4 The material culture

4.1 The later prehistoric pottery

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4.1.1 Introduction

A total of 6291 sherds of prehistoric pottery, weighing 84,100 g, was recovered from the site. The pottery dates from the Early Iron Age to the Late Iron Age, but a combination of absolute dating, associated finds and stylistic affinities suggest that most of the assemblage dates to the 5th–late 3rd centuries BC. Judging by radiocarbon determinations obtained on associated material, much of the pottery was likely to have been produced, used and discarded at the later end of this date range.

Fifteen trenches produced prehistoric pottery in sufficient quantity to warrant analysis or comment: 1, 2, 3, 4, 5, 6, 8, 10, 12, 13, 14, 15, 17, 20, 21. The most productive trenches were 2 and 5, the pottery recovered from these locations together accounting for almost three-quarters of the site assemblage. Quantification of the pottery by trench is presented in Table 4.1.

In this report a presentation of the method of analysis, condition of the pottery, fabric and form typologies, and patterns of distribution are followed by a discussion of the pottery by trench group, highlighting the deposits or feature assemblages that are most informative on the basis of their size or character, or both.

4.1.2 Methodology

The pottery was recorded on an Access database, following standards recommended by the Prehistoric Ceramics Research Group (PCRG 1997). Sherds were quantified by trench and context, and weighed to the nearest whole gramme.

The following characteristics were recorded: number of sherds, weight, fabric, surface treatment, form, decoration, diameter of rim or base, degree of abrasion, presence and type of residue. Where possible, dates were attributed to each context group on the basis of diagnostic forms and decoration. Where form and decoration could not be determined, dating was generally based on fabric type supported by surface treatment and firing colour, which can provide only a very broad indication of chronology. General similarities to well-dated context groups were also taken into account in these cases.

The degree of abrasion was recorded according to the following broad categories: severe (no trace of original surface surviving); moderate (some of the original surface survives but some wear apparent); slight (some indication of wear apparent but most surfaces preserved); none (no wear detected). Evidence of use was indicated by recording residues such as carbonised matter, soot and limescale, and the position of residues on the sherds was noted.

Table 4.1 Quantification of prehistoric pottery by trench.

Trench	No sherds	% sherds	Weight (g)	Weight (%)
1	259	4	2877	3
2	2311	37	46824	55.65
3	100	2	788	1
4	554	9	7214	9
5	2248	36	16168	19
6	25	0.3	173	0.2
8	21	0.2	154	0.2
10	26	0.3	139	0.2
12	152	2	1315	1.5
13	177	3	1357	2
14	84	1	782	1
15	79	1	574	1
17	14	0.1	206	0.2
20	229	4	5454	6
21	12	0.1	40	0.05
Total	**6291**		**84065**	

4.1.3 Condition

The condition of the prehistoric pottery is variable, but the majority of sherds (74%) are highly abraded and the average sherd weight (ASW) for the combined assemblage is only 13 g (Table 4.2). This figure is misleading in that a few pit assemblages are remarkably well-preserved, containing complete or near-complete vessels, some of which show little or no attrition, either from exposure to natural elements or from use (e.g. battering or pitting of the inner surfaces).

4.1.4 Fabrics

Seventeen fabrics within six ware groups were identified. Some fabrics were present in very small quantities as anomalous elements within an otherwise relatively limited range of fabrics, incorporating Jurassic rocks, glauconitic sands and fine silty clays (Table 4.3). These commonly occurring wares were almost certainly largely products of local manufacture networks.

Table 4.2 Abrasion levels for prehistoric pottery.

Abrasion factor	Count	% Count
Not recorded	27	0.4
1 unabraded	277	4
2 moderately abraded	1355	21
3 highly abraded	4732	74
4 re-fired or over-fired	4	0.06

Shelly fabric

SH1 Slightly micaceous fine glauconitic clay, incorporating moderate density of rounded translucent and opaque dark quartz sand, with common ill-assorted inclusions of crushed fossil shell 1–4 mm. Much of the shell is platey and laminar. May also contain rare oolites, and also contains rare ferrous pellets.

Calcareous fabrics

L1 Fine clay with rounded, mostly translucent quartz sand, incorporating a moderate to abundant quantity of oolites and rare small angular limestone fragments.

C1 Glauconitic sandy clay with small, sparse calcite pieces. Uncommon.

Smooth finely sanded clay

S1 Smooth finely sanded glauconitic clay, with no or rare additional visible inclusions.

S2 Smooth finely sanded glauconitic clay, incorporating rare fossil shell fragments under 2 mm.

S3 Smooth finely sanded glauconitc clay, incorporating rare, small, white calcined flint 2 mm and smaller.

Flint-tempered fabrics

F1 Fine, well-sorted small white calcined flint inclusions in lightly sanded and slightly micaceous soapy clay. Many examples are well-smoothed or burnished.

F2 Coarse ill-assorted calcined flint inclusions 1–3 mm in sandy, slightly micaceous clay.

Table 4.3 Quantification of prehistoric fabrics.

Fabric	No	Wt	% No	% Wt	ASW (g)
Unidentifiable	**126**	**189**	**2**	**0.2**	**1.5**
SH1	**2843**	**32897**	**45**	**39**	**12**
L1	**61**	**532**	**1**	**0.6**	**9**
C1	**7**	**134**	**0.1**	**0.2**	**19**
S1	352	2917	5.6	3	
S2	556	6816	9	8	
S3	9	43	0.1	0.05	
S totals	**917**	**9776**	**15**	**12**	**11**
F1	65	433	1	0.5	
F2	33	284	0.5	0.3	
F totals	**98**	**717**	**1.6**	**0.9**	**7**
Q1	1097	24697	17	29	
Q2	1029	14117	16	17	
Q3	58	627	1	0.7	
Q4	28	181	0.4	0.2	
Q5	10	104	0.2	0.1	
Q6	10	102	0.2	0.1	
Q7	15	142	0.2	0.2	
Q8	1	8	0.02	0.01	
Q totals	**2248**	**39978**	**36**	**47**	**18**
SS1	**1**	**7**	**0.02**	**0.01**	**7**
TOTAL	**6301**	**84230**			**13**

Sandy fabrics

Q1 Fine sandy glauconitic clay, sometimes including rare burnt red or grey flint pieces up to 3 mm.

Q2 Fine/medium sandy glauconitic clay, including rare to sparse shell fossil shell.

Q3 Medium grade quartz sand and moderate glauconite.

Q4 Fine sand and rare small white flint pieces less than 2 mm.

Q5 Relatively coarse, rounded quartz sand and rare white flint. Possible Hampshire source.

Q6 Late Iron Age Poole Harbour Ware or Roman Black Burnished Ware I.

Q7 Moderate to coarse sub-angular translucent quartz sand, some examples incorporating rare small white flint or fossil shell fragments.

Q8 Medium grade glauconitic sand and rare chalk (single sherd from fill (2144)).

Rock-tempered fabric

SS1 Very finely sanded, slightly soapy clay containing moderate quantity of hard, buff-coloured rock fragments (possibly sandstone), ill-assorted and between 1–5 mm. Probably earlier prehistoric; single sherd from natural feature [2106].

4.1.5 Forms

Bowls

BA Shouldered Bowls

BA1 Bipartite bowl with carinated or angular shoulder and elongated or flaring rim.

BA2 Shouldered tripartite bowl, generally with rounded shoulder and elongated or flaring rim.

BB Cordoned Bowls

Tripartite bowl, body angles expanded or emphasised with cordons, generally red-finished and/or decorated with scratched linear motifs after firing.

Jars

JA Bipartite Jars/Bowls

Bipartite jars with a maximum girth at the shoulder, often with T-shaped or expanded rim. Rim, shoulder, or both may be accentuated with finger impressions. Could be classified as a cauldron or large bowl with its wide mouth, but the height of the Alfred's Castle examples is uncertain due to fragmentation.

JB Shouldered Jars

JB1 High shouldered jar with upright or slightly flaring elongated neck, and rim accentuated with fingertip moulding or slashed impressions.

JB2 Shouldered jar with upstanding or slightly flaring rim, and flattened but otherwise unaccentuated rim.

JB3 Large jar with slack or rounded shoulder and upstanding rim.

JB4 Barrel-shaped jar with slack shoulder and short upstanding or out-turned rim.

JC General category for rounded-profile or globular jars, rim diameter less than shoulder diameter. Rim tops are plain, or may have proto-bead or developed bead. Some examples have lug handles.

JD Tripartite jar with S-profile and generally well-smoothed or burnished surfaces.

Pots

PA Vessel with slightly curving walls or incurving upper section, height approximately equal to diameter, rim and base diameters approximately equal. The rim may be plain or flattened. Variable surface finish, often crude.

PB Vessels with vertical or near vertical walls and plain rim tops. Often well smoothed or burnished.

Miniature Vessels

This category includes small jars and simple, open thumb pots.

4.1.6 Fabric, form and affinities

The site is located at Ashbury, Oxfordshire, some 2–3 km south of the Ridgeway, and lies on the boundary of the White Chalk subgroup and Lower Cretaceous Wealden clays and sands. Wealden sediments tend to contain fossil plants and freshwater mussels, with marine fossil shells at the top of the Wealden succession. These clays are the closest and likeliest source of the shelly potting clays that dominate the Alfred's Castle assemblage. Gault and Upper Greensand formations lie a short distance to the north of the Ridgeway, and thin Upper Greensand forms a low feature at the foot of the prominent Chalk ridge of the Lambourn Downs, to the south of Ashbury, the Ridgeway and the Chilterns (Natural England 2013). These were likely sources of some of the glauconitic clays of the Alfred's Castle sandy wares (Q). The Alfred's Castle assemblage is dominated by sandy wares (see Q and S series above), which form 51% by count and 59% by weight of the total. Fossil shell-tempered fabrics are also common, accounting for 45% by count/39% by weight of the assemblage. Small quantities of flint-tempered wares and single or few sherds of calcite-tempered, limestone-tempered and sandstone-tempered fabrics were also identified.

No petrologic examination was undertaken, but the major fabric groups compare well with material from Uffington analysed by Dr David Williams (Brown 2003, 167). The fossil shell component of the abundant shelly wares (39% of the assemblage by weight) was probably deliberately added as temper to the very finely sanded glauconitic clay matrix, as was the case with the shell-tempered wares from Uffington (Brown 2003, 167), and Segsbury (Brown 2005, web section 3, 4). The Alfred's Castle shelly fabrics, however, did not present the variety seen in the Segsbury and Uffington assemblages, and were all recorded under a single classification (SH1). This could indicate short-term production, preference for a standardised clay recipe, supply by an individual potter or small unit, or all or some of these factors.

Despite the ready availability of glauconitic clays, some of the carinated fineware bowls were probably imported from the Salisbury region, Wiltshire area. These bowls were made in distinctive glauconitic fabrics (Q1 and S1-S2) at centralised production sites in the Salisbury area from the 5th century BC or slightly earlier (Williams 1984). Red-finishing by application of haematite or controlled firing was a common characteristic of these ceramics, and was observed on a few Alfred's Castle examples of this tradition. The fabric and decoration on a straight-sided 'saucepan pot' (see below, Fig. 4.8, no. 55) also indicate a similar south Wiltshire source, possibly Compton Chamberlyne, highlighted by David Williams in his study of Middle Iron Age glauconitic wares from Danebury (1984, 245).

Oolitic fabrics form only about 1% of the fabrics, indicating that the oolite formations of north Oxfordshire were not commonly exploited for raw materials by the potters supplying the site during the Iron Age. Oolitic fabrics were equally uncommon within the Iron Age assemblage from Segsbury and extremely rare at Uffington.

Some of the flint inclusions seen in fabrics F1, F2, S3 and Q5 may have originated in the Cretaceous chalks of the ridge on which the site lies. However, proximity of raw materials need not be indicative of source in any given case. The very small proportions of fabrics containing flint (*c.* 1%) suggest that, although this resource would have been easily available, it was not favoured for potting clay during the Middle Iron Age in this area, so it should be equally considered that the small collection of the finer flint-tempered sherds (F1) were imports to the site, originating from the downland regions of Wessex, where a fully developed Middle Iron Age pottery tradition of standardised, high quality vessels was probably being centrally produced. These production centres, although not specifically identified, combined access to good potting clays and flint, which was burnt, crushed and sorted to produce opening materials of consistent size and quality to ensure reliability in the firing process. Only one sherd of F1 was classifiable by form: an ovoid jar (JC), one of the most common of vessels found in deposits dating from the 3rd century onwards at Danebury and elsewhere in the Hampshire and Sussex regions (Brown 1984). A very uncommon fabric (Q5), which incorporates relatively coarse sand and a little white flint, may also have had an origin in this region. A single sherd of chalk-tempered pottery (Q8) was decorated in the style typical of the late Middle Iron Age assemblage at Danebury and nearby settlement sites in Hampshire, and was almost certainly an import from this region. As such, it increases the probability that at least some of the few flint-tempered wares came from the same area.

In summary, the Alfred's Castle Iron Age pottery reflects a stylistically conservative, handmade range of vessels produced from locally procured raw materials. The presence of apprentice pieces deposited in Trench 2 pits (see below) provides a strong indication of some level of on-site production, although no firing sites or pottery wasters were identified. The evidence does not indicate that the Alfred's Castle settlement was routinely involved in extensive trade networks, supplying pottery from sources beyond the local area. However, there were clearly opportunities whereby small numbers of vessels were brought onto the site from Hampshire and Wiltshire, probably through exchange.

The range of forms recovered is quite limited, and the great majority of vessels are coarsewares. Shouldered jars with elongated rims are most common, with sherds representing some 119 individual vessels of this class identified. Only six examples of the biconical jar/bowl form with expanded rim (JA) were recovered, two of them from pit [2123]. Coarseware jar fabrics are typically shelly, but a significant number were made in glauconitic sandy clays.

Another 19 vessels are pots with incurving upper sections (PA). There was no apparent preference for shelly as opposed

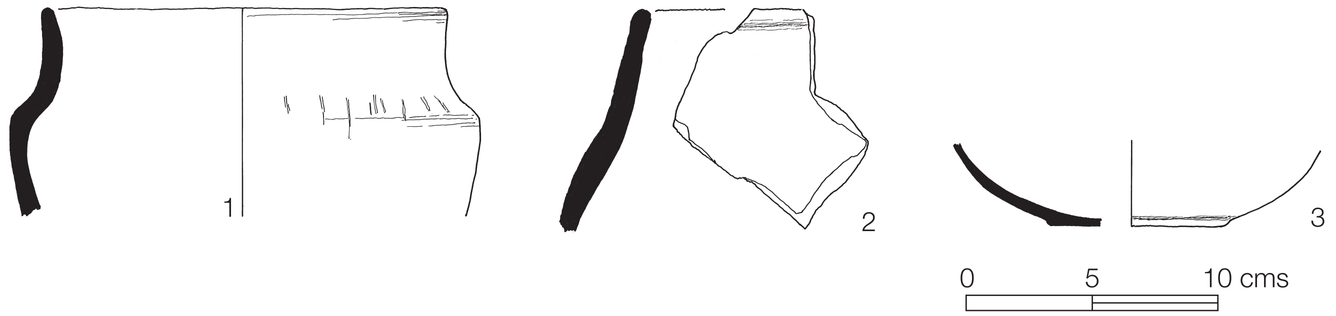

Fig. 4.1 Illustrated prehistoric pottery from Pit [1034], pot numbers 1–3.

to sandy fabrics in the manufacture of these vessels, which are generally fairly crudely made, possibly with whatever material was most conveniently to hand at the point of production.

Sherds representing a total of 75 bowls were recovered. A small number are examples of the BA and BB varieties made in finely sanded glauconitic fabric, sometimes red-finished. A proportion of these were probably manufactured at centralised production sites in the Salisbury area from the 5th century BC or slightly earlier (Brown 1984; Williams 1984). However, glauconitic clays also outcrop within a few km of the site and, in the absence of petrologic analysis, clays from the two sources are difficult to distinguish. Red-finishing was achieved by application of haematite slip or by controlled firing to permit oxidisation of the vessel surfaces and this was observed on a few sherds from Alfred's Castle. A distinctive moulded base with a fine red haematite slip, typical of these Wiltshire products, was found in pit [1034] (Fig. 4.1 no. 3) and other likely examples of imported bowls were found in pits [2177] (Fig. 4.3, nos 14 and 16), [2189, 2123] (Fig. 4.2, no. 10) and in a topsoil layer

Fig. 4.2 Illustrated prehistoric pottery from Pit [2123], pot numbers 4–10.

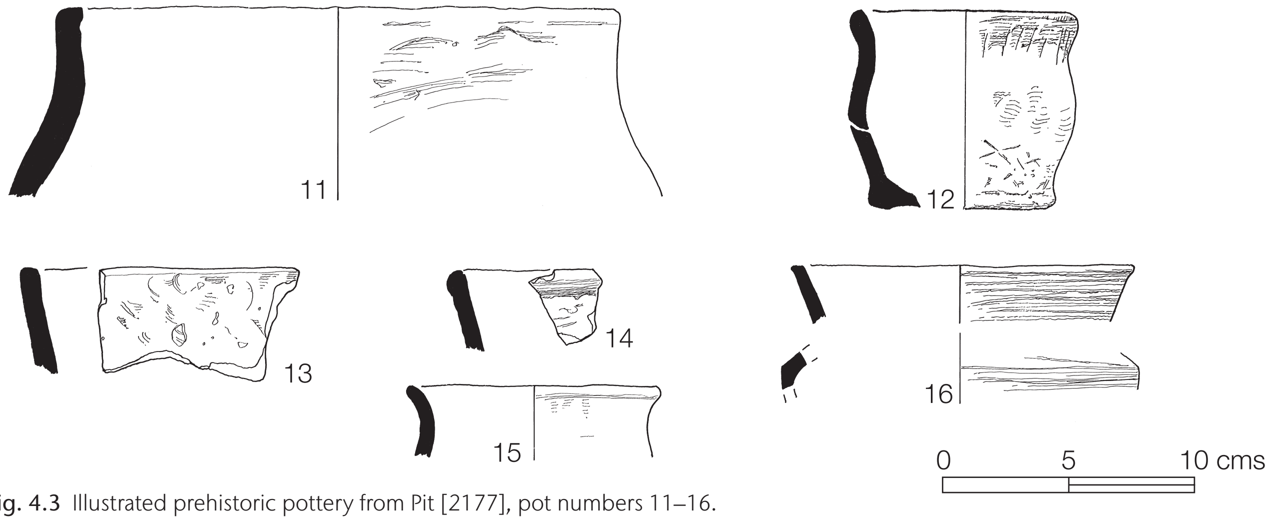

Fig. 4.3 Illustrated prehistoric pottery from Pit [2177], pot numbers 11–16.

of Trench 13. These fineware bowls were distributed fairly widely in southern England for at least a century or so, and copied in similar or even much coarser fabrics further afield until perhaps the 3rd century BC, sometimes found in deposits that are difficult to date. There is no clear evidence of occupation at Alfred's Castle dating to as early as the 5th century BC, so these fineware bowls were probably amongst the latest products of the Wiltshire potteries.

A high burnish and scratched chevron decoration, often of slipshod execution, is a feature of a group of more locally produced bowls represented in the Alfred's Castle assemblage. Because most of the vessels are very fragmentary, they have been subsumed in a general class (BA) with either carinated or rounded shoulders and elongated rims, sometimes decorated, sometimes plain. Because they were also produced from fine glauconitic clays, they can be difficult to distinguish from the Wiltshire products. They correspond in general terms to pottery characteristic of Cunliffe's Chinnor-Wandlebury group, dated by association to the 5th to 3rd centuries BC (Cunliffe 2005, 101–2 and fig. A: 12).

Four miniature vessels were recovered, one from pit [2177] and three from pit [2178]. These vessels are a widespread but nonetheless uncommon component of many Early and Middle Iron Age pottery assemblages, and are typically recovered as single or rare example on any given site. They can also be easily confused with crucibles, and one of the small thumb pots from pit [2178] closely resembles later prehistoric crucibles found, for example, at Knight's Farm, Berkshire (Bradley *et al.* 1980, 127), but it did not have any traces of metallic residue.

Five examples of straight-sided pots (PB) are in glauconitic sandy ware (Q1), which may indicate a Wiltshire source related to the materials used in the production of fineware bowls. The sherds have not been petrologically analysed, but a decorated example from the topsoil in Trench 13 (Fig. 4.8, no. 55) was almost certainly a product of the Wiltshire potteries. The existence, albeit limited, of a Wiltshire and Hampshire/Sussex supply network impinging on Alfred's Castle during the developed Middle Iron Age seems highly probable, especially in the light of evidence from Uffington (Brown 2003, 167).

The coarser variety of flint-tempered ware (F2) is represented by only 33 sherds and a single classifiable vessel, a shouldered jar of type JB2. This fabric was clearly not in the mainstream of preferred potting recipes and the few individual vessels represented may also have been brought into the site from elsewhere in the vicinity through a variety of circumstances. The correlation between dominant forms and fabric groups is presented in Table 4.4.

Table 4.4 Correlation of prehistoric pottery forms and fabrics.

Form	Fabric	SH1	S1	S2	S3	F1	F2	Q1	Q2	Q4	Q5	Q7	L1	C1	Total
Bowls															
BA		.	22	14	1	.	.	27	5	.	.	1	.	.	70
BB		.	1	2	.	.	.	2	.	.	.	.	.	.	5
Jars															
J		7	1	2	.	.	1	.	6	.	.	.	.	.	17
JA		6	.	.	.	.	.	.	.	.	.	.	.	.	6
JB1		13	.	2	1	.	.	1	4	.	.	.	2	.	23
JB2-3		19	4	16	1	.	1	4	15	.	.	.	.	1	61
JB4		.	.	.	.	.	.	1	.	.	.	.	.	.	1
JC		1	1	.	.	1	.	3	3	1	1	.	.	.	10
JD		.	.	.	.	.	.	1	.	.	.	.	.	.	1
LUG		1	.	3	.	.	.	8	.	.	.	.	.	.	12
Pots															
PA		4	2	3	1	.	.	6	1	.	.	.	.	1	19
PB		.	.	.	.	.	.	5	.	1	.	.	.	.	6
Miniature pots		1	.	.	.	.	.	.	3	.	.	.	.	.	4
Total		**52**	**31**	**42**	**4**	**1**	**2**	**58**	**37**	**2**	**1**	**1**	**2**	**2**	**235**

4.1.7 Deposition

Prehistoric pottery was recovered from a wide range of features and deposits. A relatively high proportion is present as residual material in disturbed topsoil and subsoil contexts, and in the makeup or demolition levels of the Roman structure, altogether 25% by sherd count and 12% by weight. The low weight figure relative to the sherd count demonstrates the typically small size of these residual sherds.

The predominant catchment was pits, but the broad figures presented in Table 4.5 mask the reality of a high degree of disparity between pit yields. Some were virtually aceramic whilst others had obviously served as foci for ceremonial or routine activity that included the deposition of complete vessels, significant parts of vessels, or fragmented pottery incorporated in what may have been midden or domestic waste deposits. The latter deposits also included bone and metal artefacts, burnt materials, and human and animal bone, and served as either merely convenient or, alternatively, meaningful backfilling material.

Only 429 sherds (9720 g) of pottery were present in the fills of 20 ditches [1004, 1044, 1127, 1137, 3516, 4073, 4131, 6006, 6304, 6310, 20001, 20502, 20505, 20803, 20823, 20862, 20882]. The largest collection (128 sherds/4468 g) is from rampart ditch [20502], but this figure represents the shattered in situ remains of a near complete JC2 type jar that had been deliberately placed in the ditch. If this vessel is removed from the ditch assemblage quantification, the ASW is reduced to 17 g, still high for a ditch assemblage, but not as striking as 21 g.

The ASW for the posthole assemblages are also relatively high at 21 g. Typically, this figure would be under 10 g, but the postholes at Alfred's Castle are large, relating mainly to the ramparts, and large fragments of pottery could have been selected as useful material for packing rather than representing incidental incorporation of weathered fragments. Of particular interest are the large unabraded rim fragments of a JA1 jar and a fineware bowl, each weighing over 100 g, found in the packing of posthole [4054]. Their size and fresh condition suggest deliberate selection.

A detailed trench by trench description of the pottery is presented on the Project Website.

4.1.8 Discussion

Chronology and character of the Alfred's Castle pottery

Elements of the prehistoric ceramic assemblage from Alfred's Castle could, on stylistic range and fabric, place the beginning of activity on the hilltop as early as the 6th–5th centuries BC. However, a programme of radiocarbon dating that has allowed for the pottery to be linked closely to dated deposition events indicates that construction of the earthworks probably began no later than the early 4th century BC, and that most of the activity within the interior dated to the 4th–3rd centuries BC.

Very little pottery was found in the rampart make-up and enclosure ditch fills, and most sherds recovered from these deposits are small, abraded body sherds. Five radiocarbon determinations obtained on material from the fill of the enclosure ditch [1044] exposed in Trench 1, date the fills to between 416 and 207 cal BC, nothing earlier than the late 5th century BC. The only indicator that sets the small pottery collection apart from the mainstream Middle Iron Age assemblage is the base of a large jar from fill (1032), in a rare limestone-tempered fabric (L1).

A radiocarbon determination of 401–353 cal BC obtained on material from an early rampart deposit (4045) also suggests that the earthworks were constructed no earlier than the late 4th century BC. The small collection of pottery from an Old Ground Surface (4060) underlying the rampart in this trench could, on the basis of a few rare fabrics and an atypically wide range of fabrics, belong to the Early Iron Age, but the limited evidence is inconclusive.

Radiocarbon dates from six of the pits in Trenches 2, 4 and 5 [2177, 2189, 4063, 5022, 5028, 5472], indicate that they were filling during the 4th–2nd centuries BC, placing the activity within the interior of the hillfort at the very end of a sequence of hilltop settlement in a region that includes Ram's Hill, Uffington, Liddington and Segsbury Camp. This provides a useful time frame within which to place a ceramic assemblage that, in stylistic terms, is quite conservative and could otherwise be assigned a much broader date, commencing in the last part of the 6th century BC.

Pottery, agency and patterns of behaviour

The practice of intentionally depositing selected materials in pits, waterholes, boundary and other features is well-rehearsed in the archaeological record of prehistoric Britain. What may be the most apt description for this behaviour: '*placed deposit*', '*intentional deposit*', '*special deposit*' and '*formal deposit*', is debateable, as each term is accompanied by the baggage of intent. Any and every deposit is '*placed*', including shovelling the closest available soil into a pit that needs levelling. Any act of deposition by human agency is '*intentional*' in the way that natural erosion, alluviation and colluviation are not. We can hardly judge the level of formality that accompanied the past deposition events, and the term *'formal'* is ambiguous at best. Any intentional act of depositing selected materials is arguably *'special'* behaviour and the selected material is, therefore, *'special'*. Here the term *'special deposit'* is used.

Detailed analysis of the Segsbury pit assemblages appeared to demonstrate that 21% of pit deposits that incorporated pottery included it as part of an intentional act, and that most of these special deposits were found at the top of pits, in contrast to the pattern of other Iron Age sites like Danebury and Winnall Down, where basal deposits were more typical (Lock *et al.* 2005, 132). There is no obvious

Table 4.5 Deposition of pottery – all trenches.

Provenance	Sherds (no)	Weight (g)	Sherds (%)	Weight (%)	ASW (g)
Pit	3095	55695	49	66	18
Posthole	30	630	0.5	0.7	21
Ditch	429	9720	7	12	23
Gully / slot	78	503	1	0.6	6
Hollow/misc. cut	106	1202	2	1	11
Natural feature	33	341	0.5	0.4	10
Roman structure	255	1197	4	1	5
Topsoil	1021	6897	16	8	7
Subsoil	342	2169	5	3	6
Rampart make-up	262	1238	4	1	5
Other layer and rampart make-up	673	4690	11	6	7

explanation for this, apart from the observation that where there are no beehive-shaped pits, there are fewer special deposits altogether, and fewer on pit bases. Additionally, at sites with large numbers of beehive pits, the occurrences of recorded special deposits increases over time, with a particularly high incidence during the Middle Iron Age, a possible reflection of intensification of both agricultural activity and of materials during this period.

Although the same level of analysis that was undertaken with the Segsbury assemblage was not applied to the spatial deposition of pottery at Alfred's Castle, it is clear that the Segsbury pattern was not reflected at this chronologically later site. At Alfred's Castle, where most of the pits conformed to the 'beehive' classification, the majority of archaeologically visible special deposits were located at or near the base of pits or, less typically, in the middle fills.

Summary descriptions of the pottery assemblages from each of the pits are presented on the Project Website in the sections dealing with individual trench assemblages. It is more apparent, in some cases than others, which acts of deposition of pottery or other materials reflected particular selection and intent. Some examples are obvious: the placement of complete or large parts of vessels on the surface of primary fills, as was the case in pits [2123] and [4131]. A near complete miniature jar found in the basal fill of pit [2177] would almost certainly have been intentionally selected for deposition, but what of the associated small fragments of a haematite-slipped bowl? Can we argue that these scraps were also consciously chosen for placement in this position? Perhaps we can, as a pattern of selection and deposition of these noticeable and attractive sherds emerges with careful scrutiny. Haematite-slipped bowl sherds were found also in the basal fill of pit [2143] and nowhere else in the pit, although two near complete jars had been placed in the middle fills, accompanied by burnt material, bone tools, a loom weight and much animal bone. The apparent selection of single small sherds of haematite-slipped and decorated wares for placement at the base of roundhouse postholes was observed at Flint Farm in Hampshire (Brown, 2008). A cache of possible apprentice pots, some complete, in both fills of pit [2178] was associated with a diverse range of other selected items, included metalwork, bone implements, burnt material and human bone.

In pit [2552] highly burnished and decorated bowl sherds lay in the basal fill, accompanied by a large coarseware jar base. Examples of the placing of pot bases, sometimes carefully trimmed and sometimes in groups, on or near the bases of pits, were observed at Danebury (Poole 1995a). The possible significance of these otherwise apparently negligible sherds becomes apparent only when considered in the light of other occurrences and associated material.

This then brings into relief some other classes of deposits which include less highly visible pottery components. Several of the pits, notably [2104] and [2133], yielded little in the way of distinguished pottery assemblages, nevertheless they were incorporated in deposits rich in domestic remains, which may have originated from above-ground middens, themselves culturally and socially significant constructions. Although the artefacts within these deposits may not have held specific individual importance, the holistic status and potential benefits or consequences of selecting this material for pit filling events may have been viewed in much the same way as offering a complete vessel or a set of valuable metalwork. On the other hand, upstanding middens represent easily accessible quarry material for levelling nuisance holes in the ground.

Examples of a special deposit of a near complete pottery vessel was also noted in the fill of rampart ditch [20502] (Fig. 4.8, no. 52), and in at least one of the rampart postholes [4054], as noted above.

Apprentice pieces

An interesting component of the Alfred's Castle ceramic assemblage, and of some of the special deposits, is a number of vessels that were apparently made by unskilled hands, possibly apprentice potters or even children. These include a small thumb pot created by pulling up the sides of the vessel from a ball of clay, rather than by the more usual method of coil-building. This group also includes miniature jars and a particularly poorly executed bowl (Fig. 4.5, no. 30 and Fig. 4.9) that appears to have been an attempt to imitate the numerous fineware bowls from the site. Four of these atypical vessels, two of them complete, the others nearly complete, were found in the fill of pit (2178) (see Fig. 4.10) but the site records do not divulge whether they were deposited as a cohesive group. Another miniature jar was found in the basal fill of pit (2177).

This lack of aptitude or skill is also apparent in the execution of decoration on several vessels, again in fine glauconitic fabrics. The most striking of these is the lugged jar from pit [2143] (Fig. 4.4, no. 25 and Fig. 4.11), which has been discussed above. A similar 'sloppiness' is expressed in the chevron-type scratched design on bowl fragments from pit [2252] (Fig. 4.6, no. 43) and pit [2178] (Fig. 4.5, no. 39). A unique vessel with pricked decoration from subsoil layer (5002) (Fig. 4.7, no. 46) may also have been an experimental or apprentice piece.

These pots may have been made in a domestic setting, almost certainly using locally available clays. All, except the small thumb pot (a possible crucible) (Fig. 4.5, no. 33) from pit [2178] in shell-tempered fabric, are in fine glauconitic fabrics and quite poorly fired. In fact, bowl **no. 30** developed a crack during firing, originating at the point of a large piece of burnt flint in the lower wall of the vessel, and working its way up to the rim. The flint was an unintended inclusion in the potting clay and would have likely been removed by an experienced potter.

Whether these vessels offer evidence for on-site pottery production is unclear, as no other evidence of manufacture or firing was recorded. At Uffington, a rolled length of shell-tempered clay, possibly a discarded coil or similar potting scrap, although fired, was viewed as possible evidence for on-site production (Brown 2003, 167; fig. 9.5, no. 34). In any case, it is unlikely that these Alfred's Castle pots would have been moved far due to their lack of sophistication and poor firing. That most of them were complete or near-complete pieces within specially selected assemblages of material, highlights a specific, although undefined, function. They could, in fact, be compared to the amateur efforts of young children, so prized by parents in this modern age, and often given pride of place in a dwelling.

