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**Archaeological Excavations
at Norwich Road, Kilverstone, Norfolk**

**Volume 2
Specialist Reports and Bibliography**

**Cambridge Archaeological Unit
University of Cambridge**

Report No. 463
February 2002

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1. PREHISTORIC POTTERY

Sarah Percival

Introduction

Excavations at Kilverstone produced 1198 sherds of prehistoric pottery weighing 7681g. The assemblage consisted of Neolithic, Bronze Age and Iron Age pottery, as well as undiagnostic prehistoric sherds, which could not be closely dated.

Period	Pottery type	Quantity	Weight (g)
Neolithic	plain bowl	597	3503
	Mildenhall	17	104
	Fengate	5	102
	other	143	473
<i>total</i>		<i>762</i>	<i>4182</i>
Later Neolithic/ early Bronze Age	Beaker	19	63
	Grooved ware	1	6
	other	15	19
<i>total</i>		<i>35</i>	<i>88</i>
Early to mid Bronze Age	Collared Urn	153	432
	urn	16	58
	Cordoned urn	4	56
	other	20	77
<i>total</i>		<i>193</i>	<i>623</i>
Iron Age		111	1548
Later Iron Age/early Roman		81	1227
undatable prehistoric		16	13
<i>Grand total</i>		<i>1198</i>	<i>7681</i>

Table 1: Quantity and weight of pottery by Ceramic Period

Methodology

The assemblage was analysed using the pottery recording system described in the Norfolk Archaeological Unit Pottery Recording Manual and in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 1992). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also

noted. The pottery and archive are curated by Cambridge Archaeological Unit, University of Cambridge.

Neolithic Pottery

An assemblage of 762 Neolithic sherds weighing 4182g was recovered from fifty-nine excavated features and from surface collection. The sherds were small but mostly in good condition.

A mixture of styles is present representing forms from earlier to middle Neolithic. The majority of the assemblage is plain, carinated bowl, the typical pottery of East Anglia in the earlier to mid Neolithic, a form which appears to date to after 3700 BC (Herne 1988, 14). A small quantity of Mildenhall ware, an eastern variant of the earlier Neolithic southern decorated bowl tradition, was also present in small quantities. Mildenhall ware also dates to the early 4th to early 3rd millennia BC, 3900-2900BC (Healy 1996, 113). Five sherds of Fengate ware were recovered from within a pit that also contained plain carinated bowl (pit 113). Fengate ware is placed within the later Neolithic impressed tradition and has a long currency, dating to the late 4th to early 3rd millennia BC (Healy 1996, 113).

Seven fabrics were identified (see Appendix I below for full descriptions). The carinated bowl and Mildenhall wares are characterised by fabrics that contain burnt flint, either alone (fabrics F1 and F2) or in combination with varying quantities of quartz-sand (fabric F3, Q2). The fabrics display characteristic dark grey, orange brown or black colouring and were fired to a hard finish and compare well with those of Earlier Neolithic pottery from other sites in Norfolk, in particular those from Broome Heath, Ditchingham (Wainwright 1972, 23) and Spong Hill, North Elmham (Healy 1988 71).

Fengate ware occurs only in grog rich fabrics (879g), with grog as either the sole temper present (G5) or combined with burnt flint, (G2) or quartz-sand (G4). Occasional sherds of grog tempered fabrics displayed sub-angular voids, where grog had been leached from the matrix of the fabric. This produced a vacuous corky texture observed in small quantities on contemporary sites such as Spong Hill, North Elmham, Norfolk (Healy 1988, 71).

The Earlier Neolithic assemblage is predominantly undecorated, open bowl forms with simple out-turned or rolled rims, and round bases. Eight sherds exhibited distinct changes of angle suggesting carinated bowls with well-defined shoulder ledges and these, along with the rolled rims suggest a close parallel with the assemblage from Broome Heath, Ditchingham (Wainwright 1972, Fig.15 P1). The vessels are finely finished, often with a burnished or closed surface, most have thin walls where the thickness of the fabric does not exceed 8mm. All the bowls are undecorated. The vessels appeared to be coil built as many sherds displayed coil fractures. It is possible that 'thumb pots' formed from a single lump of clay were also produced. This limited range of production techniques has been noted within Earlier Neolithic assemblages such as Windmill Hill, Wiltshire (Smith 1965).

The Fengate ware has externally thickened or expanded rims and is decorated with a combination of cord and fingernail impressions, with particular emphasis on decoration to the internal rim bevel and collar.

Mildenhall ware features distinctive incised channelling to form geometric or herringbone patterns. The decoration is restricted to the rim top and sides and the body of the vessel below the shoulder.

The rims were classified following the typology defined by Smith (Smith 1965) as shown below:

Form	Rim type	Description	Quantity	Weight (g)
Carinated bowl	R1	simple	2	4
	R1a	simple, rounded	1	6
	R2	out-turned or rolled	44	472
	R3	externally thickened	18	362
Fengate	R3	externally thickened	2	18
	R4	expanded	1	24
Mildenhall	R2		2	4
	R3		6	68
			78	1030

The bulk of the Earlier Neolithic assemblage was recovered from pits. Ninety-five percent (729 sherds) of this assemblage came from fifty-two pits, sixteen of which contained over twenty sherds of pottery along with quantities of burnt and struck flint. The remainder of the sherds were found in small quantities within the fills of six ditches and from buried soil, spoil heap finds or cleaning. The deposition of pottery and flint artefacts within pits rapidly "backfilled with dark organic material" is highly characteristic of Earlier Neolithic sites in the East Anglian region (Healy 1995 173). On larger sites grouping of pits into chronologically and stylistically distinct clusters has been noted (Healy 1988 64-9). Future analysis of the assemblage should include a detailed study of the deposition of the pottery within the pit groups to discover if separate episodes of depositional activity can be identified.

Recommendations

The Earlier Neolithic pottery from Kilverstone provides a noteworthy addition to the small number of contemporary sites found in Norfolk and East Anglia.

- Detailed analysis of pottery from selected pits, to compare number of vessels, decoration and fabric types present.
- Detailed comparison with contemporary assemblages from the region, the sites of Broome Heath, Ditchingham, Spong Hill, North Elmham and Middle Harling Norfolk are of particular interest.
- To select *c.* twelve illustrated sherds and provide a full catalogue description.

Later Neolithic/Early Bronze Age

Thirty-five later Neolithic/early Bronze Age sherds weighing 88g were recovered from four excavated features and from surface collection. The sherds were in a good to moderate state of preservation.

Nineteen Beaker sherds were identified (63g). The Beaker was characterised by the presence of fingernail-impressed rustication or impressed or incised decoration (four sherds) and by distinctive grog tempered fabrics (G1, G3). In contrast to the pottery of the earlier to mid Neolithic the later Neolithic/early Bronze Age pottery was mostly recovered from buried soils and other deposits and not from pit fills. This suggests that the Beaker may have been discarded in surface deposits similar to those identified on Fen Edge settlement sites such as Hockwold cum Wilton (Bamford 1982). The mix of rusticated and incised impressed styles at Kilverstone also suggests that the assemblage was domestic in nature and probably dates to the later period of Beaker currency, which spans 2600-1800BC. (Kinnes *et al.* 1992).

A single sherd of *possible* Grooved Ware was found within the fill of a pit (1436). The sherd features shallow incised grooves and is made of quartz-sand tempered fabric.

Recommendations

No further work is required on the later Neolithic/earlier Bronze Age sherds.

Early to mid Bronze Age

One hundred and ninety-three sherds (623g) were identified as being of early to mid Bronze Age date. The bulk of the assemblage comprises three small, collared urns found within the fills of two cremation pits (F1424 and F1426, Area C). The urns are of highly grog-tempered fabrics, two are decorated with comb-impressions to the collar and one is plain. The urns appear to be of the type often placed as accessory vessels and are similar to examples from Bixley, Norfolk (Ashwin and Bates 2000, Fig 35) which date to the earlier second millennium BC.

Four sherds of a possible cordoned urn were found within pit F190, Area C. The vessel was incomplete and was identified by the grog rich fabric and distinctive applied cordon. This type of vessel also dates to the earlier second millennium BC, perhaps around 1925-1400 (Needham 1996).

Twenty further sherds were identified as being from possible Bronze Age urns by the presence of large chunks of grog within their fabric and the relative thickness of the vessel walls.

Recommendations

- to provide detailed comparison with contemporary assemblages from Norwich Southern Bypass and other sites in the region.
- To select *c.* six illustrated sherds and provide a full catalogue description.

Iron Age

One hundred and ninety-one sherds (2775g) of Iron Age pottery were found; of these eighty-one were wheel-made forms or others typical of the latest Iron Age/early Roman period, whilst the majority were hand-made, of mid-late Iron Age date (111 sherds, 1548g). It is possible that features containing only hand-made pottery were earlier than those containing both hand- and wheel-made forms. However, it should be noted that there is a considerable degree of overlap between the two styles, and that these formal differences are not necessarily indicative of temporal ones.

The 'mid-late Iron Age' assemblage is characterised by hand-made jar forms with flat, everted rims and slack shoulders in dense quartz-sand tempered fabrics. A small proportion of flint-tempered sherds are also present (7%, 13 sherds). The presence of flint tempered sherds within assemblages from Norfolk does not necessarily indicate an early Iron Age date for the pottery as both flint and sand tempered fabrics continued to be used up to the introduction of wheel-made forms (Percival 1999 179). Few of the sherds are decorated, though a number of quartz-sand tempered sherds are burnished (51 sherds) and some are smoothed (two sherds). Scoring is present (two sherds), though the sherds are not Scored Ware of the type found in the East Midlands from c. 600BC onwards (Elsdon 1993, 2). The majority of the mid-late Iron Age pottery was recovered from pits (83 sherds 1162g) with small quantities being recovered from ditches (22 sherds 330g), postholes (3 sherds 37g) and as surface finds (2 sherds, 11g). The pit assemblages did not appear to be significant with only two pits (495 and 126) containing over ten sherds.

The assemblage appears to be typical of pottery of the mid-late Iron Age from Norfolk (Percival 1999, 177-9) and compares well to assemblages from contemporary settlement sites such as Park Farm, Silfield (Percival 1996). The pottery is also similar to the Phase I assemblage from Fison Way, Thetford, situated close by and future work should include a detailed comparison between the two assemblages.

The 'latest Iron Age' pottery spans the transitional period during the introduction of Romanised forms, in particular of wheel-made vessels in the late first century AD (Lyons 2000, 221). Wheel-made sherds made up 50% (41 sherds) of the total assemblage, the remainder being hand-made fabrics which continued in use alongside the more Romanised forms.

The assemblage contains a greatly expanded range of forms including narrow, medium and wide-mouthed jars, thick-walled storage jars, lidded vessels for storing and serving food and a finely made copy of a 'Belgic' Beaker. A greater range of fabrics is also present including wheel-made micaceous sandy greyware brought to the site from production sites in the Waveney Valley (fabric Q5). This fabric made-up the bulk of the assemblage which is consistent with other Roman sites in Norfolk, where micaceous fabrics constitute the most commonly used fabric for utilitarian wares from the late first to fourth centuries AD. (Lyons 2000 217). Other fabrics present include organic rich fabric (O1), grog tempered fabric (G6) and a fabric containing fossil shell (S1). This assemblage is comparable to phase II, III at Fison Way as well as other transitional sites such as Quidney Farm, Saham Toney, Norfolk (Lyons 2000, 211-222).

Recommendations

- To provide detailed comparison with contemporary assemblages from Norfolk, in particular to Fison Way, Thetford and provide parallels for wheel-made vessels and handmade jar forms.
- To select c. fifteen illustrated sherds and provide a full catalogue description.

Fabric Descriptions

<i>Pottery date</i>	<i>Fabric code</i>	<i>Description</i>	<i>Quantity</i>	<i>Weight (g)</i>
Neolithic	F1	Sparse medium angular flint; smooth hard fired dark grey brown.	117	494
	F2	Common, coarse angular flint. Hard fired. Pale buff brown to orange	308	2266
	F3	Common medium sub-rounded burnt white flint, common quartz sand. Hard fired. Dark brown to grey black.	72	559
	Q2	Common, rounded quartz-sand, sparse small angular flint. Hard fired. Dark brown to orange.	22	72
	G2	Common medium grog; sparse burnt white angular flint. Moderate hardness. Dark brown to orange.	206	619
	G4	Common medium grog; common quartz sand. Moderate hardness. Dark brown to orange.	11	11
	G5	Common medium grog; Moderate hardness. Dark brown to orange.	11	130
Bronze Age	G1	Common medium grog; Moderate hardness. Buff brown to orange.	84	204
	G3	Common medium grog; sparse angular flint. Moderate hardness. Buff brown to orange.	142	491
Iron Age	F4	Common, coarse angular burnt white flint. Hard fired. Dark brown to buff.	7	133
	F5	Common, medium to small angular burnt white	6	167

		flint. Hard fired. Dark brown to buff.		
	Q1	Common rounded quartz sand; sparse small angular fresh flint. Some organic, perhaps chopped grass? Hard fired, Dark brown orange ext., Grey brown int.	66	706
	Q3	Common quartz-sand, moderate mica. Hard fired. Dense texture. Burnished ext. Dark grey brown to black.	64	854
	Q4	Common quartz-sand, moderate mica. Very hard fired. Dense texture. Thin walls. Burnished ext. Dark grey to black.	2	4
	Q5	Wheel made micaceous sandy grey ware type. Waveney Valley.	29	268
	Q6	Wheel made micaceous reduced ware.	5	69
	Q7	Hand made dense quartz sand, common mica sparse burnt flint. Hard fired. Dark grey brown throughout.	9	121
	Q8	Wheel-made, sandy oxidised ware.	4	61
	Q9	Wheel-made sandy reduced ware	2	46
	G6	Common grog, common, quartz-sand. Medium hard fired. Grey brown throughout	6	126
	O1	Common organic perhaps chopped grass? Common rounded quartz sand; sparse small angular fresh flint. Hard fired, Dark brown orange ext., Grey brown int.	3	70
	S1	Common, fossil shell, common, quartz-sand. Medium hard fired. Orange brown throughout.	4	188
	U	Undiagnostic. Quartz sand.	18	14
			1198	7673

2. ROMANO-BRITISH POTTERY

Gwladys Monteil

Introduction

A total of 5,776 Roman pottery sherds were spot-dated and assessed. The assemblage covered the entire Roman period, with the majority dating to the 2nd century. A few groups suggested a pre-Flavian phase of occupation, probably in continuity with the Iron Age; activity seemed to pick up in the Flavian period, with a clear intensification in the Flavian-Hadrianic and Antonine periods; it kept a steady pace until the beginning of the 3rd century; although the settlement still existed in the mid-late 3rd century and the 4th century, on the basis of the pottery evidence its activity significantly decreased.

For each context the pottery was sorted by a combination of fabric and form, then counted. All the figures are based on the number of sherds.

Condition and residuality

The assemblage is on the whole in good condition, with many medium to large sherds. Although several groups appear to have been affected by residuality, especially early Roman material found in later contexts and late Roman material found in Saxon contexts, contexts generally seem to be quite secure and homogenous.

Assemblage composition

Imports

A relatively small number of imports were identified. Apart from a possible early Central Gaulish colour-coated roughcast decorated beaker [2894], a Cologne colour-coated roughcast decorated beaker [1916] and one possible South Gaulish amphora fragment in [2424], all the imported pottery was Samian.

Most of the Samian was from Central Gaul (1.21% of the total number of Roman sherds, 58% of the total Samian sherds). Plain forms are in preponderance, with a very limited range of forms present: three types of dishes (Dragendorff 18/31, 31 and 31R) and one type of cup (Dragendorff 33). One of the Dragendorff 33 [1722] is stamped: SEVERI.O.F. Although this stamp was not listed by Stanfield and Simpson on that particular form (1958, pl 128), it does exist and refers to the work of SEVERUS from Lezoux whose work is dated after 160 AD. Two bowls (Dragendorff 37) from the Central Gaulish kilns were also identified. 35.5% of the Samian was from South Gaul (0.2 % of total number of Roman sherds). Two inkwells (Ritterling 13) have been identified [2794], [4041], one in good condition as well as a decorated Dragendorff 37 with two repair holes [1619]. A cup (Dragendorff 27) was also catalogued along with the base of an unidentified cup with an illiterate stamp [3512]: A A. AV.VI. The final origin for the Samian was East Gaul

(0.03% of the total Roman sherds, 6.5% of the Samian sherds); two forms were identified, a cup (Dragendorff 33) and a bowl (Dragendorff 37).

Romano-British Wares

Nene Valley wares

Not surprisingly, part of the assemblage (slightly less than 4% of the total number of sherds) was composed of Nene Valley products. Nene Valley Grey wares accounted for less than 1% of the total number of Roman sherds, while Nene Valley Colour coated wares constituted 1.7% and Nene Valley Cream Wares (including mortaria) represented 0.24 %. The range of Nene Valley forms was relatively limited, but covered the chronological evolution of the industry up to the 4th century AD.

The assemblage included colour-coated beakers with underslip barbotine decorations (a 'hunt cup' in [912]), with 'S' shaped barbotine decoration, rouletted and/or folded. The colour-coated dishes are mostly plain-rimmed or with triangular or flat-topped rims. A small number of dishes were Samian form imitations (Dragendorff 31 [1536]). The Nene Valley colour-coated group also included castor boxes [1910], [3446], [3933], flanged bowls, imitations of the Samian form Dragendorff 38, flagons and jugs. Some more unusual forms are also present like a beaded rim small cup with barbotine intersecting arc decoration (Perrin 1999, 249 - Fig. 64). The Nene Valley Grey Wares includes a flanged bowl. The Nene Valley Cream wares mainly include examples of the mortaria M22 and M25 (Perrin 1999) and a flagon with red-painted bands [3481].

Colchester wares

A small number of vessels come from Colchester (0.15 % of the total). Colour-coated beakers formed the largest part of this group with eight examples identified, including a folded and rouletted example [2226] and a cornice-type rim [1631]. A mortarium (Cam 497) in white ware was also identified [1524].

Hadham wares

One Hadham white slipped mortarium was identified [1150], but the majority were red slipped examples: a copy of the Samian form Dragendorff 38 in [1081] and a beaded bowl in [2598]. The Hadham examples formed 0.2% of the total assemblage.

Oxfordshire wares

One mortarium in white fabric with multicoloured quartz grits was recorded in [3444], while red slipped wares formed the rest of this group (0.6 % of total). Few forms have been identified: a beaded bowl in [3424], copies of the Samian form Dragendorff 38 in [3454] and [3163] and a possible C97 (Young 1977).

Verulanium ware

Very few Verulanium examples were recognized: two flagons in [2277] and [3727] and an unidentified sherd in [814].

Local Wares

The bulk of the assemblage was made up of a very specific local grey ware. A detailed fabric analysis was not carried out, but this group displays characteristics that strongly point to a Suffolk origin, probably Wattisfield (Tomber et al. 1991, 184). The matrix is quite fine and very micaceous with a slight laminated texture, ill-sorted small black inclusions are visible to the naked eye and it is often reduced. The surface varies from being heavily black-burnished to a very fine and smooth grey slip that can also be burnished.

The range of forms was varied. This ware seems to appear fairly early on the site, with forms as early as imitations of the Cam 215b. The majority of the repertoire was made up of 2nd century forms such as beaded rim dishes, basic flanged bowls, narrow-mouthed jars with lattice decorations and 'ring and dot' beakers. It seems to decrease some time in the 3rd century, although a bowl with Romano-Saxon decorations (bosses) was found in [3625]. Only further study could identify when some of this ware starts to become incorporated residually. The bulk of the forms consist of long-lived grey-ware types of jars, beaded rim dishes and basic flanged bowls, mostly influenced by black-burnished ware and Nene Valley ware.

Several 'ring and dot' beakers with a characteristic metallic shine and diamond-shaped panels of barbotine dots decoration were identified in [705], [826], [1736], [1780], [1796], [2046], [2424], [2794], [3178], [3512]. Cam 215b copies were found in [3035] and [3034] with a double cordon on the neck. A couple of colanders were also recorded in this fabric [2346], [4197]. Amongst this group a few 'London ware' black-burnished bowls fragments with compass decorations were recorded [2654], [3143c] and [3499e].

