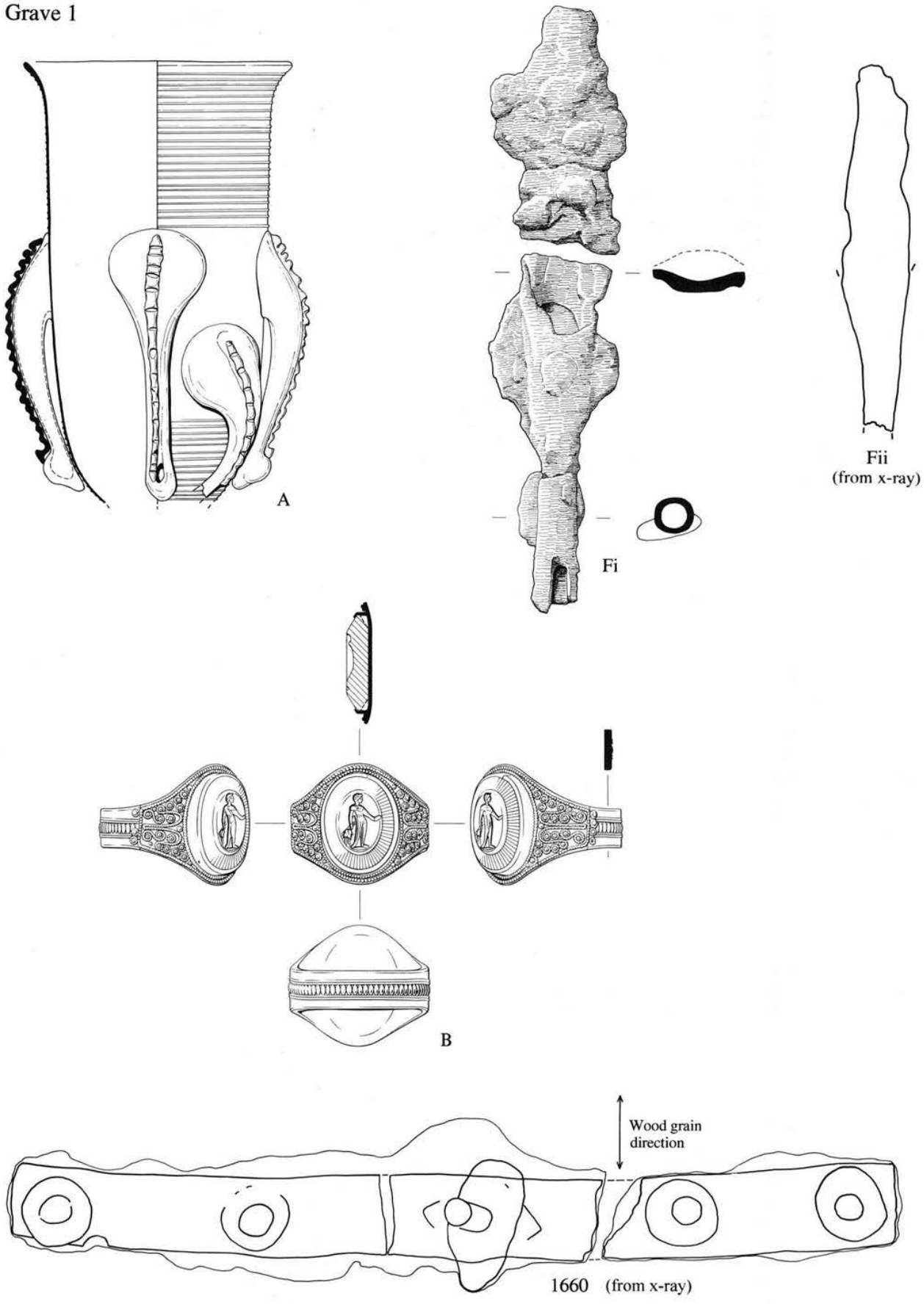


Figure 78 Grave-goods from grave 1. Scales: *B*; 1:1. Others 1:2

Grave 2

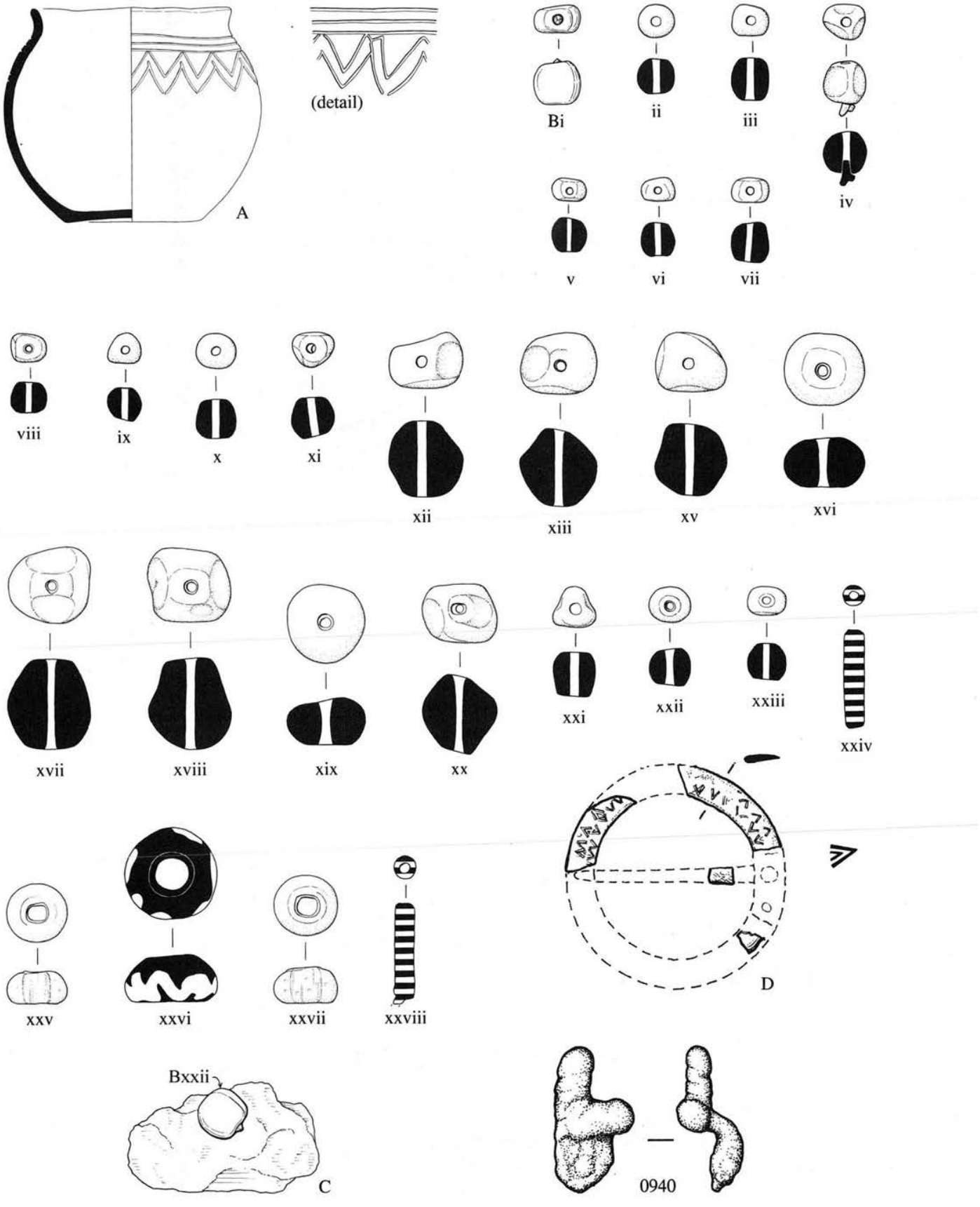


Figure 79 Grave-goods from grave 2. Scales: *A*; 1:3, detail 1:2. Others 1:1. Punch stamp at 2:1

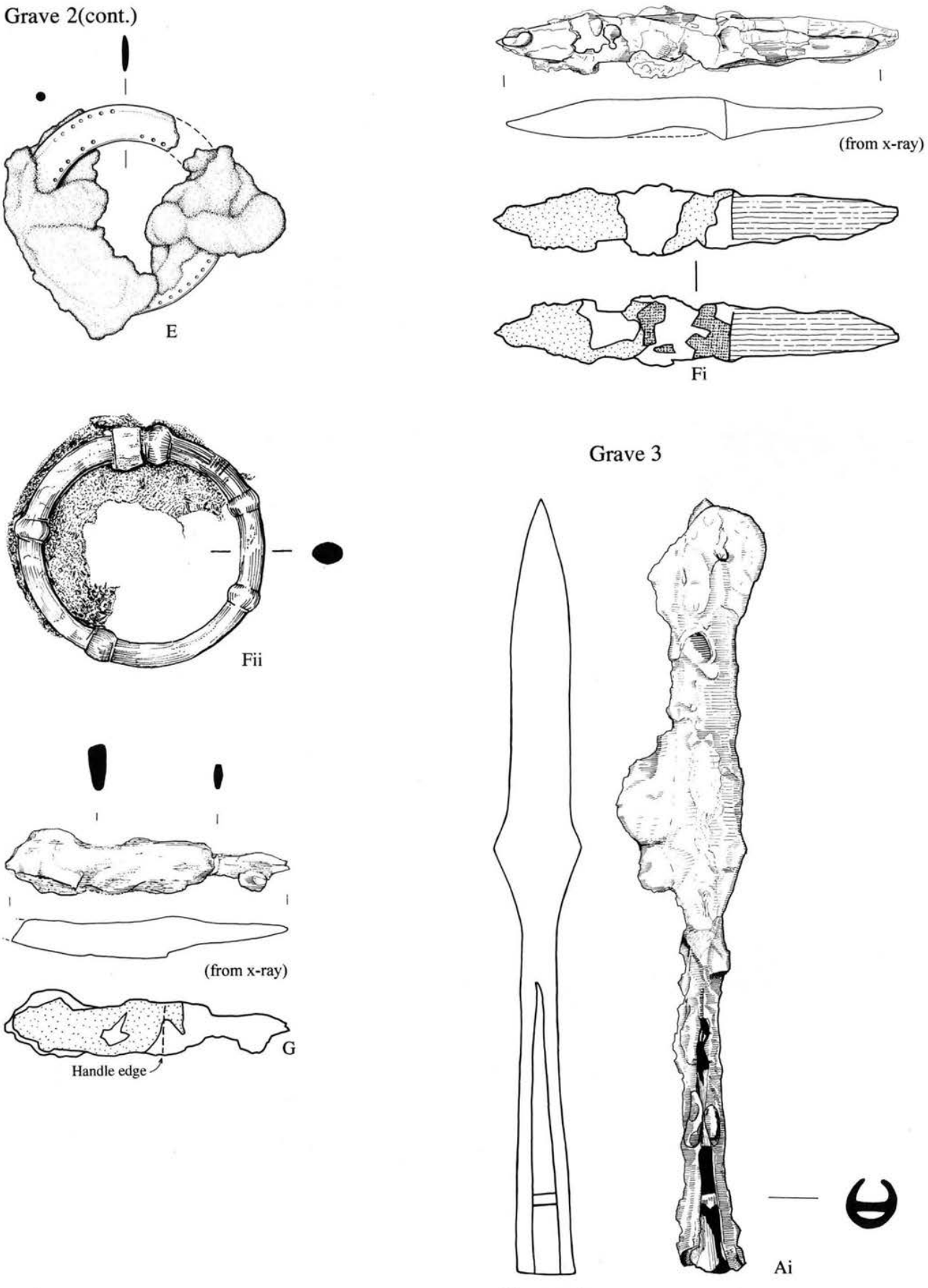


Figure 80 Grave-goods from graves 2 (cont'd) and 3. Grave 2. Scales: *E* and *Fii*; 1:1, *Fi* and *G*; 1:2. Punch stamp at 2:1. Grave 3. Scale: *Ai*; 1:2

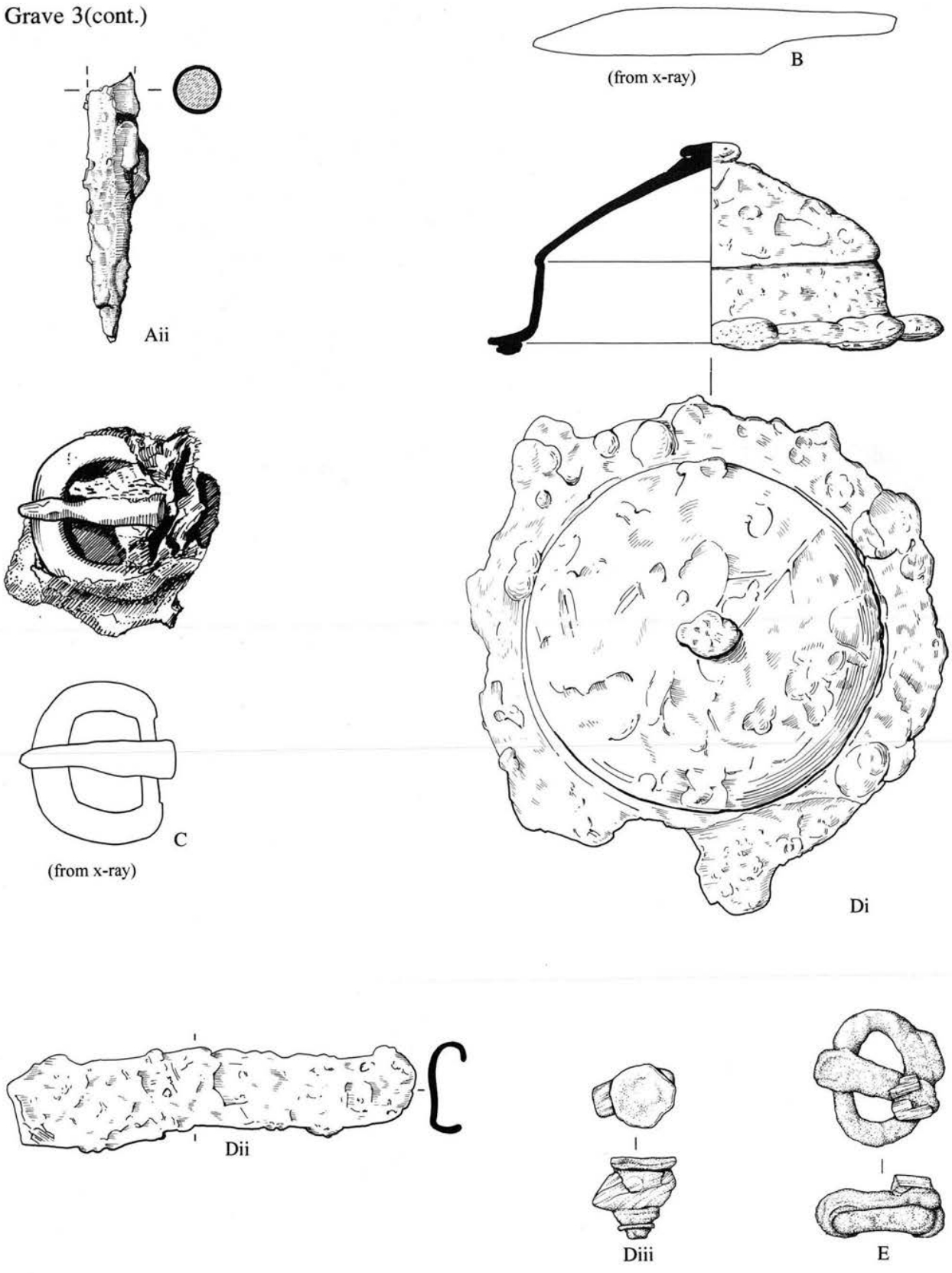


Figure 81 Grave-goods from grave 3 (cont'd). Scales: *C*, *Diii* and *E*; 1:1. Others; 1:2

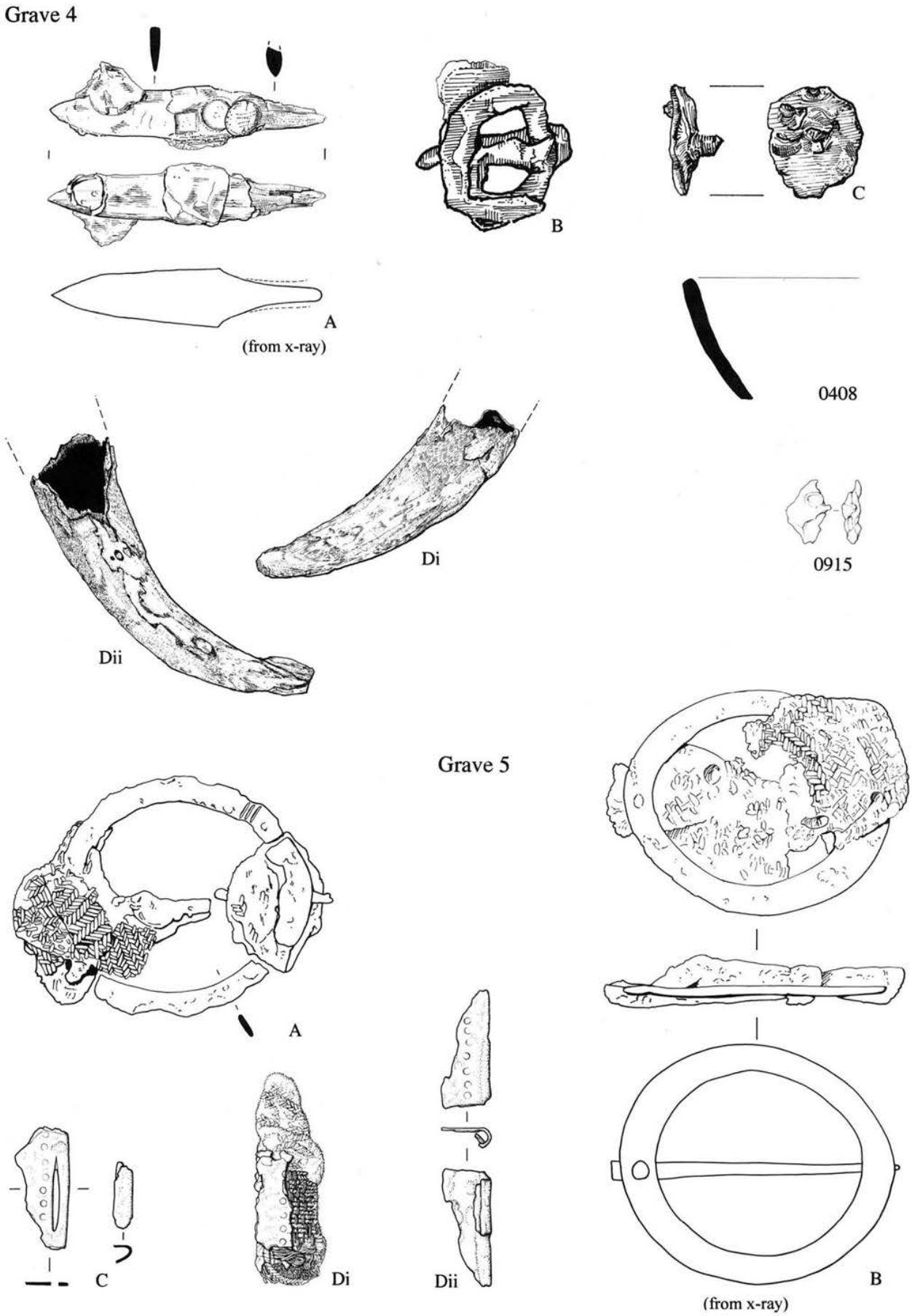


Figure 82 Grave-goods from graves 4 and 5. Grave 4. Scales: *B*, *C* and *0915*; 1:1. *0408*; 1:3. Others; 1:2. Grave 5. Scale: All 1:1

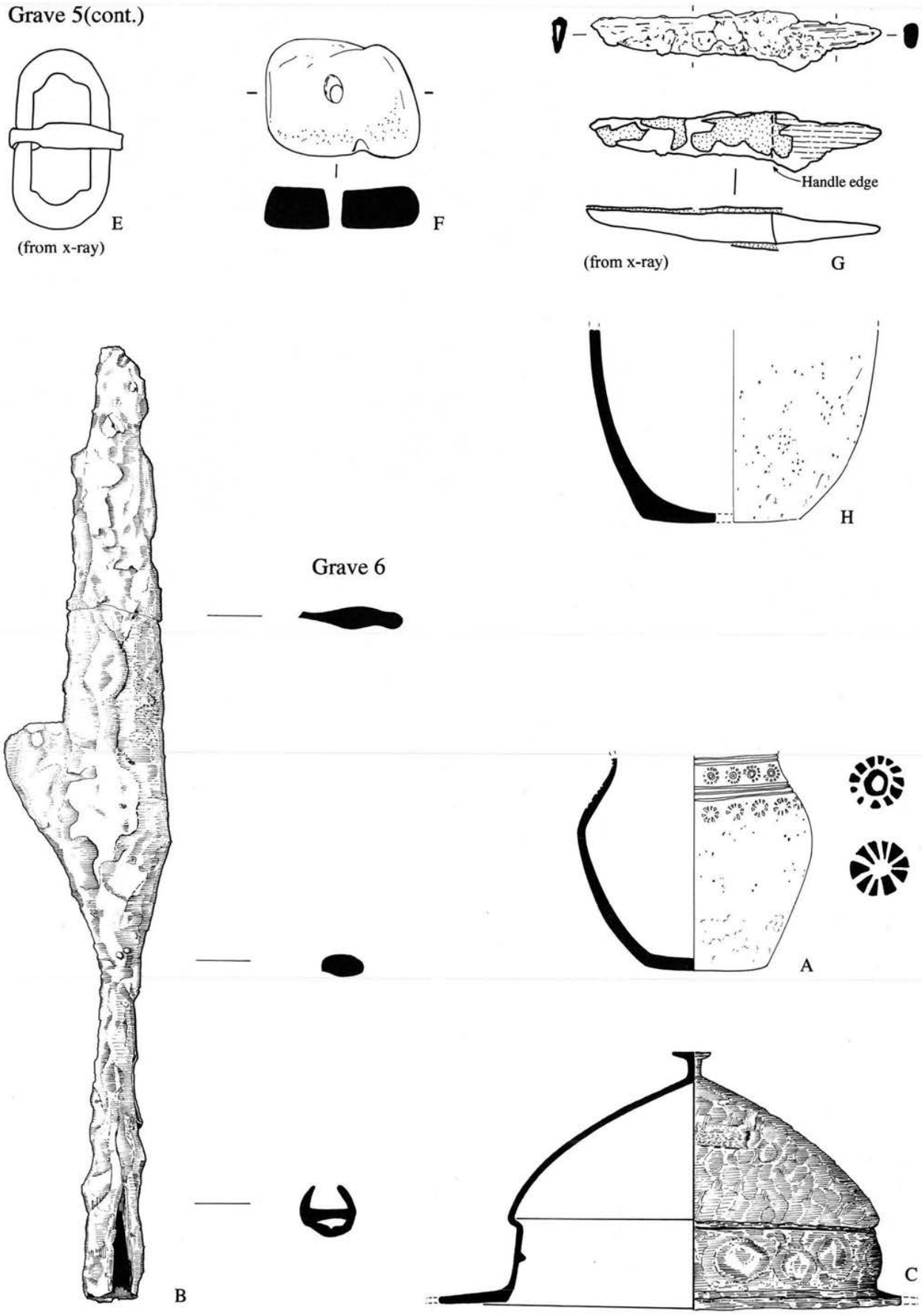


Figure 83 Grave-goods from 5 (cont'd) and 6. Grave 5. Scales: *E* and *F*; 1:1. G; 1:2. *H*; 1:3. Grave 6. Scales: *B* and *C*; 1:2. *A*; 1:3, pot stamps at 1:1

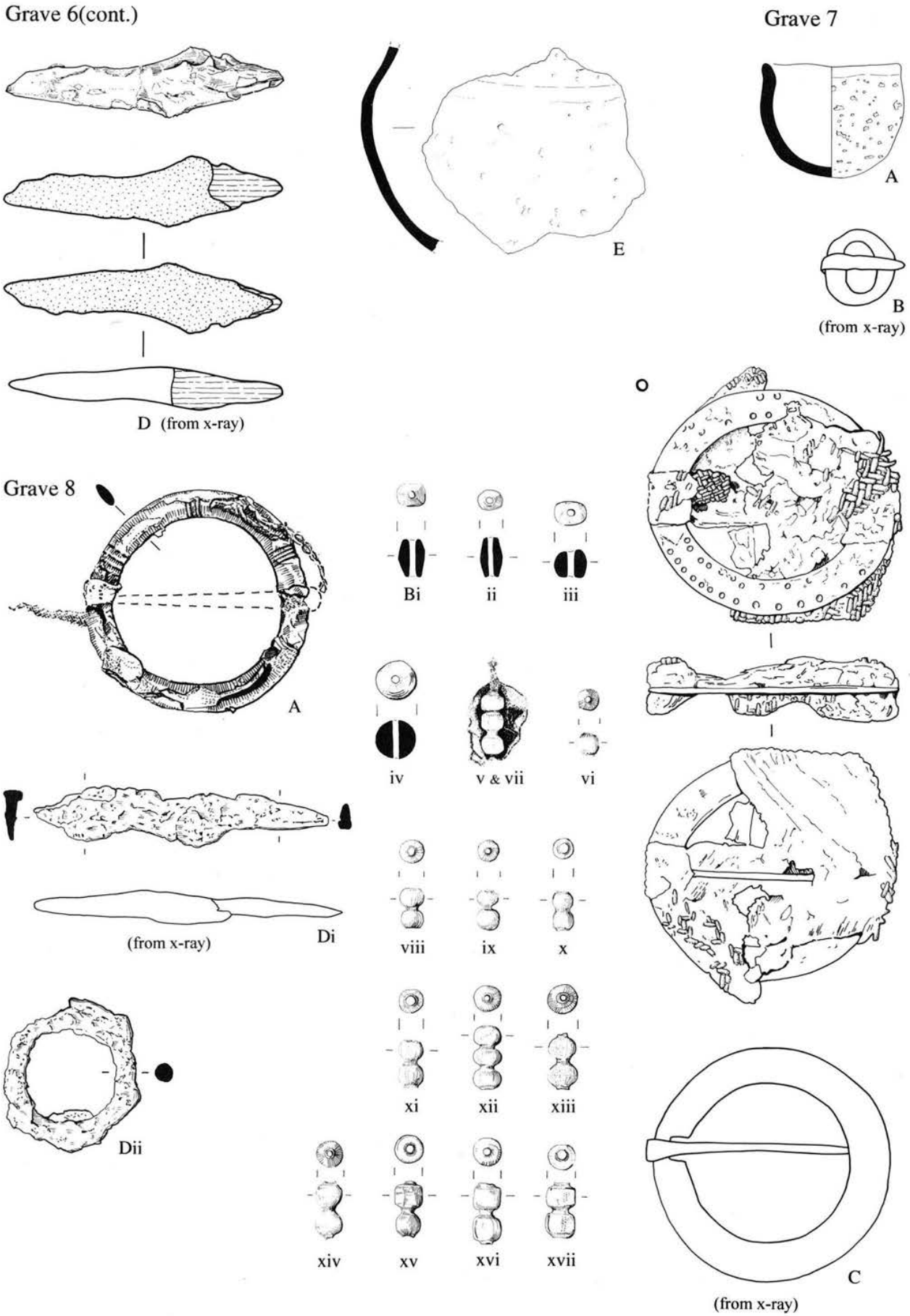


Figure 84 Grave-goods from graves 6 (cont'd), 7 and 8. Grave 6. Scales: *D*; 1:2. *E*; 1:3. Grave 7. Scales: *A*; 1:3. *B*; 1:1. Grave 8. Scales: *Di* and *ii*; 1:2. Others; 1:1. Punch stamp at 2:1

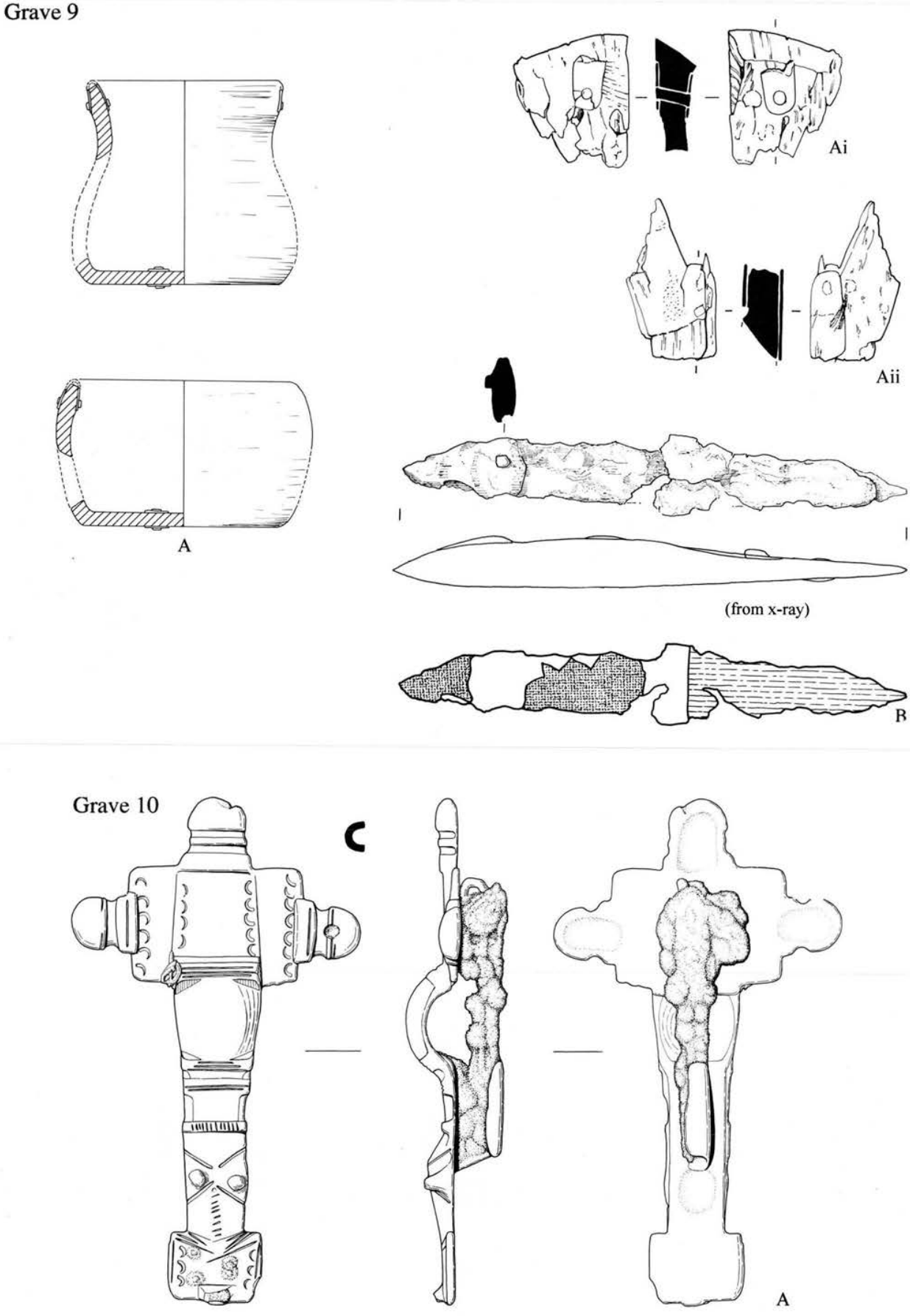


Figure 85 Grave-goods from grave 9 and 10. Grave 9. Scales: *Ai* and *ii*; 1:1. Reconstructions of *A*, and *B*; 1:2. Grave 10. Scale: *A*; 1:1. Punch stamp at 2:1

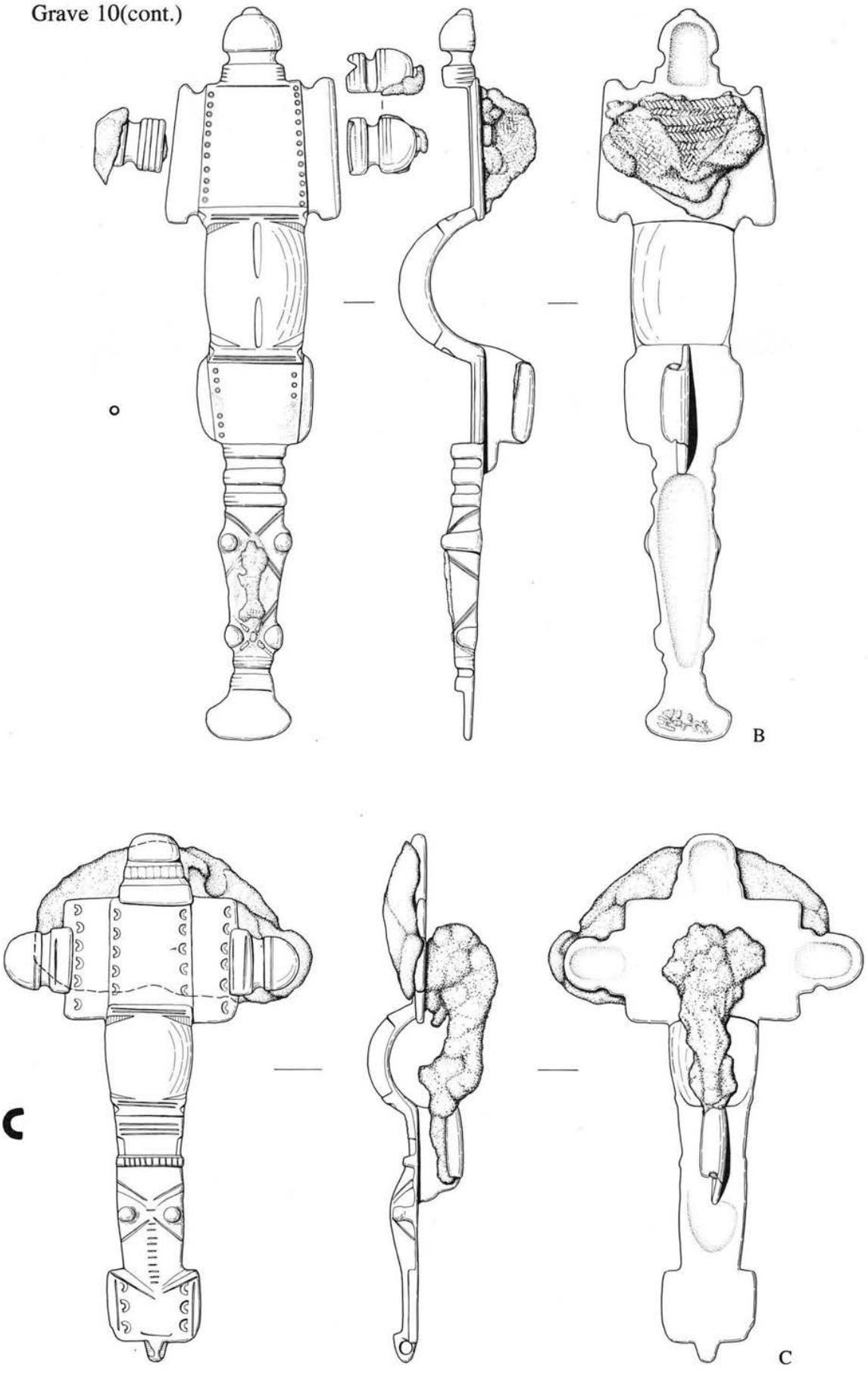


Figure 86 Grave-goods from grave 10 (cont'd). Scale: 1:1. Punch stamp at 2:1

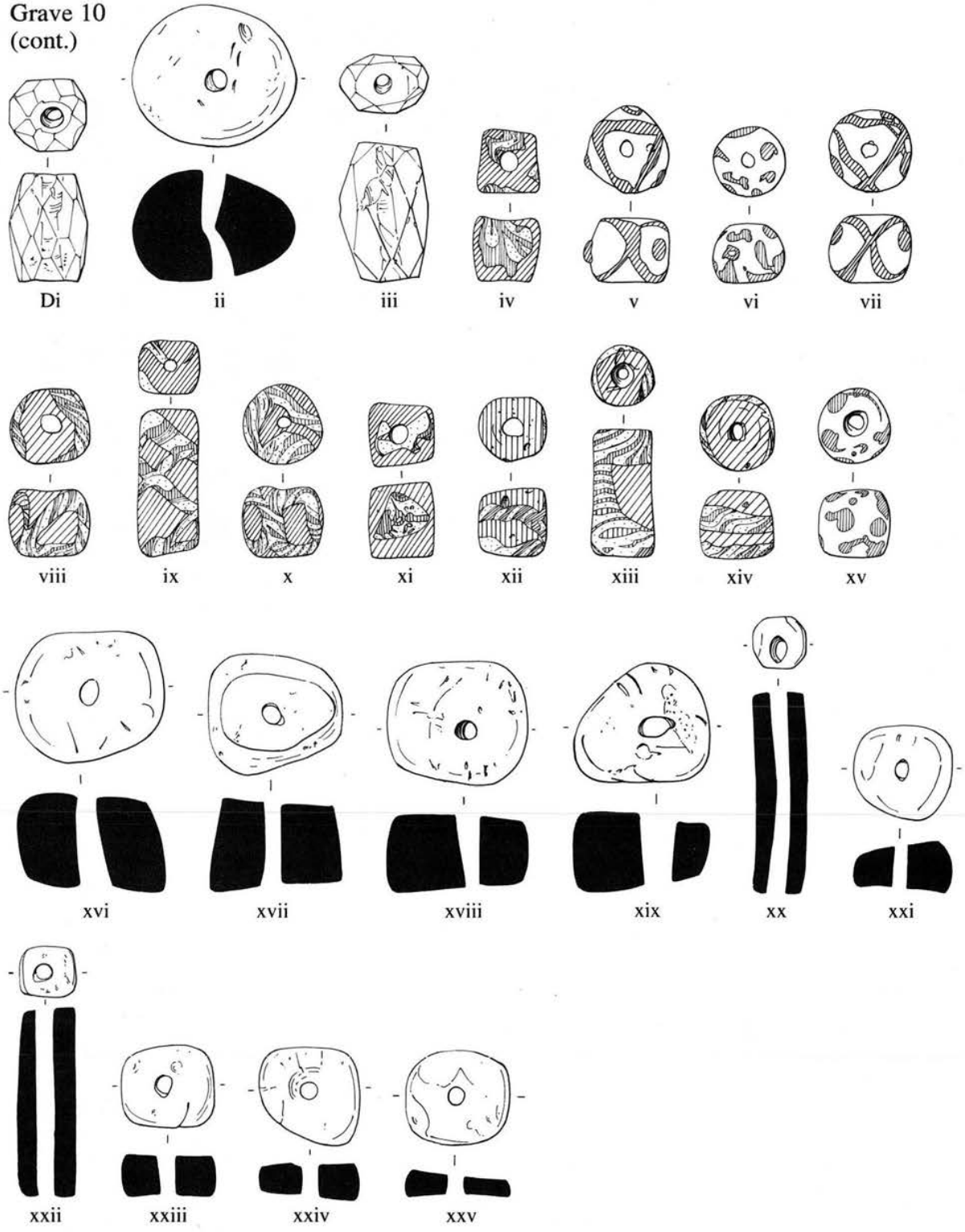


Figure 87 Grave-goods from grave 10 (cont'd). Scale: 1:1

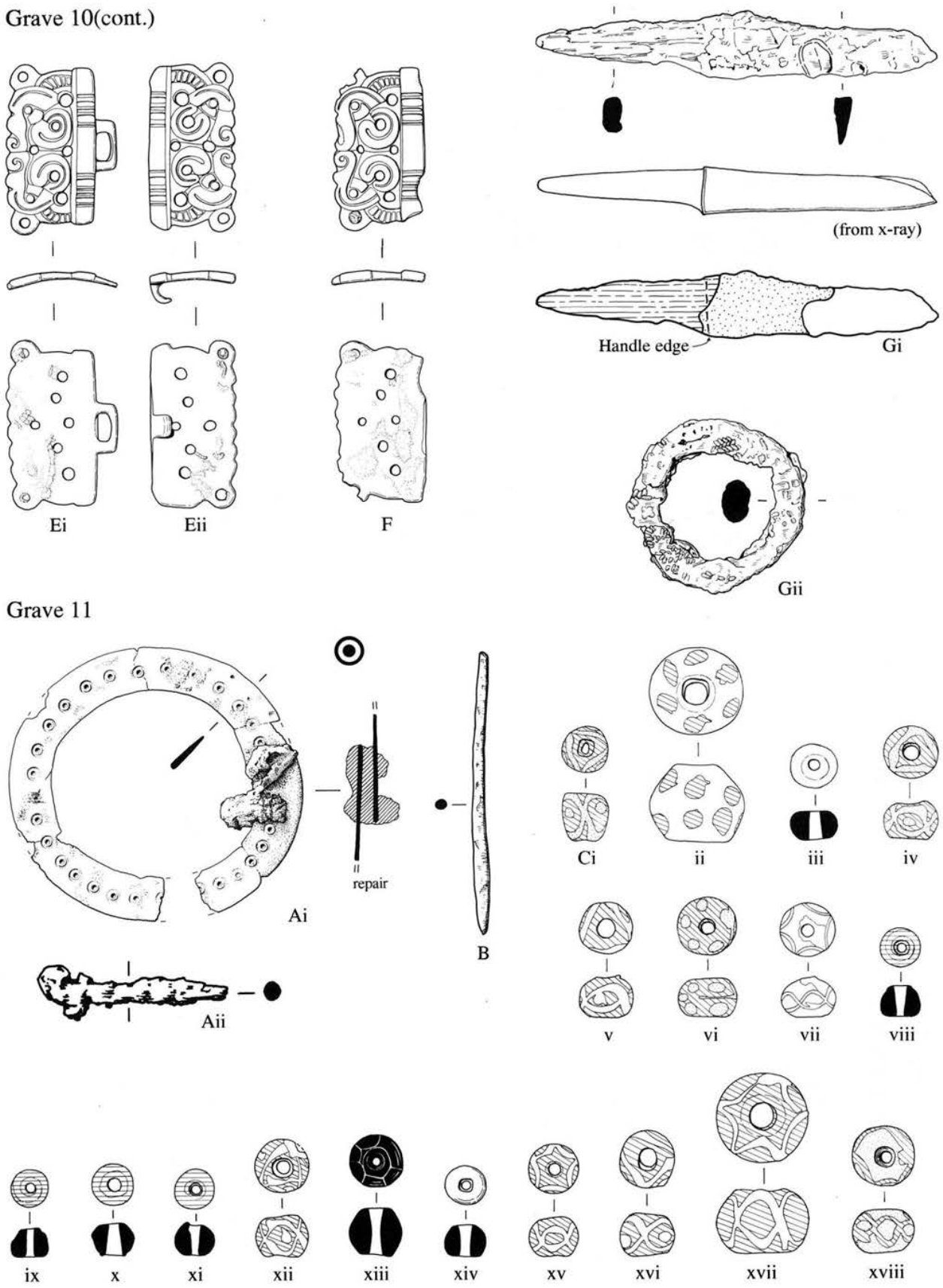


Figure 88 Grave-goods from graves 10 (cont'd.) and 11. Grave 10. Scales: *E*, *F*; 1:1. *Gi* and *ii*; 1:2. Grave 11. Scale: 1:1. Punch stamp at 2:1