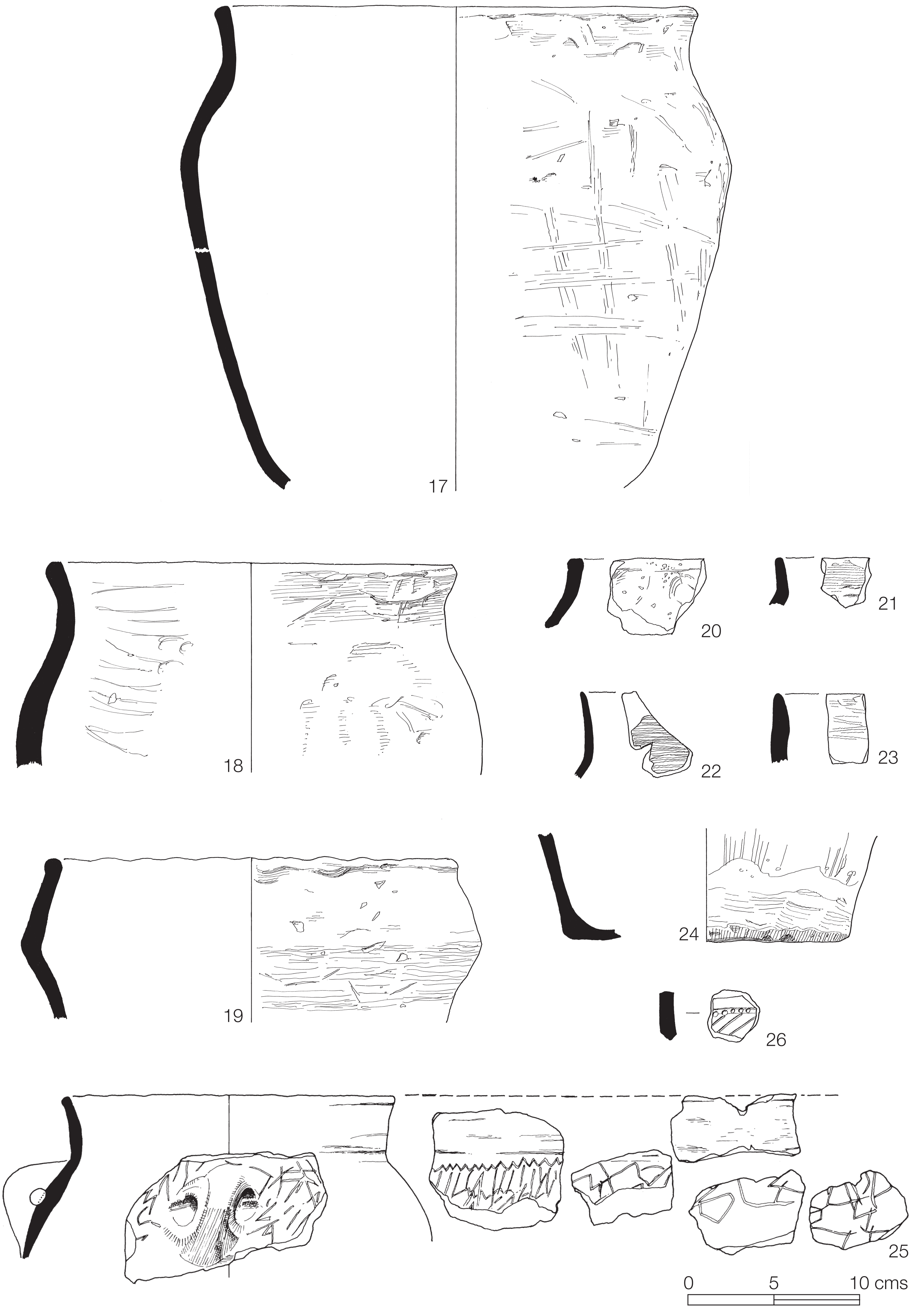

Fig. 4.4 Illustrated prehistoric pottery from Pit [2143], pot numbers 17–26.

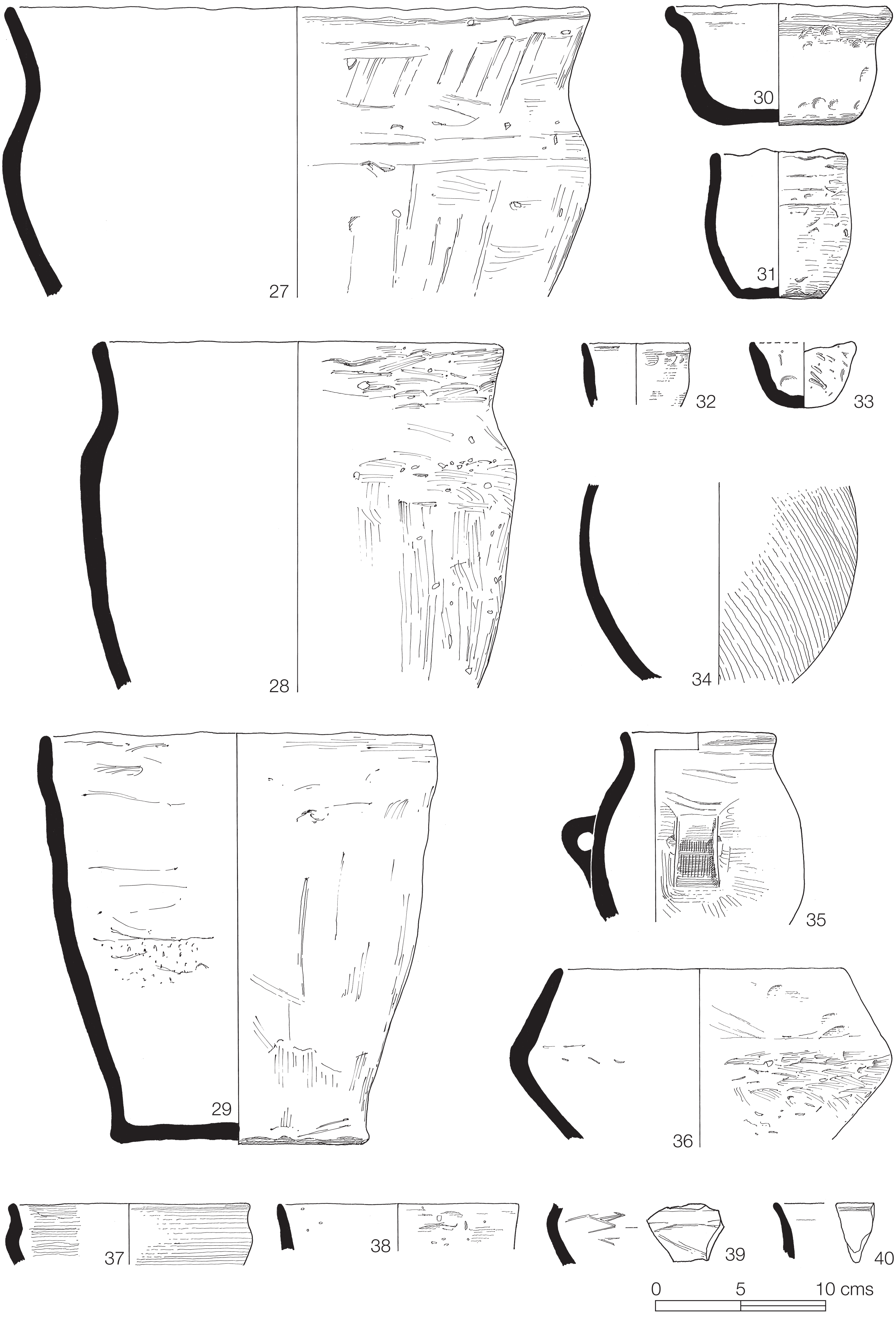

Fig. 4.5 Illustrated prehistoric pottery from Pit [2178], pot numbers 27–40.

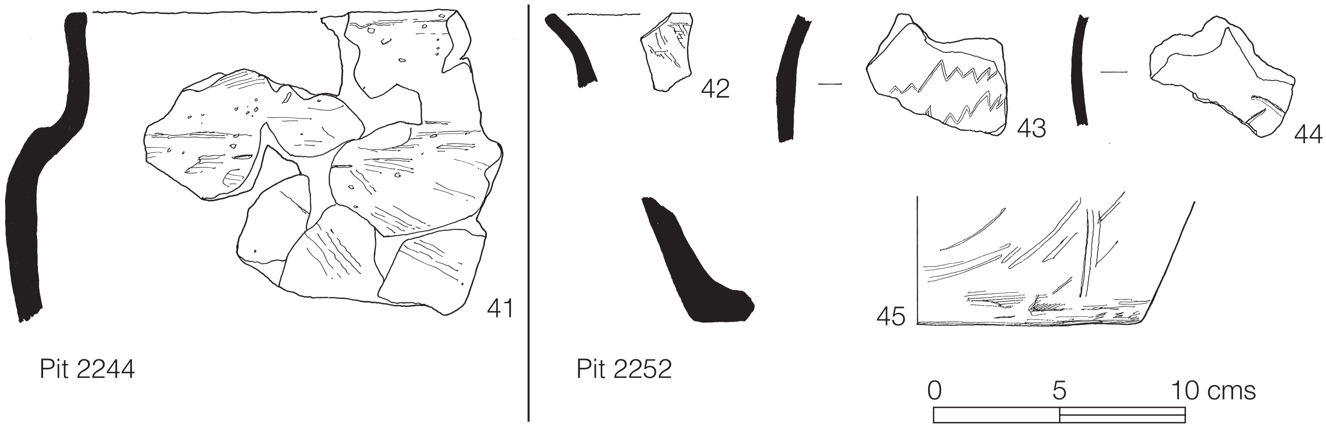

Fig. 4.6 Illustrated prehistoric pottery from Pits [2244] and [2252], pot numbers 41–45.

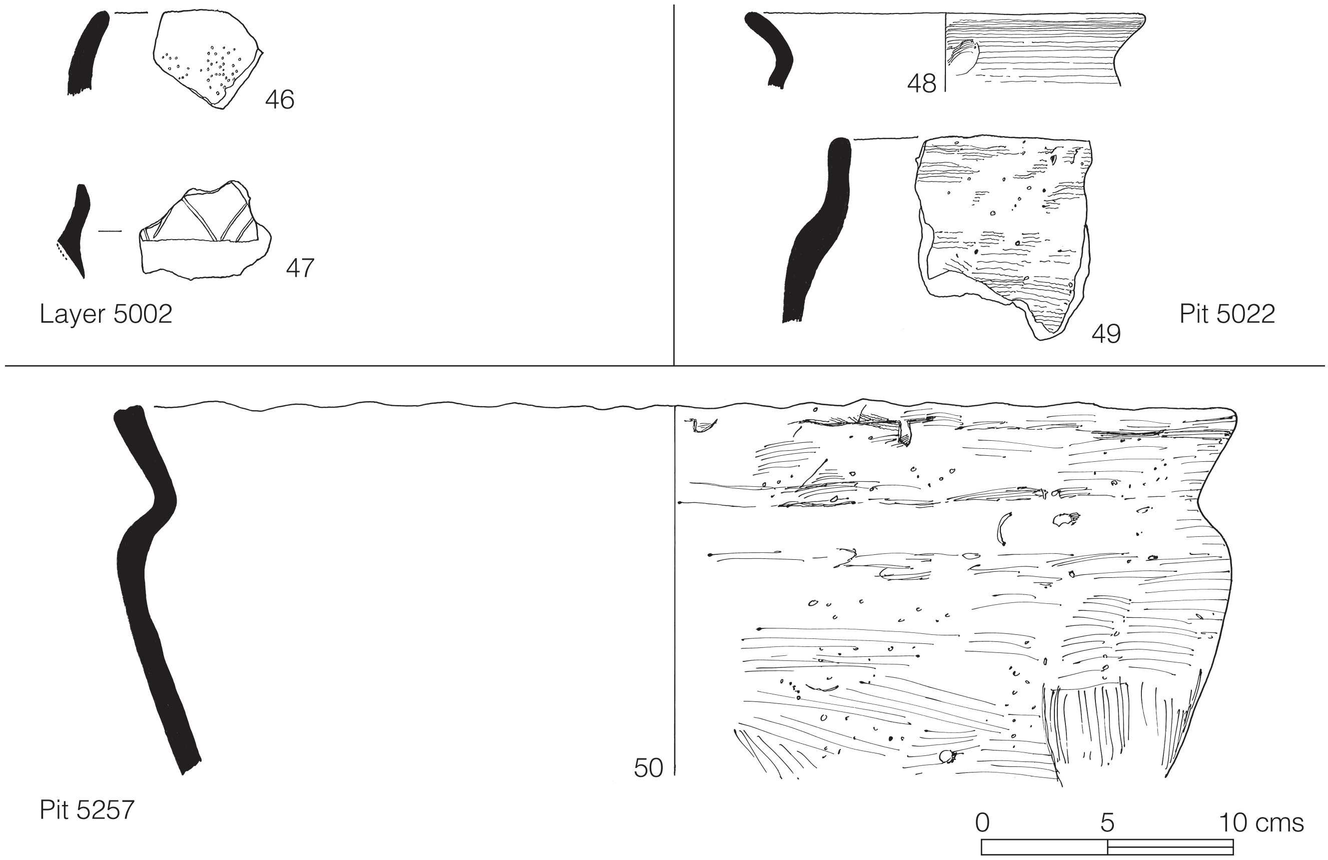

Fig. 4.7 Illustrated prehistoric pottery from Pit [5022], Pit [5257] and Layer (5002), pot numbers 46–50.

Later Prehistoric Pottery from the Ridgeway

The excavations at Alfred's Castle produced a considerable assemblage of Iron Age pottery relative to the other sites of the Ridgeway Project. The collections from Segsbury Camp and Uffington White Horse are only about half the size of the Alfred's Castle group (i.e. 3278 sherds/19 kg and 3596 sherds/18 g respectively), and the assemblages from Liddington Castle (Hirst and Rahtz 199) and Blewburton Hill (Collins and Collins 1959; Harding 1976) are smaller still. This difference can be put down partly to the varying scale of excavation and recovery, the different dates and functions of the sites, but also to the contrasting provenance of the discarded pottery.

Significant, although arguably intermittent, use of the Uffington hilltop appears to have begun during the 8th–7th centuries BC, as attested by the pottery and the structural sequence, which mostly relates to the ramparts. Small quantities of Middle Iron Age pottery were collected from the site, but as very little of the interior was excavated, it is difficult to estimate the level and date of activity within the earthworks. The geophysical survey suggests levels of activity were relatively slight, and it has been proposed that the site may have served a more ceremonial than settlement function (Miles *et al.* 2003, 123).

Comparison of the average sherd weights of the Alfred's Castle, Uffington and Segsbury assemblages highlights the fact that most of the material from the latter two sites was recovered from earthworks deposits, whilst about half of the pottery from Alfred's Castle was found in pit fills (49% by sherd count and 66% by weight). A number of vessels from the pits are complete or near complete, accounting for the high ASW of 18 g for the total pit assemblage. However, at Uffington, where some 42% of the pottery came from pits, the ASW for the pit groups was typically 3%–7%, reflecting the much higher degree of fragmentation of pottery from their fills.

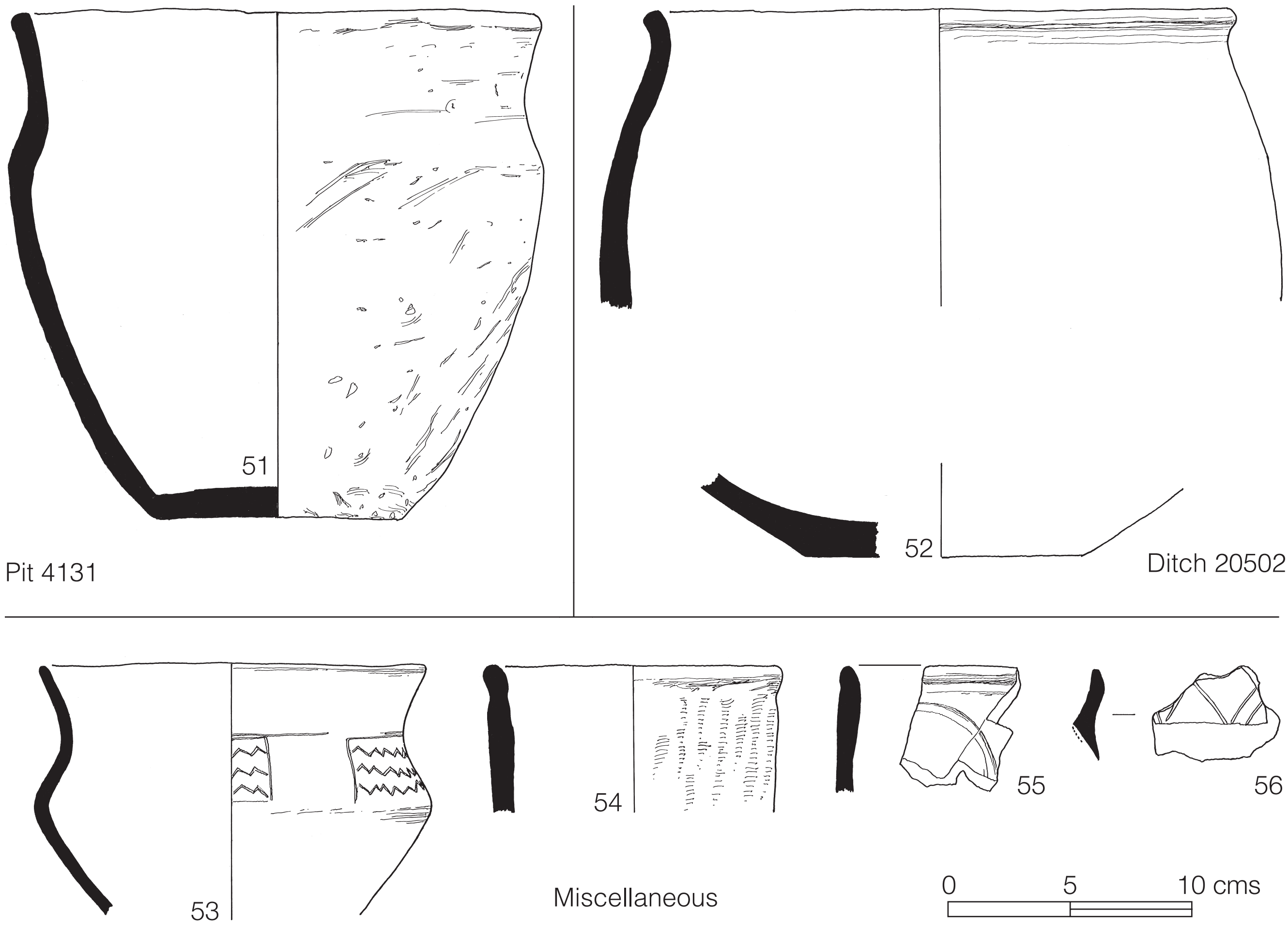

Fig. 4.8 Illustrated prehistoric pottery from Pit [4131], Ditch [20502], Cut [3522] and layers (2006), (13000) and (1000), pot nos 51–56.

Fig. 4.9 Photograph of Pot 30 (SF513), Pit [2178], Fill (2229). Photo by Ian Cartwright.

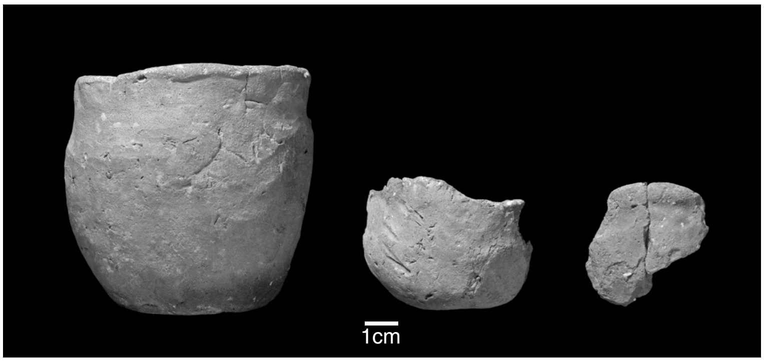

Fig. 4.10 Photographs of Pots from Pit [2178]: Pot 31, Fill (2229); Pot 33, Fill (2222); Sherds from Pot 32, Fills (2222) and (2229). Photo by Ian Cartwright.

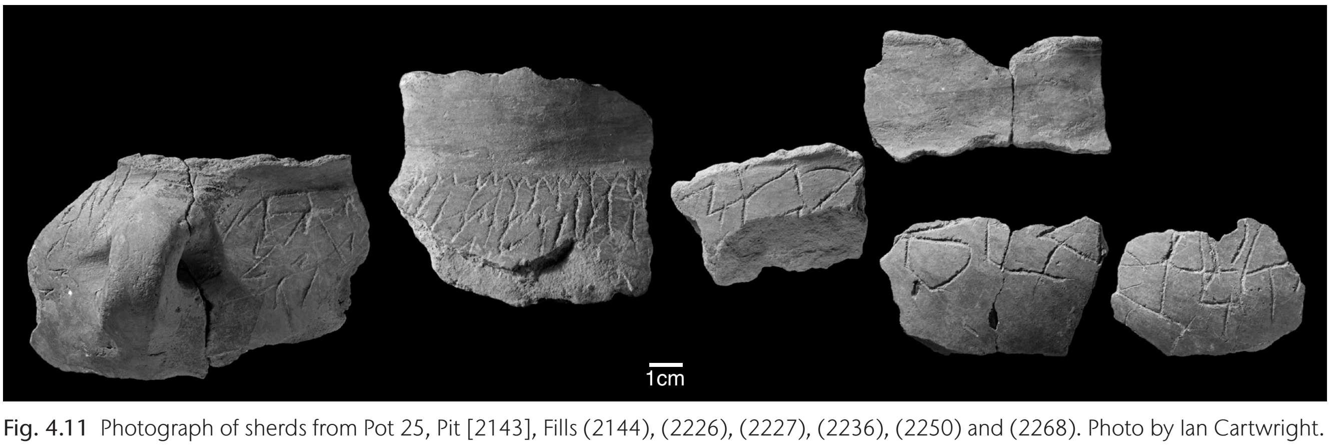

Fig. 4.11 Photograph of sherds from Pot 25, Pit [2143], Fills (2144), (2226), (2227), (2236), (2250) and (2268). Photo by Ian Cartwright.

A major factor in the dissimilarities between the Alfred's Castle pottery assemblage and those from the other hillfort sites in the vicinity is no doubt the later date of occupation. The radiocarbon dates and some distinctive vessels clearly placed the use of the pits in the interior of the site in the Middle Iron Age, in contrast to the Late Bronze Age and Early Iron Age settlements of the other hilltops. But this does not preclude the possibility that other factors may also account for the observable differences, including the status and function of the hillfort.

4.2 The Romano-British pottery

Kayt Brown

4.2.1 Introduction

A total of 12,182 sherds (129,949 g) of Romano-British pottery was recovered and retained from the excavations, from trenches investigating both the villa structure (Trenches 2, 11, 13, 14, 16, 17, 18 and 19) and beyond (Trenches 1, 3, 5, 6, 8, 12 and 15) (Table 4.6). Romano-British pottery was not recovered from Trenches 4 and 7. This report focuses primarily on the pottery from villa Trenches 2, 13, 14 and 17–19, comprising 10,050 sherds (111,672 g) and the majority of the entire assemblage. This was predominantly of Late Romano-British date, although a small amount of late 1st- to early 2nd-century AD pottery was also identified, usually occurring residually alongside late 2nd- to 4th-century AD sherds.

The sherds were highly comminuted; many had abraded edges and little or no surviving surface finish. The average sherd weight for the material from the villa trenches was 11 g; however this is skewed by the presence of numerous large, thick-walled storage jar sherds from context (19003). Once these are excluded, the average sherd weight falls to just 9.7 g. Pieces from the remaining trenches were even smaller, with an average weight of 8.5 g. Although 11% (by count) of the pottery from the villa trenches was recovered from features, a substantial proportion (39% by count, 30% by weight) was recovered from top- and subsoil deposits, with a further 50% (by count, 60% by weight) from levelling or surface layers. Consequently, there was high level of redeposition within the assemblage. The few refits that could be made were observed within these layers.

Table 4.6 Romano-British pottery quantification by trench.

	Trench	Count	Weight (g)
Non-villa trenches	0	8	60
	1	587	6,330
	3	435	4,131
	5	1,065	7,523
	6	4	17
	8	1	8
	11	32	208
Sub-totals		**2,132**	**18,277**
Villa trenches	2	5,155	56,661
	11	1,198	10,070
	13	1,036	7,408
	14	362	3,254
	16	916	7,989
	17	302	3,413
	18	74	525
	19	999	22,292
	Unstratified	8	60
Sub-totals		**10,050**	**111,672**
Totals		**12,182**	**129,949**

4.2.2 Methodology

The assemblage was initially quantified by number and weight of sherds within each context to ascertain the character, date range and condition of the material. Subsequently, detailed fabric/vessel form recording was focused only on sherds from contexts relating to the 'villa' structure, following the guidelines set by Morris (1994). Six broad fabric groups were identified and defined by the range and size of the principal inclusion types present: Group C (calcareous ware), Group F (flint-tempered), Group G (grog-tempered), Group Q (sandy wares) and Group S (shell-tempered wares), in addition to a range of 'established' wares of known type or source (Group E). Fabric and form details are listed in the archive. In addition to the basic quantification, vessel rim diameter and estimated vessel equivalents (EVEs) were also recorded for the villa material. The low EVEs value for the assemblage reflects the condition of the assemblage, with many rims too small to be confidently recorded (i.e. less than 5% of the rim surviving). Consequently these rims are recorded by rim count, but have not been included within the EVEs total.

Additional characteristics such as surface treatment, decoration, manufacturing technique and the presence of perforations or other evidence of use wear or repair were also noted. A site-specific form series was created, incorporating references to existing typologies, principally Young's (1977) typology of the Oxfordshire industry (in archive). Young was selected as the most comprehensive and best known type-series for the area, although not all vessels assigned a Young type code will have been products of the Oxford industry. Fabrics were also cross-referenced to the National Roman Fabric Collection (Tomber and Dore 1998). A full quantification by fabric is presented in Table 4.7.

4.2.3 Description of the assemblage by fabric and form

Imported fineware

Twenty-eight sherds of samian ware were recovered (less than 1% of the assemblage by both count and weight), with a mean sherd weight of just 6.9 g. Although not examined in detail, the central Gaulish (E307) material survived in marginally better condition than that from southern Gaul (E301). Three out of the four vessels identified were from context (2060) and comprised fragments of bowl forms 31 and 37, and cup form 33. Part of a second form 33 cup was recovered from context (12017).

Other imported material was restricted to 14 sherds of central Gaulish 'Rhenish' ware (E120; CNG BS). These were all found in Trench 2, contexts (2007, 2013, 2015, 2023), Table 4.8. No refits were possible between these sherds, although as the sherds were retrieved from contexts both within and outside the building, given the level of disturbance within the assemblage it is not implausible that they may derive from the same vessel, particularly in light of the overall small quantity of finewares. These beakers

Table 4.7 Romano-British pottery quantification by ware.

Ware code	Description	Count	Weight (g)	EVEs
Late Iron Age				
F99	Flint-tempered	53	369	
Q99	Sand-tempered	613	4,167	
Roman Imports				
E120	Rhenish ware	14	57	
E300	Samian (unspecified source)	2	2	
E301	South Gaulish samian	10	16	
E307	Central Gaulish samian	11	159	
British Finewares				
E162	New Forest colour-coat	9	39	0.08
E170	Oxfordshire colour-coat	165	675	0.04
Mortaria				
E209	Oxfordshire white ware mortaria	8	131	
E210	Oxfordshire white-slipped red ware mortaria	2	187	
E211	Oxfordshire red/brown colour-coat mortaria	6	52	
Q121	N Wilts/S Gloucs mortaria	1	100	
Oxidised wares				
E172	Oxfordshire parchment ware	4	13	
E173	Oxfordshire white wares	4	21	
Q110	Sandy fabrics (oxidised)	198	848	0.29
Q111	Sandy fabrics fine (oxidised)	5	16	
Q112	Verulamium white ware	3	10	
Q115	Unsourced white wares	1	1	
Q120	White-slipped oxidised wares	25	170	
Coarsewares				
C100	Calcareous fabrics	23	164	0.13
E101	Black burnished ware	716	5,200	2.10
E155	Savernake Ware	414	10,735	0.08
F100	Flint-tempered wares	85	1,062	0.60
G100	Grog tempered	916	30,515	0.32
G101	Grog tempered	267	5,369	
G102	Grog tempered	137	1,441	0.04
Q100	Sandy fabrics (reduced)	2,430	16,104	3.58
Q101	Sandy fabrics (fine, reduced)	48	633	
Q103	Early Oxfordshire sandy fabric (reduced)	62	849	
S100	Shell-tempered wares	706	5,634	
Z100	Topsoil groups	3,112	26,933	
Totals		**10,050**	**111,672**	**7.26**

were imported from the mid 2nd century AD into the 3rd century AD (Greene 1978, 19), possibly until the late 3rd or 4th centuries AD (Millett 1986, 75).

British fineware, mortaria and oxidised ware

The British finewares consisted of Late Roman colour-coated wares (fabric E170; OXF RS) from the nearby Oxfordshire industry, with a few from the New Forest (fabric E162; NFO CC) (Table 4.7). Combined, these wares account for 2.9% of all the sherds, with the Oxfordshire colour-coated wares alone representing 2.5%. These sherds were all very small and abraded, with an average weight of less than 5 g. Identified forms were limited to a single flagon (Young 1977, 148, type C8), two bowls (*ibid*, 160, type C51) and a wide-mouthed jar (*ibid*, 152, type C18). The only diagnostic sherd amongst the New Forest wares was a bag-shaped beaker rim (Fulford 1975, 56, type 44). All of these wares date from the mid to late 3rd century AD onwards.

Mortaria were poorly represented and with the exception of a single rim from a north Wiltshire/ south Gloucestershire (fabric Q121; SOW WS) vessel, all were Oxfordshire products (fabrics E209–211; OXF WH, OXF WS and OXF RS). Forms included Young's types M17 and WC4, both dated to *c.* AD 240–300 (Young 1977, 72 and 120). Colour-coated mortaria (fabric E211) body sherds were found in Trenches 2 (2002, 2011) and 19 (19007), but can only be dated to the mid 3rd to 4th centuries AD.

Overall, the oxidised and whiteware sherds accounted for just over 2% of the assemblage. Un-sourced oxidised wares (fabric Q110), some with a white slip covering the exterior surface (fabric Q120) were the most numerous. It is possible that the five fine oxidised ware (fabric Q111) sherds represent very abraded Oxfordshire colour-coated ware, while the remaining fabrics are all likely to be Oxfordshire or north Wiltshire products. The only identifiable forms comprised a small flagon and a globular beaker (Young 1977, 194, type O18,) probably of late 1st- to early 2nd-century AD date. The white-wares comprised three sherds from the Verulamium region (fabric Q112; VER WH), one in an un-sourced fabric (Q115) and four Oxfordshire Parchment ware sherds (E172; OXF PA), all from the same vessel.

Coarseware

As might be expected, reduced coarseware fabrics formed the major component of the Romano-British pottery assemblage (73% of the sherds, 85% by weight). The broad fabric groups represented comprised sand, grog, flint, and calcareous wares.

The reduced sandy wares dominated the coarseware assemblage (51% by count, 25% by weight). A small quantity of notably coarse, sandy ware (Q103) was identified, but most of the sandy ware sherds could only be assigned to a miscellaneous, reduced ware group (fabric Q100). It is highly likely that products of the north Wiltshire industry (Anderson 1979) dominate this group, as is the case at nearby Wanborough (Seager Smith 2001), although vessels from the Oxfordshire industry (Young 1977) and other local kilns, such as Compton, are also likely to be present. The problems associated with differentiating these grey-wares have been previously highlighted (Young 1977, 202) and, taking into account the small sherd size and paucity of diagnostic sherds as well, the decision was taken during analysis not to attempt to separate out the grey-wares from the different industries.

In the absence of diagnostic sherds, the majority of the reduced sandy wares could only be assigned a generalised Romano-British date. Jars were the dominant vessel type and most were paralleled within the Oxfordshire type series (Young 1977). The most prevalent forms were necked jars (R104, R105, R109; Young 1977, 216, type R24). Bead rim and storage jars occurred in small quantities while bowl and dish forms comprised straight-sided vessels with a variety of plain, beaded and flanged rims (ibid, types R43, R46, R47, R52, R53, R57). In most cases, the rims were too small to provide an accurate EVE measurement (Table 4.9).

Grog-tempered wares comprised 34% of the coarseware sherds (66% by weight). This group included Savernake (Annable 1962, 142–55; SAV GT) and Savernake-type

Table 4.8 Romano-British pottery quantification in villa trenches by fabric and source.