An unusual stamped ware jar was identified in [2914]; the fabric was fine, reduced with no mica and heavily black-burnished. The decoration consisted of repetitive diamonds of rouletting with stamped concentric circles overlapping on three corners of the diamond. The closest reference was found on the Romano-British site of Grandford in Cambridgeshire (Potter and Potter 1982, 65 no.186). Although this example was a bowl, it displayed the same decoration; the authors suggest an origin in the Lower Nene Valley, but this example does not display Nene Valley fabric characteristics.

Another well-defined and interesting group consisted of cooking jars with 'rusticated' decorations. The fabric was hard, coarse and reduced while the most common decorations were parallel barbotine lines on the body, very large and coarse barbotine dots or very coarse slashing or rouletting. This ware is common in East Anglia and "a distinctive regional class of pottery" (Swan 1981, 146). Swan suggests that the barbotine decoration emerged "during the second half of second century" (*ibid*, 147). Local sandy grey wares are also present. Although they are less homogenous than the group described above, they have been grouped together, as they all seem

to display relatively coarse fabrics often burnt on the outside. Another distinctive group can be defined, which appeared in a black-slipped, oxidized, hard sandy fabric. The main form was large storage jars, some with vertical combed parallel bands [425], [745], [912], [964], [1222], [1575].

An interesting small group deserves mention, as it displays very easily recognisable characteristics: a hard coarse fabric tempered with translucent quartz. Fragments of cooking jars were found in [1991], [2004], [2160], [3123] as well as a Cam 221,224 type jar in [1922]. Horningsea grey ware was also present; the main form a storage jar with characteristic thumbs prints at the base of the vessel (Lucas 1999). Shell-tempered ware is also present but relatively minimal, the main form is a cooking jar, often rilled and burnt on the exterior. Also of some interest were a couple of cupped ring flagons in fine unidentified buff ware [2589], [3020] and a buttbeaker (Cam 113) in a grog-tempered fabric [2894].

Discussion

This assemblage is interesting as it covers the entire Roman period without any clear discontinuity with either the later Iron Age or the Saxon period. The range of wares in use for three centuries was remarkably homogenous, as the main supply seems to have been fairly local and most of the forms are very long lived. The limited use of non-local wares, especially for the supply of grey wares, is quite clear and can only be explained by a preference for locally produced domestic items. Nene Valley Grey Wares are, for example, fairly common on other East Anglian sites. The small amount of finewares (i.e. Samian, Nene Valley and Colchester colour-coated ware) is also marked and probably reflects a relatively low to medium status for the site; there is no other evidence such as glass, wall-painted plaster or metal vessels to suggest otherwise. However the high quality of certain local grey ware examples, especially the 'ring and dot' beakers, could justify their integration into the fineware category.

Recommendations

- Quantification: sherds count, weight, ENV (Estimated Number of Vessels) and EVEs (Estimated Vessels Equivalents).
- Fabric type series.
- Spatial analysis by phase, to aid the understanding of the functions of various settlement elements (e.g. field system, 'ponds', etc.).
- More work on the stratigraphical sequence, to obtain a more precise and detailed chronology of the Roman settlement, especially to define the chronology of the dominant local grey ware.

Acknowledgements

I would like to thank Dr Gavin Lucas for his help and supervision during the analysis of this assemblage.

3. ANGLO-SAXON POTTERY

Jess Tipper

Summary

A total of 109 handmade Early Anglo-Saxon sherds weighing 2,255g, and representing a maximum of 83 vessels, have been recorded in this assessment from the excavation by Cambridge Archaeological Unit at Kilverstone, on the north-east edge of Thetford, Norfolk. There were 18 decorated sherds in the assemblage (153g). This pottery is considered to date between the fifth and seventh centuries AD based on similarities of form, fabric and decorative techniques with other assemblages dating to this period. There is no Middle Anglo-Saxon Ipswich ware in the assemblage.

All except six of the sherds (weighing 49g) were stratified within the fills of eight SFBs; the fills of two SFBs contained no Anglo-Saxon pottery (F434 and F1042; Table 1). The quantity of pottery within individual features varied from four sherds (38g) in the fill of F1091 up to 31 sherds (590g) in F240; the greatest density of pottery (by weight) was in the fill F974 (295g/m³).

Methodology

The pottery has been recorded for this assessment in an Access Database with individual records created for each sherd (by context). It has been quantified by sherd count and sherd weight (g). The size of each sherd, taken as the maximum diameter (mm), and thickness (mm) has also been recorded. Sherd form has been recorded (rim, neck, body, lower body, base). Rim and base diameters have been calculated and they have been measured as a percentage of the complete rim or base, from which an estimated vessel-equivalent has been obtained (eve). Preliminary fabric groups have been created and each sherd has been assigned to one of ten groups. Decoration has been recorded in the database (bossed, stamped and/or incised). Surface treatment (burnishing) has also been recorded. Internal and/or external carbonised organic residues have been noted. The condition of individual sherds has also been recorded on a simple ordinal scale (poor, fair, good). Finally, sherd links have also been recorded.

The Pottery Fabrics

Ten fabric groups have been identified macroscopically based on a rapid visual assessment of the qualitative differences in fabric and matrix. These groups should not be seen as mutually exclusive and it is possible that further analysis will show that the small groups are simply variations with broader types and should be merged together. They are summarised as follows (see Tables 2, 3 and Figure 1):

Calcite-tempered (CALCT)

A total of 16 sherds (weighing 443g) was identified as calcite-tempered. The calcite has frequently dissolved to leave voids in a quartz sandstone matrix, varying in size and density from occasional to frequent inclusions and/or voids. These could be the remains of calcite and/or

possibly fossiliferous limestone inclusions. It is unclear from this assessment how many of the calcitic inclusions have been added to the clay as temper or how many occur as background material within the clay which has been used to manufacture these vessels.

Calcite and Organic-tempered (CALCT+ECHAF)

One Early Anglo-Saxon(?) sherd (22g), from the fill of F994, was identified as calcitic and organic-tempered, containing frequent calcite and organic inclusions and voids.

Calcite and Ironstone-tempered (CALCT+FE)

Three sherds (weighing 34g) contained common calcitic inclusions and voids <1mm in size (calcite or possibly fossiliferous limestone) and also common ironstone inclusions. This subgroup also contained organic, mica and quartz inclusions.

Calcite and Mica-tempered (CALCT+MICA)

Sixteen sherds (weighing 412g) with fine calcitic inclusions also contained frequent coarse mica inclusions (gold coloured in appearance). Other inclusions included flint, organic inclusions or voids and quartz sandstone.

Organic-tempered (ECHAF)

A total of 21 sherds (weighing 382g) was identified as organic-tempered. This fabric group included all sherds that possess organic inclusions, either as carbonised organic matter or most frequently as organic voids, varying from a dense organic content to occasional voids within a fine to medium quartz sandstone matrix. Other inclusions identified in this group included occasional calcite fragments or voids.

Organic and Ironstone-tempered (ECHAF+FE)

Ten sherds (weighing 99g) were tempered with organic inclusions and common to frequent (red-brown coloured) ironstone inclusions <1.5mm in size. Other inclusions included varying quantities of quartz sandstone and occasional calcite fragments. One sherd (17g), from the fill of F240, contained common organic inclusions, ironstone inclusions and coarse mica fragments (ECHAF+FE+MICA).

Organic and Mica-tempered (ECHAF+MICA)

Six sherds (weighing 164g) contained common to frequent organic inclusions or voids in combination with frequent coarse mica inclusions. These sherds also contained frequent medium-coarse quartz inclusions <1.5mm in size. Two sherds (83g), in the fill of F974 and from the same vessel, were tempered with common organic, mica and coarse quartz inclusions.

Ironstone-tempered (FE)

A single sherd (18g), from the fill of F997, contained common red-brown ironstone inclusions in a fine quartz sandstone matrix. There were also occasional fine calcitic(?) voids <1mm in size. This could be part of the same group as CALCT+FE.

Quartz Sandstone-tempered (SST)

A total of 29 sherds (weighing 474g) was identified as quartz sandstone-tempered. This group was characterised by frequent fine to medium quartz sandstone inclusions. A range of other inclusions was also present, including occasional calcite inclusions (or possibly chalk or limestone), flint, ironstone (possibly a sub-group), mica and organic inclusions.

Quartz Sandstone and Mica-tempered (SST+MICA)

Six sherds (207g) were identified as quartz sandstone and mica-tempered. This fabric sub-group contained quartz inclusions <1mm in size and frequent coarse mica inclusions. Other inclusions included occasional calcite or organic fragments.

Summary

In total, 37 sherds (34% of the total by sherd count) from Kilverstone have been identified as organic-tempered in this assessment. Thirty-six sherds were identified as calcitic-tempered (33%) and 35 sherds were identified as quartz sandstone-tempered (32%). Fourteen sherds contained ironstone inclusions, ten of which occurred in association with organic inclusions.

These preliminary fabric groups will require confirmation and clarification using a binocular microscope. It is suggested that a sample of sherds from these fabric groups should be chosen for thin-section and chemical analysis to confirm the identifications made by macroscopic analysis, and in order to study the manufacture and distribution of the pottery.

Comparison should be made with other East Anglian sites, particularly those assemblages from elsewhere in, and close to, Thetford. Seven fabric groups were identified at Redcastle Furze (Andrews 1995: 101). The majority of sherds were classified as sandy with quartz (177 sherds), sandy with quartz and white inclusions (104 sherds) and sandy with mica (71 sherds). Only five sherds were identified as calcitic-tempered and there were apparently no organic-tempered sherds in the assemblage. At Brandon Road nine fabric groups were identified (Dallas 1993: 124). The majority of pottery from that site (60 sherds out of 139 in total) was defined as sandy and tempered with quartz sand. Only five sherds contained calcitic inclusions. However, 14 sherds (c.10% of the assemblage) were identified as organic-tempered. There were no ironstone-tempered sherds on either of these sites.

The differences between the fabric groups identified at Kilverstone in this assessment and those at Redcastle Furze and Brandon Road, which appear to be quite similar to each other based on their published reports, is potentially significant. The further analysis would benefit greatly by comparison with the actual material as well as their publications in order to correlate and compare the fabric groups identified on the different sites.

The distinction between Iron Age and Early Anglo-Saxon pottery is often unclear, particularly in the identification of undecorated small body sherds, and this was the case with the assemblages at Redcastle Furze and Brandon Road (Andrews 1995: 101; Dallas 1995: 124). At West Stow,

nearly all of the Phase II Iron Age pottery was organic-tempered which, Martin suggested, was also very similar to Early Anglo-Saxon fabrics (Martin 1990: 68). It is normally assumed that such material within SFBs is Early Anglo-Saxon in date, based on the stratigraphic evidence. However, this might not be the case given the frequency of prehistoric and Roman pottery which is also often found in their fills. It is possible that some of the pottery from Kilverstone which has been identified as Early Anglo-Saxon is actually Iron Age in date (and vice versa). Ideally the complete pottery assemblage should be examined, and not just that which has been initially identified as Iron Age or Early Anglo-Saxon, and there should be close cooperation between the different period specialists.

Vessel Form

Early Anglo-Saxon pottery is characterised by a relatively limited range of vessel forms across the country, with two major categories which are generally referred to as bowls (open forms) and jars (closed forms). Most sherds in the assemblage from Kilverstone were too small and indistinct to indicate the form of the vessel, as vessels are often represented by single sherds. There were no complete profiles in the assemblage. However, it is possible to distinguish the form of a number of vessels. The majority of vessels in the assemblage, where they can be defined, appear to be simple curved or globular closed forms, often referred to as jars. These possess a simple flattened base, a curved body, constricted neck and a simple everted or short vertical rim. The proportion of different vessel types needs to be fully quantified in the analysis and illustrated.

Twenty-four rim-sherds (753g) were classified by rim form. The majority of rim-sherds were short vertical rims from vessels with constricted necks and short vertical rims (generally curved or globular but also straight-sided ovoid in shape). There were eight sherds (265g) with this rim form, from seven vessels at Kilverstone. This is a common vessel form during the Early Anglo-Saxon period; two similar vessels were illustrated from the excavations at Redcastle Furze and one from Brandon Road (Andrews 1995: Fig. 82.2-3; Dallas 1993: Fig. 136.4).

This group was followed by simple everted rims (eight sherds weighing 221g and deriving from six vessels), which are not in themselves diagnostic of vessel form. There were also four rim-sherds (174g) from simple inturned bowls and three sherds (88g) from straight-sided bowls. There was one possible Early Anglo-Saxon rim-sherd from a wide-mouthed bowl (in the fill of F936), although the sherd is too small to be certain of the vessel form.

There were only four base sherds, all from different vessels, in the assemblage (weighing 152g in total). Two of these derived from the fill of F240, and the others from F974 and F1090. Early Anglo-Saxon base-sherds are generally very simple and consequently they are often under-represented in assemblages due to the difficulty of distinguishing them from body sherds. Two of the base-sherds are flat-angled, with a definite angle between base and lower body, and the other two are simple flat-rounded bases. There were no moulded forms, such as pedestal, foot-stand or foot-ring bases in the assemblage from Kilverstone.

Two sub-biconical vessels have been identified in the assemblage. Three joining sherds (97g), from a plain vessel with burnished surfaces, derived from the fill of F633. The other, represented

by a single sherd (18g), derived from the fill of F997 and was decorated with a horizontal incised line above the shoulder. There was no pottery in the assemblage from Kilverstone with sharply biconical forms or pronounced carinations (such as faceted-carinated pottery), which are thought to date from the first half of the fifth century (Myres 1977: 8). However, a sherd of faceted-angled pottery was apparently found at Red Castle (Andrews 1995: 24).

Decoration

There were 18 decorated sherds weighing 312g and representing a maximum of 10 vessels (Table 4). These form 16.5% of the assemblage by sherd count, which is considerably higher than the proportion of decorated pottery at West Stow (c.2%; West 1985: 128). At Brandon Road there was no decorated Early Anglo-Saxon pottery (Dallas 1993: 124). At Redcastle Furze, out of a total of 375 Early Anglo-Saxon sherds, there was one sherd with rusticated decoration but there was no other decorated pottery. There was, however, some stamped pottery from Red Castle (Knocker 1967).

The decorative techniques that occur on the pottery from Kilverstone are typical of the Early Anglo-Saxon Period, and they are dated to between the fifth and seventh centuries AD (Myres 1977). J.N.L. Myres established a typological framework based on a study of decorative elements and their arrangement on certain distinctive vessel forms. He also put forward a broad chronological framework, which has generally been accepted, for particular types of decorated pottery. However, the pottery of this period is difficult to date accurately and this should be used with caution as dating evidence in the absence of other datable material. Furthermore, the use of the decorated pottery to assign any sort of dating or phasing to the deposits in which they are located is complicated by the formation of the SFB deposits. It has been shown that their fills were, in general, the result of secondary and tertiary deposition, with considerable movement of material between use, breakage and final deposition (Tipper 2000). This needs to be investigated by detailed assemblage analysis at Kilverstone.

There were eight stamped sherds in the assemblage from Kilverstone (weighing 153g and representing a maximum of four vessels), all of which also possessed incised linear decoration, and one of which was also bossed (from F936). Five different stamp motifs have been identified according to the classification in the Archive of Anglo-Saxon Pottery Stamps (Briscoe 1983; Table 5). However, these preliminary identifications must be used with caution and they need to be confirmed by Diana Briscoe and incorporated into the Archive, where parallels for the stamp motifs can be sought.

There was one sherd (12g) decorated with bossed, stamped (stamp motif B 2b) and incised decoration, deriving from the fill of Ditch F936. The boss was a hollow form, pushed out from the vessel wall. Myres suggested that the combination of stamped decoration, linear panels and bosses is indicative of a sixth-century date (Myres 1977: 22 & 26-7). A sherd link was established between this sherd and two others (weighing 22g) in the fill of SFB F997. These sherds were decorated with (single) horizontal rows of stamp motifs B 2b and H 1b, separated by incised lines.

Two of the stamped and incised sherds (40g), from the same vessel, possessed a two-line chevron pattern filled with stamp motif A 2c. These were from the fill of F1090. Stamped-chevron pottery is, according to Myres, generally attributable to the sixth-century (Myres 1977: 51).

There were also four incised sherds (35g), from different vessels; it is possible that this decoration could have occurred on vessels in combination with stamped decoration given that only a small part of the decorative scheme can be identified from single sherds.

All the decorated pottery in the assemblage from Kilverstone should be illustrated.

Surface Treatment

Just over half the sherds in the assemblage have been smoothed or wiped with a cloth or by hand to produce a smooth surface finish, varying from a rough wipe to a smooth lustre. A number of sherds have striated surfaces where large surface inclusions have been dragged across the surface. This is particularly evident on one organic-tempered rim-sherd (25g) from the fill of F240.

Burnished Pottery

A large proportion of the assemblage from Kilverstone was burnished. Fifty sherds (weighing 1,098g) in the assemblage have burnished internal and/or external surfaces, varying from a light burnish to a very high gloss. Burnishing generally appears to have been a functional rather than a decorative technique, although 11 out of 13 decorated sherds (excluding the finger-pinched pottery) were burnished and therefore it probably also served a decorative purpose.

Coarse-slipped pottery

One large rim-sherd (weighing 58g), which is part of a small inturned bowl and derives from the fill of F1090, has been coarse-slipped (Schlickung). This consists of the application of a thin layer of clay to the outer surface. Helena Hamerow suggested that it was a functional treatment to facilitate the handling of slippery containers (Hamerow 1993: 35). The vessel from Kilverstone also possesses a slight carbonised residue on both internal and external surfaces. This is a relatively uncommon surface treatment on pottery in this country during the Early Anglo-Saxon Period. A small number of sherds were defined in the fills of Grubenhäuser at Mucking and SFBs at West Stow, which were phased (from other evidence) to the fifth-century AD (Hamerow 1993: Fig. 23; West 1985: 129).

Finger-tip impressed pottery

The total quantity for the decorated pottery includes six sherds (124g), from two separate vessels, with finger-pinched or rusticated outer surfaces. These derive from the fills of F354 and F974. This surface treatment is usually seen as a functional surface treatment, to facilitate the handling of slippery containers or large storage vessels, although it might also have been used as a decorative technique (Hamerow 1993: 35; Blinkhorn 1997: 116). It is quite a rare surface technique which occurs in the pottery assemblages of other excavated settlements. There was a

single rusticated sherd in the assemblage at Redcastle Furze (Andrews 1995: Fig. 82.7). However, at West Stow there were over 600 rusticated sherds compared to c.460 stamped sherds in the assemblage (West 1985: 135-7).

Carbonised organic residue/sooting

Twenty-nine sherds (weighing 757g) had evidence of carbonised organic residue adhering to their internal and/or external surfaces.

There is some potential for using samples of the carbonised residues on this pottery for radiocarbon dating. This should be considered given the absence of other closely datable material on the site and because the pottery from this period is difficult to closely date.

Method of Manufacture

The pottery is all handmade but with varying levels of competence. The majority of vessels were probably coil built and have been carefully finished, although the coils were not generally visible in section. It appears to have been fired in a bonfire- or clamp-type kiln, resulting in the characteristic (reduced) dark grey-brown - black colour. Several of the sherds are lighter brown, indicating variations in the conditions of firing.

Fragmentation

The pottery appeared, in general, to be in relatively good condition, although most vessels are represented by only single sherds. The mean sherd weight of the Kilverstone assemblage is high at 20.7g. This compares to a mean sherd weight of 9.8g in the fills of 20 SFBs (c.6000 sherds) examined in detail at West Stow (Tipper 2000). There is, however, considerable variation between features, varying from 7.1g in the fill of F354 up to 31.5g in F633. Only 41 out of 109 sherds (38%) weighed less than 10g. In comparison, at West Stow 75% of the assemblage weighed less than 10g. Just over half the pottery from Kilverstone (57 sherds) was under 5cm in size (max. length). In comparison, 86% of the assemblage examined at West Stow was under 5cm in size. This may in part be due to the small size of the assemblage at Kilverstone. However, this might be a result of the recovery methods and this also needs to be examined.

At Witton, Norfolk, the proportion of Early Anglo-Saxon pottery recovered by hand and by sieve were compared, which showed that many of the small sherds (under 5cm in diameter) were missed by hand (Wade 1983: 61 & Table 6). In Structure C at Witton, for example, 100% of the pottery over 6cm in diameter was recovered by hand but the proportion fell rapidly for sherds under 5cm. However, the relatively low level of fragmentation at Kilverstone, in comparison to West Stow, could relate to differences in disposal practices. Therefore, the discussion of the pottery needs to be integrated with the detailed study of other artefact categories in order to compare the level of recovery, state of preservation and fragmentation.

