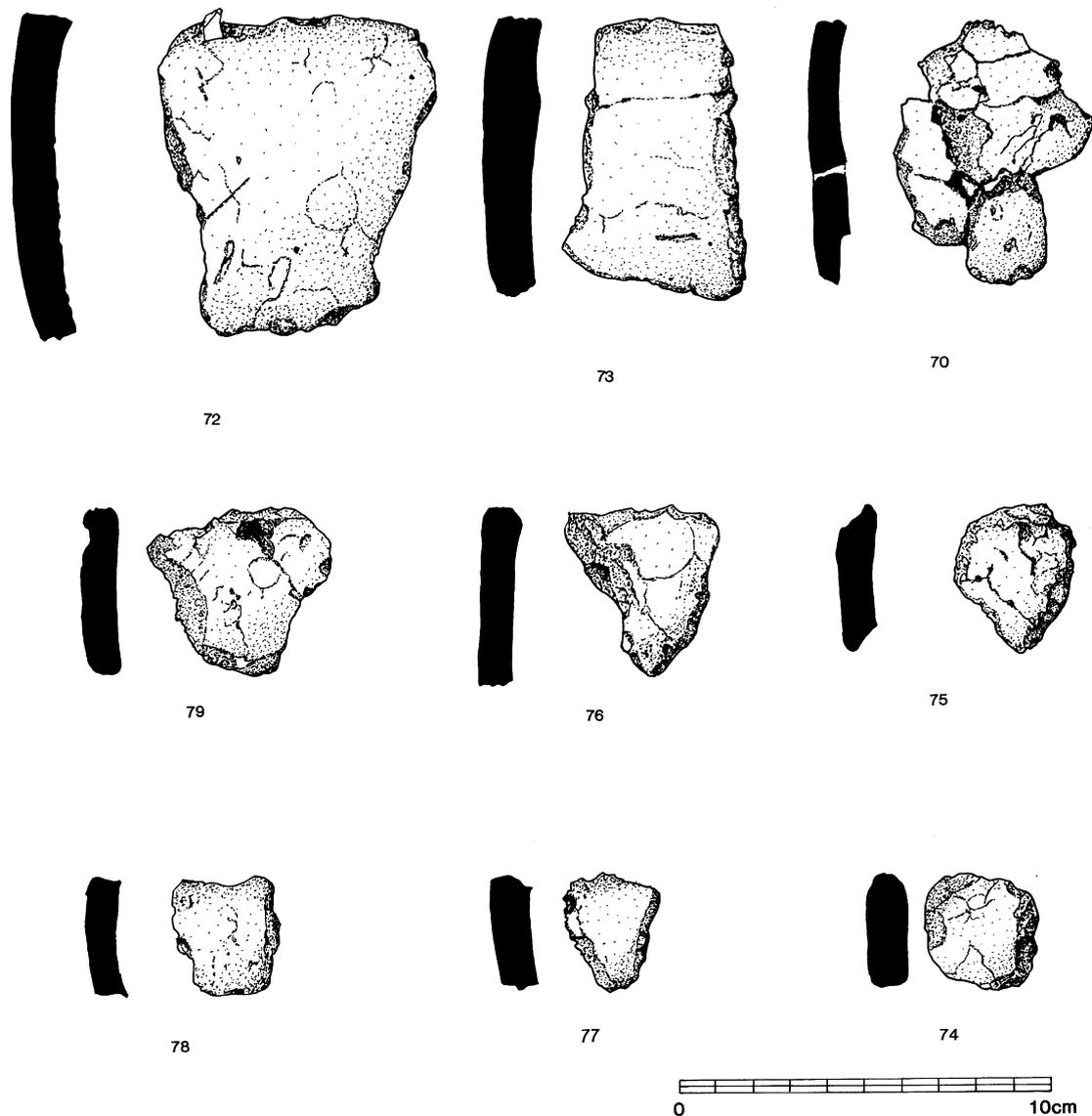


Fig. 17 Body sherds from pit F4 at half size.

- crushed stone inclusions (< 3 mm) and averages 9 mm thick. Probably from the same vessel as 65, 70, 71, 75 and 78.
69. Tiny hard rim sherd with medium brown burnished surface and very slightly everted profile. Fabric contains crushed stone inclusions and averages 6 mm thick. Probably from the same vessel as 66.
70. Two rejoined sherds with distinctive orange-brown burnished but gritty surfaces. Fabric contains crushed stone inclusions (< 3 mm) and averages 8 mm thick. Probably from the same vessel as 65, 67, 71, 75 and 78.
71. Small body sherd with distinctive orange-brown burnished but gritty surface. Fabric contains crushed stone inclusions (< 3 mm)

- and averages 10 mm thick. A fracture on one side of the sherd has formed along a coil break. Probably from the same vessel as 65, 67, 70, 75 and 78.
72. Large curving sherd with burnished buff coloured exterior surface, dark grey core and red-brown inner surface. Fabric contains crushed angular sandstone inclusions and averages 12 mm thick. Likely to be from the same vessel as 64 and 73.
 73. Two rejoined pieces forming a sizeable curving sherd with burnished buff coloured exterior surface, dark grey core and red-brown inner surface. Fabric contains crushed angular sandstone inclusions and averages 12 mm thick. Likely to be from the same vessel as 64 and 72.
 74. Small orange-brown sherd burnished on both surfaces averaging 10 mm thick. Fabric contains angular stone inclusions. Probably from the same vessel as 76.
 75. Small body sherd with distinctive orange-brown burnished but gritty surface. Fabric contains crushed stone inclusions (< 3 mm) and averages 9 mm thick. Probably from the same vessel as 65, 67, 70, 71, and 78.
 76. Small orange-brown sherd showing a carinated profile burnished on both surfaces and averaging 9 mm thick. Fabric contains angular stone inclusions. Probably from the same vessel as 74.
 77. Small hard sherd with a burnished medium brown coloured inner and outer surface averaging 10 mm thick. Fabric contains crushed stone inclusions. Probably from the same vessel as 68.
 78. Small body sherd with distinctive orange-brown burnished but gritty surface. Fabric contains crushed stone inclusions (< 3 mm) and averages 8 mm thick. Probably from the same vessel as 65, 67, 70, 71, and 75.
 79. Small hard sherd with dark brown coloured outer surface and red-brown inner surface averaging 8 mm thick. Fabric contains crushed stone inclusions.
- contains angular stone inclusions. Probably from the same vessel as 62.
81. Body sherd with burnished buff coloured and gritty outer surface, dark brown and gritty inner surface with carinated profile. Fabric contains crushed stone inclusions (< 5 mm) and averages 8 mm thick. Possibly from the same vessel as a sherd from the truncated land surface 63.
 82. Small sherd burnished on both surfaces with pink-brown outer surface, slightly darker inner surface and averaging 8 mm thick. Fabric contains crushed stone inclusions. Probably from the same vessel as 83.
 83. Two rejoined sherds burnished on both surfaces with pink-brown surfaces and averaging 9 mm thick. Fabric contains crushed stone inclusions. Probably from the same vessel as 82.
 84. Small body sherd with distinctive orange-brown burnished but gritty outer surface, dark grey core and medium brown gritty inner surface. Fabric contains crushed angular stone inclusions (< 3 mm) and averages 11 mm thick. Probably from the same vessel as 18 from the truncated land surface above.
 85. Small body sherd with orange-brown gritty inner and outer surfaces. Fabric contains crushed stone inclusions (< 3 mm) and averages 7 mm thick.
 86. Two rejoined sherds with dark brown burnished outer surface and rougher pink-brown inner surface. Fabric contains crushed stone inclusions and averages 7 mm thick. Probably from the same vessel as 88.
 87. Small body sherd with orange-brown gritty fabric. Fabric contains coarse crushed stone inclusions (< 7 mm) and averages 8 mm thick. This sherd appears to be core material only with no definite surface surviving.
 88. Small body sherd with dark brown burnished outer and inner surfaces. Fabric contains crushed stone inclusions and averages 8 mm thick. Probably from the same vessel as 86.