Trench	2		11		13		14		16		17		18		19		u/s		Totals	
Ware code	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*	No.	*Wt. (g)*
Late Iron Age																				
F99	15	*144*	12	*68*	.	.	.	.	.	.	26	*157*	.	.	.	.	.	.	53	*369*
Q99	607	*4,149*	6	*18*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	613	*4,167*
Imports																				
E120	14	*57*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	14	*57*
E300	.	.	.	.	.	.	.	.	1	*1*	.	.	.	.	1	*1*	.	.	2	*2*
E301	6	*9*	1	*2*	1	*2*	2	*3*	.	.	.	.	.	.	.	.	.	.	10	*16*
E307	11	*159*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11	*159*
British fine and specialist wares																				
E162	.	.	.	.	1	*8*	1	*7*	.	.	.	.	1	*2*	6	*22*	.	.	9	*39*
E170	95	*376*	37	*93*	5	*8*	.	.	11	*53*	.	.	.	.	17	*145*	.	.	165	*675*
E209	3	*68*	2	*38*	.	.	1	*19*	.	.	.	.	.	.	2	*6*	.	.	8	*131*
E210	2	*187*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	*187*
E211	3	*17*	.	.	.	.	.	.	.	.	.	.	.	.	3	*35*	.	.	6	*52*
Q121	1	*100*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	*100*
Oxidised wares																				
E172	.	.	.	.	4	*13*	.	.	.	.	.	.	.	.	.	.	.	.	4	*13*
E173	4	*21*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	*21*
Q110	121	*634*	42	*105*	6	*17*	1	*2*	7	*23*	6	*27*	8	*10*	7	*30*	.	.	198	*848*
Q111	5	*16*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	*16*
Q112	2	*5*	1	*5*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	*10*
Q115	.	.	1	*1*	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	*1*
Q120	9	*133*	1	*1*	2	*13*	.	.	12	*21*	.	.	.	.	1	*2*	.	.	25	*170*
Romano-British coarsewares																				
C100	4	*41*	1	*4*	.	.	.	.	2	*16*	14	*91*	.	.	2	*12*	.	.	23	*164*
E101	476	*3,426*	83	*557*	3	*18*	3	*11*	13	*310*	.	.	25	*137*	113	*741*	.	.	716	*5,200*
E155	389	*10,185*	.	.	1	*16*	2	*26*	.	.	14	*214*	2	*108*	6	*186*	.	.	414	*10,735*
F100	13	*323*	.	.	.	.	.	.	.	.	72	*739*	.	.	.	.	.	.	85	*1,062*
G100	386	*9,709*	15	*345*	.	.	1	*69*	1	*9*	9	*847*	.	.	504	*19,636*	.	.	916	*30,515*
G101	257	*4,668*	9	*658*	.	.	1	*43*	.	.	.	.	.	.	.	.	.	.	267	*5,369*
G102	73	*840*	16	*271*	.	.	2	*7*	.	.	46	*323*	.	.	.	.	.	.	137	*1,441*
Q100	1,594	*11,497*	323	*1,882*	49	*304*	17	*86*	66	*474*	35	*391*	20	*107*	326	*1,363*	.	.	2,430	*16,104*
Q101	40	*592*	4	*17*	.	.	.	.	.	.	4	*24*	.	.	.	.	.	.	48	*633*
Q103	49	*698*	1	*19*	.	.	.	.	.	.	12	*132*	.	.	.	.	.	.	62	*849*
S100	694	*5,438*	4	*12*	.	.	8	*184*	.	.	.	.	.	.	.	.	.	.	706	*5,634*
Z100	282	*3,169*	639	*6,074*	964	*7,009*	323	*2,797*	803	*7,082*	64	*468*	18	*161*	11	*113*	8	*60*	3,112	*26,933*
Totals	5,155	*56,661*	1,198	*10,070*	1,036	*7,408*	362	*3,254*	916	*7,989*	302	*3,413*	74	*525*	999	*22,292*	8	*60*	10,050	*111,672*

wares (fabric E155) as well as other locally-produced fabrics (G100, G101 and G102). These wares represent a continuation of local native Late Iron Age potting traditions and span the period from the Late Iron Age well into the later 2nd century AD, with some forms, including storage jars, perhaps lasting into the 3rd century AD (Hopkins 1999; Seager Smith 2001, 298). Timby identified a Savernake-type fabric used for storage jars across Oxfordshire into the 3rd century AD, which may have been a local replacement produced in response to the decreasing availability of Savernake ware during the 2nd century (Timby 2001, 77). Vessel forms comprised bead-rim jars and large storage jars, with one unusual lid-seated jar/bowl identified within destruction layer (2015). This form was identified by Hopkins (1999, form 6.7) and a similar vessel at Cirencester was assigned a mid 1st- to early 2nd-century AD date (Wacher and McWhirr 1982, fig. 64. 470).

No diagnostic pieces occurred among the shell-tempered sherds (fabric S100) and these have therefore been assigned a general Romano-British date based on fabric criteria alone. Late Romano-British shell-tempered fabrics are known at Wanborough (Seager Smith 2001, 249, fabric 85,) and Maddle Farm (Gaffney and Tingle 1989, 203), but shell was also used during the preceding Middle and Late Iron Age periods (see Table 4.3 above). Among the other sherds with calcareous inclusions (fabrics C100), the only diagnostic piece was from a lid found in Trench 19, context (19007).

Most of the flint-tempered wares (fabrics F100 and F101) were from a single everted rim jar (fabric F101) from Trench 17, context (17008). Flint-tempered wares were also present at Wanborough, dated to the Late Roman period (Seager Smith 2001, 250, fabric 90).

Black-burnished ware (fabric E100; DOR BB1), from the Wareham/Poole Harbour region of Dorset was the only non-local coarseware present and accounted for 6.5% of the sherds. Jars, especially the ubiquitous late 3rd- to 4th-century AD everted rim forms, are by far the most common types, although measurable pieces amounted to just 0.83 EVEs. Within the bowl and dish repertoire, the

Table 4.9 Quantification of Romano-British vessel types by EVEs.

Form code	Vessel type	EVEs
Samian		
Dr 31	Bowl	-
Dr 33	Cup	0.17
Dr 37	Bowl	0.09
Coarsewares		
-	Flagon	0.12
R101	Jar	0.14
R102	Jar	0.10
R103	Jar	0.19
R104	Jar	0.51
R105	Jar	1.59
R106	Jar	2.66
R107	Jar	0.10
R108	Jar	0.40
R109	Jar	0.62
R110	Jar	0.47
R111	Jar	-
R112	Jar	0.26
R113	Jar	0.05
R114	Jar	-
R115	Jar	-
R116	Jar	0.09
R117	Jar	-
R118	Jar	0.04
R119	Beaker	0.07
R120	Jar	0.25
-	Jar	1.70
-	Bowl	0.18
LID	Lid	0.07
Uncertain	Rim Fragment	0.97
'Rhenish' ware		
-	Beaker	0.50
New Forest		
Type 44	Beaker	0.08
Young types		
R15	Jar	0.55
R16	Jar	0.15
R24	Jar	4.28
R27	Jar	0.22
R29	Beaker	0.70
R43	Bowl	0.06
R46	Bowl	0.67
R47	Bowl	0.49
R52	Bowl	0.06
R53	Bowl	0.16
R57	Bowl	0.07
R76	Lid	0.09
C8	Flagon	1.00
C18	Jar	-
C22	Beaker	0.40
C28	Beaker	0.23
C44	Bowl	0.30
C51	Bowl	0.04
M17	Mortarium	-
O18	Beaker	0.11
WC7	Mortarium	0.20
Uncertain	Beaker	0.15
Uncertain	Mortarium	0.06
White slipped ware		
-	Mortarium	0.10
Black burnished ware		
WA1	Jar	0.10
WA2/3	Jar	0.28
WA3	Jar	2.03
WA20	Dish	1.60
WA22/23	Dish	0.10
WA25	Bowl	1.30
Total EVEs		**26.92**

straight-sided, plain-rimmed dishes ('dog-dishes'), which became increasingly widespread from the mid/late 2nd century AD onwards, were marginally better represented than the late 3rd- to 4th-century AD dropped-flange forms. This form, however, also has a tendency to break into more pieces than the drop-flanged bowls, and exposes one of the limitations of the EVEs methodology recognised by Orton (Orton 1980, 164). This does not invalidate the methodology, however, although it does mean that vessel count figures based on rims have to be used with extreme caution.

Decoration on these dishes included wiping and burnishing, either overall as on the complete profile of a straight sided dish, with approximately 42% of the rim surviving within destruction layer (16008), or as burnished intersecting arcs. Other surface treatments characteristic of the Late Romano-British period (Seager Smith and Davies 1993, 257) were also observed on a number of body sherds and, together with the absence of the flat-rimmed bowl/dish form, may indicate that black-burnished ware, although possibly present from the mid/late 2nd century, was not reaching the site in any significant quantity until the late 3rd century AD. This would follow the pattern observed at some other sites in the area such as Cirencester and Wanborough (Seager Smith 2001, 244).

A detailed trench by trench description of the pottery is presented on the Project Website.

4.2.4 Discussion

The poor condition of the assemblage and the lack of useful stratigraphic groups have severely limited the contribution made by the pottery to any detailed understanding of the chronology or function of the 'villa' building. This is somewhat disappointing given the unusual setting of this substantial Romano-British building within the hillfort. Although there is a suggestion of Early Roman activity in the hillfort, attested to by the presence of the early grog-tempered wares, bead rim jars and the small quantity of south Gaulish samian ware, the condition of this material indicates that it is most likely to have been re-deposited, and it has not proved possible to positively identify any features exclusively of Early Roman date on the basis of the pottery. The presence of late 1st- to early 2nd-century AD sherds in the trenches away from the villa building may well indicate an earlier phase of activity elsewhere within the enclosure, though it should be borne in mind that there is evidence elsewhere for earlier material apparently imported for use as hardcore during the Late Roman period, such as at Overton Down (R. Seager Smith, pers. comm.). Consequently most of the Alfred's Castle assemblage could only be assigned a broad mid/late 2nd- to late 3rd-/early 4th-century AD date. The only diagnostic sherds to provide a date for the construction of elements of the building comprise forms in circulation during the mid-late 2nd century AD at the earliest.

The end date of the assemblage is also difficult to establish with any certainty. Although the coin evidence suggests activity through to, but not beyond, the late 3rd century AD, the ceramic evidence suggests that activity possibly extended at least into the early 4th century AD. The Oxfordshire finewares present, for instance, have a

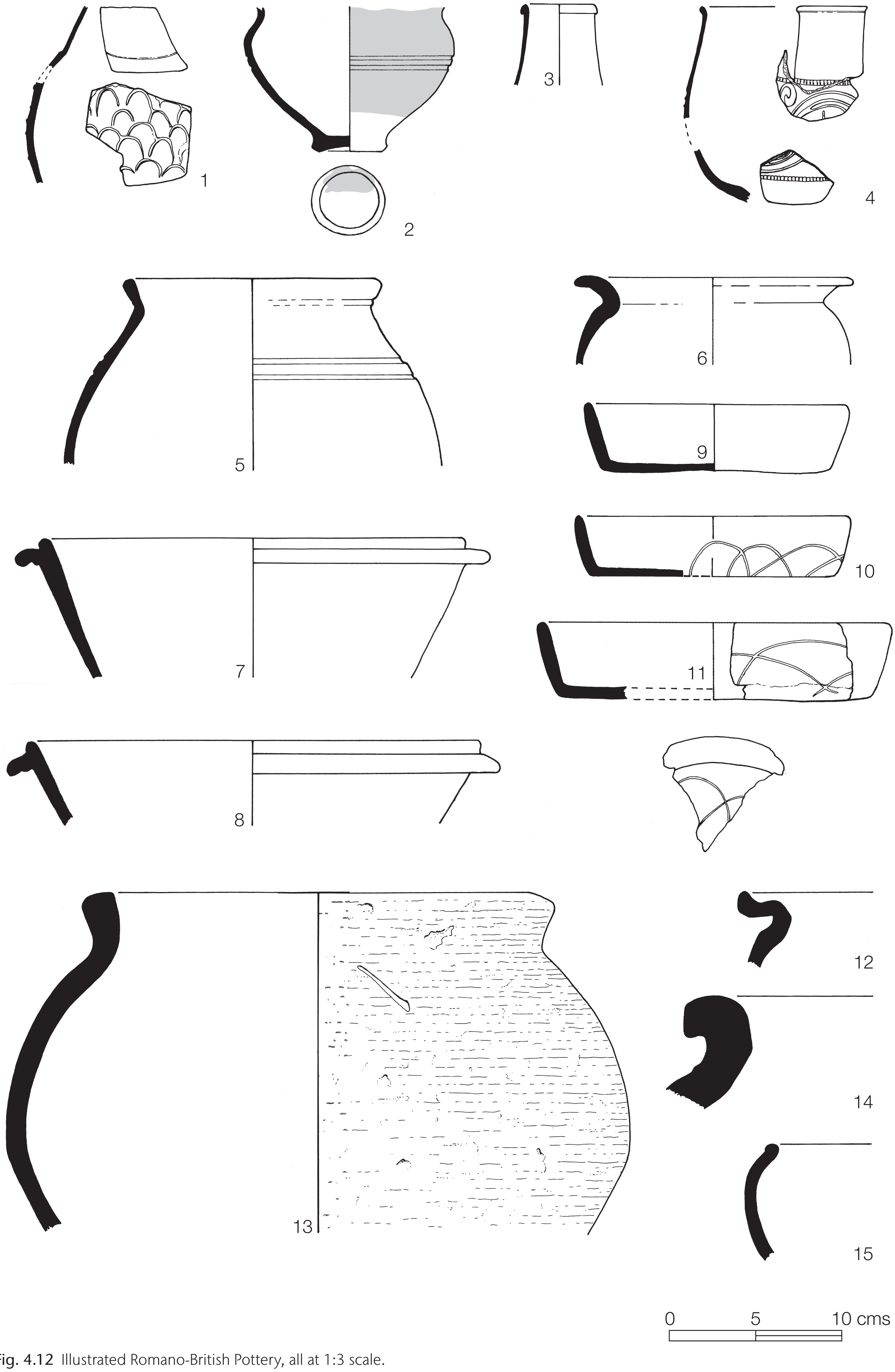

Fig. 4.12 Illustrated Romano-British Pottery, all at 1:3 scale.

broad date range from the mid 3rd century through the 4th century AD, though what is missing from this repertoire are the forms (including stamp decorated vessels) that are exclusively 4th-century AD in date. The poor condition of the shell-tempered wares has prevented positive identification of the fabric, as that characteristic of the second half of the 4th century AD in this area (Tomber and Dore 1998, fabric ROH SH), but its presence cannot be fully excluded, particularly as it occurs alongside other Late Roman fabrics. Finally, the restricted, late range of black-burnished ware forms and surface treatments would similarly indicate activity into the early 4th century AD. In theory therefore a terminal date for the assemblage in the latter years of the 3rd century into the early 4th century AD, is not unfeasible. The coin evidence is potentially not inconsistent with such a chronology, as coins of the first three decades of the 4th century AD are much less common as site finds than later issues, and in a small coin list might easily be absent altogether, as here, without necessarily indicating that occupation had ceased completely.

Nevertheless, the Alfred's Castle assemblage does not appear to continue as late as other local sites such as Maddle Farm (Gaffney and Tingle 1989) and Uffington Castle (Brown 2003) along the Ridgeway, and may in fact have a rather short *floruit* of activity from the late 2nd to late 3rd or early 4th centuries. The range of fabrics, forms and even the poor condition of the sherds themselves can also be paralleled at these other sites. For instance, most of the pottery from Maddle Farm was also from the topsoil or layers within the building which contained significant quantities of re-deposited sherds (Gaffney and Tingle 1989, 198), although the Late Romano-British finewares were perhaps better represented here than at Alfred's Castle.

There is a dearth of villas in south Oxfordshire compared to the north of the county, and those that are known from north of the Downs have not been examined in detail (Henig and Booth 2000, 103). There are numerous villa sites in north Wiltshire, although, again, the published data is also variable. For example, Starveall lacks quantified data, Tockendon has only been investigated through field survey (Harding and Lewis 1997) and numerous other villas and possible villas in the region similarly lack useable published data (Gosden and Lock 2003, 76). The villa at Groundwell Ridge, north east of Swindon, has been excavated and the assemblage fully quantified, although the results are not yet published. Here again, sherd condition was poor, with a high level of re-deposition. Although similar in terms of date and the range of coarse-wares present, the Groundwell assemblage included a wider range of early imports and the later fine-wares were also better represented (Timby, *pers. comm.*). Despite the proximity of the urban settlement at Wanborough, whose inhabitants appear to have had access to vessels from a wide variety of sources, little of this appears to have found its way to those occupying the building at Alfred's Castle. The paucity of fine and specialist wares, particularly the complete absence of amphora, indicates an essentially rural domestic assemblage, with very little in the ceramics beyond the small quantity of Rhenish ware that might be expected to indicate villa status.

4.2.5 Comparing the assemblage
Paul Booth

The most extensive body of comparative data against which the Alfred's Castle assemblage can be considered in order to define its character, derives from the Upper Thames Valley (e.g. Booth 2004; 2007). It is legitimate to question how far arguments or conclusions based on the varying proportions of ware types in that region have validity for the present site, but there is no particular reason to believe that the character of pottery supply to Alfred's Castle would have been significantly different from that seen in the Upper Thames Valley, particularly in the Early Roman period. Here, as in any other rural settlement, supply was dominated by locally or regionally-produced coarse wares. In this case these were the various products of the north Wiltshire industries (including Savernake), a situation which is evident in some of the Upper Thames Valley assemblages as well. A little further down the valley, the products first of an unlocated 'west Oxfordshire' industry (probably focussed in the vicinity of Witney, and itself having several similarities with the north Wiltshire industry) and then of the Oxford kilns themselves, fulfilled this dominant role. In all cases, however, the consequences for assemblage composition were broadly equivalent.

Analysis based on ware groups (Booth 2004, 39–40) considers assemblage character in terms of the component comprising '*fine and specialist*' wares. Significant variations in the size and composition of this component can usually be correlated with aspects of site type. There is a broad correspondence between higher representations of fine and specialist wares and higher site status, although site-specific factors and issues, such as assemblage size, mean that status assessment must always be considered with caution. Assemblage chronology is also a significant factor in considering the evidence of fine and specialist wares, since the wide availability of Late Roman Oxfordshire fine ware products resulted in a fundamental shift in base-level fine and specialist ware provision in the region (Booth 2004, 42, 44). Late Roman assemblages therefore need to be compared separately from groups of 1st–2nd century AD date. In the case of Alfred's Castle, the apparent absence of significant occupation of very early or very late Roman date makes this less straightforward, but in such cases the most meaningful comparison is usually with Early Roman assemblages.

The fine and specialist wares at Alfred's Castle amount to 3.8% of the 6948 sherds which were subject to detailed quantification. Almost two thirds of this total consists of sherds of Oxford colour-coated ware, which account for 2.4% of the entire assemblage. The figure of 3.8% puts Alfred's Castle off the bottom of the scale in terms of comparative Late Roman assemblages (for which the range of fine and specialist representation is from *c.* 11% to 30%) (*ibid*, 47). This simply serves to emphasise the point that 4th-century AD occupation, during which relatively large quantities of Oxford wares might have been expected to arrive at the site, was at a low level at best. When compared with the range of fine and specialist ware representation for the Early Roman period in the Upper Thames Valley, Alfred's Castle still appears relatively 'poor' and the assemblage is most closely comparable with those from a number of lower status rural settlement sites, in which fine and specialist wares usually constitute less (and sometimes considerably less) than 5% of the total sherds (*ibid*., 44–45). Of the villa or 'proto-villa' sites amongst the Early Roman assemblages in the 2004 study, only Roughground Farm is remotely comparable, and there the fine and specialist wares were twice as common as at Alfred's Castle, at 7.5%. It is particularly unfortunate that there are no usable comparative data for Maddle Farm. Indeed, in noting that the total pottery from the excavations amounted to *c.* 27,600 sherds, Gaffney and Tingle (1989, 198) do not even identify how much material comes from each of the contrasting settlements of Maddle Farm itself and Knighton Bushes. A number of sites with more recently-analysed assemblages have fine and specialist ware values broadly comparable to that of Roughground Farm. At Middle Duntisbourne, Kempsford, Claydon Pike and Watchfield, for example, fine and specialist ware values were 9.8%, 6.4%, 8.7% and 7.1% respectively (Booth 2007, 328). These sites are of variable character, but none is obviously of high status in the Early Roman period. Equally, other sites, such as the later 1st- to early 2nd-century AD rectilinear enclosures of Barton Court Farm and Appleford, further down the Thames Valley, have relatively slight evidence of distinctive structures, yet have much higher fine and specialist ware values, which contribute to their characterisation as potential proto-villas. Early Roman assemblages from the small towns of Alchester and Asthall, and the minor roadside settlement of Middleton Stoney had fine and specialist ware percentages in an intermediate range between Alfred's Castle and Roughground Farm (respectively 7.8%, 7.2% and 5.8%). On the basis of all these figures, therefore, the Alfred's Castle fine and specialist ware assemblage can be seen to lie in the lower half of a range of values for rural settlements of non-villa character, apparently in contradiction of the structural evidence from the site.

This view is supported by more detailed consideration of the samian ware. Data on samian ware assembled from some 41 sites in the region (Booth forthcoming) show that the occurrence of this ware ranges from complete absence (in one case only) to a maximum (and exceptional) figure of 9.3% of the total sherd count, seen at Whelford Bowmore (it should be noted that the ware group quantities for this site presented in Booth 2007, table 13.4, were derived from preliminary data and should have been replaced with the results of the subsequent analysis, for which see Brown 2007, 285). In nine of the 41 assemblages, samian ware forms 0.5% or less of the total sherds and, with a figure of only 0.3%, Alfred's Castle falls firmly within that range, which is associated specifically with sites of low status. In addition to these assemblages it may be noted that samian ware comprised 1% of the total sherds from the Maddle Farm excavations (Fulford 1989), although it is unclear if there was any distinction in provision between the two separate sites there (see above). The Alfred's Castle samian ware assemblage is too small to sustain further detailed consideration, but superficially the presence of very small sherds of South Gaulish material and comparatively much larger pieces of Central Gaulish origin is characteristic of the lower status sites, and the identifiable vessel forms (Drag 33, 37 and 31) are consistent with an emphasis on supply in the 2nd century AD rather than earlier, also reflected in a relative absence (only two sherds, from one vessel) of decorated pieces.

Another aspect of the assemblage which can be examined comparatively with a view to providing information about site character (e.g. Evans 2001), is its composition in terms of vessel types. Settlement assemblages of all periods in this region are dominated by jars, with a recognised chronological trend which sees a gradual reduction in the number of jars through the course of the Roman period and, generally, a corresponding increase in the importance of bowls and dishes, although jars always remain the most numerous individual vessel class. Early Roman sites in the Upper Thames Valley show a range of values for jars from just over 59% at Whelford Bowmore, an atypically low value, to 90–92% at sites such as Watchfield, Hatford and Gravelly Guy (Booth 2007, 331–332). In fact with the exception of Whelford Bowmore, the lowest value for the nine other sites examined in this study was *c.* 72% (ibid.). At Alfred's Castle jars comprise 60.9% of EVEs, a figure close to that for Whelford Bowmore and rather below those from the other sites. This shows that Alfred's Castle is clearly distinguished from the lower status settlements of the most basic, totally jar-dominated character in terms of the range of vessel types in use. Addition of the vessels not assigned to type to the total of jars, on the basis that the majority of small and indistinctive rims are likely to have derived from the dominant vessel class, does not in fact make much difference to this assessment.

Other aspects of the vessel assemblage are broadly consistent with this pattern. The representation of both bowls and dishes is relatively high in comparison to the Early Roman Upper Thames Valley sites, in which these types together usually, comprise from 3% to 13% of assemblages. Again, there is a close similarity with Whelford Bowmore, where bowls and dishes totalled 19%, while at Alfred's Castle they amounted to 18.7% of the assemblage.

Unsurprisingly, therefore, the combined representation of drinking vessels (cups and beakers) and liquid containers (flagons) is also similar at the two sites and a little above the values seen in the other Early Roman groups in the Upper Thames. In terms of comparative Early Roman assemblages, therefore, Alfred's Castle stands with Whelford Bowmore, unfortunately a site of rather uncertain, but potentially unusual, character (Smith 2007), a little apart from other sites. Some of the characteristics of the assemblages from these two sites may, however, reflect their chronological emphasis within the middle part of the Roman period as much as particular functional characteristics. They may represent a stage of assemblage development between the jar-dominated Early Roman groups and later Roman assemblages in which jars decrease in importance and bowls and dishes increase correspondingly. In light of this, if Alfred's Castle were to be simply regarded as a later Roman assemblage, it would still stand comparison with sites of middling status, including the small town/roadside settlements of Asthall and Birdlip, and the later Roman phases of Claydon Pike, which include the modest Late Roman villa (see Booth 2007, 334, fig 13.1). The Late Roman assemblage from the villa site at Roughground Farm is slightly different, with a higher proportion of bowls and dishes (but fewer beakers) than Alfred's Castle. Nevertheless, Alfred's Castle is as similar to Roughground Farm as it is, for example, to the low status settlement assemblage from Yarnton, where the effective absence of forms other than the basic repertoire of jars, bowls and dishes is characteristic.

Therefore, the two strands of evidence, fabric based and vessel type based, suggest quite distinctly different characterisations of Alfred's Castle. With regard to the former, does the contradiction between the physical remains of the principal building and the relatively impoverished range of fabrics associated with it invalidate the fine and specialist ware approach to assessment of site status, or is this site the exception that proves the rule? Material culture can be used in many different ways to express status, and architecture may have been privileged over other aspects in this case, with a rather undistinguished pottery assemblage as one consequence of this. In terms of the likely use of the vessels acquired, however, the range was of sufficient diversity and the secondary (i.e. non-jar) vessel types were sufficiently numerous for the assemblage to stand comparison in this respect with those from sites which were definitely not in the lowest status bracket. In this case, what people were doing with their vessels was arguably more important than where the vessels came from. The similarity between the Alfred's Castle and Whelford Bowmore assemblages seems quite striking in this regard, and for this reason it is the more notable that their fine and specialist ware levels should be so different, Whelford Bowmore, with 16.1% fine and specialist wares, enjoying in particular remarkably (in comparative terms) large quantities of both samian ware and amphorae.

In conclusion, the Alfred's Castle assemblage appears unusual in a regional context, albeit that because of the nature of the dataset the parallels are drawn almost entirely from sites lying to the north of the Berkshire Downs. It seems unlikely that this in itself would explain the distinctive, internally contradictory character of the assemblage, which must be accounted for in terms of particular patterns of activity on the site that the pottery evidence alone cannot define.

4.3 The fired clay

Kayt Brown, Sue Nelson and Sheila Raven

4.3.1 Introduction

A total of 1,686 fragments (25,027 g) of fired clay were recovered during the excavations from Trenches 1, 2, 5, 11–14, 16, 17 and 19 (Table 4.10) and see full quantification in the Project Website report. The assemblage comprised mostly of loom weight material, daub or floor material, oven/hearth fragments and un-diagnostic pieces. Evidence of textile production was identified in the form of three spindle whorls and six complete/near complete loom weights. Apart from this, the only other identifiable fired clay artefacts were one bronze-working crucible from context (5251) in Trench 5 (see SF 557 on Fig. 4.13), one complete slingshot from a Middle Iron Age pit in Trench 5 (see SF 1266 on Fig. 4.13) and seventeen fragments of slingshots. Nine clipped pottery discs were also found and are included in this report, although their fabric is pottery rather than fired clay. Only one of these was from an Iron Age context (see SF 610 on Fig. 4.13). The remainder were cut from Roman vessels and mostly derive from late Roman layers in the villa area. Apart from two larger discs SF382 and 454, the majority were small enough to be counters (see SF numbers 374, 391, 413, 445, 449 and 1493 on Fig. 4.13).

4.3.2 Fabrics

Eighteen individual fabrics were identified, see Appendix 1 below, though for the purposes of this report they have been amalgamated into five distinct groups, based on the principal inclusions present: Groups C (chalk), Q (sand), F (flint), G (grog), and V (organics). No apparent chronological or spatial patterning was identified in terms of the fired clay fabric type distribution, and so is not discussed in this report.

4.3.3 Results

Loom weights

Compared to other hillfort sites in the region, there is a comparatively large quantity of loom weight material from Alfred's Castle (Table 4.10), the bulk of which derives from the Middle Iron Age pits in Trenches 2 and 5 in the centre of the hillfort. The total weight of the loom weight material is 15,670 g, a considerably larger assemblage than at Segsbury Camp hillfort (total weight 186 g), and White Horse Hill hillfort (no fired clay loom weight material and only 10 fragments of stone loom weight) put together (Lock *et. al.* 2005; Miles *et. al.* 2003). The Alfred's Castle assemblage also constitutes more, relatively speaking, than the very large unenclosed Iron Age settlement site of Gravelly Guy in Oxfordshire (Lambrick and Allen, 2004). The small hillfort site of Alfred's Castle produced only 50 pits compared to the 1000 plus pits excavated at Gravelly Guy, so the total weight of 15,670 g loom weight material found at Alfred's Castle, as compared to the 49,000 g found at Gravelly Guy, represents a proportionally large number of loom weight finds. Cunliffe noted at Danebury (Cunliffe 1984, 439) that in terms of all types of textile equipment, loom weights seem to occur more frequently at hillfort sites than at other types of settlement site in the Iron Age period. Equally, non hillfort sites for this period have generally produced more spindle

Table 4.10 Quantification of fired clay objects by artefact type and weight.

Artefact type	Count	Weight (grams.)
Spindlewhorl	3	46g
Complete/near comp. loomweight	6	8,453g
Loomweight fragments	227	7,217g
Crucible	1	85g
Disc/counter	9	260g
Complete slingshot	1	39g
Slingshot fragments	17	63g
Oven/hearth fragments	367	2,489g
Wall/floor daub	533	3,167g
Featureless fragments	522	3,208g
Total	**1,686**	**25,027g**

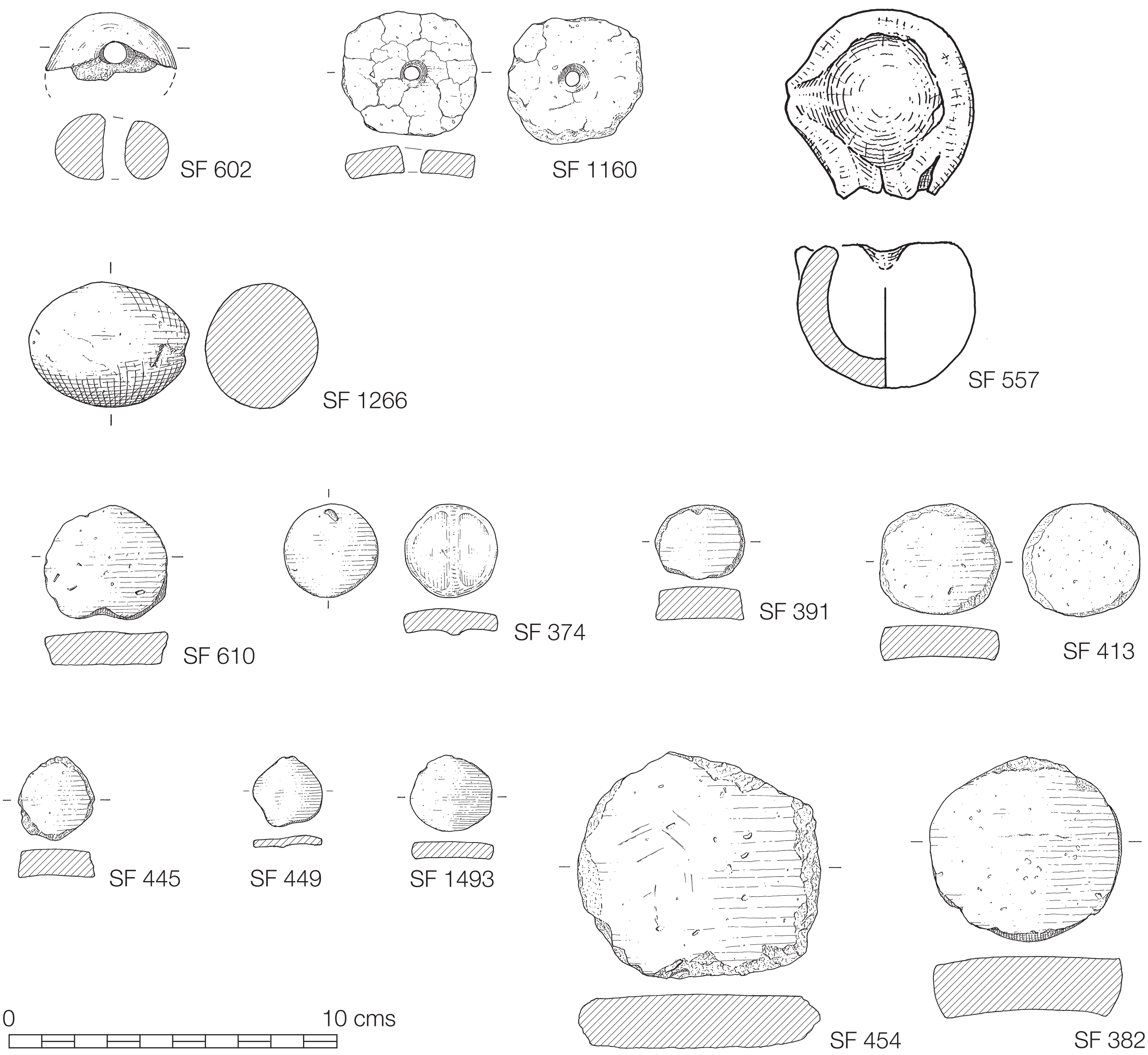

Fig. 4.13 Fired clay object illustrations.

whorls than hillforts. This pattern certainly seems to fit the Alfred's Castle assemblage, which has a very small number of spindle whorls in total (three ceramic and three stone) and only one of those derives from an Iron Age context (SF 581 in pit [5257]).

There are six complete or near complete loom weights from Alfred's Castle (over 65% of the objects), all of which are of the standard Iron Age triangular form, with three perforated corners where all corners are present. All are of medium to large size and where complete sides exist to measure, the length varies between 140 and 175 mm. Their shapes and profiles vary considerably however, some exhibiting very rounded corners, some with sharper triangular corners and two with at least one flattened corner. The evenness of their shape and quality of their finish varies greatly also. Taking a mean average weight of *c.* 1,600 g from these complete/near complete examples, we can calculate that there might be at least other possible four complete loom weights represented by the remaining fragmentary loom weight material. This would bring the theoretical total of whole loom weights to ten at least.