There were 27 rim-sherds (weighing 762g in total) in the assemblage, deriving from 24 different vessels. Sixteen of the sherds had measurable rim diameters, from a maximum of 14 vessels. These represent a total of just 1.7 estimated vessel equivalents (rim-eves). The rim diameter of these ranged from 8 – 17cm. As a percentage of the complete rim, individual sherds ranged from less than 5% up to 17%. Eleven rim-sherds (44% by sherd count) had a rim-percentage of 1 – 5%, i.e. 95% or more of the rim was missing. In comparison, at West Stow 69% of the rim-sherds had a rim percentage of 1 – 5% (Tipper 2000: 183).

Sherd refitting was undertaken in this assessment given the small quantity of pottery in the assemblage. A number of sherd links was defined within the fills of individual SFBs. One sherd link (although not an actual sherd join), from a vessel with stamped, bossed and incised decoration, was defined between different features, between the fill of an SFB (F997) and a ditch (F936), c.9m apart (min.). The identification of sherd links between different features is important evidence for the interpretation of deposits across the site.

Recommendations

Comparative Early Anglo-Saxon pottery in the immediate area includes the small published assemblages from the excavations at Brandon Road, Red Castle and Redcastle Furze, on the western side of Thetford, although the site at Brandon Road lies less than 2.5km to the south-west of Kilverstone (Dallas 1993; Knocker 1967; Andrews 1995). However, at Redcastle Furze only 189 sherds out of 375 in total were from stratified contexts and at Brandon Road only 25 out of 129 sherds in total were stratified in the fills of Grubenhäuser. The analysis of the Kilverstone assemblage would benefit greatly from comparison with the pottery from these sites, particularly for fabric comparisons, as well as the short published accounts of this material. The pottery from West Stow, Suffolk, situated c.15km to the south-west of Kilverstone, is the largest (and also published) assemblage in the country from an Early Anglo-Saxon settlement (comprising c.52,000 sherds) and this will also form an important reference for the analysis of this assemblage.

Tables:

Feature	Feature Type	Count	Weight (g)	Maximum Vessels	Density (g/cub. m)
F240	SFB	31	590	29	216.1
F354	SFB	10	71	4	67.6
F434	SFB	0	0		
F633	SFB	6	189	2	38.2
F936	Ditch	2	17	2	
F974	SFB	14	289	10	295.2
F994	SFB	9	202	8	134.2
F997	SFB	4	55	3	16.1
F1042	SFB	0	0		
F1090	SFB	25	772	18	269.9
F1091	SFB	4	38	4	10.6
F1348	Ditch	3	29	3	
3656	Layer	1	3	1	

Table 1: Quantification of pottery in the fills of Grubenhäuser

Fabric	Count	Weight (g)
CALCT	16	443
CALCT+ECHAF	1	22
CALCT+FE	3	34
CALCT+MICA	16	412
ECHAF	21	382
ECHAF+FE	10	99
ECHAF+MICA	6	164
FE	1	18
SST	29	474
SST+MICA	6	207

Table 2: Summary of Early Anglo-Saxon pottery by fabric group

Feature	CALCT	CALCT +ECHAF	CALCT +FE	CALCT+ MICA	ECHAF	ECHAF +FE	ECHAF +MICA	FE	SST	SST +MICA
F240	6			2	8	2	1		10	2
F354					1	8			1	
F633				3					3	
F936			1		1					
F974				1	4		3		3	3
F994		1			3				5	
F997			2		1			1		
F1090	8			10	3		2		1	1
F1091	2								2	
F1348									3	
3656									1	
Total	16	1	3	16	21	10	6	1	29	6

a. sherd count

Feature	CALCT	CALCT +ECHAF	CALCT +FE	CALCT+ MICA	ECHAF	ECHAF +FE	ECHAF +MICA	FE	SST	SST +MICA
F240	129			11	199	37	22		139	53
F354					3	62			6	
F633				92					97	
F936			12		5					
F974				10	38		96		51	94
F994		22			81				99	
F997			22		15			18		
F1090	304			299	41		46		22	60
F1091	10								28	
F1348									29	
3656									3	
Total	443	22	34	412	382	99	164	18	474	207

b. sherd weight (g)

Table 3: Pottery in the fills of features by fabric group by a. sherd count and b. sherd weight

Feature	Bossed+Stamped +Incised	Finger-Pinched	Incised	Stamped+Incised
F240			2 (12g)	
F354		2 (12g)		
F633				
F936	1 (12g)			
F974		4 (112g)		
F994			1 (5g)	2 (72g)
F997			1 (18g)	2 (22g)
F1090				2 (40g)
F1091				
F1348				1 (7g)
3656				

Table 4: Decorated pottery by feature by sherd count (weight in brackets)

Feature	Context	Decoration	Stamp Motif 1	Stamp Motif 2
F936	3106	Bossed, Stamped and Incised	B2b	
F994	3088	Stamped and Incised	A4ci	
F994	3094	Stamped and Incised	A4ci	
F997	3096	Stamped and Incised	B2b	H1b
F997	3095	Stamped and Incised	B2b	
F1090	3392	Stamped and Incised	A2c	
F1090	3392	Stamped and Incised	A2c	
F1348	4311	Stamped and Incised	C1ai	

Table 5: Stamped pottery with identified stamp motifs

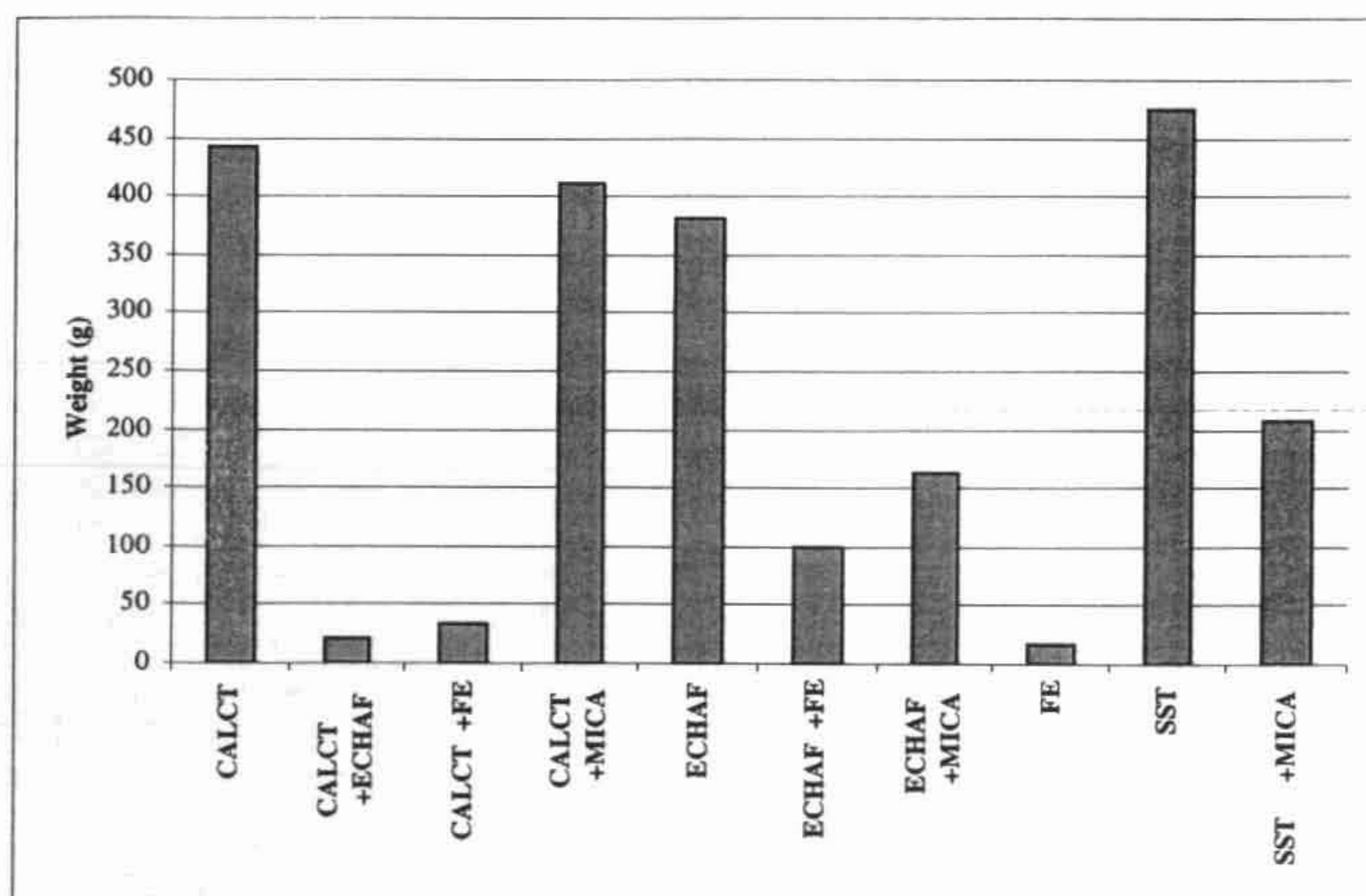


Figure 1: Anglo-Saxon pottery by major fabric group

4. MEDIEVAL and POST-MEDIEVAL POTTERY

David Hall

A total of 41 sherds of Medieval and Post-Medieval pottery was examined, details of which are provided in the table below. No further work is recommended.

Medieval

The bulk of the assemblage (31 sherds) is made in reduced sandy fabrics, following the tradition of Thetford pottery making. The few rim pieces amongst these suggest a 14th century date. Grimston, the ubiquitous fine ware of East Anglia, was represented by 8 sherds, again of likely 14th century date. The majority of the Medieval pottery was recovered from a series of ditches and pits towards the south-eastern corner of Area C. In Area B, six Grimston sherds were found within a pit (F17) and one within the 'buried soil'. Two intrusive sherds were recovered from Neolithic pits in Area A.

Post-Medieval

Two sherds, one a Staffordshire marbled, the other a Glazed red earthenware, were recovered within the fills of the brick kiln stoking pit (F18) in Area D. Their 17th/18th century dates fit well with the proposed early 18th century date of the kiln.

Area	Feat.	Cont.	T'ford	Sandy	G'ston	P-med	Total	Date	Notes
A	F1464	4628			1		1	14	
A	F1473	4646		1			1	14	Jug rim
B	F17	183		2	6		8	14	4 of Grimston not certain
B	b'd soil	148		2			2	13/14	
C	F136	342		1			1	15	Jug piece
C	F1013	3329		1			1	13	Developed Thetford
C	F1045	3260		4			4	14	Sandyware jug
C	F1056	4320		6			6	14	
C	F1056	4322		2			2	14	
C	F1056	4376		1			1	14	Jug rim
C	F1065	3317		4	1		5	14	1 base, 1 jar rim sandy
C	F1289	4173		1			1	14*15	Fine ware
C	F1336	surface		1			1	15	
C	F1348	4340		1			1	14	
C	F1354	4335		1			1	14	
C	F1366	4353		1			1	14	Jug rim
C	F1366	4414	1	1			2	13	Late Thetford; sandy grey jar rim
D	F18	186				1	1	17	Glazed Red Earthenware base
D	F18	193				1	1	18	Staffordshire marbled
Total			1	30	8	2	41		

5. FLINT

Chantal Conneller

The site yielded a substantial collection of worked flint. In total 15,637 pieces were recovered. Though this material spans the Palaeolithic to the Roman period, the vast majority is the product of Neolithic flintworking. The material derives from a variety of different contexts: Residual flint from later features and the ploughsoil/buried soil (the main sources of the collections from Areas B and C) provides a sample of the activities undertaken on the old land surface of Kilverstone. This can be compared with material from prehistoric pits (the source of all Area A material, but also contributing to the collection from Areas B and C) to see how pieces selected for deposition differ from the material habitually discarded on the old land surface. Two elements of the Kilverstone assemblage are particularly important and deserve more detailed survey than this initial report provides. The sheer quantity of Neolithic pits from Area A provides an opportunity to analyse exactly what kind of pieces were selected for deposition in the Neolithic pits. Secondly, a rare and relatively complete assemblage of Roman flintwork permits a unique opportunity to discover the nature of flint-using activities at this time.

Area A

Of the 93 pits in Area A, 61 yielded worked flint. The material recovered from the pits suggests the majority of these features are Neolithic in date, though a few yielded pieces that suggest that some Early Bronze Age features may also be represented. The material is very similar to the assemblages from a small cluster of three Neolithic pits in Area C, though the greater number of pits in Area A means that more variation is present. In both Area A and C pits, microdenticulates are the most common tool type and retouched blades are also very common. However, a far broader range of tools is present in Area A: these include an oblique arrowhead, burins, hammerstones, knives, scrapers and two flakes deriving from a greenstone axe. A relatively large number of hammerstones were also recovered. Often these are re-used cores, though a pebble with characteristic edge damage is also present. The presence of burins and the large number of micro-denticulates on blades indicates many of the pits are likely to be early Neolithic in date. However, the debitage in some pits seems relatively crude and lacks the preparation characteristic of Early Neolithic material and since micro-denticulates and blade-focused technologies also occur in Late Neolithic contexts, it may be that some of the pits represent activities of this date.

The assemblages from the pits do not represent the deposition of the debris from discrete knapping sequences – usually certain elements (i.e. cores or tools) are over- or under-represented. Interesting in this preliminary analysis is the general lack of refits in the pit assemblages – or even the presence of pieces that appear to belong to the same nodule. Refits have only been noted in F.1394, though F.1420 and F.1421 appear to contain pieces from the same raw material unit. This suggests that the material selected for deposition in each pit was derived from a broader amalgamation of lithic material, such as a midden. Further refitting may throw further light on this problem.

The selection of material for deposition within the Neolithic pits appears purposeful. Certain themes constantly re-occur in the assemblages from the pits. There seems to be some patterning between the balance of fine pieces (i.e. blades, delicate flakes and microdenticulated pieces) to larger pieces (cores, hammerstones and shatter fragments) in the pit assemblages. Some pits (i.e. F. 1404, F.1410) contain fine pieces and lack cores, while others (i.e. F.1415, F.1419) are characterised by larger, chunky pieces, though some do contain a mixture of the two (i.e. F.1472). Also of interest is the large amount of burnt, worked flint present. The feature with the highest number of burnt worked pieces is F.1410, which has a high proportion of retouched and utilized pieces. Other themes seem present in some of the pit assemblages: Material in F.1404, for example appears to have been selected for the presence of stripes in the flint. None, however seem to belong to the same raw material unit. Future statistical analysis, such as cluster analysis may discern patterning relating to these themes.

Category	Flint No.	Flint %	Burnt Flint No.	BF%	Total	Total %
Tools:	118	7.6	13	5.2	131	7.2
Arrow	1	0.1	0	0	1	0.1
Arrow blank?	1	0.1	0	0	1	0.1
Axe fragments	2	0.1	0	0	2	0.1
Burin	7	0.4	0	0	7	0.4
Denticulate	1	0.1	0	0	1	0.1
Hammerstone	6	0.4	0	0	6	0.3
Knife	2	0.1	0	0	2	0.1
Micro-denticulate	18	1.2	6	2.4	24	1.3
Scraper	9	0.6	0	0	9	0.5
Flaked piece	5	0.3	0	0	5	0.3
Retouched Blade	39	2.5	4	1.6	43	2.4
Retouched Flake	27	1.7	3	1.2	30	1.7
Debitage:	1439	92.4	238	94.8	1677	92.8
Burin spall	4	0.3	0	0	4	0.2
Blade	134	8.4	14	5.6	148	8.2
Flake/fragment	1022	65.6	204	81.3	1226	67.8
Chips (<10mm)	128	8.2	2	0.8	130	7.2
Core prep.	12	0.2	2	0.8	14	0.8
Shatter frag.	82	5.3	9	3.6	91	5.0
Core	40	2.6	6	2.4	46	2.5
Expedient core	16	1.0	1	0.4	17	0.9
Tested nodule	1	0.1	0	0	1	0.1
Total	1557	100	251	100	1808	100

Table 1. Material from the Area A pits.

The quantities of lithic material recovered from a single pit varied from 1 piece to 166¹. Figure 1 shows the quantities of worked and burnt, worked flint recovered from the Area A pits. The majority of the distribution clusters from 0 to 60 pieces per pit, but there are a number of outliers

¹ This total includes worked flint, burnt worked flint and pieces recovered during processing of environmental samples.

– though even these pale into insignificance in comparison to the quantity of worked flint recovered from F.328 in Area C. Three of these F.1406, F.1452 and F.1472 contained a majority of worked, unheated flint, while the fourth F.1410 yielded almost equal amounts of worked burnt and unburnt flint. Whether it is a coincidence that one of these pits is positioned within each major pit cluster is uncertain. Further spatial analysis may produce further patterns of this type. F.1406 is notable for the lack of tools recovered from this large assemblage: only a single micro-denticulate and a retouched flake were recovered from an assemblage of 163 pieces. The emphasis seems to be more on large pieces (7 shatter fragments, 2 core fragments and 8 cores). F.1452 and F.1472 are more balanced in the relationship between fine and chunky pieces, but both contain unusual elements. F.1452 yielded 3 hammerstones, while F.1472 contained the three fragments of greenstone axe. F.1410 is also unusual, and not simply in the quantities of burnt worked flint recovered. Twelve of the unburnt pieces of the 62 recovered showed evidence of retouch or use and a number of these also showed gloss, indicative of plant processing. Three of the burnt pieces also show retouch and more may have been used in this way, but edges have been damaged by fire-cracking.

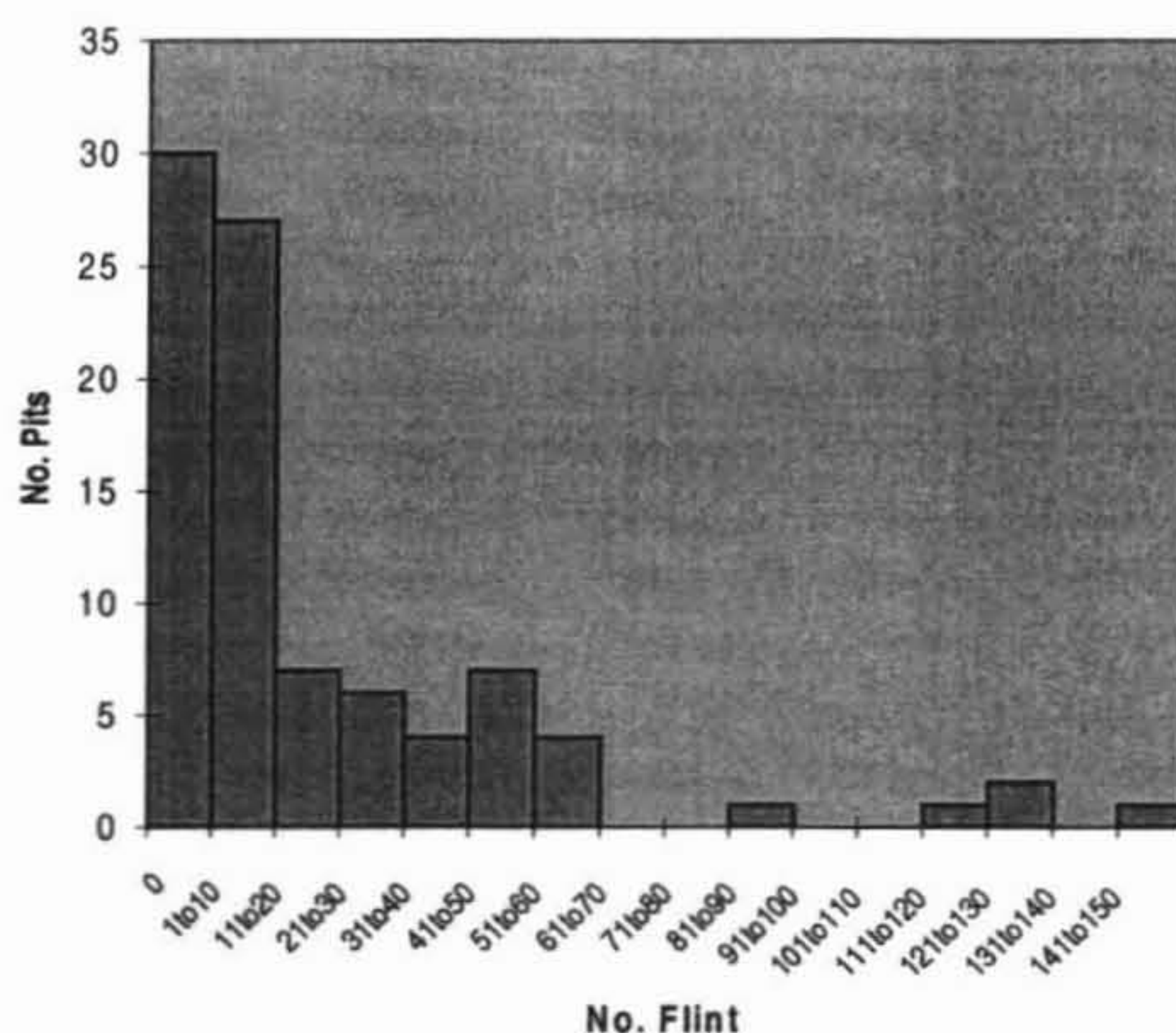


Figure 1. Quantities of flint recovered from the Area A pits

Area B

The nature of the sampled sediment appears more complex than realised during the evaluation. The assemblage recovered is of mixed date, from Late Neolithic to Late Bronze Age and many of the pieces are plough-damaged and sand-polished, indicating the sampled sediment is not a pristine buried soil. However, there are interesting variations in the condition of the material. Little or none of the material recovered from squares 167-176 is polished or abraded and these

also contain large quantities of small chips (<10mm). The material recovered from this area during the evaluation was also characterised by small chips and appeared fresh. It thus seems likely that small patches of material have not been significantly affected by post-depositional disturbance.