Four pieces of very fragmentary ceramic were also recovered from this pit consisting of small heavily abraded undiagnostic core material with no surfaces surviving.

Pit F5 (fig. 18)

62. Small red-brown sherd burnished on outer surface, with the inner surface not surviving. Fabric contains angular stone inclusions. Probably from the same vessel as 80.
80. Large red-brown sherd burnished on both surfaces and averaging 7 mm thick. Fabric

Pit F36 (fig. 19)

89. Small sherd showing slight carination with burnished dark brown inner and outer

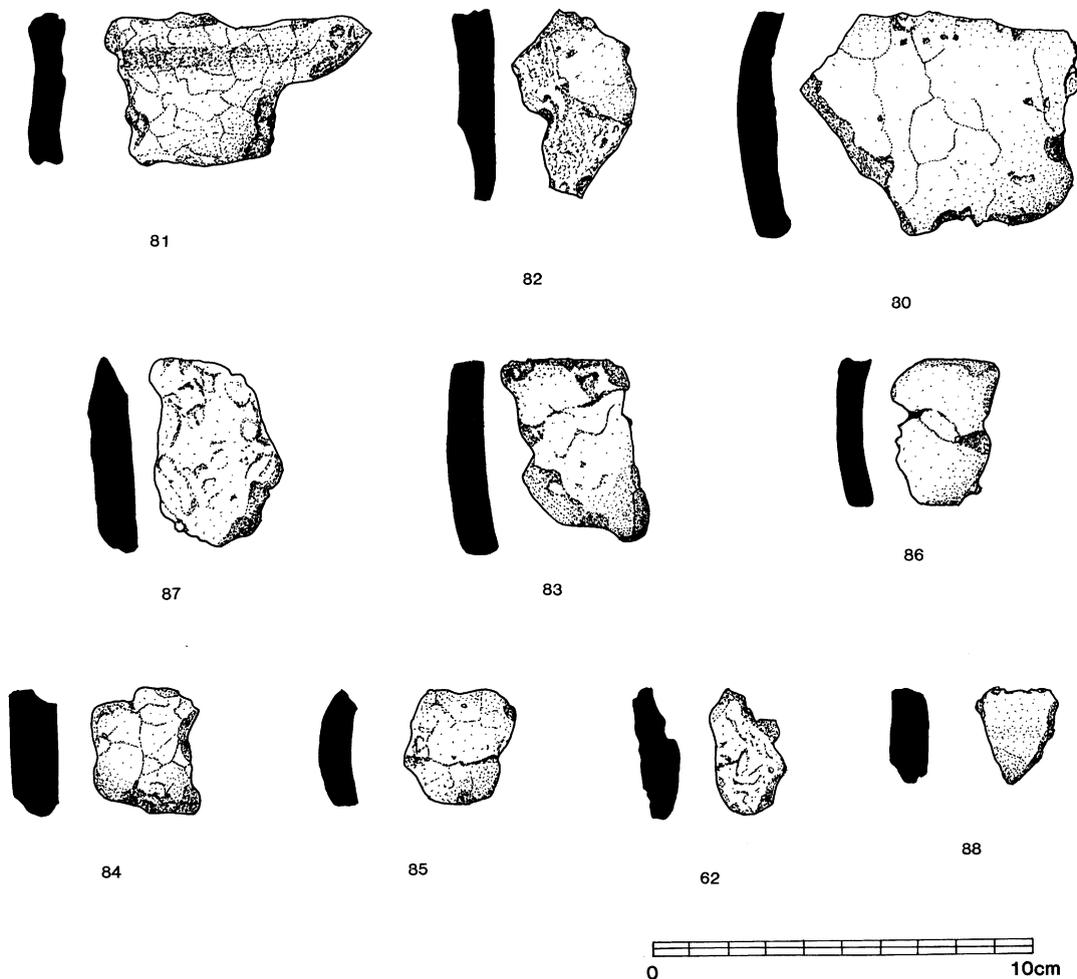


Fig. 18 Pottery from pit F5 at half size.

- surfaces. Fabric contains fine crushed stone inclusions (< 3 mm) and averages 6 mm thick.
90. Small orange-brown sherd with angular stone inclusions, inner face missing.
 91. Small rim sherd with everted rim. Fabric contains fine crushed stone inclusions (< 3 mm) with dark brown inner and outer burnished surfaces and averaging 7 mm thick (not including rim area).
 92. Small thick sherd showing start of carination, possibly from the same vessel as 64, with highly burnished inner and outer surface. Fabric contains fine crushed stone inclusions with a

dark brown inner surface and a lighter red-brown blotchy surface on the exterior. Averages 12 mm thick.

93. Small sherd showing slight carination with burnished dark brown inner and outer surfaces. Fabric contains fine crushed stone inclusions (< 3 mm) and averages 6 mm thick.

Pit F9

94. Single tiny sherd of pottery, 7 mm thick, gritty fabric and undecorated. Dark grey outer surface.

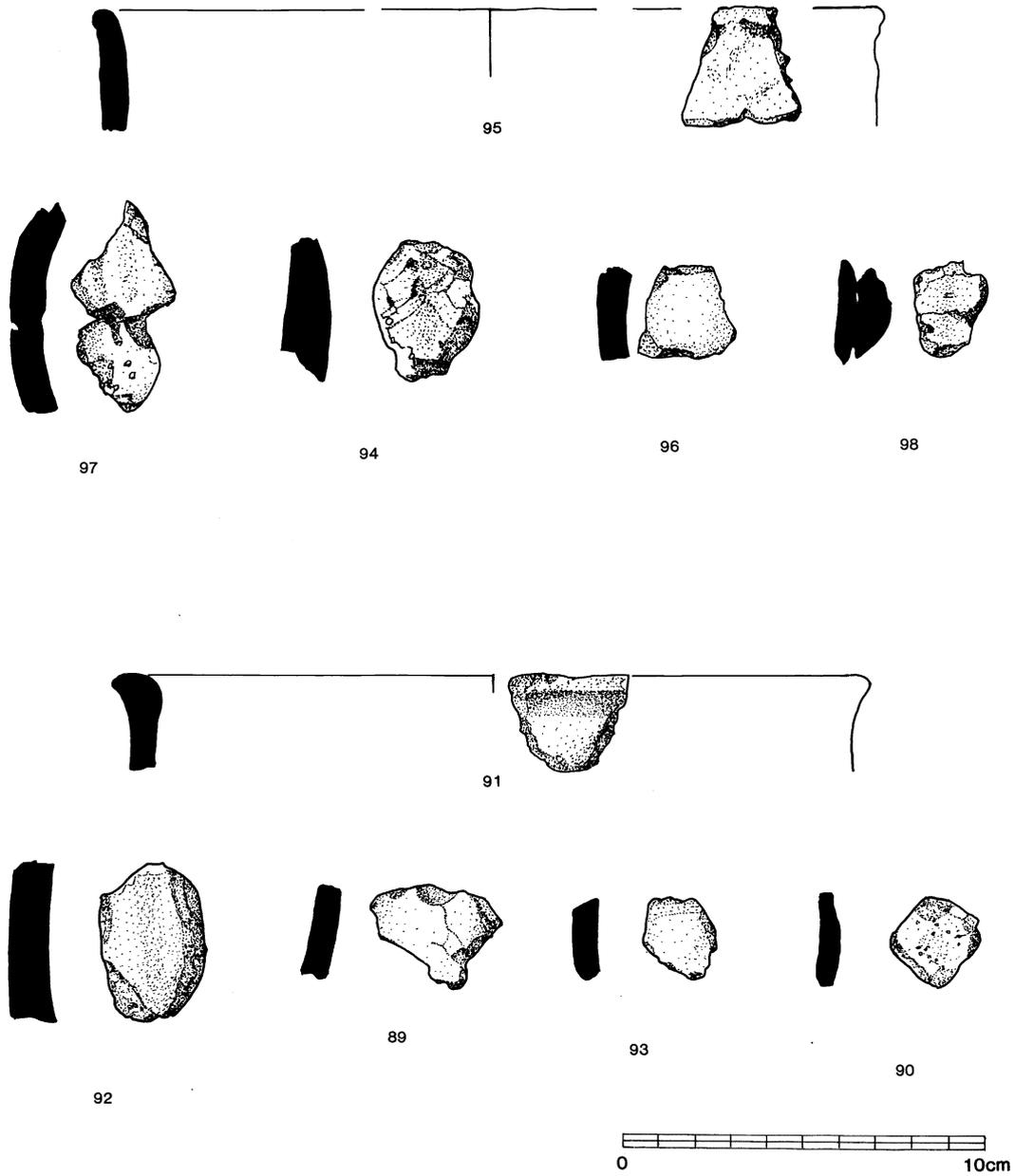


Fig. 19 Pottery from pits F10 (top two rows) and F36 (bottom two rows) at half size.