The six complete/near complete loom weights were all found in the Trench 2 and Trench 5 Iron Age pits [2143, 5028, 5066, 5257]. The fragmentary loom weight remains were also concentrated in the Iron Age pits from these two trenches [2123, 2143, 2178, 5028, 5027], with pit [2178] containing enough large fragments to make up two potential whole loom weights. A number of the pits listed here contained other key artefacts used in textile or braid production, like long-handled combs, needles, and grooved and polished metapodial bones in their deposits, and have been described in Chapter Six. The Roman villa destruction layers in Trench 2 and the topsoil and subsoil layers in Trench 5 supply the remaining fragmentary loom weight remains of undiagnostic form. The few examples of fragmentary triangular loom weights found in Roman contexts are probably residual Iron Age pieces, even though this type of loom weight is known to occasionally continue into the Early Roman period (Wild 2002, 10). Two very small fragments of possibly cylindrical loom weights from contexts (2007) and (5262) may represent potential Late Bronze Age/Early Iron Age types, but their identity is not certain.

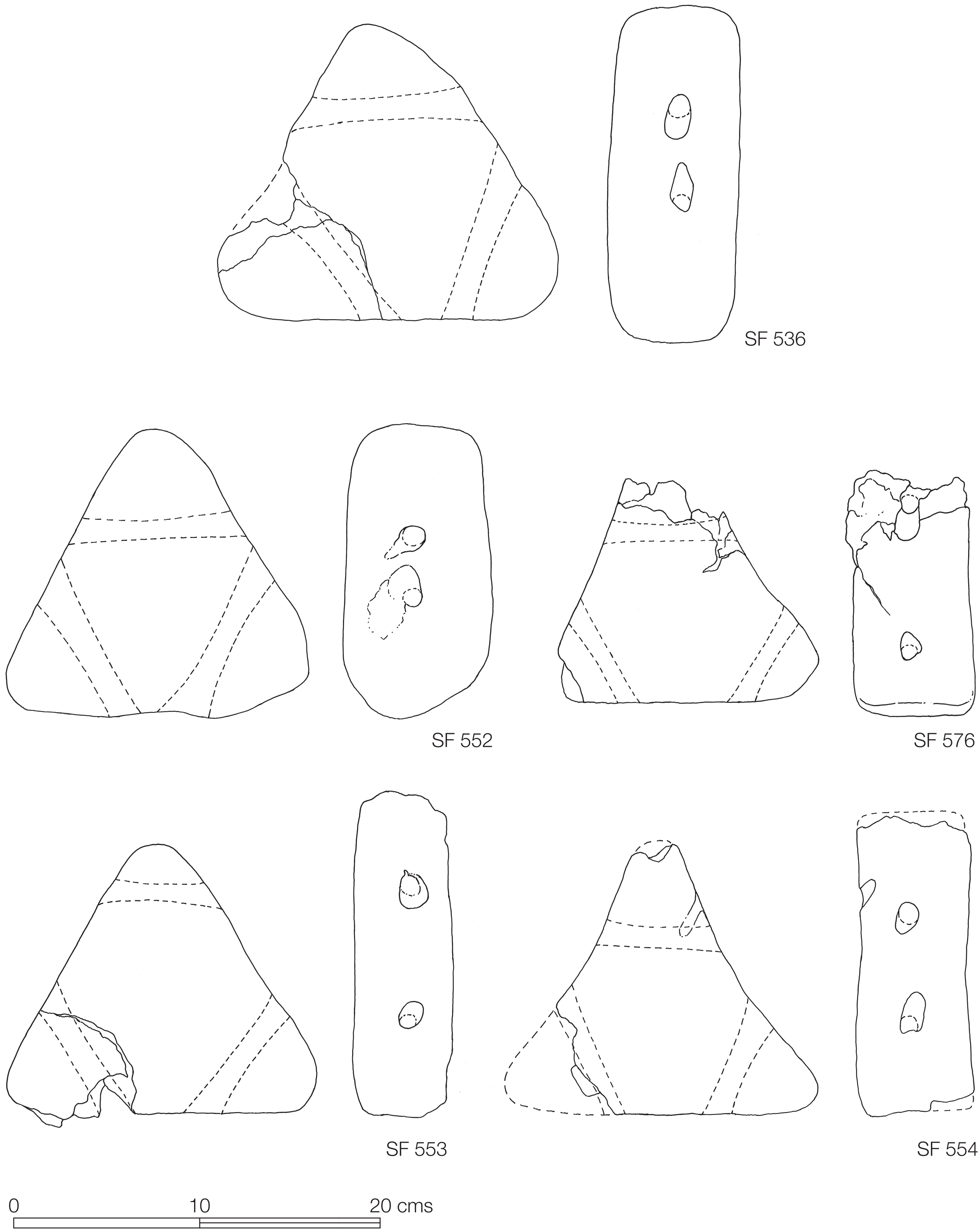

Fig. 4.14 Fired clay loom weight illustrations, all at 1:3 scale.

Oven/hearth fragments

There is a reasonably large quantity of oven/hearth fragments from the site (Table 4.10), twice the bulk weight of those found at Segsbury hillfort. Some derive from Roman contexts and topsoil contexts in and around the villa area (Trenches 2, 11, 12, 13, 16, 17 and 19). A few fragments derive from potentially Early Medieval layers in the villa area. However about 75% of the fragments (282 pieces) derive from Iron Age contexts, namely four pits [2104, 2133, 2143, 2178] in Trench 2 underneath the later villa, and two pits [5119, 5257] in Trench 5 (the latter is from a Roman top fill but contains much residual Middle Iron Age pottery). The four pits in Trench 2 are notable for containing a quantity of finds indicating structured deposition, and in particular for containing many different types of burnt or cremated material, which is not found elsewhere on the site.

One of these pits [2178], in fills (2222) and (2229), also contains both daub/floor material and loom weight fragments that are highly burnt and vitrified. All of these four pits from Trench 2 are charcoal-rich and contain samples of the rarely-found FAS (Fuel Ash Slag), usually associated with cremations, cremated calcined animal bone and other forms of burnt material, and lastly a number of cremated bone textile tools. One interesting possibility is that this unprecedented mix of burnt and cremated material in these pit deposits (which occurs alongside the normal range of unburnt pot and bone in the same fills, so the objects were not burned in situ), may have been the subject of ritual burning somewhere else on the site in ovens/hearths, the fragments of which were tossed into the pits with all the cremated material and the remains of the charcoaled wood that had stoked the fires. Or perhaps, what the burnt material represents is a selected fragment of the remains of both the structure and the contents of a burnt round-house.

Details of individual artefacts and fabric types are given on the Project Website.

4.4 The ceramic and stone tile

Peter Warry

Ceramic Tile

The assemblage of typical red fabric was divided broadly into thirds by weight of flat fragments, curved fragments and pieces too small to classify. In total 23 kg of ceramic tile was recovered (equivalent to just four complete roof tiles), of which half came from the building area in Trench 2 (Table 4.11).

Table 4.11 Ceramic tile by context

Context	Total Weight (kg)
2000	1.63
2006	0.15
2007	0.80
2011	1.00
2013	0.70
2015	2.22
2016	0.70
2017	0.81
2018	0.48
2020	0.77
2022	1.15
2037	0.12
2060	0.57
2077	0.32
2102	0.03
Total Trench 2	**11.45**
1010	0.76
3508	0.07
11000	1.00
11001	0.50
11004	1.38
11012	0.10
11017	0.10
11018	0.13
11028	0.32
11029	0.16
12000	0.55
12014	0.05
12021	0.05
12023	0.08
13000	0.55
13002	0.03
13016	0.08
15002	0.13
16000	1.44
16002	0.28
16003	0.47
16004	0.09
16006	2.00
16007	0.11
16008	0.19
18000	0.12
18001	0.25
18005	0.14
19000	0.13
19003	0.12
Overall total	**22.83**

Flat ceramic tile

The flat fragments were unusual as there was only one piece with a possible flange, context (18000), however the base of this fragment was only 12 mm thick which is too thin for a tegula. It is possible that it might have been a fragment of flue tile where a wall thickness of 12 mm is reasonable, but there was no sign of any keying on either of the external surfaces, albeit these were highly eroded, and the fabric did not look appropriate for a flue tile.

There were a number of pieces of flat tile with straight edges where the upper surface had been smoothed and the lower remained rough but without any scoring. With one exception all of these fragments were between 18 mm and 28 mm thick. In principle these might have come from either the upper or lower ends of a tegula (i.e. between the flanges). However this can be ruled out either because there were downward projecting lips of clay on the undersides, which would be inconsistent with manufacture in a four-sided mould, or because the upper surface had been smoothed with strokes running parallel to the straight edge, whereas a tegula maker would have been constrained by the flanges and therefore smoothed the tile with strokes running the length of the tile rather than across it (Warry 2006, 33–34). There was a further example composed of two mating fragments from contexts (2011) and (2018), which produced a flat corner piece measuring roughly 10 cm by 10 cm. Upper cutaways are never as long as 10 cm (*ibid.*, 136), so this could not have come from a tegula. However, its appearance in two separate contexts may say something of the taphonomy of the site. Although it is possible that all these pieces were imported fragments of *bessales* from hypocaust *pilae,* the most likely explanation is that they were for use on floors as *opus spicatum* set on edge in a herringbone fashion. These sorts of tile varied hugely in size across the country with average dimensions 114.4 mm × 62.8 mm × 26.3 mm (Brodribb 1987, 52)[1]. However, it is

1 Amended for typographical error per page 142.

also possible that they were laid flat, especially the larger tile from context (2011)/(2018), as has been observed at Silchester (Ward 1911, 260). The one thicker flat fragment, from context (11000), was probably a lydion used for tile bonding courses in wall construction. It had a thickness of 45 mm which is very close to the average of 41 mm for this class of tile (Brodribb 1987, 40).

Curved ceramic tile

Three categories of curved ceramic tile were noted. The first, of which there was only a single example in context (1010), was a standard imbrex from the large ditch by the enclosure entrance. Although only 10 cm in length and representing just one side of the imbrex, the fragment had the typical longitudinal striations and the start of the sharp bend that produces the rounded V shaped imbrex. The second category were much thicker (25 mm and above), without striations and probably with a larger but indeterminate radius of curvature. These could have been ridge tiles, although the fragments were too small for any definitive statement to be possible. The final category were thinner, typically 15 mm thick, with no striations but a colour wash that could have represented a pattern or might simply have been the result of wiping the product with a clay filled cloth. It was possible to estimate the curvature of the largest piece, from context (2060), at between 300 mm and 500 mm diameter. This is much too large for an imbrex, but could be consistent with a water pipe, however examples of these have much thicker walls and lack any colour wash. It is just possible that they could have been fragments of chimney pot, but this is very speculative.

Stone roof tile

In total just under half a metric tonne (486 kg) of stone tile was recovered, comprising 1751 fragments, 90% of this derived from Trench 2 which incorporated the building (Table 4.12). Nail holes were observed in 43 fragments and three of these fragments had two nail holes. The tiles were made of Jurassic limestone and matched samples of the Oxfordshire Corallian collected from the Slat Pit, a former quarry in the Pusey Flags near Buckland, Oxfordshire, some 20 km to the north of Alfred's Castle (see Roe below), although other sources are also possible (see Eyers below).

Five more or less complete stone tiles were recovered. Two were of classical six-sided shape, both with a width of 270 mm, one with a length of 430 mm, Fig. 4.15a context (2007), and the other a length of 470 mm, Fig. 4.15b context (2108). They weighed 4.4 kg and 2.9 kg respectively. These dimensions compare with the averages from Caerwent forum-basilica[2], of 400 mm by 260 mm, and from the Silchester forum-basilica, of 400 mm by 250 mm (Wooders 2000, 99), whilst the Bembridge limestone tiles found at several sites on the Isle of Wight (Tomalin 1987, 105) are somewhat larger at 460 mm by 290 mm.[3] Tiles from Frocester Court in Gloucestershire have widths mainly falling in the range 240 mm–290 mm, with an average weight of 3.6 kg (Price 2000, 134 and 137). The average weight of the Caerwent tiles is 4.75 kg.

Table 4.12 Stone tile by context

Context	Number of fragments	Total weight (Kg)
2000	760	121.5
2004	33	10.5
2006	275	60
2007	49	41.5
2011	91	25
2012	1	1
2013	108	69.8
2015	12	6
2016	2	0.7
2017	10	8.5
2018	7	4.9
2019	6	3
2020	71	30.2
2022	30	14
2023	15	3
2024	2	1
2028	2	0.5
2030	16	5
2032	4	7
2034	3	1.5
2037	17	10
2038	3	1
2070	1	1.5
2077	2	3.5
2108	3	9.3
2243	3	0.3
U/S	18	5.5
Total Trench 2	1544	445.7
4000	2	0.66
11000	7	2.41
11001	2	0.65
11004	30	10.93
11016	1	0.56
11027	1	0.11
11029	35	5.25
15000	6	1.35
16007	31	4
16008	2	0.61
17000	8	0.72
17006	1	0.2
17008	8	2.26
18005	47	5.3
18006	14	2.79
19003	11	2.1
19007	1	0.1
Overall total	**1751**	**485.7**

To produce the classical diamond patterned roof style (Tomalin 1987, 97, Plate 9), Fig. 4.16, the critical dimension was the width which would have needed to be the same on all tiles. Length was less important, as the positioning of the tiles along the rafters could be adjusted (within limits) to achieve the required overlap with the tiles beneath. Another

2 *Pers. comm.* Evan Chapman, National Gallery and Museum of Wales.

3 Bellamy 1993a, 172 gives a range of lengths from 320 mm to 515 mm, and widths from 225 mm to 320 mm for Greyhound Yard, Dorchester; Bellamy 1993b, 111 indicates that the main size at Halstock villa, Dorset was circa 425 mm by 225 mm.

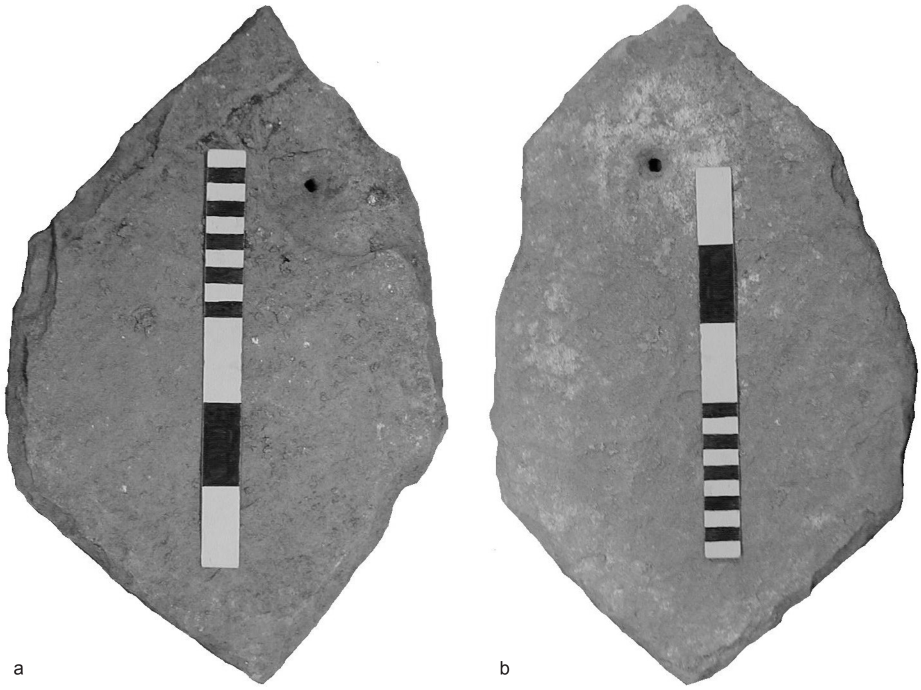

Fig. 4.15 Stone roof tiles: a) context (2007) and b) context (2108).

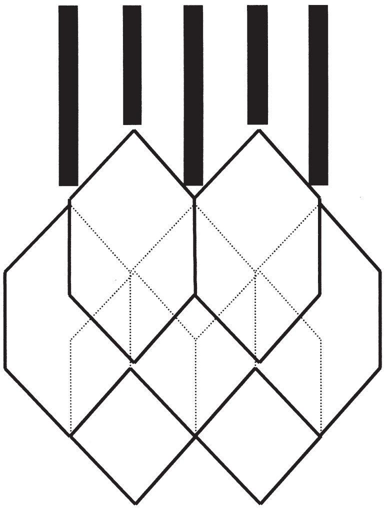

Fig. 4.16 Stone roof tiles arranged in diamond pattern showing underlying alignment of rafters.

Fig. 4.17 Stone roof tile from context (11004).

critical factor would have been the shape of the lower triangular portion of these tiles, which had to be uniform to achieve a regular diamond shaped pattern. The final design aspect was the positioning of the nail hole which needed to be within the upper section of the tile, otherwise access to the rafter would have been impeded by the tile beneath. Provided the three criteria of width, lower triangular section and nail hole position were met, then the finishing of the rest of the tile was less important as this would not be visible on the completed roof. Both the tiles from contexts (2007) and (2108) meet these criteria and the ragged elements of their upper portions may actually represent their original form rather than subsequent damage. The height of their lower triangles is 135 mm, which is exactly half their 270 mm width, and would have been deliberately fixed such that the diamonds on the roof were in fact perfect squares.

A third, possibly six-sided, tile had the same 270 mm width as the other two, but was only 400 mm in length and the height of the lower triangle was 170 mm rather than the 135 mm of the other two examples, Fig. 4.17, context (11004). The nail hole was positioned only 250 mm above the bottom of the tile, compared to around 300 mm in the other examples. This tile may well have been designed to butt against an obstruction such as a chimney vent, although the irregularity of its lower triangle would have marred the diamond pattern and the shortness of the nail hole position may have made it difficult to fix the tile.

The fourth tile is a five sided version that would have been used at the ridge of the roof, Fig. 4.18, context (2032). It is 335 mm long and 295 mm wide, weighed 4.1 kg and has two nail holes. The difference in width from the standard 270 mm could have been for decorative effect at the top of the roof, but would have made it more difficult to position the nail hole where it located on a rafter, and this may be the reason why the second nail hole was required. Wind pressure would have been greatest at the eaves of the roof, but those tiles were sustained in part by the weight of the overlapping tiles whereas, although the wind pressure would be less at the ridge, there would not have been overlapping

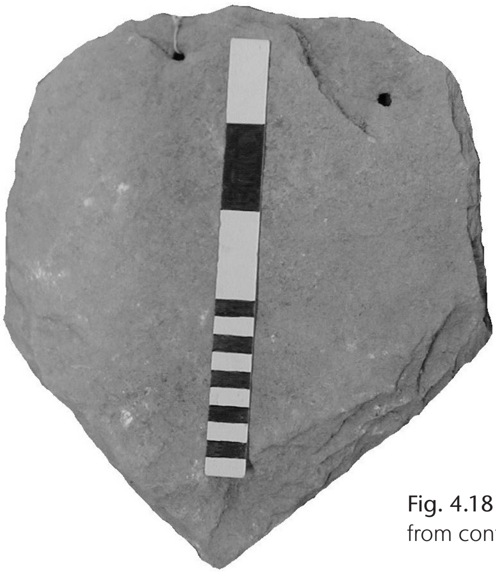

Fig. 4.18 Stone roof tile from context (2032).

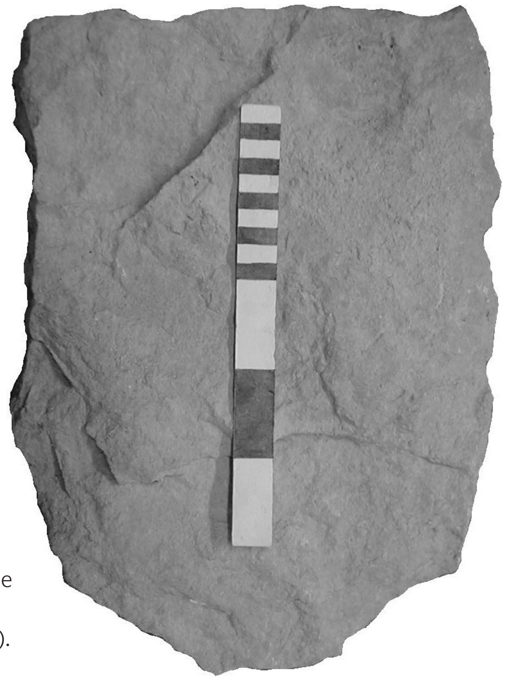

Fig. 4.19 Stone roof tile from context (2017).

tiles, so it is also possible that the additional nail hole was for security. The final stone tile measures 415 mm by 280 mm and weighs 6 kg, Fig. 4.19, context (2017). Its shape suggests it was intended for the bottom course at the eaves, but it is unfinished as it has no nail hole. The comparatively greater weight of this tile may have been deliberate to counteract the greater wind pressure at the eaves.

From Figure 4.16 it can be seen that the stone tiles in each vertical column are separated by a distance that represents the height of two lower triangles and that they are separated horizontally by half their width. The incremental roof area covered by each tile is therefore equal to half the width times twice the height of the lower triangle. For Alfred's Castle this is $(0.5 \times 27) \times (2 \times 13.5) = 27 \times 13.5 = 364.5\,cm^2$. This is, of course, also the area of the exposed diamond on each tile which is a square with a diagonal of length 27 cm. This means that approximately 27 of these tiles would have been needed for each square metre of roof, or allowing for a pitch of 45 degrees[4], roughly 40 for each square metre of floor area. The building measured approximately 12.5 m by 23 m, giving a total area of 287.5 m^2, which would therefore have required 11,500 stone roof tiles (assuming there was no central atrium). The average weight of the two hexagonal tiles, contexts (2007, 2108), was 3.7 kg which would imply that the weight of the roof would have been 42.5 tonnes.[5] This roof is about 50% heavier than its equivalent in ceramic tiles (tegulae and imbrices) and would have required 85 ox-cart loads to deliver the tiles, assuming that they abided by the maximum circa 500 kg weight limit for Roman roads (Boon, 1984, 51). If the tiles came from the Slat Pit quarry 20 km away, as suggested by Fiona Roe, then this would have been on the outer limit of the distance that an ox-cart could travel in one day and, allowing for the return journey, would have taken a single cart almost six months to deliver.

The stone tiles would have been placed upon common rafters set at 13.5 cm intervals. The common rafters would have rested on longitudinal purlins, which in turn would have rested on the principal rafters. It is possible that some longitudinal battens were added over the common rafters at the top of the roof to aid the fixing of the pentagonal tiles. The huge weight of the roof would have created a horizontal thrust of some fifteen tonnes on each of the longitudinal walls which were unbutressed, so it seems certain that the principal rafters must have been retained in position by tie beams, thereby creating triangulated trusses. The width of the building at 12.5 m makes it unlikely (although not impossible) that it was achieved in a single span so an aisled structure with a clerestory would be the most satisfactory engineering solution. There is some evidence in the form of sarsen stones for foot pads for the aisle posts of such a design. It is of course possible that instead of a longitudinal clerestory arrangement, the building had three parallel roofs running across the width of the building. However such an arrangement would have been very unusual, lighting would have been problematic particularly for the central section of the building, and the internal walls were not thick enough to allow a particularly satisfactory gully arrangement above.

It has been suggested that the rafters would have been covered with planking (Price 2000, 135; Wooders 2000, 99), but this seems an unnecessary and costly addition and the planks would have been likely to warp. The construction may have been more pragmatic with the rafters made from split logs, which would have produced some irregularity into the structure. The stone tiles themselves were manifestly non-uniform at least in thickness (as witnessed by the fact that the tile from context (2007) is half as heavy again as that from context (2108)) and therefore a degree of selection would have been necessary when fitting the tiles to the rafters. This is reinforced by the observation that the locations of the nail holes are not consistent but are particular to each tile.[6] This suggests that the holes were formed in situ

4 Frere 1990, 355 gives the slope of the collapsed Meonstoke façade that was clad with stone tiles as 47.5 degrees.

5 Rather more complete tiles were recovered at Caerwent, where the average weight of 4.75 kg may be more reliable and could therefore imply that the Alfred's Castle roof weighed nearer to 50 tonnes.

6 The holes cannot be centralised as this would align them with the join of the two overlapping tiles above and thereby allow water to easily penetrate the roof.

by the tiler to align with their intended positions. This is reinforced by the presence of the unholed eaves tile, context (2017). Indeed it is possible that the building was supplied entirely with unfinished tiles which were shaped on site as required and then holed by the tiler.

Assuming the angle of the roof pitch was 45 degrees, then the length from the eaves to the ridge would have been about 8.8 m. The vertical spacing between each tile was twice the height of their lower triangles or 27 cm, so around 30 tiles would have been required in each vertical column. Assuming, as suggested by the tile from context (2032), that the ridge was furnished with a row of pentagonal tiles that had twin nail holes, then the proportion of such tiles with twin nail holes should be 1 in 30 or around 3%. In fact 3 out of the 43 fragments had twin holes, or around 7%, and this must understate the reality as many of the tiles with twin holes will have been broken thereby giving the appearance of single holed tiles (although against this the tiler must have needed to create a second hole in hexagonal tiles on occasions when the first hole failed to locate the rafter). This could suggest that the roof was completed with two or three rows of pentagonal tiles in order to yield the observed proportion of twin holed tiles.

Stone roofs begin to occur in the west of the country from the 3rd century AD onwards[7], which would be consistent with the last phase of the building having a stone tiled roof before it fell out of use at the end of the 3rd century AD.

Synthesis

Based on an original roof weight of 42.5 tonnes, just over 1% of the original tiles have been recovered in the excavation. Thus, even allowing for the unexcavated area, it would appear that almost all of the roofing material had been removed from site after the building fell out of use. As a result, the residual material may not be representative of the whole of the original building and conclusions based on this material need to be viewed with caution.

The most likely reconstruction is that the early phases of the building had a thatched roof which left no traces when it was demolished, and this was replaced sometime after the start of the 3rd century AD by a stone roof which will have necessitated reconstruction of the roof supports and possibly some strengthening of the walls. The roof was finished with distinctive rows of pentagonal tiles at the ridge, which was then capped with ceramic ridge tiles. The roof may have had a ceramic chimney.

The walls were made of stone without ceramic tile bonding courses. Some of the floors were finished with ceramic tile and the subsequent robbing could explain the apparent absence of floors in some of the rooms. The solitary imbrex and wall tile fragments (neither of which come from the building trench) might have arrived with a load of building material that represented the robbing of a building elsewhere.

Almost half a tonne of stone roof tile has been recovered from 3rd-century AD contexts, which would suggest that some, or all, of the roof collapsed towards the end of this phase such that any continuing occupation would have been in a much reduced state.

7 Brewer 1993, 20 notes that Caerwent switched to stone in the 3rd century AD, and McWhirr and Viner 1978,371 state that in Cirencester 4th-century AD buildings with ceramic tiling were reutilising tiles from earlier buildings.

Table 4.13 Stone roofing tile geology.

Site Code	Context	Description	Stone
AC 00	11029	1 fragment roofing tile	fine-grained, shell fragmental Corallian limestone
AC 00	15000	2 fragments roofing tile	fine-grained, shell fragmental Corallian limestone
AC 00	16007	1 fragment roofing tile	fine-grained, sandy, shell fragmental Corallian limestone

4.4.1 A geological note on stone roof tile fragments

Fiona Roe

A sample of four fragments of stone roof tile was examined (see Table 4.13). All consist of Jurassic limestone which is likely to have been obtained from the Oxfordshire Corallian to the north of the site. Three pieces, from (11029, 15000), consist of fine-grained shelly limestone, while the fourth fragment (16007) is a more sandy, fine-grained shelly limestone. Both these varieties of stone could be matched with samples collected from the Slat Pit, a former quarry in the Pusey Flags near Buckland, Oxfordshire (Arkell 1947, 86). This quarry is some 20 km (12.5 miles) to the north of Alfred's Castle, a reasonable distance for the transport of heavy roofing material by ox-cart. Comparable roof tiles were used at other Roman sites in the area, including the settlement at Mill Street, Wantage (Roe 1996).

4.4.2 Stone roof tile geological determination

Jill Eyers

A sample of *c.* 50 fragments was looked at from various contexts in Trench 3.

Lithological unit: Forest Marble.

Age: Middle Jurassic, Upper Bathonian, part of the Great Oolite series (approximately 160Mya).

Lithology: There are two facies present: a coarse-grained, fossiliferous limestone and a less abundant finer-grained calcareous limestone.

Description: (from hand specimens only under binocular microscope, thin sections not made)

Fossiliferous limestone facies

This is a coarse-grained, shelly limestone with a sparry (coarse calcitic) cement which also contains small quartz grains. Fossiliferous material is present both as fragments (a large component of the limestone matrix) and as larger broken or whole shells which may be identified:

Fossils:

Lima sp. (a scallop)
Plagiostoma subcardiiforme (Greppin) (a scallop)
Modiolus sp. (a mussel)
Oysters (a large number, spp. indet., fragile and robust forms)
Fish scales
Wood (lignite)
Annelid burrow

The suite of fossils is very characteristic of the Forest Marble. The fossil material and lignitic particles of wood impart a similarly characteristic patchy, bluish colour to the rock matrix when fresh. The weathered rock is a pale yellowish or orange-brown and often acquires an overgrowth cement of calcite on one side.

Composition:

fossil debris	40–50%
Quartz, size range 200–250 microns	20%
Ooliths	1%
Sparry cement	30–40%

Sedimentary characteristics: thin beds.

Fine alternation of grain-size, between coarser and finer laminae (promoting the flaggy property suitable for splitting into roof tiles).

Small ripples (and ripple cross-lamination)

Fine-grained calcareous sandstone

This is a fine-grained sandstone with minor mica and is unfossiliferous.

Colour: Pale beige-brown to mid-orange-brown (patchy layers).

Grain size: fine sand to silt (190 microns and less).

Fossils: none.

Composition:

Quartz	80%
Other (e.g. mica or rock fragments)	1%
Calcite (as cement)	19%

Sedimentary characteristics: thin beds.

Fairly uniform grain size distribution, but iron-stained clay layers form the partings which provide the flaggy character.

Source area

The potential source area (possible outcrop) extends from the Bath/Frome area in the west through Chippenham, Malmsbury, Burford and Oxford (there is a good present exposure of this rock type in Woodeaton quarry outside Oxford and can be seen in a variety of outcrops eastwards to Buckinghamshire).

The two rock types are undoubtedly different facies of the same unit – the Forest Marble. The two are commonly found in association across the entire outcrop area. The course fossiliferous unit is more abundant at all quarries currently exposed (or exposed since the late 1980s). There is also another facies (an oolitic facies) which is not present here. This oolitic facies is plentiful in the western part of the outcrop in the Frome to Burford area. The fact that none of the oolitic facies is present as roofing tiles on the villa hints that the source may well have been the eastern part of the outcrop (the Burford-Witney-Oxford region). Fiona Roe (see above) has identified a similar lithology within the Corallian of Slat Pit, near Buckland, Oxfordshire, although this source has not been seen by the current author.

4.5 The building plaster

Sheila Raven

The area inside and around the Roman villa produced 11.048 kg of plain lime wall plaster and 1.399 kg of painted plaster (Table 4.14). The painted plaster fragments had a limited range of colours and decoration, the bulk of which were painted with an overall pink to red wash (898 g) and the remainder have either pink/red stripes on white (435 g), white stripes on red (44 g), or very rarely a green wash or stripe (22 g). There are eleven lime plaster fabric types and one chalk paste fabric in this assemblage, as detailed below in the petrographic analysis. The bulk of the plaster fabrics are very similar in their range of inclusions, they just vary in the amount of particular inclusions. All the fabrics, except the very fine Fabric 7 and the unusual chalk paste Fabric 10, contain both flint and chalk in varying degrees, and some also contain small amounts of fine sand and/or crushed brick or tile. As Chris Doherty points out below, the only ones that stand out as significantly different from the norm are Fabric 6 and Fabric 7. Fabric 10 is an unusual chalk paste mix rather than plaster, and is only found in Middle Iron Age pit [2178], fill (2222). Interestingly, a very unusual chalk 'daub' triangular loom weight, made of a very similar fabric, came from another Iron Age context in Trench 5 (SF 5669, Middle Iron Age pit [5257]).

Table 4.14 Plain and painted plaster by trench and weight.

Trench	Plain Plaster by weight (types 1–9)	Painted Plaster by weight (all types)
2	4,470g	-
11	534g	20g
13	330g	-
14	904g	12g
16	286g	-
17	1,118g	-
18	588g	-
19	5,408g	1367g
22	1,202g	-

As expected, all of the plain lime plaster was found in the trenches in and around the Roman villa itself (Trenches 2, 11, 13, 14,16,17,18, 19 and 22). Of the painted plaster fragments (244 pieces) the vast majority were found in Trench 19 (238 pieces), which is situated in the southern corner of the largest room in the villa, Room 1. The remaining 6 pieces derive from Trenches 11 and 14. Although it is perfectly possible that villa demolition building material, including painted plaster, was mostly dumped some distance from all the excavated areas and so there may originally have been a lot more painted plaster, if this assemblage does represent most of the painted plaster from the villa it is quite a small amount. It may suggest that only one or two of the rooms had painted walls and one could speculate that it may have been Room 1, which is the largest room and the one where the vast bulk of the painted pieces were found. There are no painted fragments showing any figurative or foliage designs from this site. The decorated pieces consist mostly of plain coloured fragments in pink/red, plus some horizontal striped pieces (pink/red on a white background and occasionally white on a red background). There are also some thin striped washes of pink/red that may either be deliberate zones of striping or an accident of the painting style, a tiny amount of broad green stripes, and lastly what may be vertical or upright stripes or zones in pink/red. The use of this range of colours and of stripes as a simple decorative scheme is commonly found in the more plainly decorated 'villa' rooms in Romano-British structures of this period.