Though much of the assemblage is of mixed date, the assemblage is an unusual one. Tools are relatively common compared to Area C, though with the exception of two scraper fragments, all are crude and relatively amorphous. Seven scrapers/retouched pieces are made on naturally fractured pieces, in particular, potlid fractures. This retouching of natural flint is a characteristic of Bronze Age technological strategies. Many of the cores also appear to be Early-Late Bronze Age, tending to be multi-platform examples, lacking preparation. Late Neolithic material is represented by prepared flakes and blades.

Much of the characteristics of the assemblage appear to be due to the expedient exploitation of small, poor quality raw material. Expedient cores (either under-exploited cores, or the ad-hoc reduction of poor quality natural chunks) are common, as are tested nodules (nodules with one or two flakes removed). This indicates a technological strategy of little effort, where cores were discarded after 'easy' flakes are removed, rather than employing core preparation techniques to permit further exploitation of the core. This is a technological strategy suited to an area with an abundant supply of raw material. Flint nodules are abundant in this area and tend to be smaller and of poorer quality than that noted to be naturally occurring in Area C – hence the exploitation of poor quality pieces. Since this is a technological strategy that intentionally lacks finesse, it is difficult to date it exactly – the crudeness suggests Bronze Age; however in F.17, a retouched potlid and crude core are associated with Late Neolithic material. It is thus likely that this assemblage was generated through a long-lasting technological strategy pertinent to this particular area. It probably represents pieces generated for ad-hoc use in industrial activity in the vicinity.

Cortex	No.	%
Entirely cortical	31	8.1
Partially cortical	204	53.3
No cortex	148	38.6
Total	383	100

Table 2. Area B: Cortical Flakes

Category	No.	%
Tools:	34	6.2
Hammerstone	2	0.4
Scraper	9	1.6
Scraper/notch	1	0.2
Retouched	22	4.0
Debitage:	513	93.8
Blade	19	3.5
Flake/fragment	322	58.9
Chips (<10mm)	114	20.8
Shatter fragment	18	3.3

Core preparation	2	0.4
Core	8	1.5
Expedient core	16	2.9
Tested nodule	14	2.6
Total	547	100

Table 3. Area B: Material from the buried soil

Feature group F9-12

The material recovered from this cluster of four pits is very different from the adjacent ?buried soil. The material appears to be Late Neolithic in date. Diagnostic pieces include a scale flaked scraper and a retouched Levallois flake from F.9. A fragment of a bifacially flaked piece from F.11 could be later in date – it bears similarities to Middle Bronze Age pieces from Grimes Graves (which are also often broken: see Saville 1981).

Material appears to have been specially selected for deposition, as a very high proportion of tools are present. Very different material has been selected for deposition to material in Neolithic pits in Areas A and C (see below). Whereas in Area C and Area A the emphasis was on the deposition of microdenticulate and blades, here it is on the deposition of scrapers and retouched flakes.

Category	F.9	F.10	F.11	F.12
Tools:	2	3	1	1
Bifacial fragment.	0	0	1	0
Scraper	1	0	0	1
Retouched Flake	1	3	0	0
Debitage:	10	4	2	1
Flake/fragment	10	4	2	1
Total	12	7	3	2

Table 4. The assemblages from Neolithic pits: Fs 9-12

A Late Neolithic discoidal scraper recovered during machining may originally derive from one of these features as it appears more similar to the pit assemblages than the material from the test squares.

Area C

The greater part of the material recovered from Area C, unlike the assemblages from Areas A and B, consists of residual material incorporated within Roman or Saxon features. The majority appears to be Late Neolithic/Early Bronze Age in date, though earlier and later pieces are also represented.

The earliest piece recovered, dating from the Lower Palaeolithic, is a fine ovate handaxe, which is slightly rolled. People also visited the site during the later part of the Mesolithic period. Three geometric microliths were recovered (two rods and a pear) and a micro-core may also belong to

this period. The presence of large quantities of Neolithic material on the site may mask further Mesolithic activity, as blades, which on balance of probability are likely to belong to the Neolithic period, could feasibly be Mesolithic. However, even so, it appears that Mesolithic activity in the area was small scale and ephemeral.

Later Bronze Age material may also be present – though this is in cases difficult to ascertain given the particular technological strategies employed by the Late Neolithic/ Early Bronze Age inhabitants of the site. More pieces usually indicative of Later Bronze Age technological strategies are represented towards the southeast part of the site.

The majority of the material recovered is Late Neolithic/Early Bronze Age in date. Blades are present – often fine examples - but the majority of the technology was based on flake production. Levallois products are present, though very rare. One of the finest examples has a very chalky cortex; thus Levallois products found on site may represent imported pieces, manufactured from chalk sources, with networks of specialised production existing alongside more *ad hoc* production on nodules from the local sandy gravels/clays. It is tempting to suggest that Grimes Graves, a not too distant site of specialist Levallois production, may be the source of such pieces.

A variety of different core types were recovered. These range from single platform cores with preparation to cruder, multi-platform cores lacking preparation. A common re-occurring theme is the presence of 'expedient cores'. These consist either of underexploited cores, core cores on poor pieces of raw material, with only occasional removals. Both soft hammer and hard hammer techniques were used. There is ample evidence for the presence of skilful knappers on site. Sixteen core preparation and maintenance flakes were recovered. These include pieces designed to correct mistakes, such as step fracture removals and to prolong the life of the core, such as platform rejuvenation; 9.6% of flakes and blades also show evidence of preparation.

A notable feature of the assemblage is the low frequency of formal tools. Arrows do appear to have been manufactured on site during both the Late Neolithic and the Early Bronze Age, as indicated by three blanks/unfinished arrows. Scrapers are the most common tool type, but many examples are relatively amorphous. A few notable exceptions include a scraper on a levallois flake, a discoidal scraper, an endscraper and two finely flaked fragments. All these well-made examples appear to be Late Neolithic. Knives are also relatively crude and amorphous for a site of this date – no fine scale-flaked examples are present, though a bifacially worked piece on a large flake was recovered. Micro-denticulates are relatively common for a predominantly Late Neolithic site and some are particularly well-made. These serrated pieces appear to have had a particular significance as more than half of them were recovered from Neolithic pits. A final notable find is a unifacially worked, flaring, wedge-shaped axe made on a very large flake. The piece has a large step fracture on its dorsal surface, probably to facilitate hafting. This artefact is of uncertain date and seems to lack analogues.

Category	No	%
Tools:	199	1.5
Arrow	2	0.02
Arrow blank/unfinished	3	0.02
Awl	1	0.01

Axe	2	0.02
Burin	2	0.02
Denticulate	1	0.01
Hammerstone	3	0.02
Knife	10	0.1
Microdenticulate	17	0.1
Microlith	3	0.02
Notch	3	0.02
Scraper	22	0.2
Scraper/knife	4	0.03
Scraper/notch	1	0.01
Retouched/Utilised Blade	35	0.3
Retouched/Utilised Flake	82	0.6
Flaked Piece	8	0.06
Debitage:	13059	98.5
Burin spall	2	0.02
Blade	108	0.8
Flake/fragment	2073	15.6
Chips (<10mm)	10638	80.2
Shatter fragment	83	0.6
Core prep/maintenance	16	0.1
Core	75	0.6
Expedient core	26	0.2
Core fragment	20	0.2
Tested nodule	18	0.1
Total	13258	100

Table 5. Lithic material from Area C

Cortex	No.	%
Entirely cortical	126	5.7
Partially cortical	992	45.1
No cortex	1081	49.2
Total	2199	100

Table 6. Cortical flakes and blades from Area C

Assemblages from Neolithic contexts

A cluster of three pits in the south-eastern part of the site yielded significant lithic material. All share certain similarities and important differences. All three pits yielded fine micro-denticulated pieces, usually on blades, and a high proportion of well-made blades with platform preparation. Such features are frequently characteristic of Early Neolithic assemblages, however many of the flakes present appear too crude to represent Early Neolithic work: most have thick butts and lack preparation. These cruder flakes have been found to refit with some of the fine blades, thus precluding curation of earlier pieces as an explanation for the presence of the blades. It thus

seems that the pit assemblages represent either a frequently ad hoc Early Neolithic technology or a blade-based Late Neolithic assemblage - Late Neolithic technologies are quite heterogeneous and can often contain large quantities of blades.

In many ways the assemblages from F.328 and F.329 appear complementary. F.328 contains a large number of cores and shatter fragments and many large cortical flakes. Unusually for the Kilverstone site these cores are small and exhausted. The occasional refit does occur, but only between shatter fragments. The debitage that refits onto the cores is absent. Cores are absent from F.329 and pieces are generally smaller. There is a high proportion of fine retouched and microdenticulated pieces and several blades are particularly narrow and regular. Though F.329 appears to represent the elements of complete knapping sequences that are absent from F.328 and *vice versa*, there are no refits between the two. Instead both assemblages seem to represent selected elements of assemblages generated through particular tasks. Pieces recovered from F.328 appear to have derived from a large number of generalized core reduction activities. In general mainly the initial parts of the sequence – large cortical flakes –and the final part – exhausted cores are represented. These large pieces appear to have been favoured for deposition, which may be because they derive from the clearance or middening of large waste pieces from a primary working floor. The assemblage from F.329 appears to be a material representation of a more particular suit of activities. Several cores were worked and blades produced for further modification (serration or retouch). Though there are many refits (including a sequence of seven), there are many gaps and many elements of the sequence appear not to have been selected for deposition. The assemblage from F.330 is less easy to interpret. No refits or themes are present, instead it appears to be a random selection and is perhaps composed of midden material.

Category	F.328	%	F.329	%	F.330	%	Tot.	%
Tools:	5	1.3	10	6.5	2	2.6	17	2.8
Microdenticulate	3	0.8	4	2.6	1	1.3	8	1.3
Retouched Blade	1	0.3	3	2	0	0	4	0.7
Retouched Flake	1	0.3	3	2	1	1.3	5	0.8
Debitage:	375	98.7	143	93.5	73	96.1	591	97.2
Burin spall	0	0	0	0	1	1.3	1	0.2
Blade	21	5.5	21	14.4	11	14.5	54	8.9
Flake/fragment	292	76.8	121	79.1	36	47.4	449	73.8
Chips	24	6.3	0	0	24	31.6	48	7.9
Shatter frag.	17	4.5	0	0	0	0	17	2.8
Core	21	5.5	0	0	0	0	21	3.5
Core fragment	0	0	0	0	1	1.3	1	0.2
Total	380	100	152	100	76	100	608	100

Table 7. The worked flint assemblages from three Neolithic pits: F.328, F.329, F.330

Category	F.328	%	F.329	%	F.330	%	Tot.	%
Tools:	3	3.9	1	5	0	0	4	3.8
Microdenticulate	2	2.6	1	5	0	0	3	2.8
Retouched Blade	1	1.3	0	0	0	0	1	0.9
Retouched Flake	0	0	0	0	0	0	0	0
Debitage:	73	96.1	19	95	0	0	102	96.2

Burin spall	0	0	0	0	0	0	0	0
Blade	1	1.3	2	10	2	20	5	4.7
Flake/fragment	54	71.1	17	85	8	80	79	74.5
Shatter frag.	16	21.1	0	0	0	0	16	15.1
Core	2	2.6	0	0	0	0	2	1.9
Core fragment	0	0	0	0	0	0	0	0
Total	76	100	20	100	10	100	106	100

Table 8. The burnt, worked flint from F.328, F.329 and F.330

Category	F.328	%	F.329	%	F.330	%	Tot.	%
Tools:	8	1.8	11	6.4	2	2.6	21	2.9
Microdenticulate	5	1.1	5	2.9	1	1.3	11	1.5
Retouched Blade	2	0.4	3	1.7	0	0	5	0.7
Retouched Flake	1	0.2	3	1.7	1	1.3	5	0.7
Debitage:	448	98.2	161	93.6	73	97.4	693	97.1
Burin spall	0	0	0	0	1	1.3	1	0.1
Blade	22	4.8	23	13.4	13	17.1	59	8.3
Flake/fragment	346	75.9	138	80.2	44	57.9	528	73.9
Chips	24	5.3	0	0	24	31.6	48	6.7
Shatter frag.	33	7.2	0	0	0	0	33	4.6
Core	23	5.0	0	0	0	0	23	3.2
Core fragment	0	0	0	0	1	1.3	1	0.1
Total	456	100	172	100	76	100	714	100

Table 9. Total worked flint recovered from F.328, F.329 and F.330

Cortex	F.328	%	F.329	%	F.330	%	Tot.	%
Entirely cortical	14	4.6	1	0.7	2	5.1	17	3.5
Partially cortical	117	38.6	48	33.6	23	59.0	188	38.8
No cortex	172	56.8	94	65.7	14	35.9	280	57.7
Total	303	100	143	100	39	100	485	100

Table 10. The assemblages from three Neolithic pits: F.328, F.329, F.330: cortical flakes

Two further assemblages appear to occur in primary context. The material from F.919 is similar to that from the three-pit cluster, in the presence of blades and micro-denticulate. This assemblage is more balanced than those above, in that all stages of the reduction sequence appear to be present, from cortical flakes, to cores, to tools. Refits occur, though there are also single pieces that derive from different raw material units. Like the assemblage from F.329 this material appears to represent a selection of the material generated by a particular suite of tasks. The assemblage from F.1246 is similar. Though no refits occur, several pieces appear to derive from the same nodules. Further comparable material was recovered from ditch F.1245. This also yielded an assemblage with a high proportion of fine blades and thus probably derives from a Late Neolithic pit cut away during construction of the ditch.

Category	F.919	%	F.1246	%
Tools:	2	2.5	1	3.4
Microdenticulate	2	2.5	0	0
Retouched Blade	0	0	1	3.4
Debitage:	77	97.5	28	96.6
Burin spall	0	0	0	0
Blade	10	12.7	2	6.9
Flake/fragment	21	26.6	24	82.8
Chip (<10mm)	41	51.9	0	0
Core	3	3.8	1	3.4
Core prep.	2	2.5	1	3.4
Tested nodule	0	0	0	0
Total	79	100	29	100

Table 11. The assemblages from F.919 and 1246

The Roman flint assemblage

A large lithic assemblage was recovered from a dark upper fill of Roman ditch F.266. This fill [912] was exceptionally dense with, in particular, lithic material, but also 2nd century pot. The lithic material was far too densely scattered to represent prehistoric flintwork incidentally incorporated into deposit [912] and its occurrence with Roman pottery indicates Roman activities involving the working of flint nodules. Flintwork displaying similar technological traits has been recovered elsewhere from Roman contexts (i.e. Pollard and Baker 1999) and appears to have been employed in various agricultural and industrial activities.

The assemblage displays a number of idiosyncratic features not seen in prehistoric material. Flakes have crushed platforms, flat bulbs and very sharp, pronounced ripples. Step fractures are common. Though thick crude flakes are present, many are thin and fine. Cores also display crushing, or battering, of the platform/core face angle. This battering is very similar to the damage found on flint cores or nodules that have been used as hammers. It thus seems that knapping proceeded through hitting the core onto an anvil or other hard material, rather than striking the core with a hammer, as would occur with a prehistoric assemblage. Context [917] was the main repository of Roman flintworking; however three flakes with similar distinctive characteristics were also recovered from F240.

No tools were recovered and the purpose of the flintworking is uncertain. Cores and non-cortical flakes are certainly under-represented, so the interior parts of the nodules may have been removed for use elsewhere. Use as building stone is a possibility – though the methodology employed seems unusual. The ubiquity of crushed and battered platforms and cores makes it possible that the flakes were the incidental by-products of the use of flint nodules as hammerstones or similar in the processing of some hard material. Further refitting and possibly also usewear might elucidate this problem.

Another unusual feature of the assemblage is the sheer quantity of debitage smaller than 10mm (see table) and spatial concentration of the lithic material. After it silted up to an extent it no longer functioned, the ditch appears to have been used as a midden. It is likely that the flint was worked on a skin or a cloth, which was then dumped into the ditch. A high proportion of refits and the distinctiveness of the material suggests it represents a single or very few working episodes.

Category	No.	%
Blade	1	0.01
Flake	751	6.64
Shatter fragment	61	0.54
Core	9	0.08
Chip (>10mm)	10489	92.73
Total	11311	100

Table 12. The Roman assemblage from F.266 [912]

Cortex	No.	%
Entirely cortical	73	9.71
Partially cortical	387	51.46
No cortex	292	38.83
Total	752	100

Table 13. The Roman assemblage from F.266 [912]: Cortical pieces

Recommendations

Further analysis of both the Late Neolithic pit assemblages and the Roman flintwork is warranted. The quantity of the Neolithic pits means that further questions concerning the form and nature of Neolithic depositional practises can be addressed. Statistical multivariate analysis and cluster analysis would be helpful in discerning any patterning behind the themes which characterise the pit assemblages. Further attempts at refitting, both within and between pits, would also be useful in elucidating whether material derives from midden material, or from the debris from smaller-scale tasks. It would also be interesting to see whether there are refits between complimentary assemblages; whether different pits reference each other.

Further work on the unique assemblage of Roman flint would also prove useful. Further refitting would determine what elements of the assemblage are missing, while usewear could determine what the flint was used to process.

6. WORKED STONE

Kevin Hayward

A total of 84 stone artefacts, weighing almost 23kg, were examined systematically, with quantifiable criteria such as dimension and weight recorded. In addition, the rocks were examined using a hand lens (Gowland X10) to provide a preliminary identification of the lithology. The application of dilute hydrochloric acid (5%) determined whether the stone contained calcium carbonate.

A preliminary source for each artefact was determined, using local and national geological maps and publications, as well as geological and archaeological reference collections and the accumulated knowledge of the specialist.