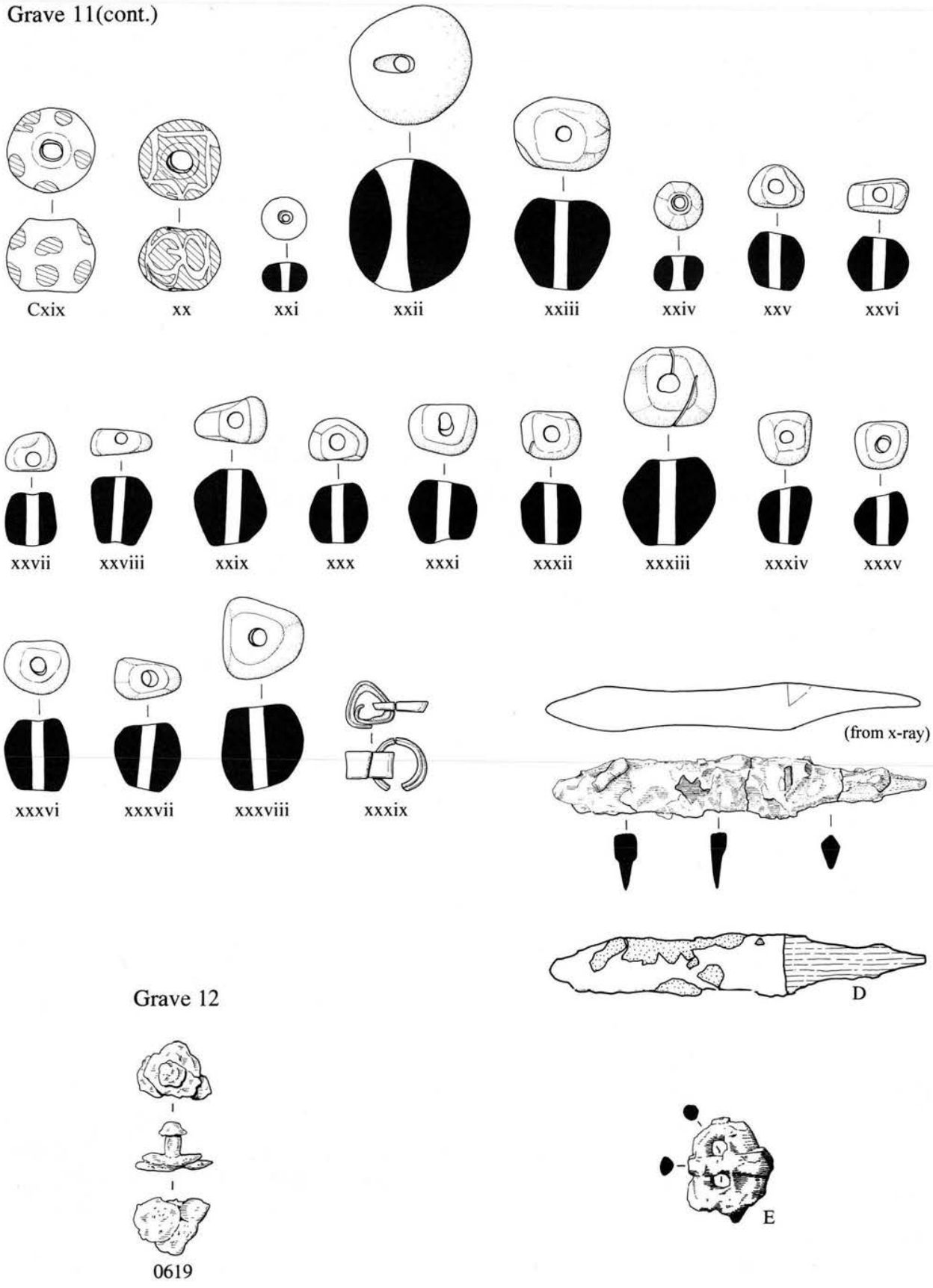


Figure 89 Grave-goods from graves 11 (cont'd) and 12. Grave 11. Scale: *C*, *E*; 1:1. *D*; 1:2. Grave 12. Scale: 1:2

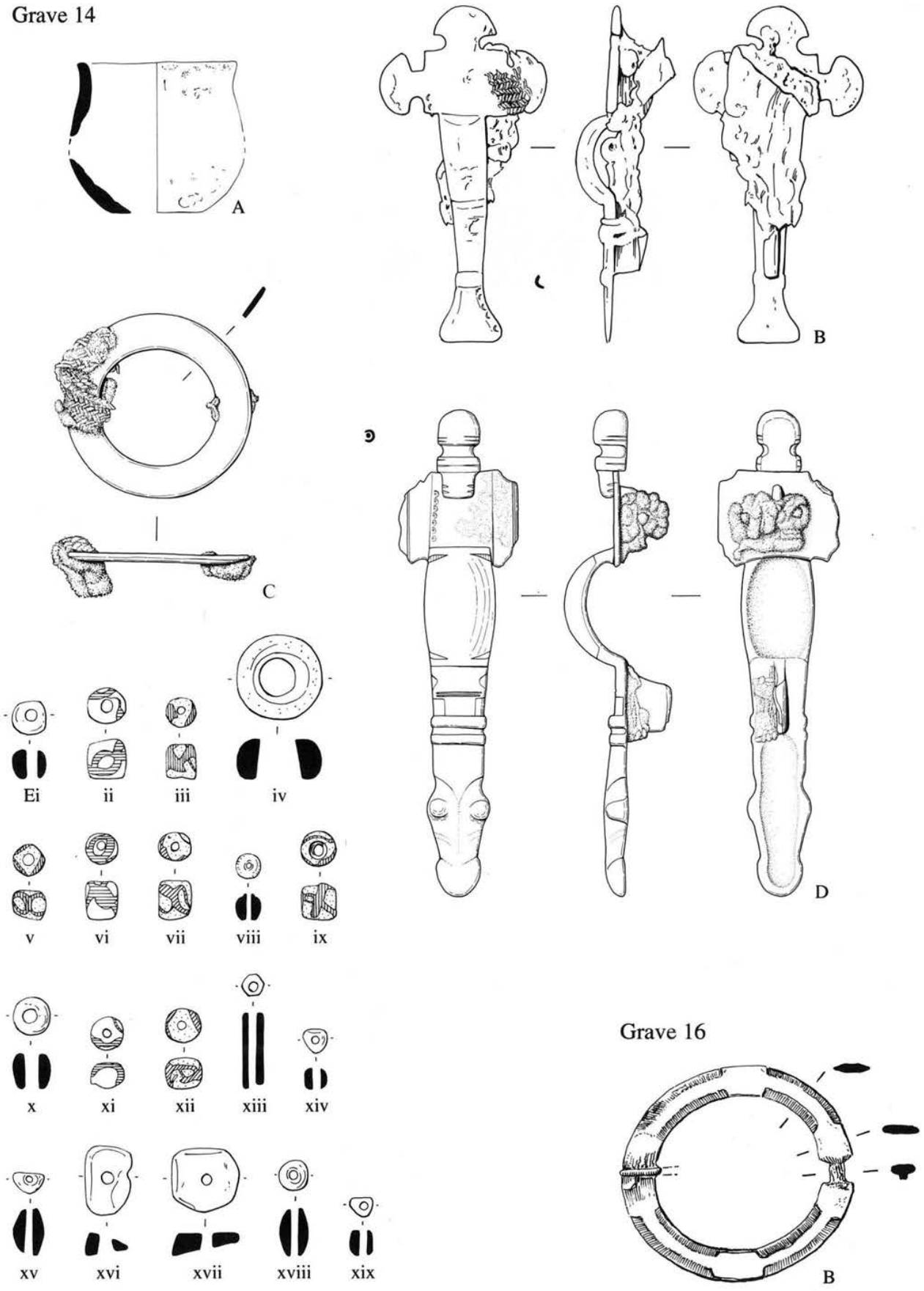


Figure 90 Grave-goods from graves 14 and 16. Grave 14. Scale: *A*; 1:3. Others; 1:1. Punch stamp at 2:1. Grave 16. Scale: 1:1

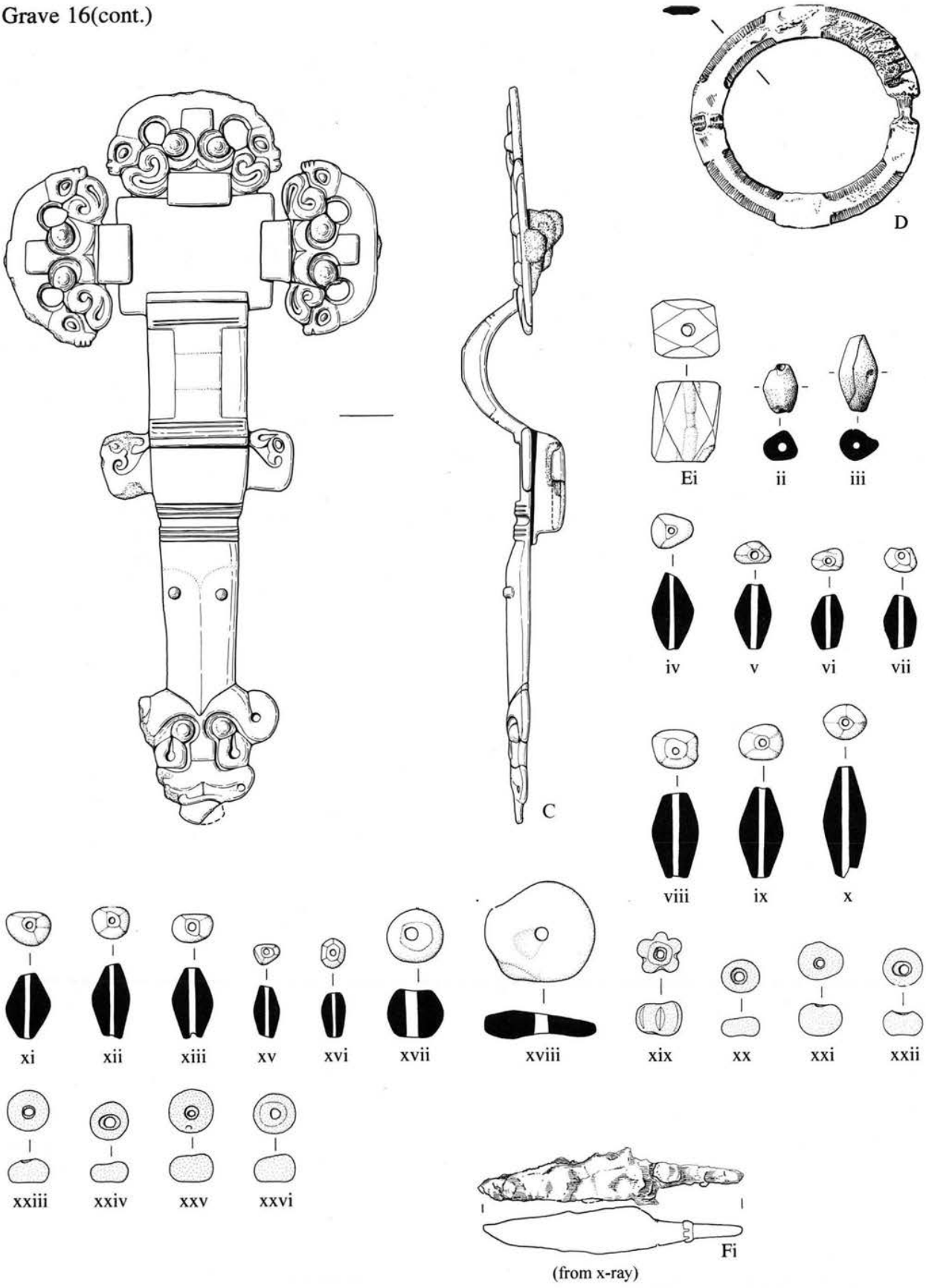


Figure 91 Grave-goods from grave 16 (cont'd). Scales: *Fi*; 1:2. Others; 1:1

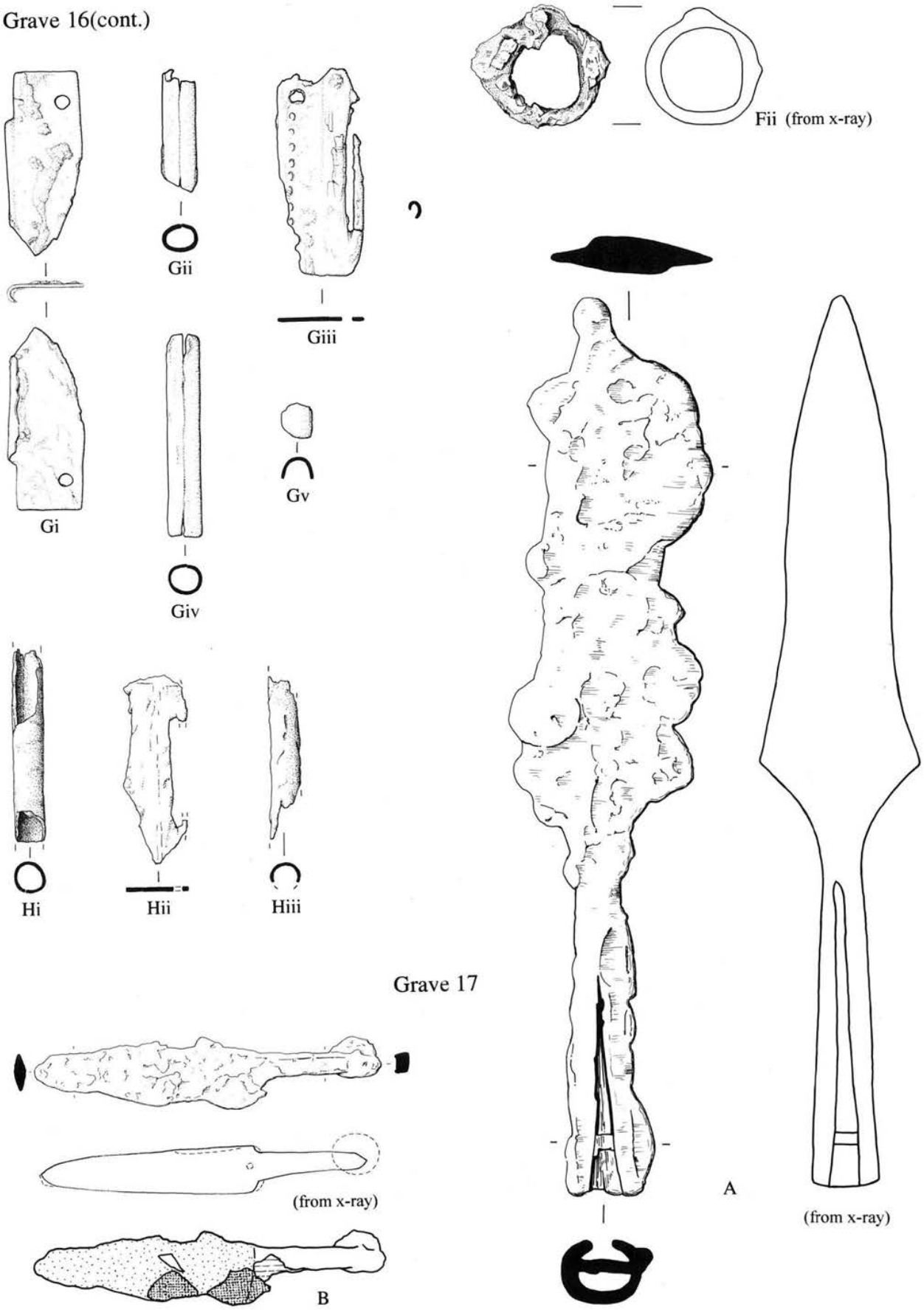


Figure 92 Grave-goods from graves 16 (cont'd) and 17. Grave 16. Scales: *G* and *H*; 1:1. *Fii*; 1:2. Punch stamp at 2:1. Grave 17. Scale 1:2

Grave 18

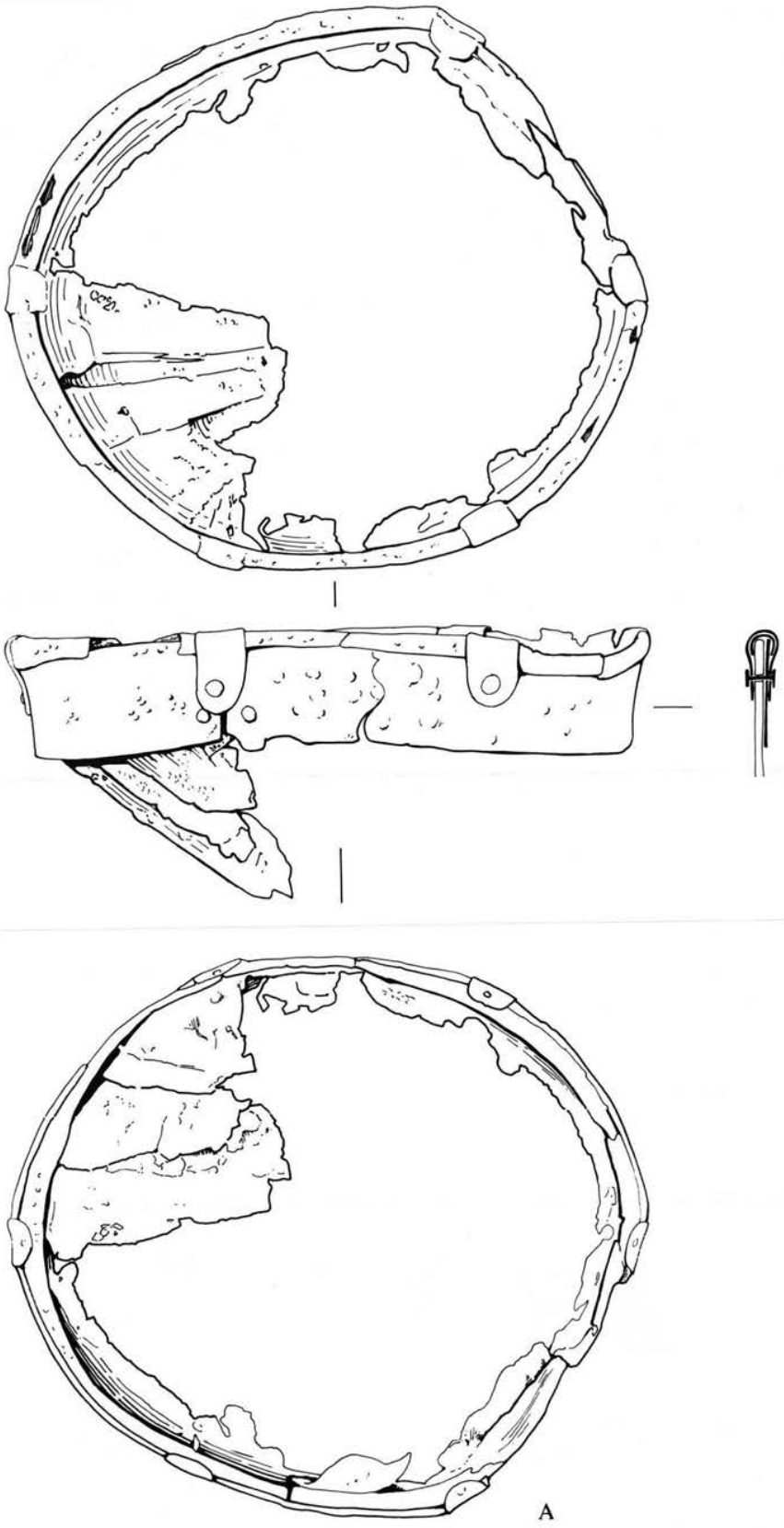


Figure 93 Grave-goods from grave 18. Scale: 1:1

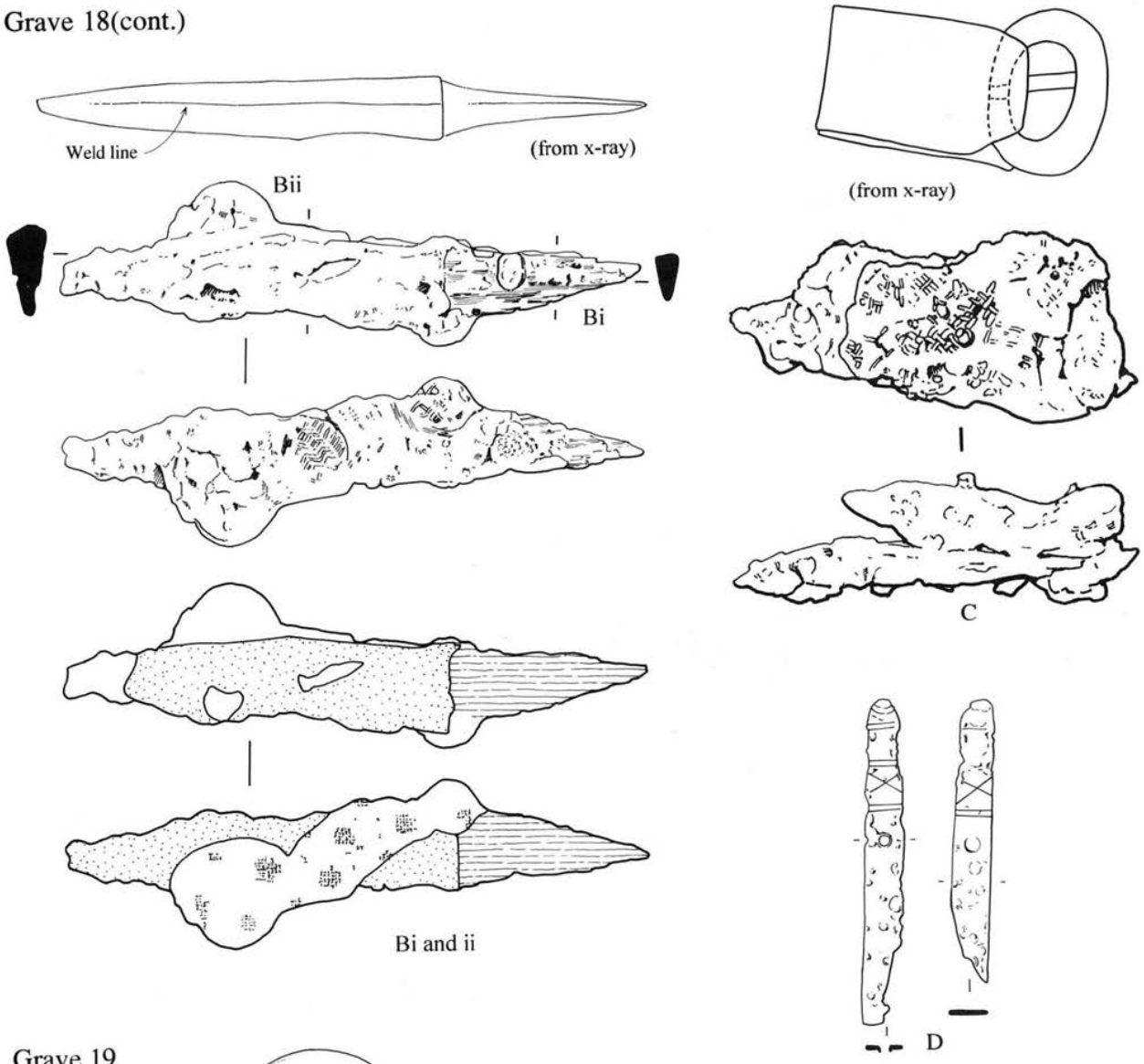


Figure 94 Grave-goods from graves 18 (cont'd) and 19. Grave 18. Scales: *B*; 1:2. *C*, *D*; 1:1. Grave 19. Scale: 1:1

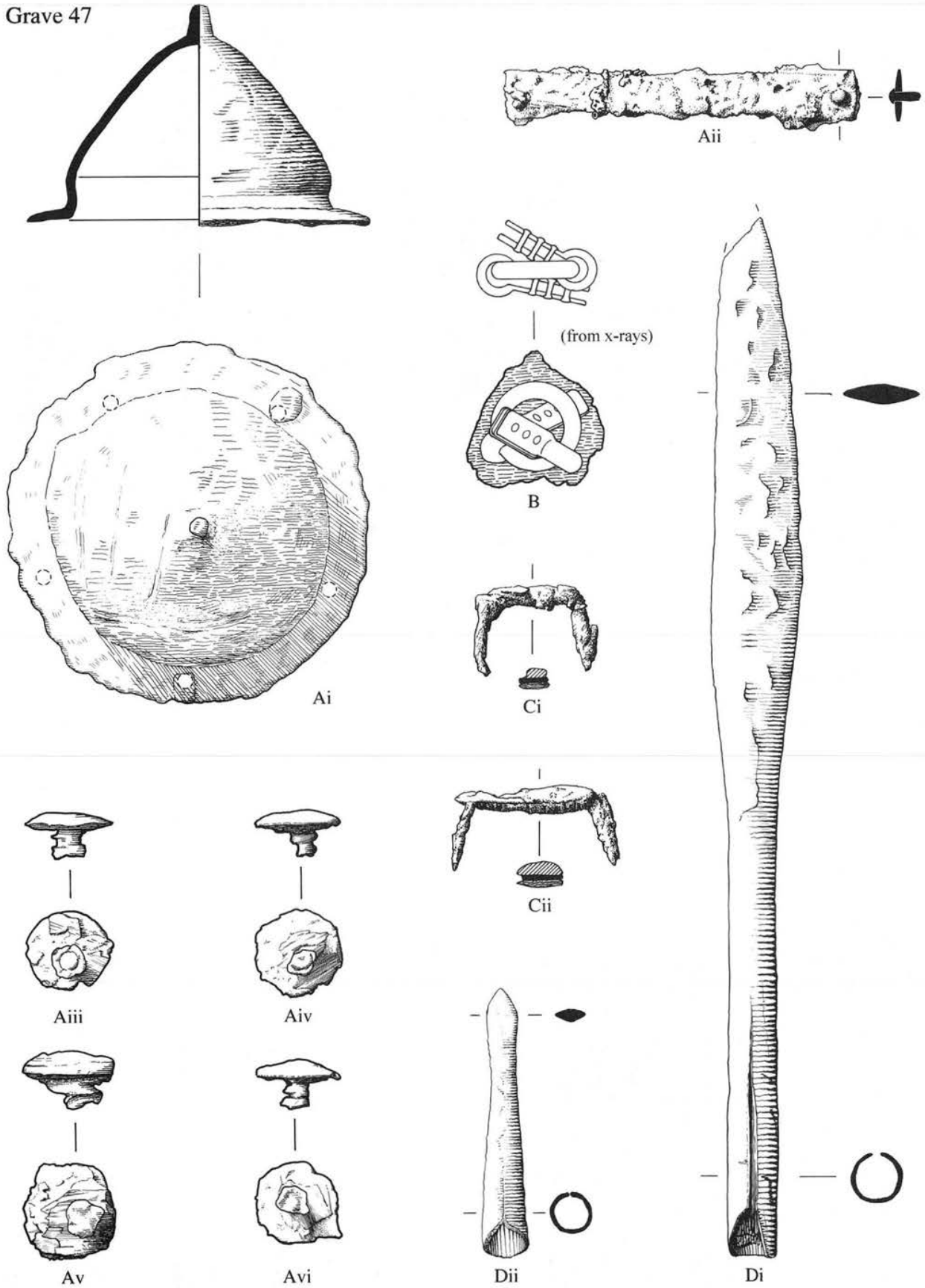


Figure 107 Grave-goods from grave 47. Scale: all 1:2

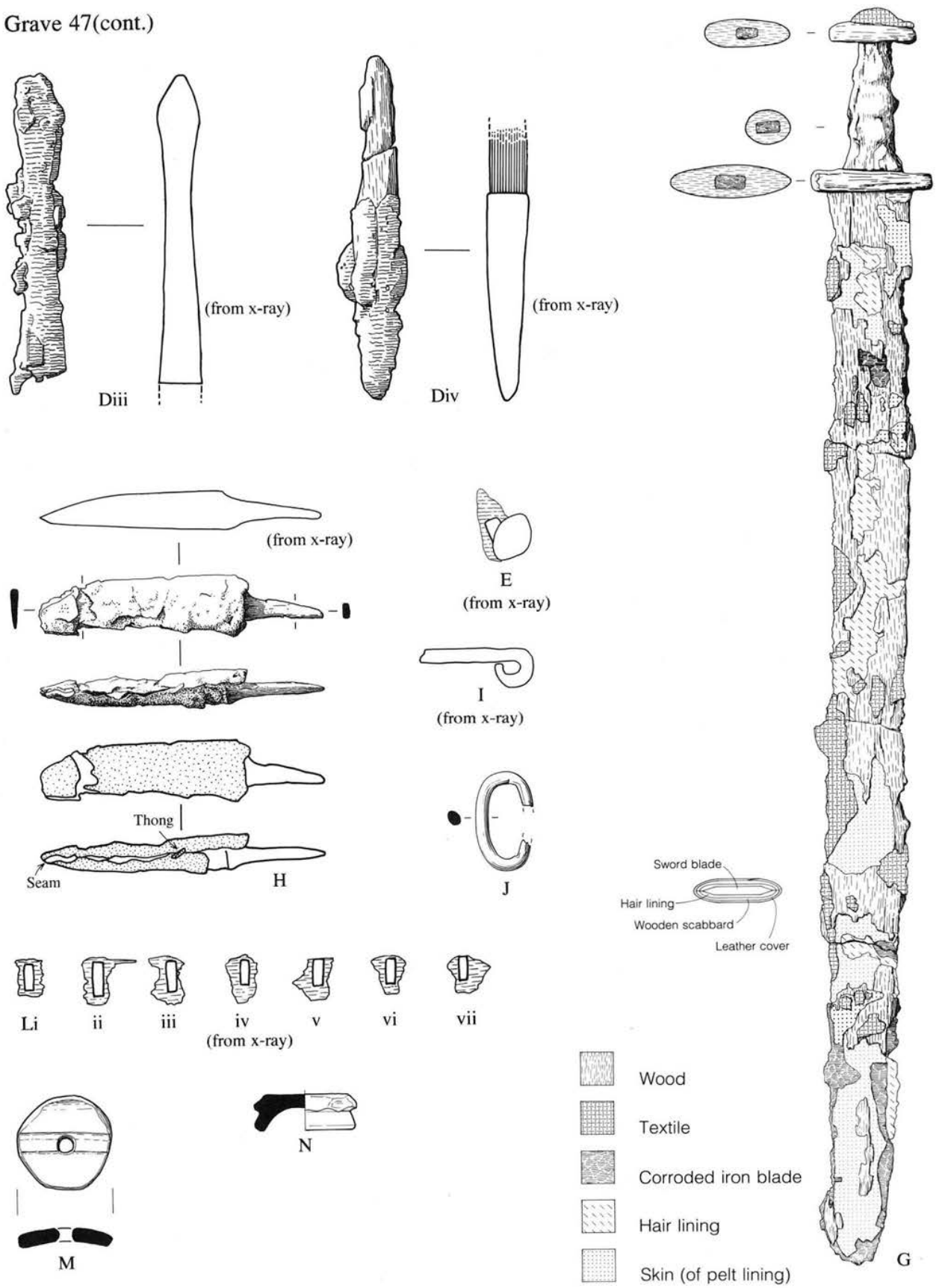


Figure 108 Grave-goods from grave 47 (cont'd). Scales: *G*; 1:4. *D*, *E*, *H*, *L*; 1:2. *I*, *J*; 1:1. *M*, *N*; 1:3

Grave 47(cont.)

Figure 109 Grave-goods from grave 47 (cont'd). Scale: 1:4

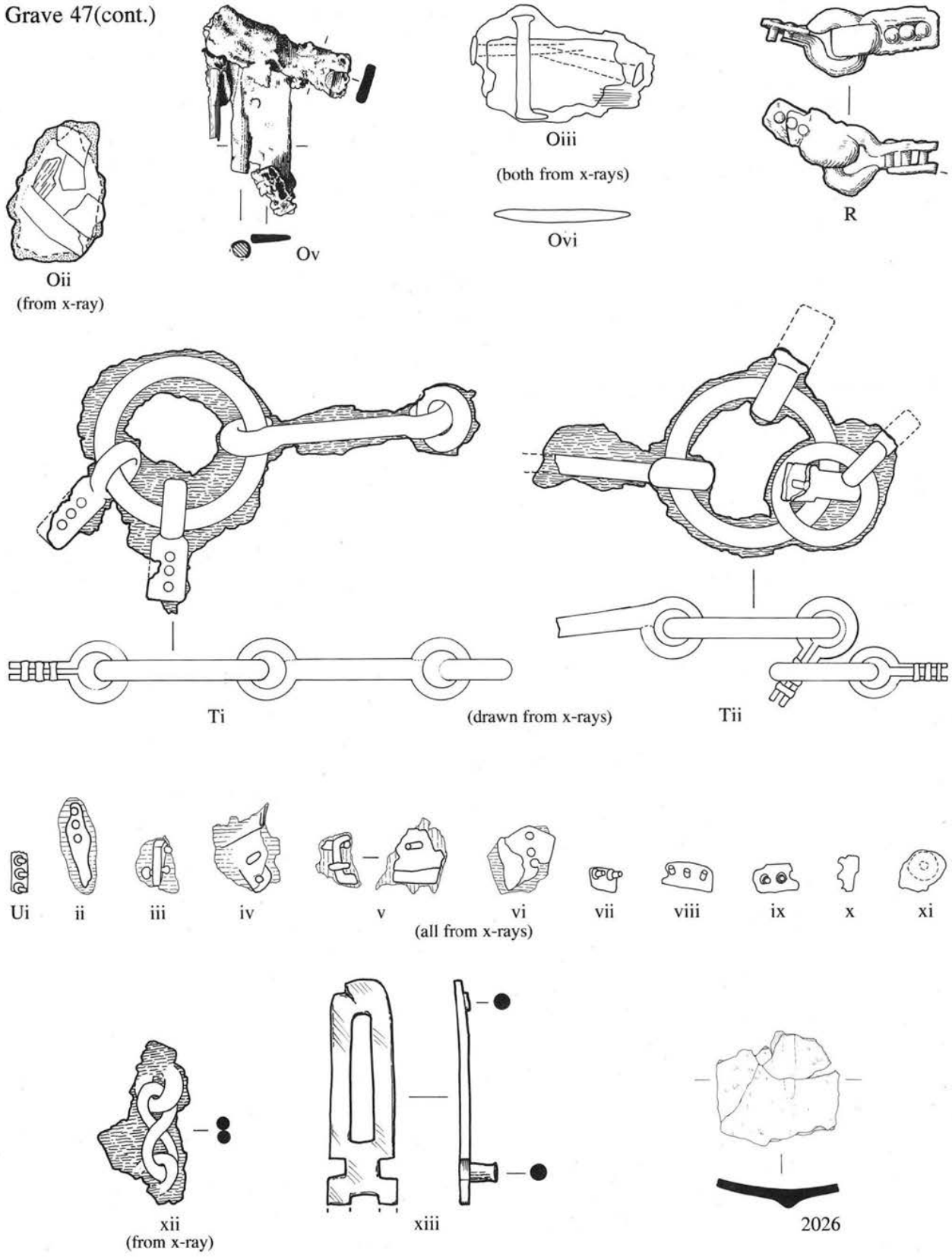


Figure 110 Grave-goods from grave 47 (cont'd). Scales: *Uxiii*; 1:1. *2026*; 1:3. Others; 1:2

III. Catalogue of Cremations

by Tim Pestell and Shirley Carnegie, incorporating material by Teresa Briscoe (pot stamps), Elisabeth Crowfoot (textiles), Rowena Gale (charcoal), Simon Mays (cremated bone), Peter Murphy (seeds) and James Steele (cremated bone).

Grave 48 (cremation) (Fig. 111)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A Bronze Age collared urn, *0558*, height 366mm, virtually complete. The collar is decorated with alternating zones of vertical or slightly diagonal, and horizontal, lines of cord impressions, numbering between four and nine in each zone. The grit-tempered fabric is mid-brown with a surface which is now crazed and which has probably been varnished since excavation.

The urn was found upside down in mound one in 1862, making it likely that the ship burial mound re-used an earlier prehistoric barrow. Hele recorded that the urn 'contained human bone, the femur or thighbone and part of the pelvis being perfect' (1870, 25–6) but Davidson commented that it was empty (1863, 179) and Francis 'almost empty' (1863a, 61). [Ald A122]

Grave-goods: None

Grave 49 (cremation) (Fig. 111)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A damaged biconical urn, *0559*, lacking all of the rim and much of its hollow neck. Decoration consists of four incised lines just below the outward curve of the neck. Beneath are two bands of circular stamps of plain centre with radiating lines (Briscoe A5di), divided by three bands of incised lines. Beneath are two more bands of incised lines, above a band of segmented horseshoe stamps (Briscoe G2bii). The decoration finishes just above the carination which has a slight flange. The fabric has a dark grey core and inner surface with a pink-brown layer immediately beneath the outer surface. The outer surface is pale brown with a large dark grey patch. The fabric is generally rough and gritty though smoothed in some areas. Surviving height 201mm.

The urn's date of discovery is unknown but it was placed in the Ashmolean Museum in 1885 from the University of Oxford Natural Science Museum. Nothing is known of its arrival in Oxford, although George Rolleston, Professor of Anatomy, acquired a great deal of archaeological material in the 1860s and 1870s. The urn is not mentioned in his correspondence but its accompanying label states 'Found at Snape, Suffolk. From the collection of Antiquities formed by the late J. M. Spalding, Esq., of Westleton' (David Brown, Asst. Keeper, Dept. of Antiquities, pers. comm. 5/7/82). The urn is therefore assumed to derive from the 1862–3 excavations. The urn was drawn by Pat Jacobs. [Ash 605–1885. Myres 1977, No. 2040]

Grave-goods: None

Grave 50 (cremation) (Fig. 111)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Urn now missing
Sex/age: Unknown

Description: A small biconical vessel, *0640*, with wide mouth, hollow neck, slightly elevated rim and a low footring base. It is known only from Myres' Corpus (1977, 40, fig. 209, No. 2421) and its location, if it still exists, is unknown. Its decoration consists of three horizontal grooves above short diagonal slashes on the carination around the urn's circumference. Its fabric is a dark brown coarse ware. Height 126mm. The urn is assumed to have been found during the 1862–3 excavations.

Grave-goods: None

Grave 51 (cremation) (Fig. 112)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A shouldered urn, *0641*, with tall neck and everted rim. It is decorated with a grooved corrugation low on the neck, interspersed with wider grooves. The three panels contain a diagonal grooved cross and vertical and diagonal grooved swastikas (Briscoe J1aii) of the same size. The drawing has been rearranged to show both swastikas, the vertically-set one being in the place where the diagonal cross should be. The soft pale brown core fabric has a grey surface, burnished black above the shoulder. The tempering has burnt out leaving *c.*1mm diameter holes. Height 155mm.