Pit F10 (fig. 19)

95. Small rim sherd with slightly everted rim. Fabric contains crushed angular sandstone inclusions and averages 7 mm thick.

96. Small hard sherd with buff coloured outer surface and darker brown core and inner surface averaging 7 mm thick. Burnished with fine crushed stone inclusions.

97. Two joining orange-brown sherds with angular stone inclusions averaging 9 mm thick. Possibly from same vessel as 98.
98. Small orange-brown sherd with angular stone inclusions, inner face missing.

LITHICS

Clive Waddington

A total of 37 lithics was recovered during the Sandyford Quarry Field excavations. The material formed a cohesive assemblage resulting from a narrow parallel-sided blade-based manufacturing tradition. Diagnostic Early Neolithic pieces are present including a broken leaf-shaped arrowhead and an end scraper, and since the pieces came from excavated deposits which were either radiocarbon dated to the Early Neolithic period or contained Early Neolithic pottery, the assemblage can be confidently assigned to that period. A tiny broken backed bladelet from the fenceline fill (context 25) may be a microlith fragment that could have been incorporated into this fill as a residual piece when the fence socket was back-filled. However, it need not necessarily be a microlith though it is hard to envisage this small piece as anything else. A struck flake of Group VI volcanic tuff was recovered from one of the domestic rubbish pits as noted above and this is likely to have come from the same piece as the broken polished stone axe from pit F5 which it matches closely.

The raw material is notably all flint with no examples of the struck quartz, chert or agate common in other assemblages from the region (e.g. Waddington 1999). There are few cortical flakes to give a clue to the origin of the flint; lithics 21, 4 and 8 however are probably of local boulder clay origin. The flint is a variety of colours from translucent through various shades of grey to two red-brown pieces. Some of the better quality flint may be imported from a nodular source but otherwise most of the pieces are probably made from flint local to the north-east. The two pieces of Langdale tuff, although probably from the same original, indicate contact with the south Lake District and this is reinforced by the various finds of

Group VI axes found elsewhere throughout the County (Cummins and Harding 1988, 81).

The range of lithics includes pieces from all stages of the core reduction sequence from primary flakes through to discarded broken tools; this suggests that stone tool production/maintenance and their use took place on the site. This pattern of lithic types, together with the presence of processing tools such as a scraper (8), retouched blade tool (49) and utilised blades (4; 99), are consistent with activities associated with a settlement site. The broken leaf arrowhead indicates the presence of weaponry associated with hunting/warfare and its broken tip suggests it was lost or discarded after use.

CATALOGUE OF LITHICS FROM THE EXCAVATION

All numbers are the original find numbers and relate directly to the site archive. No measurements are given for broken pieces; otherwise all measurements are maximum dimensions.

Context 3 Truncated Land Surface (fig. 20)

2. Broken bladelet segment made of light grey flint with a sliver of white cortex remaining on the dorsal side. Part of a narrow blade with a blade removal scar on the dorsal surface.
3. Small debitage flake made of light grey flint. 13 mm long by 9 mm wide by 1.5 mm thick.
4. Broken blade segment made of medium grey flint with triangular section with some abrasion on one of the long edges suggesting its use as a tool. A small area of cortex indicating a boulder clay origin survives on dorsal surface.
5. Small debitage flake made of light grey flint. 11 mm long by 11 mm wide by 3 mm thick.
6. Broken blade segment made of light grey flint with triangular section.
8. End scraper made of honey coloured flint of glacial origin. Abrupt retouch around the thick distal end of the blade with evidence of utilisation indicating its use as a tool. 36 mm long by 21 mm wide by 11 mm thick.
9. Blade made of light grey flint with thin sliver of white cortex surviving on dorsal surface. 21.5 mm long by 9 mm wide by 2 mm thick.
13. Broken leaf-shaped arrowhead of classic 'tear-drop' shape made of a medium grey speckled flint. The piece has been invasively retouched

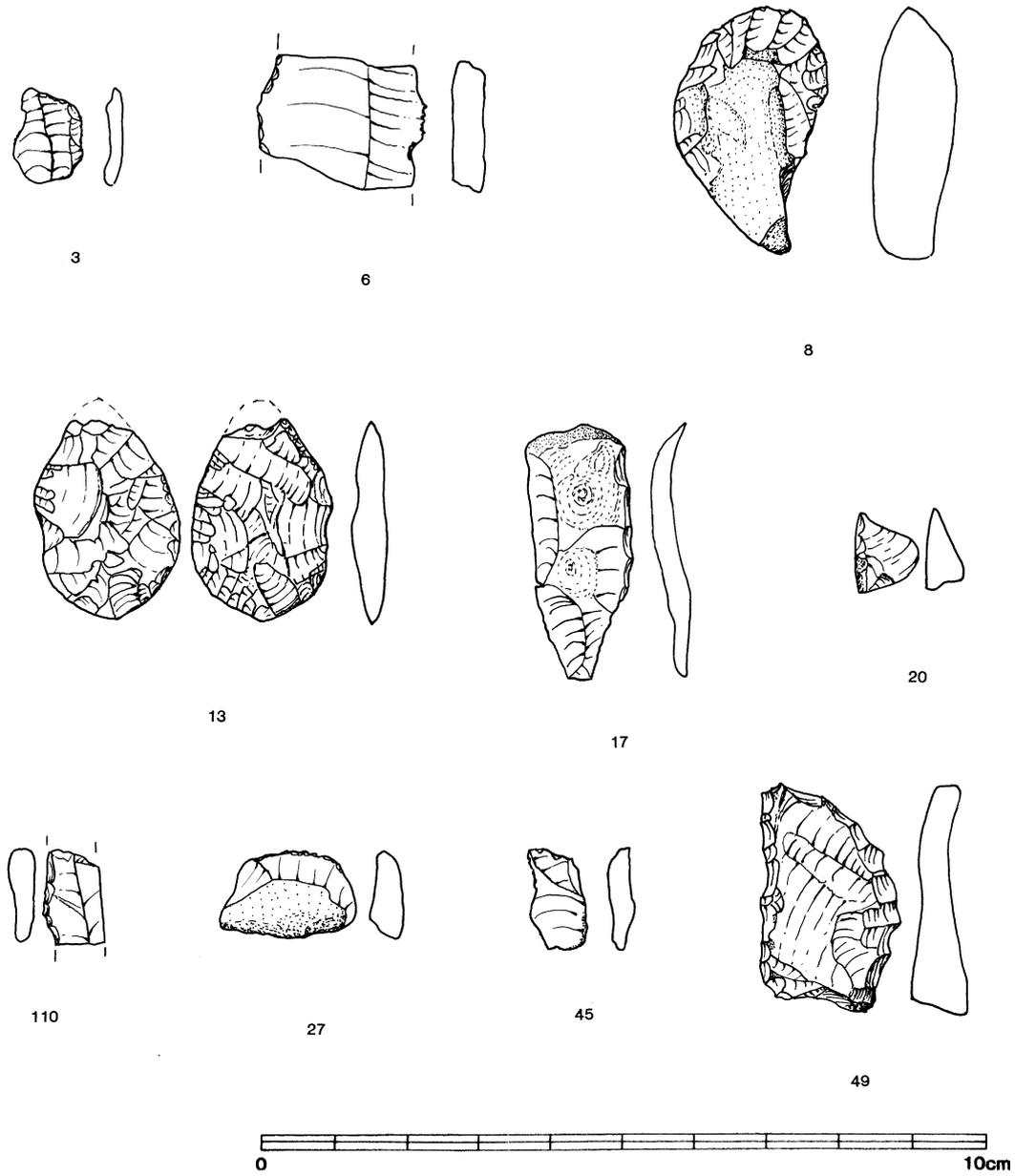


Fig. 20 Selected lithics from the truncated land surface (context 3), actual size.