The petrography of the plaster material
Chris Doherty

A simple petrographic examination was made on a sub-sample of plasters recovered. Eleven closely related types of lime plaster were recognised and one unfired earthen plaster, made of crushed chalk (referred to as 'chalk daub'). These visually distinct plaster types differ in the relative proportions of their fillers. Flint is usually the main constituent but there are also small components of fine sand, chalk, and fine fragments of pottery, brick, or tile. For the most part these different types, although distinguishable, are merely a reflection of the use of non-exact quantities of lime and filler. One exception here is Type 7, which is a very fine plaster, arguably used to provide a better quality finish. Another is Type 6, which has a relativity large component of crushed pottery/tile/brick, though probably not of sufficient quality to be considered as an attempt at *Opus Signinum*.

A detailed fabric catalogue is presented on the Project Website.

4.6 Metal finds, other than copper alloy
Ian R. Scott

4.6.1 Methodology
Recording

The complete assemblage of iron and lead finds was quantified, each object identified, its provenance and small find number recorded, and verbal description added as appropriate. All objects were assigned to a functional category (Table 4.15) for the purpose of analysis and characterisation of the assemblage. Finds were measured where appropriate. Some pieces of slag and cinder (n=26) were recorded, but these are not included in the quantifications or discussions in this report. Where an object was in a number of pieces the number of fragments was recorded. Nails were quantified by counting whole nails and nail heads to give a minimum number, and counting all nail fragments to give a maximum number. This method almost certainly underestimates the minimum number of nails and overestimates the maximum number, it does, however, give some indication of how fragmented the nails may be.

Table 4.15 Function Codes used in the non-copper alloy finds database and report.

Function Code	Description
Arms	Weapons and armour
Tools	Craft tools, from smithing to textile work
Transport	Items relating to waggons, carts and also horse gear
Measure	Weights and scales
Religious/cult	Objects pertaining to religion
Household	Household furnishings and equipment including pots and utensils
Personal	Jewellery, items of dress, toilet items and writing materials
Leisure	Games and leisure actvities
Security	Keys, locks and chains
Door	Door fittings including hinges and latches
Window	Window fittings including hinges and grills
Structural	Other structural fittings including holdfasts and staples
Nails	Nails (excluding hobnails)
Bindings	Bindings and strips with nails or nail holes
Miscellaneous	Bar, rod, wire, strip, sheet and plate fragments, and plain rings
Query	Objects of uncertain identification
Industrial	Equipment, other than tools, used in industrial processes
Waste	Waste products from craft processes including offcuts and melted waste
Unknown	Objects or fragments, usually small that cannot be identified

4.6.2 Composition of the metals assemblage

The iron and lead finds comprise some 1096 objects or 1384 fragments. Nails form by far the largest component of the assemblage by number (520; 47.4%; fragments=726; 52.4%). The nails are concentrated particularly in Trenches 2 and 11 (Table 4.16), and first occur in large numbers in 3rd-century AD contexts (Table 4.17). Further concentrations are found in later 3rd- and 4th-century AD contexts, and in Early Medieval contexts, mainly in layers and destruction deposits.

Another large category is personal items (256; 23.4%; fragments=261; 18.8%), dominated by hobnails (218; fragments=224) and boot cleats (n=28; fragments=28). Together boot fittings form 96.5% of personal items. By contrast there is only one brooch (SF 747) from topsoil in Trench 12, one small iron buckle (SF 225), one stylus (SF 785) and a fragment of a second possible stylus (SF 1478), two small ring-headed pins (SF 526), a ring headed swan neck pin (SF 752) and one belt stiffener (SF 503). Personal items are concentrated in Trenches 2, 4, 11 and 16, with smaller concentrations in Trenches 1 and 19. These items and other iron and lead finds can be seen in Figs 4.20 and 4.21.

The third large component of the metals assemblage comprises miscellaneous fragments (249; 22.7%; fragments=274;19.8%). A table detailing these finds is to be found on the Project Website. There is a contrast in the chronological distribution of the miscellaneous finds when compared to the distribution of the nails. Miscellaneous finds are more spread through the phases, although they occur primarily in 3rd-century and late 3rd- to 4th-century AD contexts, and in topsoil (modern) contexts. The quantity of miscellaneous finds in late 9th- to early 11th-century AD contexts is notably limited.

The quantities of finds in other functional categories such as household and structural items are small and fewer than would be expected from a domestic occupation. It might be that the occupation was limited, that supply of materials to the site was poor or that the building had been stripped prior to abandonment. On balance and through comparison with the Roman pottery assemblages on the site, we incline to the second possibility.

A trench by trench description of the finds is contained on the Project Website.

4.6.3 Discussion

The majority of iron and lead finds are from Trenches 2, 11 and 16, with small assemblages from Trenches 1, 4, 5, 12, 14, 15, 18 and 19. Most finds are from trenches in the interior of the site (2, 5, 11, 12, 14, 15, 18 and 19). Trenches 1 and 4,

Table 4.16 Iron and lead finds: summary quantification by trench and function (object and fragment count).

Trench		Function Arms	Tools	Transport	Personal	Leisure	Household	Security	Structural	Binding	Nails	Misc	Query	Waste	Unknown	Slag	Total incl. slag	Total excl. slag
1	Count	1	1	.	17	.	2	.	3	1	6	9	.	1	0	.	41	41
	Frag. Count	1	1	.	17	.	1	.	3	1	7	11	.	1	2	.	45	45
1A	Count	1	.	.	1	.	.	.	.	1	.	1	.	.	.	.	4	4
	Frag. Count	1	.	.	1	.	.	.	.	1	.	1	.	.	.	.	4	4
1E	Count	.	.	.	.	.	.	.	.	.	.	.	.	.	0	.	0	0
	Frag. Count	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	3	3
1H	Count	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	2	2
	Frag. Count	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	2	2
2	Count	.	4	.	69	.	2	.	6	2	207	24	4	1	0	0	320	319
	Frag. Count	.	4	.	74	.	2	.	6	2	289	29	5	1	16	1	429	428
3B	Count	.	.	3	.	.	.	.	.	.	1	1	.	.	.	.	5	5
	Frag. Count	.	.	3	.	.	.	.	.	.	1	1	.	.	.	.	5	5
4	Count	.	.	.	51	.	.	.	.	.	3	4	1	.	.	.	59	59
	Frag. Count	.	.	.	51	.	.	.	.	.	3	4	1	.	.	.	59	59
5	Count	.	2	.	6	.	1	.	.	.	10	17	3	.	.	0	39	39
	Frag. Count	.	2	.	6	.	1	.	.	.	16	20	3	.	.	10	58	48
6B	Count	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
	Frag. Count	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	2	2
11	Count	.	1	.	56	.	1	.	1	.	94	67	7	.	0	0	228	227
	Frag. Count	.	1	.	56	.	1	.	1	.	127	76	9	.	12	8	291	283
12	Count	.	1	.	4	.	.	.	1	.	11	5	.	.	.	.	22	22
	Frag. Count	.	1	.	4	.	.	.	1	.	24	5	.	.	.	.	35	35
13	Count	.	1	1	4	.	.	.	1	.	20	9	.	.	.	.	37	6
	Frag. Count	.	1	1	4	.	.	.	1	.	29	9	.	.	.	.	45	45
14	Count	.	.	.	1	.	.	.	.	.	27	15	.	.	0	.	43	43
	Frag. Count	.	.	.	1	.	.	.	.	.	35	15	.	.	4	.	55	55
15	Count	.	.	.	3	.	.	.	.	.	4	27	3	1	.	0	38	38
	Frag. Count	.	.	.	3	.	.	.	.	.	12	29	3	1	.	1	49	48
16	Count	.	.	.	27	.	.	1	1	.	65	19	.	.	0	.	113	113
	Frag. Count	.	.	.	27	.	.	1	1	.	92	19	.	.	4	.	144	144
17	Count	1	.	.	.	.	1	.	.	.	17	1	.	.	0	0	20	20
	Frag. Count	1	.	.	.	.	1	.	.	.	21	1	.	.	1	1	25	25
18	Count	.	.	.	3	.	.	1	.	.	15	34	3	.	0	0	56	56
	Frag. Count	.	.	.	3	.	.	1	.	.	23	36	3	.	8	5	79	74
19	Count	.	.	.	13	.	.	1	1	.	30	10	.	.	.	.	55	55
	Frag. Count	.	.	.	13	.	.	1	1	.	40	11	.	.	.	.	66	66
20B	Count	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	1
	Frag. Count	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1	1
20C	Count	.	.	.	.	.	.	.	.	.	.	4	.	.	.	.	4	4
	Frag. Count	.	.	.	.	.	.	.	.	.	.	4	.	.	.	.	4	4
20G	Count	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
	Frag. Count	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	1
22	Count	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1
	Frag. Count	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1	1
unph	Count	.	.	.	1	.	.	.	.	.	6	.	.	.	.	.	7	7
	Frag. Count	.	.	.	1	.	.	.	.	.	6	.	.	.	.	.	7	7
Total	**Count**	**3**	**10**	**4**	**256**	**2**	**7**	**3**	**14**	**4**	**517**	**249**	**22**	**3**	**0**	**0**	**1,097**	**1,094**
Total	**Frag. Count**	**3**	**10**	**4**	**261**	**2**	**6**	**3**	**14**	**4**	**726**	**274**	**25**	**3**	**50**	**26**	**1,411**	**1,385**

Table 4.17 Summary quantification of nails, by trench and phase (object and fragment count).

Trench		Phase MIA	?MIA	L1–2	C2	C3	L3–4	C3–C4	C3–C5	ROM	?ROM	ROM+	Early Medieval	?Early Medieval	Modern	Unph	Totals
1	Count	.	.	.	.	.	.	5	.	.	.	.	.	.	1	.	6
	Frag. Count	.	.	.	.	.	.	5	.	.	.	.	.	.	2	.	7
2	Count	1	0	2	.	65	.	.	18	.	1	.	83	16	21	.	207
	Frag. Count	1	1	3	.	99	.	.	24	.	1	.	111	23	26	.	289
3B	Count	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1
	Frag. Count	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1
4	Count	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	3
	Frag. Count	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	3
5	Count	0	.	1	.	.	.	.	.	.	.	.	.	4	5	.	10
	Frag. Count	2	.	1	.	.	.	.	.	.	.	.	.	6	7	.	16
11	Count	.	.	.	.	17	31	.	.	.	.	15	.	.	30	1	94
	Frag. Count	.	.	.	.	26	42	.	.	.	.	19	.	.	38	2	127
12	Count	.	.	.	.	.	.	.	.	.	0	.	.	1	10	.	11
	Frag. Count	.	.	.	.	.	.	.	.	.	3	.	.	1	20	.	24
13	Count	.	2	.	.	.	.	.	.	.	.	13	.	.	5	.	18
	Frag. Count	.	2	.	.	.	.	.	.	.	.	20	.	.	7	.	29
14	Count	.	0	.	.	.	20	.	.	.	.	.	.	.	7	.	27
	Frag. Count	.	1	.	.	.	24	.	.	.	.	.	.	.	10	.	35
15	Count	.	.	.	.	2	.	.	.	.	.	.	.	.	2	.	4
	Frag. Count	.	.	.	.	5	.	.	.	.	.	.	.	.	7	.	12
16	Count	.	.	.	.	.	44	.	.	.	.	.	.	.	21	.	65
	Frag. Count	.	.	.	.	.	59	.	.	.	.	.	.	.	33	.	92
17	Count	.	.	.	.	.	8	.	.	.	.	.	.	.	9	.	17
	Frag. Count	.	.	.	.	.	9	.	.	.	.	.	.	.	12	.	21
18	Count	.	.	.	.	5	.	.	.	.	.	.	.	8	2	.	15
	Frag. Count	.	.	.	.	9	.	.	.	.	.	.	.	11	3	.	23
19	Count	.	.	.	2	.	25	.	.	.	.	.	.	3	.	.	30
	Frag. Count	.	.	.	4	.	30	.	.	.	.	.	.	6	.	.	40
22	Count	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1
	Frag. Count	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1
u/s	Count	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	6
	Frag. Count	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	6
Total	**Count**	**1**	**2**	**4**	**2**	**89**	**128**	**5**	**18**	**1**	**1**	**31**	**83**	**32**	**113**	**7**	**517**
Total	**Frag. Count**	**3**	**4**	**5**	**4**	**139**	**164**	**5**	**24**	**1**	**4**	**42**	**111**	**47**	**165**	**8**	**726**

which explore the ramparts, produced smaller assemblages. As already noted above, the range of types of finds is very limited, with little evidence for domestic or craft activity. Personal items are dominated by hobnails and boot cleats, with only handful of other personal items. Similarly, there are few domestic or household items, even for a low status rural settlement the range of finds is limited. Nails form the largest single assemblage by number and are largely concentrated in Trench 2 as shown in the table of nails by phase on the Project Website. There are 517 nails or nail heads, and some 726 nail fragments. Of the 517 nails, some 455 are Type 1 nails (Table 4.18). The typology used here is that of Manning (1985, 134–37 and fig. 32). Manning distinguished Types 1a and 1b: Type 1a are over 150 mm long and have pyramidal heads, whereas Type 1b nails are less than 150 mm long and generally have flat heads. All the Type 1 nails from Alfred's Castle are of Type 1b (Table 4.19). Type 1 nails are general purpose wood nails. More than half the nails that can be identified to type are complete and can be measured. The majority of the measured Type 1 nails fall between 41 mm and 70 mm in length, that is between 1½ inches and 2¾ inches long, just the size of nails used most commonly in construction work.

There is only one nail of Type 2, which have triangular heads of rectangular section, and are generally the second most common type of Romano-British nail. They are usually large nails, and the single example from Alfred's Castle is 100 mm long. There are small numbers of nails with T-shaped heads (Type 3) and L-shaped heads (Type 4), and a number of Type 5 nails which are spikes with very small or almost no head. The nails are almost certainly all or almost all derived from the Roman building and associated structures.

A catalogue of the finds is provided on the Project Website.

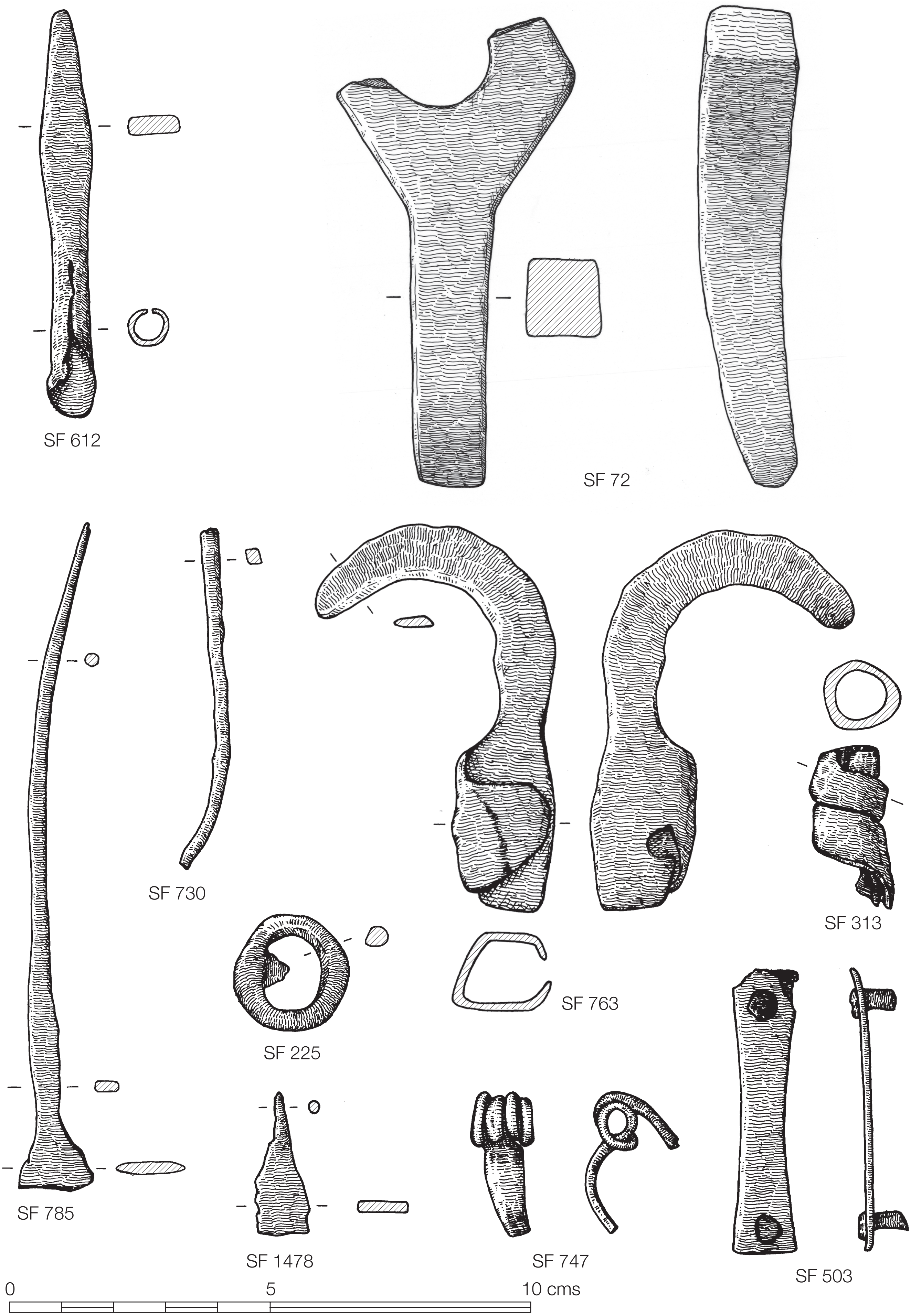

Fig. 4.20 Iron object illustrations, all at 1:1 scale.

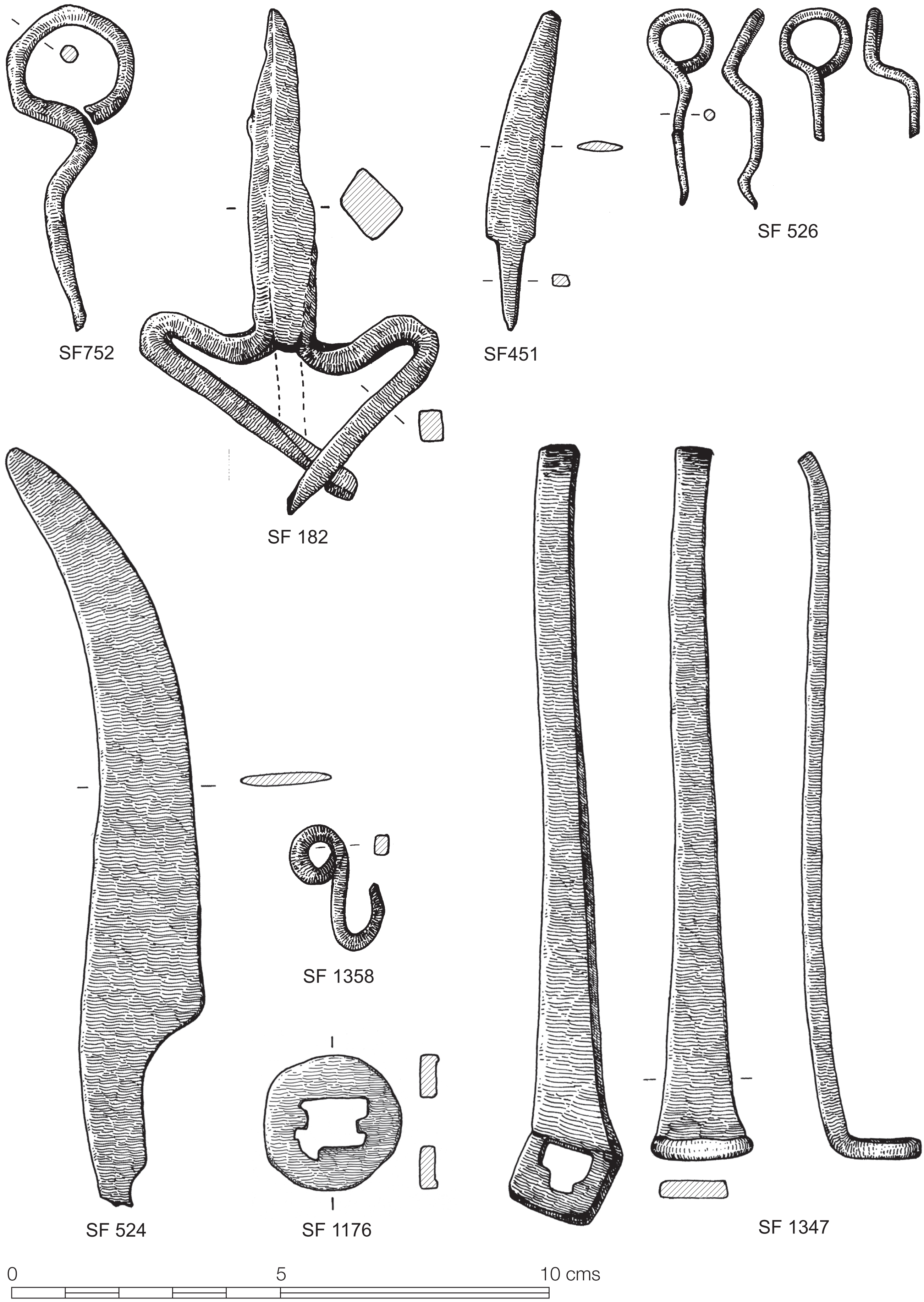

Fig. 4.21 Iron object illustrations, all at 1:1 scale.

Table 4.18 Nails quantified by type (count).

Nail Type	Description	Count
Type 1	flat or slightly domed circular head	455
Type 1 (probable)		21
Type 2		1
Type 3	T-head	4
Type 4	L-head	4
Type 5	very small head or no head	19
Type 7	large tack	4
-	solid domed head	1
-	chisel head	1
uncertain		7
Total		**517**

Table 4.19 Nails quantified by type and length (count of complete nails).

Nail Type	Length	Count
Type 1	< 30mm	4
	31mm – 40mm	19
	41mm – 50mm	82
	51mm – 60mm	96
	61mm – 70mm	44
	71mm – 80mm	3
	81mm – 90mm	4
	91mm – 100mm	3
Sub total		**255**
Type 2	100mm	1
Type 3	39mm & 70mm	2
Type 4	58mm	1
Type 5	< 40mm	1
	41mm – 50mm	3
	51mm – 60mm	2
	61mm – 70mm	1
	71mm – 80mm	4
	115mm	1
Sub total		**12**
Type 7 (tacks)	18mm, 37mm, 49mm	3
Total count		**274**

4.7 Report on the iron slag

C. J. Salter

Slag

A total of just less than 6 kg of material was examined, of which just over 1.5 kg could be associated with metal working (Table 4.20). The majority of the rest was in the form of ironstone (4.1 kg). In terms of phasing, the only significant amounts of metal working slag came from the 3rd-century AD and modern contexts (1.08 and 0.28 kg respectively). The slag from the Roman period was consistent with that produced during small scale smithing, which is small smithing hearth bottoms, fragments of bottoms and non-diagnostic slag. Only one piece of thick hammer scale was observed which would indicate either lack of recovery during the sampling of charcoal deposits (however, the one charcoal sample examined by the author contained no hammer scale), or more likely that no contexts close to the original smithing area were excavated.

Ironstone

The vast majority of the material recovered was ironstone. This came in the form of either boxstone or oxidized iron sulphide nodules. The iron sulphide nodules are most likely to have been derived from the Chalk, whereas, the boxstone may have come from a number of different sources. However, there is no obvious evidence that the material had been used for metallurgical or colouring purposes. Only 1.9% of the ironstone showed evidence of heating (as indicated by the presence of magnetic properties) and in most case this was only in small parts of the samples. One ironstone object from the topsoil of Trench 13 showed wear evidence that could have indicated that it might have been used as a whetstone.

Other Material

There was a little coal found on the site mainly from 3rd-century AD contexts. Coal has been found in contexts well outside the established coalfields. It has been suggested that it was used in the Roman period as a fuel for iron smithing; however, in this case the coal was not found in contexts associated with iron working.

Glossary

Smithing Hearth bottom

A smithing hearth bottom is formed by the reaction of iron oxide burnt from the surface of the objects being forged, with the fuel ash, hearth lining, slag inclusions within the metal, and any flux added to aid welding. These often have a characteristic plano-convex shape, with a flat upper surface, and a convex lower surface which may show impressions of fuel or the floor of the hearth. Occasionally, they may show tool impressions where they have been manipulated within the hearth, as was the case of one of those from this site. At this site all the smithing hearth bottoms were relatively small, suggesting that the smithing operations were all on a very small scale.

Smithing Hearth Bottom Fragments

Smithing hearth bottoms often contain a relative proportion of metallic iron. This will corrode, expanding and thus cracking the smithing hearth bottoms. Therefore, it is very common to find fragments of smithing hearth bottoms. Sometimes these are easily identified by the characteristic upper and lower surfaces.

Slag Fragments

Non-diagnostic fragments of relatively high density slag. This includes broken slag fragments or small runs of slag where it has cooled in the furnace/hearth between the pieces of fuel.

Hammer Scale

During heating, for forging or welding during iron-working the surface is oxidized. During cooling and quenching this surface oxide comes off as fine black scale. The presence of significant amounts of this in soil samples is a strong indicator that there was forging in the vicinity.

Low Density Slag

Slag that is intermediated between normal high density slag produced in the core of the iron smithing or smelting furnace. It is often the result of mixing of dense furnace

Table 4.20 Quantified iron slag and associated material finds by phase.

Phase	Smithing Hearth Bottom	Smithing Slag Frags	Slag Frags	Hammer Scale	Low density slag	Vitrified Hearth Lining	Heated Ironstone	Ironstone	Coal	Charred cereal grains	Iron	Total weight	Natural	Unknown
MIA	.	.	6.4	.	.	.	26.9	44.8	.	.	.	78.0	.	.
?MIA	.	.	.	.	.	.	.	69.0	.	.	.	69.0	.	.
C3	435.8	182.0	405.5	2.9	.	59.4	.	466.8	55.3	3.9	78.2	1693.8	.	.
C3-C5	.	.	.	.	.	.	23.2	361.4	.	.	23.4	408.1	.	.
L1-2	.	.	9.6	.	5.9	.	.	525.4	.	.	.	540.8	.	.
L3-4	54.9	30.4	.	.	.	.	.	137.2	.	.	15.0	237.5	.	.
ROM	.	.	11.0	.	.	.	2.9	298.9	.	.	.	312.8	.	.
ROM +	.	.	.	.	.	.	.	141.5	.	.	.	165.6	.	24.1
Early Medieval	.	.	45.1	.	.	.	.	188.8	.	.	73.5	307.4	.	.
?Early Medieval	.	.	.	.	.	.	26.1	546.7	2.0	.	.	574.8	.	.
Modern	163.1	.	116.0	.	.	.	.	1252.0	.	.	.	1591.5	60.4	.

slags with flows of hearth lining vitrification, or of fuel ash. Caroline Cartwright of the British Museum identified seven examples of Fuel Ash slag from the site. They were all from Middle Iron Age pits in Trench 2 and six out of the seven came from pits [2104, 2135, 2143, and 2178], all part of the small group exhibiting structured deposition. The seventh example came from Middle Iron Age pit [2252]. These were the only contexts on the site that contained any Fuel Ash Slag.

Vitrified Hearth Lining

Clay hearth lining material that had been heated to the point where the surface had vitrified or in some cases had begun to flow. This sort of material can be produced by any high temperature process, not necessarily those associated with metal-working.

Iron

This consisted of entirely corroded iron objects, some of which were just about recognizable objects (e.g. nails etc), but most of them were only identified by a combination of colour morphology and magnetic properties.

4.8 The copper alloy objects

Sheila Raven

4.8.1 Introduction

The assemblage comprises forty-three copper alloy objects, with the bulk of the artefacts deriving from the Roman period. Eight objects come from Middle Iron Age features; six pieces derive from potential Early Medieval features, though most of these also contain much residual Roman material so the copper alloy fragments, which are mostly un-diagnostic sheet fragments, may be Roman too; and finally there is one definite Saxon object. For the prehistoric period, five of the eight copper alloy objects derive from the Middle Iron Age pits in Trench 2 in the centre of the hillfort, and the remaining pieces come from Trench 1, Trench 4 and Trench 5. Predictably, the Roman bronze objects mostly derive from the layers in and around the villa structure in Trench 2 and from Trenches 11–19 in the area to the southeast of the villa building. Roman contexts in the Trench 1 entrance area produced another two copper alloy fragments, and one came from a Roman upper pit fill in Trench 5.

For the Iron Age period the number of objects may be small, as is common on most Iron Age settlement sites, but it is proportionally quite large when compared to the Early–Middle Iron Age metalwork assemblages from much larger Iron Age hillforts and settlements like White Horse Hill (Miles *et. al.* 2003), Danebury (Cunliffe 1984; Cunliffe and Poole 1991), or Gussage All Saints (Wainwright 1979). All of these sites have produced large quantities of copper alloy objects from the Late Iron Age/Early Roman period but only modest amounts from the Early Iron Age/Middle Iron Age features. For instance, the excavations of the massive hillforts of Maiden Castle (Wheeler 1943) and Danebury only produced about eight and eleven Early Iron Age/ Middle Iron Age copper alloy objects respectively, which make the tally of eight objects from the small site of Alfred's Castle surprisingly large.

By contrast, the number and range of bronze objects from the Roman period is very limited compared to other small Romano-British settlement sites. Small fittings and sheet fragments make up the bulk of the assemblage. Even on a small site like this more broken and discarded copper alloy objects might be expected, if this building was occupied continuously for 200 years or more, as the pottery evidence suggests. Viewed as a whole, the Roman assemblage indicates that either this site was not very intensively occupied during the Roman period, or that the 'villa' occupants were people of fairly modest means.

4.8.2 Individual categories of finds

Jewellery and dress accessories

Fig. 4.22, SF 45, 54, 51, 544, 450, 345, 397, 487, 418, 509, 471, 693, 555, 906, 776 and 780.