The urn was about half full of mixed loose earth and cremated bone with some cremated bone concreted to the side wall near the base. The material was possibly undisturbed but was not examined.

The urn was mentioned by Davidson (1863, 178 and fig. 1), Francis (1863a, 61 and fig. 2) and Hele (1870, 25–6 and figure), having been found in 1862 during the excavation of the ship burial (mound one). [Ald A126. Myres 1977, No. 2423]

Grave-goods: None

Grave 52 (cremation) (Fig. 112)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A shouldered urn, *0642*, with wide mouth and a short upright rim. There is a possible hole in the lower part of the urn but this was blocked when the urn was restored by Ipswich Museum and cannot now be examined properly. The decoration consists of three horizontal incised lines forming two bands with a zone of pendant triangles beneath. The upper band contains a row of bow-edged triangular stamps (Briscoe E1di), the lower band, a row of plain circular stamps (Briscoe A1bi). The pendant triangles, probably originally five in number, are irregularly spaced and contain stamped rosettes (Briscoe A5ai). The fabric is of a smooth grey-brown ware with a

red oxidised band immediately beneath the outer surface. It has occasional inclusions of small stones. Height 159mm.

The urn is assumed to have been found in the 1862–3 excavations. [Ald A130, Myres 1977, No. 2424]

Grave-goods: None

Grave 53 (cremation) (Fig. 112)
Cut dimension: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A bossed globular urn, *0643*, with only the lower half surviving. It has four, originally five, small hollow bosses at the shoulder evenly spaced. Each is enclosed on its sides and base by three straight incised lines. Between each boss is the lower portion of a triangle formed by three incised lines; the bases are roughly level with the base lines beneath the bosses. There were originally five triangles, each apparently filled with stamps following the edges and bisecting them vertically. Two stamps are used; in three triangles there is a key-hole design (Briscoe E5ai) and in the other surviving triangle a small cross-in-square (A4aiii). At one point there is a horizontal incised line between a boss and a triangle near the (surviving) top of the pot. This is possibly the base of another decorative feature. The dark grey fabric is grog-tempered and has a pinky-brown layer just beneath the outer surface. The outer surface is burnished very dark grey from the base of the decoration up. The interior surface is dark grey with the surface largely flaked away. Surviving height *c.*171mm.

The urn was found in 1862 in mound 2 according to Francis (1863a, 61 and fig. 1). [Ips, no accession number; Myres 1977, No. 2425]

Grave-goods: None

Grave 54 (cremation) (Fig. 112)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A shouldered urn, *0644*, with slightly everted rim. Just below the rim is a line of 'tree'-shaped stamps with a grid pattern, set vertically (Briscoe M6ai). At each quadrant a pair of vertical lines, each made up of five stamps, reaches down to the shoulder. The dark grey sand-tempered ware has a pink layer immediately beneath the outer surface. The outer surface is rough and gritty with smoothing, especially above the shoulders. Surviving height 165mm.

The urn is labelled simply 'Snape, Aldeburgh 1863' and is assumed to come from the 1862–3 excavations. There is no other information and the urn does not appear in the British Museum accession book. [BM. OA 4300. Myres 1977, No. 3626]

Grave-goods: None

Grave 55 (cremation) (Fig. 112)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A shoulder-bossed urn, *0645*, with its rim missing. Its only decoration is of five regularly spaced hollow bosses. The fabric is dark grey with grog tempering and a thin pale brown oxidised layer immediately below the outer surface. The dark grey surface is burnished on its upper half. The lower third of the urn shows possible traces of horizontal knife trimming. Surviving height 165mm.

The urn is assumed to have been found in the 1862–3 excavations. [Ald A128. Myres 1977, No. 3862]

Grave-goods: None

Grave 56 (cremation) (Fig. 112)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A plain sub-globular urn, *0648*, with wide mouth and inverted rim. Its fabric is a smooth black ware, originally burnished. Height 175mm. It is assumed to have been found during the 1862–3 excavations. [Ald A127. Myres 1977, No. 3865]

Grave-goods: None

Grave 57 (cremation) (Fig. 113)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A tall, plain, sub-biconical urn, *0649*, with everted rim. Its mid grey core fabric is grit-tempered. The surface is a hard brown-grey, patchily burnished especially above the shoulder. The fabric is a pale grey immediately beneath the outer surface. Height 220mm. The urn is assumed to have been found in the 1862–3 excavations. [Ald A129. Myres 1977, No. 3866]

Grave-goods: None

Grave 58 (cremation) (Fig. 113)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A biconical urn, *0651*, with its rim missing. The neck and shoulder has three horizontal lines above a line of 'Union Jack' stamps (Briscoe C4ai). Beneath this zone are two more incised horizontal lines. The lower is interrupted by long hollow bosses demarcated by variously one or two incised vertical lines. At the shoulder between the bosses are lines of three circular cross stamps (Briscoe A4ai). Incised lines lower down on one part of the pot (not shown) are classified by Briscoe under 'doodles' (M7bi). Surviving height 99mm.

The urn was donated to the Verulamium Museum, St Albans by Sir John Evans, having been in his possession for a number of years. He was at Aldeburgh frequently around 1866 and he probably acquired this single pot at about this time (B. Adams pers. comm. 3/2/89). The urn is therefore assumed to have been found in the 1862–3 excavations. [Ver 80.548]

Grave-goods: None

Grave 59 (cremation) (Fig. 113)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: Fragments of the conical neck of an urn, *0652*, with a slightly thickened vertical rounded rim. The decoration still surviving consists of two wide horizontal grooves beneath an irregular line of impressions formed by a stamp (Briscoe G1aiii) used six times, to create a rectangular shape. The sand-tempered dark grey fabric has a smooth mid grey inner surface. The outer surface is a smooth dark grey with a thin pink layer immediately beneath. Surviving height 92mm. This urn is assumed to have been found in the 1862–3 excavations. [Ips, no accession number — wrongly entered under 1972.120]

Grave-goods: None

Grave 60 (cremation) (Fig. 113)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A decorated sub-biconical urn, *0653*, mostly complete in its lower half. The sandy dark grey fabric has dark brown inner and outer surfaces and evidence of its coil manufacture at the shoulder. The outer surface is burnished and the inner has scrape marks. Decoration consists of elongated hollow bosses, both on their own and contained within slightly diagonal incised lines. One sherd suggests some incised lines may have formed a pendant triangle. A band of irregularly-spaced oval cross stamps (Briscoe D4ai) is contained beneath two, and above three, incised horizontal lines at the shoulder. Height 198mm. No associated contents are known. It is assumed to be from the 1862–3 excavations. [Ips, no accession number]

Grave-goods: None

Grave 61 (cremation) (Figs 114 and 119)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A complete urn, *0560*, of sub-biconical form with an upright rim. It has a variety of decorative stamps used within a field of triangles set beneath a single incised band below the neck. Those triangles with their bases uppermost have a line of stamps following each side. Those with their apexes uppermost are not always stamped along their bases and one has no stamps outlining any of its sides. Each triangle is bisected vertically by a line of stamps except for one which is filled with stamps. There is a group of three solitary stamps above the upper line (shown in the 'unrolled' illustration, Fig. 114). The stamps used are two concentric circles (Briscoe A2ai), concentric triangles (E1ei), a cross stamp (A4aii) and a lattice square (C2di). Each triangle normally contains two stamp types, used eight times, but on occasions only one stamp type is used. The fabric consists of a dark grey core with a pale brown layer just beneath the surface. The upper half is pale pinky-brown and oxidised, the lower dark grey and reduced. The surface lacks tempering and is flaking away from the body. Height 270mm.

The urn was found to contain quite a large amount of cremated bone which was not examined; it is presumed to be a mix of material as two sherd fragments (from other urns), matchsticks and paper scraps were also contained. Sherd (i) possibly derives from urn *0643* (grave 53). A large fragment of charcoal from the bone, up to 19mm in diameter, was identified as of gorse or broom (*Ulex* sp. or *Cytisus* sp.), of ring porous structure. The urn is assumed to come from the 1862–3 excavations. [Ald A123. Myres 1977, No. 2419]

Grave-goods: None

Grave 62 (cremation) (Fig. 114)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A large shouldered urn, *0639*, with conical neck and slightly everted rim. It is decorated at the shoulder with four incised horizontal lines forming three bands, each decorated with incised diagonal lines forming chevrons. The narrow upper and lower bands contain single line chevrons and frame a wider band of three-line chevrons. The fabric is pale grey, chaff-tempered, with a roughly burnished surface of oxidised pale brown, with pink and grey patches. There are numerous chaff impressions. Height 273mm.

The urn has a smear of the original cremation concreted to the base but this was not examined. The urn is assumed to derive from the 1862–3 excavations. [Ald A125. Myres 1977, No. 2420]

Grave-goods: None

Grave 63 (cremation) (Fig. 115)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A plain shoulder-bossed urn, *0646*, with missing rim. Its nine applied bosses are evenly spaced. The pale grey grog-tempered fabric has a hard, dark grey surface, with an oxidised patch of pale pinky brown. The surface is burnished above the shoulder. Surviving height 180mm.

The urn contained a mix of loose soil and cremated bone; the bottom 40mm appears to be intact with the bone and sand concreted together. This bone was not examined.

The urn is assumed to have been discovered in 1862–3. [Ald A124. Myres 1977, No. 3863]

Grave-goods: None

Grave 64 (cremation) (Figs 115 and 119)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Incomplete
Sex/age: Unknown

Description: A plain shouldered urn, *0647*, with wide mouth, hollow neck and a smaller, slightly squared-off, rim. The fabric is a rough dark grey ware with a thin red oxidised layer immediately beneath the outer surface. Height 155mm.

The bottom 50mm of the urn contained the unexcavated remains of cremated bone concreted within a dark grey sand. The bone was mainly in small fragments and has not been examined. The urn is assumed to have been found during the 1862–3 excavations. [Ald A131. Myres 1977, No. 3864]

Grave-goods:
A: Opaque fused **glass lump**, length 25mm, of dark blue colour with a small green patch, possibly from beads. [1165]
B: Opaque fused **glass lump** of dark blue colour, from beads? [0654]
C: Three small melted **Ae fragments** from unknown objects. [0655]

Grave 65 (cremation) (Fig. 115)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Only urn survives
Sex/age: Unknown

Description: A plain sub-biconical urn, *0650*, with a hollow neck and everted rim. The pale grey fabric is grog-tempered with chaff and occasional angular flint fragment inclusions. It has a smooth grey and brown surface burnished above the shoulder. Height 210mm.

The bottom 45mm of the urn contains a mix of grey sand and cremated bone, concreted together so hard that the material could not be extracted. The urn is assumed to derive from the 1862–3 excavations. [Ald A132. Myres 1977, No. 3867]

Grave-goods: None

Grave 66 (cremation) (Fig. 119)
Cut dimensions: Unknown
Container for bone: Urn (*not illus.*)
Condition: Incomplete
Sex/age: Possibly female, adult

Description: A cremation with no details other than that it derives from Snape, making it likely to be from the 1862–3 excavations. The fragments of urn *0769*, surviving only as a base, were held together by the bottom 120mm of the concreted cremated bone it originally contained. The urn remains have a dark grey core and inner surface, with an outer surface of smooth mid grey-brown. The fabric is chaff-tempered. No decoration is visible. The form is uncertain as the weight of earth had caved in the base which was also root damaged, making reconstruction or drawing impossible.

Over four thousand fragments (1146.8g) of well fired cremated bone survived, deriving from a middle-aged adult, possibly female. The bone was excavated in two equal spits for the present study. Forty-four fragments (98.9g) of animal bone from a horse/donkey were identified, including an equid second carpal and a (possibly horse) mandible, and occipital fragments. As nearly 10% of the total bone by weight was of animal bone, it may represent the deliberate burning of part or all of the animal with the corpse (see Chapter 6 section IV for further discussion). [Ips, no accession number — wrongly entered under 1972.90]

Grave-goods:
A: Four Fe **rivets**, length *c.*12mm. (i–iii) were found within 60mm of each other during retrieval of the bone. (iv) was found in sieving the top spit of bone from the urn. The first three rivets all have wood impressions and their position in a line within the bone suggests that all four originally came from the same wooden object, presumably placed in the urn unburnt. [1387, 2437–2439]

Grave 67 (cremation) (Fig. 115)
Cut dimensions: Unknown
Container for bone: Urn
Condition: Probably truncated
Sex/age: Possibly female, adult

Description: An urned cremation located by Major-General Scott-Elliott by dowsing, at approximately TM 4010 5937, that is, north-west of Area A (roughly located in Fig. 5). The urn, *0658*, of chaff-tempered fabric, has only the lower two thirds surviving, with detached fragments of the rim and decoration. These show it to have been probably biconical with a rounded, everted rim. Its interior is dark grey, with a mid grey core and a pale pink layer beneath the exterior surface. This exterior is dark grey-brown and pockmarked, with slight burnishing on the upper half. The decoration consists of chevrons, each formed by four incised lines, beneath a single incised horizontal line. A single quatrefoil stamp (Briscoe A4aiii) survives above this line. Reconstructed height 219mm.

The cremated bone, *1166*, surviving as over 2000 fragments (407.1g), is of a middle- to old-aged adult, possibly female. The bone was well fired. A fragment of ossified cartilage, *2415*, probably from an animal, was also identified.

Amongst the bone were two small pieces of unworked burnt flint (*1167*) and some tiny pieces of charcoal (*2425*). One fragment was probably of heather (*Ericaceae*) and one probably of gorse (*Ulex* sp.) or broom (*Cytisus* sp.); the sample was too small to specify which. A third fragment was vitrified with distortion of the structure.

Published by Owles (1970, 103). [Ips 1970.90]

Grave-goods:
A: Bone **spindle-whorl** fragment, now missing (*not illus.*). [1168]

Grave 68 (cremation) (Figs 115 and 119)
Cut dimensions: 0.55m diameter
Container for bone: Ae bowl
Condition: Complete
Sex/age: Probably female, adult or possibly adolescent

Description: A cremation buried in a flat-bottomed pit, its base at approximately 13.70mOD. The bone was contained in an open Ae bowl, *0770*, spun rather than beaten (Dr S.J. Plunkett pers. comm.), diameter 327mm. The rim has a thickened triangular section, the sides curving down to a flat base. The bowl had been wrapped in an uneven Z-spun plain tabby weave cloth. One corner of this had fallen inside, leaving its impression on the rim and inner side. The cloth fibres have the appearance and structure of flax *Linum usitatissimum*. L., and all the preserved remains derive from the same fabric. The warp is generally coarser than the weft, thread counts per cm varying from 25–6/18, 23/17 and 19/16. Identification of the weft was through the preservation in three places of a return thread only halfway across the fragment, used to straighten up an uneven shed. The parallels of early Scandinavian textiles and the Z-spinning suggest a local/European origin is more likely than one further east. The position of the fragments and the lack of any string under the bowl rim suggest that it was completely wrapped in cloth rather than tied on; both methods have been found used in bronze bowls from Anglo-Saxon graves.

The cremated bone consisted of a few hundred minute fragments and a few larger identifiable pieces. These suggest a female, probably adult but possibly adolescent. The bone had been well fired but the collection of the remains was poor. Four fragments (5.4g) of unidentifiable animal bone were included (*contra* Calvin Wells in West and Owles 1973, 55).

When *in situ* the bowl had pieces of wood (*2427*) adhering to its west side, suggested at the time of excavation to have been probably tree roots. The wood was mineralised and has been re-examined, showing it to be of oak (*Quercus* sp.) with a ring-porous structure indicating that it derived from aerial parts of the tree, *i.e.* branch or trunk, and therefore possibly deliberately included. A small amount of burnt flint (*2426*) was also found.

The cremation was exposed in the sewer trench excavated in 1972 where it was called 'burial 1' (West and Owles 1973). [Ips 1972.120]

Grave-goods:
A: Fe **rivet**. [1385]

Grave 69 (cremation) (Fig. 116)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Male, young adult

Description: A cremation contained within urn *0882*, a large biconical vessel with its rim missing, surviving height 226mm. The urn is of light grey fabric with a reduced surface and was originally well burnished. The upper body is decorated with a band of triangles whose sides are each formed of four incised lines. The triangles are enclosed at the top by two, and bottom by four, bands of horizontal lines; each triangle contains a group of seven open rosette stamps (Briscoe A7ci). All are sharp, clear, deep and clearly made with the same die. A further sherd from the urn, also decorated with lines and stamps, came to light in 1991 from a private collection; it has now been reunited with the pot.

The bone, a few hundred small fragments, are from a young adult male and include small fragments of cranial vault, some with unfused sutures. Firing of the bone was efficient although collection was poor. No animal bones were present.

A small flint flake (*2422*, *not illus.*) was also found mixed in with the bone, as was a charred wheat grain (*2421*) of *Triticum* sp., probably emmer.

The cremation was excavated in the 1972 sewer trench and called 'burial 2' (West and Owles 1973). [Ips 1972.120]

Grave-goods: None

Grave 70 (cremation) (Figs 116 and 119)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Unknown, infant

Description: A cremation contained within *0883*, a plain, squat, dark brown biconical urn of soft fabric with some chaff backing, burnished all over. Height 192mm. Decoration consists of five small hollow bosses around the girth of the pot.

The several hundred minute bone fragments were from an unsexable infant, probably 9–10 months old and included two crowns of deciduous teeth (a molar and an incisor). Two cranial vault fragments had porotic lesions — pitting on the surface of the bone — which are often classified as porotic hyperostosis. This condition is most frequent in infants in the 6 months–2 years age range (Stuart-Macadam 1989), and seems to be the result of iron-deficiency anaemia. This condition can be caused by poor diet, but it is perhaps most commonly caused by intestinal parasites (Stuart-Macadam 1991). It particularly affects individuals during phases of rapid growth and immunological vulnerability (*e.g.* weanlings) and was a common disease in antiquity.

The firing of the bones was good. A small fragment of an adult (?tibia) bone was present. There was no animal bone. Two small fragments (0.1g) of 'cremation slag' were found (*2411*).

Some tiny pieces of charcoal (*2420*) were identified as being of oak (*Quercus* sp.), probably alder (*Alnus* sp.) and probably cherry or blackthorn (*Prunus* spp.). A small piece of burnt flint (*2419*) was also present.

Excavated in the 1972 sewer trench and published as 'burial 3' in West and Owles (1973). [Ips 1972.120]

Grave-goods:
A: Bone **object**, length 10.5mm, possibly a pin terminal. An alternative interpretation would be as a bone cosmetic pick but these normally have a hole at the flattened end for suspension. The flat end has four notches, rounded and therefore possibly made by friction from an abrasive thread rather than a saw (R. D. Carr pers. comm.). [2412]

Grave 71 (cremation) (Fig. 116)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Unknown, infant

Description: A cremation contained within urn *0884*. This shouldered vessel has a rounded profile, short upright rim and a soft fine pale buff fabric with grey-brown reduced surfaces, apparently unburnished. The shoulder is decorated with five hollow bosses. Reconstructed height 190mm.

The small amount of bone contained was from an unsexable infant probably 3–6 months old, including the partly formed crown of an unerupted molar. The firing of the bones was good and their collection moderately so. No animal bones were present.

Excavated in 1972 and published as 'burial 4' in West and Owles (1973). [Ips 1972.120]

Grave-goods: None

Grave 72 (cremation) (Fig. 116)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Unknown, adult

Description: A cremation contained within urn *0885*. The urn survives only as fragments of a globular vessel with a high shoulder, its rim and base missing, surviving height 140mm. The fabric is a dark red-brown with smoothed surfaces.

The few small fragments of bone show an unsexable adult with few identifiable pieces. Firing was efficient but collection bad. There were two fragments (10.9g) of animal bone (*contra* Calvin Wells in West and Owles 1973, 55), one fragment petrous, from a ?pig, cow or horse.

The cremation was from the 1972 sewer trench and published by West and Owles (1973) as 'burial 5'. [Ips 1972.120]

Grave-goods: None

Grave 73 (cremation) (Figs 116 and 119)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Unknown, adult

Description: A cremation contained within an open biconical urn, *0886*, height 168mm. The fabric is grey with red-brown oxidised surfaces. Most of the upper half was lost but enough survives, including a rim fragment, to show that it had been decorated with a single row of cross-hatched stamps in a band below three horizontal incised lines under the rim and above three more horizontal incised lines. The shoulder had a zone of pendant triangles beneath the lower lines, each of their edges formed by three incised lines, containing six stamps made with the same cross-hatched die (Briscoe A3aii).

The cremated bone consists of several hundred very small fragments from an adult. Three fragments of leg bone, one probably of the tibia, show evidence of chronic periostitis. There is longitudinal striation of the kind which is commonly found in early, especially Anglo-Saxon, leg bones. The striae, about 2mm apart, have in between, occasional fine pits, 0.25mm or less in diameter, which indicate a reaction to a low grade inflammation of the legbone membrane or vascular congestion.

There is a slight underfiring of several fragments of the bone and collection of the remains was poor. A fragment (0.9g) of unidentified mammalian animal bone (*2414*) was present.

The cremation was excavated in 1972 and published as 'burial 6' by West and Owles (1973). [Ips 1972.120]

Grave-goods:
A: Bone **spindle-whorl**, max. diameter 30mm, laminated during firing. [0887]
B: Fragment of double-sided bone **comb**, length 13mm, shrunken during firing. Now missing. [0888]
C: A **girdle ring**, diameter *c.*46mm, made from the burr of a red deer antler, shrunken during firing. [0889, 2414]

Grave 74 (cremation) (Fig. 119)
Cut dimensions: None observed
Container for bone: None
Condition: Incomplete
Sex/age: Male, youngish adult

Description: An unurned cremation recovered immediately east of ring-ditch *2449*, beneath the present road.

The bone was of a male, possibly youngish adult, represented by several hundred fragments. Some pieces of the cranial vault showed unfused sutures or barely starting fusion. A short length of mandible showed three incisors had been present at death although not now surviving. The bones had all been well fired but not well collected. They include a tiny fragment of the superior orbital margin of a young child. No animal bones were present.

Excavated in the 1972 sewer trench and called 'burial 7' by West and Owles (1973). [Ips 1972.120]

Grave-goods:
A: Four fragments of a double-sided bone **comb**, the tooth-plates originally clamped between a central band on either side. A rivet hole is visible on fragment (iii). [2409]

Grave 75 (cremation) (Fig. 116)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Unknown, infant

Description: A cremation contained within biconical urn, *0890*. It has a hard fabric of fine-grained buff with oxidised patches of dark red-brown, decorated with six small applied bosses. Height 63mm.

The bone, consisting of a few hundred tiny fragments mostly of the cranial vault, show the body to have been from an infant ?8–12 weeks old. The bone was well fired and reasonably well collected. Two small fragments of adult radius or ulna bones were also present. There was no animal bone.

Excavated in the 1972 sewer trench and published by West and Owles (1973) as 'burial 8'. [Ips 1972.120]

Grave-goods: None

Grave 76 (Figs 117 and 119)
Cut dimensions: None observed
Container for bone: Urn
Condition: Incomplete
Sex/age: Probably female, (?young) adult

Description: A collection of cremated bone found in a restricted area of the spoil heap from the 1972 sewer trench, well away from any other cremations. In the same area were found fragments of pottery and the spindle-whorl, hence the group is interpreted as deriving from a single urned burial. The pottery consists of rim and shoulder sherds from a biconical urn (*0891*), surviving height 105mm, of hard grey fabric with overall burnishing and red-brown oxidised surfaces. One fragment has an applied boss.

The cremated bone is limited to a few tiny scraps, including fragments of thin cranial vault, some with unfused sutures. The bones were well fired but no new assessment of the bone collection has been made. There was no animal bone.

Published by West and Owles (1973) as 'burial 9'. [Ips 1972.120]

Grave-goods:
A: Clay **spindle-whorl**, found in the same area of spoil as the bones and urn sherds. [0892]

Graves 77–99 were discovered in 1985–1992 excavations.

Grave 77 (cremation) (Fig. 119)
Cut dimensions: None observed
Container for bone: Urn (*not illus.*)
Condition: Truncated
Sex/age: Unknown, middle/old-aged adult

Description: A damaged cremation contained within urn *0013* found in trial box 3 in 1985, about 3.5m from grave 67. The urn survives only in fragments and is in too poor condition to be reconstructed or drawn. Its form is unknown and no decoration exists on any of the surviving sherds. The underfired fabric is dark brown with occasional grit and in crumbly condition. The outer surface is smoothed, the inner surface decayed.

The bone was well fired, and consists of about 750 fragments (181.2g). It represents a middle/old-aged adult of unknown sex. No animal bone was identified.

Grave-goods:
A: A **droplet** of melted Ae adhering to a fragment of cremated bone. [0021]

Grave 78 (cremation) (Figs 117 and 119)
Cut dimensions: 0.34 × 0.59m
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown

Description: A plough-damaged cremation contained in urn *0073*. The 109 sherds that survive all derive from the lower half showing it to have been of a squat globular form; the highest surviving fragment appears to be inturning. Surviving height 96mm. Its red-brown sandy fabric has occasional large flint grit inclusions and dark brown inner and outer surfaces with chaff impressions on the base. The inner surface has tooling marks and the outer surface is burnished.

This problematic deposit is listed as a cremation although no cremated bone was found within the pot. Two joining rim sherds (*0074*) were found in the base of the urn and derive from vessel *1152*, an open bowl, fragments of which were also found in the fill of grave 4 and loose in topsoil layer *0273* (Scatters No. 20). This whole 'cremation' is therefore most curious.

Grave-goods: None

Grave 79 (cremation) (Fig. 117)
Cut dimensions: 0.3 × 0.24m
Container for bone: Urn
Condition: Intact
Sex/age: Probably male, middle/old-aged adult

Description: An intact cremation placed in a regular round cut, contained within urn *0268*, height 245mm, that had collapsed in on itself (Pl. VI). The 148 sherds show the urn was globular with a rounded upright rim. It has a dark brown fabric with grit/sand tempera and some angular flint grit inclusions. Both surfaces are dark brown and smoothed with internal tooling on the shoulder. Decoration consists of three horizontal lines enclosing two rows of simple cross stamps (Briscoe A4ai). Beneath the bottom horizontal line are spaced six single-line pendant triangles enclosing rows of the same cross-shaped stamps.

The 6,600 bone fragments (576.8g) were of a middle/old-aged adult, possibly male. The bone was white and well fired, with some internal blackening. One vertebral fragment had a Schmorl's node. There was no animal bone.

Grave-goods: None

Grave 80 (cremation) (Figs 16, 117 and 120)
Cut dimensions: None — scattered within fill of grave 5 (an inhumation)
Container for bone: Urn originally
Condition: Scattered
Sex/age: Unknown, adult

Description: A scatter of cremated bone fragments and sherds found principally at the uppermost levels, but also lower down the fill of grave 5. Together, they are interpreted as deriving from a cremation disturbed by the digging of the inhumation and scattered throughout the grave on backfilling. Sherds from another pot (*0677*) were found directly associated with the body and are considered to relate to the inhumation. No sherds or bone fragments from grave 80 were found in the bottom layers of grave 5 or associated with the body.

The 118 sherds from the suggested cremation urn, *0318*, show the vessel to have been large, with a simple upright rim, reconstructed height 145mm. It was decorated with a zone of four horizontal lines on the shoulder above a line of stamps with a central club shape between two dots with barely discernible transverse grooves (Briscoe M3ci), apparently made using the foot of a brooch (Chapter 5 section VIII, pp. 228–31). Beneath are three horizontal lines and although incomplete, the shoulder appears to have had eight three-line pendant triangles, every other triangle containing one of four hollow bosses.

Its fabric is of fine brown clay, the inner surface showing extensive tooling, the outer surface grey-brown and burnished.

The 80 bone fragments (19g) scattered throughout the fill of the grave are from an adult of unknown sex. The bone is white, well fired and contains no animal bone. The fill of grave 5 contained 29 charcoal fragments (*0465*, *0486*) but it is unclear whether they relate to the inhumation or the cremation. Some were of a reasonable size suggesting that they are more likely to relate to the inhumation, although all were high up in the fill where the cremation material was most dense; they are described in the catalogue entry for grave 5.

Grave-goods:

A: Ae **buckle**, burnt and twisted, found within the fill of grave 5 and interpreted as belonging to the cremation. [0165]

B: Fe **nailhead** or **tack**, also found within the grave fill and interpreted as belonging to the cremation. [0185]

Grave 81 (cremation) (Figs 117 and 120)
Cut dimensions: None observed
Container for bone: Urn
Condition: Truncated
Sex/age: Possibly female, young adult

Description: A damaged cremation contained within urn *0042*. The urn survives only as fragments with no rim sherds, to 75mm high. They show a convex base and body sherds with two horizontal grooves on the shoulder above a zone of diagonal lines, apparently in groups. The fabric is sandy with occasional large grit inclusions. It has an oxidised dark grey outer skin with burnished inner and outer surfaces of dark grey.

The cremated bone was well fired and survives as over 460 fragments (156g). They derive from a young adult, possibly female. Three fragments (1g) of unidentified animal bone were identified, similar in appearance to the animal bone fragment from grave 73.

Grave-goods:

A: Circular clay ?**counter** with one face flat, the other convex. Diameter 17mm. [0044]

Grave 82 (cremation)
Cut dimensions: 0.6 × 0.57m
Container for bone: None
Condition: Truncated
Sex/age: Unknown

Description: A deposit of bone contained within an irregular round cut. The 300 fragments (53.7g) of bone were white and well fired but could not be used to determine either the age or sex of the individual. Two fragments (3.1g) of unidentified animal bone were recognised.

Grave-goods: None

Grave 83 (cremation) (Fig. 120)
Cut dimensions: 0.38 × 0.36m
Container for bone: None
Condition: Truncated
Sex/age: Unknown

Description: A tightly restricted scatter of cremated bone associated with pottery fragments from pot *A*, contained within or just outside a shallow round cut. The deposit was contained within a shallow scoop south of grave 7. Whilst the deposit was obviously truncated, the bone within the scoop was concentrated and clearly not originally contained within the pot, which had no base fragments; the pot is therefore listed here as a grave-good. There were in addition two sherds deriving from at least one other (unidentifiable) vessel.

The 360 fragments of bone (119.3g) represent an individual of unknown age or sex. The bone was well fired, white and includes some yellow trabecular material. Eight fragments (28.1g) of animal bone were mixed in, including mandible fragments from a large animal, ?horse/cow tibia shaft fragments and rib fragments from a smaller animal.

Several fragments of burnt flint and charcoal were also mixed in with the bone and sherds.

Grave-goods:

A: Fragments from a **pot**. The sherds (total weight 0.22kg) derive from the rim, neck and body. The pot was undecorated, of a soft grey fabric with external surfaces of red/brown colour. [0635]

Cremation 84 (cremation) (Figs 117 and 120)
Cut dimensions: None observed
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown, adult

Description: A plough-damaged cremation contained within urn *0048*. As excavated, it appeared as a scatter of bone, pottery and the grave-goods. This was cleaned to reveal the base of the urn *in situ*, containing bone with spindle-whorl *A* sitting at the centre of the urn base. The vessel sherds can be reconstructed to show a well-made biconical urn, *c.*147mm tall, with upright rounded rim with a slight external bead. The vessel is of a fine light grey sandy fabric with slightly oxidised outer layers. Both surfaces are dark grey and burnished. Decoration consists of a band of circular cross and rosette stamps (Briscoe A5ai and A4ai), used alternately above two horizontal incised lines on the shoulder. Spaced pairs of shallow vertical lines extend from the lower horizontal line onto the urn's lower half. The decoration is, perhaps surprisingly, badly executed for such a well-made pot.

The bone collected was well fired, the 480 fragments weighing 126.7g. They represent an adult of unknown sex, although possibly female based on the presence of the spindle-whorl and the possible melted beads. Three pieces of burnt flint (*0196*) were recovered from the scatter. No animal bone was identified.

Grave-goods:

A: Two burnt and fused **fragments**, (i) of glass, possibly deriving from beads, (ii) of Ae. [0050]

B: Antler **spindle-whorl**, maximum diameter 33mm, nearly complete and burnt. A chip from the top of one edge (ii) has several circular incised lines apparently the result of the object being turned. [0192, 2418]

C: Large melted glass **fragment**, possibly deriving from beads. [0193]

D: Eight melted and fused glass **fragments** (i–viii), possibly deriving from beads, and a separate lump of melted Ae (*none illus.*). [0194]
E: Fe **object**, possibly a part of a nail or rivet shaft. The broken section shows a square core within the corrosion. [0195]
F: Twenty-one fragments of a double-sided **comb**. The comb originally had central tooth-plates of bone or very compact antler clamped by iron rivets between two decorated antler side-plates. Four joining fragments show a curved end (*selectively illus.*). [0049, 2417]

Grave 85 (cremation) (Fig. 121)
Cut dimensions: 0.39 × 0.48m
Container for bone: None
Condition: Truncated
Sex/age: Unknown, adult

Description: A discrete area of cremated bone containing several burnt fragments of grave-goods suggesting an unurned cremation. The bone was immediately beneath plough level and enclosed within a patch of dark greyish-brown sand which perhaps formed the base of the cut.

The bone, in a truncated deposit, consisted of about 113 fragments (11.7g) from an adult of unknown sex. The bone was well fired, mainly white with some yellowish trabecular material. No animal bone was identified.

The deposit also included a mass of charcoal fragments (*0255*), all of oak (*Quercus* sp.) including stem and heartwood, some slow grown.

Grave-goods:
A: Ten fragments of Ae **sheet**. All are warped, possibly after softening by fire but not actually melted. None is decorated. Nine are of thin sheet and one is of thicker gauge with a straight edge and a rounded profile. They suggest that, if all are from the same object, it was either a binding or more likely a thin-walled vessel such as a bowl. Only the three best pieces are illustrated. [0047, 0247, 0248, 0256]
B: Two fused glass **lumps**; (i) translucent blue, (ii) a droplet of opaque red and translucent blue. [0254, 0256]

Grave 86 (cremation) (Figs 117 and 119)
Cut dimensions: 0.24m diameter
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown, adult

Description: A badly damaged cremation with associated material scattered over a wide area. The cremation was originally contained within urn *1157*. Although the pottery found in the scatter could be matched with that left in the base of the cremation cut, the identification of the remainder of the material as having constituted grave 86 is interpretative. The material is not considered a part of the cremation pyre spreads, and it seems to have been independent from that contained in grave 12.

The cremated bone from the scatter (11.1g) is from an adult of unknown age or sex, although the associated grave-goods suggest a female. Amongst the material was a fragment (1.3g) of animal bone of unknown type. Two samples of charcoal from the scatter (*0136*, *0168*) were both of oak stem (*Quercus* sp.), that from *0136* fast grown. Three fragments of burnt flint, *0054*, were found mixed in with the scatter.

Grave-goods:
A: Distorted fragment of Ae **cruciform brooch**, possibly the bow, with decoration of three ring-and-dot stamps. [0053]
B: Two **fragments** of Fe from an unknown object of flat rectangular shape. One possibly has a hole through one end — ?part of a **belt fitting**. [0069]
C: Melted **lump** of Ae, original object unrecognisable. [0125]
D: Five joining fragments of Fe from an object, possibly a **stud head** badly blistered by corrosion. [0126]
E: Fe **buckle** with tongue, width 23mm. [0234]
F: Fe **plate** with large rivet, possibly from a buckle. [0235]

Grave 87 (cremation) (Figs 118 and 121)
Cut dimensions: 0.28 × 0.27m
Container for bone: Urn
Condition: Slightly truncated
Sex/age: Possibly female, middle/old-aged adult

Description: A cremation within urn *0138*, placed within an irregular cut, only the base of which survived. The urn is tall and straight-sided with a wide mouth and rounded upright rim, reconstructed height 195mm. Its fabric is a dense dark brown with grit, chaff and some red grog inclusions. Its outer skin is oxidised to a darker brown and both inner and outer surfaces are rough. It is decorated with a faint horizontal line on the neck, crossed with spaced vertical lines. The fragments from the neck and rim show there to have been at least one row of coarse, open, four-leafed rosette stamps (Briscoe A4aiii) on the shoulder above another row of spaced, coarse, vertical lines.

The 4500 bone fragments (487.3g) were mainly white with some blackening internally and some yellowish trabecular material. They were possibly of a middle-aged female (35+). A fragment (2.2g) of possible animal bone was included in the cremated material.

Grave-goods:
A: **Object** with a porous structure, probably of clinker or slag. [0115]
B: Fragments of a double-sided bone **comb** (i–iv). Fragment (ii) from the connecting plate has ring-and-dot decoration and (iii) has a rivet still *in situ*. [0130, 2433]

Grave 88 (cremation) (Figs 36, 37, 38 and 118)
Cut dimensions: None — contained in upper fill of grave 17 (an inhumation)
Container for bone: Urn
Condition: Intact
Sex/age: Unknown, child

Description: An intact urned cremation within the upper fill of an inhumation (grave 17) adjacent to grave 89. The undecorated urn, *0030*, 95% complete, is hollow-necked with an upright rim, flattened above. The fabric has a dark grey core with grit tempera. Both surfaces are smoothed, the inner dark brown, the outer reddish brown. Height 129mm.

The 2700 bone fragments (172.2g) are unsexable, but come from a child, about 7 years old. The bones are white

and well fired. Two longbone fragments apparently from this cremation are included in grave 89 (see below) and suggest that the two were buried at the same time. No animal bone was present.

Grave-goods: None

Grave 89 (cremation) (Figs 36, 37, 38, 118 and 121)
Cut dimensions: None — contained in upper fill of grave 17 (an inhumation)
Container for bone: Urn
Condition: Intact
Sex/age: Unknown, child

Description: An intact cremation contained within urn *0029*, deposited at the east end of an inhumation (grave 17), adjacent to grave 88. The globular undecorated urn, height 126mm, is 75% complete with a rounded upright rim, most of which is missing. Its fabric is gritty, of a dark brown colour. It has a brown interior and exterior, with a red-brown layer beneath the skin of the outer layer. The exterior is smoothed and the interior has tooling marks on the inside.

The 1100 bone fragments (172.2g) are of a child, unsexable, aged between 2–7 years. The bone includes a 'woven' bone, probably indicative of an infection, and a sutural ossicle ('wormian bone') like those from the pyre spread and grave 91. Wormian bones are supernumerary bones growing in the sutures of the cranial vault. Although sutural ossicles are to some extent hereditary (Sjøvold 1984), they have been found to be so common in Anglo-Saxon skeletons that their occurrence cannot be used at Snape to infer a familial relationship.

The bone was white and well fired. In addition, there were two longbone fragments, more robust than the rest of the assemblage, which would be consistent with the age of the older juvenile in the adjacent cremation, grave 88. Whilst intrusive, the fragments were evidently placed within the urn when originally deposited and suggest that cremations 88 and 89 were buried contemporaneously. They were apparently buried at the same time as the inhumation in grave 17, as no secondary cuts for the cremations were found in the grave fill. No animal bone was present.

Grave-goods:
A: Square-shaped bone **object** with a hole drilled through the centre, maximum width 14mm. [0270]

Grave 90 (cremation) (Fig. 118)
Cut dimensions: None — found in a scatter
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown, infant/juvenile

Description: A scatter of pottery and cremated bone contained within ring-ditch *0302*, immediately south of the enclosed inhumation (grave 20). The scatter comprises 60 fragmentary sherds from an urn (*1597*) of unknown form other than having a simple upright rounded rim. The sandy fabric has a black inner surface and a smooth outer one of dark brown, showing signs of scraping. The only decoration visible is of faint horizontal lines on the neck sherds. One other sherd from this scatter (*0623*), from a rim, joins urn *A* in grave 6 (see discussion in Chapter 6 section II, pp. 244–6).

The six bone fragments (1.4g), all white, are from an infant or juvenile (0–12 years old) of unknown sex. Three unidentified fragments of charcoal, *0622*, were found in the scatter. No animal bone was identified. The tight distribution of the scatter fragments suggest that they are from a single truncated cremation perhaps associated in some way with the occupant of ring-ditch grave 20, and through sherd *0623*, maybe also with that of grave 6.

Grave-goods: None

Grave 91 (cremation) (Fig. 118)
Cut dimensions: 0.46 × 0.37m
Container for bone: Urn
Condition: Truncated
Sex/age: Possibly male, young adult

Description: A disturbed cremation originally contained within urn *0507*, placed in an oval cut. The cremation was between graves 21 and 22 (unexcavated) and was possibly associated with one or other. The urn has been reconstructed, height 169mm, showing it to be of globular form with a rounded, everted rim. It had no decoration, but a small hole 5mm in diameter had been drilled off-centre through its base. Its fabric has a dark brown core, the inner surface black, the outer, a lighter red-brown.

The cremated bone associated with the pottery fragments was spread over a restricted area. The 1300 fragments (572.3g) are from a young adult, 18–35 years old, possibly male. The bone was white, with occasional blackening internally and included a sutural ossicle or 'wormian bone' (*c.f.* those from the pyre spread and grave 89). There was no animal bone present.