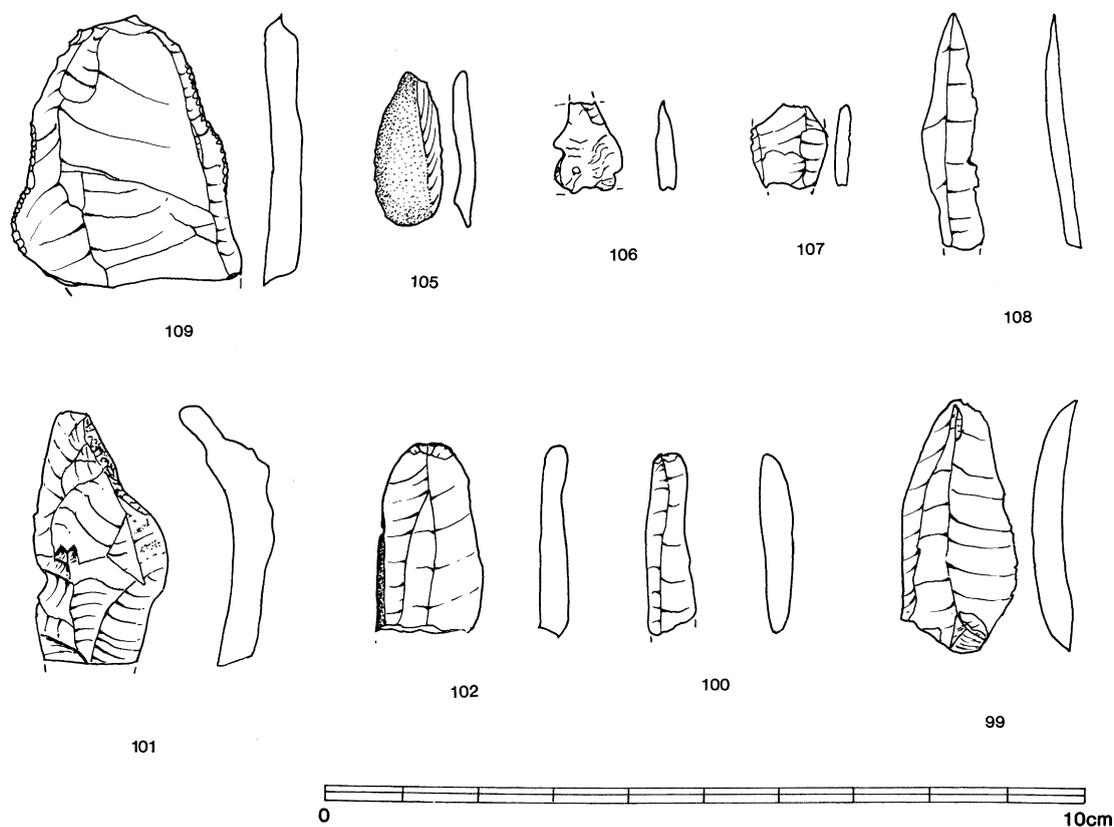


Fig. 21 Lithics from pits F5 (top row) and F4 (bottom row), actual size.

- on both surfaces to create a thin and roughly symmetrical piece. Early Neolithic.
14. Broken flake made of light grey flint.
 16. Broken bladelet made of medium grey flint.
 17. Blade made of medium grey flint. 36 mm long by 14 mm wide by 2 mm thick.
 19. Broken bladelet segment made of light grey flint with some possible utilisation along one of the long edges.
 20. Core rejuvenation flake made of medium grey speckled flint. 19.5 mm long by 14 mm wide by 8 mm thick.
 21. Broken primary flake made of medium grey boulder clay flint with area of cortex surviving on dorsal surface.
 27. Broken blade segment made of light grey flint.
 28. Tiny broken flake made of light grey flint.
 29. Tiny flake made of medium grey flint with triangular section. 11.5 mm long by 12 mm wide by 4 mm thick.
 41. Broken flake made of light grey flint with evidence of a hinge fracture at the distal end.
 42. Tiny broken bladelet segment made of light grey flint with triangular section.
 45. Tiny broken bladelet made of red-brown flint.
 49. Broken retouched blade tool made from light grey speckled flint. The retouch is steep and continuous along all the surviving original edges and is unifacial. There is abrasion on some of the retouched edges indicating its utilisation as a tool in antiquity.
 52. Small broken flake made of light grey flint with some chalky cortex surviving.
 58. Broken burnt flake.
 60. Broken blade segment made of medium grey flint.
 61. Broken core fragment made of red-brown flint. The piece is the distal tip of a platform core with narrow blade removals visible around all sides. Mesolithic-Early Neolithic.

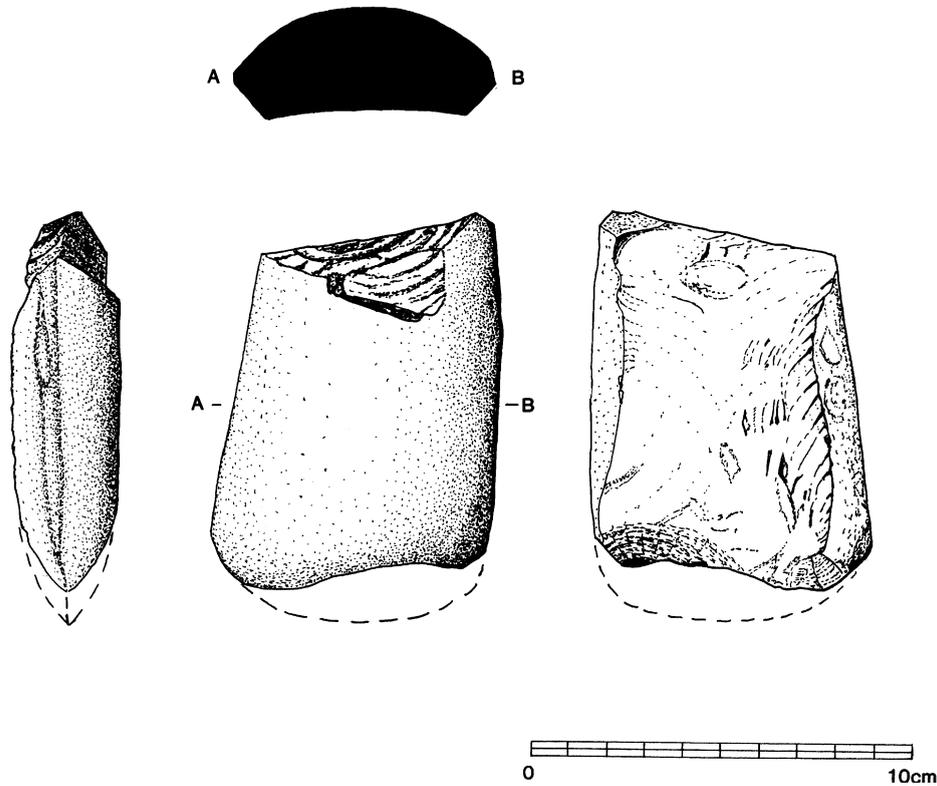


Fig. 22 Broken polished stone axe from pit F5 at half size.