Cat No.	Context	Feature	Rock Type
171	405	159	Fine Vesicular Lavastone –Rhineland (Quern fragments)
262	442	104	Millstone Grit (Quern Fragment)
454	964	301	Millstone Grit (coarsening from sandstone to conglomerate (Quern Fragment)
494	1083	333	Millstone Grit (Quern Fragment)
530	1152		Millstone Grit (conglomerate) a quern fragment
682	1542	259	Rhineland Lavastone (fine vesicular Inclusion rich) quern fragments
759	1664	525	Rhineland Lavastone (fine vesicular Inclusion rich) quern fragments
804	1803	549	Rhineland Lavastone (coarse vesicular) quern fragments
821	1829	381	Rhineland Lavastone (fine vesicular Inclusion rich) quern fragments
832	1852	567	Rhineland Lavastone (fine vesicular Inclusion rich) quern fragment
892	2019	616	Calcareous mudstone (possibly local) building material fragment ?
940	2084	636	Fine sandstone (light brown) Millstone Grit whetstone
972	2142	441	Calcareous Ironstone (Chamosite or Siderite) Middle Jurassic – Midlands
1066	2328	694	Devonian conglomerate – Forest of Dean Quern Fragment
1092	2364	743	Millstone Grit (fine banded sandstone) – could be whetstone
1178	2547	801	Millstone Grit (fine) – quernstone fragment
1206	2601	822	Devonian Conglomerate (Forest Of Dean) quernstone
1247	2328	731	Devonian Conglomerate (Forest of Dean) quernstone
1288	2254	694	Millstone Grit (Conglomerate) – Quern

1343	2882	922	Rhineland Lavastone (fine vesicular inclusion rich) – Quern fragments
1370	2928	946	Rhineland Lavastone (fine vesicular inclusion rich) – Quern fragments
1534	3171	1014	Millstone Grit (conglomerate) burnt quern fragment
1560	3180	944	Rhineland Lavastone (fine vesicular inclusion rich) – Quern Fragment
1565	3183c	104	Rhineland Lavastone (coarse non-inclusion) Quern Fragment
1593	3287	661	Rhineland Lavastone (fine vesicular inclusion rich) – Quern Fragment
1601	3317	1065	Rhineland Lavastone (coarse non-inclusion) Quern Fragments
1610	3329	1073	Rhineland Lavastone (fine vesicular inclusion rich) – Quern Fragment
1617	3334	1043	Millstone Grit- Quern Fragment
1642	3359	1070	Millstone Grit – Quern Fragment
1662	3388	1089	Greensand – burnt – quern fragment
1706	3454	1113	Hertfordshire Pudding stone – profile quernstone
1749	3510	1126	burnt calcareous mudstone – too fine for hone stone (Building Material ?) greensand quern fragment
1935	3808/9	1185	Devonian sandstone – Forest of Dean (quern fragment)
1946	3827	1232	Millstone Grit (fine) burnt quern fragment
2264	4368	1043	Flint – sponge fossil (bottle stop ?)
2704	stray	find	Jet Bead – faceted (Yorkshire coast ?)

Recommendations

It is recommended that the following analyses are undertaken:

- Establish the position of Kilverstone in relation to local geology and influence of the rock type upon the surrounding topography. This would both identify the suitability of any local rock types and whether important natural transport routes could be identified and utilised during the occupation of the site.
- Petrological identification of the different stone artefacts and suggested provenance.
- Subdivision into stone function.
- Quantifiable study based upon type of rock, phase of occupation, quantity and weight and the identification of any trends in the data.
- Discussion – combining information on site function, its position to surrounding transport routes and the type/function of rocks present at Kilverstone.

7. METALWORK

Adrian Challands

Summary

The metallic artefacts recovered at Kilverstone span most periods from Roman to the 1940s with many of the Roman items being particularly well preserved.

An important assemblage of well preserved Roman ironwork consisting of smithing tools and agricultural implements may indicate one aspect of the site's activities.

With the exception of coins, the small number of Romano-British copper alloy finds, mostly of a domestic/personal ornament nature comprise fragments of four brooches, two finger rings, a dress pin, a bracelet fragment and a toilet hanger. Other Romano-British copper alloy finds consist of a spoon bowl fragment, a gilt finial and a dagger chape (may be medieval). All of the copper alloy finds are normal finds for a Romano-British site and cannot be given special significance. A Saxon copper alloy square headed brooch was an un-stratified find. Other copper alloy un-stratified finds are of medieval, post-medieval or modern date.

The copper alloy, lead and iron composite artefacts are certainly the most important of the Kilverstone finds and may be Roman pump components.

Recommendations for the treatment and analysis of the Kilverstone small finds are contained in the text below and the appendix.

The small finds

The small finds from Kilverstone have been isolated in-groups according to their metallic composition and are quantified below: -

Copper alloy and silver coins	77
Copper alloy artefacts	160
Lead and pewter	64
Aluminium	2
Composite (artefacts containing Fe, Cu and Pb)	4
Iron	286
<i>TOTAL</i>	<i>308</i>

The well preserved Roman iron objects comprise most of the portable tools utilised in smithing activities, together with some fragments of agricultural implements which may have been destined for repair or re-forging. As a group, the ironwork is important; with the exception of the considerable quantities of nails, all of the excavated ironwork should be X-rayed and conserved.

The iron artefacts are in a stable condition and are presently stored with silica gel in air tight containers.

Considerable quantities of lead off-cuts, casting waste and fragmentary Roman pewter vessels suggest another possible industrial/craft site activity. It is possible that the repair or manufacture of pewter artefacts may have been carried out on part of the excavated area. Specialist analysis of the metallic composition and examination of the pewter and lead artefacts should resolve the repair / manufacture question. Many of the lead scrap off-cuts in the assemblage have been located in un-stratified contexts and are thus un-datable, although as lead is a fundamental part of pewter manufacture/repair, some of the un-provenanced scrap lead may be associated with pewter repair. It should be noted that Romano-British pewter finds tend to cluster in East Anglia and although the Kilverstone pewter finds are numerically few, expert examination of the pewter fragments may point to a Romano-British, East Anglian, repair/manufacture depot.

The copper alloy objects recovered are diverse, and the stratified artefacts are all of Roman date with the exception of the considerable number of metal detected finds from the land surface and spoil heaps. The Romano-British artefacts are mostly connected with dress and ornament and are found on most East Anglian Roman sites. The small quantity of identifiable Roman copper alloy artefacts recovered will only require basic conservation. Unfortunately, a well-preserved fragment of a Saxon, copper alloy, small square-headed brooch (Cat. No. 2810) was located in an un-stratified context. An un-stratified heavy copper alloy foot (Cat. No. 2749) is similar in form to moulded clay saltern supports. Although the foot is visually un-datable, it may be Roman and possibly be from a heavy copper alloy vessel or one of four supports for a non-ferrous casting mould. Metallurgical analysis may assist in determining the date of the foot.

Four composite metal objects were recovered. One (Cat. No. 2718) was located in a non-stratified context, and consists of a lead sphere cast onto a projecting nail and has some similarities with a steelyard weight, although the artefact does not appear to have fulfilled that function. The three other composite artefacts (Cat. Nos. 2737-8 and 2793) are composed of copper alloy, lead and iron. The most important of the composite artefacts are 2737-8 both identical objects consisting of saucer shaped, flattened edged, sheet copper alloy disks with lead cast into the concave side and a iron pin situated centrally through the Cu and Pb. Both 2737 and 2738 appear to represent a single artefact forming a convex-shaped object originally connected together by the iron pin. Possibly the convex shaped object originally contained a leather washer or flap between the two discs to form a non-return valve fitting for a Roman double acting pump (see Liversidge 1968, 52). Catalogue number 2793 is also fabricated from sheet copper alloy, lead and iron and, although the object was not recovered from a securely dated context, may also form part of a Roman pump. Roman pumps are rare in Britain; if after investigative conservation the artefacts prove to be pump components, they will be of national importance.

The appendix catalogues the whole assemblage with the exception of the 77 coins. The coins have not been totally identified.

Some entries in the appended catalogue relate to metal detected finds and contain multiple artefacts.

Condition

The pewter artefacts are in bad condition as the alloyed metal has become crystalline. The storage of the pewter in sealed containers with silica gel will prevent further deterioration, although should only be considered a temporary measure. The composite artefacts were in a particularly bad condition when excavated, although the present storage conditions with silica gel in sealed containers will prevent further deterioration. The copper alloy and iron objects are in excellent condition and do not require special storage conditions other than being maintained in a air-tight dry environment.

Recommendations

The iron objects excavated at Kilverstone, as a group, form museum display class artefacts and as such warrant a complete programme of examination by X- ray, followed by full conservation. Another important aspect of the site is the pewter. As the pewter is mostly in poor condition, before study and drawing can be undertaken, specialist conservation is required. After a comprehensive X-ray programme the composite artefacts will require very careful analytical conservation. Copper alloy artefacts are of no special significance and recommendations for conservation and drawing has been restricted to definite Roman objects and a single Saxon brooch. The coins recovered from Kilverstone only require identification and subsequent statistical analysis will be dependant on the context and spacial distribution.

Iron: 60 iron artefacts have been selected for X- raying and conservation out of a total assemblage of 285. Nails and post-medieval artefacts have been excluded.

Copper alloy: 161 copper alloy objects were recovered, out of which 30 could usefully be conserved and drawn.

Lead and pewter: 29 lead and pewter artefacts require conservation and metal composition analysis. Pewter is particularly difficult to conserve and restore and English Heritage Ancient Monuments Laboratory may be the only establishment capable of the task. It may be that all that can be done is to render the pewter suitable for illustration. In total, 22 artefacts have been selected for illustration.

Composite artefacts: Analytical conservation after X-raying needs to be carried out on the composite artefacts, particularly examination for organic remains, such as leather and wood. The A.M. laboratory could provide advice on the appropriate conservation organisation.

Coins: The 77 coins just require identification followed, if justified, by statistical analysis.

Cat. No.	Mat.	Context	Feature	Num.	Area	Location	Sm. Find No.	Identification	Date	Conserve	Draw	X-ray
209	Fe	254	104	1		Tr.7		55 mm diameter ring	Unknown	No	No	Yes
210	Fe			1		sorting through spoil		Fragment of triangular headed nail.	Late Roman	No	No	No
243	Fe	375	151	1		Tr.7		Nail shaft.	Roman	No	No	No
2815	Fe	421		1	C			Perforated plate, possibly a bucket band.	Roman	Yes	Yes	Yes
2816	Fe	424		1	C			Oval plate/lid.	Unknown	Yes	Yes	Yes
2817	Fe	426		1	C			Hammer head (sledge hammer).	Roman	Yes	Yes	Yes
2818	Fe	426		3	C			Triangular headed nails.	Late Roman	No	No	No
2819	Fe	426		1	C			Flat headed nail.	Roman	No	No	No
2820	Fe	426		1	C			Blacksmith's tongs Ref. Manning A13d	Roman	Yes	Yes	Yes
2821	Fe	427		1	C			Axehead Ref. Manning B6	Roman	Yes	Yes	Yes
2822	Fe	426		7	C			a) Possibly ferrule. b) 2No. Latch lifters c) Portable anvil. d) 3No. Fragments	a) Roman b) Roman c) Roman d) Not datable	a) Yes b) Yes c) Yes d) No	a)Yesb)Yes c)Yes d) No	a) Yes b) Yes c) Yes d) No
2823	Fe	427	201	10	C			Nailed bent plate, Fe fragments and nails.	Roman	Yes	Yes	Yes
2824	Fe	427	201	2	C			Sheet Fe bent to right angle and riveted, plus Fe fragment.	Roman	Yes	Yes	Yes
2825	Fe	427	201	29	C			Sheet Fe fragments.	Roman	Yes	Yes	Yes

2826	Fe	428		3	C		Triangular headed nails. Ref. Manning R73 and R86	Late Roman	No	No	No
2827	Fe	428		1	C		Nailed through - heavy, curved one face and flat the other face, Fe metal object. Possibly plane.	Roman	Yes	Yes	Yes
2828	Fe	428		2	C		Shears. Ref. Manning D4	Roman	Yes	Yes	Yes
2829	Fe	442	104	9	C		Nails	Roman	No	No	No
2830	Fe	523		5	C		Nails	Roman	No	No	No
2831	Fe	952	297	1	C		Nail	Roman	No	No	No
2832	Fe	1123	333	1	C		Nail	Roman	No	No	No
2833	Fe	1155		1	C	74	Blade with tang.	Possibly Roman	Yes	Yes	Yes
2834	Fe	1157		1	C		Nail	Possibly Roman	No	No	No
2835	Fe	1275	298	1	C		Notched Fe bar	Roman	Yes	Yes	Yes
2836	Fe	1352		1	C		Nail	Possibly Roman	No	No	No
2837	Fe	1486	288	1	C		Nail	Roman	No	No	No
2838	Fe	1527	455	2	C		Nails	Roman	No	No	No
2839	Fe	1554	239	1	C		Nail	Roman	No	No	No
2840	Fe	1778	412	1	C		Nail	Roman	No	No	No
2841	Fe	1796	454	1	C		Nail	Roman	No	No	No
2842	Fe	1651	518	1	C		Nail	Roman	No	No	No
2843	Fe	2001	613	1	C		Nail	Roman	No	No	No
2844	Fe	2078	633	1	C		Nail	Roman	No	No	No
2845	Fe	2078	633	1	C	N.W.Quad	U' section edge trim, similar to shield binding.	Roman	Yes	Yes	Yes
2846	Fe	2079	633	1	C		Nail	Roman	No	No	No

2847	Fe	2084	636	1	C		Hook	Roman	Yes	Yes	Yes
2848	Fe	2087	637	1	C		Fe strip	Roman	Yes	Yes	Yes
2849	Fe	2089	638	1	C		Nail	Roman	No	No	No
2850	Fe	2237	690	1	C		Fe bar fragment.	Roman	Yes	Yes	Yes
2851	Fe	2271		1	C	MD	Belt hook	Possibly Roman	Yes	Yes	Yes
2852	Fe	2537	796	1	C		76 Nail	Roman	No	No	No
2853	Fe	2687	862	1	C		Nail	Roman	No	No	No
2854	Fe	2723	874	2	C		Nails	Roman	No	No	No
2855	Fe	2786	889	1	C		Nail shaft.	Roman	No	No	No
2856	Fe	2464	780	2	C		a) Fe strip	a) Roman	a) Yes	a) Yes	a) Yes
							b) Nail	b) Roman	b) No	b) No	b) No
2857	Fe	2716	852	1	C		Fe sheet fragment.	Roman	Yes	No	Yes
2858	Fe	2784		1	C		Nail	Roman	No	No	No
2859	Fe	2813	904	1	C		Nail	Roman	No	No	No
2860	Fe	2980		11	C		a) Skillet fragments.	a) Roman	a) Yes	a) Yes	a) Yes
							b) Twisted Fe hanger.Ref. Manning P9	b) Roman	b) Yes	b) Yes	b) Yes
2861	Fe	2981	968	1	C		Shears. Ref. Manning D4	Roman	Yes	Yes	Yes
2862	Fe	3018	147	2	C		Nails	Roman	No	No	No
2863	Fe	3044	912	1	C		Nail	Roman	No	No	No
2864	Fe	3112	1001	1	C		Nail	Roman	No	No	No
2865	Fe	3115	852	1	C		Ferrule fragment	Roman	Yes	No	Yes
2866	Fe	3444	1108	7	C		Nails and nail fragments.	Roman	No	No	No
2867	Fe	3517		2	C		Ferrule fragments	Roman	No	No	Yes
2868	Fe	3593		1	C		Screw	Post Med.	No	No	No
2869	Fe	3626	1162	3	C		Nails	Roman?	No	No	No

2870	Fe	3927	1242	5	C		a) Fe strap fragments. b) 3No. Nails.	a) Roman b) Roman	a) Yes b) No	a) No b) No	a) Yes b) No
2871	Fe	3949	1248	2	C	S.half	a) Fe strip b) Nail	a) Roman? b) Roman?	a) Yes b) No	a) No b) No	a) Yes b) No
2872	Fe	3949	1248	32	C	S.half	Square headed "coffin" nails.	Roman	No	No	No
2873	Fe	3949	1248	1	C	N.half	Nail	Roman	No	No	No
2874	Fe	3949	1248	1	C	Find (A)	Broken hook	Roman?	Yes	Yes	Yes
2875	Fe	3949	1248	1	C	Find (B)	Triangular headed nail.	Roman	No	No	No
2876	Fe	3949	1248	3	C	Find (C)	Fragments of double spiked loop. Similar to Manning R37	Roman	Yes	Yes	Yes
2877	Fe	3949	1248	1	C	Find (D)	Hanger	Roman	Yes	Yes	Yes
2878	Fe	3971	1250	8	C		Square headed "coffin" nails.	Roman	No	No	No
2879	Fe	3971	1250	31	C		Hobnails	Roman	No	No	No
2880	Fe	3973	1251	1	C		Nail	Roman	No	No	No
2881	Fe	4052	1272	1	C		Nail	Roman	No	No	No
2882	Fe	154		1	B		Nail	Roman	No	No	No
2883	Fe	183	17	1	B		Nail	Roman	No	No	No
2884	Fe			1			7 Fragment of scythe blade.	Roman	Yes	Yes	Yes
2885	Fe			1			11 Tip of scythe blade. Ref. Manning F19	Roman	Yes	Yes	Yes
2886	Fe			1			12 Fe plate fragment.	Roman	Yes	Yes	Yes
2887	Fe			1			14 Possibly fragments of scythe blade.	Roman	Yes	Yes	Yes
2888	Fe			1			16 Nail	Roman	No	No	No
2889	Fe			1			17 Nail	Roman	No	No	No
2890	Fe			1			18 Nail	Roman	No	No	No
2891	Fe			1			24 Fe bar fragment.	Roman?	Yes	No	Yes

2892	Fe	1		28	Rolled Fe with one edge rolled possibly ferrule fragment.	Roman?	Yes	Yes	Yes
2893	Fe	1			Chisel. Ref. Manning C11	Roman	Yes	Yes	Yes
2894	Fe	1			Bill hook. Ref. Manning F35	Roman	Yes	Yes	Yes
2895	Fe	1			Spade shoe. Ref. Manning F11	Roman	Yes	Yes	Yes
2896	Fe	1		37	Nail	Roman	No	No	No
2897	Fe	1		38	Blade fragment, scramasax?	Saxon	Yes	Yes	Yes
2898	Fe	1		42	Fe plate fragment.	Unknown	Yes	No	Yes
2899	Fe	1		45	Buckle	Post Med.	No	No	No
2900	Fe	1		46	Fragment of scythe blade.	Roman	Yes	Yes	Yes
2901	Fe	1		50	Plate perforated for nails.	Unknown	Yes	No	Yes
2902	Fe	1		51	50 mm dia. Ring.	Post Med.	No	No	No
2903	Fe	1		52	Chisel. Ref. Manning B43	Roman	Yes	Yes	Yes
2904	Fe	1		54	Part of lock?	Roman?	Yes	Yes	Yes
2905	Fe	1		55	Cleaver	Roman	Yes	Yes	Yes
2906	Fe	1		56	Fragment of scythe blade.	Roman	Yes	Yes	Yes
2907	Fe	1		58	Perforated sheet	Unknown	Yes	No	Yes
2908	Fe	1		63	Knife blade. Manning Q16	Roman	Yes	Yes	Yes
2909	Fe	1		72	Nail	Roman	No	No	No
2910	Fe	1		75	Stylus point. Manning N9	Roman	Yes	Yes	Yes
2911	Fe	1		69	Hook. Manning R24	Roman	Yes	Yes	Yes
2912	Fe	1	104 MD		Bar with 90 deg. Bend.	Unknown	Yes	No	Yes
2913	Fe	1	MD - A		Strip Fe.	Unknown	No	No	No
2914	Fe	1	MD - B		Fe strap.	Unknown	No	No	No
2916	Fe	1	MD - E. of site		Fragment of knife blade.	Unknown	Yes	No	Yes
2917	Fe	1	?		Masons pick	Roman	Yes	Yes	Yes
2918	Fe	1	spoil heap		Knife Frag. Ref. Manning Q98	Roman	Yes	Yes	Yes

2919	Fe			1	spoil heap	Broken spear head?	Saxon?	Yes	Yes	Yes
2920	Fe			15	spoil heap	3 No.rings, 2 No.Nails, 1 No. bar frag., 2 No. Buckles, 5 No.misc.	Post Med.?	No	No	No
2921	Fe			1	stray find	Spade shoe. Ref. Manning F11	Roman	Yes	Yes	Yes
2922	Fe			1	stray find	Nail	Post Med.	No	No	No
2923	Fe			1	stray find	Horseshoe fragment.	Post Med.	No	No	No
3016	Fe	166		1		Brooch fragment?	Iron Age	Yes	Yes	Yes
3017	Fe	2093		1		Nail shaft.	Roman?	No	No	No
194	Cu	415	163	1		Pin, bun-headed, above spiral groove decoration	Roman	No	Yes	No
195	Cu		115	1	Top Fill	Fibula brooch, pin intact	Roman	Yes	Yes	No
199	Cu			1	Tr.6 spoil	Decorated strap-end	Roman?	Yes	Yes	No
200	Cu			1	Tr.7 (25m)	Spoon bowl fragment	Post-Med?	No	No	No
202	Cu			1	Tr.7-80m?85m?	Perforated strip	Roman or Med	No	No	No
203	Cu			1	Tr.7-100m	Probably part of small lock or clock mechanism	Post-Med	No	No	No
204	Cu			2	Tr.7 spoil near F 104	a) Spoon, probably silvered b) Stud	a)Roman b) unknown	a) Yes b) No	a) Yes b) No	a)No b)No
208	Cu			2	Tr.13 spoil	a) Thimble b) Stud	a)PostMed b)Rom/Me d	a)No b)No	a)No b)No	a)No b)No
245	Cu			1	Metal det. find	Riveted strip	Rom./Med.	No	No	No
2709	Cu					Coin size round weight?	Rom./Med.	No	No	No
2739	Cu	3971	1250	1		Twisted wire bracelet	Roman	Yes	Yes	No