Mixed in with the bone were a few charcoal fragments of oak (*Quercus* sp.) and gorse (*Ulex* sp.); there were also a few fragments of cokey-looking material.

Grave-goods: None

Grave 92 (cremation) (Fig. 118)
Cut dimension: None observed
Container for bone: Urn
Condition: Intact
Sex/age: Possibly male, adult

Description: A cremation contained within urn *0025*. Only the lower three-quarters of the tall straight-sided urn, height 180mm, survives. Its dense dark brown fabric has burnt-out chaff impressions on the outer red-brown to grey surface, which also shows wipe marks. The inner surface is dark brown to grey.

The bone was well fired with some subsidiary blackening internally. The bone survives as over 1500 fragments (369.8g), from an adult, possibly male. No animal bones were identified. A small fragment of burnt flint (*0033*) was collected from amongst the bone.

Grave-goods: None

Grave 93 (cremation) (Figs 118 and 121)
Cut dimensions: None observed
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown, adult

Description: A plough-damaged cremation contained within urn *1423*, surviving height 60mm. Only the bottom can be reconstructed of what was probably originally a large vessel. There is no decoration on the remaining sherds. The dark grey, sandy fabric has an oxidised outer buff layer. The inner surface of the pot is dark grey, the outer dark brown; both are smoothed.

The 1100 cremated bone fragments (136.2g) are from a young/middle-aged adult (18–50 yrs) of unknown sex. The bones are white and well fired. No animal bone was present but there were two fragments of burnt flint, *1428*, weight under 5g.

Grave-goods:
A: Small Ae **fragment**, distorted by heat (*not illus.*). [1426]
B: Fe ?**nail** shaft, height 24mm, drawable only from X-ray. Found close to the main scatter of cremated bone, its association is only interpretive. [1421]

Grave 94 (cremation)
Cut dimensions: None observed
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown, child

Description: A plough-damaged cremation placed close to cremations 95 and 96, in which only the bottom 80mm of urn *1495* survived (*not illus.*). Its form is not known, nor whether it was decorated. The surviving sherds show a fabric with a fine, pale grey core with red/brown surfaces, and smoothed on the exterior. One sherd shows evidence of a coil.

The surviving 500 bone remains (64.7g) are from an unsexable child about 2 years old. The bone is all white and well fired. No animal bone was present.

Grave-goods: None

Grave 95 (cremation)
Cut dimensions: None observed
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown, adult

Description: A badly plough-damaged cremation (Pl. V) buried close to cremations 94 and 96. It was contained within urn *1494* (*not illus.*) which had completely lost its structure. Only remains of the base survived and its form, and whether it had any decoration, is unknown. The dark brown, soft, sandy fabric has a powdered red grog filler. One sherd is burnished.

The bone is made up of 1000 fragments (197.8g), all white and well fired, from an adult of unknown sex. No animal bone was present.

Grave-goods: None

Grave 96 (cremation)
Cut dimensions: None observed
Container for bone: None
Condition: Truncated
Sex/age: Unknown, adult

Description: A plough-damaged cremation found in close proximity to cremations 94 and 95. The 150 bone fragments (19.7g) are from an adult of unknown sex. The bone is white, well fired and includes no animal remains.

Grave-goods: None

Grave 97 (cremation)
Cut dimensions: 0.16 × 0.19m
Container for bone: None
Condition: Truncated
Sex/age: Unknown

Description: An unurned cremation located in evaluation work in trial trench VI and left unexcavated, hence no further information, except that it was adjacent to possible post-hole *1562* (Fig. 133).

Grave-goods: Unknown

Grave 98 (cremation)
Cut dimensions: None observed
Container for bone: Urn
Condition: Truncated
Sex/age: Unknown

Description: A heavily plough-damaged urned cremation located in evaluation work in trial trench VII and left unexcavated, hence no further information.

Grave-goods: Unknown

Grave 99 (cremation) (Figs 26, 27, 28 and 121)
Cut dimensions: None — scattered within fill of grave 11 (an inhumation)
Container for bone: None originally?
Condition: Probably incomplete
Sex/age: Unknown

Description: A scatter of cremated bone fragments with burnt metal objects from the fill of grave 11 (an inhumation), the majority from a thin, single, layer. Like grave 80, the material is considered to derive from an individual cremation. It appears to have been a deliberate rather than accidental inclusion, only a few bone sherds being found other than in the main layer (for an interpretation of this see Chapter 6 section II, pp. 246). The association of the burnt metal objects with the cremation rather than the inhumation is, naturally, interpretive.

The bone weighs 60.5g in total but the age, sex or number of individuals represented by it is unknown. Amongst the bone are two burnt animal bone fragments, weighing 2.1g. One is ?zygomatic, the other possibly of calcaneum. Both were from a large animal, possibly a horse or cow. The fill of grave 11 also contained a few charcoal fragments, although these might relate to the inhumation rather than the cremation.

Grave-goods:
A: Ae fragment possibly from a **brooch**. [0964]
B: Ae **droplet** or ball (*not illus.*). [0965]
C: **Strip** of rolled Ae. [0966]
D: Ag **droplet** attached to a fragment of burnt bone. [1129]
E: Two conjoined **balls** of Ag. [1130]

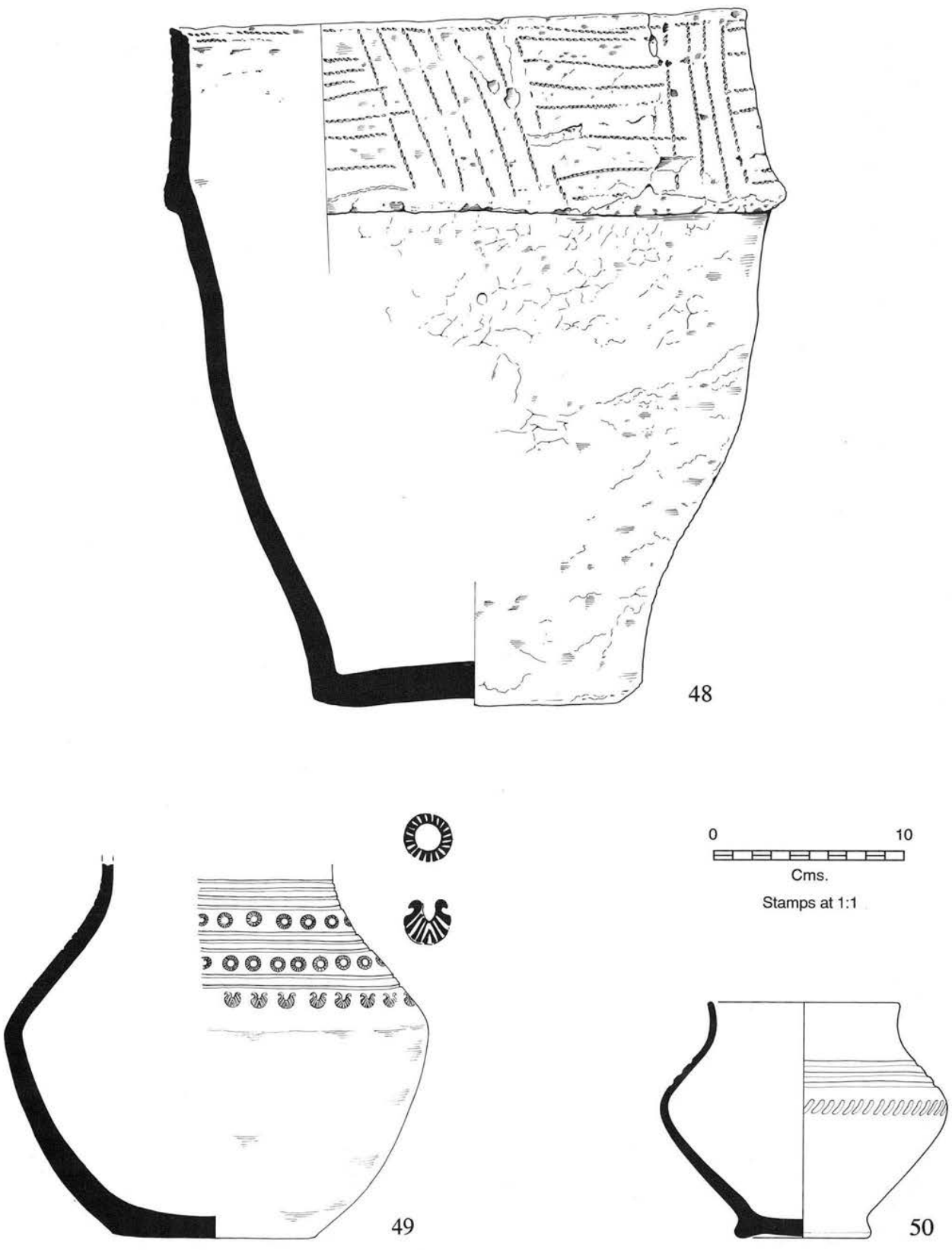


Figure 111 Cremation urns, graves 48, 49 and 50. Scale 1:3, pot stamps at 1:1

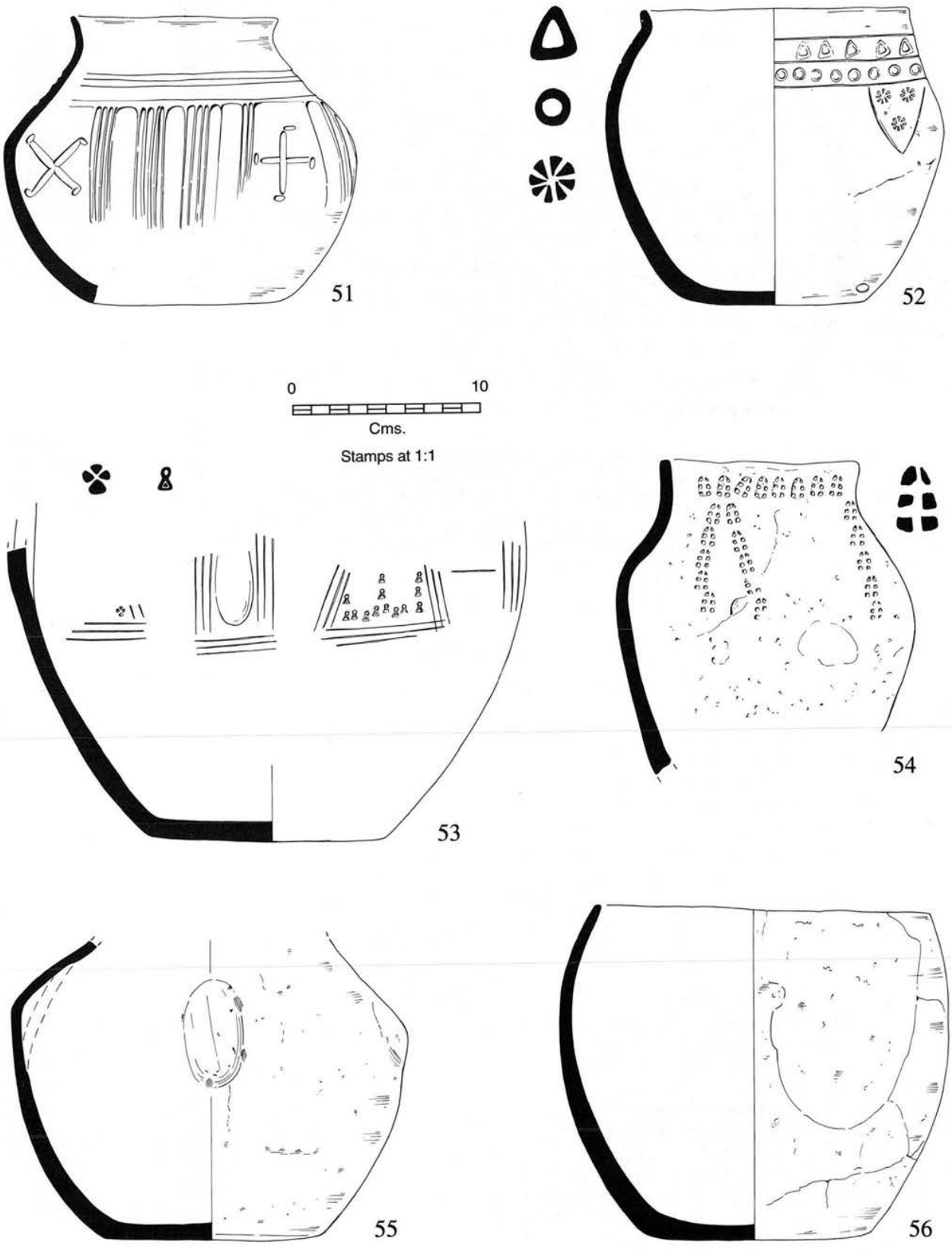


Figure 112 Cremation urns, graves 51, 52, 53, 54, 55 and 56. Scale 1:3, pot stamps at 1:1

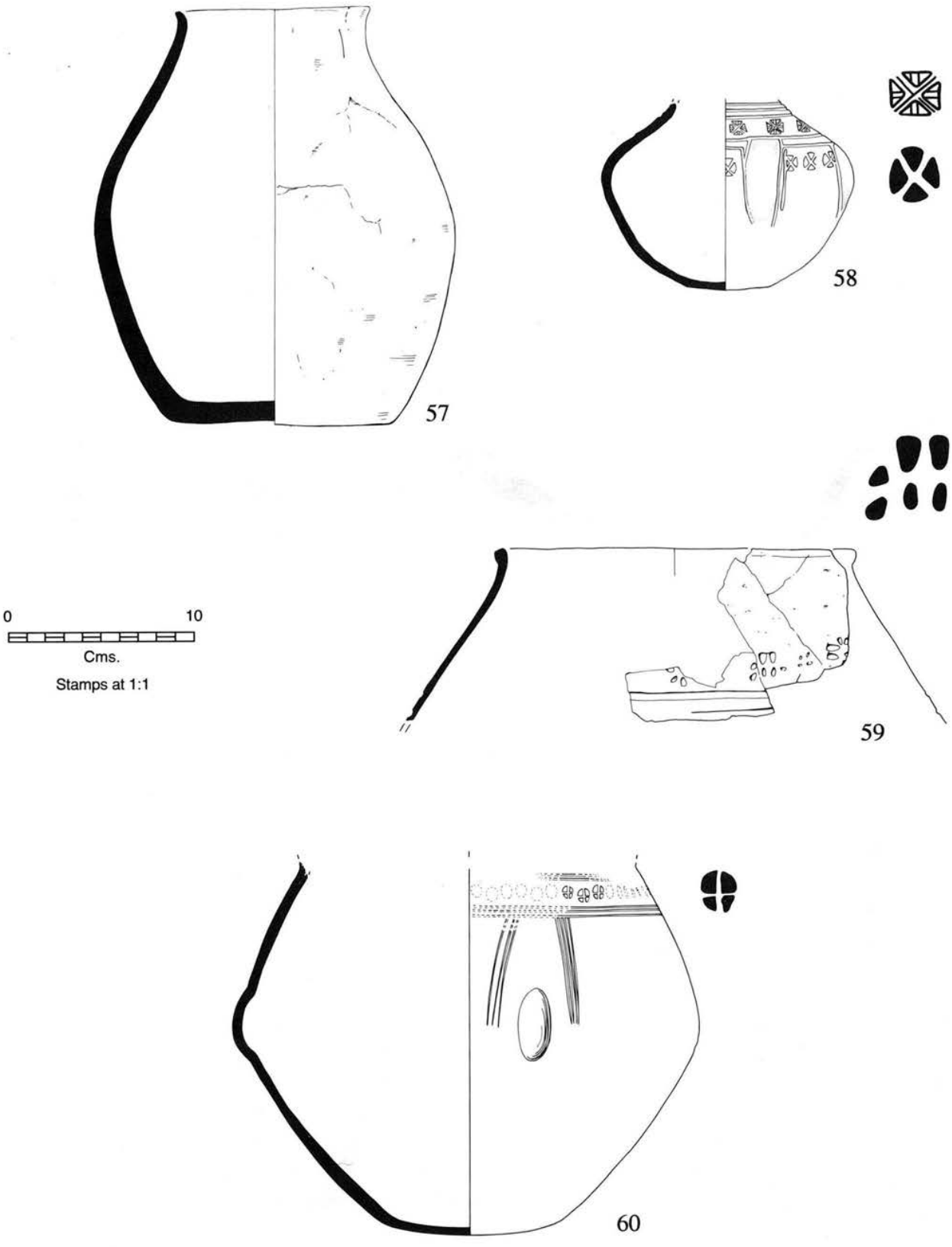


Figure 113 Cremation urns, graves 57, 58, 59 and 60. Scale 1:3, pot stamps 1:1

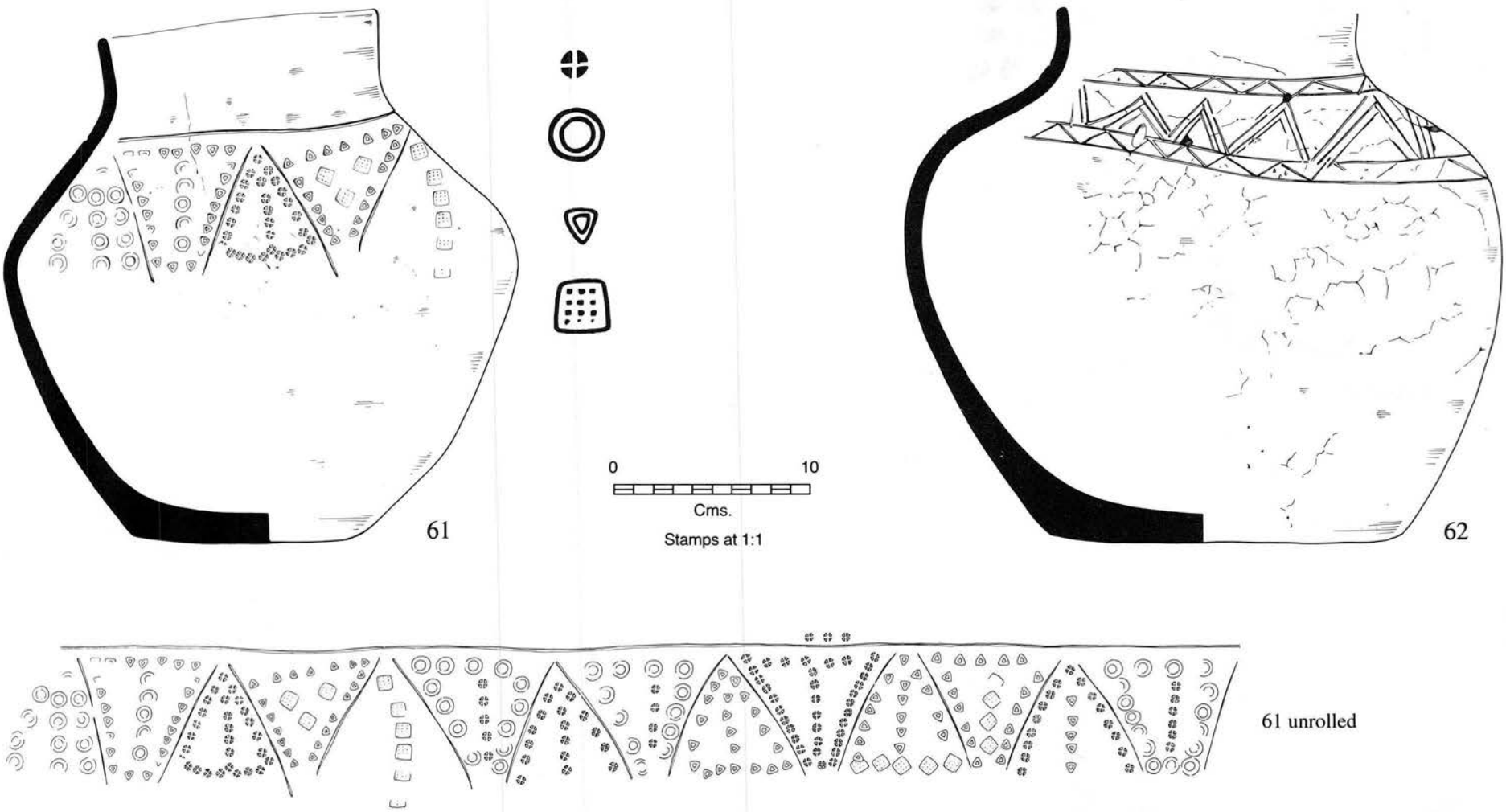


Figure 114 Cremation urns, graves 61 and 62, decoration on pot from 61 unrolled. Scale 1:3, pot stamps at 1:1

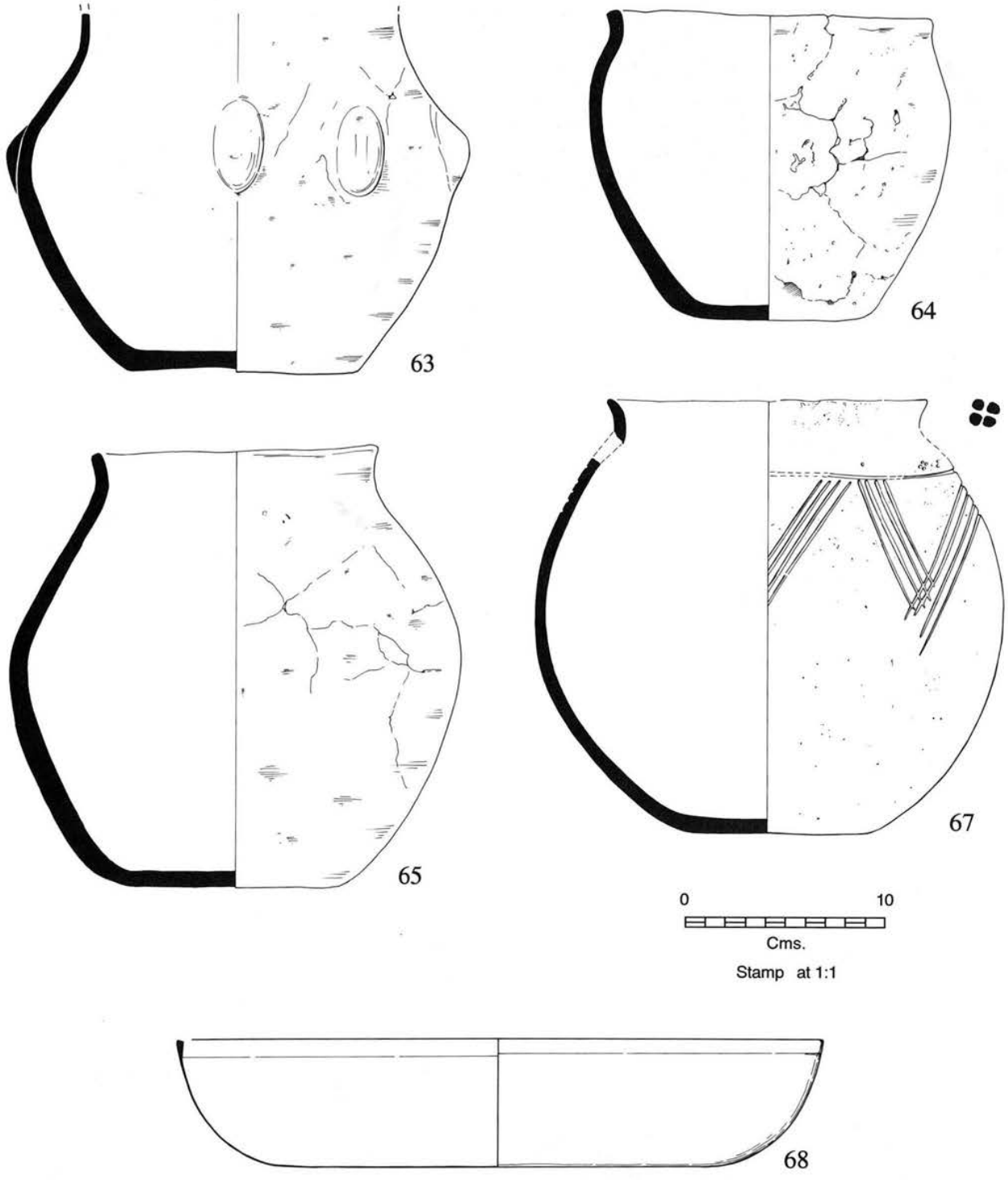


Figure 115 Cremation urns, graves 63, 64, 65, 67, and bronze bowl from grave 68. Scale 1:3, pot stamp at 1:1

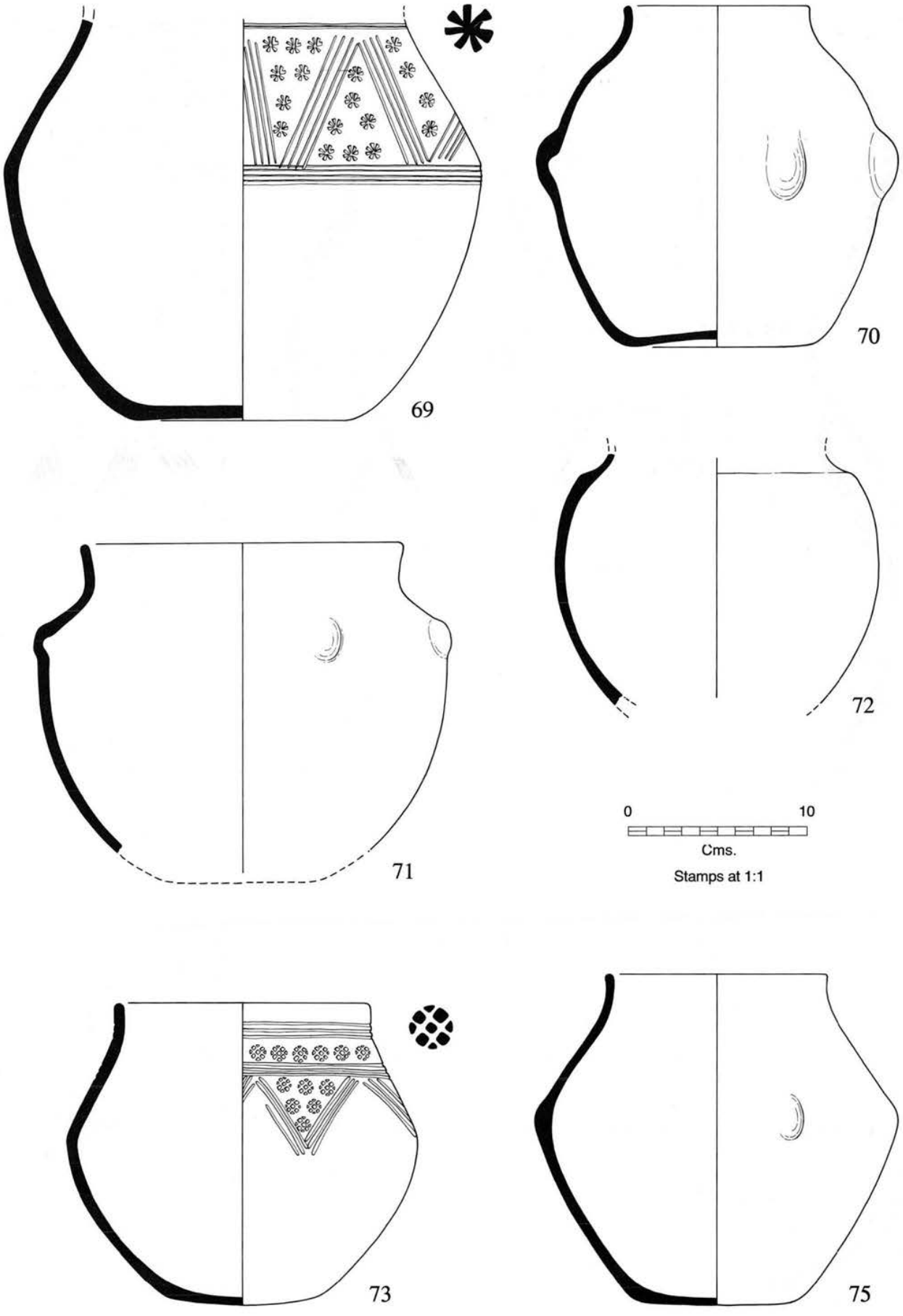


Figure 116 Cremation urns, graves 69, 70, 71, 72, 73 and 75. Scale 1:3, pot stamps at 1:1

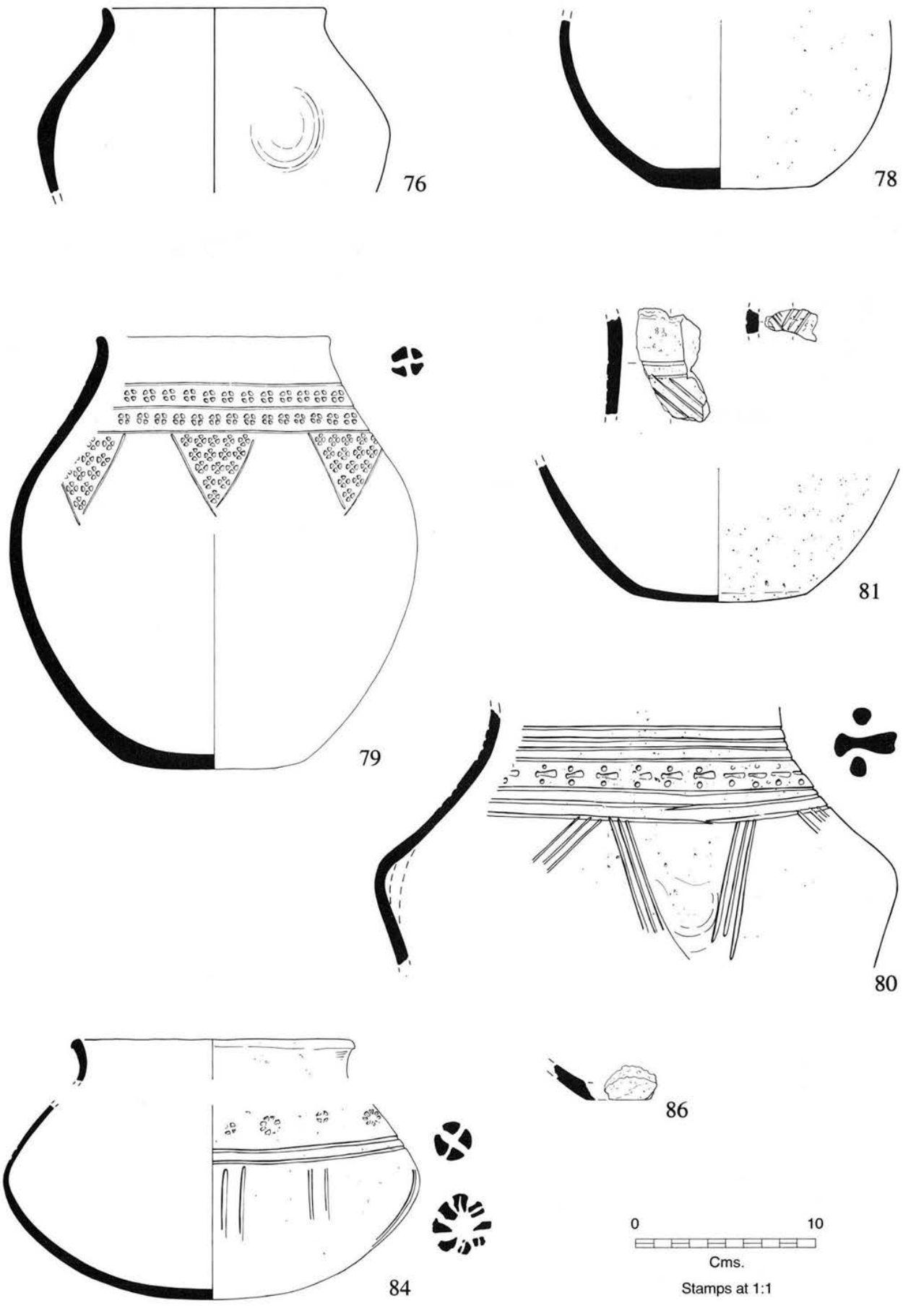


Figure 117 Cremation urns, graves 76, 78, 79, 80, 81, 84 and 86. Scale 1:3, pot stamps at 1:1

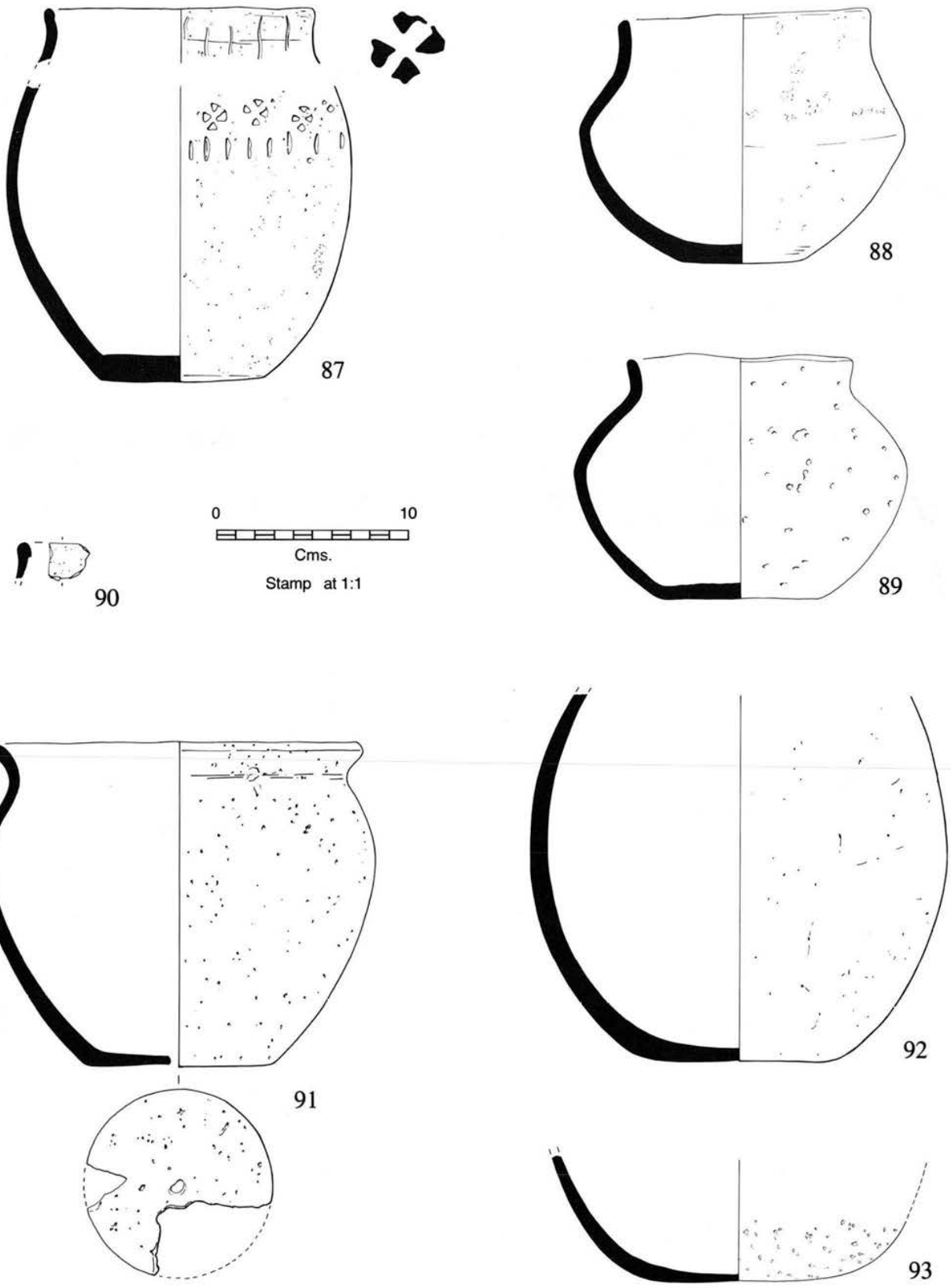


Figure 118 Cremation urns, graves 87, 88, 89, 90, 91, 92 and 93. Scale 1:3, pot stamp at 1:1

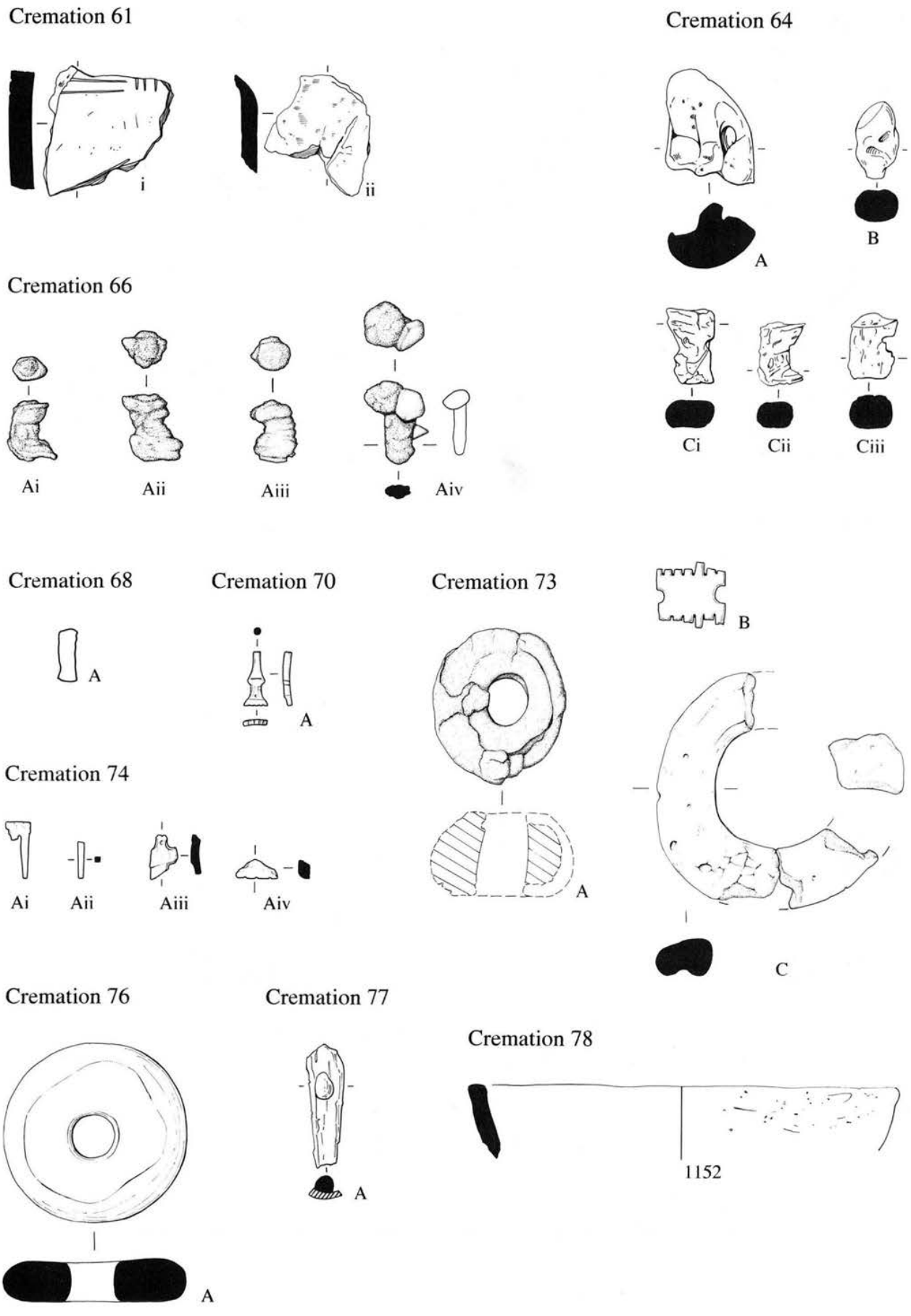


Figure 119 Grave-goods from graves 61, 64, 66, 68, 70, 73, 74, 76, 77 and 78. Scale 1:1 except 61 and 78 at 1:3