F4 Rubbish Pit (fig. 21)

- 105. Tiny cortical bladelet removal made of medium grey flint. 19.5 mm by 8.5 mm by 1.5 mm.
- 106. Tiny broken flake made of medium grey flint.
- 107. Tiny broken debitage flake made of light grey flint.
- 108. Broken bladelet made of light grey speckled flint with triangular section.
- 109. Broken edge-trimmed flake of Group VI Langdale tuff with utilisation along sections of both long edges.

F5 Rubbish Pit (fig. 21)

- 99. Blade with utilisation along one long edge made of medium grey flint. 33 mm long by 14.5 mm wide by 3 mm thick.
- 100. Narrow broken bladelet made of medium grey flint.
- 101. Broken blade segment made of light grey flint.

- 102. Broken blade segment made of medium grey flint with sliver of cortex surviving on dorsal side.
- 103. Broken ground and polished stone axe made of Group VI Langdale volcanic tuff (fig. 22). Although broken the axe measured 72 mm broad at its blade end. The axe has characteristic flat edges running down both of its sides. The striations resulting from polishing are still visible on the axe surface and indicate that it was ground and polished using strokes not always in the same direction. Neolithic.

F36 Rubbish Pit

- 104. Broken blade segment made of translucent grey flint.

F25 Fenceline fill (fig. 21)

- 110. Broken backed bladelet made of light grey flint, probably part of a microlith segment.

CATALOGUE OF ILLUSTRATED LITHICS RECOVERED
BY FIELDWALKING FROM SANDYFORD QUARRY
FIELD

Fig. 23 (Lithics drawn are from 1995–6 collections)

- S1.4 Patinated blade with triangular section. The bulbar end is missing and the right hand edge has been trimmed.
- S1.5 Burnt fragment of a scraper, fabricator or even possibly of a knife. There is not enough of this artefact left to make a positive identification.
- S1.6 Blade trimmed down the whole of the left hand margin. This has been neatly executed and there may be the remains of tiny, worn denticulations.
- S1.15 Primary flake with uneven flat flaking on both faces. The flint has been trimmed around 75% of the circumference. Possibly a heavily used scraper/fabricator.
- S1.18 Tiny scraper where the percussive bulb has been removed. On size alone this piece seem likely to be Mesolithic; there is, however, some flat flaking suggesting a later, and more likely, Neolithic date.
- S1.30 Burnt flake, almost square in shape, possibly a gun flint. Similar to a piece from a nearby field.
- S1.38 Part of a tool made from a thick flake with some pebble cortex. One margin is steeply trimmed and chipped. Probably used as a scraper.
- S1.41 Hinge flake from orange/brown pebble. It was possibly hafted as there is some trim at the bulbar end on both margins. The right margin is trimmed unevenly along the whole of the length. Possibly a heavily-used knife.
- S1.42 Small keeled blade with trimming on the right distal edge and some chipping, possibly from use, on both long edges.
- S1.48 Neolithic side scraper with neat retouch along the left margin. This piece is of high quality though there is considerable damage.
- S1.49 Flake with both long margins retouched.
- S1.59 Fragment of a scraper, possibly Mesolithic

Fig. 24 (Lithics drawn are from 1995–6 collections)

- S1.60 Blade of excellent quality material with bulbar end missing. The retouch along the right margin is regular and worn. There is

retouch for 75% of the left margin at the proximal end.

- S1.61 Scraper with steep trim on two sides at right angles to each other, possibly Mesolithic.
- S1.72 Small chunky flint with thermal damage, possibly a scraper.
- S1.78 Waste flake with some possible retouch.
- S1.82 Primary flake with scraper style dressing on the ventral surface.
- S1.104 Small chunky flake with steep retouch. Possibly used as a scraper.
- S1.110 Flake of high quality flint with the bulbar end removed. There is scraper-type retouch on the dorsal surface of the left margin and severe chipping from use on the reverse side of the left margin. Possibly used as a knife.
- S1.111 Possible small scraper with light retouch and thermal damage.
- S1.118 Quartz flake with broken tip and trim along both margins, probably a quartz microlith.

Fig. 25 (Lithics drawn are from 1995–6 collections)

- S1.129 Possible scraper with thermal damage.
- S1.132 Heavily damaged flake retaining cortex. Possibly a damaged scraper.
- S1.144 Small flake with neat retouch on the right margin.
- S1.146 End scraper worked on a thick flake with neat trim at the distal end and part of the right margin.
- S1.156 Side scraper fashioned on a heavy flake. Badly damaged, with the bulb of percussion missing. The left side is retouched.
- S1.175 Heavy flake with flat trim to produce a good edge. Possibly a knife or scraper.
- S1.204 High quality flint blade with retouch along the butt end of the left hand margin. Also retouched on three quarters of the right margin at the proximal end.
- S1.210 Blade with two sides retouched and with both left and right sides notched.
- S1.222 Flake with left margin heavily trimmed, the opposite margin has been more finely trimmed to make a point.
- S1.228 Blade with right and left distal edges retouched to leave a spatulate point.
- S1.231 Neolithic spearhead. Both sides of the flake have been dressed. This piece is unlikely to be an arrowhead of leaf type because of the weight of the finished blade.
- S1.233 Flake with ventral right margin trimmed near the distal end. The left margin is