A total of sixteen objects were found in this category, six of which are from Middle Iron Age contexts, and four of those concentrated in neighbouring Trench 2 Middle Iron Age pits [2104, 2123 and 2178] in the centre of the hillfort under the later villa. These pits all show clear signs of 'structured deposition' and the bronze accessories are associated with a range of other significant artefacts, such as loom weights, burnt bone tools, cremated animal and human bone and iron objects. A fragment of plain wire bracelet (SF 544) was also found in a Middle Iron Age layer within the rampart in Trench 1, and a plain finger ring (SF 906) was found in Middle Iron Age pit [5022] in Trench 5. The three most diagnostic finds in this group are the two La Tène 1

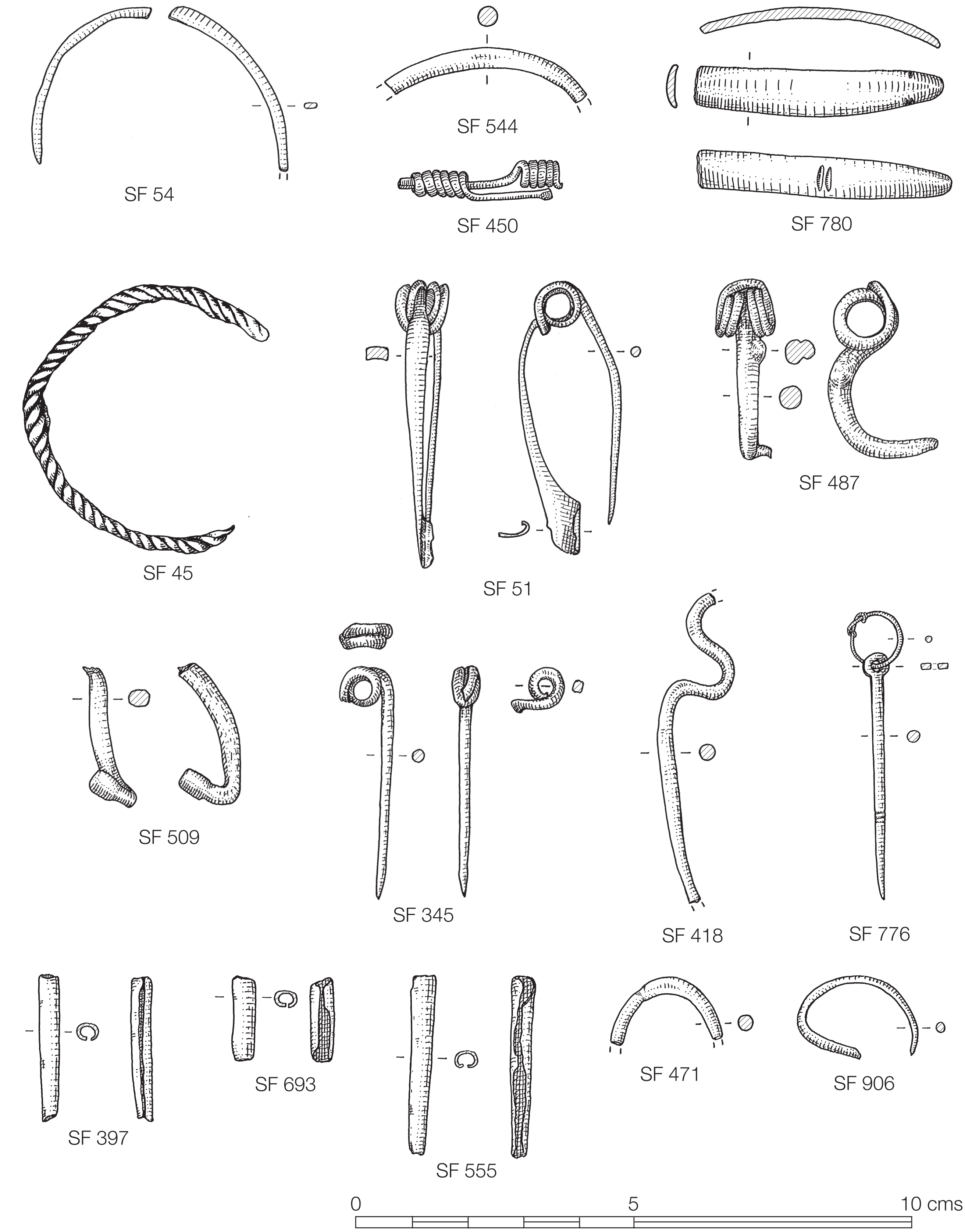

Fig. 4.22 Copper alloy object illustrations (items of personal adornment), all at 1:1 scale..

brooches (SF 487 and SF 509 from pits [2104] and [2178]) and the swan-necked pin (SF 418 from pit [2123]). The established date range for these types in Europe is 5th to 4th centuries BC. More recent reviews of early La Tène brooches now suggest that though the key period for the La Tène 1 art style in this country was 5th to 4th centuries, many La Tène 1a brooches were probably still being made and used in the 3rd century and possibly also the 2nd century (Cunliffe 2005, 470). Jope's most recent survey of these Early Iron Age brooches also concurs that in Britain such brooches had a longer currency than on the Continent (Jope 2000, 39). So though our examples might be as early as the 5th century, a broader date range of 5th–3rd centuries has to be considered. Swan-necked pins are still rare and mostly found in the south of England. As a group they can only be given a general Early Iron Age date, as most have been found in

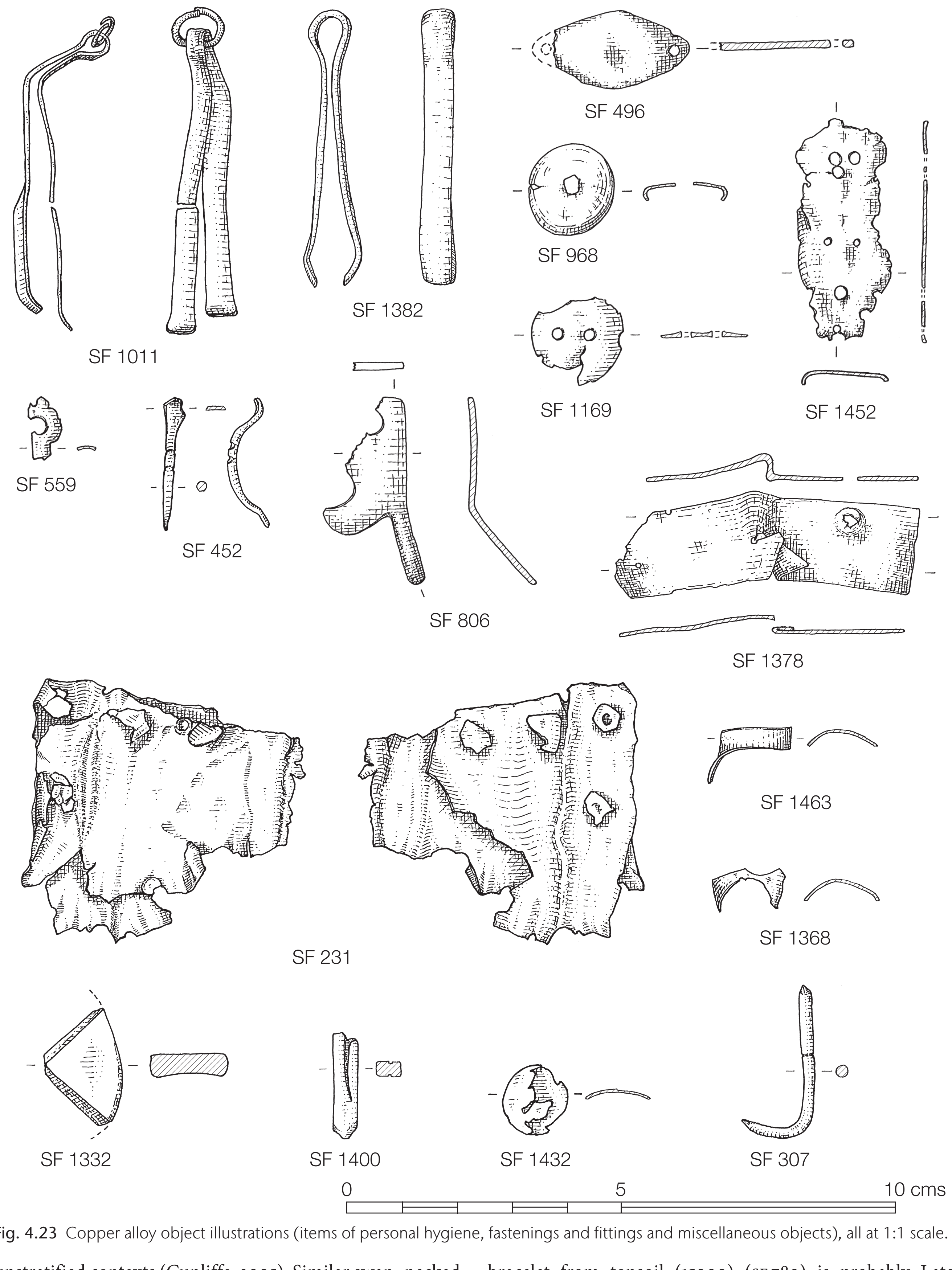

Fig. 4.23 Copper alloy object illustrations (items of personal hygiene, fastenings and fittings and miscellaneous objects), all at 1:1 scale.

unstratified contexts (Cunliffe, 2005). Similar swan–necked pins were found at Woodeaton in Oxfordshire (Kirk 1949).

Only eight personal accessories derive from the Roman period and these comprise a typical range of items, such as simple bow brooches, bracelets, and lace-tags. Most are not closely dateable, other than to the Roman period, but the Nauheim-derivative brooch from context (1013) (SF 51) is probably 1st-century AD, and the simple snakes-head bracelet from topsoil (15000) (SF 780) is probably Late Roman. This bracelet shows the simplest and most stylised version of the snakes-head form, more naturalistic examples of which tend to be Early Roman, so is not the most diagnostic piece. However, the trend away from naturalism is a later tendency and simple bronze bracelets are generally much more common in the 3rd and 4th centuries than earlier (Johns 1996, 109; Clarke 1979, 301). The simple cable bracelet from context (1010) (SF 45) is one of the commonest forms in the Roman period, and were particularly favoured in the Late Roman period. Eight objects is a very small tally of personal items for the projected 200 or so years lifespan for this site. All of the Roman personal items are simple, fairly inexpensive objects, none are very indicative of wealth or high status.

A single Early Saxon dress pin or 'pick' (SF 776) is the only definite Anglo-Saxon metal find on the site. As it was found in a Late Roman destruction layer with no other Saxon finds, and no other Early Saxon material has been found on the site, it is probably the result of casual loss rather than occupation.

A catalogue of these artefacts is found on the Project Website.

Toilet implements

Fig. 4.23, SF 1011 and 1382.

Only two finds of simple tweezers were found in contexts (17000) and (19020); no other toilet implements were discovered.

A catalogue of these artefacts is found on the Project Website.

Fastenings and fittings

Fig. 4.23, SF 496, 452, 968, 559, 1452, 1169 and 806.

The majority of the seven fittings were found in Roman contexts in the Villa area but two interesting pieces were found in Middle Iron Age pits, and one un-diagnostic sheet fragment was found in a possible Early Medieval context. One of the prehistoric fittings is a small lozenge-shaped perforated fitting (SF 496, pit [2177]) that may have been attached to a wooden box, or more likely a leather object like a belt or strap, or an item of clothing. The second is a small perforated stud from Middle Iron Age pit [4063] (SF 968) that could also have decorated a leather belt or strap or may have acted as a ferrule at the end of a wooden handle. Either or both of these objects might have been personal dress accessories, but it is impossible to be sure. The remaining fittings from the Roman period are not particularly diagnostic or highly decorative, but they include a possible strap end (SF 1452), and part of a decorative plate with a lunate or pelta shape (SF 806) which may be a harness fitting.

A catalogue of these artefacts is found on the Project Website.

Sheet and strip objects

Fig. 4.23, SF 231 & 1378.

Of the ten objects found in this category, only one definite fragment of a Roman bronze vessel was found on the site (SF 231 in context (2007)), though some of the small cut sheet fragments may derive from vessels. The repoussé moulding on the fragment SF 231 and the thinness of the sheet suggests a bowl rather than a larger object like a cauldron. Thin strips like SF 1378 probably represent binding strips from wooden or leather objects. Most of these fragments came from Roman contexts. Three pieces derived from possibly Early Medieval contexts, which also contained residual Roman pottery, so their dating is uncertain.

A catalogue of these artefacts is found on the Project Website.

Metal working evidence

Fig. 4.23, SF 1463, 742 and 1368.

There is only limited evidence for bronze metal-working on the site, represented by three scraps or off-cuts from the Roman and topsoil layers in the Villa area and a single 'thumb-pot' bronze-working crucible (SF 557 in context (5251) – see Fired Clay report in Section 4.3 and Fig. 4.13). None of the evidence comes from stratified prehistoric deposits, and most probably derives from the Roman period of occupation. The crucible does suggest some small-scale casting did take place but it was found in a disturbed, possibly Early Medieval, context with both residual Iron Age and Roman material, so provides no clue as to either the area or time period for this activity.

A catalogue of these artefacts is found on the Project Website.

Miscellaneous

Fig. 4.23, SF 307, 1332, 1400 and 1432.

Only five objects fell under this category, mostly parts of sheet or rod and all came from either Roman or possible post-Roman features.

4.9 The coins

Adrian Marsden

4.9.1 Discussion

The coins number fourteen Roman radiates and radiate imitations from the later years of the 3rd century AD, a cut fragment of a later 2nd-century AD *sestertius*, and a single Canadian token dating to 1843. Most were found within the destruction layers of the Roman building, strongly implying that they were in use during the last stages of occupation. They confirm a putative date for destruction and abandonment of the building of around AD 280–300.

Most of the pieces are either very debased *antoniniani* of the last of the Gallic emperors, similar pieces dating to the reign of Claudius II, or small imitations of the same. A number of the imitations are quite pitiful in appearance, having been chopped with shears from very thin sheets of bronze. This gives several coins (e.g. SF 187 and SF 267) a square or polygonal appearance. These are among the crudest radiate imitations to have been made anywhere, being very thin, with blank reverses or highly abstracted designs, and appear to have been the latest examples of the series. This would place them in the late AD 270s or early 280s.

The *sestertius* fragment has been gouged deeply twice and broken along one of the gouged lines. It may have been used as a weight or as scrap metal. It is most likely, however, from the evidence of assemblages from Norfolk, that it was intended to be recycled as a radiate imitation (Marsden 2012). At some sites *aes* were melted down to produce bars or ingots of a particular alloy, which were then in turn melted down to cast irregular radiate blanks. At other sites, however, it appears that *sestertii* and other large bronze coins were simply chopped up into strips and chopped up again, the resulting angular pieces of metal then being hammered out to produce the sort of distinctively-shaped coins found at Alfred's Castle. This method of blank production does not require metal smelting or alloying, so would leave minimal traces archaeologically. It is quite possible that irregular coining, albeit on a fairly minor level, was being carried out at Alfred's Castle. The site's location would be consistent with arguments that irregular coining operations occur in remote places.

None of the pieces from this assemblage can be described as anything other than very poor examples of the circulating medium, and attest a rural trade centre which was not heavily monetised or particularly flourishing. Indeed, given the location of Alfred's Castle, we would not expect a richly-appointed or wealthy site. These coins probably represent casual loss during relatively small-value transactions at little more than a local level. It is tempting in the light of this to see the site either as a small farmhouse or as a significant satellite of a nearby villa, servicing a larger and more prosperous settlement.

The chronological list produces, with the exception of the *sestertius* which was probably re-used in a later 3rd-century AD context, a tight cluster around the AD 270s and 280s:

Faustina I/II (AD 138–175)	1
Victorinus (AD 269–271)	2
Tetricus I (AD 271–274)	2
Tetricus II (AD 273–274)	1
Deified Claudius II (*c.* AD 270)	1
Imitations of radiates (post-*c.* AD 275)	8

Thus there is no real evidence purely from a numismatic viewpoint for any settlement before the mid 3rd century AD. However, it might also be argued that relatively remote places such as Alfred's Castle were not using coins until this period. Trade could easily have been carried on by barter or other methods; it was only when huge numbers of debased or imitation *antoniniani* were produced that coins began to seep into the countryside in sufficient numbers to make a coin-using economy viable in such areas. Again, this implies that the site is not of very great status; were we dealing with such a site we might expect evidence of earlier coin-use as an indication of the wealth and *Romanitas* of the inhabitants. Certainly, most villas from Roman Britain produce coins from the very early 2nd century AD or earlier, with a few examples from the 2nd and first half of the 3rd centuries AD. The absence of such material here points to this settlement being part of a less well-developed or successful sector of the economy, at least until the second half of the 3rd century AD, when some expansion, not least in terms of coin-use, is evident.

There is no numismatic evidence for habitation during the 4th century AD; the complete lack of the very plentiful coins of the Constantinian and Valentinianic dynasties is very telling on this point. This terminal date for the site, which may be some time in the AD 280s or 290s, is interesting. It is always dangerous to ascribe terminal dates to recorded historical events, but this period from AD 280–300 covers three incidents that may have some connection with the abandonment of the Alfred's Castle site. The first is the usurpation of Carausius in the British provinces in AD 286, the second his murder in AD 293 by his finance minister Allectus, and the third the defeat of Allectus by Constantius Chlorus in AD 296. Any of these three events could have resulted in proscriptions or confiscations that would have had significant repercussions at a local level.

It is equally true that the site may have been abandoned not because of disaster but because of success. Britain was beginning to flourish in this period and it may be that the owners of Alfred's Castle had friends at court, so to speak, and abandoned this site to build a more luxurious dwelling elsewhere. Certainly the addition of the sixth room at some stage not too long before destruction would seem to indicate success and expansion. All this is little more than idle speculation but it may, nonetheless, provide a small window on the desertion of the site.

A catalogue of the coins is found on the Project Website.

4.10 The flint and burned un-worked flint

Hugo Anderson-Whymark

4.10.1 Introduction

The excavations yielded 428 struck flints and 52 pieces/307 g of burnt un-worked flint (Table 4.21). The struck flint was dominated by large hard hammer flakes, characteristic of later prehistoric industries (Ford *et al.* 1984), but the presence of several blades and thin, well prepared, flakes reflect a component of Mesolithic and Neolithic flint work. The Mesolithic and Neolithic flint was widely distributed across the excavations and was recovered from the topsoil or as residual finds in later archaeological contexts; none was recovered from contemporary depositional contexts.

The trenches within the hillfort produced the largest assemblages, particularly Trenches 2, 4 and 5. In total, 141 flints, excluding 24 clearly residual artefacts, were recovered from contexts phased to the Middle Iron Age (Table 4.22). These flints are in fresh condition and can be considered contemporary with the Iron Age occupation. This represents a sizable assemblage for the period and presents an opportunity to characterise the technological and metrical attributes of a securely dated Iron Age assemblage. In addition, struck flint was recovered from numerous archaeological contexts of Roman or later date; these artefacts are residual, but most date from the later prehistoric period.

4.10.2 Methodology

The flints were catalogued according to broad artefact/debitage type and retouched pieces were classified following standard morphological descriptions (Bamford 1985, 72–77; Healy 1988, 48–49; Bradley 1999, 211–227; Butler 2005). Additional information was recorded on condition of the artefacts, including burning, breakage, the degree of edge-damage and the degree of cortication. Unworked burnt flint was quantified by weight and number. Technological attribute analysis was undertaken on all complete flakes from contexts phased to the Middle Iron Age; residual flakes were excluded from the sample. The 105 analysed flints were recovered from 40 archaeological contexts; 63 flints were recovered from 25 contexts in 10 pits [2104, 2133, 2177, 2178, 2189, 4063, 5022, 5028, 5119, 5257], eight flints were recovered from seven contexts in five other cut features (ditch [4073], gullies [2230, 2206], posthole [5562] and tree-throw hole [5377]) and 34 flints were retrieved from eight layers

Table 4.21 The flint assemblage from Alfred's Castle by trench and category.

	Trench No.																
Category type	**1**	**2**	**3**	**4**	**5**	**6**	**8**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**20**	**Total**
Flake	6	123	1	76	101	1	1	5	8	15	11	2	5	10	2	3	370
Blade	.	3	2	3	2	.	.	.	.	1	.	.	.	.	.	.	11
Bladelet	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Blade-like	.	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	2
Irregular waste	2	5	.	3	8	.	.	.	1	.	.	1	.	.	.	.	20
Chip	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1
Rejuvenation flake tablet	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	1
Rejuvenation flake other	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1
Janus flake (= thinning)	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1
Tested nodule/bashed lump	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Single platform flake core	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	2
Multiplatform flake core	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	2
Core on a flake	1	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	3
End scraper	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1
Side scraper	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	1
End and side scraper	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	2
Spurred piece	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1
Denticulate	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Notch	.	2	.	.	1	.	.	.	.	1	.	.	.	.	.	.	4
Retouched flake	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	2
Hammerstone	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1
Total	9	136	3	86	123	1	1	5	10	18	13	5	5	10	2	3	429
Burnt unworked flint																	
No. burnt	.	12	.	.	4	.	.	.	.	2	1	1	.	.	.	.	20
(g)		(8.9)			(3.3)												(4.7)
No. broken	.	24	.	9	9	1	.	.	.	3	4	2	1	3	.	2	58
(g)		(17.8)		(10.5)	(7.3)												(13.6)
No. retouched	.	4	.	2	4	.	.	.	.	1	.	1	.	.	.	.	12
(g)		(3)		(2.3)	(3.3)												(2.8)

Table 4.22 The flint assemblage from Alfred's Castle by phase.

Category type	MIA flint	Roman/Early Medieval	Modern	Unphased	Grand Total
Flake	125 (17)*	151	74	3	370
Blade	(4)*	6	1	.	11
Bladelet	.	1	.	.	1
Blade-like	.	1	1	.	2
Irregular waste	11	7	2	.	20
Chip	.	.	1	.	1
Rejuvenation flake tablet	.	.	1	.	1
Rejuvenation flake other	.	1	.	.	1
Janus flake (= thinning)	.	.	1	.	1
Tested nodule/bashed lump	.	.	1	.	1
Single platform flake core	1	.	1	.	2
Multiplatform flake core	1	1	.	.	2
Core on a flake	3	.	.	.	3
End scraper	.	.	1	.	1
Side scraper	.	.	.	1	1
End and side scraper	.	2	.	.	2
Spurred piece	1	.	.	.	1
Denticulate	.	1	.	.	1
Notch	1	2	1	.	4
Retouched flake	.	2	.	.	2
Hammerstone	1	.	.	.	1
Total	**141 (24)***	**175**	**85**	**4**	**429**

* Residual flintwork is shown in brackets for MIA phase: all flintwork from Roman/Early Medieval and Modern phases is residual.

(4002, 4025, 4027, 4039, 4042, 4049, 4060, 4062). Technological attributes recorded include butt type (Inizan 1999), extent of dorsal cortex, termination type, flake type (after Harding 1990) and hammer mode (Onhuma and Bergman 1982). The presence of platform-edge abrasion and dorsal blade scars was also recorded. The dimensions of complete flakes were measured using standard methods for recording length, breadth and thickness (Saville 1980).

4.10.3 Raw material and condition

The flint was generally dark brown in colour, and the cortex, where present, was white to beige in colour with a relatively un-abraded surface and measures between three and seven millimetres thick. The presence of a few thermal fractures within the flint suggests the raw material was exposed to some frost-damage prior to knapping. This raw material was probably collected from surface deposits on the chalk and is locally available.

The majority of flints exhibit some post-depositional edge-damage and a few artefacts were rolled; this indicates that most of the flints are residual in later deposits. The flint from Middle Iron Age contexts in Trenches 2, 4 and 5 was in fresh condition, with the exception of a small number of clearly residual edge-damaged artefacts. A refit between a core and a flake in the Middle Iron Age pit [5022], fill (5527), demonstrates the presence of fresh knapping debris (Fig. 4.25).

The surface condition of the flint was variable. The majority of flints were free from surface cortication, but a small number exhibited a light to moderate white cortication and a few flints exhibited a very heavy white cortication.

4.10.4 The assemblage

Mesolithic and Neolithic

The Mesolithic and Neolithic periods are represented by a small group of *c.* 40 flints recovered from Trenches 1, 2, 3, 4, 5, 12, 13 and 20; these flints are all residual. The Mesolithic and Neolithic component of the assemblage was, in the absence of diagnostic artefacts, distinguished on the basis of flake morphology, i.e. the presence of narrow and thin flakes, and the use of techniques to facilitate production of the desired produce, e.g. platform-edge abrasion, platform-maintenance and rejuvenation (Pitts 1978; Pitts and Jacobi 1979; Ford 1987). A few narrow blades exhibit the scars of blade removals on their dorsal surface are clearly the product of a blade-based industry; one blade was removed from a bipolar blade core. These flints are most probably Mesolithic. The Neolithic flint work is more ambiguous, but a small proportion of the flake assemblage was comparatively thin and many of these flakes also exhibited platform-edge abrasion, suggesting a degree of control was exercised in reduction. These characteristics are typical of Neolithic to Early Bronze Age flint working techniques, but are not commonly observed in later prehistoric industries.

Middle Iron Age flintwork

Middle Iron Age features yielded 141 flints, excluding 24 residual flints considered to date from the Mesolithic or Neolithic. This debitage is considered to be contemporary with the features and has been subject to metrical and technological attribute analysis, the results of which are presented below. In addition, the vast majority of the debitage from the Roman and Modern phases is comparable to the stratified Iron Age flint and is tentatively considered to have derived from this phase of activity.

Flakes

Flakes represent the largest component of the assemblage from the Middle Iron Age features (125 examples), followed by pieces of irregular waste (11 pieces). The flakes are of relatively small proportions, averaging 29.1 mm long, by 29.2 mm wide and 8.3 mm thick; details of the flake proportions of the assemblage are in the tables on the Project Website. The largest flake measures only 66 mm in length (Fig. 4.24). Tables detailing the flake attributes discussed in this section are available on the Project Website. The typical length to breadth ratio is 1:1 and 90.4% of flakes have length to breadth values between 0.6 and 1.5. Only one flake was of blade proportions (>2:1 length to breadth ratio) (Fig. 4.24), and this piece represents an accidental product; this statement is supported by the total absence of dorsal blade scars on the flakes examined. Blades, therefore, only comprise 0.9% of the flake assemblage indicating narrow flakes were not the intended product. Flakes appear to have been exclusively removed using hard hammer percussion, as not a single example of soft hammer percussion was recorded; it was however not possible to determine the hammer mode on 45.7% of flakes. An irregular flint hammer-stone, weighing 127 g, from Middle Iron Age pit [5257], may have been employed in flint knapping. The flakes were most commonly struck from plain platforms (52.4%), but cortical surfaces were also frequently used as platforms (30.5%). Facetted and linear platforms are absent and only one puncti-form butt was noted; the 'other' platforms include several flakes with crushed edges. None of the flakes exhibited platform-edge abrasion. It is also notable that 72.5% of flakes exhibit some cortex on their dorsal surface. These

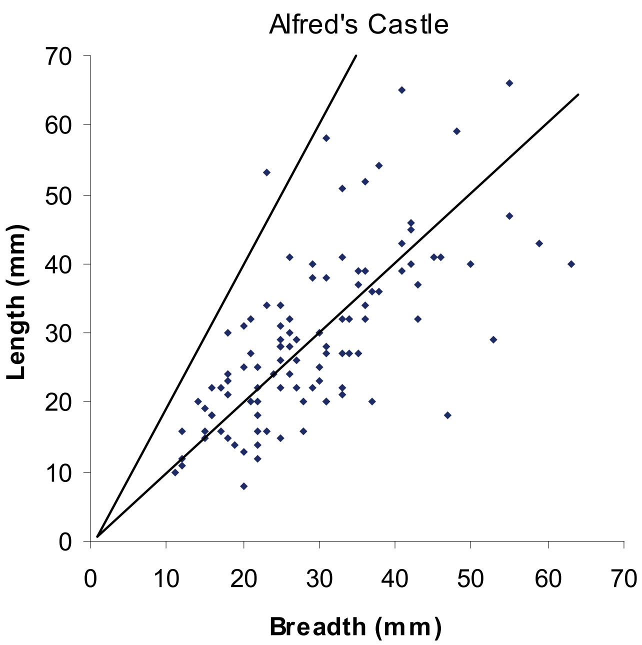

Fig. 4.24 Length to breadth scatter diagram for complete unretouched flint flakes over 10mm^2 from Middle Iron Age contexts.

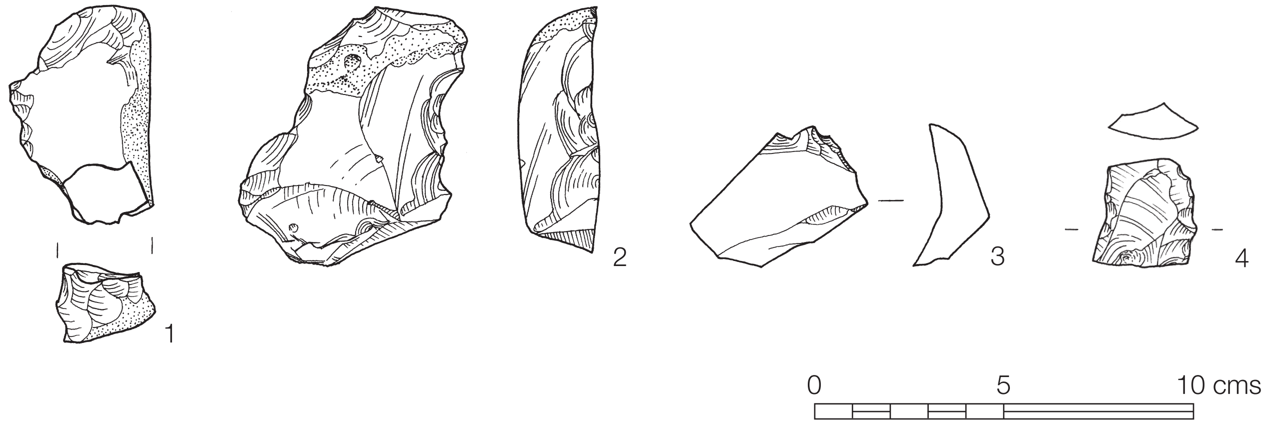

Fig. 4.25 Illustrated worked flint objects and burned un-worked flint, all at 1:2 scale.

figures demonstrate that cores were not prepared by removing the cortex and that flint nodules were knapped following minimal platform preparation, and sometimes without any preparation at all. Moreover, the high proportion of cortical flakes suggests that cores were not extensively worked before being abandoned. The absence of careful preparation, compounded by low levels of knapping ability, is also reflected by the high proportions of hinge and step terminations, 21% and 8.5% respectively.

Cores

Seven cores are present, including five from Middle Iron Age contexts. These cores are all aimed at unspecialised flake production and weigh between 10 g and 148 g, with an average weight of 57 g. Two cores exhibit removals from multiple platforms, but the other five cores have only been worked from a single platform. Reduction from a single platform, and particularly using the ventral surface of a large flake as the platform, represents a very simplistic reduction technique that requires little skill in its execution. It is notable that the flake removals on one of the cores on a flake may be interpreted as crude retouch, although there is no evidence of use-damage, (Fig. 4.25, no. 2).

Retouched artefacts

Retouched tools are comparatively uncommon and represent only 2.7% (12 pieces) of the total assemblage and 1.4% (two pieces) of flints from the Iron Age phase. The retouched tools within the Iron Age contexts comprise a spurred piece, manufactured on a piece of irregular waste (Fig. 4.25, no. 3), and a simple notch on an earlier lightly corticated flake which also forms a slight spur (Fig. 4.25, no. 4). The other retouched pieces comprise four scrapers, a denticulate, three notched flakes and two flakes with small areas of irregular edge-retouch. This limited range of simple flake-based retouched tools is typical of later prehistoric industries (Ford *et al*. 1984), and whilst it is only possible to be entirely confident over the Iron Age date for the two stratified tools, it is significant that retouched flints are present in the Iron Age.

Catalogue of illustrated flint

Fig. 4.25, no. 1, Pit [5022], fill (5527). Single platform flake core with one refitting flake. Flakes have been removed from one thermal platform, but the refitting flake was struck into the platform from the core face. Core weight: 48 g. Middle Iron Age.

Fig. 4.25, no. 2, Pit [5257], fill (5550). Single platform core on a flake or coarse edge-retouch. Numerous incipient cones reflect attempts to remove further flakes. Weight: 72 g.Middle Iron Age.

Fig. 4.25, no. 3, Pit [5257], fill (5596). Spurred piece manufactured on fragment of irregular waste. Middle Iron Age.

Fig. 4.25, no. 4, Pit [5022], fill (5126). Notch, possibly to form a slight piercing point and other slight edge-retouch. Manufactured on an earlier lightly corticated flake. Middle Iron Age.

4.10.5 Discussion

The flint work provides evidence for a Mesolithic and Neolithic presence in the landscape, but the assemblage is not informative regarding the character of this activity. In contrast, the presence of Middle Iron Age flint is of particular significance as the existence of flint-working in this period was, until recently, in doubt (Saville 1981). Recent research has, however, demonstrated the presence of flint work on numerous Iron Age sites and has convincingly argued for the continued use of flint beyond the Late Bronze Age (Humphrey and Young 1999; Young and Humphrey 1999; Humphrey 2003). Iron Age flint assemblages are frequently small, reflecting the declining use of the material, and artefacts are often widely distributed across excavated sites (*ibid*.). The latter reflects the deposition practices of the period in question, which frequently involve the deposition of artefacts in middens and surface deposits prior to re-deposition into other features, such as disused pits. The Iron Age assemblage at Alfred's Castle was both small and dispersed across numerous archaeological contexts, but it was substantial enough to allow detailed characterisation of the flint-working techniques of this period. The industry was focused on the production of small flakes, with a length to breath ratio of 1:1, using hard hammer percussion. The knapping demonstrates little skill or control and knapping errors, such as hinge and step terminations, are common; platform-edge preparation and rejuvenation were not practiced. Unprepared nodules and large flakes were used as cores, resulting in a large number of cortical and partly cortical flakes (*cf*. Humphrey 2003, 20). The simplistic reduction strategies employed, combined with the limited size of the assemblage, indicate that, whilst flint was used in the Iron Age, it probably was not a commonly worked or utilised material. Indeed, the assemblage at Alfred's Castle may represent *ad hoc* tool production, when a sharp edge or piercing point was required and no other tool was available, rather than a distinct industry with products manufactured for a specific purpose or use.

4.11 The worked and utilised stone

Hugo Anderson-Whymark

A total of 48 stone objects and three pieces of chalk working debris were recovered from the excavations. The assemblage contains a variety of domestic and personal equipment, including a saddle quern, saddle quern rubbers, spindle-whorls, flaked discs (pot-lids), processors, whetstones, a possible weight and a possible burnishing stone. Personal ornaments comprise two fragments of shale bracelets and weaponry was represented by twenty flint pebble sling-shot. A full catalogue is provided in the Project Website.

The raw materials exploited were predominately of local origin. Sarsen was used for manufacturing the quernstones, some of the discs and the possible weight, whilst chalk was used for the spindle-whorls. The other stone discs were manufactured from a Jurassic limestone available a few kilometres to the east. The Kimmeridge Shale bracelets and the siltstone whetstone originate from more distant sources to the south east and east. The flint pebble sling-shot are well rounded and probably derive from water-born tertiary deposits. The closest outcrops are to the south between Marlborough and Newbury, but a precise source for these pebbles has not been identified.

Querns and quern rubbers

Fig. 4.26, SF 1277 and 1508

A large sarsen saddle quern (SF 1277) weighing in excess of 25 kg was recovered from Trench 5, in context (5669), and two sarsen saddle quern rubbers were recovered from Trench 2, contexts (2227) and (2259) (SF 1508); these contexts date from the Middle Iron Age. The quernstones were manufactured by flaking a piece of sarsen to shape and finely pecking the working faces. The saddle quern has a large working face, measuring 510 mm long by 325 mm wide that has a gentle curve along the artefact's long axis. The saddle quern rubbers both exhibit flat working faces and the complete example from context (2259) has an oval working face measuring 260 mm by 159 mm and weighs 5.351 kg.

Spindle-whorls

Fig. 4.27, SF 272, 378, 423, 464, 538 and 581

Six spindle-whorls were recovered, comprising five examples manufactured from chalk and one exploiting a naturally perforated flint pebble. Four of the spindle-whorls were recovered from Roman contexts, one from a Middle Iron Age context and one was un-stratified. The spindle-whorls are all disc-shaped, but three have flat sides and three have curving sides and an oval cross-section. The five complete spindle-whorls weigh 3 g, 14 g, 18 g, 54 g and 66 g and would have been used for the production of yarn for textiles.

Sling-shot

The excavations yielded twenty water-worn flint pebbles of flattened oval form that are interpreted as sling-shot. These stones were all recovered from trenches within the hillfort, except for two that were recovered from Trench 21, located just outside the earthwork. The majority of sling-stones were recovered from Middle Iron Age contexts, but residual examples were also retrieved from Roman contexts. The stones weigh between 7 g and 59 g, with complete examples weighing an average of 36 g. The pebbles average dimensions were 40 mm long, by 30 mm wide and 24 mm thick. The sling-shot at Alfred's Castle are of comparable size to those recovered from other hillforts. For example, at Danebury, Hampshire, the majority of stone sling-shot weighed between 29.5 g and 109.5 g, whilst at Maiden Castle, Dorset, they ranged between ½ and 2 ounces (14.2 g to 56.7 g), with the majority towards the heavier end of the scale (Wheeler 1943; Brown 1984).