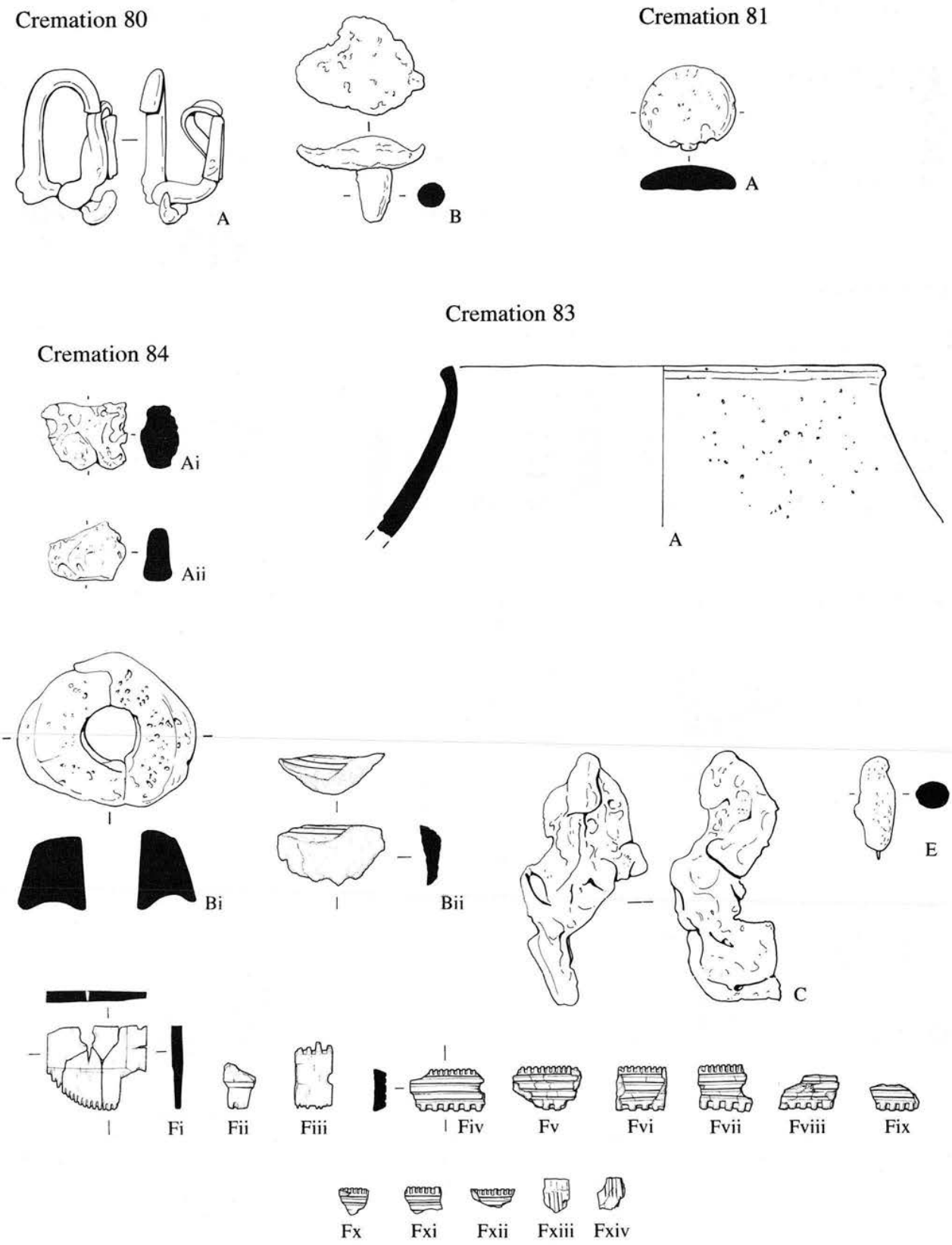


Figure 120 Grave-goods from graves 80, 81, 83 and 84. Scale 1:1 except 83 at 1:3

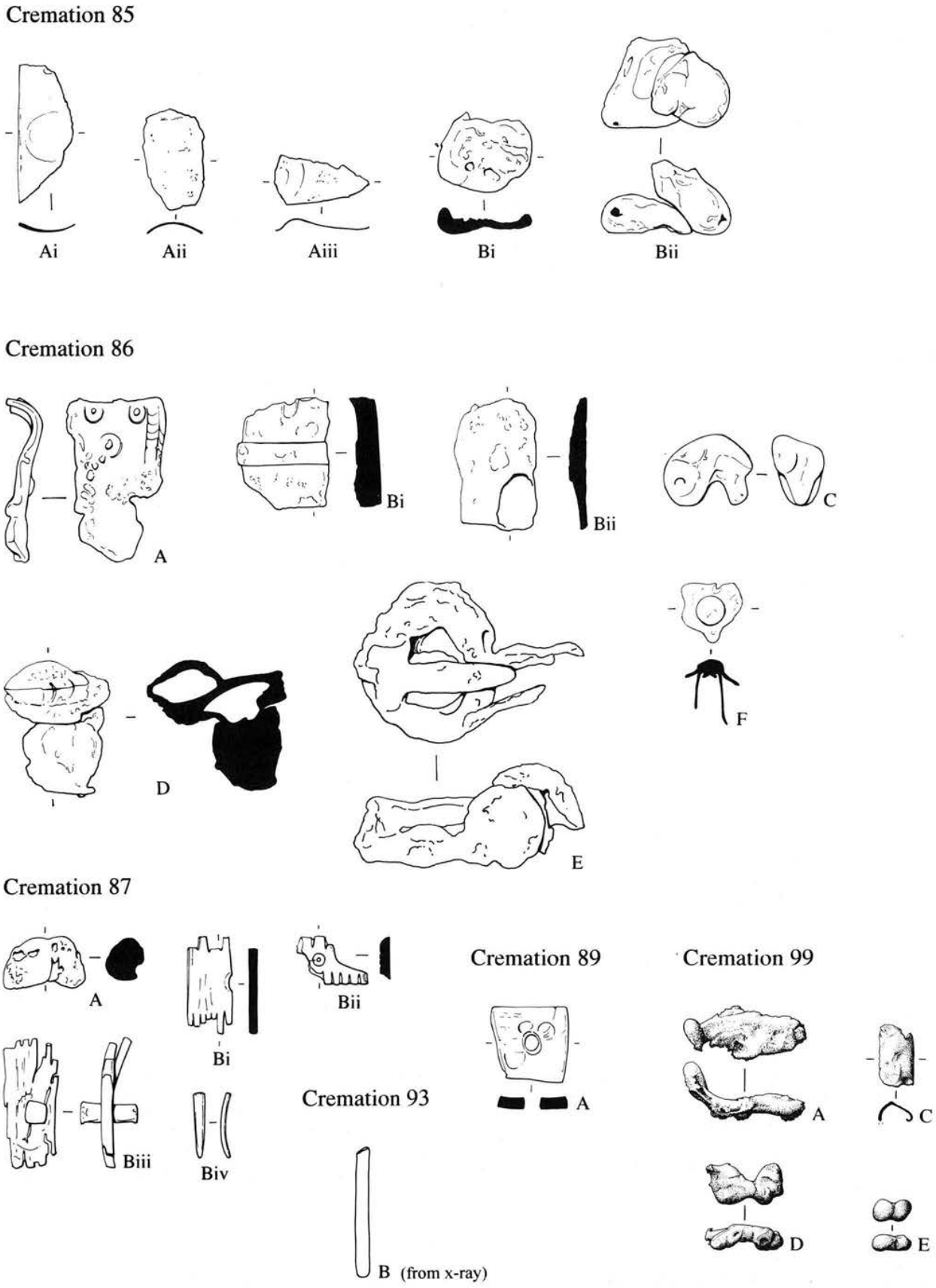


Figure 121 Grave-goods from graves 85, 86, 87, 93 and 99. Scale 1:1

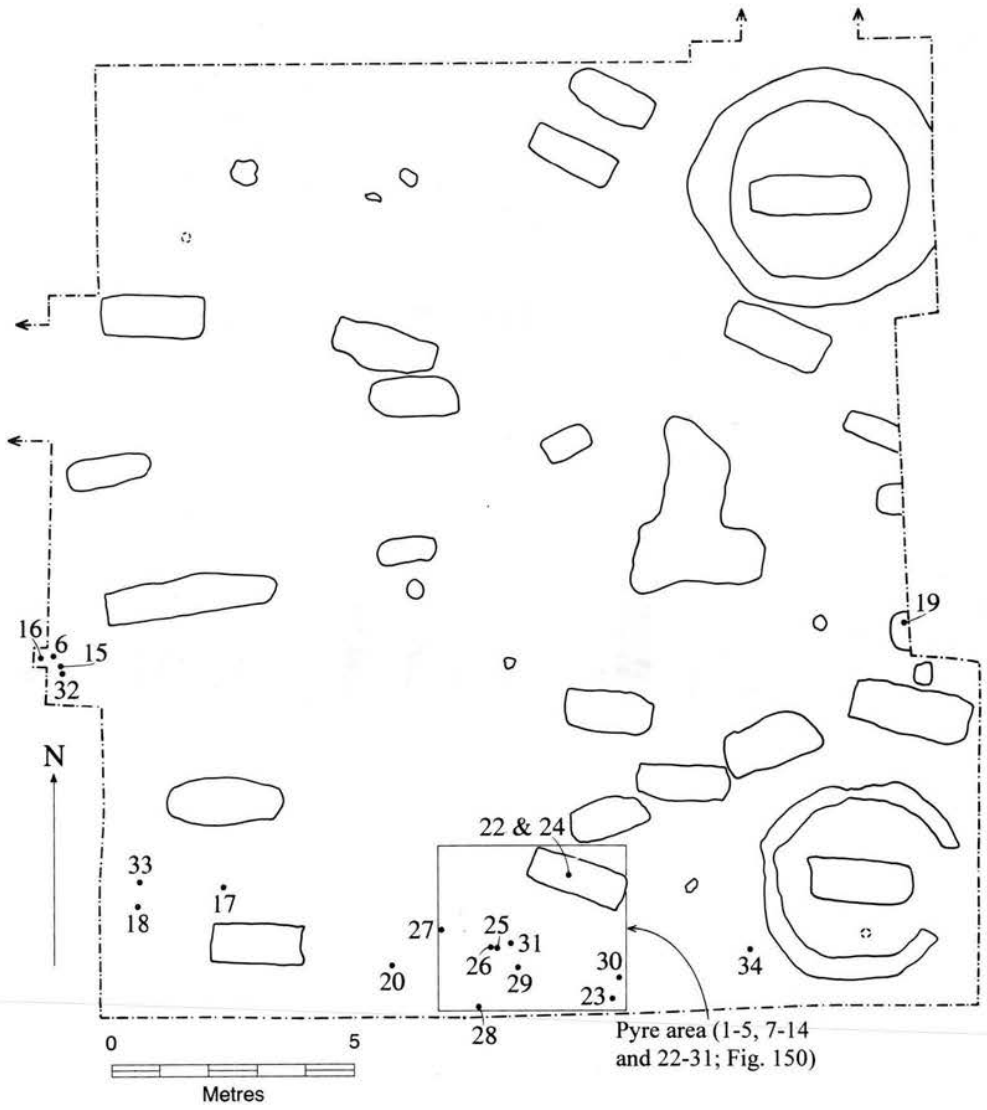


Figure 122 Location of scatters material from Area A

IV. Scatters and Unstratified Material

by Tim Pestell, incorporating material by Shirley Carnegie (pottery), Rowena Gale (charcoal), Vanessa Fell (metalwork), Simon Mays and James Steele (cremated bone)

Within soil layer *0273*, interpreted as being the remains of the Anglo-Saxon topsoil (above, pp. 15), were a number of fragments of pottery, cremated bone, burnt and unburnt metal, charcoal and burnt flint. This material was principally found in Area A because of the survival of the topsoil there.

The scatters were first seen during initial cleaning, following ploughsoil stripping. Thought to be the remains of smashed cremations, they were all numbered (mostly as individual finds, occasionally in small groups), planned and levelled. When the spreads became clearer they were planned at 1: 20. As soon as material could be related to the fill of a grave it was planned (and has been catalogued) as part of that grave. Scattered material obviously deriving from plough-damaged cremations is catalogued elsewhere as part of the relevant cremation.

Material is presented by type and includes original site numbers. Much of the material found in an extensive scatter in Area A is interpreted elsewhere as being the remnants of a cremation pyre (Chapter 6 section III, pp. 252–5). The remaining material from the site, including unstratified finds, is catalogued here, with the exception of a few individual sherds of pottery and cremated bone that cannot be assigned to component vessels or features. These are listed in the site archive, under the topsoil layer *0273*. All categories of artefacts considered to have been a part of the pyre area are distinguished by an asterisk accompanying their catalogue number. All items catalogued within this section are located in Figures 122 and 150 except No. 21 (on Fig. 5) and Nos 38 and 39 (on Fig. 7).

Cremated bone

Cremated bone was collected in several separate contexts, with individual fragments being planned in many cases. Those that cannot be related to the main spread of 'pyre' material, or to individual cremations, were all very small in extent and are listed in the site archive under the component number for the Anglo-Saxon topsoil, *0273*.

These fragments, being often individual pieces, were considered too small to yield any useful information and were not examined. Those spreads that can be associated with the pyre weighed 211.6g in total and represent the remains of a minimum of one individual, possibly male. The full cremated bone report in the excavation archive lists those individual contexts examined as part of the pyre spread. [components 0083, 0216, 0245, 0273, 0327]

Animal bone

The scatters included four small fragments of burnt animal bone, total weight 11.9g, none of which could be identified. All were from the pyre area. [0141, 0416, 0531]

Charcoal

Charcoal was recovered from various locations within the pyre area. That associated with the cremated material in the upper fill of grave 10 included six fragments of hazel (*Corylus* sp.). A scatter west of grave 10 produced the remaining charcoal, containing hazel and oak (*Quercus* sp.) possibly of stem. Uniquely it also contained several fragments of pine (*Pinus* sp.) of the *sylvestris* group which includes Scots pine, discussed on p. 226. Only one piece of charcoal is recorded from the surface scatters outside of the pyre area (No. 6).

Catalogue

(Figs 122 and 150)

1* 6 fragments of hazel (*Corylus* sp.). [0422]

2* 5 fragments of pine (*Pinus* sp.), *sylvestris* group which includes Scots pine. [0443]

3* 1 fragment of oak ?stem (*Quercus* sp.) and 1 fragment of hazel (*Corylus* sp.). [0458]

4* 6 fragments of pine (*Pinus* sp.), *sylvestris* group. [0479]

5* 4 fragments of pine (*Pinus* sp.), *sylvestris* group and 1 fragment of hazel (*Corylus* sp.). [0482]

6 3 fragments of oak stem (*Quercus* sp.), partially vitrified. Possibly associated with scatters vessel No. 16. [1393]

Pottery

The sherds from the scatters were all examined individually by Shirley Carnegie. In many cases their distinctive fabrics enabled isolation and grouping as components of identifiable vessels. The possibility that sherds listed as deriving from a vessel could be part of another pot was considered. Whilst the pottery of this period is notably crude and badly fired, close study was made of the fabric colour, fabric type, inclusions, style, method of manufacture, part of the vessel and finish (*e.g.* burnishing). Attribution to a particular vessel has been made on these criteria and it has proved possible to identify at least fifteen separate pots. This is in fact a conservative estimate of the total, as a number of odd sherds remain, apparently unassociated with these or any of the other vessels from the site, but which cannot be described easily for cataloguing; they are therefore omitted. The location of the sherds/vessels is shown in Figures 122 and 150.

Nearly all the fragments are plain bodysherds but where evidence for form or decoration exists, this is noted. In the absence of any evidence for their use, the term 'urn' has been avoided; instead 'vessel' or 'pot' is used. A sherd found in a service trench dug in 1976 (No. 21) is also published.

Catalogue

(Figs 122, 123 and 150)

7* *0406*. Form and decoration unknown. Vertical rim and body sherds survive. The fabric is a hard, dark grey sandy clay with sparse grit and external burnishing. Fracturing of the sherds clearly shows the coils used in its manufacture. [0057, 0109, 0219, 0307, 0319, 0323, 0352–3, 0356, 0412–3].

8* *0616*. Form unclear although probably from a biconical urn with everted rim. The only surviving decoration is of two horizontal incised lines around the vessel neck. The fabric is a hard dark grey sandy clay with sparse grit. The outer dark grey-brown surface was originally burnished. [0109, 0411, 0481, 0544].

9* *0617*. Appears from fragments to be a tall, straight-sided vessel, with two horizontal incised lines at the bottom of the neck and a slightly everted rim. It has a hard, light grey fabric with coarse angular grit, and a brown outer surface. Both interior and exterior surfaces are tooled smooth. Decoration consists of a horizontal row of coarse ring-and-dot stamps (Briscoe A2ai) between two lines both above and below. Another sherd has part of a larger zone of deeply impressed oval stamps with an internal 'V' shape (Briscoe D5ci). It is impossible to tell whether the oval stamps were originally arranged above or below the ring-and-dot stamps, although the latter seems most likely. [0109, 0220, 0285–6, 0354, 0437, 0480, 1220].

10* *0636*. A straight-sided open bowl of fairly hard dark grey sandy fabric with a dark brown smoothed external surface and angular rim. It is unknown if it was originally decorated. [0210, 0213].

11* *0899*. A vessel of unknown form and decoration as only body sherds survive. The fabric is a hard dark grey and sandy with an orange-brown outer surface, burnished in parts. The interior sherds have some wipe marks (*not illus.*). [0214, 0218, 0290, 0294, 0309]

12* *0930*. A vessel represented by a number of sherds but not reconstructable. The body sherds are all fairly straight-sided and preserve evidence of the coils used in the pot's manufacture, just over 60mm wide. The hard orange-brown fabric has small grit/sand and red grog inclusions. The dark brown inner surface is well burnished and shows scraping and wiping marks. The exterior is also dark brown but less well burnished and some sherds have a pronounced orange layer just beneath the outer surface. It seems to have been decorated in part with hollow bosses. [0275, 0277, 0283–4, 0287, 0297–8, 0404, 0410, 0446, 0454, 0456–61, 0478, 0487, 0489–90, 0505–6, 0525–6, 0545]

13* *1153*. With its form and decoration unknown, this vessel is represented by small body sherds of a hard dark grey-brown fabric with small sand inclusions. There is evidence for an orange-brown interior surface (*not illus.*). [0412, 0441, 0444]

14* *1588*. A vessel of unknown form and decoration but probably small in size as the pot walling is thin. The dark grey sandy fabric has an orange-brown outer core with a mid/dark brown outer surface slightly burnished in parts; the inner core is grey-brown with a dark brown inner surface, partially burnished. Some traces of burnishing remain on the outer surface. One small sherd has an evertion, probably indicating the neck. There is no surviving decoration (*not illus.*). [0227, 0245, 0306, 0308, 0320–22, 0325, 0414–5]

15 *0902*. A vessel, probably globular, with a simple rounded rim of a dark brown gritty fabric. Its inner and outer surfaces are brown and oxidised beneath the outer surface, with external burnishing. Decoration consisted of at least four horizontal incised lines on the neck with a row of square stamps beneath, probably arranged horizontally, featuring a central dot and radiating lines (Briscoe C4ai). A shoulder sherd has three lines from a ?chevron with the same stamps and two vertical lines, possibly the edge of a boss. Found west of grave 4 like No. 16. Only sherd with stamps illustrated. [0901, 0902, 0904, 0906]

16 *0903*. Form and decoration unknown. A soft powdery brown fabric with minute, rounded, quartz grains. Found west of grave 4 like No. 15 (*not illus.*). [0903]

17 *0184*. A vessel of unknown form with soft brown fabric and burnished dark grey surfaces. Decoration is of a slight solid boss bordered with two lines. A second sherd bears two broad grooves. Found between graves 2 and 3. [0184]

18 *1594*. A vessel of unknown form but decorated with three indistinct stamps and two horizontal incised lines. Two stamps, probably Briscoe A3aii and A4aiii are above or below these lines. The third stamp seen on another sherd is, like the first two, applied very indistinctly; it is probably Briscoe A5giv. The vessel fabric is of a hard sandy type with a dark brown burnished inner surface. The outer surface has an orange layer immediately below the partially burnished brown top skin. There are some internal scraping lines. The thickening of sherd *0206* indicates either the former presence

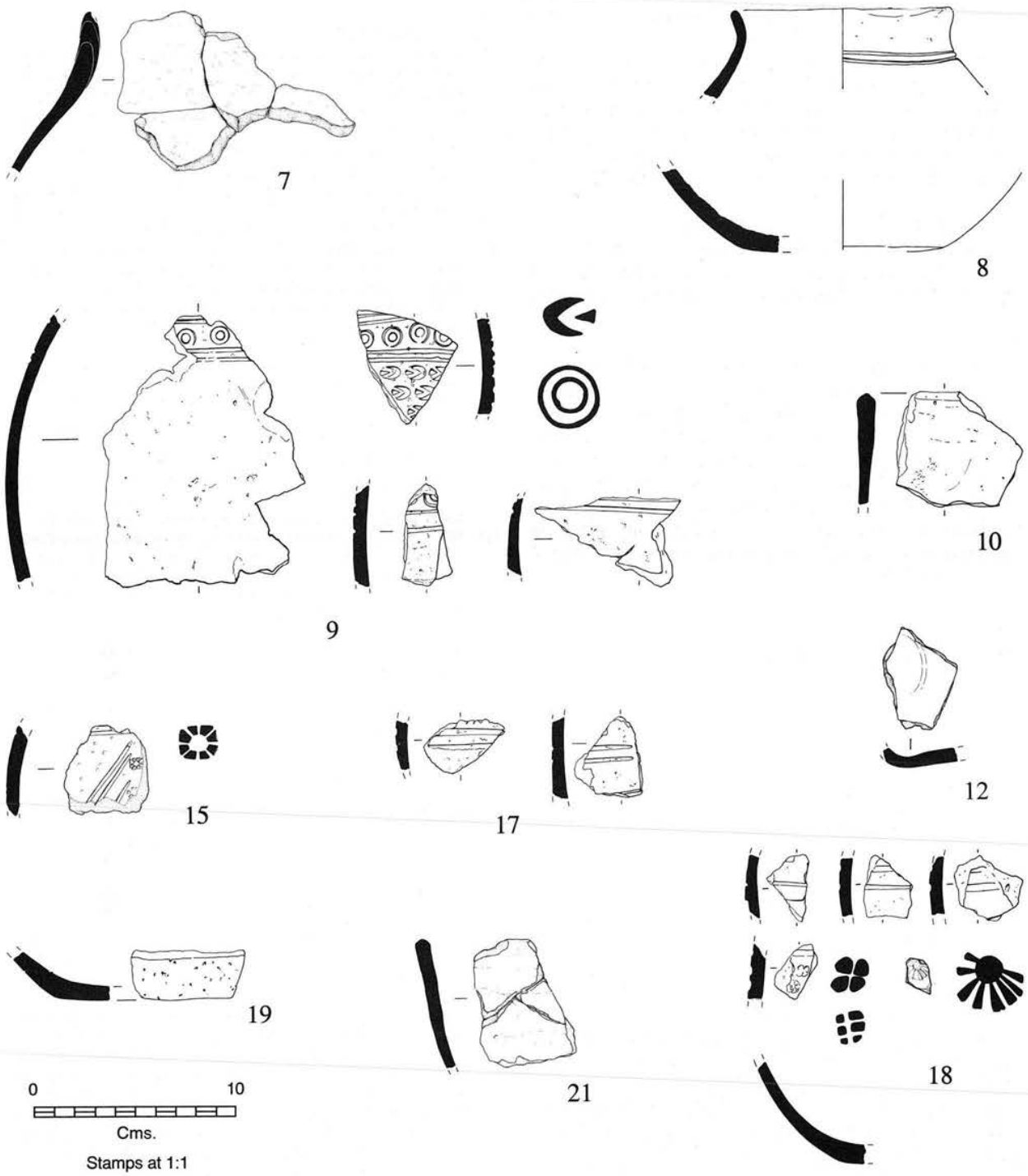


Figure 123 Scatters material, Nos 7–10, 12, 15, 17–19 and 21. All at 1:3, pot stamps at 1:1

of an applied boss or the curvature of the sherd to the pot base (as shown). [0206, 0347–8]

19 *0579*. The incomplete base and body of a vessel of unknown form or decoration. The black fabric has rounded quartz grit and some red grog inclusions. The inner surface is black and the outer reddish-brown to black. Found in the baulk section above grave 22. [0578]

20 *1152*. A vessel represented by sherds in layer *0273*, and also from within the fill of grave 4 and within the urn of grave 78 (a cremation). It has a soft dark brown fabric with angular grit and pitted surfaces. Two joining rim sherds found in grave 78 show it to have been a shallow open bowl. (*illus. under grave 78*). [0278, 0280]

21 *0637*. A vessel represented by three joining sherds, found in a Post Office service trench in the road north of mound 4 in 1976 (located on Fig. 5). The sherds are of a dark brown sandy fabric. Both surfaces are dark brown, the exterior having slight burnishing; both surfaces have wipe marks. The inner fabric is light brown. The sherds are from the rim and body of an open bowl or possibly the upper part of a biconical pot. [0637]

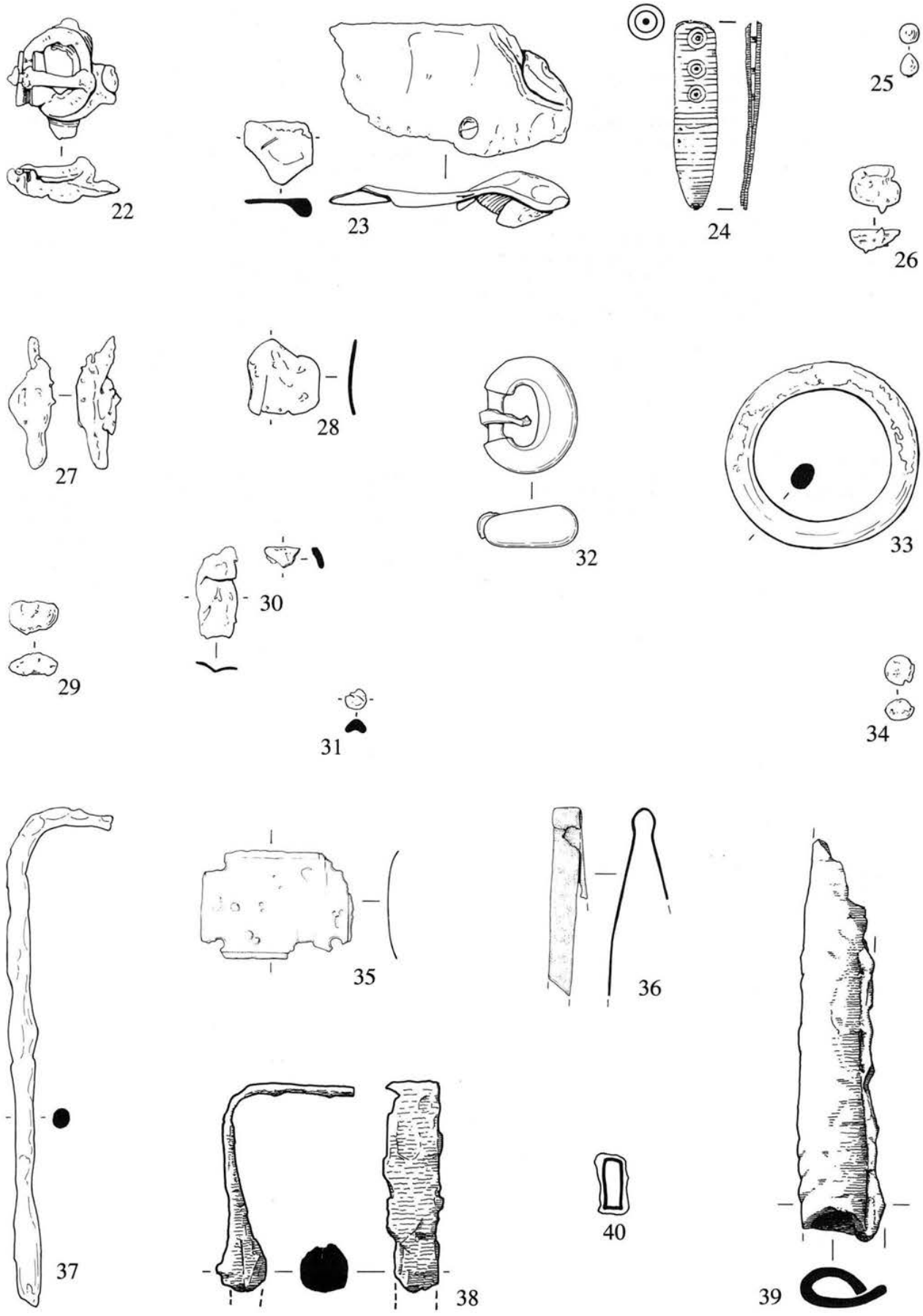


Figure 124 Scatters material, Nos 22–40. All at 1:1 except Nos 37, 38 and 39 at 1:2, punch stamp at 2:1

Metalwork

A number of metal objects were found but present problems in interpretation. Unless otherwise stated, all are burnt and most have been distorted beyond recognition into droplets of metal making identifications difficult and tenuous. Three unstratified finds from the 1972 sewer trench (Nos 35, 36 and 40), previously unpublished, are also included but cannot be located any more accurately.

Catalogue

(Figs 7, 122, 124 and 150)

22* **Fe buckle**, width 15mm, contained within the fill of grave 10 (an inhumation) in association with sherds relating to the 'pyre' spreads and thus catalogued here rather than with the grave. [0351]

23* Two fragments of Ae **sheet**, length 45mm, possibly the remains of an open bowl or repair/binding strips to a wooden object. The larger piece has a small hole punched through it. [0493]

24* Two Ae fragments from a **strap end**, length 35mm, with three stamps of a ring-and-dot design, on one side only, at the end nearest the rivets. The fragments do not appear to have been burned but were contained in the fill of grave 10 (an inhumation) with other material from the 'pyre' spreads, hence their being catalogued here. [0410]

25* Ae **droplet**. [0446]

26* Ae fragment, possibly from a **brooch**. [0458]

27* Ae fragment, possibly from a **brooch**, width 25mm. [0281]

28* Ae fragment, possibly from a **wrist clasp** or **small-long brooch**, width 13mm. [0488]

29* Ae **fragment**, unidentifiable, length 10mm. [0491]

30* Two Ae **fragments**, longest length 17mm, unidentifiable. [0494]

31* Ae **fragment**, unidentifiable. [0461]

32 Ae **buckle** and tongue, width 17mm, possibly associated with scatters vessels Nos 15 or 16. Not apparently burnt. [0905]

33 Small Ae **ring**, possibly part of a belt/knife fitting, diameter 37mm. Apparently unburnt. Possibly associated with scatters vessels Nos 17 or 18. [0124]

34 Burnt Ae **droplet** found just west of ring-ditch *0302*. [0282]

35 Unburnt Ae **sheet**, length 29mm, found amongst the 1972 sewer trench material in Ipswich Museum. Its provenance from Snape seems assured as it is labelled with the site code. It is slightly curved and has a circular rivet hole at each corner with faint traces of an internal line running around the edge. Probably a binding or repair patch. [2440]

36 Unburnt Ae **tweezers**, now broken, found amongst the 1972 sewer trench material in Ipswich Museum, also labelled with the site code. Only one arm survives to any length (35mm). [2441]

37 Unburnt Fe **?pin**, length 21mm, found unstratified in layer *0273*. It is a length of thin square-section Fe bent into a right angle at one end. It is apparently broken at each end. [0066]

38 Unburnt Fe **strip**, length 12mm, found in plough-disturbed topsoil in the extension opened up on the south side of mound 4, Area B (located in Fig. 7). [1840]

39 Unburnt Fe **object** found within the fill of modern ditch *2176* running along the north side of Area B (located in Fig. 7). The object has the appearance of a spear ferrule, being a rolled iron sheet forming a point, length 150mm. If Anglo-Saxon, it is unclear whence the object derives, although components of a spear were found in the topsoil apparently ploughed out of grave 32. [2184]

40 Fe **rivet**, length 9mm, found amongst cremated bone recovered from the 1972 sewer trench, in a bag marked only 'manhole bone' (drawn from X-ray). [2430]

Burnt Flint

In common with many graves and a few cremations, several burnt flints were found in the spreads of material. Their presence was originally thought to be indicative of natural heathland fires and they were not systematically recorded. Their subsequent occurrence in large numbers elsewhere on the site and the discovery of the burnt stone features meant that this view had to be revised. Six pieces are recorded in the pyre area but no further instances are considered worth listing here as the recovery was too erratic. A full list, for those interested, is held in the site archive. [0289, 0357, 0441, 0447, 0460, 0479].

V. Burnt Stone Features

by Tim Pestell, incorporating material by Rowena Gale (Fig. 7)

Stone feature *1771* (*not illus.*)
Dimensions: 1.55 (to baulk) × 1.30 × 0.16m
Samples recovered: Charcoal 0.23kg Burnt flint 31.2kg

Description: A shallow ovoid feature filled with burnt flint and charcoal, heavily plough-damaged. It was found at the edge of Area B when first cleaned and was initially considered a tree-clearance pit. A section cut across it showed that the feature had no real structure, hence it is not illustrated. The charcoal included a large mass of roundwood with fragments of gorse stem (*Ulex* sp.), Rosaceae, subfamily Pomoideae (which includes hawthorn (*Crateagus* sp.), apple (*Malus* sp.), pear (*Pyrus* sp.) and rowan, whitebeam and wild service tree (*Sorbus* spp.). Fragments of oak (*Quercus* sp.) were also present.

Stone feature *1775* (Fig. 125)
Dimensions: 1.5 × 0.99 × 0.35m
Samples recovered: Charcoal 1kg Burnt flint 61.98kg

Description: A sub-rectangular feature, initially quite irregularly shaped. Cleaning revealed the well defined profile of a flat base and steep sides with a rounded break of slope. The feature had been truncated in its upper levels by agricultural activity which had mixed the contents of charcoal and burnt flints with the surrounding natural sand. In its lower levels a deposit of charcoal was overlain by medium to large size burnt flints with several larger fragments of charcoal included. The pit had been cut by grave 46 at its south-east corner. Flint from the first quadrant of the grave excavated was not recorded but the respective weights of the charcoal and burnt flint include the material subsequently recovered from the grave. The charcoal from the feature included a large mass of roundwood, principally gorse stem (*Ulex* sp.), oak stem (*Quercus* sp.), *Prunus* sp. and Rosaceae subfamily Pomoideae.

Stone feature *1779* (*not illus.*)
Dimensions: 0.56 × 0.54 × 0.16m
Samples recovered: Charcoal 0.08kg Burnt flint 92.1kg

Dimensions: A near circular shallow scoop found when first cleaning off the site. Also initially considered a modern feature, no large-scale plan was made although a detailed section was drawn. This showed that it maintained some of its structure with a bottom layer of charcoal resting on natural sand turned a pinkish colour by burning. Above the charcoal was a more mixed layer of small to medium size flints with some charcoal mixed in. The feature was shallow and truncated by agricultural activity although that part beneath plough depth was substantially undamaged. The charcoal preserved consisted of oak stem (*Quercus* sp.) and gorse stem (*Ulex* sp.).

Stone feature *1794* (Fig. 126)
Dimensions: 0.9 × 0.69 × 0.17m
Samples recovered: Charcoal 0.59kg Burnt flint 151.6kg

Description: A sub-rectangular pit of shallow depth disturbed in its upper levels by agricultural activity (gyrotiller and plough). This had distorted the original

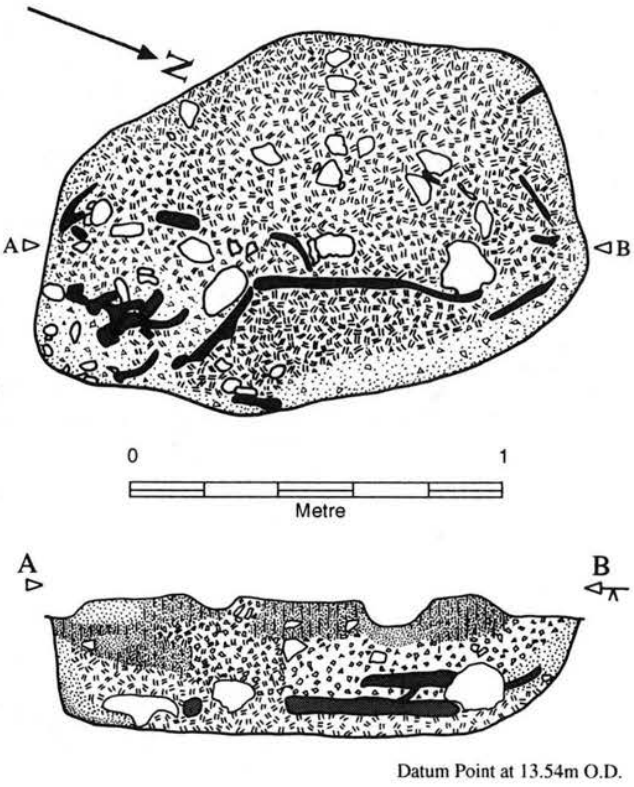


Figure 125 Burnt stone feature *1775*. Scale 1:20

shape of the feature, probably rounding off its ends, notably that to the east. It contained a mixture of small to medium size burnt flints, many of which had been broken up from larger pieces. The pit had a flat bottom with edges rounded at the bottom break of slope. The sides above had been destroyed. The natural sand of the edges had been turned to a pink-red colour by the heat and were covered with a layer of charcoal. The charcoal examined from the sample taken was of gorse stem (*Ulex* sp.), hazel (*Corylus* sp.) and oak (*Quercus* sp.).

A sample of charcoal from the feature was radiocarbon dated to cal AD 380–600 at 2σ (GU–5234; 1580±50BP).

Stone feature *1815* (*not illus.*)
Dimensions: approx. 1.36 × 1.17 × 0.2m
Samples recovered: Charcoal 0.27kg Burnt flint 51.5kg

Description: An irregularly shaped feature, probably originally sub-rectangular, much damaged by agricultural activity. This activity, principally ploughing, has destroyed nearly all evidence for any structure within the feature, except in a few parts between plough furrows. Here, the characteristic layering of charcoal beneath a mixture of medium-sized shattered burnt flint was present. The edges were too severely truncated to give any idea of their original shape. The charcoal derived from stems of gorse (*Ulex* sp.), oak (*Quercus* sp.) and a fragment of *Prunus* sp.

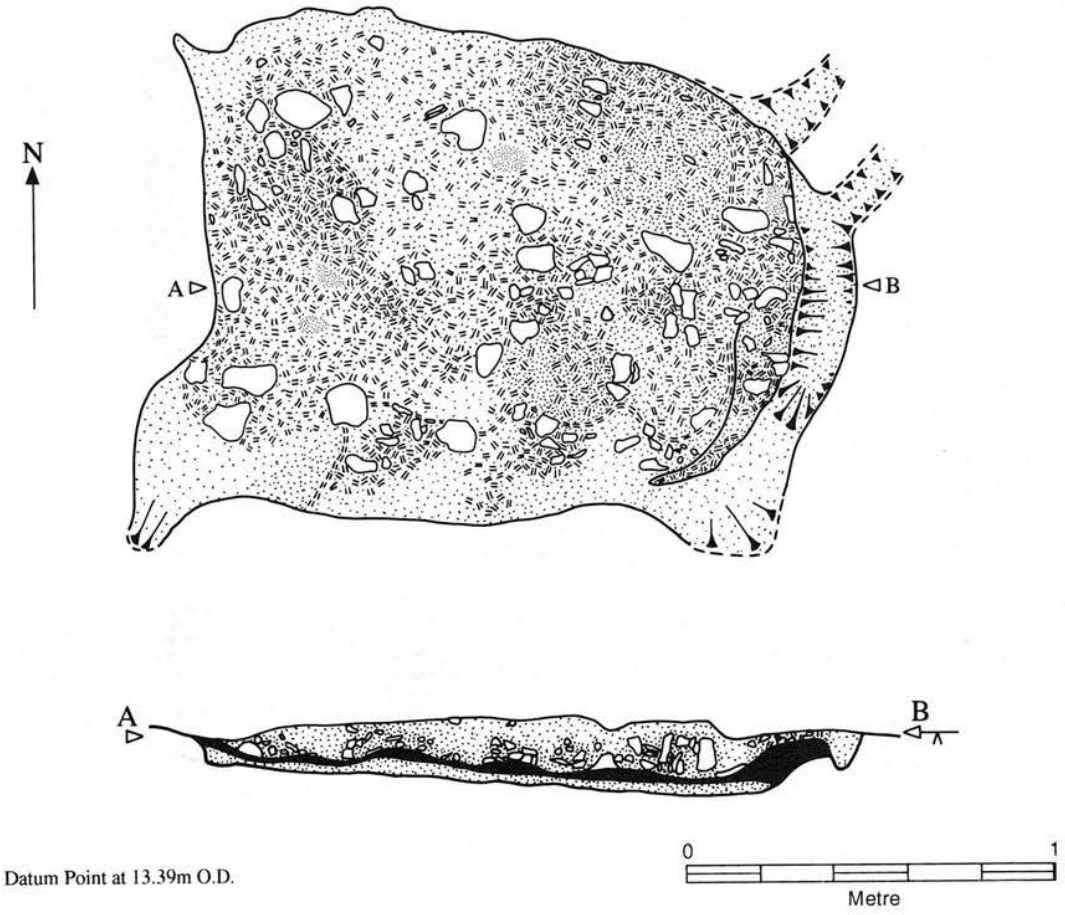


Figure 126 Burnt stone feature *1794*. Scale 1:20

Stone feature *1849* (Fig. 127, Pl. XXX)
Dimensions: 1.92 × 1.26 × 0.26m
Samples recovered: Charcoal 3.27kg Burnt flint 176.53kg

Description: The best preserved of all the burnt stone features, despite much disruption and damage in its upper levels by agricultural activity. The initial spread of material in this area, some 3.14 × 2.12m, was cleaned to reveal a well-defined pit about half this size. The feature was rectangular with rounded corners and had gently sloping sides with rounded bottom edges. The feature had the natural sand along the bottom and sides burnt pink. The bottom layer of the fill was of charcoal, many pieces of which preserved their structure showing that the pit appears to have been lined with branches. Above this was the usual thick infilling of burnt flint of small and medium stones including many shattered fragments. The amount of charcoal mixed in with this suggests a possible second layer of wood above or between the stones. There appears to have been a small layer of gravel near the top of the fill although this may simply reflect later disturbances by agricultural machinery.