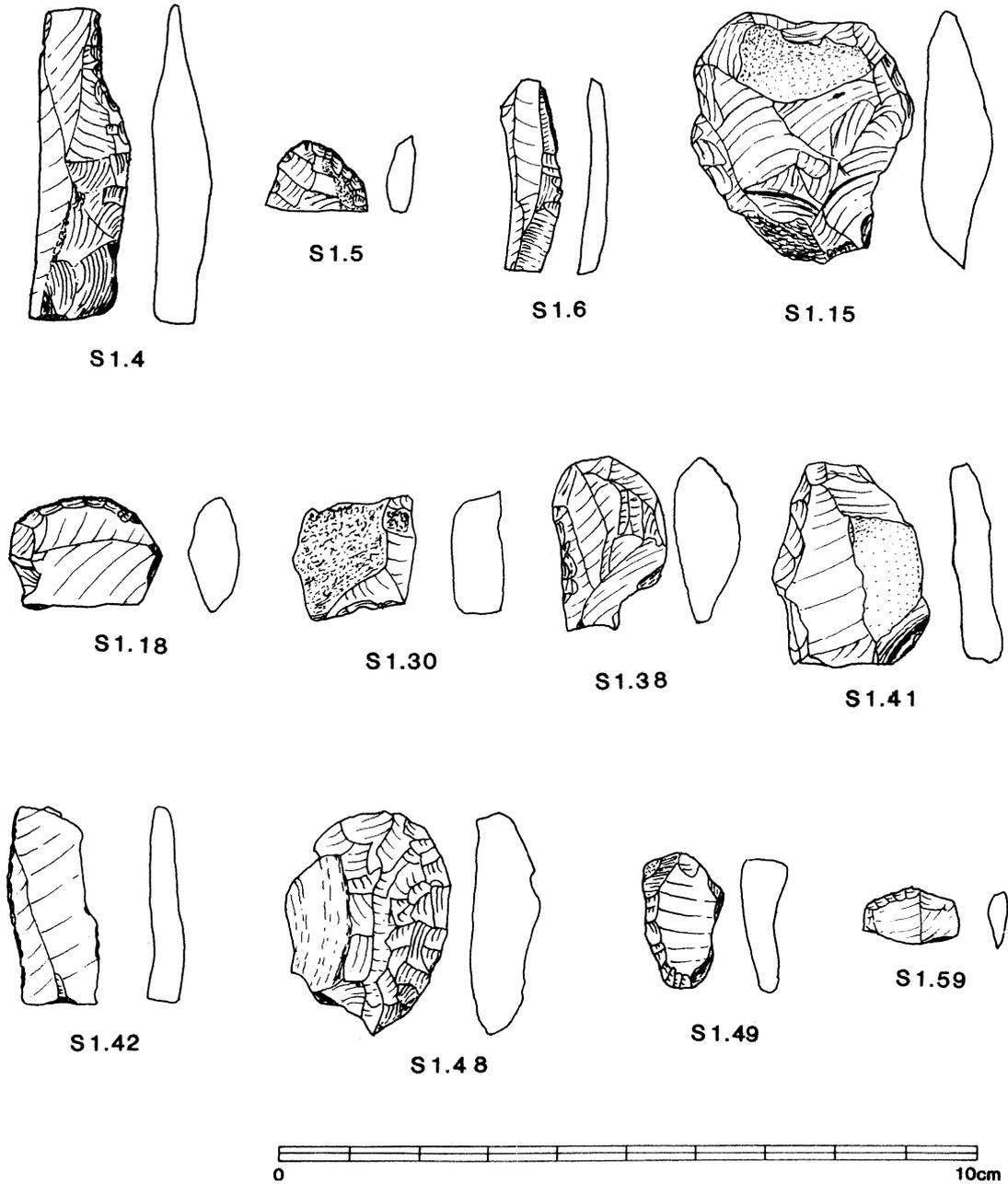


Fig. 23 Lithics recovered during fieldwalking of Sandyford Quarry Field 1995-6, actual size.

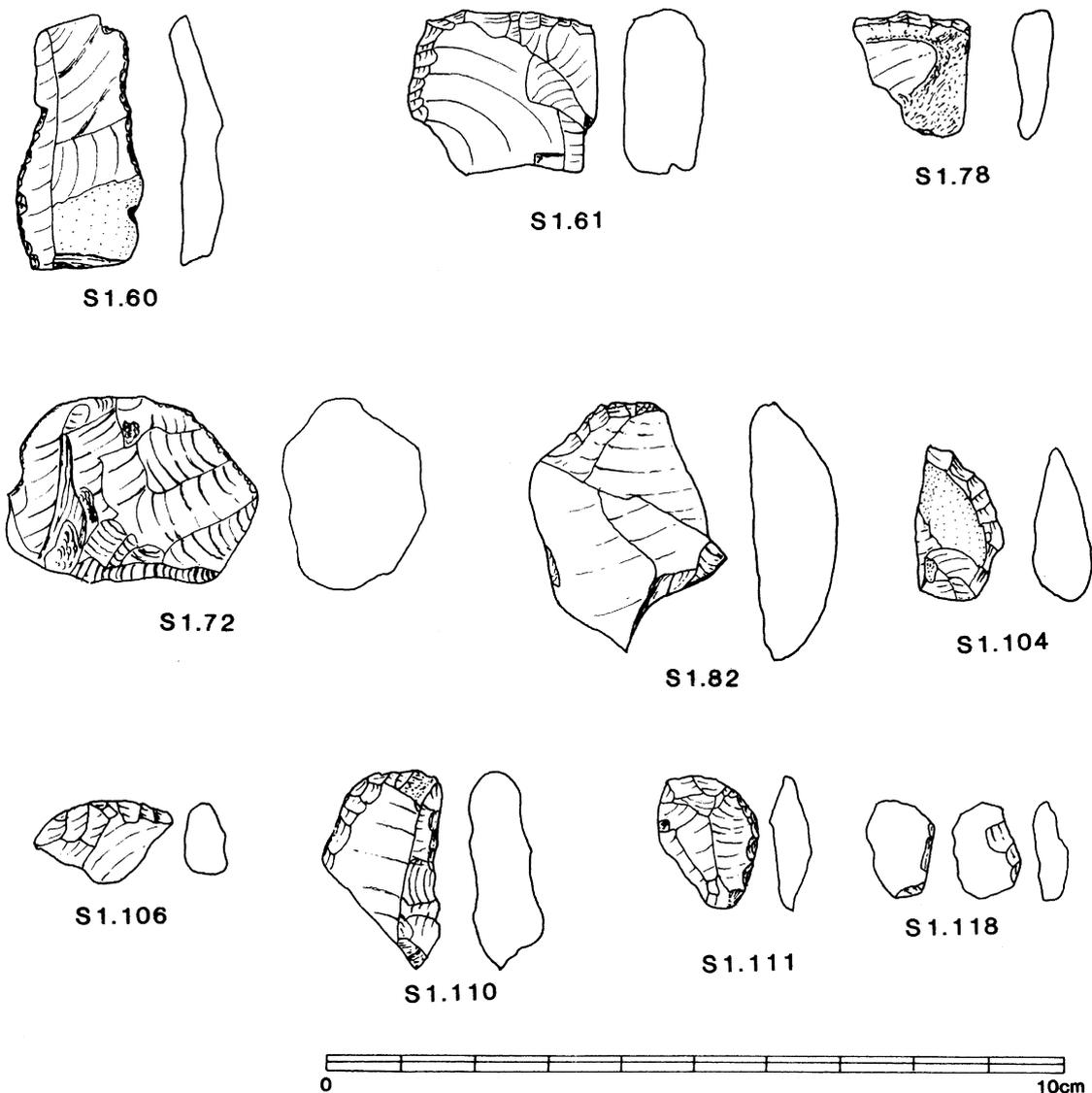


Fig. 24 Lithics recovered during fieldwalking of Sandyford Quarry Field 1995-6, actual size.

retouched; this is most evident on the ventral surface.

Fig. 26 (Lithics drawn are from 1996-7 collection)

S1.253 Side scraper unlike most of the material of scraper type from this site. The retouch is of a more scaly type and the flake scars are

minute and flat. The tool edge is in excellent condition and it looks as if the piece has been reworked in the centre of the edge. From the form of the tool it is probably Bronze Age in date.

S1.292 Fine quality narrow blade microlith with deep invasive retouch on the whole of the left margin. The proximal end and the whole