2740	Cu	1	Big Field D7-MD	Bow of fibula brooch	Roman	Yes	No	No
2741	Cu	1	Big Field D8 -MD	Scrap sheet metal, trimmed with shears and folded.	Rom./Med.	No	No	No
2742	Cu	1	Big Field E5-MD	D' shaped buckle.	Medieval or Post-Med.	No	Yes	No
2743	Cu	1	Big Field G2-MD	Furniture escutcheon plate.	Post-Med.	No	No	No
2745	Cu	1	Big Field LZ1-MD	Sheet metal cut into diamond shape with shears.	Rom./Med.	No	No	No
2746	Cu	1	Big Field NZ5-MD	Button	Modern	No	No	No
2747	Cu	1	Big Field RZ7-MD	Decorative stud	Post-Med.	No	No	No
2748	Cu	1	Big Field Q26-MD	Button and loop strap fitting.	Medieval	Yes	Yes	No
2749	Cu	1	Big Field QZ9-MD	Foot from large vessel or supporting foot from mould.	Roman	Yes	Yes	No
2775	Cu	1	22	'U' shaped binding strip, perforated at ends.	Rom./Med.	Yes	Yes	No
2776	Cu	1	35	Small buckle with attachment plate.	Medieval	Yes	Yes	No
2777	Cu	1		Decorated stud.	Roman	Yes	Yes	No
2778	Cu	1		Sheet metal clip, not perforated.	Rom/Med.	No	No	No

2779	Cu		1		39	Sheet metal plate, traces of soldered on boss, perforated.	Rom./Med.	Yes	Yes	No
2780	Cu		1		44	Rectangular sheet metal fragment, cut by shears, silvered on one side.	Roman?	Yes	No	No
2781	Cu		1		53	Small rectangular sheet metal plate with two perforations.	Rom./Med.	No	No	No
2782	Cu		1		59	Small riveted hanger with ring.	Roman	Yes	Yes	No
2783	Cu		1		60	Cast metal plain ring, harness fitting.	Modern	No	No	No
2784	Cu		1		65	Fragment of foot (as 2749)	Roman	Yes	Yes	No
2785	Cu		1		66	Fibula brooch fragment.	Roman	Yes	Yes	No
2786	Cu		1	B	70	Decorated stud central fixing.	Rom./Med.	Yes	Yes	No
2787	Cu	149	1	B		Bent metal strip, ends pointed.	Rom./Med.	No	No	No
2788	Cu	177	1			Fragment of decorated tweezers.	Roman	Yes	Yes	No
2789	Cu	421	14		a)	Undecorated, riveted belt hook	a)	Yes	a)Yes	a)No
					b)	13 misc.artifacts inc.bullet cases.	Medieval	b) No	b)No	b)No
2790	Cu	423	2		a)	Hook with screw holes.	a)Modern	a)No	a)No	a)No
					b)	Corrugated sheet metal.	b)Modern	b)No	b)No	b)No
2791	Cu	424	1			Bowl of spoon	Post-Med.	No	No	No

2792	Cu	426		1			Nipple plate for gas jet	Modern	No	No	No
2794	Cu	442	104	4			a)Brooch Frag.with cell for glass/enam. b)Decorated stud c)Perf.and filed coin. d)Rolled sheet metal. All Cu dust.	All Roman	a)Yes b)Yes c)Yes d)No	a)Yes b)Yes c)Yes d)No	All No
2795	Cu	483						Unknown	No	No	No
2796	Cu	1993		2			Fibula brooch	Roman	Yes	Yes	No
2797	Cu	4492	1399	1		113	Cased electric wire	modern	No	No	No
2798	Cu			1	Topsoil		Frament of buckle	Medieval	Yes	Yes	No
2799	Cu			1	spoil heap		Plain intaglio finger ring, stone missing.	Roman	Yes	Yes	No
2800	Cu	2491		2			Remains of stud.	Roman	No	No	No
2801	Cu		725	3			Washer found with parts of battery.	Modern	No	No	No
2803	Cu			2	stray find-MD		a)Dagger chape decorated with two pairs of parallel lines and rilled drum terminal. b)Fragment of cast pedestal.	a)Rom./Me d.b)Roman	a)Yes b)Yes	a)Yes b)Yes	a)No b)No
2806	Cu			52	A	spoil heap	Misc. finds inc. shell cases.	Modern	No	No	No
2807	Cu			11	B	MD	Buttons,harness studs and scrap sheet metal.	Modern	No	No	No

2808	Cu			16	B	MD	Misc. items inc. shell cases, buckles and a spoon handle.	Post Med./ modern	No	No	No
2810	Cu			3	C	MD	a)Small square headed brooch. b)Gilded furniture plate. c)Sheet metal hanger.	a)Saxon b)Modern c)Modern	a)Yes b)No c)No	a)Yes b)No c)No	a)No b)No c)No
2812	Cu			4	C	MD-spoil heap	a)Small spoon bowl. b)Fragment of bell. c)Bullets	a)Roman b)Post-Med. c)Modern	a)Yes b)No c)No	a)Yes b)No c)No	a)No b)No c)No
2814	Cu			5	E. of site	MD	Buttons,harness buckle and stud.	Modern	No	No	No
2915	Cu			1	A	MD	Acorn shaped small gilt finial.	Roman	Yes	Yes	No
2924	Cu	3574		1			Rolled sheet	Unknown	No	No	No
2925	Cu			1			Casting waste.	Roman?	No	No	No
3018	Cu	4038		1			Fragment of finger ring decorated with bosses and grooves.	Roman	Yes	Yes	No
190	Pb	254	104	1		Tr.7	Sheet Pb folded to form a three sided box, possibly a protector for a timber corner.	Roman?	No	Yes	No
191	Pb			1		spoil near Tr.7 F 104	Musket ball	Post Med.	No	No	No
192	Pb			1		Tr.7 spoil	Pb sheared offcut.	Unknown	No	No	No
244	Pb			1		General metal detector finds	Pb globule - casting waste.	Unknown	No	No	No

2708	Pb	423		1		Musket ball	Post Med.	No	No	No
2709	Pb	421		4		Fragments of pewter plate.	Roman	Yes	Yes	No
2710	Pb	4472	1389	1		Casting globule - Test metallic composition to check if pewter.	Roman?	Yes	No	No
2711	Pb			1	1	Un-perforated weight.	Roman?	Yes	Yes	No
2712	Pb			1	13	Pb vessel repair plug.	Roman?	No	Yes	No
2713	Pb			1	20	Drip from smelting - test metallic composition to check if pewter.	Roman?	Yes	No	No
2714	Pb			1	26	Drip from smelting - test metallic composition to check if pewter.	Roman?	Yes	No	No
2715	Pb			1	27	Perhaps fragment of pewter vessel.	Roman	Yes	No	No
2716	Pb			1	43	Pewter plate fragment (fresh break).	Roman	Yes	Yes	No
2717	Pb			1	57	Irregular Pb fragment - test metallic composition.	Roman?	Yes	No	No
2719	Pb			1		Rolled sheet Pb.	Roman?	Yes	No	No
2720	Pb			1	Big Field C9	Fragment of pewter plate, cut with shears.	Roman	Yes	Yes	No
2721	Pb			1	Big Field D5	Pewter leg or support.	Roman	Yes	Yes	No
2722	Pb		27?	1	F27?	Folded and perforated Pb 1cm. long. Possibly small weight.	Roman	Yes	No	No

2723	Pb		1		Big Field N29	Fragment of pewter plate, cut with Roman shears.	Yes	Yes	No
2724	Pb		1	A	QZ5	Pb metal vessel repair plug.	Roman?	Yes	Yes No
2725	Pb		3		MD	a) Pb leaf shaped object. b) Offcut from pewter vessel. c) Roll of sheet Pb.	a) Roman b) Roman c) Roman?	a)Yes b)Yes c)No	a) No b) No c) No
2726	Pb		4	B	MD	a) Repair plug. b) Folded sheet Pb. c) 2No. 1 mm broken sheet Pb.	a) Roman? b) Roman? c) Roman?	a) No b) No c) No	a) No b) No c) No
2727	Pb		2	C	MD - spoil	Pb or pewter casting waste.	Roman	Yes	No No
2728	Pb		16		spoil heap	a) Pb weight. b) Fragment of pewter bowl. c) 3No. Pb or pewter sheared trimmings. d) 3No. Pb repair plugs. e) 8No. Pb or pewter casting waste frags.	a) Roman b) Roman c) Roman d) Roman e) Roman?	a) Yes b) Yes c) Yes d) Yes e) Yes	a) Yes b) Yes c) Yes d) Yes e) No
2729	Pb		1		MD	Sheared offcut of Pb or pewter.	Roman?	No	No No
2730	Pb	426	1	E. of site	MD	Rim of heavy gauge pewter dish or plate.	Roman	Yes	Yes No
2731	Pb	426	2			Pewter plate, rim detached, 380 mm diameter.	Roman	Yes	Yes No
2732	Pb	426	1			Pewter plate, rim attached, 440 mm diameter.	Roman	Yes	Yes No
2733	Pb	426				Pewter heavy gauge plate fragments inc. 3No. Rims.	Roman	Yes	Yes No

2734	Pb	426			Medium gauge pewter plate fragments.	Roman	Yes	Yes	No
2735	Pb	426			Fine gauge pewter plate fragments inc. good section of rim.	Roman	Yes	Yes	No
2736	Pb		3	spoil heap	Pewter plate, large body portion remaining plus good rim.	Roman	Yes	Yes	No
2718	composite		1		Pb bevelled sphere cast around Fe tapered projecting pin.	Roman	Yes	Yes	Yes
2737	compo site	427	1		Copper alloy convex shaped disc internally filled with lead, a central Fe pin connects the Pb and Cu alloy. Possibly a pump component.	Roman	Yes	Yes	Yes
2738	compo site	427	1		As Cat. No. 2737	Roman	Yes	Yes	Yes
2793	compo site	426	1		Composite object consisting of a Fe core through Pb within a Cu alloy collar. Possibly a pump component.	Roman	Yes	Yes	Yes

8. HUMAN BONE

Natasha Dodwell

Introduction

A detailed assessment of the human skeletal remains recovered during excavations at Kilverstone, Norfolk and a statement of their potential is presented below.

Six cremation burials dating to the Neolithic/early Bronze Age were identified in Area A. In Area C, six articulated Roman inhumations and an urned cremation were identified. Three of the inhumations were identified in the southeast corner of the site; these adult-sized graves lay parallel to each other and were aligned north – south. Three immature individuals were recovered from two, shallow graves. In addition, disarticulated human skeletal elements were recovered from Anglo Saxon, Roman and Iron Age features in Area C.

The condition of the material

As with the faunal remains the bone preservation is extremely variable. The three adult inhumations are extremely poorly preserved; the latter is represented only by the skull and the abraded leg bones, whilst only the splintered and abraded shafts of the legs of the other two individuals survive. In contrast the infant bones, both articulated and disarticulated are in excellent condition. Each of the cremations has been truncated to some degree and the quantity of calcined bone collected was extremely variable, as was the bone fragment size.

Methodology

All the human bone was scanned to produce an inventory of surviving skeletal elements and to provisionally age and sex each individual. Each cremation was bulk sampled, although larger fragments of bone were lifted separately during the excavation. Whilst these samples have been processed their residues have been scanned but not sorted. General methods used in the osteological evaluation of these individuals are those of Bass (1992), Buikstra. and Ubelaker. (eds.) 1994 and Steele and Bramblett (1988). The age of the immature individuals was assessed when possible from the stage of tooth development (Ubelaker 1978) and from the lengths of the long bones. The following age categories are used in this assessment:

foetus/neonate	<6 months
infant	0-4 years
juvenile	5-12 years
subadult	13-18 years
young adult	19-25 years
middle adult	26-45 years
mature adult	45 years +

There may be overlaps between categories or a broad category, such as adult, where insufficient evidence was present.

No assessment of sex could be made as the relevant parts of the pelvis, skull or limb joints did not survive.

Summary of Results

The Adult Inhumations

A group of three *extremely* poorly preserved adult or older subadult inhumations, [3970], [4007] and [4010] were identified in the south east corner of the site. The graves lay parallel to each other and were aligned north-south, with their heads in the south. The surviving bones were extremely abraded and the majority of the epiphyses were missing.

F. 1250, skeleton [3970]: Only the mid shafts of both femora and tibia survive. A Cu alloy bracelet was identified in the region of the left elbow and hobnail tacks were recovered in the northern end of the grave; it was not possible to determine whether the shoes would have been worn on the feet or placed beside them. Iron nails recovered from the fill suggest that the body was interred in a coffin.

F. 1248, skeleton [4007]: Again, only the mid shafts of the both femora and tibia survive, although two loose molars were recovered from the sampled grave fill. The individual is an older subadult/young adult of indeterminate sex. Poorly preserved hobnails were identified in the area of the feet and again it was not possible to determine whether the shoes were worn. The position of iron nails and an iron latch recovered from the fill suggest that the body was interred in a coffin.

F. 1262, skeleton [4010]: This is the only skeleton where the skull survives as well as the lower limbs. The wear on the molars suggests that this adult died before c.35 years of age. The sex is indeterminate. The following dentition survives:

-	7	6	5	4	3	2		1	2	-	-	-	-	-
1								-						
8	7	6	5	4	3	2		1	2	/	4	5	6	7
1								8						

The Infant graves

Two shallow graves, or rather scoops, F853 and F1228 contained the articulated remains of three immature individuals (F1228 contained two individuals).

Skeleton [2648] in F. 853 lay in a slight depression, on its right side with both its arms and legs slightly flexed. Its head was to the west and it faced south. The stage of dental eruption suggests that the infant died at 9 months \pm 3 months.

Feature 1228, contained the bodies of two immature individuals, who were buried directly on top of each other. The bodies lay in a slight depression, with both the heads and the legs slightly higher than the rest of the bodies. The upper one, [3859] lay on its right side, facing south with its head to the west whereas the one beneath it, [3859] had its head to the east. Skeleton [3859], aged using its dentition, died at birth \pm 2 months. The dentition for skeleton [3908] is missing but the surviving long bones are only slightly smaller suggesting that this infant died at or around birth too.

The disarticulated material

Disarticulated skeletal elements were recovered from 6 features in Area C; five of these contained neonate/infant bones. It should be noted that aging immature individuals from single elements is less accurate than assessing age from the whole skeleton or from the dentition. Bones were recovered from the following features:

Feature	type	context	skeletal element	approx. age	notes
F. 350	pit	1215	skull fragment	adult	found with antler
F. 354	SFB	1220	maxilla fragment	middle adult	
F.689	pit	2234	r.ulna	neonate	
		2235	l. humerus	neonate	
F.690	post hole	2237	skull frags., l.illium, l. & r. radii	neonate	
F.1105	ditch	3798	l. tibia	neonate	
F.1216	pit	3804	r. humerus	neonate	

The only disarticulated adult bone identified derived from an Iron Age pit, F. 350. The superior portion of the occipital part of the skull was recovered from the base of the pit together with a sawn/worked red deer antler. The antler itself had (unfired) clay crudely moulded to the sawn ends.

The proximity of feature F689 to F690, the similar age estimates obtained from each skeletal element and the lack of duplication, suggests that the bones are from one individual aged between 0-18 months old at death. Similarly, it is possible that the disarticulated bone recovered from F1216 may well derive from the adjacent double neonate/infant grave F1228. The length of the tibia (68mm) recovered from the fill of the ditch F. 1105 suggests it comes from an individual who died between 0-6 months. It therefore *could* belong to either of the neonates in the double grave F1216 or from the individual represented in features F689 and F.690. However it should be stressed that this bone was found c.30 and 50 meters away from both of theses features and so could derive from a 5th immature individual.

The fill of the SFB F.354 in the northwest of the site was sampled and a fragment of adult maxilla identified in the residue. Based on the degree of wear on the dentition (canine, 2nd premolar, 1st and 2nd molars) the individual was a middle adult.

The Cremations

A total of 7 cremation deposits were identified. One, [879] was identified in the upper fill of a ditch in the west of Area C, and has been provisionally dated to the Romano-British period. The other six date to the late Neolithic/early Bronze Age and were loosely clustered in the south-east of Area A.

Both urned and unurned burials were recorded and some contained pyre debris. All the bone fragments were a uniform buff-white colour, which is indicative of full oxidisation of the organic component. The relatively small bone fragment size somewhat inhibited the quantity of information that could be gleaned from the assemblage and as the residues have yet to be sorted the weight of bone analysed should be viewed as a minimum. None of the burials could be sexed and the age categories are broad. Much of this information is summarised in the table below:

Feature	Context	Age	Weight (g)	Type	Inclusions
263/284	879	Adult & immature	230	urned	? animal burnt bone
1409	4512	Subadult/adult	83	unurned	
1424	4543	Infant/juvenile	20	with 2 vessels	
1436	4570	adult	745	unurned	
1445	4588	Older subadult/adult	60	unurned	
1426	4548	juvenile	150	?urned	
1454	4606	Older subadult/adult	18	unurned	Unburnt animal bone

Recommendations

Little further work is necessary with regards the skeletal material itself although closer examination of the cremated material might refine some of the ages already allocated. The residues from the cremations need to be sorted so that a total weight of bone can be established; this is significant in terms of the burial ritual. Further study and regional comparison needs to be undertaken on the burial rites and rituals observed at Kilverstone, particularly with regards the to immature burials, the disarticulated skeletal elements and the prehistoric cremations.

9. ANIMAL BONE

Andy Clarke

Quantity and Provenance of Material

A moderately sized assemblage of faunal remains totalling 3706 bone fragments was recovered from Neolithic, Iron Age, Romano-British and Saxon contexts. Of these it was the Romano-British phase that produced the most amount of faunal material, accounting for 81.5% (3023 fragments) of the total assemblage, followed by the Saxon phase (17%) and then the Iron Age (1.2%) and Neolithic (<1%) periods.

Method

For the purpose of this assessment the entire assemblage was quickly scanned in order to gain an insight into the species present and to highlight any patterns evident in element distribution, age profiles, butchery and spatial distribution. All the bone was identified using Schmid (1972) and the Cambridge Archaeological Unit reference collection. Age estimations were undertaken using the criteria established by Getty (1975) and Grant (1982). No attempt was made at this time to distinguish between the bones of sheep and goats. These bones are quoted as sheep/goat. Deer and bird remains are grouped as Deer species and Bird species. Also, where it was clear that a group of fragments originated from a single bone, they were grouped together and counted as a single element, i.e. 100 fragments from a broken skull were counted as 1 bone.

Division of Assemblage

In view of the very low amounts of animal bone recovered from the prehistoric phases of the site, this report will concentrate on the Romano-British and Saxon phases. By doing so it should be possible to gain an insight into the type of animal husbandry practiced and how it developed or changed between the two major occupation phases of the site. This division reduces the assemblage to a total of 3658 bone fragments.

Condition of Material

The assemblage is in a very varied state of preservation. While some of the bone is in very good condition, much has clearly suffered the degenerative effects of the elements combined with the length of time the bone has been in the ground. This situation, compounded by the attentions of gnawing animals, has rendered it impossible in some cases to identify the individual elements present, let alone the species. The combined result of these factors is that 49.1% (1799 bones) of the total assemblage is unidentifiable. This obviously severely limits the amount of potentially useful interpretative data that can be retrieved. However, as shown in Tables 1 and 2 below, it is clear that although the amount of potential metrical data is very low, the potential for retrieving aging data is fairly high, suggesting that in the more detailed

inspection of an analysis, it should be possible to gain a useful insight into the kill-off patterns for each of the three major domestics and in so doing obtain indications of the type of husbandry practiced at the site. Then, by comparing this information to more detailed, contemporary sites, it may be possible to extrapolate the data from Kilverstone and recreate the part played by each of the major domestics in the overall economy of the site.