A sample of charcoal from the feature was dated by radiocarbon to cal AD 240–440 at 2σ (GU–5235; 1680±50BP). This feature also contained fragments of burnt clay of uncertain origin (*not illus.*). These had a lighter, softer feel than brick but an apparent lack of inclusions or impressions compared with daub. They

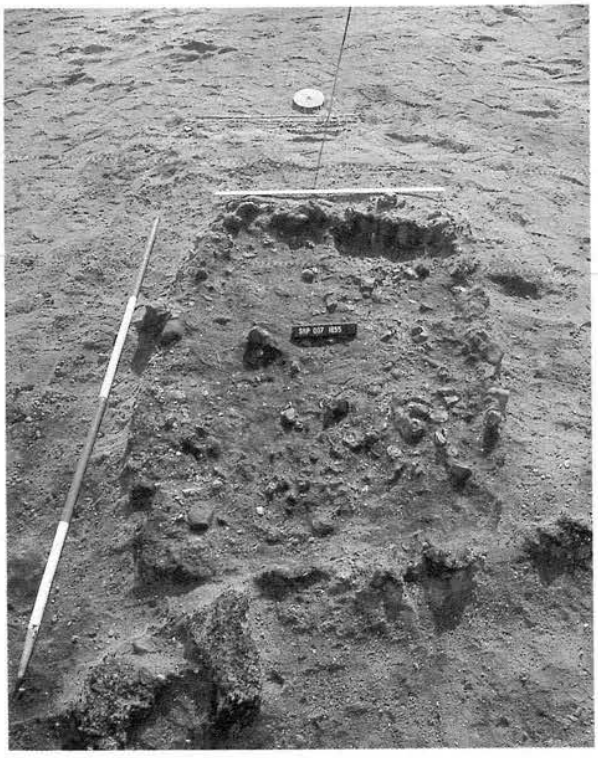


Plate XXX Burnt stone feature *1849* during excavation showing its well-defined rectangular shape

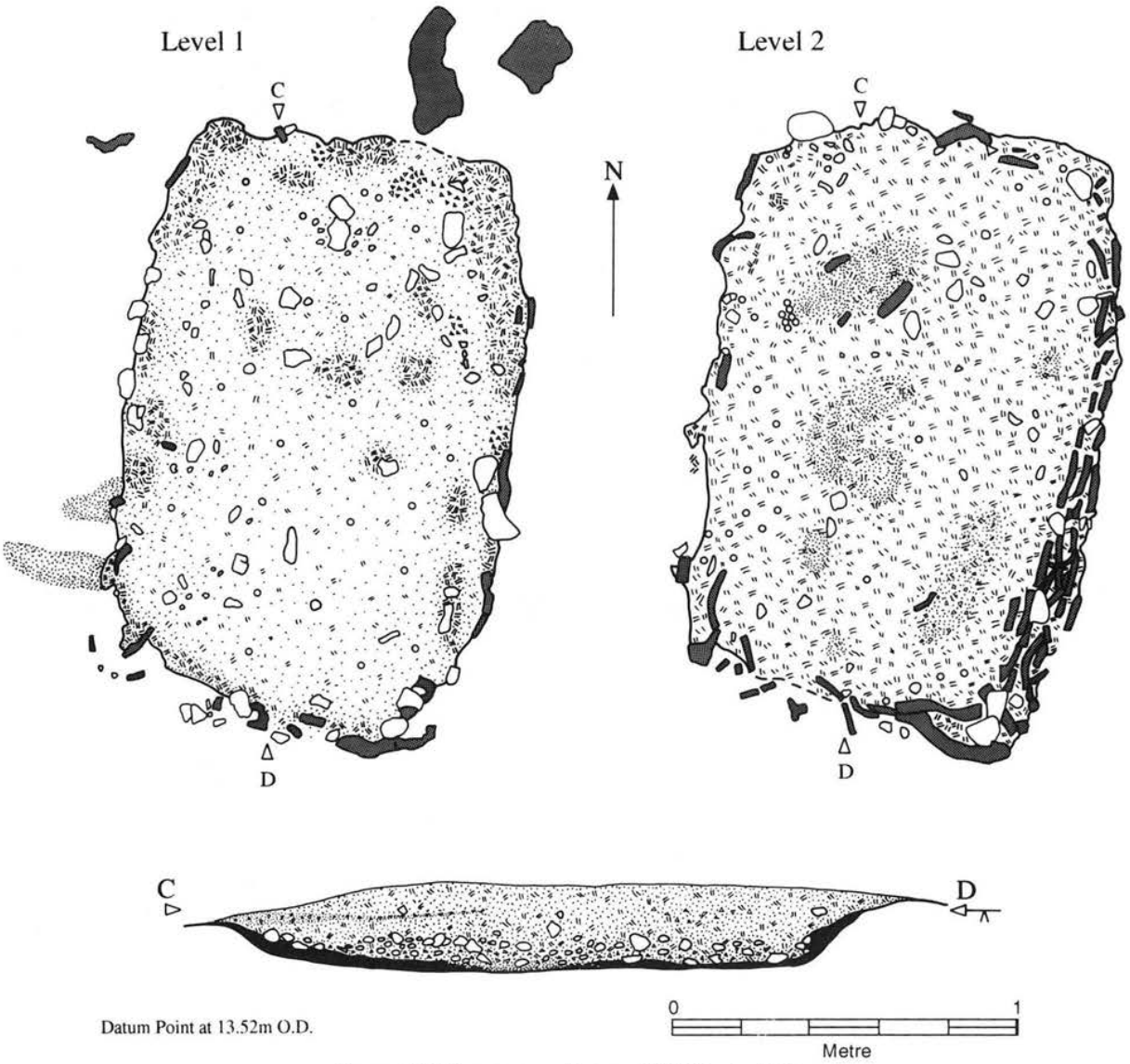


Figure 127 Burnt stone feature *1849*. Scale 1:20

appear to lie somewhere between examples of both brick and daub recovered from the Middle Anglo-Saxon site at Staunch Meadow, Brandon (A. Tester pers. comm.) and resemble pieces of furnace or oven (E. Martin pers. comm.). Their inclusion in the feature would appear to be accidental, perhaps arriving with a load of flint. Despite the large quantity of charcoal present, the samples examined contained only stems of gorse (*Ulex* sp.) and oak (*Quercus* sp.).

Stone feature *2251* (*not illus.*)
Dimensions: 1.34 × 0.9 × 0.13m
Samples recovered: Charcoal 0.98kg Burnt flint 23.86kg

Description: A medium-sized feature that had been almost totally destroyed by ploughing, only retaining its shape between furrows. Its original shape appears to have been rectangular with a flat base, rounded bottom edges and steeply sloping sides. The profile of the sides is uncertain, as ploughing had removed most edges. The fill was mixed but had a bottom layer of 90% charcoal and small heat-shattered flint. The upper layer consisted mainly of burnt flints, some large, mixing with structureless fragments of charcoal. This consisted of a large mass of roundwood, principally oak stem (*Quercus* sp.), some fast grown, and gorse stem (*Ulex* sp.). Some oak stem fragments had annual rings of up to 14 years. Present in smaller quantities were *Prunus* spp. and rose or bramble (*Rosa* sp. or *Rubus* sp.). The base of the feature had natural sand burnt pink to a depth of up to 50mm.

VI. Ring-ditches and Other Features

by Tim Pestell

The site produced a few features in addition to those already catalogued, the most important of which were the ring-ditches. Those surrounding inhumations are described in their relevant grave catalogue entries, but are illustrated here (Pl. XXXI, Figs 128–130) for ease of comparison with the other ring-ditches. The majority of other features were natural or modern, and often related to agricultural activity; only features of possible relevance to the cemetery are considered here. All measurements given are *maxima*.

Ring-ditch *1735* (Fig. 132, Pl.XXXII)
Diameter: 6.6m (approx.)
Width: 0.95m
Depth: 0.2m (approx.)

Description: Area B. This ring-ditch, first located during trial trenching in 1990, was very fragmentary, having been scarred by ploughing, subsoiling, rabbit holes and tree roots from the adjacent road hedgeline. Additionally, the northern part had been removed by a modern roadside ditch. The ring-ditch's original diameter can only be estimated, but there is some evidence that it was penannular, since a section through the south-western end showed a steep slope, suggestive of a terminal. The depth of the ditch on the west side contrasts with the extremely shallow traces to the east. The ditch fill contained 0.17kg of burnt flint; a single flint flake, *2248*, was found immediately adjacent to the ditch. The stratigraphic relationship between this ring-ditch and ring-ditch *2265*, which would overlap if fully reconstructed (Fig. 7) could not be determined from the sparse remains of both that were left. If penannular, it is possible that *1735* was added to *2265*, since its gap occurs on the western side, in the region of where *2265* would have extended.

The ring-ditch contained three features, *2174*, *2311* and *2346*, none centrally positioned, and none of which could be interpreted clearly. Feature *2174* to the south was apparently a sub-rectangular cut with a mixed grey sand fill, but was only 50mm deep at best, being completely disturbed by surrounding animal activity. No section could be drawn and nothing diagnostic was contained in the fill. Feature *2346* in the northern end was cut by feature *2311*. Again, it was apparently originally a sub-rectangular feature, showing a clear layering of soil in its fill. Finally, feature *2311*, a large sub-rectangular cut, oriented north–south, contained a fill of mixed grey sand with coarser brown sand at the bottom. Although fully excavated and sieved, no finds were made within the pit and its date and function are unknown.

Ring–ditch *1780* (Fig. 131)
Diameter: 7.3m (approx.)
Width: 0.65–0.95m
Depth: 0.48–0.5m

Description: A ring-ditch located at the far east end of Area B. The ditch showed that an apparent hummock within the scheduled area to the north was in fact the remains of a small barrow (mound 6). Only about one-third of the ditch was uncovered and so its edge-to-edge diameter can only be estimated; nor could the ditch be proven to have been penannular or annular. As exposed, it seems to show straighter lengths joined together to form an arc. It had a very steep section to the outer edge, sloping slightly more in the internal edge, and, in parts, a flat bottom, 0.2m wide. The narrow width of the ditch and its steep profile may suggest that it once contained a retaining fence although there were no other indications of any former palisade in the ditch, nor any obvious post-hole bases at the bottom of the ditch cut. The ditch fill was a mixed grey and brown sand, coarser brown at the bottom, but mixed by much root disturbance. Only this small stretch was excavated because the ditch extended into the scheduled area.

Ring-ditch *2066* (Fig. 131, Pl.XXXII)
Diameter: 4.6m (approx.)
Width: 0.32–0.58m
Depth: 0.21m

Description: A ring-ditch to the west of ditches *1735* and *2265*, located against the northern edge of Area B. Over half of the ditch was exposed, although it was unclear whether the ditch was fully annular or not. The ditch had been damaged by a modern field ditch running across the southern part of its arc, and the whole area was heavily disturbed by root action, being adjacent to the hedgeline. The ditch was open in section, with a rounded bottom, becoming almost V-shaped in one part. The fill was of a coarse grey-pink sand, with a slightly more coarse, browny sand silting the bottom. The ditch was 100% sampled and yielded 0.27kg of burnt flint.

At the projected original centre of the ring-ditch, possible feature *2185* was located, but this was uncertain as the whole area was disturbed by animal burrowing. The feature could not be seen in the baulk for the same reason, and proved to be only a few centimetres deep. If it did represent a central deposit within the ring-ditch, this was only its base, and no objects or stains were found within the feature.

Ring-ditch *2265* (Fig. 133, Pl.XXXII)
Diameter: Estimated at 4.2m
Width: 0.38m
Depth: 0.07m

Description: Area B. A curved linear feature interpreted as the fragmentary remain of a ring-ditch, 1.1m away from ditch *2066* and possibly once overlapping (or overlapped by) ditch *1735*. The short curved stretch was both very shallow (at no point deeper than 70mm) and much disturbed by animal and agricultural activity. 100% sampling failed to recover any finds. The fill was of light to mid grey sand with some grey-brown sand mixing in. No trace of silting could be seen. No feature possibly once central to this ditch was seen, if indeed one once existed. It is possible that if penannular, this ditch could have formed an 'add-on' to the west of ring-ditch *1735* or, if annular, had been added to by a penannular *1735*.

Plate XXXI Ring-ditch *2062* surrounding inhumation grave 34; view from south looking north

Plate XXXII Ring-ditches *1735, 2066* and *2265*, Area B, from the south looking north

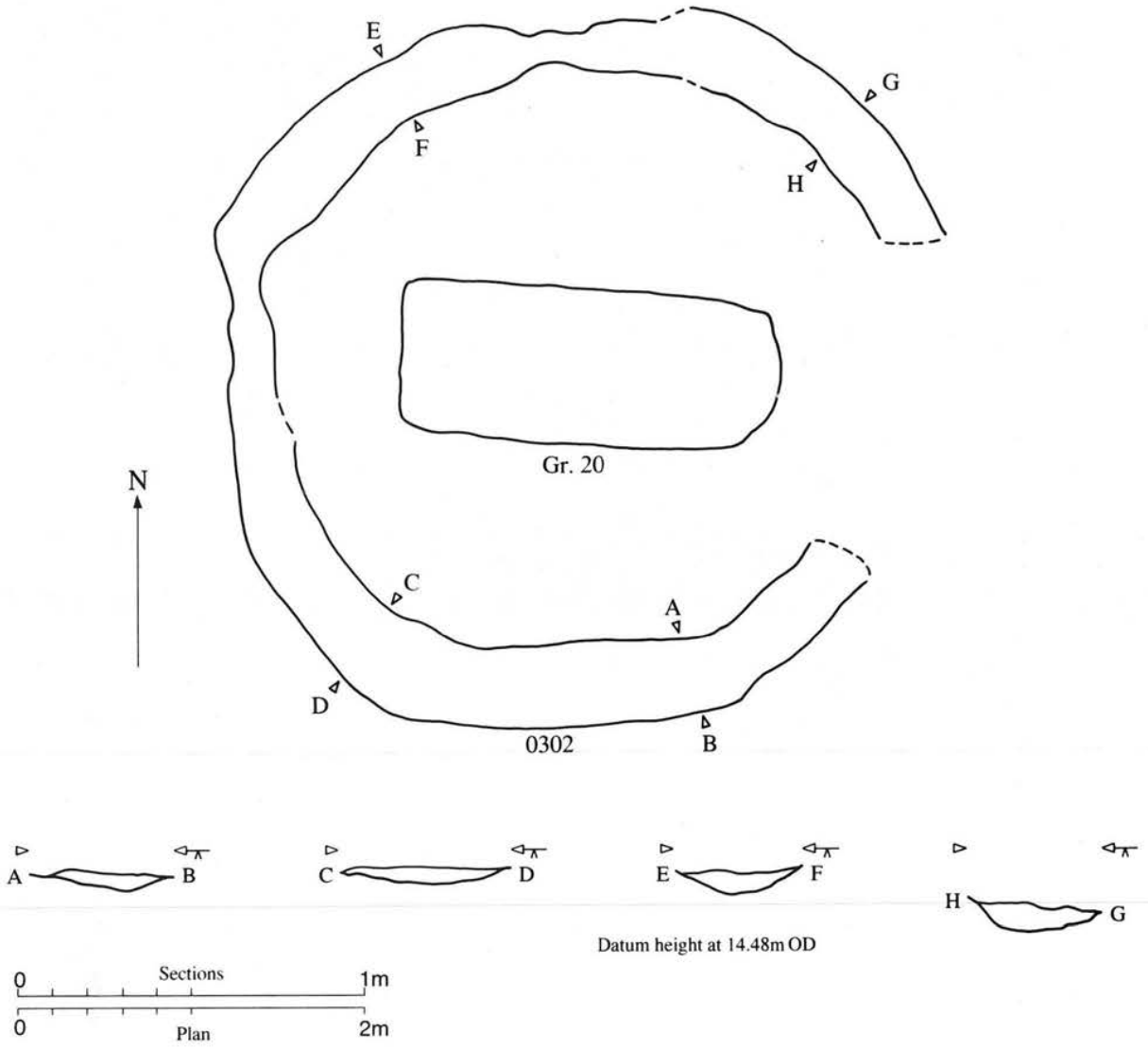


Figure 128 Ring-ditch *0302*. Scale 1:40, sections 1:20

Ring-ditch *2449* (Fig. 5)
Diameter: Estimated at 5.5–6.2m
Width: 0.55–0.85m
Depth: 0.8–1.1m

Description: A ring-ditch seen in section only, in the two walls of the sewer trench dug along the A1094 road in 1972. The estimated diameter is based on its description by West and Owles (1973, 47) as 'reaching a depth of 1.8m from the present ground surface ... [*i.e.* about 12.80m OD] The inner lips of the ditches on the north side of the trench were 3.4m apart and they were just over 1m wide; those on the south face were almost touching and, since the section was more oblique, appeared 1.6m wide'. Reconstruction of the diameter measurement assumes the trench to have been approximately 2' (0.7m) wide, which seems reasonable based upon photographs taken at the time, now held in Ipswich Museum. This suggests an approximate external diameter of 5.5–6.2m, rather than the 8m that West and Owles proposed (1973, 48).

The ring-ditch yielded six plain Anglo-Saxon body sherds, although these cannot now be isolated from the other 1972 material held in Ipswich Museum. Since the centre of the ring-ditch has not been seen, it is impossible to date the feature.

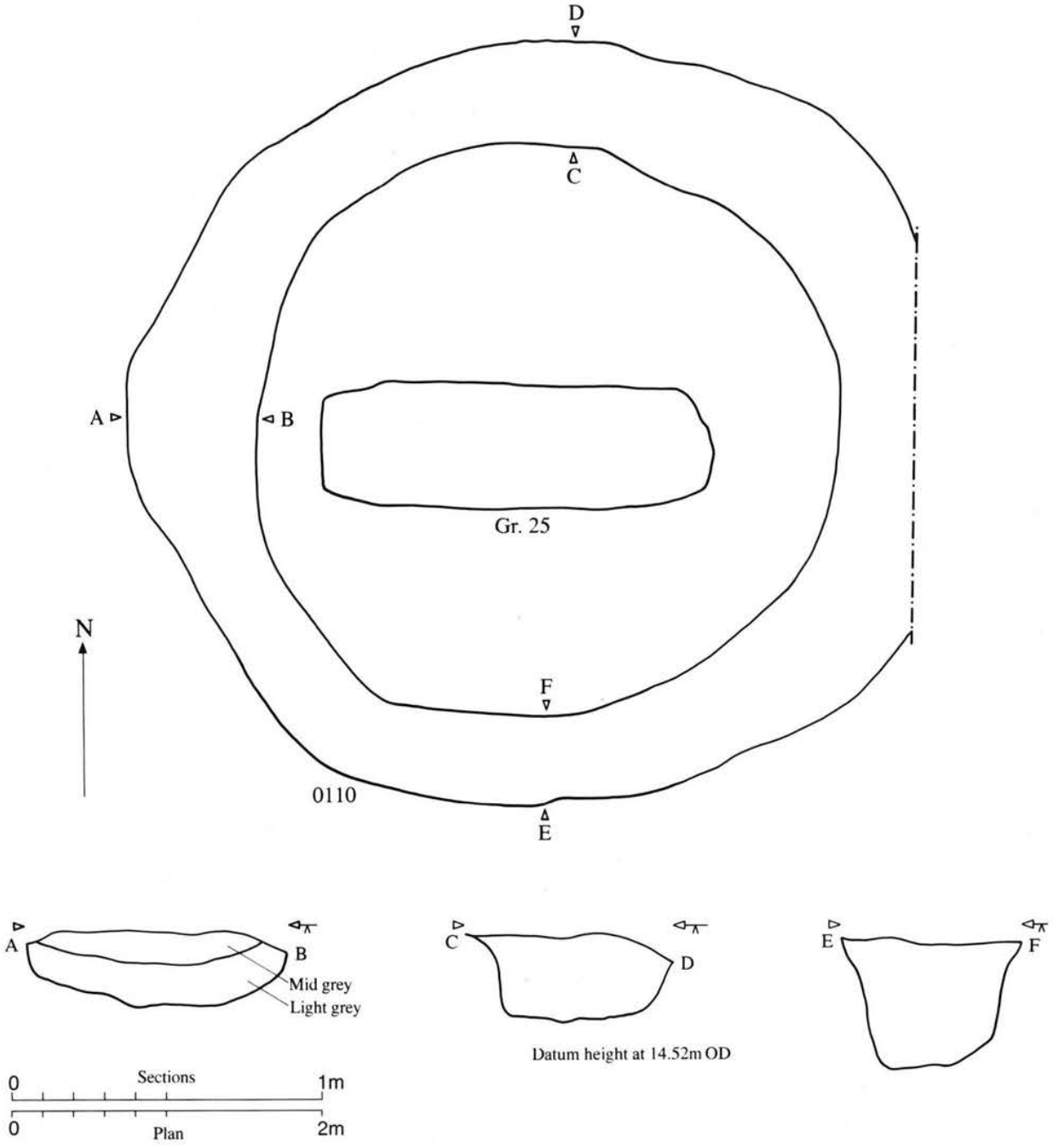


Figure 129 Ring-ditch *0110*. Scale 1:40, sections 1:20

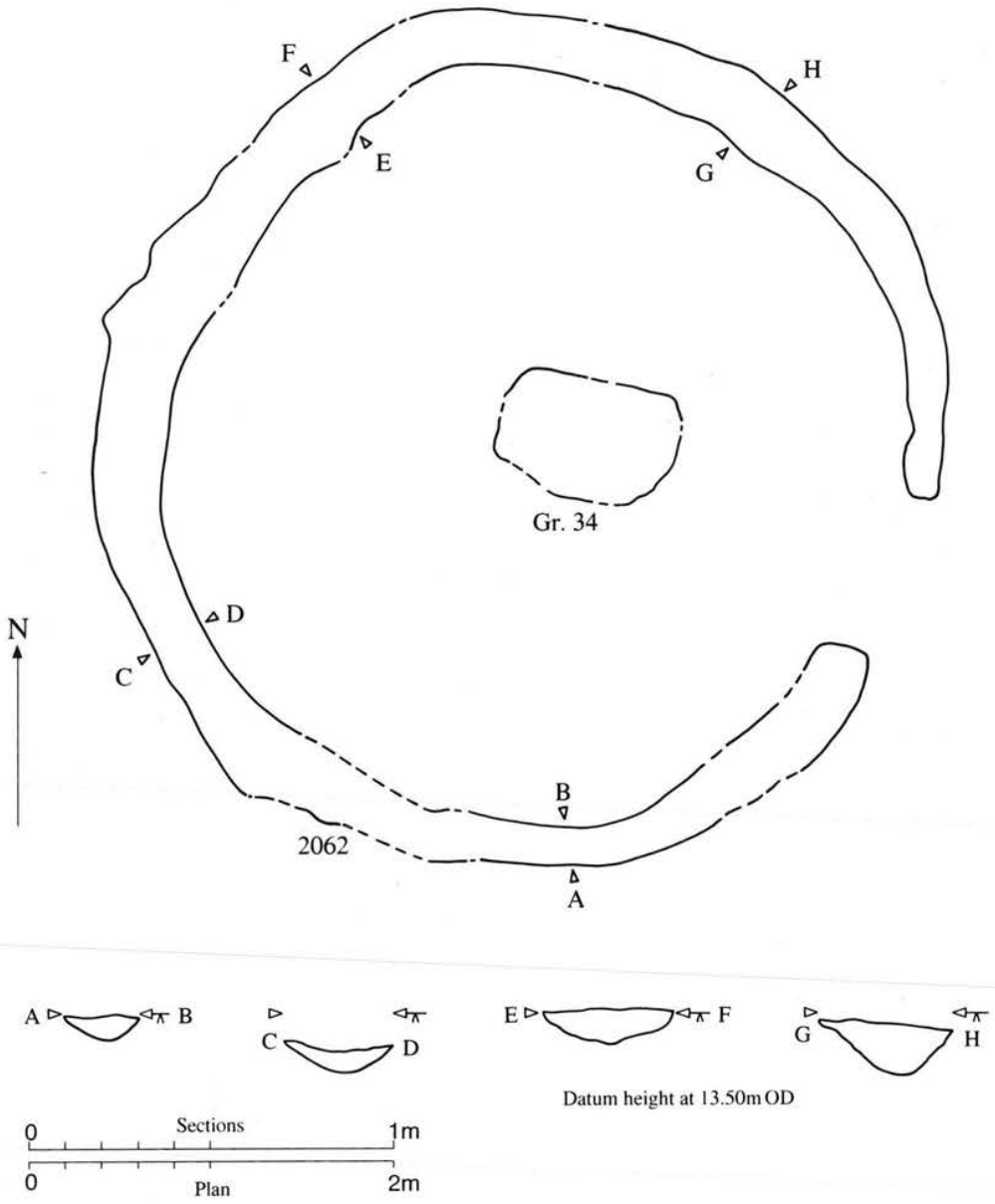


Figure 130 Ring-ditch *2062*. Scale 1:40, sections 1:20

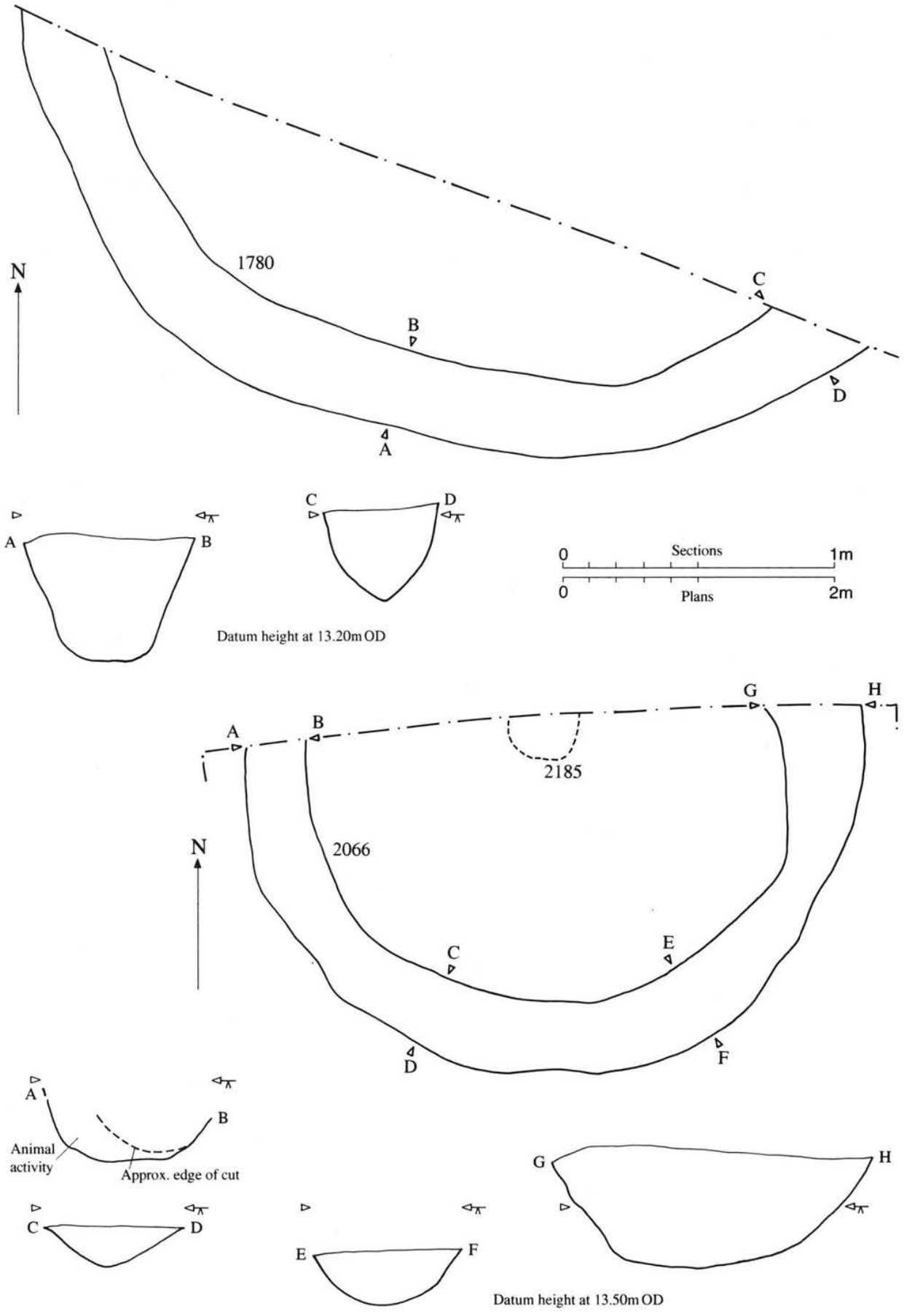


Figure 131 Ring-ditches *1780* and *2066*, and feature *2185*. Scale 1:40, sections 1:20

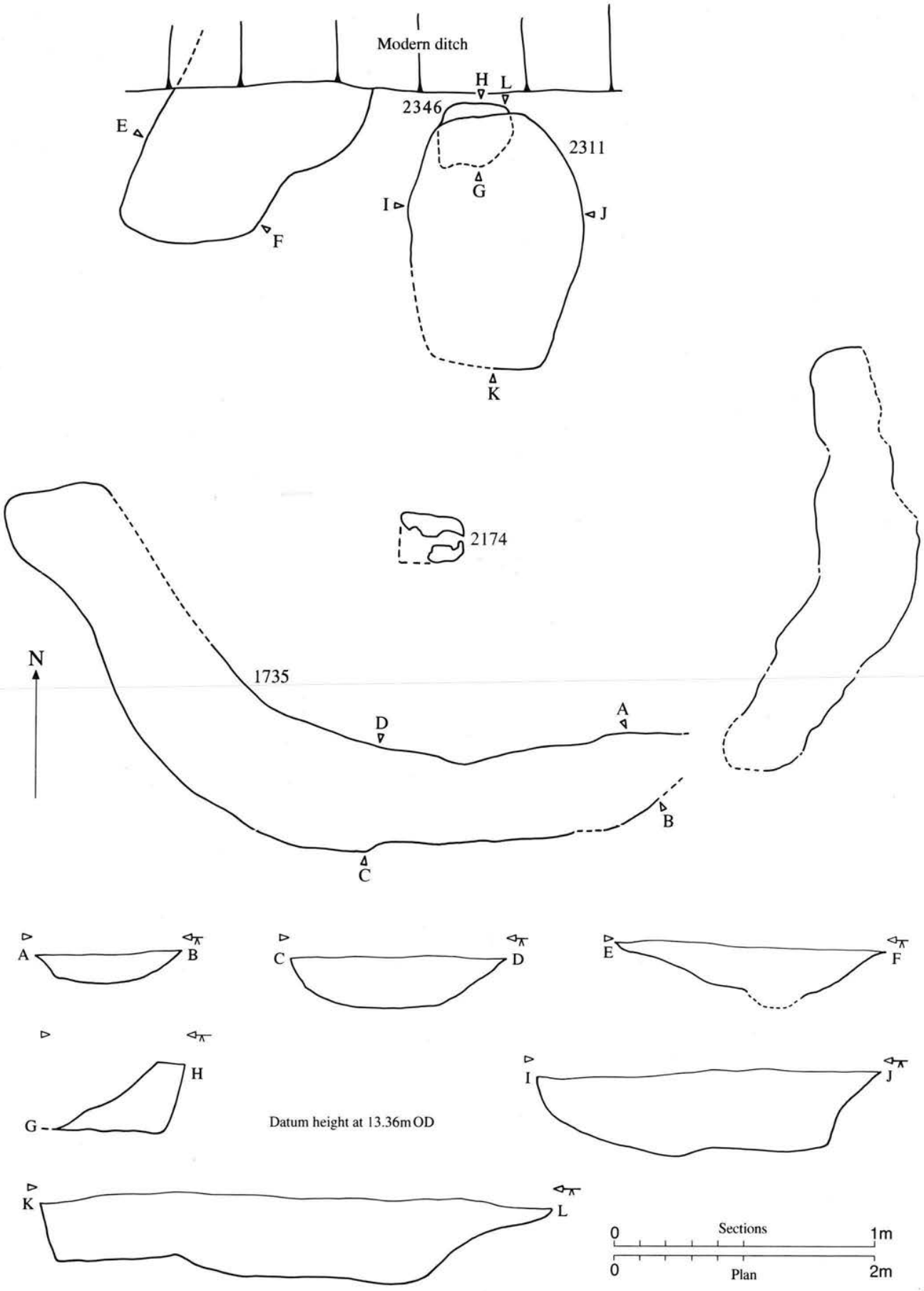


Figure 132 Ring-ditch *1735* and features *2174, 2311* and *2346*. Scale 1:40, sections 1:20

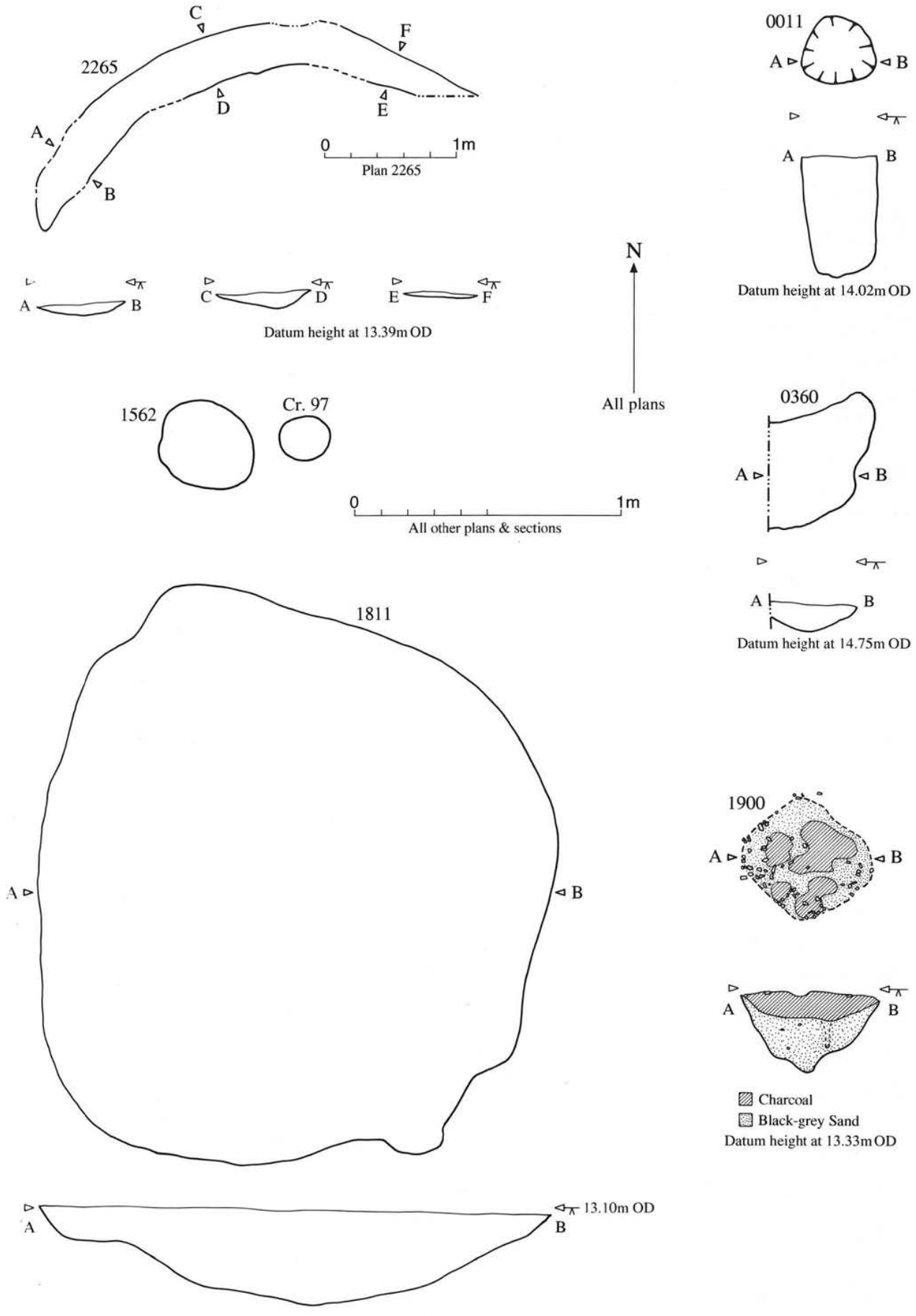


Figure 133 Ring-ditch *2265*, features *0011, 0360, 1562, 1811* and *1900*. Scale 1:20, except plan of *2265* at 1:40

Post-holes/pits (Figs 133 and 134)
A few post-holes, other than those directly associated with graves, were located during excavation, but none (other than the charcoal in feature *1900*) contained any material that could be dated. A possible post-hole, *0011*, was found in 1985 trial box 2 but was unassociated with any other feature in the box. It was steep-sided with a rounded base and contained a fill of mid grey sand. *1562*, in trial trench VI, was a small circular feature with a fill of pale grey sand adjacent, and possibly related to, grave 97 (a cremation); because they were found during evaluation work, both were left unexcavated. Of more interest was post-hole *1900* in Area B, south of burnt stone feature *1794*. This was filled with a mass of charcoal in its upper levels, of oak stem roundwood (*Quercus* sp.). The feature was 0.31m deep with a fill of light grey sand in its lower edges that could not be clearly defined. Finally, features *2340* and *2341* in Area B were possible post-holes, with fills of light grey sand. Although perhaps paired, they were isolated from any other feature.

The proximity of post-holes *1562* and *1900* to Anglo-Saxon features encourages belief in their antiquity, although their purpose is unclear. It is conceivable that they represent post-holes associated with former pyre structures as discussed by Genrich (1981a, 60); any pyre material could then have been lost with the destroyed topsoil layer. This interpretation might seem especially tempting for *1900* given the charcoal content, but its composition of stem wood fragments demonstrates that the fragments did not derive from an *in situ* post.

Finally, in Area A, a patch of clay with chalk flecks, *0360*, was noted during initial site cleaning. At the time it was assumed to have been a modern deposit, possibly associated with marling, since it was at the interface of the ploughsoil and the archaeological horizon. Subsequent analysis has shown how two similar patches, *0358* and *0359*, lay almost directly over the corners of grave 2 and possibly represented post pads. Thus, *0360* may also be the remains of a clay post pad, perhaps for an inhumation immediately outside the excavated area.

Other features (Figs 133, 134 and 135)
There were several other categories of features encountered during excavation. A single feature to the south-west of mound 4, *1811* (Fig. 133), has been interpreted as a quarry pit, created in the construction of that tumulus. The feature was near circular at the surface and had been damaged by agricultural activity in its upper layers. Its fill of light and mid grey sand was stone-free and consistent in colour, mixing down into the natural brown sand at the base. Its interpretation as a quarry pit rests on its proximity to mound 4, and its size and shape bears comparison with the known scoops surrounding the mound to the north and west, that were revealed by contour survey (Fig. 7). The level of its bottom (12.73mOD) was also consistent with the bases of these scoops in the scheduled area (*c.* 12.65mOD).