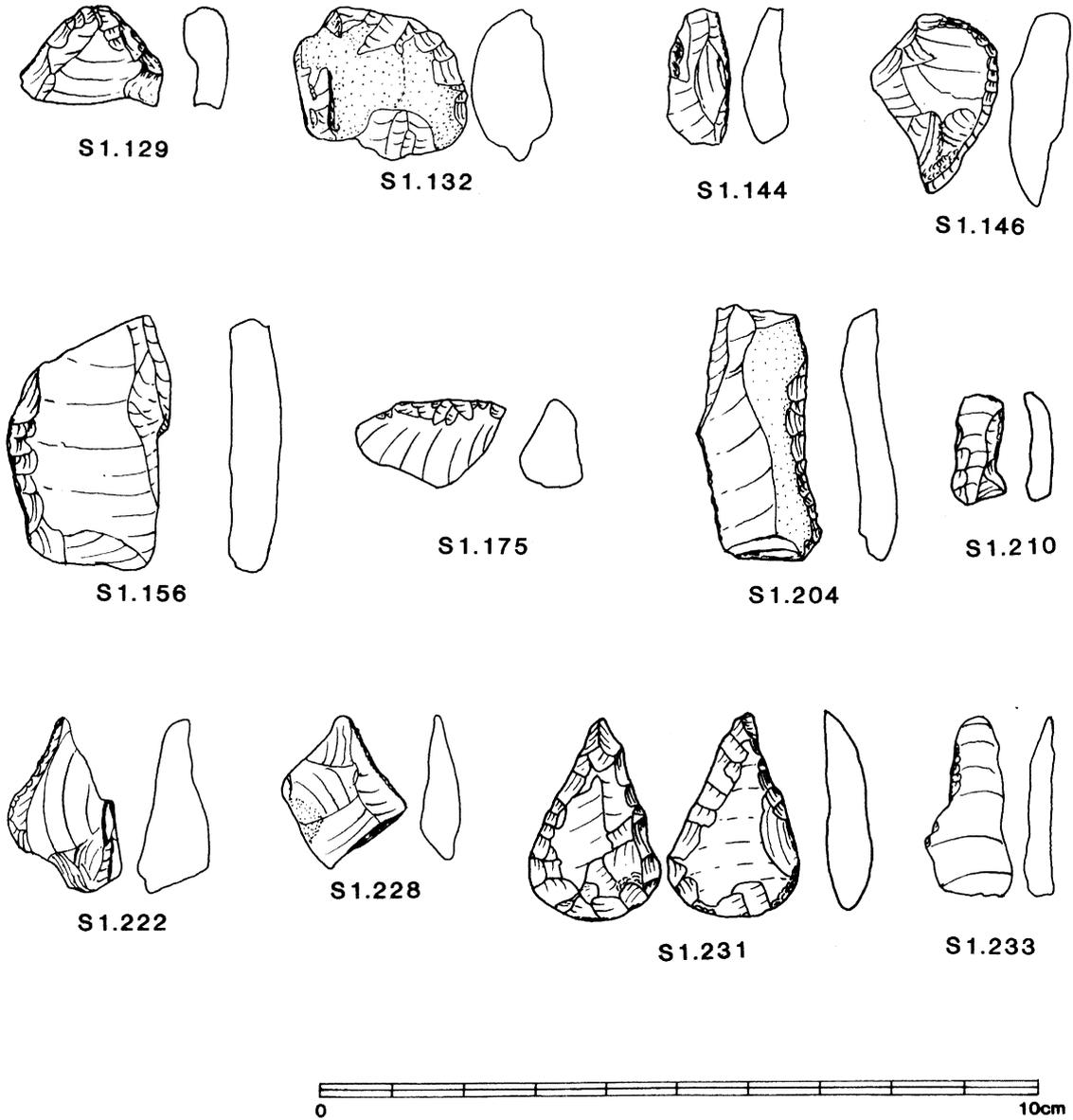


Fig. 25 Lithics recovered during fieldwalking of Sandyford Quarry Field 1995-6, actual size.

right side are finely chipped or retouched. The right distal end has invasive retouch like the left margin.

S1.307 Possible part of leaf-shaped arrowhead or plano-convex knife. The right hand margin has flat regular retouch and almost all of the

left side is missing. The basal right underside has been reduced in thickness as if for hafting. There is no sign of the high quality retouch on the ventral surface hence the possibility that it is a plano-convex knife fragment.

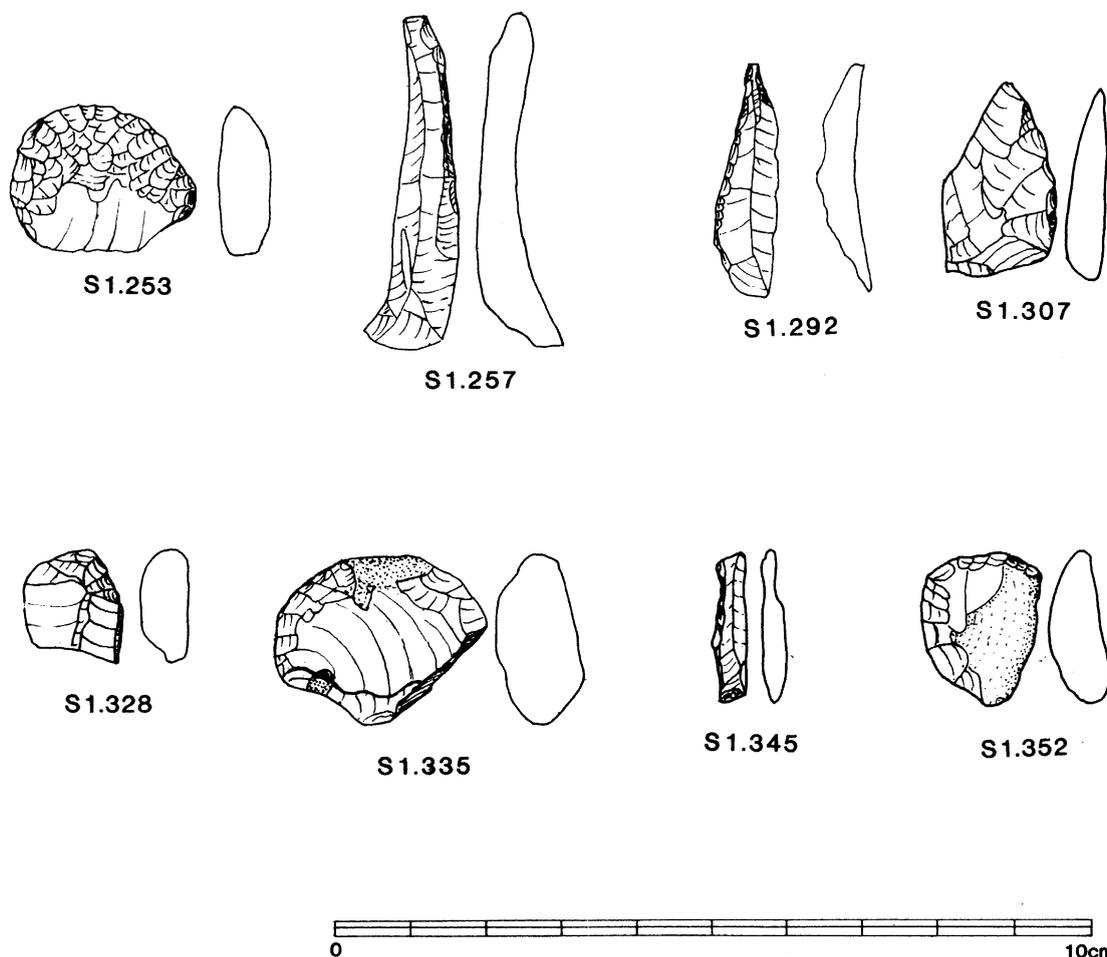


Fig. 26 Lithics recovered during fieldwalking of Sandyford Quarry Field 1996-7, actual size.

- S1.328 Steep edged small end scraper on butt section of a heavy blade-possibly Mesolithic.
- S1.335 Side scraper. Made from quite a thick flake of creamy coloured flint which retains some cortex up to right hand working edge. The cutting edge has regular neat retouch.
- S1.345 Very narrow flake of 'rod type'. There is heavy invasive retouch on the right margin. Microlith which by its form must be Late Mesolithic.
- S1.352 End scraper on butt end of squat flake retaining cortex. The retouch on the working end is fine and regular. The left margin has been dressed down as far as the proximal

end. Possibly late Mesolithic or early Neolithic.

PALAEOENVIRONMENTAL SAMPLES

Jacqui Huntley

Bulk samples of sediment (20-30 litres each) were taken but only two contexts produced evidence of botanical residues and these are presented in Table 7. The bulk samples were manually floated in the laboratory with both flots and residue retained upon 500 μ mesh. The

Table 7 *Archaeobotanical macrofossils.*

| Taxon | Domestic Pit F4 | Domestic Pit F33 |
|--|-----------------|------------------|
| <i>Corylus avellana</i> shell (hazelnut) | ++ | ++ |
| <i>Triticum dicoccon</i> (emmer wheat) | 1 | |
| Cf. <i>Triticum</i> | 1 | |
| Cerealia indet. (indeterminate cereal) | 1 | 1 |
| <i>Ulex europaeus</i> (gorse) | 1 | |
| <i>Carex triginous</i> (sedge) | 1 | |
| <i>Crataegus monogyna</i> (hawthorn) | | 1 |
| <i>Bromus</i> sp (brome grass) | | 1 |

flots were sorted for their charred plant remains and identifications were by comparison with modern reference material held in the Department of Archaeology, University of Durham.