Stone discs (pot-lids)

Fig. 4.27, SF 24 and 1270

Seven flaked stone discs, commonly interpreted as pot-lids, were recovered. Three of the discs were manufactured from a Jurassic limestone, probably the Corallian Pusey Flags, whilst the four remaining examples were manufactured from Sarsen. Three of the discs were recovered from Roman contexts, two were recovered from Early Medieval contexts, one was recovered from a Middle Iron Age context and one was un-stratified. The discs were generally sub-circular with flat sides and had been flaked to shape. Two small discs measured 29 mm and 61 mm respectively, whilst the other five examples had maximum dimensions between 102 mm and 156 mm (average 123 mm).

Whetstones

Fig. 4.27, SF 259

Two whetstones were recovered from Roman contexts in Trench 2. A broken rod-shaped form with a square cross-section manufactured from siltstone was recovered from context (2028), whilst an ironstone example from context (2024) exploited a natural groove on an irregular piece of locally available stone. A fragment of a post-medieval hone was recovered from topsoil in Trench 12.

Shale bracelets

Fig. 4.27, SF 501 and 794

Two fragments of shale bracelets were recovered from Roman contexts in Trenches 2 and 11. The fragment from (2144) (SF 501) represents approximately one third of a circular bracelet with a small internal diameter of 35 mm. The bracelet had an oval cross-section, measuring 10 mm wide by 8 mm thick, and exhibited a fine highly polished surface. The bracelet fragment from context (11018) (SF 794) is only 25% compete, but also appear to have been circular with a small internal diameter of 45 mm; the cross-section was sub-circular, measuring 5 mm by 6 mm. The external edge of the bracelet exhibits worn traces of a ribbed decoration; the ribs each measure *c.* 2 mm wide.

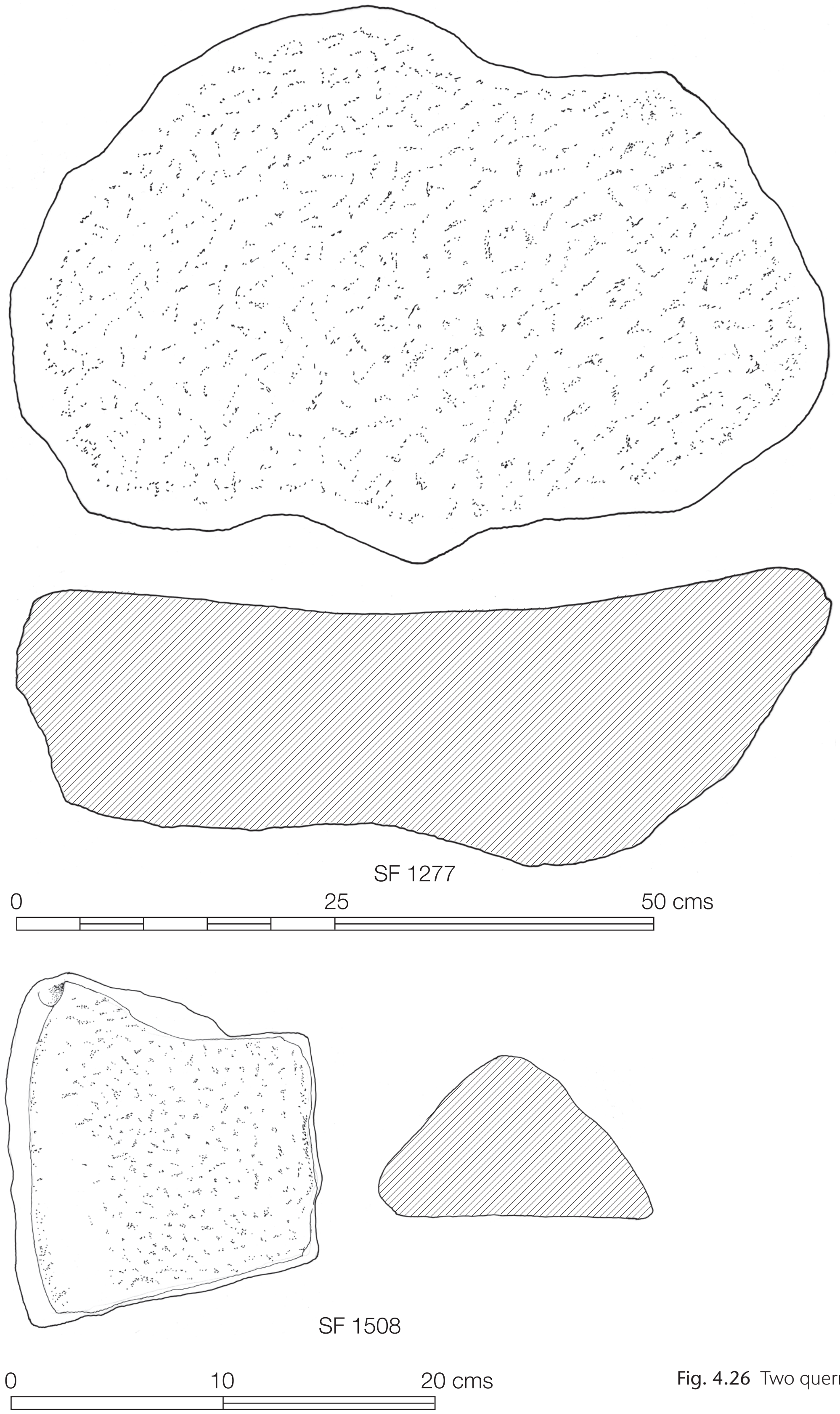

Fig. 4.26 Two quern drawings, SF 1277 and 1508.

Miscellaneous artefacts

Fig. 4.27, SF 377

Miscellaneous artefacts include a small fragment of a pebble possibly used as a burnisher (context (5270), SF 1451), a naturally perforated piece of Sarsen, weighing 707 g, that was possibly used as a weight (context (5246), SF 585), a worked chalk object with a slight concave surface of unknown function (context (2060), SF 377) and three pebbles with wear that suggested they were used as processors or hammerstones, contexts (1160, 2144, 2250). In addition, three pieces of chalk working debris were recovered from Roman context (2028), including one that appeared to represent a rough-out for a weight. Figure 4.28 shows a loom weight made of a chalk composite found in fill (5669)

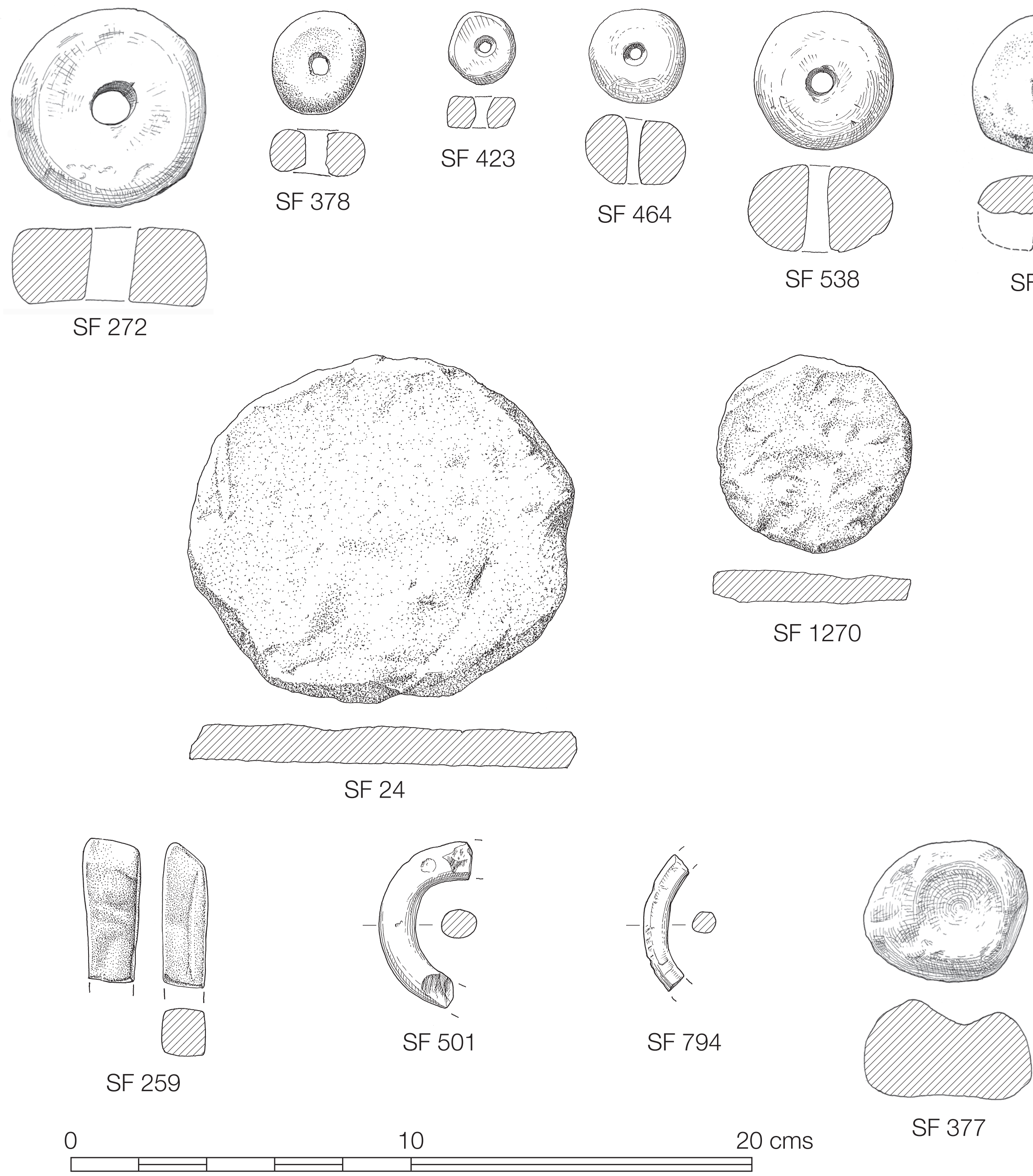

Fig. 4.27 Miscellaneous worked stone objects, all at 1:2 scale.

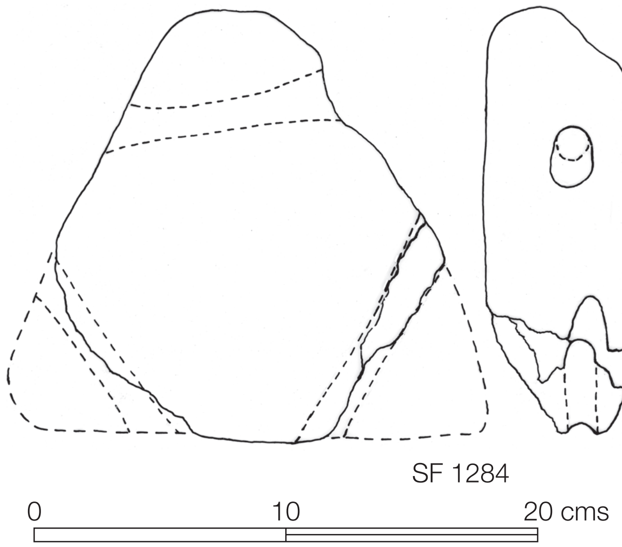

Fig. 4.28 Chalk composite loom weight SF 1284 at 1:3 scale.

of pit [5257]. Although not routinely considered to be worked stone, due to its unusual composition it has been included in this portion of the text. No other objects of this material were found at the site.

4.11.1 Discussion

The worked and utilised stone objects are characteristic of Iron Age and Roman settlements in the local region and the sling-shot are common on defended sites. The majority of the raw materials were locally available and only the shale bracelets and siltstone whetstone have been imported from any distance. The chronology of the stone assemblage is potentially problematic as many of the stone artefacts in Roman and later contexts may have been reworked from Iron Age deposits. The sling-shots in Roman contexts represent residual artefacts and this may also be the case for the spindle-whorls, pot-lids and shale bracelets as although these artefacts occur in the Roman period they are also common in the Iron Age.

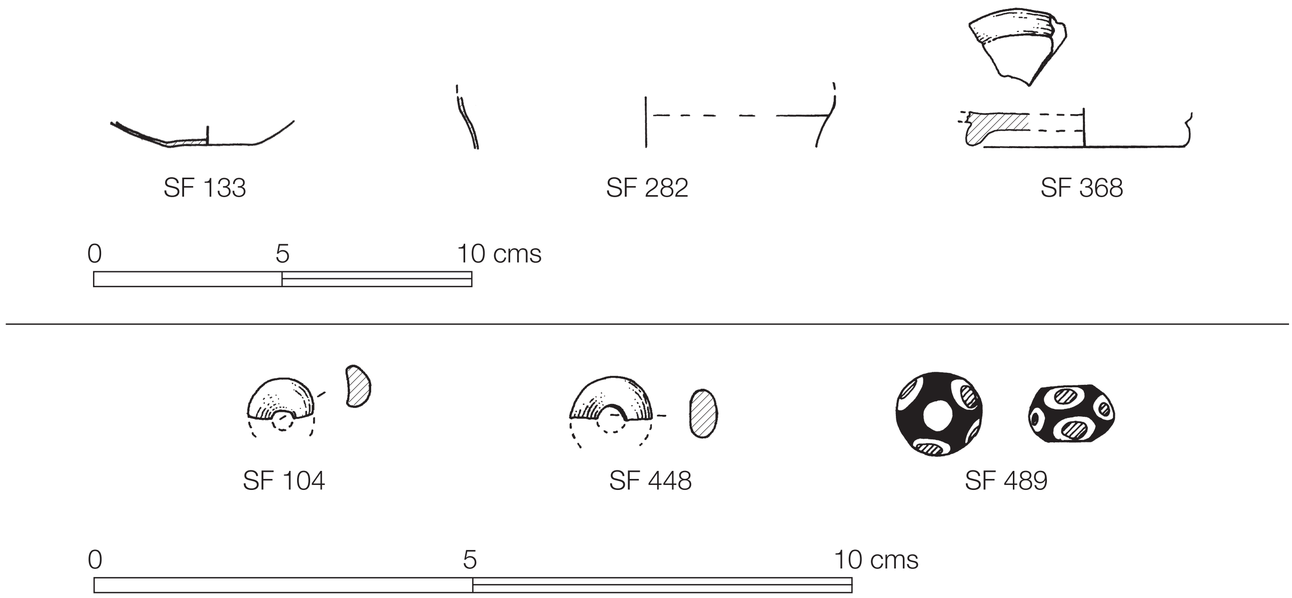

Fig. 4.29 Glass objects, vessels at 1:2 scale, beads at 1:1 scale.

4.12 The glass

Denise Allen

The quantity of glass in this assemblage is very small (91 objects and object fragments), consisting mostly of tiny abraded fragments. There is one very nice Iron Age bead, and two bead fragments which are probably Roman. Very little of the vessel glass can be closely identified, but it indicates that various types of glass tableware and containers were in use here, both from the first two centuries AD (the two bottle pieces) and the last period of habitation on the site, late 3rd century. There are also 43 tiny fragments of window glass, many of them probably from the same panes, all of the type which was used to about AD 300.

All the glass type lists below are in trench and context number order. The glass finds catalogue is on the Project Website.

Vessels

Fig. 4.29, SF 133, 282 and 368

Only a few vessel fragments have sufficient features to be identified at all, and even these cannot be assigned to any particular form. SF 368, context (2060), a vessel base, is blue-green in colour and could have been from any of a wide variety of cups and jugs or flasks. It appears that the edge of the vessel has been neatly chipped away, allowing the complete base-ring to be used as a gaming piece or counter – this is frequently noted in Roman glass assemblages, e.g. at Colchester (Cool and Price 1995, 167).

SF numbers 133, 282, 284 and 424 are all fragments of pale greenish/colourless glass, with lots of pinhead bubbles within the glass, and the colour, quality and general finish are features which are usually typical of the later Roman period (that is after the mid 3rd and the 4th centuries AD), although they are not unknown before this. With so little in the way of specific features it is difficult to be sure. Bowls and beakers at this time typically had out-flared rims, simply cracked off and left quite sharp (Price and Cottam 1998, 121–2), an example of which may be seen on fragment SF 282, context (2032). Several varieties of cylindrical jugs and flasks were made from the late 2nd century onwards in colourless glass, with bands of abraded lines around their bodies. The fragment SF 284, context (2032), may be from any one of these (e.g. Price and Cottam 1998, 202–7), and rim SF 282, context (2032), could be from a conical beaker or a cylindrical flask. The base fragments SF 133, context (2000), could be from a bowl or a flask, but again cannot be identified as one specific vessel type.

Bottles

There are just two fragments of blue-green bottles which were some of the commonest forms of glass during the first two centuries (Price and Cottam 1998, 191–202). Although they had stopped being made after this, pieces often turn up in later contexts as residual finds, and it seems clear that some continued to be used for quite some time after manufacture ceased.

Beads

Fig. 4.29, SF 104, 448 and 489

Three beads are represented here. There are two small blue annular ones, of which only fragments survive, which could easily be Roman though not closely datable. There is also a very fine complete blue bead decorated with opaque whiter rings. This is probably an example of Guido's Arras type II, which are Iron Age rather than Roman, being amongst the earliest beads to be introduced to this country (Guido 1978, 45–48, figure 5, plate 1).

Window glass

The presence of window glass on the site may indicate that the main structure had some glazed windows. All the window glass here is of the matt-glossy 'cast' variety, thought to have been in use until about AD 300. The probable method of manufacture of these panes has been discussed recently by various people (e.g. Allen 2002, 103–6) and it seems as though these flat sheets began as discs and were manipulated into squares (the tool marks can often been seen in the upper glossy surfaces). There is no way of knowing how many panes of glass are represented here, and the fragments are very tiny and abraded – judging by their colour, some may have come from the same pane.

4.13 The worked bone and antler

Sheila Raven

4.13.1 Introduction

The assemblage consists of 74 items of worked bone and antler, most being fragments rather than complete objects. The majority of the worked bone is animal bone, but the long-handled combs are certainly made from antler. Potentially a few other objects, particularly the hair pins from the villa area, may also be made from antler. Though decorative bone pins have been proven to be made from antler on some Roman sites (Johnston 1972), others have suggested the limb bones of large ungulates were preferred for pin production (MacGregor 1985). Because objects like pins or needles are made from the outer layer of the antler, and so lack the diagnostic spongy cancellous core material, it is difficult to categorise them as antler, as opposed to bone.

The date range of the worked bone objects extends from the Middle Iron Age to the Late Roman period, with about 50% of the assemblage deriving from Iron Age features and the remainder from Roman layers or disturbed post-Roman and modern layers. The nature of the material however varies between the Iron Age and the Roman assemblages. The majority of the prehistoric bone objects represent craft tools for various domestic processes like weaving, cloth-making, sewing, basketry, and leather-working. The material found in the Roman layers also features craft tools like needles, a bobbin, gouges/pegs and awls, but also includes decorative items like the boars tusk pendant and the hair pins. Three potential unfinished pins, along with other items like the sawn antler tines, may suggest small-scale bone pin production on the site in the Roman period.

The assignment of some worked bone 'tools' to a precise craft function is difficult as a number of tools might have had more than one function and be used on more than one material. Bone 'points' of various sizes, profiles and wear patterns have in the past created the biggest problem in definition, being in some reports all lumped together, despite obvious differences in shape and wear. It is common to find the same shaped tool being described variously in different site reports as either a 'gouge' or a 'knife' or a 'spearhead' or a 'shuttle' or a 'bobbin'! However, more precise functions can be assigned for some of these tools based on the recent work of researchers like Tina Tuohy (1999) and Cornelia Becker (2001), who have done a lot of detailed analysis on wear patterns and the precise functionality of shape on certain tools like points and combs. Following their work, we have been able to assign some of the tools to specific craft functions (Table 4.23). A full catalogue is given on the Project Website.

Table 4.23 The range of definable worked bone and antler objects in the assemblage.

Object Function	Unburnt	Burnt
Hair pin	3	.
Pendant	1	.
Tally	.	1
Textile comb	.	5
Needle	6	2
Awl	6	.
'Bobbin'	1	.
Basketry tool	5	4
Perf. tool handle	1	3
Deco. handle	1	.
Gouge/peg	1	.
Total	**25**	**15**

4.13.2 Depositional Practices

Although the Alfred's Castle prehistoric worked bone assemblage is unremarkable in the range of objects, it is remarkable for its evidence of selective depositional practices and in the high incidence of burning found in bone tools in a few unusual 'structured' deposits, as recognised by Hill (1995). Twenty–five objects (representing almost 75% of the total Iron Age assemblage of worked bone) are burnt, all coming from a mere seven Middle Iron Age pits, none are found in any other Iron Age features and none in the Roman layers (Table 4.24). This is not a case of casual accidental burning, as many of the tools are burnt to the same high temperature reached in human cremations, and are closely associated with other types of burnt material like Fuel Ash Slag (FAS) and charcoal.

Table 4.24 shows the incidence of burnt bone tools across the site, the degree of burning, and where these burnt tools coincide with FAS. The pattern is very clear: apart from one burnt tool fragment in pit [4063], all of the burnt tool artefacts occur in a small handful of Trench 2 Middle Iron Age pits in the centre of the site, in the area underneath the later villa. Their occurrence seems to coincide closely with that of the incidence of FAS across the site, a material that is only created in intense high temperature processes, like cremations, pottery or metalwork firing, or the burning of timber and daub buildings (Salter 2005). With one exception (a

Table 4.24 List of all burnt tool fragment by pit type (N.B. joining fragments from the same layer are counted as one item in this table).

Context type		No. of burnt tool fragments in pits & degree of burning				
Pit form	Pit no.	brown/black *c.* 200 °C	black *c.* 300 °C	grey/white *c.* 6–700 °C	white *c.* 700 °C	FAS incidence in no. of fills
bell	2104	2	.	4	2	1
bell	2123	.	.	.	4	2
bell	2177	.	1	.	.	.
bell	2178	.	.	.	3*	1
large bell	4063	.	.	.	1	.
barrel	2133	.	2	.	1*	.
barrel	2143	1	4	.	1	3

*part of same comb in 2 pits

sample in Middle Iron Age pit [2252], situated very near the pit group under discussion) the FAS only occurs in the Middle Iron Age pit group featured in Table 4.24. All seven of these pits also contained sizeable quantities of charcoal in their fills, two of them, in pits [2178, 2143], contexts (2229, 2250), contained the only examples of re-fired pottery from the site, and all of them produced highly burnt/cremated un-worked animal bone. Three other pits [2093, 2189, 2242] in Trench 2 and nine pits in Trench 5 also produced fragments of highly burnt un-worked animal bone, but they did not contain any burnt artefacts.

It has been shown that for burnt animal bone in archaeological deposits to be reduced to the calcined grey-white and fully white stage seen in many of these burnt tools, very high temperatures of 600 degrees and above would need to have been reached (Nicholson 1993). Such intensely-burnt artefacts are more commonly associated with human cremations, but these pits, though featuring the occasional piece of cremated human skull, do not contain whole human cremations. It seems that some form of deliberate deposition, involving the burning of domestic bone tools and other types of material, was taking place within the hillfort. That some kind of selective deposition was being carried out is particularly supported by the case of comb SF 520 (Fig. 4.31) seven joining fragments of which were dispersed between two separate fills in pit [2178] and another in the fill of a completely separate pit [2133] some five metres away. This practise of burning bone tools and depositing them with a range of other burnt material seems to be unusual within Iron Age hillforts and settlement sites, unless the presence of burnt tools and their association with a range of other burnt material is not highlighted in any of the individual specialist reports.

Table 4.24 also shows that the degree of burning is generally higher in the tools found in the three smaller bell-shaped pits [2104, 2123, 2178] than in the larger barrel-shaped pits or the large bell-shaped pit in Trench 4. It may be no coincidence that it is also these 3 pits that show the most extensive and unusual range of associated metal and ceramic small finds (see Chapter Six for further discussion on deposition within these pits). The burnt worked bone assemblage consists of all four bone comb finds, four basketry points, one needle, and one tally, but the bulk is made up of unidentified ovicaprid long bone tools with the working end missing. Most of these were probably also tools connected with activities like cloth production, basket-making and hide dressing.

A catalogue of these artefacts is provided on the Project Website.

Items of personal adornment

Of the three Roman hair pins in this category, two are Crummy's Type 6 Late Roman type in context (2022) (Crummy 1983). The third example (SF 608, 178, 186 and 1343, Fig. 4.30) has an unusual three-cornered decorative head which is not closely dateable and looks rather amateurish. This may fit in with the evidence of unfinished pins from the site (see the Bone-Working Evidence section below), suggesting small-scale domestic bone pin production in the Roman period. Though bone hairpins are not in themselves expensive or high-status objects, their presence does at least suggest women of some social standing lived at Alfred's Castle. Though two of the hairpins come from a possible Early Medieval layer, they are not a Saxon type and must represent residual Roman material in these contexts. The only other item of bone jewellery from the site is the pig/boar tooth pendant (SF 608, Fig. 4.30). Drilled animal canines made into pendants are found on many Iron Age and Roman sites, such as Gussage All Saints (Wainwright 1979), and they may have functioned as amulets as well as being decorative.

A catalogue of these artefacts is found on the Project Website.

Needles

Fig. 4.30, SF 444, 515, 525, 529, 594, 1435, 651

There are eight needles in the assemblage, four from Middle Iron Age pits [2178, 2232 and 5257], and four from Roman and post-Roman layers in the villa area (2006), (2015), (3521) and (16000). Three of the needles are of the double-headed type seen at other Iron Age sites like Maiden Castle and Gravelly Guy (Wheeler 1943; and Lambrick and Allen 2004). The unusual and impossible shape of needle SF 515, from pit [2232] may have had a ritual or symbolic function rather than a practical one.

Long-handled combs

The exact function of long-handled bone combs of the type found at Alfred's Castle and many other Iron Age British sites has long been in dispute and their original definition as 'weaving combs' needs some refining. Tuohy has done a comprehensive study on the large assemblages of Iron Age bone combs from Glastonbury and Meare, and has made a particular study of the wear on the teeth and the position of any breaks (Tuohy 2001). Her conclusion is that the most common use for these combs is not for beating up the weft on warp-weighted looms, or for the less favoured options of skin-cleaning (Cunnington 1923) or weft beating on baskets, but that these combs were used specifically in the making of narrow braids and webbing, or alternatively for the narrow starting borders on warp-weighted looms.

The five combs finds from Alfred's Castle are too small a sample and either too fragmentary or burnt to test this hypothesis properly, but it does seem a highly plausible explanation of their use. One comb from Alfred's Castle (SF 537, Fig. 4.31) has some very puzzling wear patterns consisting of dozens of fine deep transverse cuts across the entire front face of the handle. This fits none of the known wear patterns for long-handled combs and it may be that there was some kind of secondary re-use of this tool which caused the eccentric wear. Cartwright's examination of this object under a scanning electron microscope (see section 4.14 below) revealed a network of cuts of different depths, probably made at different times. Another unusual example was the fully burnt or cremated comb (SF 520, Fig. 4.31) that had split into a number of joining pieces and was distributed between two layers in two different pits [2133 and 2178]. The high temperature had cracked and split the antler comb along curved breaks, which initially looked like they had been carved into these curved shapes (see Fig. 4.31 for how the pieces fit together). Presumably this occurred due to the

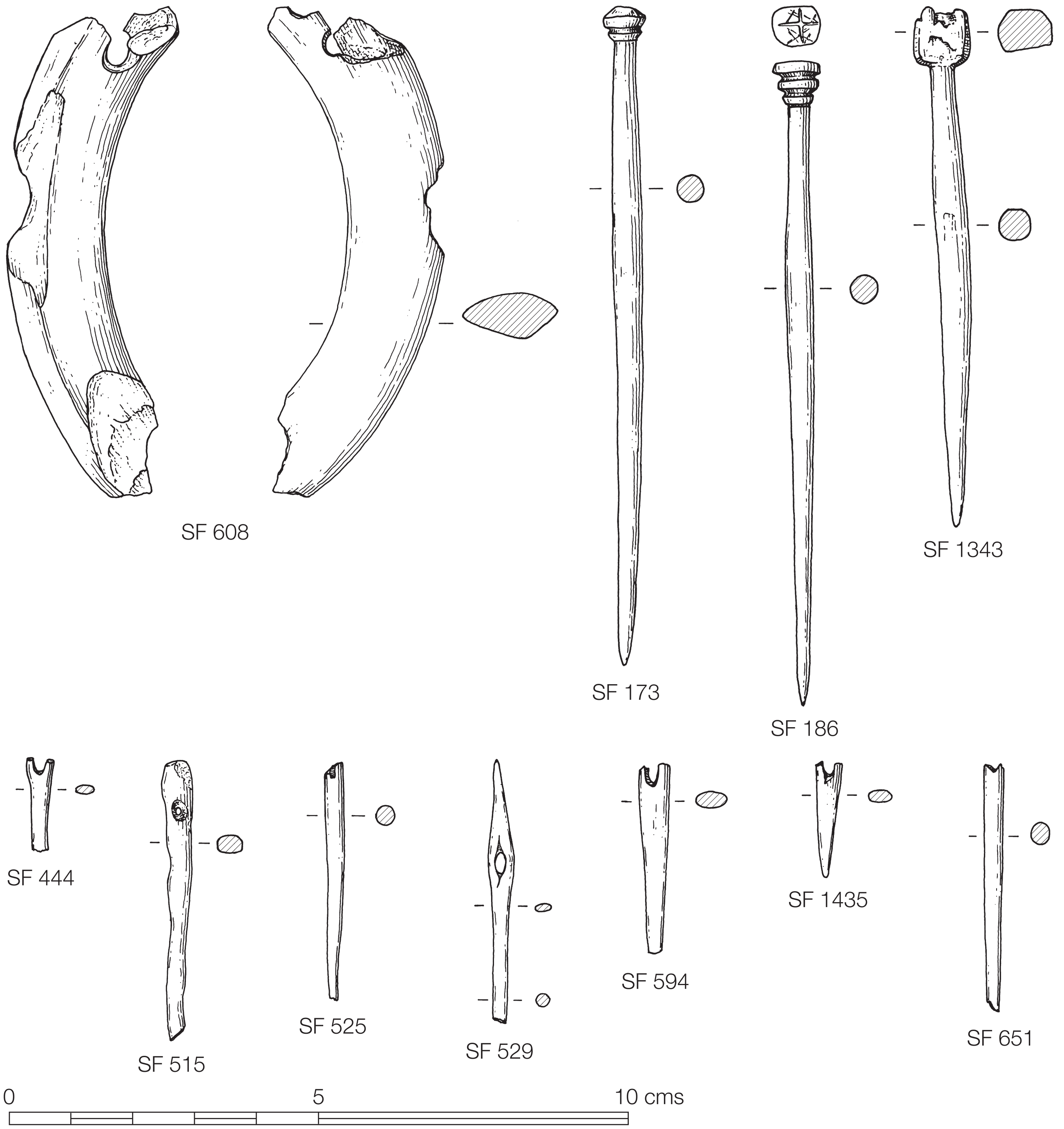

Fig. 4.30 Worked bone objects (items of personal adornment and sewing needles), all at 1:1 scale.

weakening of the bone structure along the natural curved line of tine growth.

There are only five examples of bone comb finds from the site (some finds are made up of one or more joining fragments), all are from potentially Middle Iron Age pits in Trench 2 [2123, 2133, 2143, 2177 and 2178], and all are lacking any decoration. The evidence from other Iron Age sites like Maiden Castle and Gussage All Saints, suggests that decorated bone combs seem to be more common in the Middle Iron Age than the Early Iron Age, but this does not seem to occur at Alfred's Castle. It is possible however that the combs were of some antiquity when buried in the pits. Of the three comb butt-ends represented in the assemblage, one has an unusual concave or dished head, another seems to have a simple integrated rounded head, and the third has an ovoid enlarged head. None display the squared butt-ends found commonly at Danebury. It may be worth noting that at Danebury, the ovoid and integrated butt-end forms found at Alfred's Castle are very rare and only found in the two earliest phases of the hillfort (Cunliffe 1984). They are however the two most predominant comb butt-end types at Meare Lake-village (Bulleid and Grey 1948). All of the comb fragments found at Alfred's Castle are burnt, and some dispersed between more than one pit (see the Depositional Practises section above).

A catalogue of these artefacts is found on the Project Website.

Awls/gouges/pegs

Fig. 4.31, SF 20, 25, 588, 473, 593, 788 and 1443.