Only three other clear features could be defined, all from the west end of Area B. *2175* (*not illus.*), a sub-rectangular feature, was aligned east-west, the stone-free fill of mixed mid grey and brown sand being removed to reveal a smooth base. There were no finds. Feature *2348* (*not illus.*), near grave 32, was also aligned east-west but was not investigated since it extended beneath the north baulk adjacent to the road. Feature *2263*

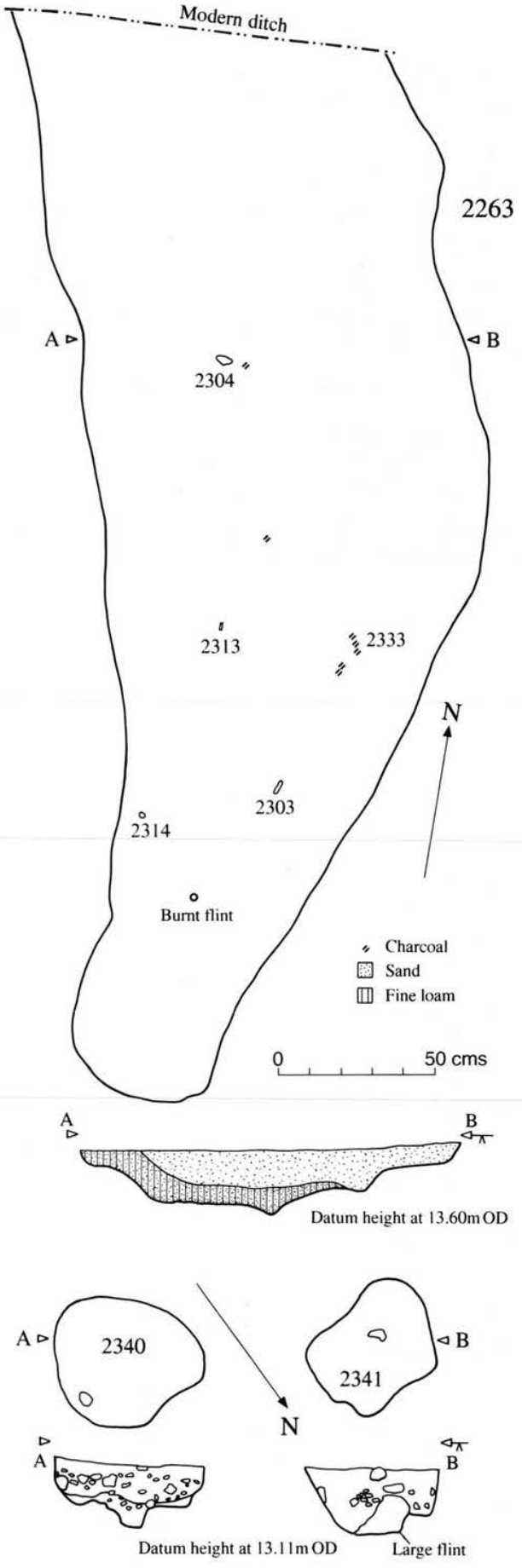


Figure 134 Features *2263*, *2340* and *2341*. Scale 1:20

(Fig. 134) was of an irregular shape, on a north-south alignment. Like *2175*, it was much disturbed by animal and agricultural activity in its upper layers. Its sides sloped down gently to a slightly uneven bottom, the silver-grey fill mixing into the natural brown sand at the base. Contained within the fill was a small fragment of burnt flint, several fragments of charred oak stem (*Quercus* sp.), and four pieces of iron. One of these was shapeless, but the remaining three finds (Fig. 135) consisted of a **staple/clamp** with a rivet *in situ* (*2313*); a round-headed **nail** with a square-section stem, *2314*; and an iron **clamp** with two rivets, *2303*. The amorphous nature and light colour of the fill graded into the natural sand making the definition of an edge difficult.

Several more amorphous features were found across the site, for instance *1404* and *1407* from trial trench V and *2271* in Area B (*not illus.*); they cannot be dated and have no apparent relevance to the cemetery. These and other amorphous features are excluded from the catalogue since they are probably natural and are not shown on the site plans, although full details of them are contained in the site archive. These features all seem to represent hollows in the natural heathland surface, larger examples

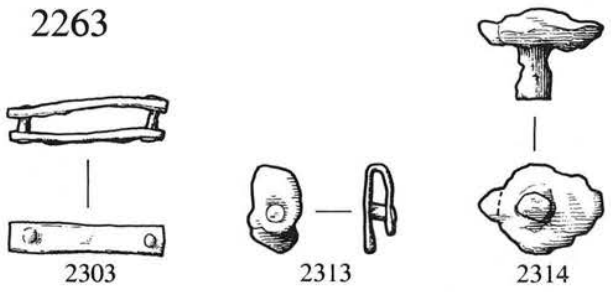


Figure 135 Small finds *2303, 2213* and *2314* from feature *2263*. Scale 1:2

of which seem to have been exploited by the excavators of graves 17, 36 and 44. Their presence is a reminder of how the original ground surface apparently undulated when the cemetery was in use, and how radically the now flat fields have been changed by intensive agriculture in the last forty years.

Chapter 5. Detailed Results

I. Grave 1 (the 1862 Ship Burial): Analysis and Interpretation

by William Filmer-Sankey

Introduction

The excavation in 1862 of a mound containing a ship burial was described in Chapter 2 (above, pp. 6–7). This grave (grave 1) and its contents are of very great importance and deserve detailed examination, individually and collectively. At the same time, as the sources of information on the grave — the surviving finds and the contemporary accounts — are less than complete and leave a number of important issues unresolved, it is vital that any interpretation is soundly based. The following discussion therefore looks carefully at the evidence to see how far it can be used to address the unresolved issues of the mound's location, its relationship with the cremation burials, and the orientation of the ship within the mound. It then assesses the significance of the boat and the other finds as objects in their own right, before suggesting how they can be used to draw conclusions about the sex and status of the person buried, and about the date of the burial. The wider question of the relationship of the grave to the rest of the cemetery is discussed in Chapter 6.

The location of the mound

Perhaps the most important of the issues left unresolved by the contemporary accounts is the location of the mound containing the ship burial. As already discussed (above, pp.5–6), we know that it was the westernmost (and largest) of the three mounds north of the road; we know also that it was close to the road, since a considerable part of it had been sliced off by passing traffic. Unfortunately, all traces of the three mounds have been completely obliterated in the subsequent years. The only possible evidence is an area of rough ground, containing what might be the remains of spoil heaps, which lies in the south-west corner of the present garden of St Margaret's. There was no trace of any mound in the 1986–8 excavated area immediately to the west of this (Area A: Fig. 6), so that, if these mounds are spoil heaps, they must come from the ship burial mound. For want of any better evidence, the ship burial has been tentatively marked in this location on Fig. 5. This would then allow the remaining two mounds excavated in 1862 to be placed in the garden to the east, between the house and the road.

The relationship between the mound and the cremation burials

There is further uncertainty over the important question of the stratigraphic relationship between the mound and the cremation urns, and thus to the question of whether the ship burial pre-dates, is contemporary with, or post-dates the urns found within it (above, p.16). The excavators, unaware of the significance of this question, leave only unsatisfactory and inconclusive evidence in the accounts. Thus Francis Francis, the only one to make a general statement, writes 'we found them [urns], or portions of them, at all depths (from one to three feet deep), as well as in all parts of the mound' (Francis 1863a, 62). Dr Hele, recounting specifically the discovery of the urn with swastika decoration (grave 51) and of the Bronze Age urn (grave 48), writes: 'The pot [with swastika decoration] was about three or four inches below the surface of the ground [...] We afterwards came across a second example [the Bronze Age urn], just beneath the surface as in the former case' (Hele 1870, 25). All that can sensibly be concluded from these accounts is that some intact urns were apparently near the surface, while others, or fragments of others, were found at greater depth. It is impossible to draw any valid stratigraphic conclusions from this. It might have been tempting to conclude that the shallowly buried whole urns were later insertions into the mound, were it not for the fact that one is Bronze Age and the other, a distinctive Anglian type with swastika decoration, is of a relatively early form, which Myres dates to the late 4th or first half of the 5th century (Myres 1977, I, 37–41, type II.6; for comments on Myres's chronology, see below p. 235)! Francis Francis' mention of portions of urns at depths of up to three feet might be interpreted as evidence for the later insertion of a mound into a pre-existing urnfield, with the consequent disturbance of cremations, but given the methods of excavation and the fragility of the pottery, cannot be absolutely trusted. In short, there is no definite stratigraphic evidence to establish the relationship between ship mound and urnfield. Before leaving the subject, it is worth noting that Rupert Bruce-Mitford argued that the ship mound was later, 'possibly appreciably later' than the urnfield. The reason for this was not so much the evidence of the original accounts, but rather his own dating of the ship burial to *c.*600–625. If there were later cremation burials on the site, it would 'be proof of a wholly unexpected persistence of cremation in this corner of Suffolk right up to the Christian period' (Bruce-Mitford 1974, 136). In order to avoid this unwanted conclusion, it was necessary to assign the cremations to an earlier period.

The orientation of the ship within the mound

The final area of uncertainty, about which the excavators make no clear statement, relates to the orientation of the ship within the mound. It is possible, however, to deduce that the boat lay E–W, for several reasons. In the first place, the watercolour plan from the Society of Antiquaries' library (Pl. I), shows a section along the length of the ship with an undisturbed profile through the mound, with no trace of truncation by the road. Secondly, the excavators would surely not have aligned their trench through the mound so as to start or finish on the road. It would make much better sense to dig it (as they had done with the first mound) parallel to the road. In fact it was a very fortunate coincidence that the east-west road made an east-west trench the most convenient way to proceed, since this meant that the excavators came directly down onto the full length of the boat, rather than cutting obliquely across it.

Had this happened, it would have been far harder for them to recognise what they had stumbled across.

The ship

The ship thus recognised and excavated by Septimus Davidson in 1862 is of considerable importance. In archaeological terms, it was the first ship burial to be recognised in England, and it was the first in Europe to have its plan published (Müller-Wille 1970, 9). It is also reasonably securely dated, with the mid to second half of the 6th century date of the burial providing a *terminus ante quem* for the construction of the boat (see below, pp.195–6). In nautical terms, it remains (after the Sutton Hoo mound 1 ship) the only example of a complete pagan Anglo-Saxon clinker-built boat, a testimony to the constructional skills of 6th-century boat builders, and a clue to the types of vessel in which the Anglo-Saxon immigrants arrived in East Anglia. It is important therefore to extract the maximum possible amount of detail about its construction. There are three sources of evidence. The first is Septimus Davidson's 1863 account, which is worth quoting in full:

> It was therefore decided to increase the depth of the excavation, and a highly interesting result ensued. A few pieces of metal or wood, of dubious structure and use, were discovered. They scarcely held together, and the scraping the earth from them broke them. They appeared to have been originally of the thickness and length of a finger or a little more, with a head the size of a florin, sometimes set diamond-wise, sometimes not, and knobbed rather than flat, and sometimes with a short projecting point. An examination of the broken ones seemed to show that they were composed of laminae of metal and wood, with a bolt or handle through them.
>
> The number of these articles increasing, it was determined to avoid disturbing any more, but to trace them out in the earth, removing the superincumbent soil. This plan of operations laid bare what seemed to be a floor of considerable size, with rows of these knobs protruding at regular intervals of a few inches, and led to the impression that perhaps this was the substitute for a cist or coffin. Carefully scraping or sweeping with the hand only between the rows, it became apparent that the interval was of wood, but so disintegrated and crumbling as to be almost of the colour of the soil. The same plan of operations being pursued disclosed a continuance of these rows at an obtuse angle from the floor upwards; and the excavation being yet further extended, both on each side and at each end, gave to view the shape of a boat, and it appeared that the knobbed pieces of metal and wood above alluded to, were the rivets that fastened together the planks laid clinkerwise, and that the boat was probably flat-bottomed. This boat, or at least boat-like structure, was 48 feet in length, 9 feet 9 in. in width, and 4 feet deep. In each row of rivets seven were included within a distance of 3 feet. The rows were six in number on either side, and four or five in number in the bottom of the boat. At the sides the rivets lay horizontally, at the bottom they rested vertically on the sand. All the rows terminated in two rivets lying parallel with each other — the one at the stem, the other at the stern.

The second source of evidence is the plan, of which there are two versions. The first, the watercolour in the Library of the Society of Antiquaries (Pl. I), is unsigned and undated but must have been done either during or shortly after the excavation. In addition to a plan, a section through the mound and along the length of the boat, and a cross-section of the boat, there are pencil annotations of the different soil layers, and a drawing of a sand-encrusted rivet. The second version of the plan was published in the *Proceedings of the Society of Antiquaries* in 1863, to accompany Septimus Davidson's communication, and is also reproduced by Hele (Davidson 1863, 180; Hele 1870, 26; here Fig. 4). It is an engraving based on the watercolour, but altered in several ways. The plan and sections have been trimmed to omit the full section through the mound, while the pattern of rivets, shown only partially on the watercolour, has been extended to fill the entire area of the boat. The resulting number of lines of rivets, seventeen, and the spacing of the individual rivets, broadly reflect Septimus Davidson's account, but it is clear that the pattern is schematic and not intended to represent what was observed. Septimus Davidson in a footnote says that 'The plan not having been made by a professional surveyor may not be minutely accurate, especially as to the exact position of the rivets at the smaller end' (Davidson 1863, 181). On the cross-section, the profile of the boat has been made less rounded while the number of rivets shown in the cross-section has been reduced from the eighteen shown on the watercolour to seventeen, presumably so as to match up with the plan. Of the two versions, there can be no doubt that the watercolour is both the more reliable and the more informative.

The final source of evidence for the Snape ship is the collection of ironwork — principally rivets — which survives in Aldeburgh Museum. As Septimus Davidson noted, the iron is almost totally mineralised and surrounded by thick layers of corrosion and of mineralised wood which recent examination showed to be slowgrown oak heartwood (Rowena Gale, report in site archive). It is a credit to the 1862 excavators that they recognised the rivets for what they were.

The metalwork from the ship can be divided into three categories:

a) **rivets**; these are of the usual type with round, domed heads, and diamond roves. Bruce-Mitford distinguished two different lengths, with head and rove 30mm (1.2in) and 44mm (1.75in) apart;
b) **rib-bolts**; Bruce-Mitford identified only one piece, 64mm (2.5in) in length;
c) portions of an **iron strip**, at least 328mm in length, with regularly spaced rivets, which appears from the mineralised wood impressions to have been fastened vertically to the outside of the hull (Fig. 78, *1660*). The significance of this object is discussed below.

From this evidence it is possible to say that the Snape ship was of clinker built and riveted construction, identical to that used in the Sutton Hoo mound 1 ship. The rivets were spaced at 140mm intervals and were of at least two lengths. For comparison, the rivets on the mound 1 ship were spaced at *c.*170mm intervals and were *c.*50mm in length (Bruce-Mitford 1975, figs 279 and 309). The number of strakes in the Snape ship cannot be known exactly but was either sixteen or eighteen (eight or nine

per side). The latter is the more probable, since it would match the Sutton Hoo mound 1 ship, and it is the number shown in the cross-section of the watercolour plan.

A striking feature of the plan is the ship's squared end or 'transom stern'. That the Snape ship was in fact 'double ended' (or 'pointed at both ends' as a non-sailor would say) is proved by Septimus Davidson's account, which records that 'all the rows terminated in two rivets lying parallel with each other — the one at the stem, the other at the stern'. It is also indicated on the watercolour where the outer two lines of rivets do not continue around the 'stern'.

The effect of the transom stern was probably produced by the boat having been more truncated by the erosion of the mound at one end than at the other. Looking at the full section through the boat and mound (Pl. I), it is clear that (as at Sutton Hoo) the bow and stern of the boat must have been left sticking out above the surface of the mound. If one end protruded further than the other, and if the boat was broader in the beam at the same end, then the removal of the end would result in a more rounded profile beneath the surface. It is interesting that the stern of the Sutton Hoo ship appeared 'slightly rounded' to the excavators (Bruce-Mitford 1975, 360).

The flat bottom of the boat, mentioned by Septimus Davidson and particularly emphasised in the engraved version of the plan, must also be the result of post-deposition factors, in this case the settling of the boat, as the wood decayed and was pressed down into its trench (Bruce-Mitford 1975, 347).

Although Septimus Davidson gives the length of the boat as 48 feet, it must originally have been somewhat longer. Allowing for the lost bow and stern, the total length must have been in the region of 54 feet. There is no reason to question Septimus Davidson's figures for its beam and depth, so the overall dimensions were thus 16.45m in length, 2.97m in the beam and 1.22m in depth. This compares with 27 × 4.25 × 1.37m of the Sutton Hoo mound 1 ship and 8.5 × 1.6 × 0.8m of the ship from mound 7 at Valsgärde (Arwidsson 1977, 95–8).

In default of any direct evidence, we must assume that, like the Sutton Hoo ship, the principal method of propulsion for the Snape ship was oars. This does not of course rule out the use of sail and it is possible to interpret the iron strip attached vertically to the outside of the hull as the remains of a 'chain plate' to attach stays to support a mast. Against this interpretation is the fact that the use of iron chain plates is unparalleled at this period (McGrail 1987, 229); stays seem to have been attached directly to the hull. It is also worth remembering that diamond-roved rivets were not just used for boats. In Valsgärde 7, a wooden sea chest or wagon body using identical rivets to those used in the ship had been placed within the grave (Arwidsson 1977, 99–103). It is possible that the strip from Snape derives from some other object altogether.

The other finds

In addition to the ship itself, the 1862 excavators found a number of objects as they dug down into the mound and cleared the ship. Virtually all the conclusions about the sex and status of the person buried, and about the date of the burial, have to be based on these objects which were:

fragments of two iron **spearheads**
a single fragment of **blue glass**
fragments of **'jasper'**
a **bundle of 'red hair'** wrapped in cloth
fragments of a glass **claw beaker**
a gold **ring**, set with a Roman intaglio

Of these finds, the single fragment of blue glass has disappeared, making any interpretation of its significance impossible. Francis Francis felt that it was Roman, which is by no means impossible; a surface scatter of Roman material has been located 250m to the west of the site (SNP 024). The jasper fragments have also gone and remain wholly enigmatic. The 'red hair' and its associated cloth were at Aldeburgh Museum before the last War, whence it was transferred to Ipswich for safety (Stanley West, pers. comm.). It was seen in Ipswich Museum, but seems to have been lost in the subsequent return of the Snape material to Aldeburgh. Despite its loss, the accounts are sufficiently precise for it to be identified by Rupert Bruce-Mitford as the remains of a 'shaggy cloak, in which the long matted tufts of animal hair or fur were inserted into a cloth base' (Bruce-Mitford 1974, 117). Similar finds were made in the Sutton Hoo ship burial and in the Broomfield barrow, Essex.

The glass claw beaker (Pl. IV and Fig. 78), almost every fragment of which was collected by the excavators, survives in Aldeburgh Museum, and is of Evison's Type 3c, which she dates broadly to the mid-6th century (Evison 1982). The magnificent gold ring is now in the British Museum (Pls II and III, Fig. 78). It was illustrated by Septimus Davidson, and passed by inheritance to his granddaughter Mrs Christie, who generously gave it to the British Museum in 1950, just as Rupert Bruce-Mitford had given up hope of finding it (Bruce-Mitford 1974, 122–3). It is a signet ring, with a Roman onyx gemstone, depicting the standing figure of *Bonus Eventus* (Happy Outcome), mounted in a Germanic gold setting. Bruce-Mitford, the first after the original excavators to discuss the ring in any detail, argued that it was an Anglo-Saxon piece (Bruce-Mitford 1952). He was unable to find any Anglo-Saxon rings of similar form to support his thesis, but instead drew parallels with details of the decoration, such as the 'hook and eye' motif which appears on the ring's shoulders, which he linked with that on the Sutton Hoo sword clips. He also felt that the use of granulation on the shoulders was most closely paralleled by objects dating to as late as the second half of the 7th century. Based on these parallels, and writing at a time when the Sutton Hoo ship burial was still put at *c.*650, he 'found it difficult to assign the manufacture of the Snape ring ... to a date earlier than 625AD' (Bruce-Mitford 1952, 19).

Bruce-Mitford's conclusions, both on provenance and date, were strongly challenged in 1966 by Joachim Werner (Werner 1971). He had the advantage of the discovery in 1962 of a ring very similar to that from Snape in grave 1782 at Krefeld-Gellep, in the Rhineland (Fig. 136a), a grave securely dated to *c.*525 (Pirling 1974, 61–8; 1986, 139–64). Based on this find, Werner suggested that the ring was of early 6th-century Germanic manufacture.

There is no doubt that the parallels between the Snape and Krefeld-Gellep rings are very close. Both are Germanic settings for a re-used Roman intaglio and have a similarity of form and feel that Bruce-Mitford was unable to find among the Anglo-Saxon material; both furthermore have 'hook and eye' and granulation, arranged in a very similar way to give a characteristically Germanic zoomorphic effect (Müller-Wille 1970, 45).

It is, however, not just the parallels between these two rings which prove a continental origin for the Snape ring.[1] There are similarly close parallels of detail with other continental rings, such as that from Lorsch (Roth and Wamers 1984, 137). More significant, however, is the fact that, as Bruce-Mitford had found, there is no ring of comparable form to that from Snape among early Anglo-Saxon rings, numerous as these are (Fisher 1979). Although some five other intaglio rings have been found in reliable Anglo-Saxon contexts, these are all actual Roman rings. They are not Anglo-Saxon resettings of Roman intaglios. On the continent, the situation is the reverse. Of the thirty or so intaglio rings from reliable contexts, only two retain their original Roman settings. The rest are all Germanic resettings of Roman intaglios. The Snape ring is so clearly at home in this continental setting that it would be foolish to argue otherwise.

Werner's suggestion of an early 6th-century date for the ring is also clearly correct. Once again, it is not only the close parallel with the securely dated Krefeld-Gellep grave 1782 ring that proves this, but the wider context of continental rings. The form of the Snape ring, with its wide and heavily decorated shoulders is current on the continent only in the first half of the 6th century, after which it is superseded by a less sumptuous form. This date is further confirmed by the high gold content (86% pure; Bruce-Mitford 1978, 625).

The sex of the burial

The burial seems to have been that of a man. Although none of the grave-goods found within the ship (*i.e.* ring, claw beaker, cloak) give any clue as to sex, the finding of the two spearheads higher up appears conclusive. As Bruce-Mitford suggested, it is probable that they were disturbed by the 'Gentlemen from London' in 1827 (above, p. 5). The diameter of the ring neither supports nor contradicts this (*pace* Bruce-Mitford, who describes it as 'unusually large. It must have been worn by a man, either on the thumb or forefinger' (Bruce-Mitford 1974, 124)). The 22mm diameter is well within the range of both male and female rings (Filmer-Sankey 1990b, 36 and table 4). Bruce-Mitford's statement nearly landed the author in serious trouble when he attempted to remove the Aldeburgh Museum's replica ring from his thumb!

The date of the burial

The ring is of crucial importance in establishing a *terminus post quem* for the ship burial. As discussed above, Bruce-Mitford in 1952 saw the ring as an Anglo-Saxon piece which, on account of the parallels with the Sutton Hoo material, he could not 'assign to a date much earlier than AD 625'. The redating of the Sutton Hoo ship burial from 650 to 625 shifted the date of the Snape ring earlier, to *c.*A.D. 600 (Bruce-Mitford 1974, 129). In deciding the gap between the ring's manufacture and its burial, Bruce-Mitford noted 'signs of wear upon the shoulders which show that it must have been worn for some little while'. By 'some little while', Bruce-Mitford appears to have meant fifteen years, since he dated the ship burial to *c.*615.

In support of this relatively late date, Bruce-Mitford also quoted the solitary fragment of blue glass, mentioned only by Francis Francis and now lost. He interpreted it as the remains of a Cuddesdon-Broomfield type bowl, of known 7th-century date.

This interpretation cannot be accepted. Francis Francis' description of the fragment as 'being more an opaque blue, and being thicker glass of better manufacture, more in fact like a fragment of Roman glass' does not sound like a Cuddesdon-Broomfield bowl. Since only one fragment of the vessel was found (in contrast to virtually all of the claw beaker) it may well have been a stray object, or even a fused glass bead from a disturbed cremation.

The dating of the ship burial was given a radically different slant by Werner's dating of the ring to the early 6th century, based on its parallels with the Krefeld-Gellep grave 1782 ring. As already discussed, Werner is definitely right both in assigning a continental provenance and in his date. In consequence, the ring now gives a *terminus post quem* for the burial of *c.*525. At the same time, however, the continental provenance adds a further level of uncertainty, since it is now necessary to allow time for the ring to make the journey from the Rhineland to Suffolk.

The only other finds which can contribute anything to the dating are the spearheads and the claw beaker. The former are not helpful. Only one is sufficiently preserved to allot a Swanton type, H2, 'the vast majority of which belong to the latest 5th and the 6th century' (Swanton 1973, 107–111). The claw beaker is better and has been discussed by Evison as part of her overall study of claw beakers. She allots it to her type 3c, which she dates broadly to the mid 6th century (Evison 1982, 48).

In short, the surviving datable objects give a reasonably good *terminus post quem* of *c.*525 for the ring and a very vague *c.*550 for the claw beaker. Taken together (and combined with the evidence from the 1985–92 excavations, which are discussed in detail below) it seems reasonable to date the Snape ship burial to the mid to second half of the 6th century. It is thus, of course, definitely earlier than the mound 1 ship burial, and probably earlier than any of the other excavated mounds, at Sutton Hoo (Carver 1993, 17–19).

The status of the burial

Turning finally to the question of the status of the burial, the use of a ship of at least 14m as a coffin is in itself indicative of high status, albeit in a rather vague and ill-defined way. A rather more precise picture can be gained by a study of the Snape ring, both in a continental setting, and in an Anglo-Saxon setting.

As already discussed, the Snape ring is undoubtedly of continental manufacture. It should thus be seen first as one of a group of thirty intaglio rings from continental contexts, where they are one of the few types to be found in male as well as female graves. As already remarked, all but two of these rings are Germanic resettings of Roman gemstones; they are not re-used Roman rings. At the same time, however, the inspiration for the forms of the Germanic settings derives from late Roman and contemporary Byzantine, rather than from native Germanic styles. As with the Snape ring, so on the continent, the bulk of these Germanic settings are of gold (twenty out of thirty), thus qualifying for *Qualitätsgruppe* D, the highest rank, in Christlein's widely adopted system for ranking graves (Christlein 1973, Abb. 11). Analysis of the subjects chosen for resetting suggests that Germanic jewellers were selecting, wherever possible, intaglios with standing or seated figures, and it seems reasonable to

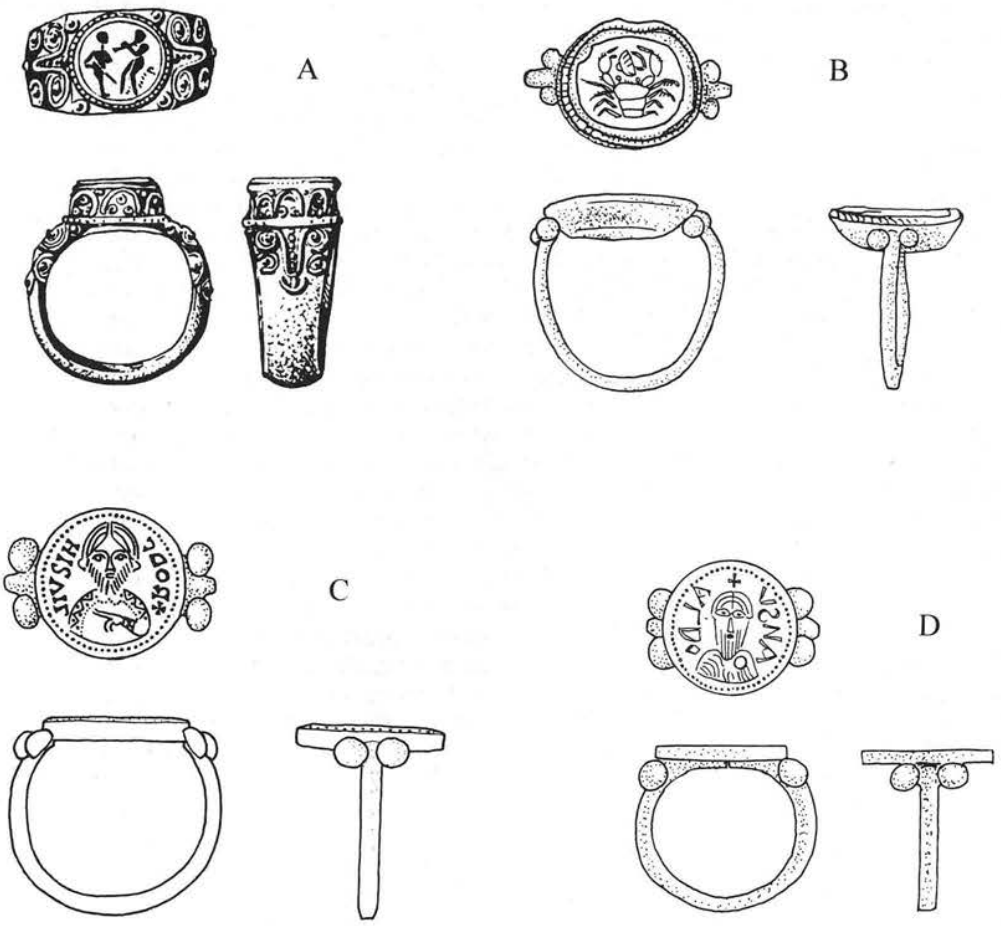


Figure 136 The finger-rings from (a) Krefeld-Gellep (after Pirling 1974) and (b–d) Trezzo sul'Adda (after Roffia 1986: (b) tav. 5; (c) tav. 13; (d) tav. 31). Scale 1:1

conclude that this reflects a symbolic role for the rings, most likely as an indicator of rank or status (Filmer-Sankey 1990b, 104–5). Once again the figure of *'Bonus Eventus'* on the Snape ring fits this pattern.

Although direct evidence in the form of surviving impressions is lacking, it is further likely that these Continental intaglio rings were used for sealing. In the first place, they were used as seals in both the preceding Roman and the succeeding Carolingian period, where the earliest surviving impressions include some probably from re-used Roman intaglios (Posse 1909, Taf. 1, A–C; Christlein 1974, 582, n. 22).

Strong, if still indirect, evidence for the use of intaglio rings as seals comes also from the small and aristocratic north Italian cemetery of Trezzo sul'Adda (Roffia 1986). The excavated area contained five graves: three adult males and two juvenile males, all dating to the 7th century. The two later adult graves, no. 4 (*c.*600–650) and no. 2 (*c.*650), both contained purpose-made gold seal rings, complete with a bust and surrounding inscription giving the name and, in the case of grave 2, the abbreviated title (*Vir Illuster*) of the owner (Fig. 136, c–d).

The earliest adult grave (no. 1, with a *terminus post quem* of 607–8) contained not a seal ring, but an intaglio ring, in which a gemstone showing a crab has been incorporated into a typical Germanic setting (Fig. 136b). The juxtaposition of these three graves, with their one intaglio and two seal rings, indicates very strongly that the intaglio ring fulfilled the same function as the purpose-made seal rings and that they belonged to succeeding generations of the same family of office holders.

In short there is good evidence to conclude that intaglios reset in Germanic ring settings were not just a symbol of rank or status, but that they also had a practical function, and were used to seal documents in exactly the same way as the genuine seal rings, such as those from graves 2 and 4 at Trezzo sul'Adda, and (more famously) that from the grave of the Frankish king Childeric (Chiflet 1655). This group, twenty-one examples of which are known from continental Germanic contexts, is clearly to be linked with the highest ranks of Germanic society, not least because several of them belonged to known kings or queens. In addition, the fact that they incorporate reversed inscriptions (to make the resultant seal legible) means that they must have been made by coin-die cutters. Since in the Germanic kingdoms it was, in theory at least, the king who controlled the coinage, it must also have been the kings who commissioned the seal rings, either for their own use, or for the use of their highest officials.

In using this information to define more precisely the continental status of intaglio rings, several avenues can be used. In the first place, the fact that not only the form of the intaglio rings, but also the use of rings as signets, derives from late Roman and contemporary Byzantine practice links the group clearly with the desire to follow Byzantine fashions, which was such a hallmark of aristocratic Germanic society in the 5th–7th centuries (see for example Schulze 1976).

Furthermore, though accurate quantification is impossible, the number of documents requiring seals in the 6th century (to take the date of manufacture of the Snape and Krefeld-Gellep rings) would clearly have been very small. A person thus equipped with a signet would therefore be of the very highest status in the Germanic world, as clearly was the man buried in grave 1782 at Krefeld-Gellep.

If the Snape ring had been found on the continent, there is no doubt that the grave would have been attributed the highest status, with its occupant as one of a very restricted group who had reason to seal documents, and who was concerned to follow Byzantine fashion.

Turning to see the ring in its Anglo-Saxon context is equally revealing. The ring, as a continental piece, belongs to a very small and select group of nine Anglo-Saxon ring finds which are of continental origin. Associated with this group are a further seven rings which are clearly based on continental Germanic types[2]. This group represents a tiny proportion (some 5%) of the corpus of Anglo-Saxon rings as catalogued by Fisher (Fisher 1979), but it stands clearly apart from the majority in several ways.

In the first place, their forms differ totally from 'native' rings. The majority of Anglo-Saxon ring types, such as the well known 'wire rings with twisted bezels', are based on native Germanic forms. Like the native Germanic rings of the Roman Iron Age, furthermore, they are made of a wide range of materials, with gold and silver forming only a small percentage of the whole. The Merovingian and Merovingian-inspired rings, by contrast, owe little to northern European forms, but rather take their inspiration from late Roman or contemporary Byzantine styles. They are predominantly of precious metal (eleven out of the sixteen are of gold or silver).

A further factor distinguishing these sixteen Merovingian and Merovingian-inspired rings from the bulk of Anglo-Saxon rings is that they virtually all have a potentially practical, as opposed to purely decorative, function. There is one purpose-made seal ring, for example, even if it is a particularly crude example (an unstratified find from Richborough). Six of the sixteen rings are intaglio rings, which could be used as seals. There are three rings which use a coin as a bezel. Native Anglo-Saxon types, by contrast, have no features like intaglios or coins which could give them such a function, and they must be assumed to have had a purely decorative function. The fact that three of this Merovingian group (the rings from Snape, Mucking cemetery II, gr. 933 and Milton-next-Sittingbourne) were found in male graves further distinguishes it from the native Anglo-Saxon tradition, where rings are only found in female graves.

In short, it seems that the Anglo-Saxons were aware of the practical and symbolic use of certain types of continental Germanic rings, and were emulating that use. In the case of the Snape ring, they were able to get hold of an actual continental intaglio ring. In other cases where a seal ring was needed, no continental ring was available, so that a Roman ring had to be found for re-use. This pattern of reusing a Roman object in place of an unavailable continental example has been noticed elsewhere in Anglo-Saxon England (White 1988, 163). In the case of five re-used Roman intaglio rings, moreover, it is very notable that every effort was made to find a gold or silver example, itself an indication of the status that was attached to the possession of a seal ring.

On the continent, as argued above, intaglio rings like that from Snape were used as seals. Clearly in England in the 6th century there would have been no documents to seal. This fact, however, can only increase the status represented by the ring's presence in the Snape ship burial. The more restricted the potential use, the higher the status accorded to the possessor. A modern analogy would be the spread of mobile telephones: they were at their height as a status symbol when they were so technologically restricted as to be virtually useless. The fact that the Snape ring may never have been used thus increases the status that must be accorded to the grave. On this basis it is reasonable to suggest that the grave may have been that of an early East Anglian king. The only difference between the Snape ship burial and Sutton Hoo mound 1 is that, while the former was plundered, the latter survived intact for its royal nature to proved.

The presence of the ring can be seen as more than just a sign of the highest (royal?) status. It is also a sign of a conscious desire to emulate Frankish and, more distantly, Roman and Byzantine customs. This is in itself a sign of the highest status, and here too there are parallels with mound 1 at Sutton Hoo, where the Frankish coins and Byzantine silver emphasise that man's Roman and Frankish aspirations, and the royal nature of the burial (Filmer-Sankey 1996).

Endnotes:

1. For more detailed discussion of the Continental parallels for the Snape ring and of the function of rings in the Early Medieval Germanic world, see Filmer-Sankey 1990b.
2. Continental rings in Anglo-Saxon graves:

Site	*Metal*	*Sex*	*Date*
Aldeburgh, stray find	gold	-	-
Finglesham, grave 58	gilded bronze	male	600–700
Harnham Hill, grave 40	silver	female	500–550
Harnham Hill, grave 54	bronze	female	500–600
Mucking II, grave 933	silver	male	-
Richborough, unstrat.	gilded silver	-	-
Richborough, unstrat.	silver	-	-
Sibertswold, grave 163	gold	male	-
Snape	gold	male	-
Alfriston, grave 28	gilded bronze	female	525–550
Chatham Hill	gold	-	-
Highdown Hill, stray	bronze	-	-
Howletts, grave 4	gold	female?	500–550?
London, Euston Square	gold	-	-
Milton-next-Sittingbourne	gold	male	-
York, stray find	gold	-	-

(After Filmer-Sankey 1990b, table 27)

II. The Logboats from Graves 4 and 47

by Tim Pestell

Background

Two of the most important discoveries in the recent campaign of excavations were the stains from graves 4 and 47, of logboats re-used as burial containers. Their identification as such is discussed in Filmer-Sankey (1990a). Briefly, both stains share the same shape, well-documented in expanded dugout logboats. They also have fittings normally associated with such boats, they derive from a site known for the use of a boat burial rite, and they are strikingly well paralleled by the expanded dugout boats excavated in the cemetery at Slusegård on the Baltic island of Bornholm (Klindt-Jensen 1978; Crumlin-Pedersen 1991). As this report was in press I was made aware of the two fundamentally similar dugout boats preserved by waterlogging and excavated in 1994 at the German cemetery of Fallward, Wremen, Kr. Cuxhaven (Schön 1999). It has therefore not been possible to take these new discoveries into account in the present discussion, although the boats, of 5th to 6th-century date, are slightly larger at 4.4m and 5m long, like the Slusegård vessels. I am grateful to Dr Chris Loveluck for drawing my attention to this site. Another inhumation, grave 3, produced a charcoal-edged stain that possibly represents a third logboat cut up for use as a burial container. Its identification can only be made by comparison with the two complete boats and gives no additional information on dugout boat design.

Both complete boats were excavated in plan according to the techniques used for the other inhumations (p. 16), except that excavation was undertaken in smaller spits, 25mm at a time, with more frequent planning levels, often every 50mm. Sections were cut through the boat bases at more regular intervals — every 50mm in grave 4, every 100mm in grave 47.

The stains of both boats preserved evidence of constructional details, that in grave 47 generating records from which a three-dimensional computer reconstruction has been made by Peter Marsden (below). By applying the naval architect computer program *Boatcad*, its theoretical nautical performance has been assessed. The full report of this study, with supporting data and calculations, is held in the site archive but is extensively summarised below. The close similarity in size and design between the boats from graves 4 and 47 suggests that the theoretical performance figures can be applied to both safely.

Size and design

As excavated, the boat in grave 4 had a length of 2.96m, beam of 0.7m and depth of 0.4m. That in grave 47 was 3.09m long, 0.62m in beam and 0.35m deep. In fact, these are all probably minimal measurements, this is especially true of the boat in grave 4, which survived at its western end from only a relatively low height. The original thickness of the boats was also unclear. The stain in grave 4 was always patchy except at the eastern bow and in several places it did not exist. It survived up to 20mm thick at the eastern bow and even more in some parts where the 'fin' of the bow point survived. The boat in grave 47 survived far better with a stain some 10–20mm thick throughout. Again, it was thicker at both bows and on the bottom, where it measured up to 30mm. A patch of charcoal within the boat stain was about 5–10mm thick

Plate XXXIII Grave 4, fin end to east bow of logboat with possible repair patch *1019*

and would seem to reflect a charring of one side of the boat, probably the inside.

The original thickness of the boat from grave 47 (and by implication of that from grave 4) seems slight in comparison with other British logboats recorded by McGrail (1978, ii), which show bottoms ranging from 30–130mm in thickness and sides of 20–80mm. Originally, all were probably slightly thicker as they were recorded dry and shrunken. The stain of both Snape boats may suggest unusually thin-walled craft although Edwin Gifford (pers. comm.) suggests that, like expanded dugouts, the Snape boats could indeed originally have been some 10–30mm thick. Understanding the construction of both relies on more ephemeral clues.