Phase	Roman	Saxon
<i>Cattle</i>	9.8	<1
<i>Sheep/Goat</i>	8.2	0
<i>Pig</i>	<1	40.7

Phase	Roman	Saxon
<i>Cattle</i>	9.8	7.8
<i>Sheep/goat</i>	15.9	25.6
<i>Pig</i>	7.6	22.2

Percentages of metrical (left) & ageing (right) data for the three major domestics by phase

Site-related questions

There are a number of areas that warrant further investigation. Primarily, the major task of an analysis would be to establish the type of animal husbandry practiced at the site and how it changed or developed through the Romano-British phase and then into the subsequent Saxon phase of occupation. As stated above this may have to be done through data extrapolation with contemporary sites. Furthermore, the role of the minor domestics (horse and dog) and the wild animals (deer) needs to be investigated. Were horses and dogs used as working animals, for food, or both? Red and Fallow deer mainly represent the wild remains; what role did these species play with regards to the economy and diet of the site? Lastly and especially in the Romano-British phase there are indications of possible ritual activity. Several features contain isolated skulls, such as feature F.788 or articulated limbs such as feature F.765, are these deliberate deposits or only the waste from primary butchery? Furthermore, there are a number of animal bone deposits that are associated with human remains such as feature F.689 for example.

Summary

The Romano-British Period

The buildings and structures produced a very small amount of faunal material, none of which is considered to be helpful in any way as regards their function.

Species present: The animal bone from the other Romano-British features, as can be seen from Table 3 below, is dominated by the remains of cattle, sheep/goat, pig and horse. Also present are the remains of dog, cat, deer species, bird species. As can be seen from Table 3, dog remains appear in high numbers. This however, is slightly misleading as most of these bones came from complete or partially complete skeletons. The 'other' category mentioned in Table 3 refers to the partial remains of a badger skeleton and an isolated rabbit mandible, both of which are not considered to be archaeological but the result of burrowing.

Elements present: With regard to the major domestic species, the vast majority of those elements present come from the extremities of the skeleton, the skull, distal limb bones and the feet, i.e. those parts of a carcass which hold the least amount of meat. This information could be used to hypothesise that most of the remains are the waste from primary butchery. This is supported by such features as ditches F.239 and F.316.

Species	Roman	Saxon
Cattle	255	51
Sheep/goat	194	43
Pig	117	27
Horse	129	6
Dog	362	0
Cat	4	0
Deer sp.	11	2
Bird sp.	3	0
Other	53	0
Cow/horse size	269	50
Sheep/pig size	204	79
Unid.	1422	377
Total	3023	635

Number of identifiable specimens per species (NISP).

In both cases there is the occurrence of animals (cow and sheep/goat respectively) that are represented only by those bones which hold little or no meat. This is a pattern that continues throughout the Romano-British assemblage.

Ageing: Despite the poor condition of much of the assemblage it was possible to retrieve a satisfactory amount of ageing data for the three major domestics. For cattle, sheep/goat and pig, age at death estimates were obtained ranging from birth to adulthood. This suggests that these animals were being bred on or at least very near the site. Unfortunately the assemblage does not hold enough ageing data to recreate the type of economy these species were bred for, but as stated above there should be enough data to extrapolate the Kilverstone age at death estimates into particular husbandry practices when compared to contemporary sites.

Minor domestic and wild species: The remains of domestic dogs are very common in this phase, as well as being very varied. The remains of two dogs found in features F.440 and F693 highlight this. The latter displayed all the characteristic deformities of a congenital dwarf, having very short and twisted leg bones. The minimum estimated shoulder height was only 23.15cms. In comparison the former was an individual at least three times as big that was clearly of advanced years, evidenced by its worn teeth and spinal arthritis. This variation in domestic dog breeds warrants some investigation into their use on the site, especially considering the fact that the Romans were responsible from introducing 'house' or 'lap' dogs into Britain (Harcourt, 1974).

The wild animals present in this phase take the form of deer species. These remains are mainly antler from Red or Fallow deer, only one of which shows any sign of being worked. There are also a few isolated long bones, possibly of Red deer. This requires further investigation to establish a confident species identification and to establish their contribution to the site economy relative to the domestic animals.

The remaining species present are cat and bird species and are represented by only 4 and 3 bones respectively. An analysis would provide little more data than to identify the cat remains as either wild or domestic and establish the species of the bird bones.

Ritual activity: There are a number of features yielding animal bone that warrant further investigation with regard to possible ritual deposition of faunal remains. Several features spread across the site contain the skulls, articulated or semi-articulated remains. The skulls mainly come from cow, sheep/goat and horse, whereas the articulated remains are from horse and dog. It is possible that some of these are simply the waste from butchery, but a complete hind leg of a horse (as seen in feature F.765) seems not to be the case. Further evidence comes from feature F. 654. Here an adult cow sacrum was recovered with a foetal or neonate cow sacrum. Was this adult pregnant at the time of death? If so why kill such an animal and where are the rest of the skeletons?

Further indications of possible ritual activity come from features F.689, F.1105, F.1171 and F.1216 which all contained animal bone associated with human remains, all of which are either foetal or neonate. Once again is this deliberate or has the dumping of animal bone disturbed earlier human burials?

The Saxon Period

The Saxon phase of occupation produced a much smaller assemblage, coming from SFBs and associated pits and post-holes. As with the previous phase there are aspects of this assemblage that warrant further investigation, but only in conjunction with data from contemporary sites.

Species present: Once again the assemblage is dominated by the remains of the three major domesticates and in this case, almost entirely to the exclusion of other species. As can be seen in Table 3 above, horse and deer species are the only other faunal remains present, suggesting an economy almost entirely based on domestic animals.

Elements present: The patterns observed in the previous phase continue into the Saxon phase of occupation. Almost all the elements recovered come from those parts of the skeleton that bear little or no meat such as the skull and distal limb bones, once again suggesting that the assemblage represents the waste from primary butchery.

Ageing: It was possible to obtain a fair amount of ageing data for the three major domesticates, revealing age at death estimations for cattle from 18-30 mths. to < 4yrs., sheep/goat from 6-12 mths. to 4-6 yrs. and pig from sub-adult to adult. Unfortunately, these estimations were not recovered in sufficient numbers to confidently reconstruct any form of husbandry. However, using the ageing data that the assemblage does provide as the basis for extrapolation, it should be possible to gain an insight into the type of economy practiced, by comparing the Kilverstone data to contemporary sites.

Minor domestic and wild species: Both horse and Red deer are present in this phase, but both in very small numbers (6 and 2 fragments respectively) and cannot provide any information beyond confirming their presence on the site.

Recommendations

The bone assemblage recovered from Kilverstone holds significant amounts of information that warrant proceeding to a more detailed investigation of an analysis. It is clear from the information set out above that the Romano-British phase of the site had an economy based around the breeding and exploitation of the three major domesticates, with a lesser contribution made by horses, dogs and deer species. There are also strong indications of ritual/ceremonial activities taking place. As the occupation moved into the Saxon phase, there is less data to interpret but it is still clear that the economy revolved around cattle, sheep/goat and pig, with once again, a lesser contribution made by horses and deer species.

A full analysis would allow the following points and questions to be investigated.

1. In both the Romano-British and Saxon phases the economy is clearly based on the three major domesticates. What were the forms of husbandry practiced and how did they develop or change through the Roman phase and then into the Saxon phase of occupation?
2. Confident identification must be made of the deer species remains in order to ascertain which species of deer were exploited and to reveal their relative contribution to the site economy.
3. The remains of domestic dogs are frequent and varied in size in the Roman period. Does this variation in size reflect a varied number of uses? Furthermore, does the possible presence of 'lap dogs' have any implications for the status of the site?
4. The indications of ritual or ceremonial deposition of animal remains requires further investigation. The reasons behind this practice and the implications that these contexts have for the differential use of space across the site need to be investigated.

The above points deserve to be fully investigated, by using close comparison to contemporary sites such as Melford Meadows (Mudd 1994), Redcastle Furze (Andrews 1995) and West Stow (West 1985). This can only be achieved by means of a full analysis, without which it will not be possible to gain any useful insight into the economic activities taking place at the site during the Romano-British and Saxon periods of occupation.

10. PLANT REMAINS

Rachel Ballantyne

The limited charred plant remains from Kilverstone represent a characteristic Breckland site, particularly during the Roman period. The development of a spelt wheat based economy with some barley appears to have been in keeping with the earlier Iron Age cultivation practices. The one mineralised seed of coriander does however indicate wider interactions, since this herb was introduced during the Roman period. During the Saxon period hulled, probably six-row barley was an important crop, and free-threshing wheat may have been introduced.

Methodology

A total of 137 bulk samples were collected from the site, including 10 that represented the preliminary evaluation stage. All the samples were processed by hand using bucket flotation. The flots were collected with a 300µm sieve, and the heavy residue washed over 1mm mesh. Both flots and residues were dried prior to their sorting. The flots were examined under a low-power binocular microscope, and identifications made using the reference collection of the Pitt-Rivers Laboratory, Department of Archaeology, University of Cambridge. Plant nomenclature follows Stace (1997), and Kerney and Cameron (1996) for land snails.

A selection of 125 samples was scanned for plant remains. Many contexts contained very little archaeological material other than wood charcoal. A number of Roman period contexts did include more substantial charred remains, which were subsequently quantified in full.

The results are summarised in Tables 2 to 4 at the end of this report.

Preservation

Charred plant macrofossils are the major remain-type present. One pit, [3706], includes mineralised seeds, but is an isolated case. The well-drained sandy soils have excluded any waterlogged preservation at the site.

The quantity and quality of charred plant remains recovered is poor. Many have limited surface preservation, which is likely to be associated with the abrasive sandy soil-matrix. It is also possible that the sampled contexts were not associated with suitable charring events or their debris. However the consistently poor condition of samples from all phases and areas of the site suggests that preservation conditions have been strongly defined by environmental rather than contextual factors.

One exceptional context, Medieval hollow [76], contains c.20 dried large *Prunus* sp. (comparable to plum) drupes with the stones removed. Dried archaeological plant remains seem extremely unlikely, and it would appear that this is an anomalous, intrusive case. However the very sandy soils have led to good preservation of iron artefacts, which are almost devoid of corrosion (Challands pers. comm.). There is

therefore a *tiny* possibility that, had the drupes entered the ground when already dried they may have been preserved. Only a carbon-14 date will be able to conclusively prove or disprove this context as archaeological.

Although intrusive root material is low in all samples, numerous uncharred and presumably modern seeds are present. Similar uncharred seeds occur in many contexts, the main taxa being *Chenopodium* c.f. *polyspermum*, *Silene latifolia*, *Polygonum arviculare*, *Fallopia convolvulus*, and *Veronica hederifolia*.

The molluscan remains are generally low, and represent a limited range of land taxa. Due to the number of clearly intrusive plant remains, some shells may be of more recent origin; a fact that is compounded by the very low amounts of shells present. The molluscan remains are not discussed further in this report.

Results

Buried soils [148] and [166]

Both soil samples contained only negligible charred plant remains, with a low quantity of highly fragmented and occasionally vitrified wood charcoal. A small number of charred cereal grains are also present in [148], two of which are identifiable to barley (*Hordeum* sp) and one, from its hulled & twisted form, probably to the six-row barley *Hordeum vulgare*.

The low amounts of artefactual material include flint debitage, burnt flint and bone fragments. There is however little to conclude, other than that a low density of 'occupation' debris is present within these contexts. The soil contents are difficult to date because of the likelihood of a residual component; barley has been present in Britain since the Neolithic period onwards.

The Neolithic contexts

Twenty-nine samples were collected from the three excavation areas. All contexts, with the exception of three-throw [605], represent pit features. There is variation in the charred plant and other artefactual remains between contexts, but no clear compositional groupings.

The major charred plant remains are of wood charcoal and hazelnut shells (*Corylus avellana*). The two material types appear to be independently associated, with contexts occurring that are rich in either one or both. The contexts rich in hazelnut shell are:

Area A: [4480], [4486]*, [4492]*, [4498], [4508]*, [4510], [4517], [4533]*, [4604], [4643]

Area C: [605], [4084]*, [4097]*

Much lower amounts of hazelnut are present in:

Area A: [4528], [4494], [4610]

Area B: [128]

Area C: [4131]

A few pit contexts include occasional charred cereal grains, but the preservation conditions are so poor that identification further than barley (*Hordeum* sp.) or wheat/barley (*Triticum/Hordeum* sp.) grain has been impossible. One grain in pit [4097] Area C is comparable to emmer wheat (*Triticum* c.f. *dicoccum*). There is a complete lack of cereal chaff, which has prevented closer identification of the cereal remains. All the contexts with cereal grain also contain numerous hazelnut shells, suggesting some association between these remains (contexts marked above with a '*').

Many of the pit contexts include amounts of burnt flint, worked flint, and/or potsherds. There again appears to be no clear correlation between these remains or between them and the charred plant types.

Iron Age contexts

A small number of later prehistoric or undefined prehistoric/Roman contexts were sampled. Most contain very few, if any, charred plant remains which are poorly preserved. The most common find is cereal grain, which is identifiable to barley in pits [1215] and [1016] (both Area C), but is generally describable only as barley or barley/wheat grain. Very few wild seeds are present, pit [1215] contains several of black bindweed (*Fallopia convovulus*) and ribwort plantain (*Plantago* c.f. *lanceolata*).

The single well-preserved context is from pit [3032]. The identifiable grain is primarily barley, of which a third was of the hulled variety. There is no accompanying barley chaff. A lesser amount of hulled wheat grain (*Triticum spelta/dicoccum*) is probably spelt wheat, as suggested by some glume bases. The wild taxa are dominated by brome grass (*Bromus* spp.), the seeds of which are extremely difficult to remove due their similar size and morphology to grain. Other taxa occur in very low numbers, but do include several seeds of small-seeded dock (*Rumex conglomeratus/obtusifolius/sanguineus*).

Roman period contexts

The most notable plant remains were recovered from the Roman contexts on site, all of which derived from Area C. Of the forty-six samples, thirteen were identified as 'rich' on the basis of containing greater than ten items of charred cereal, chaff, or other seeds (coloured grey in Table 3). The discussion of Roman contexts is centred upon these thirteen contexts.

The major cereal type present is spelt wheat (*Triticum spelta*) which is represented by comparable grains or glume bases in all but one of the fourteen 'rich' samples. Spelt wheat also occurs in lower quantities in many of the other Roman contexts. The amount of wheat grain to glume bases varies significantly between samples, and this suggests that different stages of the crop-processing sequence are represented. The usual ratio within an unprocessed spelt or emmer spikelet is 1 grain:1 glume base.

wheat type grain: glume bases	Contexts	Implications
>2 : 1	pits [659] [778] [2598] [3169] [3489] N 'pond' [3516], ditch [2794]	grain dominated, representing mainly a cleaned cereal product
2:1 to 1:1	pits [427] [3032] [2922] S 'pond' [3449]	possibly representing intact spikelets, and so a partially cleaned crop
<1:1	ditch [3920] grave [3949] S 'pond' [3619]	chaff dominated, probably charred debris from the later stages of crop-processing

Summary of the variation of wheat grain and chaff in 'rich' samples

The contexts dominated by wheat grain probably represent grain charred close to, or during, its preparation for consumption. These contexts may have been near to such activities, or have contained waste collected from them.

In contrast the three glume-base rich contexts may have been located close to an area of crop processing. The high presence of chaff in grave [3949] probably represents residual charred material that became incorporated during back-filling, rather than anything specifically linked to the burial itself.

Two other cereal types are represented in lesser quantities in the samples. There are variable but low amounts of barely grain (*Hordeum* sp.). The grain is often poorly preserved, but seems hulled when the surface texture has survived. In the fourteen 'rich' contexts an equal number of straight and twisted grains have been identified. The presence of twisted grains suggests that six-row barley, such as the hulled type *Hordeum vulgare*, is represented. Very few barley rachis internodes (chaff components) are present, but one in pit [427] was clearly a six-row type, which supports the interpretation of the cereal grain. Individual rye grains (*Secale cereale*) occur in contexts [659] [778] [1103] [3516] and [3920], and two rachis internodes are present in [427]. These finds provide limited evidence for the cultivation of rye - a cereal that was developed as a crop in Britain during the Roman period, but only became fully established during later Saxon times.

Most of the sampled contexts contain only low amounts of wild seeds relative to grain, and almost all could be linked to arable or disturbed soil conditions. The most commonly occurring and greatly represented taxa are black bindweed (*Fallopia convolvulus*), small-seeded docks (*Rumex conglomeratus/obtusifolius/sanguineus*), wild radish capsules (*Raphanus raphanistrum*) and brome grass (*Bromus* spp.). With the possible exception of the small dock seeds, most of these wild components are a similar size to grain and are difficult to clean from harvested crops. The dominance of larger seeds in the samples suggests that many smaller components had already been removed.

Other than indicating disturbed or arable soils, little other information is provided by the wild taxa as to the conditions for cereal cultivation. Several samples contain seeds of sedges (*Carex* spp.), and 'pond' [3449] also includes two seeds of a spikerush (*Eleocharis* sp.) type. These taxa may represent damper areas of arable land. The

repeated occurrence of wild radish capsules does suggest that cultivation was upon the sandy local soils, which favour this species.

The two contexts [3449] and [3619], both of southern 'pond' F.1120, include single flower-heads of a heather type (*Ericaceae* indet.). Such heathland associated material may represent a non-cereal source of charred remains, although in low quantities. There was also a single seed comparable to bell heather (*Erica* c.f. *cinerea*) in pit [2598], a species often found upon the Brecklands today.

One context of note is pit [3706], which although lacking many charred remains, contains a number of mineralised seeds. Such preservation is usually associated with contexts rich in cess or other rotting materials. The most interesting seed is one clearly representing coriander (*Coriandrum sativum*), the herb was introduced to Britain during the Roman period (Greig 1991) and has often been recovered from urban cess-pits. This find at Kilverstone demonstrates that coriander was also part of the economy in more rural settlements too, and its mineralised state suggests that it had been consumed here (if not also grown). Some of the other mineralised seeds are not so well preserved, but include buttercup (*Ranunculus* sp.), forget-me-not (*Myosotis* sp.) and hedge/heath bedstraw (*Galium mollugo/saxatile*), which are less easy to interpret; perhaps they represent plants from the surrounding environment.

Saxon contexts

Two different types of feature have been sampled. The five burnt flint pits although very rich in charcoal contain no other charred plant remains – other than one indeterminate grain in [2535].

The sunken-featured buildings (SFBs) include slightly more charred material. Pairs of samples have been examined from opposing quadrants of excavated fill from six individual SFBs:

F.240, NW and SE parts of [705]
F.633, fills [2078] and [2079]
F.994, fills [3092] and [3094]
F. 997, fills [3095] and [3096]
F.1090, fills [3391] and [3394]
F. 1091, fills [3405] and [3406]
and individual contexts F.354 [1220], F.434 [1457], F.1042 [3077]

All the above contexts contain a very low density of often poorly preserved charred cereal grains. The identifiable grains are primarily of barley, which occasionally appears to be of the hulled variety; occasional twisted grains suggest the 6-row form (*Hordeum vulgare*). A little wheat (*Triticum* sp.) and rye (*Secale cereale*) grain is also present. The few identifiable wheat grains are a mixture of hulled types (i.e. *Triticum* c.f. *spelta*) and free-threshing varieties (*Triticum aestivum sensu lato*). Unfortunately no remains of free-threshing wheat chaff (rachis internodes) were recovered to clarify this. During the Saxon period in Britain free-threshing wheats became the main cultivated type, and the hulled wheat grains and few glume bases

may represent the continued cultivation of these types or a residual Roman component to the SFB fills.