Hazelnut shell fragments dominate both samples. Such material has been commonly recovered from a variety of Neolithic pits in the region such as the sites at Coupland (Huntley 2000), Thirlings (van der Veen 1982) and Milfield North (Huntley 2000) in Northumberland and elsewhere at sites such as Dishforth (Huntley and Stallibrass 1995) in North Yorkshire. The presence of emmer wheat is informative and, although in a tiny quantity, indicates that the Neolithic inhabitants of this site either grew or had access to cultivated resources. The gorse and hawthorn remains might represent deliberate planting for stock proofing but equally can certainly be expected to have grown in the area on the somewhat acidic soils. Brome grass is a typical weedy species and frequently occurs in archaeobotanical cereal assemblages since the seeds are of similar size to cereals and hence not easy to separate during processing and cleaning. Sedges indicate a damper soil and, again, are common in such assemblages. Although a very small assemblage, the material from this site confirms that the presence of

cereals, particularly emmer, is a constant feature of Early Neolithic sites in Northumberland.

CHARRED WOOD

Jacqui Huntley

Charcoal fragments were manually recovered from some of the archaeological features (Table 8). In the laboratory, fragments over c. 10 mm were chosen and fractured by hand in transverse, radial longitudinal and tangential longitudinal sections. These fresh breaks were examined at up to x400 using a Leica epiluminescent microscope. Notes were made of the salient cell structure and arrangements. Identification was then by comparison with both photographs in Schweingruber (1978) and sections of modern reference material held in the Department of Archaeology, University of Durham.

Notes on identification criteria:

- Pomoideae: densely diffuse porous, TLS mostly bi-/tri-seriate rays
- *Salix/Populus*: densely diffuse porous, TLS all uniseriate, heterogeneous rays, simple pores
- *Alnus*: diffuse porous, vessels in strings, some 'doubles'; uniseriate rays, very short rays close to aggregate ones, 15–20 bars scalariform plates; pitting moderate size
- *Corylus*: diffuse porous, vessels in quite strong strings, flared at rays; mostly uniseriate, also aggregate; 5–8 ish bars scalariform plates; large thickened pitting
- *Betula*: diffuse porous, scattered, many 'doubles'; 1–4 seriate, few uniseriate; 8–15 bars scalariform plates; tiny pitting
- *Quercus*: ring porous, compound rays – not always present in these tiny pieces. Uniseriate and multi – very few 2–3–4 wide.

Although relatively few pieces were available for identification a range of species was nonetheless present. Oak was rare with the smaller species of alder, birch, willow/poplar and hawthorn types most common. All of these trees and shrubs would have been growing

Table 8 Charred wood remains.

| Feature | F6 | F10 | F16 | F22 | F25 | F27 | F29 | F35 | F36 |
|--|-----|-----|------|--------|-----------|------------|----------|----------|-------------|
| | Sta | Dom | Pos | Hearth | Slot fill | Stake hole | Post pit | Post pit | Rubbish pit |
| Pomoideae (hawthorn, rowan, apple types) | | | | 12 | | 1 | | | |
| Salix/Populus (willow/poplar) | | | 1 | | | 3 | | | |
| Corylus/Alnus (hazel/alder) | | | | | | | 2 | | |
| Alnus (alder) | | 4 | 4 | | | | 2 | 2 | 1 |
| Betula (birch) | | | 5 | | | | | | |
| Quercus (oak) | | | | | | 1 | | | 3 |
| Corylus nut shell | | | | | | | | | 1 |
| Indet. diffuse porous – very soft | 3 | | | 1 | | | | | |
| Coal | 1 | | | | 3 | | | | |
| Soil/charcoal particle clumps | | | many | | | | | | |

locally around the site as would, almost certainly, ash, holly and elm although the three latter were not recorded; the assemblage is too small to interpret this absence. The small amount of oak could suggest that it was not favoured by the site inhabitants because of a technology-limiting reason. At this period oaks could have been large well-grown specimens and their timber is certainly hard to cut and this perhaps dissuaded those staying in what appears to have only been a temporary encampment from exploiting it as a resource. The oak fragments were all too small to give any indications of ring curvature and hence original tree size. Some of the Pomoideae in F22 and the alder in F10 were from stems no more than a few centimetres in diameter – whole sections being present. More than one species is represented in most of the post or stake holes suggesting that either they were features used more than once (the posts being burnt for some reason) or that other woody material was used as packing. Only one fragment of oak was recovered from such a feature (F27) which

otherwise had mostly willow/poplar recorded. It is interesting to note that the oak was mostly in the rubbish pit and not in fills of discrete posts suggesting the selection of oak sticks/twigs for firewood.

In summary, it is most logical to suggest that the inhabitants of the site used a selection of wood from smaller trees to produce the stakes and posts required for their structures. Oak was rare. All the species would have been growing locally and thus it cannot be determined whether the posts and pegs were transported with the inhabitants or simply cut each time that the site was occupied. Given the experimental work the latter is quite likely.

CREMATIONS AND BURNT BONE

Paul Hindmarch

The collective weight of the excavated bone was 1200 g. The bone was white in appearance, severely fragmented and had transverse cracks and evidence of warping on the surface of the

long bones. Age assessment through epiphyseal fusion could not be carried out due to the fragmentary nature of the remains. The presence of green/blue stains on the bone may be indicative of the presence, in the past, of bronze objects next to the corpse or cremated remains.

Pit 1

Sub-adult/adult of indeterminate age. This was by far the largest collection of bones at 700 g. Although fragmentary in nature, this burial contained larger and more easily identifiable bones. Due to the large number and fragmented state of the pit contents a multiple burial cannot be discounted. A left maxilla and right mandible are identified and are gracile in nature; the mandible shows signs of partial molar eruption. An incisor and 4 partial roots, though disarticulated from their beds, were also present. Bones identifiable of the post cranial skeleton were: partial head and neck of femur; partial acetabulum; partial head of radius; partial clavicle; 6 mid rib sections and a single finger phalange. No evidence of pathology was noted on any identified bone. The long bones, however, all showed signs of warping and transverse cracking and some discoloration (green) of samples.

Pit 2

Cremation contents 225 g in weight. A probable female individual of indeterminate age. Identified remains included partial acetabulum and femoral head, a first row proximal toe phalange and large fragments of long bone (?) femur. All long bones showed signs of transverse cracking and warping. In addition to these fragments, smaller bones (supra-orbital ridge and long bone) were present which may derive from either small animal or sub-adult human (pre-birth or neonate) in nature. No evidence of disease or trauma was noted. A smooth fragment of white/pink crystal was also present.

Pit 3

An adult of indeterminate age. The bones from this pit were white and very fragmented and

made up 125 g. Therefore, individual identification of bones proved difficult. Identified remains included the neck of femur and femoral head and a single mid rib section, again with the sign of warping and cracking.

Cairn Material above Cremation Pits

A very fragmented collection of animal bones, ovine in nature, weighing 175 g were excavated from the area directly above the three pit burials. Few identifiable bones were present although molar tooth fragments could be seen.

Although not contained in urns, the excavated cremated remains represent three discrete pit burials with a covering of disarticulated animal bones (Bass 1995). In addition to the bones, a significant amount of charcoal was present in all three instances. There are indications that some bronze objects were present when the corpses were burnt resulting in the staining observed on some of the bones. The individual/s in pit 1 showed signs of discoloration on part of the cranial vault and ribs; no other discoloration was, however, noted in the other two pits. The weight of the excavated remains is typical of cremation deposits (Russell-White *et al* 1992) and ranges between 175 g and 700 g. The state of fragmentation of the bones meant no pathology was clear in any of the human remains.

In all excavated human bones from this site there are signs of transverse cracking and warping of the long bones. This indicates that the individuals were cremated 'fleshed' (Bartsiokas 2000) and is a feature attributed to the breakdown of bone collagen when under stress from high temperatures (e.g. Shipman 1981). Had the bone been dry at time of cremation there would have been less cracking and it would have been of a different nature (i.e. a step fracture) (Russell-White 1992; Prag and Neave 1997).

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