The bone points found at the site fall into four categories: the three types listed in this section, and a fourth type identified in this report as 'basketry points'. Six awls were found, one from an Iron Age deposit and five from the Roman

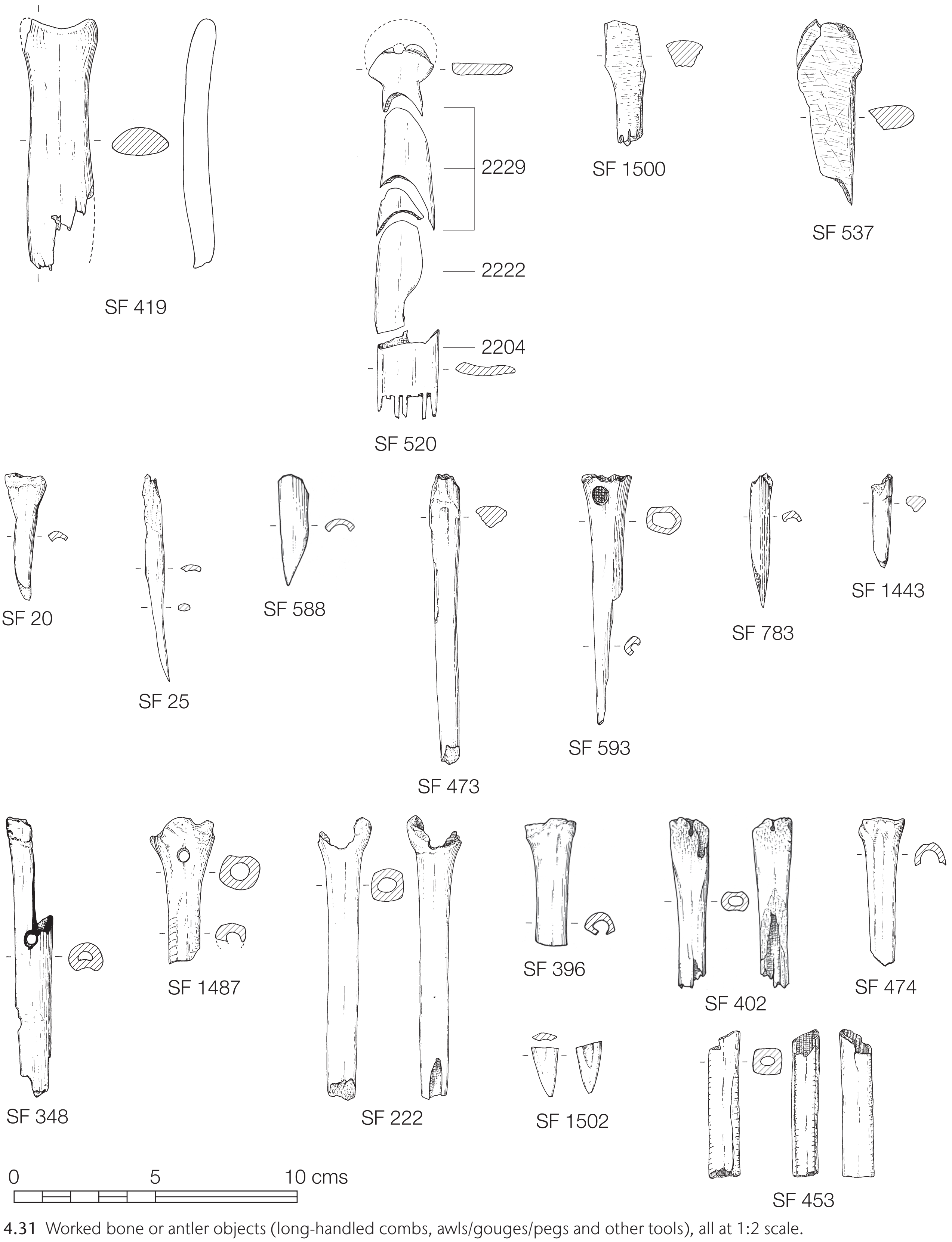

Fig. 4.31 Worked bone or antler objects (long-handled combs, awls/gouges/pegs and other tools), all at 1:2 scale.

and modern layers. These fine awls were probably used in leather-working and the crudely-cut pointed gouges or pegs used for a variety of simple domestic functions. The fourth category of bone 'point' with flat tapering tips is dealt with in the following section, '*Tools made from ovicaprid longbones*'. Even where their points are lost, the flat shape of the back is so distinctive and so different from awls and gouges that their place in this fourth group of '*basketry points*' is fairly secure.

A catalogue of these artefacts is found on the Project Website.

Tools made from ovicaprid longbones
Figs 4.31 and 4.32

There are twenty-five objects in this eclectic group, twelve of which are burnt. The bulk of this group is made up either of flat points (defined below as 'basketry' points) or of shafts lacking one or both ends, but showing polish and/or friction or wear groves. The remaining objects are either perforated ovicaprid shafts representing handles of some kind of tool or a single centrally perforated bobbin and single notched 'tally'.

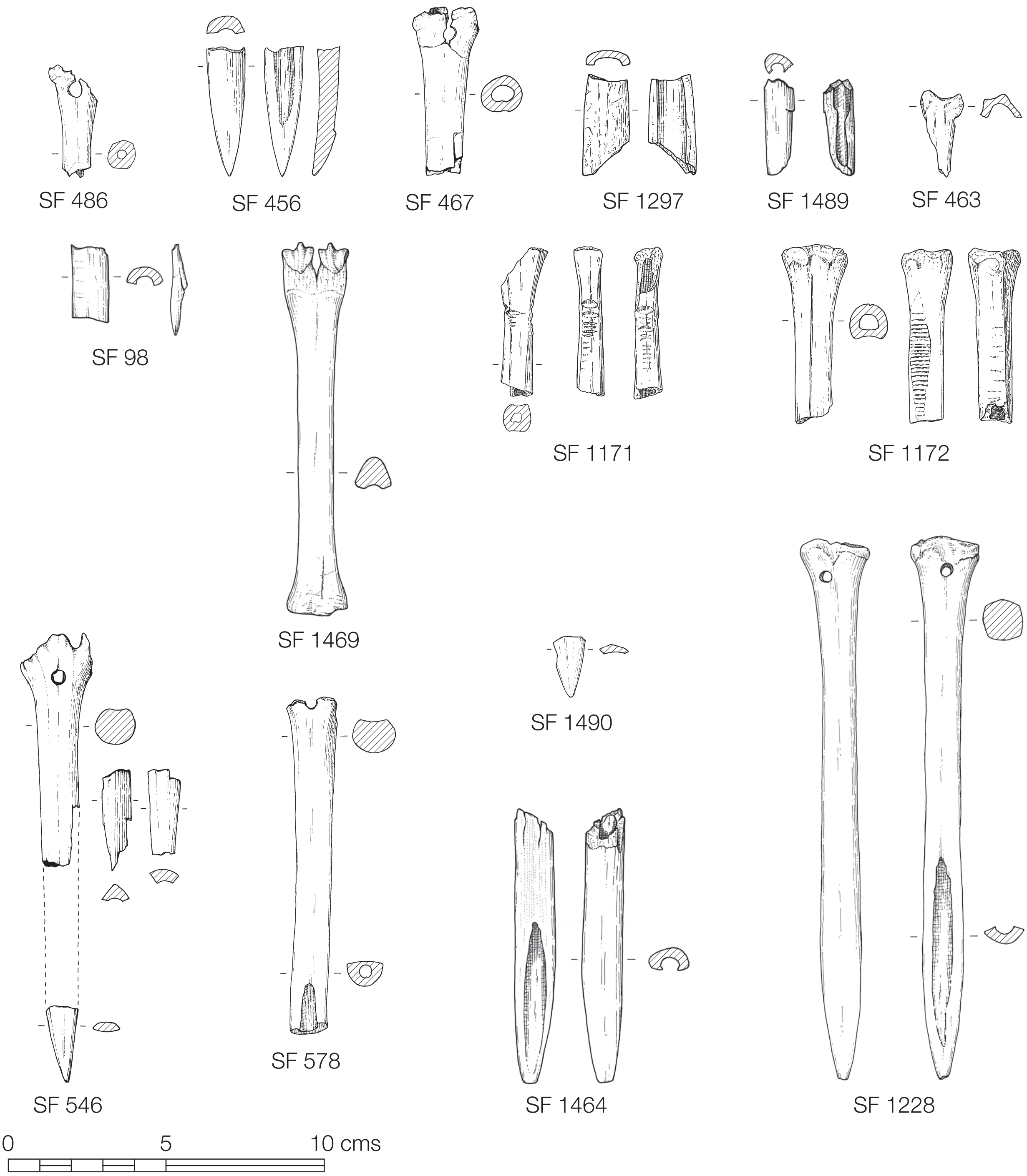

Fig. 4.32 Worked bone or antler objects (craft tools for cloth-making and basketry), all at 1:2 scale.

The assemblage includes ten examples of flat points with smoothly widening and rounded tips of flat-oval cross-section of a very different shape than the sharp 'perforating' tip found on the awls and gouges. A complete example of one of these flat points can be seen in SF 1228 from [5257] (Fig. 4.32). Such objects are widely found on prehistoric, Roman, and also Early Medieval sites in Europe. At Alfred's Castle seven of these objects came from Iron Age pits, but two were also found in Roman and post-Roman layers (2085, 4044 and 5251), supporting evidence from other sites that this tool type was used in different periods. At Danebury the 'gouges' were grouped into three classes and the Danebury 'Class 1' category has sixteen examples of these particular flat points, which are listed as possible pin-beaters (Cunliffe 1984, 387). Becker's analysis on a large assemblage of different types of bone points from a Slavic fortified settlement of the Early Medieval period, differentiated between large pegs, leather perforators, and a tool called a 'basketry pin', whose shape perfectly matches these flat points as found at Alfred's Castle and elsewhere.

Becker (2001) proposes that the flat and graduated tip shape of the latter tool would create slits rather than holes, perfect for threading through the binding material needed to secure one coil to another. She observed that the polish and wear on these tips suggests use on silica-rich plant material such as the fibrous reeds or other plant matter used for coiled baskets. A very similar flat tapering tool made out of plastic is sold for basket-making today. The wear and high polish on the undamaged tips of the Alfred's Castle flat points match those described in her study. Cartwright (section 4.14 below) concludes from her SEM examination of SF 1228 (Fig. 4.32) that the polish, oblique

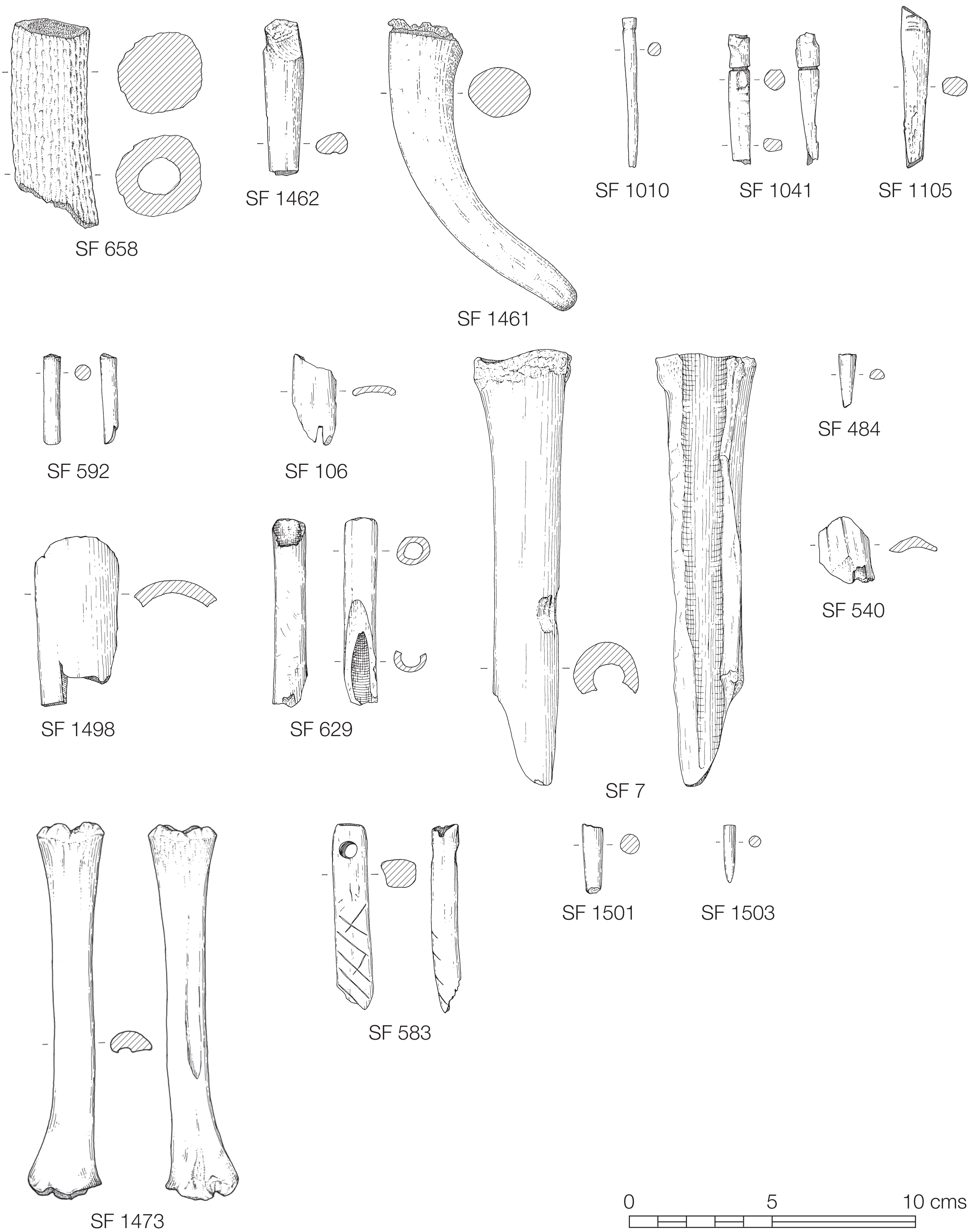

Fig. 4.33 Worked bone or antler objects (bone-working evidence and miscellaneous objects), all at 1:2 scale.

orientation, and combination of deep and shallow cuts are all consistent with the object being used as a basketry tool on woven plant fibres. In the Alfred's' Castle assemblage, wherever the 'handle' end of the basketry point is present, the handle is at the distal end, and there are perforations through both faces. This may tie in with a theory that such tools had wooden handles. It is also worth noting that in the assemblage of such points or 'gouges' at Maiden Castle, Wheeler observed that the majority of the 'gouges' with the butt at the distal end came from Iron Age 'A' contexts, the majority of those with butts at the proximal end came from Iron Age 'B' contexts, and that the same pattern had been observed at other Iron Age sites such as Swallowcliffe Down (Wheeler 1943, 304). The distal end is stronger and less spongy then the proximal end, so for practical reasons, the choice of the distal end for a 'handle' is logical. A number of the 'gouges' (which include the variant we are calling basketry points), found at both All Cannings Cross and Glastonbury (Cunnington 1923; Bulleid and Gray 1917), had the transverse perforations seen on the Alfred's Castle examples, interpreted by the original excavators as being attached to a wooden shaft by means of a pin through the perforations.

Some of the bone tools in this group which lack either their working ends or both ends, may represent more basketry points, but equally they may have been used in other craft practises. Some show a very high polish on the shaft and, where distal/proximal ends are present, most have perforations through one or both faces, either for suspension or for securing to a handle. The more complete examples with a terminal end present are listed in Table 4.23 as *'Perforated tool handles'*. Worked long bone shafts of unspecified species type and lacking both terminal and working ends are listed in the *'Miscellaneous'* category and do not appear in Table 4.23 as their function is unclear. Ten of the fourteen examples of these polished shafts have been burnt, so defining their function is even more problematic.

Two unburnt examples of polished ovicaprid metatarsals, both from the same Middle Iron Age pit (SF 1171 and 1172 in pit [4063], Fig. 4.32), show a particularly high degree of polish, plus some very deep friction grooves on either side of the shaft. Cartwright's SEM examination of SF 1172 reveals how extremely worn and polished the wear grooves are on this tool (section 4.14 below), and that the grooves are accompanied by finer radial wear marks and some later parallel cuts. She suggests the high degree of polish both on the surface and inside the worn grooves may be due to regular contact with silica-rich plant fibres, rather than wool. Similar closely spaced transverse grooves set at either end of the shaft was noted on an example from Danebury, and a function in textile production was suggested, either as a bobbin or an insert between loom warp threads (Cunliffe, 1984, 392). Examples of this kind of wear can also be seen in the utilised long bones from the large Iron Age settlement site at Gravelly Guy, Oxfordshire (Lambrick and Allen 2004), and in worked bone assemblages from many other British sites. There are various possible suggestions for the function of such bone shafts, which include the 'leaze' rod insert in upright looms and a stretcher tool for working leather thongs (Lambrick and Allen 2004, 339). It is also possible that bone shafts like this functioned as a small shed or heddle on a short braid-making loom.

There are a few remaining objects with other less definable functions, which include the potential bobbin or child's spinner toy from a Roman layer in the villa (SF 348, Fig. 4.31), the notched 'tally' from Early Iron Age pit [2104] (SF 453, Fig. 4.31), a potential decorated handle from Iron Age ditch [6304] (SF 583, Fig. 4.33), and lastly various examples of re-using bone debris, presumably for burnishing, and scraping and other domestic activities.

A catalogue of these artefacts is found on the Project Website.

Bone-working evidence

This is a very small assemblage and all of the objects come from either Roman layers within the villa or topsoil layers in the vicinity of the villa. There is no direct evidence for bone-working on site during the Iron Age, though it seems unlikely that some of the simpler bone tools commonly used and found on Iron Age settlements were not 'home-made' on this site. The sawn antler tines and the three examples of unfinished hair-pins with the shape simply roughed out, all testify to some limited bone pin production in the Roman period.

A catalogue of these artefacts is found on the Project Website.

4.14 The scanning electron microscope documentation of three worked Middle Iron Age bone and antler artefacts

Caroline Cartwright

4.14.1 Introduction

The following three Middle Iron Age worked bone and antler objects were submitted for examination and imaging using the scanning electron microscope in order to assist in the understanding of what their function might be, or how they might have been used:

1 Trench 2, context (2250) (fill of Middle Iron Age pit [2143]), Middle Iron Age, SF 537, possible antler textile comb (Fig. 4.31).
2 Trench 4, context (4077) (fill of Middle Iron Age pit [4063]), SF 1172, a bone tool or handle made from the proximal end of a grooved and highly polished sheep metacarpal bone (Fig. 4.32).
3 Trench 5, context (5596) (fill of Middle Iron Age pit [5257]), SF 1228, complete bone point, probably a basketry tool (Fig. 4.32).

See Section 4.13 above for detailed discussion of these objects.

4.14.2 Methods

Each object was placed in the Hitachi S-3700N variable pressure Scanning Electron Microscope (SEM) for examination. Being a variable pressure (VP) SEM, it was not necessary to coat the objects with a conducting material such as gold, carbon or platinum (which would have been required in a high vacuum SEM). Under conditions of VP, small amounts of air can be introduced into the chamber for optimal imaging and examination conditions; this can be seen on the image data bar as Pa (Pascal) pressure (see Fig. 4.34 for example). The higher the number (e.g. 60Pa), the more air has been introduced into the chamber. These three artefacts were examined in the VP-SEM with only small amounts of air in the chamber (30Pa). Other important information on the data bar of each SEM image (see Fig. 4.34 for example), include, from left to right, the accelerating voltage used (e.g. 10kV), the working distance between the upper surface of the object and the electron beam detector (e.g. 12.5 mm), the magnification of the screen (e.g. x45), the mode used, e.g. compositional (COMP) or three-dimensional (3D), and the scale bar which is either in microns (micrometres), frequently abbreviated to µm (or um), or in millimetres (mm), where a micron is 0.001 mm. All VP-SEM examination and imaging was done using the backscattered electron detector, abbreviated to BSE on the data bar, for example BSE3D describes an image taken in three-dimensional mode using the backscattered electron detector. By alternating COMP

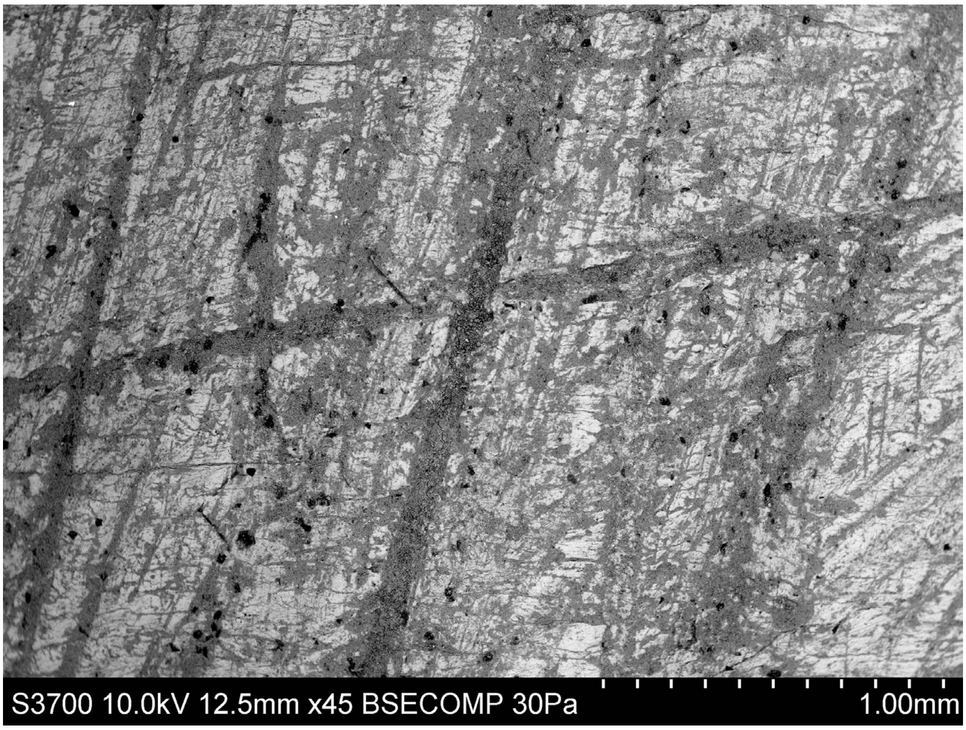

Fig. 4.34 Scanning electron microscope image of SF 537 showing a network of deeper cuts with an infilling of finer, shallower criss-cross cuts. (Image © Caroline R. Cartwright.)

and 3D modes using BSE, it was possible to maximize resolution of both the compositional information and surface topography of the objects, a method used with much success on other organic objects (Cartwright 2009; Cartwright and Meeks 2007). Using this method it was possible to characterize, through SEM imaging, different phases or 'events' of modification to the artefacts, such as grooving, polishing, scratching and cutting, as well as use-wear and damage.

4.14.3 Results and discussion

SF 537: a possible weaving comb (Trench 2, context (2250), fill of Middle Iron Age pit [2143])

This is a fragment of antler, described as possibly a textile comb. The VP-SEM examination revealed a number of interesting features. Figure 4.34 shows an axial and radial network of mostly broad and deep cuts or scratches, infilled with another criss-cross network of numerous fine scratches or cuts. Three further SEM images of this object showing the features about to be discussed can be seen on the Project Website. Towards the lower whilst the deeper cuts are still in a network arrangement, many are considerably narrower, and are not strictly arranged in an axial/radial orientation; some are oblique. The infill of fine criss-cross cuts is still clearly visible. In other areas of this object there is a noticeable difference between the width, orientation and depth of the deeper and shallower cuts, suggesting that these were possibly made at different times or as a result of varying modes of use, storage or method of being

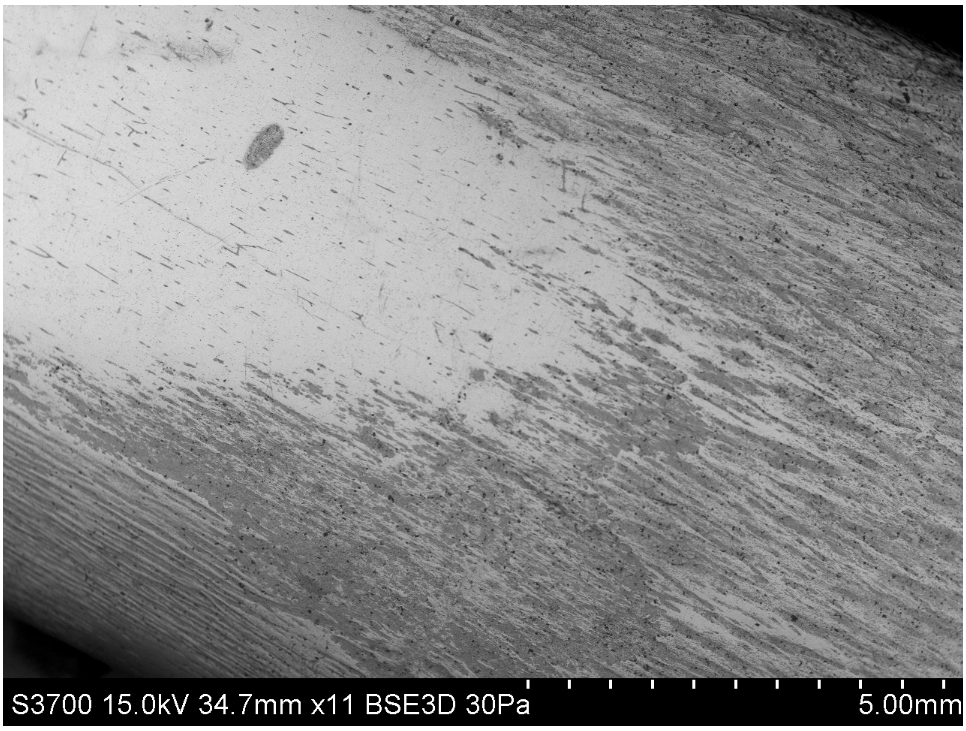

Fig. 4.35 Scanning electron microscope image of SF 1172 showing the junction of the polished area (that appears white) with the less polished parts which continue lengthways along the bone surface, gradually merging with the rough natural bone surface which shows up light grey to darker grey (Image © Caroline R. Cartwright).

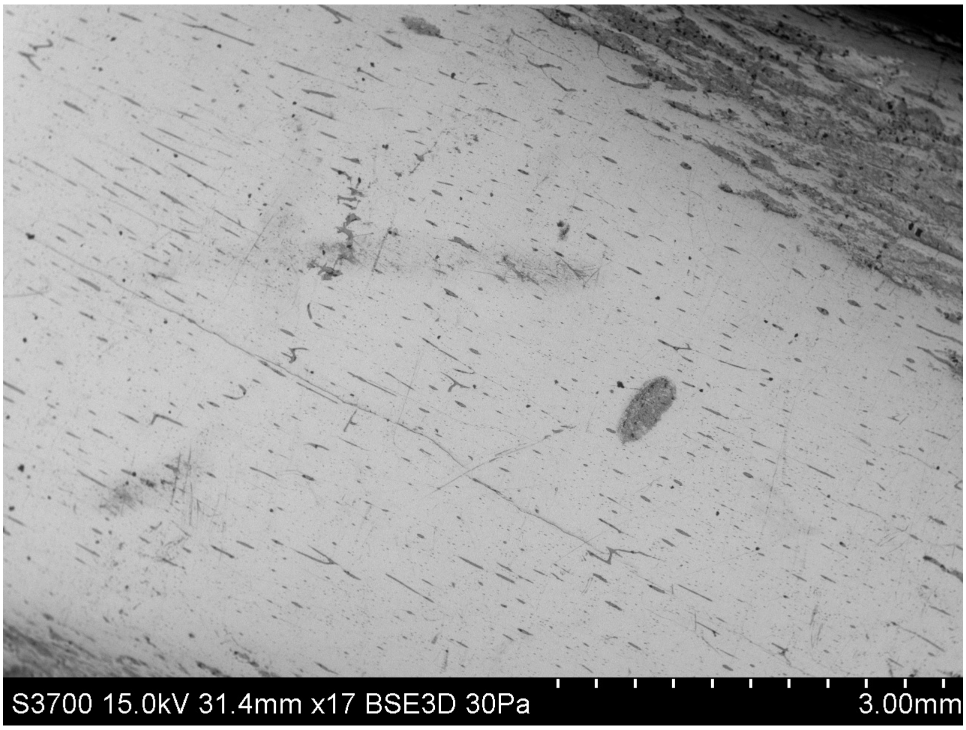

Fig. 4.36 Scanning electron microscope image of SF 1172 showing the centre of the polish and in areas where the natural surface of the bone is less regular (such as the top right-hand corner), how the polish occurs only on the most prominent parts. (Image © Caroline R. Cartwright.)

carried. At the upper edge, there are several distinct grooves running parallel to one another, but at right angles to, and cutting into, the main networks of scratches.

It is possible to envisage this object functioning as a comb used in textile processing. Experimental replication might be useful in narrowing down this object's function and history of use.

SF 1172: worked bone tool or handle made from a sheep metacarpal (Trench 4, context (4077), fill of Middle Iron Age pit [4063])

This is a remarkable piece, not only on account of its intricate, regular grooving, but also because of the areas of extremely high polish created through intense use of the tool. Figure 4.35 shows the junction of the polished area with the less polished surface of the bone. The high polish shows up on the VP-SEM image as white (top and centre left) and it is possible to see the polish continuing lengthways along the bone surface, gradually merging with the rough natural bone surface which appears light to darker grey on the image. Figure 4.36 shows the centre of the polish, demonstrating clearly that the action or usage involved in its creation must have been regular, sustained and spatially restricted. Again, in this VP-SEM image, towards the top right-hand corner, it is clear that in areas where the natural surface of the bone is less regular, the polish occurs only on the most prominent parts. The trend of polish is predominantly along the axial plane of the bone, i.e. lengthways,

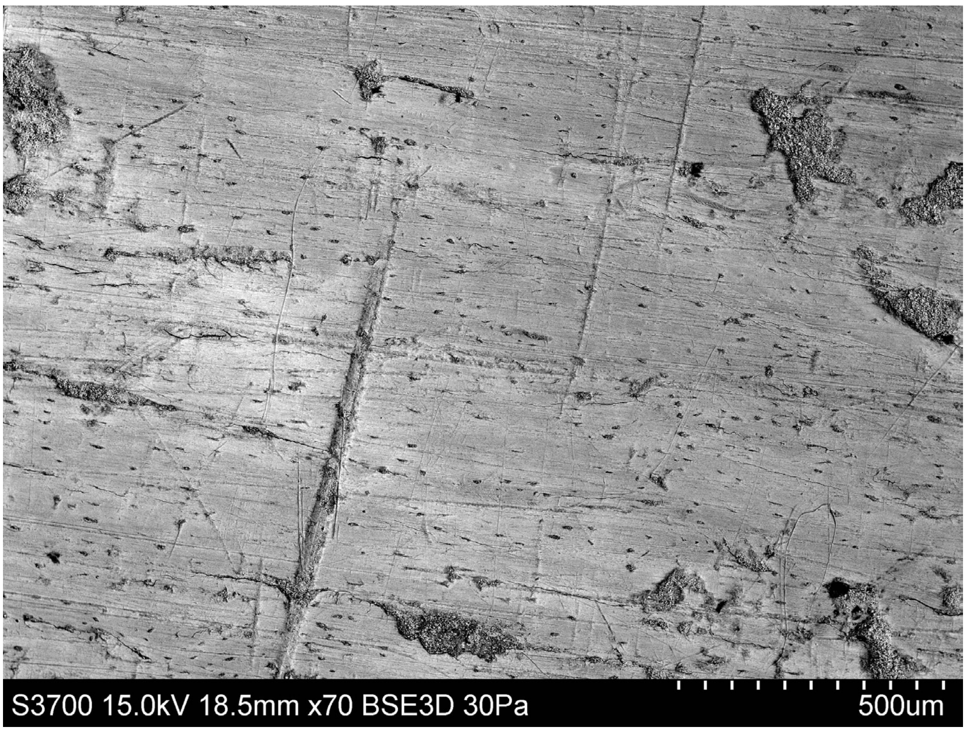

Fig. 4.37 Scanning electron microscope image of SF 1228 showing predominantly axial polish (left to right in the image), but also both deep and shallow scars at right or oblique angles to the polished surface, cutting into it, as well as random and irregular areas of subsequent damage (now infilled with dirt). (Image © Caroline R. Cartwright).

although Figure 4.36 shows that there is some later scuffing and scratching over and cutting into the polished surface. The SEM images to match the following discussion can be found on the Project Website. The grooves, also highly polished, were extremely regular and worn. Although the polish across and within the groves may seem to be axially orientated, there are clear sets of radially oriented use-wear marks in the shallow depressions in between the grooves also shows later more randomly orientated, superficial scratching which cuts into the polished surfaces of the grooves and channels between the grooves. A set of later very fine, regular parallel cuts on the left-hand side of the image, are visible but their cause is unknown. At higher magnification, it is clear how these cuts differ from the regular, radially-orientated markings in the shallow depressions between the grooves. Additional SEM images of this object are available on the Project Website.

The exact use and function of SF 1172, despite this extensive VP-SEM documentation and imaging, remains somewhat elusive although this study has provided a detailed picture of the different types and super-positioning of polish, use-wear and damage. It is worthy of note that, as plant fibres frequently contain silica and calcium oxalate crystals, a function associated with textile production, using plant fibres rather than wool, might be feasible.

SF 1228: a complete bone point, probably a basketry tool (Trench 5, context (5596), fill of Middle Iron Age pit [5257])

In the VP-SEM this tool, too, shows polish produced by use. The figure here, 4.37, as well as additional images on the Project Website, show predominantly axial polish (left to right in the images), but there are both deep and shallow scars at right or oblique angles to the polished surface, cutting into it, as well as random and irregular areas of subsequent damage (now infilled with dirt).

The polish, shape of the tool, varied orientation and the diversity of use-wear traces and subsequent damage lend support to it being a basketry tool.

4.14.4 Conclusions

This detailed and intensive VP-SEM study of three Middle Iron Age worked bone and antler tools (i.e. a possible antler comb, a highly polished and grooved sheep metacarpal bone and a bone point or gouge, probably a basketry tool) has provided a portfolio of documentation regarding the features of the polish, the creation of grooves, use-wear and damage; these categories often in distinct super-positioning. In combination with other evidence, this will assist in elucidating the uses, functions and history of these tools within the framework of Middle Iron Age habitation of the site.