Very occasional charred seeds of, for example, black-bindweed (*Fallopia convolvulus*), dock (*Rumex* sp.) and grasses (Poaceae indet.) are present. The extremely low numbers of charred items within each sample means that any spatial patterning present between fill 'quadrants' would not be statistically valid. However, the charred plant remains appear fairly consistent both between and within building fills – they contain low amounts of poorly preserved grain. It may be suggested that similar formation processes were involved in the formation of the SFB fills, probably involving residual surface material. This process is suggested by the low-density and abraded and fragmented nature of charred remains. On this basis no further contexts were processed from the remaining quadrants of the SFBs.

Discussion

The quality of the plant remains varies between contexts, and so the level of interpretation with it. The Neolithic pits demonstrate that hazelnuts were a component of the economy, although their archaeological predominance is probably due to preservation conditions. The few cereal grains recovered are all from hazelnut-rich pits and they indicate this charring was probably directly in association with food preparation. The independence of hazelnut and charcoal-rich contexts suggests these may reflect separate charring-event types. It would be interesting to examine how the charred assemblages vary spatially between pits in comparison with the other artefactual remains.

Only very limited information is provided by the Iron Age contexts. The one 'rich' sample contains charred remains very similar to those from the later Roman contexts. In each phase both hulled barley and spelt wheat are present, and the wild taxa include brome grasses (*Bromus* spp.), knotweed (*Polygonum arviculare*) and black bindweed (*Fallopia convolvulus*). Although this observation is based upon one good Iron Age charred context, the remains do suggest continuity in arable production into the Roman period at Kilverstone. The Roman charred cereal remains are however more substantial and extensive than those from the Iron Age contexts, and suggest an intensification of arable land.

The main characteristic of the Roman contexts is the dominance of spelt wheat, with lesser amounts of hulled six-row barley and limited rye. This compares very well to the Roman assemblage at West Stow, also upon the Brecklands (Murphy 1985). The similarity in remains suggests a fairly uniform range of cereal cultivation across the Brecklands at this time. From the few weed taxa it may be suggested that cereals were grown locally upon the dry, sandy soils (i.e. *Raphanus raphanistrum*), and that cultivation may also have extended into damper areas (i.e. *Carex* spp.). There appears to be no clear temporal patterning of plant remains within the Roman contexts examined.

The few 'rich' charred samples are generally low in wheat chaff and weed seeds, and were probably cleaned cereal products that were accidentally charred during their preparation for consumption. The three contexts which are richer in glume bases all

derive from the eastern side of site. The most marked context, ditch [3920], contains extremely high amounts of chaff relative to grain, and is probably charred waste from late-stage crop processing. The crop may have been stored threshed and winnowed in spikelet form, and then cleaned further in small amounts when needed. The charring of debris from late-stage processing is well represented on Roman sites, and may well have been a deliberate action. At Lances Corner, Cambridge, thick lenses of almost pure charred spelt chaff were found in a roadside ditch, and represented repeated and apparently deliberate events (Regan and Mortimer forthcoming).

The presence of rye is interesting, since it was not a major cereal crop until the later Saxon period. Low amounts of rye were recovered from the similar Roman assemblage at the Breckland site of West Stow (1985). The cereal is particularly suited to dry and well-draining soils, and so its early presence in the Brecklands seems plausible.

The Saxon plant remains are much poorer, but do indicate that free-threshing wheat was now cultivated, possibly in addition to hulled wheats – although residuality cannot be excluded. This development again mirrors cultivation patterns both upon the Brecklands (Murphy 1985) and also on a wider scale in southern Britain during this period (Grieg 1991). Barley appears to have remained an important crop, and low quantities of rye are also present. The very poor preservation conditions make any further interpretation difficult.

KEY TO RESULTS TABLES

Unless indicated, items were preserved by charring.

'u' – uncharred, probably modern

'm' – mineralised

'-' 1 or 2 items

'+' less than 10 items

'++' 10 – 50 items

'+++' greater than 50 items

sample number	<135>	<136>	<11>	<13>	<25>	<94>	<95>	<97>	<110>	<111>	<112>	<113>	<114>	<115>	<116>
context	[148]	[185]	[519]	[805]	[1120]	[4097]	[4084]	[4131]	[4523]	[4508]	[4528]	[4492]	[4488]	[4490]	[4490]
feature	-	-	F.190	F.219	F.341	F.1289	F.330	F.1305	F.1419	F.1407	F.1416	F.1399	F.1398	F.1398	F.1393
area	B	B	C	C	C	C	C	C	A	A	A	A	A	A	A
description	buried soil	buried soil	pit	tree-throw	pit	pit	pit	pit	pit	pit	pit	pit	pit	pit	pit
phase/date	-	-	?Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.	Neo.
sample volume/litres	14	14	6	15	10	15	10	15	14	13	5	7	10	4	8
flot fraction sorted	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FLOT>0.3mm															
hulled, twisted <i>Hordeum</i> sp. grain	1														
<i>Hordeum</i> sp. grain	2						1								
<i>Triticum</i> s.l. <i>dicoccum</i> grain															
<i>Triticum/Hordeum</i> sp. grain	1								8			1	1		
cereal grain indet.	1									1					
<i>Corylus avellana</i> shell fragments				+++		+++	+++	+	+++	++	+	++	++		+++
mid-Vic/Ladyrus sp. (2-4 mm)															
medium Poaceae indet. (c. 4mm)															
Poaceae culm node															
small charcoal (<2mm)	++	++	+++	++	+++	+++	+++	+++	++	++	+++	+++	+++	++	+++
med. charcoal (2-4mm)	+	+	++	+	+++	+++	+++	++	+	+	++	+++	++	-	++
large charcoal (>4mm)	-	-	+	+	++	++	++	-	-	-	-	++	+	-	+
- of which vitrified charcoal	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
charred concretion			+					+		+	+		+	+	+
fired clay															
potsherd												+			+
bone fragments			+												
burnt bone fragments	+														
fish & eel vertebrae															1 eel
glass fragments															
chalk fragments															
invasive insect exoskeleton			+	U		+								+	+
<i>Carychium minimum/tridentatum</i>															
<i>Cochlicopa lubrica/lubricella</i>															
<i>Columnella/Pupilla</i> sp.	+														
<i>Valonia costata</i>															
<i>Diclus rotundatus</i>															
<i>Aegopinella/Orychilus</i> sp.															
<i>Trichia</i> sp.															
<i>Cepaea</i> sp.															
RESIDUE>4mm															
burnt flint		+	+	+	-		++	-	++			+	+		
fired clay															
unfired clay															
flint flakes	+	+	+	+	+	++	++	+	+	+	++	+	+	+	+
potsherds															
bone fragments															
7slag															
charcoal						++	-		++						

sample number	<117>	<118>	<119>	<120>	<121>	<122>	<123>	<125>	<126>	<127>	<128>	<129>	<131>	<132>	<133>
context	[4510]	[4508]	[4498]	[4494]	[4498]	[4501]	[4517]	[4582]	[4894]	[4804]	[4810]	[4843]	[126]	[128]	[130]
feature	F.1408	F.1408	F.1401	F.1400	F.1402	F.1432	F.1411	F.1442	F.1446	F.1453	F.1456	F.1472	F.9	F.10	F.11
area	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B
description	pit	pit	pit	pit	pit	7crom.	pit	pit	pit	pit	pit	pit	pit	pit	pit
phase/date	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo	Neo
sample volume/litres	10	10	8	11	9	15	15	7.5	7	8	13	10	12	13	10
flot fraction sorted	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FLOT>0.3mm															
hulled, twisted <i>Hordeum</i> sp. grain															
<i>Hordeum</i> sp. grain															
<i>Triticum</i> s.l. <i>dicoccum</i> grain															
<i>Triticum/Hordeum</i> sp. grain															
cereal grain indet.															
<i>Corylus avellana</i> shell fragments	+++			+	++		+++		+++	+	+++			+	
mid-Vic/Ladyrus sp. (2-4 mm)															
medium Poaceae indet. (c. 4mm)															
Poaceae culm node															
small charcoal (<2mm)	+++	+++	+++	+++	+++	+++	+++	+++	+++	++	+++	++	++	++	++
med. charcoal (2-4mm)	++	++	++	++	++	+++	+++	+++	++	+	++	+	+	++	+
large charcoal (>4mm)	+	+	++	+	+	+++	+++	+++	-	-	+	-	-	-	-
- of which vitrified charcoal	+	+	+	+	+	++	++	++	-	-	+	+	+	-	-
charred concretion	+	+	+	+	+		++	+		+	+				
fired clay															
potsherd													+		
bone fragments															
burnt bone fragments															
fish & eel vertebrae															
glass fragments															
chalk fragments														++	++
invasive insect exoskeleton			+	+	+				+	-	+			-	-
<i>Carychium minimum/tridentatum</i>														+	
<i>Cochlicopa lubrica/lubricella</i>														-	
<i>Columnella/Pupilla</i> sp.															
<i>Valonia costata</i>															
<i>Diclus rotundatus</i>															
<i>Aegopinella/Orychilus</i> sp.															
<i>Trichia</i> sp.															
<i>Cepaea</i> sp.															
RESIDUE>4mm															
burnt flint	+		+					+		+	+	++		+	
fired clay															
unfired clay															
flint flakes	+		+		+	+	+	+	+	+	+	++			
potsherds	+		+							+					
bone fragments		++												+	
7slag															
charcoal	+		+							+		++			

Table 2: The buried soil and Neolithic contexts at Kilverstone (KIL00).

[illegible]

[illegible]

Table 3b: Roman contexts from Kilverstone (KIL00)

context	[2700]	[2929]	[2949]	[2971]	[4019]	[4019]	[4020]	[4200]	[4414]
sample number	<89>	<104>	<99>	<91>	<102>	<101>	<93>	<102>	<105>
feature	F.1184	F.1238	F.1249	F.1250	F.1229	F.1230	F.1238	F.1236	F.1269
area	C	C	C	C	C	C	C	C	C
description	distal	distal	distal	distal	distal	distal	distal	distal	distal
phase	BB	BB	BB	BB	BB	BB	BB	BB	medial
soil date	BB-88	BB-88	BB-88	BB-88	BB-88	BB-88	BB-88	BB-88	BB-88
sample volume/ litres	14	15	14	12	12	12	12	12	12
but fraction sorted	1	0.25	1	1	1	1	1	1	1
hulled, twisted Hordeum sp. grain									
hulled, straight Hordeum sp. grain									
hulled Hordeum sp. grain		1							
Hordeum sp. grain	1					1			1
Triticum s.l. spelta grain	1	13 (1)	2			2			
Triticum s.l. dicoccum grain									
Triticum aestivum grain	1	7							
Triticum aestivum grain									
Triticum aestivum s.l. grain									
Triticum sp. grain	5	10	15		1	5			
Triticum/Hordeum sp. grain		2			1				
Triticum/Secale grain		2							
Secale cereale grain		101							
Secale/Avena sp.									
cereal grain indet.		6							
unquantified fragmented cereal grain indet.									
germinated cereal embryo		15							
Hordeum sp. rachis internode									
Hordeum sp. rachis internode			1						
Triticum spelta glume base	1	270	27						
Triticum spelta rachis internode		1							
Triticum spelta rachis internode		400	250	3	1	5	1		
Triticum spelta rachis internode			6						
Triticum spelta rachis internode			1						
Secale cereale rachis internode									
cereal indet. rachis internode									
cereal indet. culm node									
Hordeum sp.	1 m								
Corylus avellana shell fragments									
Chenopodium album		1				3			
small Chenopodium (s.l. polysericum)	++ u		++ u	++ u	++ u	++ u	++ u	++ u	++ u
Asperula sp.		2	u			1			
Senecio sp.		1	1						
Caryophyllaceae indet.									
Chenopodiaceae/Caryophyllaceae indet.	1 m								
Polygonum aviculare	2 m & u					u	u	u	
Fallopia convolvulus		4		1		1 & u			
Rumex acetosella									
Rumex crispus									
Rumex conglomeratus/obtusifolius/manquius		5	1			1			
small Rumex sp.									
Rumex sp. kernel									
Polygonaceae indet.									
Malva sp.									
Viola sp.									
Hebecladus corymbosum caput		3 frags.	1		1				
Erica s.l. cinerea									
Ericaceae indet. flower head		1							
Ericaceae indet. leaf fragment									
mid Viola/lathyrus sp. (2-4 mm)									
small Viola/lathyrus sp. (s. 2mm)									
small Trifolium sp. (s. 1mm)			u		++ u		u		++ u
Geranium silvum	1 m								
Muscicapa sp.	1 m								
Pteris s.l. lanceolata									
Quercus vernus									
Quercus mollis/axillaris	1 m								
Sambucus nigra									u
Eleocharis sp.									
Gadum maritima									
Dist. Carex sp.									
Dist. Carex sp.									
Cyperaceae indet. kernel									
Festuca sp.									
Poa sp.									
Avena sp.									
Avena sp. awn fragment									
s.l. Avena sp. lemma base									
Phleum bertolonii		1	1						
Bromus sp.		2	1						
Bromus/Avena sp.						1			
large Poaceae indet. (>4mm)		1							
medium Poaceae indet. (s. 4mm)									
small Poaceae indet. (<4mm)									
Poaceae culm node									
Poaceae culm fragment		2							
small seed indet. (<3mm)	4 m	1	1						
kernel indet.									
small charcoal (<2mm)	+++	++	++	++	+++	++	++	++	++
med. charcoal (2-4mm)	++	+	+	+	++	++	++	++	+
large charcoal (>4mm)	+					+			
- of which vitified charcoal	+			+		+		+	
- of which twigs components		+							
charred concision	+					+	+		
charred roots		3 frags.							
fly ash									
fired clay		+	+						
bone fragments	++	+	+						
burnt bone fragments									
small bone	++ mammal	+							+
Antler bone									
fish & shellfish bones									
Thursi dune									
glass fragment									
spheroid									
Corychium minimum/bradatum									
Cochlicopa lubrica/lubricella									
Columella/Puzosia sp.									
Valonia costata									
Valonia exentris/pulchella									
Dicoma rotundifolia									
Assosinella/Oxychilus sp.									
Trichia sp.									
Cepaea sp.									
RESIDUE > 4mm									
burnt stone									
fired clay									
unfired clay									
flint flakes									
potsherds									
bone fragments	+	+		human					
Teles									
charcoal									
other									

Table 3c: Roman contexts from Kilverstone (KIL00)

Table 4: Saxon and Mediaeval contexts from Kilverstone (KIL00)

11. BRICK, TILE AND MORTAR

Romano-British

The assemblage of Roman brick and tile from the site was insubstantial (45 fragments, 4.3 kg). A variety of types were represented, including roof tiles (*tegula* and *imbrex*) and tiles associated with hypocaust heating systems (box flue and *pilae*). Ten fragments of brick were not large enough to be attributed to type. There was little variation in terms of fabric type, most being sandy redwares with very occasional flint inclusions. Two fragments of mortar were recovered.

Type	No. of fragments
Tegula	4
Imbrex	3
Box flue	4
Pilae	8
Unid. Tile	14
Unid. Brick	10
Mortar	2

Table 1 - Roman ceramic building material

This is not a substantial quantity of material by any count, a situation which fits comfortably with the fact that all of the structures on site were of timber framed construction and are unlikely to have supported tiled roofs. The possibility that one of the structures was heated by a hypocaust system is improbable. The material was not clustered in one place, but distributed at random across site. It is much more likely that the ceramic building material may have been brought onto the site for non-structural reasons, perhaps used as hardcore.

No further work is recommended.

Post-Medieval

A large quantity of Post-Medieval brick and tile was recovered from Area D, in and around the brick kiln. The kiln itself was made of brick, and three different types were involved in its construction. The stoking pit at the front of the kiln had been backfilled with a variety of ceramic building materials, apparently derived partly from the kiln superstructure and partly from waste which must have collected nearby. Samples of all types were kept for analysis.

Kiln structure

The majority of the kiln structure was made from high quality red bricks with very few flint inclusions (approx. 0.22m long, 0.11m wide, 0.07m thick). Some 'skintlings' were observed on their outer surfaces (see main report). Many, especially those nearest the firing chamber and firing tubes, were severely vitrified or cracked.

The cross beams of the kiln were originally made from thin, yellow bricks (approx. 0.21m long, 0.11m wide, 0.04m thick). The use of smaller bricks may have been designed to provide additional strength on an unsupported and unarched structural element. The beams later subsided, and in places were repaired with new courses of larger red bricks (approx. 0.23m long, 0.11m wide, 0.06m thick), presumably made in the kiln itself.

Stoking pit

A number of different types of brick and tile were recovered within the stoking pit. These are detailed below:

1. Curved roof tile (S profile), red fabric, 1.6cm thick, size unknown
2. Curved roof tile (U profile) with chamfered corners, yellow, 1.5cm thick, size unknown
3. Flat roof tile with peg hole, red, 1.2cm thick, size unknown
4. Flat roof tile, yellow, 1.4cm thick, size unknown
5. Floor tile, red, 4.5cm thick, size unknown
6. Floor tile, yellow, 4.5cm thick, size unknown
7. Bricks from kiln structure, red and yellow (as detailed above)

The presence of bricks within the stoking pit is likely to be due to two factors: the collapse or destruction of the kiln superstructure, and the incorporation of discarded bricks (wasters) left over from the firing process. The presence of both floor and roof tiles is intriguing, and may imply that the kiln operators may not have restricted production to bricks alone. The different fabrics suggest that they also experimented with different types of clay (some presumably imported).

No further work is recommended.

12. BURNT CLAY

A total of 904 pieces (12,625g) of baked clay were recovered from a variety of contexts across site.

Category	No.	Weight
Unidentifiable	454	3206g
Daub/oven	142	2739g
Daub	43	367g
Oven	70	129g
Cooking plates (?)	80	1873g
Hearth	100	3750g
Circular loomweight	12	395g
Triangular loomweight	2	161g
Mould fragment (?)	1	5g

Table 1. Burnt clay

A number of pieces were identified as daub/oven lining due to the fact that one surface of the clay appeared to have been smoothed. A total of 43 fragments were definitely daub (F698), with clear wattle impressions on the internal surface and finger smoothing marks on the external one; these did not come from contexts located close to any of the structures, and presumably were general debris. The baked clay identified as oven material (F942) also included finger-made holes in some pieces, as well as what could be described as small 'pedestals'. The fragments described as 'hearth' material were essentially burnt natural subsoil.

A number of fragments of what appeared to be 'cooking plates' were recovered within a Roman pit towards the centre of site (F703). These had originally been thick circular discs, with one smooth surface and one rougher one; in profile, the side wall nearest the smooth surface was also flat and neatly bevelled. Three different sizes were represented (18cm diam., 2cm thick; 18cm diam., 2.5cm thick; 12cm diam., 2.8cm thick). Two small, flat fragments within the same context were perforated, and one appeared to be a 'corner' piece with three angled sides (i.e. not from a disc); this was similar in form and fabric to pieces found in two other contexts (F1151 and F1120).

Two pieces of triangular loomweight were recovered from two separate contexts (Roman ditches F981 and F239); it is possible that these were residual Iron Age artefacts. The typically Saxon circular loomweight fragments were recovered within one of the SFBs (F977); interestingly, this feature was very different in form to the other Saxon buildings on site.

One possible mould fragment (W-shaped in profile) was recovered from a Roman ditch (F241).

Recommendations

The possible mould fragment merits further analysis, to establish its precise origin.

13. GLASS

Sixteen fragments of glass were recovered from Area C. Fifteen of these were part of the same fine, white/clear glass vessel (found in the same context as the Roman flintworking debris, F266). A single thicker, green fragment was recovered from a ditch towards the south of the site (F1020).

No further work on the glass is recommended.

14. INDUSTRIAL WASTE

Three pieces of slag were recovered from a 14th century pit in Area B (F17).

Ten pieces were recovered from Area C, from a total of four contexts across the site. Seven (368g) were found together within a ditch (F342) adjacent to Structure 8, the metallurgical workshop.

Several large lumps of fly ash slag (sampled) were recovered from the kiln stoking pit in Area D (F18), evidence in support of the argument that the kiln was coal fired.

Recommendations

In the context of such a large assemblage of Romano-British metalwork, further study of the industrial waste from Roman contexts in Area C is strongly recommended. It is important to establish the exact composition of these pieces, and to compare the results with the other metalworking-associated artefacts (casting globules, drips, repair plugs, etc.) in order to ascertain exactly what kind of metalworking activity was carried out within the posited workshop.

15. TOBACCO PIPE

Five tobacco pipe stems were recovered from the kiln stoking pit (F18, Area D). No further work on the tobacco pipe is recommended.

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