Although clinker-built construction with strakes fastened by wooden pegs is possible, the lack of evidence for any planking, and absence of any keel in the cross-sections, suggests that the boats were a dugout form of logboat. This identification is strengthened by their tapering plan, their rounded bottoms and the lack of any characteristic metal fittings. Whilst there is little positive evidence in support, it suggests that both the Snape logboats were expanded like those from Slusegård, a thin-walled cut-out being stretched under heat into a more open form. The shape was then maintained by the insertion of cross-pieces or breasthooks at the bows (seen at Slusegård in boats 1129, 1131, 1139 and 1391; Crumlin-Pedersen 1991, 253). Certainly, the boat from grave 4 preserved stains of substantial curved wooden fittings inside the bow fins at both ends (Pl. XXXIV). The small size of the boat makes it unlikely that they were thwarts, as the user probably sat at the centre of the boat on the floor (see below). An alternative possibility is therefore that they were breasthooks strengthening the boat. The boat

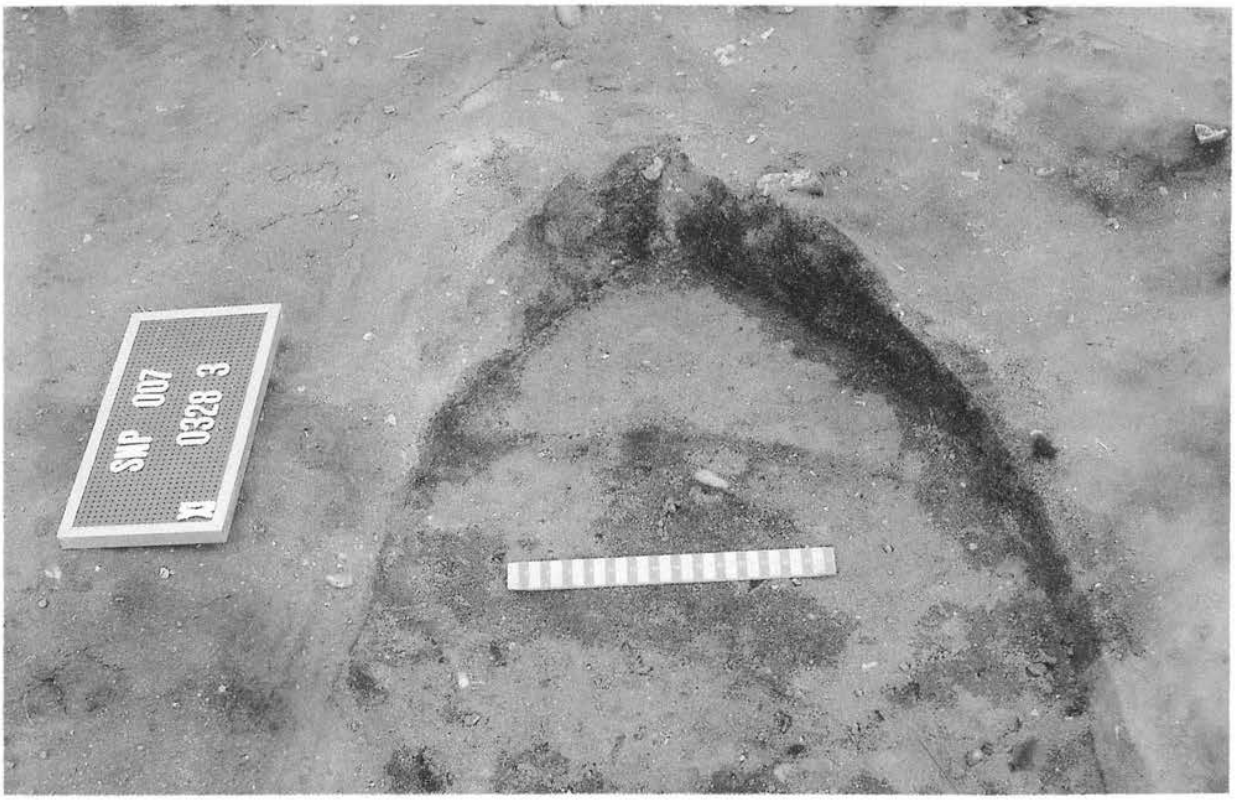


Plate XXXIV Possible thwart inside eastern bow of logboat from grave 4

from grave 4 finds at least one close parallel from Slusegård in boat 1131, which was 2.8m long and 0.7m in beam (Klindt-Jensen 1978, 110). The parent timber from which the boat in grave 4 was made is unknown but is presumed to have been of oak (*Quercus* sp.). Tiny fragments of charcoal found in its western bow stain were of oak but being possibly of softwood, it is unclear whether these derived from the actual boat. The boat in grave 47 was confirmed as oak by a large charred patch within the stain and several mineralised wooden fragments associated with small-finds in the burial deposit.

The shape of both Snape boats, pointed at each end, is uncontroversial in dugout logboats. Indeed, the distinctive 'fin' shape of the boat from grave 4 (Pl. XXXIII) is well-known in many of the Slusegård boats, for instance those from graves 1072, 1129, 1131 and 1139 (Klindt-Jensen 1978, ii; 177, 179–180, 182). However, neither of the Snape boats appeared to exhibit the lower extension to this fin, the 'skeg' (Crumlin-Pedersen 1991, 105). The uneven shape in section along the lengthwise axis of the boat from grave 47 is also unusual. This might be the result of the boat base slumping into the burial pit but the many sections show a smoothness and consistency which suggests that this need not be the case. The boat stain from grave 4, whilst far more fragmentary, also seems to have an uneven bottom and these may reflect both dugouts' original design. A possible implication is that the boats, whilst pointed at each end, could originally have been perceived or designed as having a bow and stern. Both deeper ends were to the east when buried, suggesting that if a 'front' and 'back' were recognised, this might have influenced the orientation of the boat in the grave. The evidence is slight and if intentional, it remains unclear which end was seen as the bow.

Both Snape boats provide other smaller hints for being expanded. The process of expansion often led to internal cracking which required caulking. Two patches of greasy grey organic material, suggested to be caulking, were found in the boat from grave 4 (Pl. XXXIII), a presence matched by numerous examples of resin caulking from Slusegård (Crumlin-Pedersen 1991; 104, 254). Finally, more slender evidence supporting the expansion of the boats perhaps comes from that in grave 47; this retained the U-shape section necessary for expansion and the area of charring at its west end could, like several examples from Slusegård, relate to the boat's heating over an open fire (Crumlin-Pedersen 1991, 254).

Fittings or accessories to the boats were limited. A charred stain at the bottom of the boat in grave 47 was suggestively paddle shaped but analysis of the charcoal showed that it derived from two wood types and this is probably yet another instance of charred wood accompanying a body for burial. If it does represent a paddle Slusegård again provides a possible parallel, with two or three oars placed outside the boat in grave 1224 (Crumlin-Pedersen 1991, 150–1). The boat in grave 47 also had Fe nail *E* in the boat interior but it is unclear what function this might have had.

The reconstruction and hydrostatic assessment of the boat from grave 47

by Peter Marsden

The shape of the boat

In order to conduct an assessment of the boat's seaworthiness and performance it was first necessary to create a computer reconstruction of the vessel. There are five objectives in reconstructing any boat: its type of construction, its shape, the distribution of its weight, its methods of propulsion, and its steering. Construction determines strength, and shape and weight distribution determine stability.

It was first necessary to establish what was the boat's original centre-line, since for the purpose of stability its shape and weight would have been the same on either side. The centre-line clearly ran between the sharp ends of the vessel. As the boat's stain was far better preserved on the south side it was decided to use this entire half of the boat as the basis for reconstruction, using the shape of the north side as a check.

The naval architect's computer program *Boatcad* was used, initially drawing the vertical sections reconstructed every 100mm through the boat's length into the computer using a digitizing tablet. These were related to the centre-line of the vessel and site datum. The result was that *Boatcad* could represent the excavated shape of the southern half of the boat in three dimensions. This could then be copied to form the northern half of the vessel giving an image of the whole, which could be turned to any angle. The shape was also represented by 'waterlines' (horizontal sections through the boat at vertical intervals) and buttock lines (vertical longitudinal sections parallel to the central axis of the vessel) (Fig. 137a).

The minimum reconstruction

The next objective was to 'fair' the lines of the vessel with minimum alteration. This was achieved by rotating the image of the boat and by eye averaging out the hull shape between the irregularities. The basic form of the vessel was not altered. The surviving top of the south side was uneven but in places reached a horizontal line drawn between the tops of stem and stern, as if originally the top of the vessel's sides were straight. The resultant reconstruction is very close to the shape of the boat as found, showing a vessel 3.08m long with a maximum beam of 0.62m and a height of the sides of 0.35m (Fig. 137b). It was slightly sharper at the west end than at the east and its rounded bottom was a little deeper in the western half of the vessel. This was the minimum reconstruction of the boat's original shape.

The maximum reconstruction

Uncertainty over the uneven bottom to the boat, unusual although not unique amongst dugout finds, led to the creation of a 'maximum' reconstruction. This modified the bottom to make it parallel with the gunwale throughout the vessel except at its ends, on the assumption that the bottom of the western part of the boat was the true shape (Fig. 137c). This slightly altered the beam of the boat (length 3.08m; beam 0.52m; depth 0.35m).

Weight

The distribution of the weight of the vessel is one of the most important factors determining its stability and therefore whether or not the object was a boat. The total hull area was computed by *Boatcad*, taking into account the presence of any structural weight in the boat other than the sides. If the vessel was bottom-heavy it would be more stable than one that was top-heavy, for the latter would tend to capsize. Determining weight relies upon establishing the volume of wood that comprised an average square metre of the hull. This can be converted into weight by multiplying the volume by the weight of a cubic metre of timber, a density of about 800kg per cubic metre for oak. Estimating the original hull thickness is difficult but the bottom is likely to have been at least 30mm thick and the sides at least 20mm thick. The stem and stern hull stains were much thicker and would have added weight compensating for the thinner sides. For assessing weight distribution, the boat probably had an average minimum hull thickness overall of 30mm giving the following hull weights; as found 0.059 tonnes; minimum and maximum reconstructions 0.058 tonnes. These figures confirm how the reconstructions very closely follow the excavated shape.

Hydrostatic study

The measure of any boat's stability is its ability to right itself when heeled. This righting lever is proportional to the transverse Metacentric height (GMt), which is the distance between the Centre of Gravity (CoG) above the keel, and the transverse Metacentre above the keel (KMt). For a boat to be stable the righting moment must be positive; that is, that Mt must always be above the CoG (Fig. 138). The vessel was examined in both minimum and maximum reconstructions for unladen and laden states.

Unladen: The minimum reconstruction in its unladen state, as if the empty boat was placed in the water, was found to have a displacement of 0.058 tonnes and a draught of 0.127m. Its Centre of Gravity was at 0.17m above the bottom, and its Centre of Buoyancy lay 1.39m from the east end and at a height of 0.08m above the bottom. This is important as it is about the mid point of the vessel, and therefore the best position for a seat for the user of the vessel. *Boatcad's* calculations showed that when the boat was launched empty it would remain upright. In the maximum reconstruction *Boatcad* calculated a displacement of 0.058 tonnes and a draught of 0.114m, with the Centre of Gravity 0.15m above the bottom. This vessel would also have been stable when launched.

Laden: Once laden the hydrostatics change as the vessel lies deeper in the water with a combined Centre of Gravity of the boat and person which can make it top-heavy. On the basis of certain standard parameters as advanced by McGrail (1978, 131) calculations presume a representative person to be 1.65m high with a weight of 60kg, *i.e.* short, lean and wiry. The Centre of Gravity of a standing person should be at 1.1m above the feet, of a kneeling person it would be at 0.45m, and it would be at 0.4m above the backside when seated. Only by establishing the combined CoG relative to the metacentre of the vessel in a static state can the theoretical stability of the boat, and therefore its uses, be made. The maximum heeled righting moments are calculated to occur at a displacement of about 0.118 tonnes, from which the weight of the boat (0.058 tonnes) is deducted, giving an extra load of 0.060 tonnes (*i.e.* about the weight of a person). On the basis of a standard two-fifths freeboard of

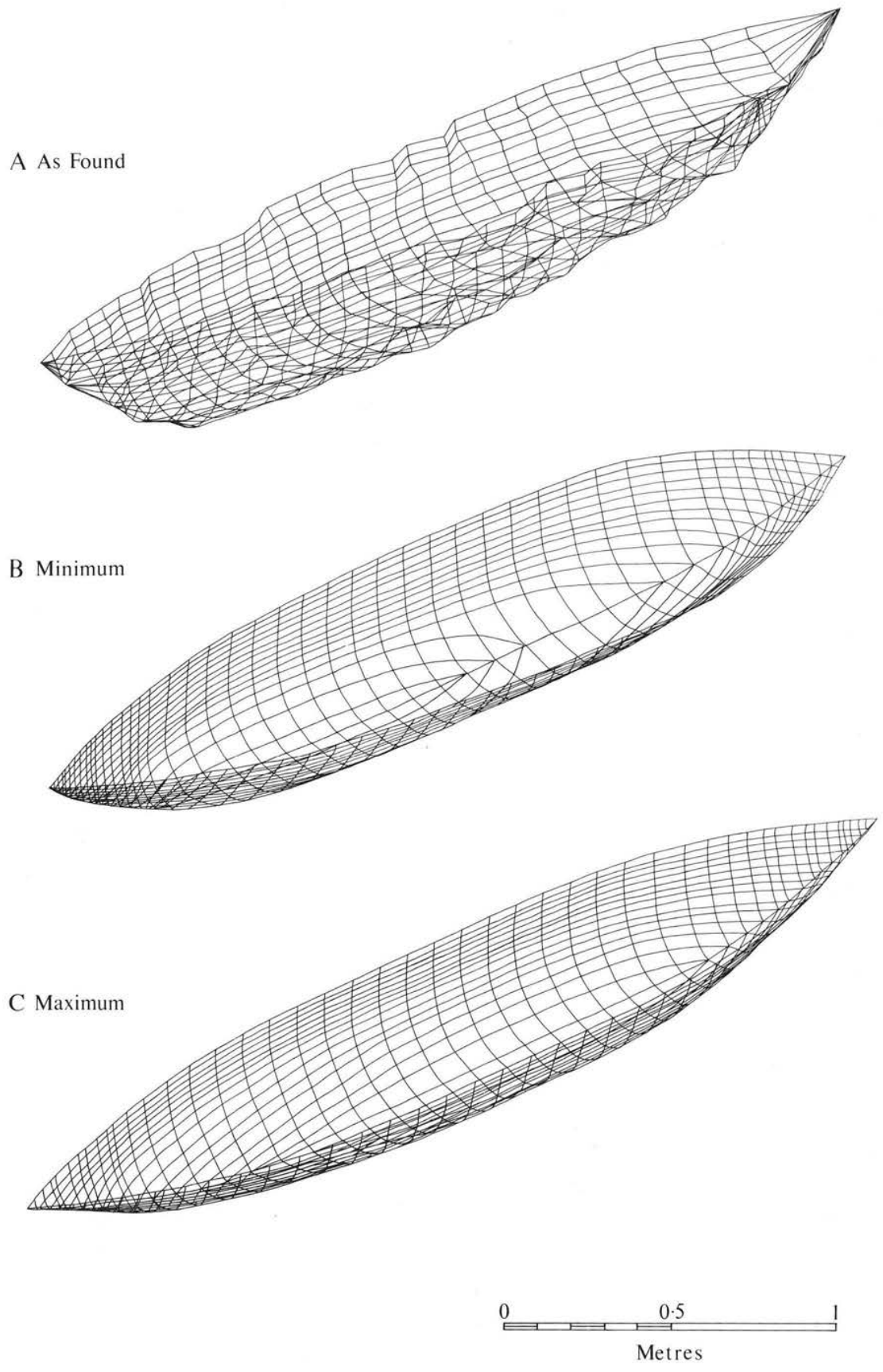


Figure 137 Three-dimensional computer-generated plots of the logboat from grave 47 as found (a), and as minimum (b) and maximum (c) reconstruction

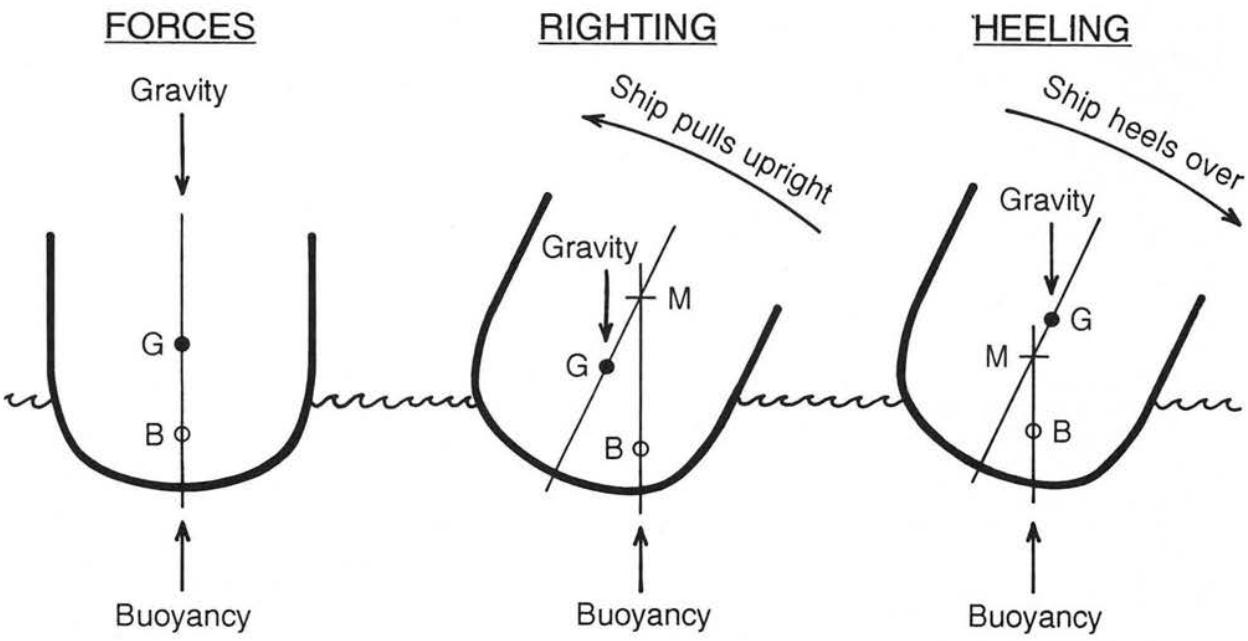


Figure 138 The forces of buoyancy

the depth of the hull amidships (the 'ideal' load as indicated in a medieval Icelandic Law: McGrail 1987, 13) the Snape boat would have a draught of 0.21m giving a displacement of 0.135 tonnes. The boat could carry a load of 0.077 tonnes in this state. In the maximum reconstruction the maximum righting moments occur at a draught of 0.193m, at a displacement of 0.118 tonnes, and would accommodate a load of 0.060 tonnes. A two-fifths freeboard would give a draught of 0.21m and a displacement of 0.148 tonnes. This would give a load of about 0.090 tonnes, about the weight of a large man. If the weight of a 60kg person is deducted, this gives a baggage load of 17kg in the minimum and 30kg in the maximum reconstructions. If the hull was only 10mm thicker *Boatcad* calculates that its weight would be 77kg, an increase of 19kg leaving little or no room for a baggage load. By comparison, the boat from grave 1131 at Slusegård is estimated to have been able carry 123kg at two-fifths freeboard (Crumlin-Pedersen 1991, 182). However, this calculation is based upon the beam originally having been some 0.9m after expansion, rather than the 0.7m as excavated.

Speed

The theoretical maximum speed is calculated by *Boatcad* to be 4 knots. This is the 'one wave' speed, based upon the fact that at slow speed the vessel is supported on its bow and stern waves. If that speed is increased beyond 4 knots the stern will sink into the trough behind the bow wave and consequently much power will be expended in trying to climb the slope of the bow wave rather than on going faster.

Conclusions

Although the calculations are very precise, the results can only be considered approximate as it is not clear what the exact shape and weight of the Snape boat was. Moreover, two alternative reconstructions were necessary, although their similarities suggest that they are close to the shape of the original vessel. The slightly negative transverse Metacentric height in all loaded situations indicates that the boat was probably a little unstable, though if the bottom was thicker and baggage was carried on the boat floor to lower the Centre of Gravity, the vessel would be less inclined to capsize. However, this tendency might not be significant as the boat seems to have had the characteristics of a modern canoe that is kept upright by using the paddle, and the user constantly moving to change their Centre of Gravity. The similarity to a modern canoe does not end there, since the boat was light enough (58kg) to be dragged, and its sharp ends show that it was designed for speed. As the Centres of Buoyancy and Gravity lay amidships in both reconstructions this was evidently where the user sat and either end could have been used as a bow.

Although there are many uncertainties, this study confirms that this vessel was indeed a working boat which had subsequently been re-used as a coffin. It could only have been used by one ordinary 60–70kg person, possibly with a little baggage, as fast and light personal transport on local rivers. In this respect, both the boats from Snape would have been ideally suited to the broad local Alde, Deben and Stour/Orwell estuaries of Suffolk.

III. The Remarkable Survival of Organic Materials

by Esther Cameron and Vanessa Fell

Introduction

It was clear while the excavation was still in progress that the survival of organic remains at Snape differed markedly from the norm. On the one hand, virtually no skeletal material survived from inhumations at Snape where shapes of bodies were preserved as darkly-stained cohesive lumps of sand, similar to those at the nearby site of Sutton Hoo (Bethell and Carver 1987; Bethell and Smith 1989). On the other hand, objects which would normally have perished, or survived only in mineralised form, such as horn, leather, textile and wood, were recovered apparently intact. Since this curious variety of survival had not been noted before, a small study was undertaken to investigate its possible causes.

Methodology

Organic materials endure burial only under conditions which prevent biological activity. This normally occurs through waterlogging, charring, mineralisation and by contact with biocidal agents such as metals, in particular copper (Biek 1963, 125).

At Snape, preservation of organic materials in the vicinity of metal artefacts is common, but there are several occurrences where they have survived without apparent contact with biocidal agents, or through any of the other conditions mentioned above. Most notable are two horns from grave 4 (Pl. XXXV) and a spread of textile from grave 37 (Pls XVII–XIX). Further textile examples are from graves 2, 11, 16, 20 and 36, as well as the bundle of red hair and textile (now lost) found during the excavation of the ship burial in 1862 (Grave 1, above p. 7 and 195; see also Bruce-Mitford 1974, 117).

In order to look for evidence which might help to explain why these materials had survived and to investigate aspects of their physical and chemical change during burial, samples were analysed in three ways:

1 The physical condition of four samples each of bone, horn, leather, animal fibre, and wood was examined by scanning electron microscopy (SEM);
2 Chemical composition in respect of stable isotope and carbon/nitrogen (C/N) ratios of sample duplicates was determined on four specimens each of horn, leather, animal fibre, and wood in order to assess the degree of organic survival (Report by the Research Laboratory for Archaeology and History of Art, University of Oxford in the site archive);
3 Fibre analysis of samples from fifteen textiles were investigated by Fourier transform infrared (FTIR) microscopy for identification of fibres and for degree of deterioration. A full report of the analyses, by Susan Hardman, is in the site archive.

Summary of results

Bone and antler

The exceptional survival of the horse skull (grave 47, *S*) is difficult to explain. Bone and antler did not normally survive except for fragments that had been partially burnt or were associated with metal artefacts. The morphology of the compact bone and cancellous bone appears undegraded. Although the bone weights from individual cremations are low, reasons other than soil dissolution are proposed for this, such as plough damage and incomplete retrieval from the pyre (Section VII below, p.227).

Horn

Two horn tips from within the prow of the logboat in grave 4, apparently not associated with metal artefacts, are so well preserved that they resemble relatively fresh specimens. A slightly porous appearance and the presence of hyphae strands indicate a degree of fungal activity. This might even be of recent occurrence, perhaps caused by the alteration of soil pH (Filmer-Sankey, n.d.). By contrast, an object of horn from the other boat burial (grave 47, *O*) did not survive and left only a crumbly black trace, 20 × 30mm, while another drinking horn or cup from grave 18 (*A*) is only preserved in proximity to its copper alloy rim. All horn handles from knives appear to be mineralised and C/N ratios of two of them did not indicate any significant degree of organic survival.

Leather

Leather survives only where it has been in contact with metal artefacts (Pl. XXXVI). Grain patterns are sometimes preserved on leather sheaths and pouches surrounding iron artefacts (Pl. XXXVII). Occasional details of construction survive such as a seam edge of a knife sheath. Finer details, such as collagen bundles characteristic of the internal structure of leather, are almost entirely absent. The C/N ratios of leather preserved near to iron confirm substantial mineralisation whereas one sample associated with a copper alloy buckle (grave 25, *B*) was appreciably organic.

Animal hairs

Fine hairs protruding from mineralised leathers are flexible and scale patterns on their outer surfaces are intact (Pls XXXVIII and XXXIX).

Spreads of woollen textile which appeared matted and soft on site became brittle on drying, but weave pattern and lengths of spun yarn are still preserved (Pl. XL). Examination of their fibre surfaces shows that erosion of the cuticle cells has exposed the hair cortex (Pl. XLI). Despite this condition, FTIR analysis confirms a high state of organic preservation (see report by Susan Hardman, site archive).

Wood

Wood survives in the charred condition and in immediate or close proximity to metalwork. The appearance of wood found near to copper alloy suggests a degree of organic survival, for example the remains of the lyre (Pls LIII and LIV) and of vessel *F* from grave 32. Wood found in association with iron is more friable and degraded, and is preserved through partial mineral replacement (Pls XLII and XLIII). C/N ratios suggest some survival of the organic content in samples associated with either of the metal types. Evidence for ancient fungal activity within samples of wood microstructure (Pl. XLIII) is minimal yet each wood sample shows depletion of hemicellulose (Dr B. Juniper, pers. comm.), possibly by the acid environment.

Plate XXXV The two horn tips from the prow of logboat grave 4

Plate XXXVI Mineralised leather loop on knife ring *Fii,* grave 2

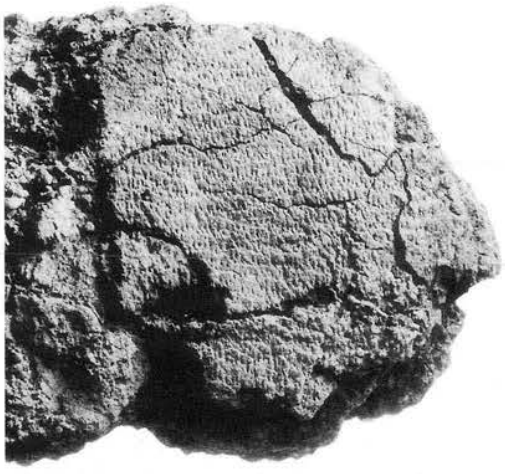


Plate XXXVII Grain pattern on a mineralised deer skin pouch, grave 32 *C*

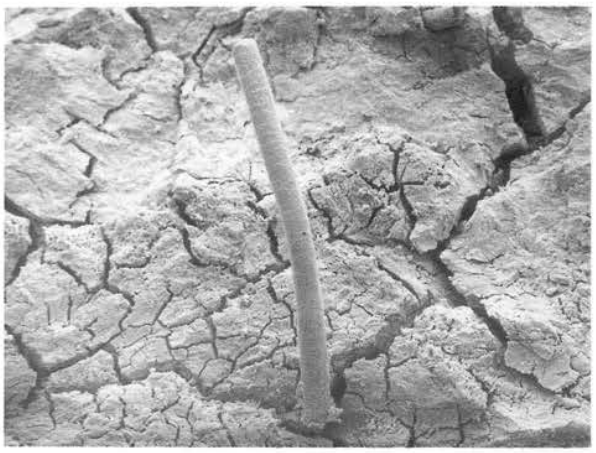


Plate XXXVIII Hair protruding from a mineralised bovid skin sheath of knife *B*, grave 37

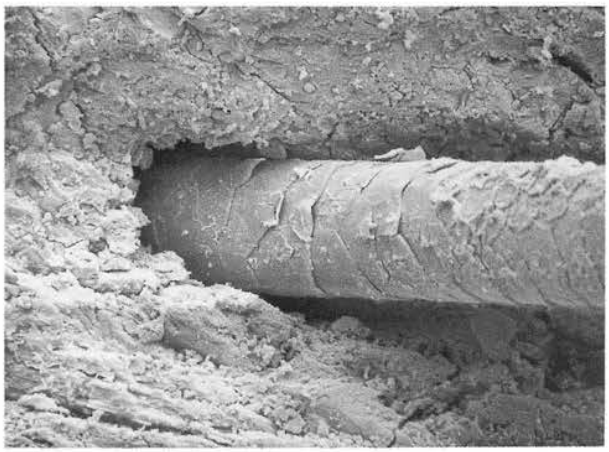


Plate XXXIX Scale pattern on a hair shaft from a mineralised bovid skin sheath, knife *B*, grave 37

Plate XL Woollen textile from the base of grave 37

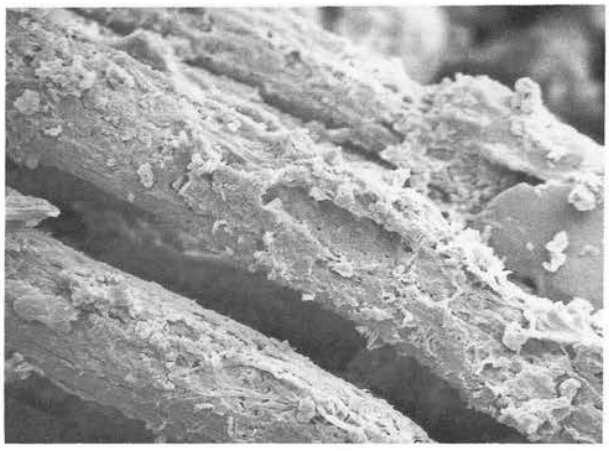


Plate XLI Individual fibres from the woollen textile from grave 37, showing loss of outer cuticle layer

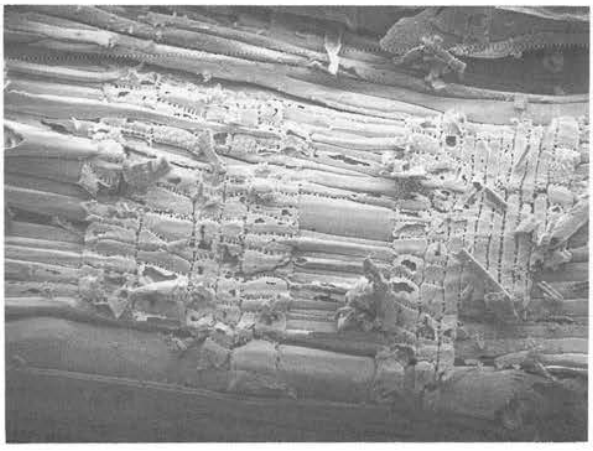


Plate XLII Partly mineralised wood from a spearhaft, grave 47. Longitudinal radial section

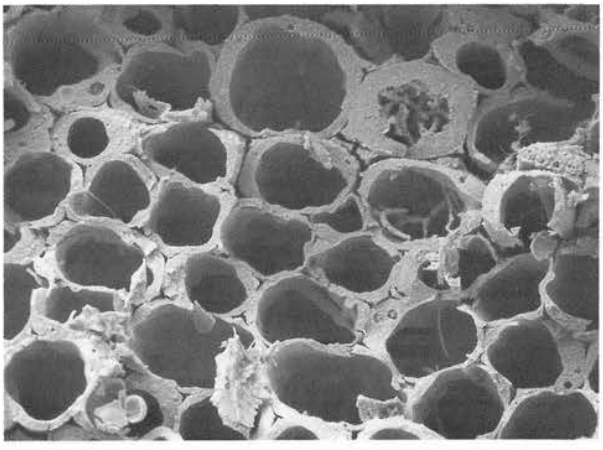


Plate XLIII Partly mineralised wood from a spearhaft, grave 47. Transverse section. Fungal hyphae occupy vessel cavities top right

Discussion

The well-drained glacial deposits of sand at Snape have a pH of 4.5 which until the recent past supported heathland. It should not be assumed that this was always so; soil conditions at Snape hold several features in common with Sutton Hoo where the acid brown earth in which the ship was buried is thought to have been under cereal cultivation in the Early Anglo-Saxon period (Bruce-Mitford 1975, 48–77). A thin iron pan which had developed at Snape is now disturbed by the burrowing of rabbits and by the recent work of the plough and subsoiler.

With the exclusion of charring — as well as the notable horse head remains mentioned earlier, and some bone fragments from grave 12 — bone, antler, leather and wood have not survived except where they have been in contact with, or in close proximity to, copper or iron artefacts. Physical appearance as well as C/N ratios suggest that the biocidal effects of copper have been more effective in preservation, though less extensive than mineralisation by iron salts. On the evidence of soil stains and incomplete objects, the disappearance of organic materials from elsewhere on site might suggest a broad variety in the microbial population. Wood-destroying fungi are known to prefer a low pH whereas bacteria utilising collagen in leather, bone and antler favour a more neutral range.

The notable class of materials to survive is the keratinous group which includes horn, woollen textiles and animal hairs. These do not normally survive burial. Acid has little effect on the protein keratin, but some fungi and bacteria living in a neutral pH range can hydrolyse it. The survival of this particular group of materials would at first suggest that the pH of the soil remained consistently low during most of the period of burial. This explanation would seem adequate if materials made wholly or largely from keratin had survived equally, but this is clearly not the case. The horn tips from grave 4 were buried as complete drinking horns, two other objects of horn (already described) have survived as traces only, while the knife handles and sword hilt of horn were not in their original state, but mineralised by iron compounds. From Sutton Hoo, Mound 1, two auroch horn tips were also well preserved (Bruce-Mitford 1983, figs 234 and 251), although this might have been due to their encasement by the decorative metal terminals of the drinking horns. More comparisons are needed (*e.g.* Taplow and Broomfield) but the remarkable survival of horn tips in particular suggest to us that structural differences between the sheath part and the tip of a horn may render the latter more resistant to biodeterioration and dissolution.

Animal hair has survived well, including isolated hairs on the surfaces of leather knife sheaths, and occurring in quantity as spreads of woollen textile. The interesting contrast between the two — survival of cuticle cells on the former and their loss from the latter — are further evidence of biological differentiation. Reasons for this might be due either to a localised pattern of colonisation among soil microbes away from accumulations of iron corrosion products in leather knife sheaths or to a focusing upon textiles as a source of nutrition. The two sorts of hair (animal pelt and woven yarn) might have been prepared in different ways which rendered the textiles more prone to biodeterioration. Similar survival of hair cuticles on finds from the Sutton Hoo ship burial include otter and beaver pelt-hair, identified partly from scale patterns on the fibre surfaces (Bruce-Mitford 1983, 723 and fig. 652). However, a scientific description of the condition of woollen textiles from the ship is still to be published.

Feathers, thought to have filled a pillow in the Sutton Hoo ship burial, were so well preserved that they were described as a 'white flock-like material' (Bruce-Mitford 1983, 888). Traces only of mineralised feathers in grave 47 at Snape, as well as the absence of hair from the horse skull, and of human hair from any of the graves, add weight to the argument that, despite the extreme acidity of the soil, keratinous materials were subject to biodeterioration and that the survival of the horn tips and woollen textiles cannot at this stage be adequately explained.

It is evident that more comparative material and a great deal more scientific analysis will be needed if further study of burial conditions at Snape and similar sites is to progress. Moreover, if we wish to heighten the sensitivity with which we reconstruct and interpret finds, then our understanding of soil processes and agents of decay needs to be more highly developed.

IV. The Textiles

by Elisabeth Crowfoot

Introduction

The places chosen for Anglo-Saxon burial grounds are usually higher positions, with light dry soil. But though the acidity at Snape has resulted in the deterioration of bone, and human skeletons are in most cases only represented by soil shadows, preservation of other organic remains in the inhumation burials was exceptionally good by English standards, and this applies particularly to wood and textile. As in all pre-Christian Anglo-Saxon cemeteries the Germanic funeral customs have continued; the dead were obviously interred fully clothed, and textile evidence is preserved by corrosion on metal grave-goods with which these less durable possessions came into contact; scraps from clothing or wrappings on brooches, buckles, wrist clasps, knives and weapons. Much of this material is mineralised, surviving as 'replacements' in which the characteristics of spin and weave can still be clearly identified. At Snape this evidence also includes a high proportion of samples in which some of the fibres have escaped mineralisation. The fragments preserved, however, are small; though well-to-do, none of the burials was immensely rich, and there was no pile-up of large metal objects under which layers of valued fabrics could survive, as at Sutton Hoo under the silver dishes (Crowfoot 1983, 412).

Apart from the remains of the important boat burials, an unusual quantity of wood has also survived, or been noted as soil shadows *in situ*. These wood fittings — coffins, biers and even planks — throw an interesting new light on burial practices, and they are also sometimes associated with textile. In grave 43 the excavators described an 'intensely organic stain' with a clearly defined edge which they interpret as a chamber, lined with textile. Samples taken from this area included rather coarse woollen threads. These, and lumps of crushed textile, some similar, some with noticeably finer threads from areas overlying the buckle and knife, suggested that the chamber had perhaps been lined with a coarse woollen twill and the clothed body covered with a layer of similar fabric (grave 43, a and b); or that the body had lain on a

blanket or cloak, large enough to lap over the entire contents of the grave.

The excavators were fully aware of the interest in evidence obtainable from textile remains; they were able to consolidate an important area of the contents of grave 16 in a block, so that study of the brooches and surrounding organic matter might be undertaken later under laboratory conditions; similarly, textile layers in graves 36 and 37 were examined during excavation on site. The suggestion of fibres in a noticeably blackened area in the centre of grave 36 perhaps indicated that some garment or object placed on top of the body was of leather, while on and around the upper surface of the grave-goods there was again enough evidence of a coarse woollen twill fabric to indicate an all-over covering. This practice was even clearer in grave 37 where remains of at least two different heavy wool weaves, one decorated with stripes, could be identified (Pl. XLIV, Fig. 139.3). There was no suggestion in the placing of these fabrics that they could have been more intimately connected with any wooden furniture, unlike the results found during recent study of bed burials from Swallowcliffe and Barrington, Cambs. (Malim and Hines 1998, 261–8). Evidence of textile overlying Anglo-Saxon burials has been noted elsewhere; at Little Eriswell, Suffolk (Hutchinson 1966) one grave was described as being 'covered with a blanket' (pers. comm. from Capt. Le Bard, USAAF to the late Lady Briscoe) but in view of this urgent wartime excavation, before the erection of buildings, nothing from this layer was preserved.

Fibres

(See also below, p. 214). With one exception (grave 19) all fibres identified in the textiles were of animal origin, mostly sheep's wool with medium or fine fibres; in some cases these were well enough preserved to show whether pigment was present (graves 5, *A*; 20, *G* and 28, *C*); in one twill weave (grave 9, *A*) yarns with pigmented and unpigmented fibres were used to form a striped pattern (Fig. 139.2). Animal fibres used for pattern work on tablet-woven braids were probably horsehair, again naturally pigmented, two colours (chestnut and black) being still visible on the wrist clasp in grave 5, *D* (Pl. XLV, Fig. 139.9). The one vegetable fibre preserved, as fine shiny white threads in a tabby weave (grave 19 *D*), was identified as well-preserved undyed hemp. A tiny fragment of plait from the same grave, possibly a bead string, appears to be of similar origin.

Dyes

(See also below, pp. 212–214). Evidence for dyes was perhaps disappointing, particularly as rather larger samples were available for testing than can usually be detached, and colour sometimes seemed to be visible, notably in the striped covering in grave 37, where to the eye the ground weave was blackish and the stripes distinctly redder (but see Undyed cloth p. 214). There was little sign of the range of reds, blues and purples occasionally found from other Anglo-Saxon sites and identified in Viking material at York. There were a few traces in tablet braids from graves 16 and 19 and one blue twill (grave 5). As mentioned above, natural pigmentation was preserved in some wool, and still clearly visible in one striped twill (grave 9), but it seems probable that some garments and coverings were indeed white, or the light tan of natural fleeces. It is also possible that the pollution of an area of the graveyard with a purple colorant (discussed below pp. 214) may have been responsible for masking the presence of some weak or fugitive dyes. The sample of hemp, as in that recently found at Harford Farm, Norfolk (Walton Rogers in Penn 2000, 90), was strikingly white and shiny.

Spinning and weaves

Most of the textile types are those general in 6th-century Anglo-Saxon weaving, but two show clear connections with earlier continental practices. As usual with people recently come from northern areas, twill weaves, whose structure gives a warm double layer of threads, are noticeably predominant. There are remains from over forty examples, compared with only fourteen tabby (plain) weaves, and eight tablet-weaves including two weave-borders, and six bands, *i.e.* ornamental pieces made separately, to be sewn to decorate garments. As in Scandinavian fabrics of the earlier Migration Period, the high number of those with Z-spun yarn in warp and weft is noticeable — at least twenty-eight of the twills, all the tabby weaves and the tablet-bands, with one possible exception (from grave 37).

Twill weaves

A high proportion of the twills are medium to coarse grade but this is perhaps due to the survival here of outer coverings, which in most cemeteries may have disappeared long before excavation. Of the simple 2/2 (four-shed) constructions, only one, the coarsest preserved, originally used to wrap a wooden bowl in grave 9, has any decoration, the narrow stripes of unpigmented single ?warps on a naturally pigmented dark brown wool fabric (Fig. 139.2). This is a type of weave familiar from other sites, with fragments from two graves at Mucking, Essex (graves 767 and 878; Hirst and Clark forthcoming), Sewerby, E. Yorks. (Crowfoot and Appleyard 1985, 52, 55) and a very well-preserved example from Broomfield Barrow, Essex (Crowfoot 1983, 468–471). Fourteen of these twills have the 'mixed spinning' (Z-spun yarns in one weave system, S-spun in the other) often associated in other cemeteries with fabrics of superior quality. Two of the finer twills here have evidence of broken diamond or herringbone structures, though the whole pattern cannot be recovered, but none have the heavy warp-thread count preponderance, or the shiny appearance which suggests that they were made of high-grade worsted wool, so noticeable in the fine broken diamond twills from the rather later very rich barrow burials at Sutton Hoo and Broomfield (Crowfoot 1983, 418–24, 468).

Ribbed twill

(Fig. 139.3, Pl. XLIV)

The coarse striped wool cloak or blanket lining the male burial in grave 37 connects the Snape settlers with travels further afield. This is an example of the *Rippenköper*, a twill weave with reversed ribs, of which many examples were published by the late Professor H-J. Hundt from Alamannic graves in Germany (Hundt 1984, 141–3 and fig. 6). This is the first example of the structure so far recorded from an English burial. Hundt's examples were all based on a 2/1 twill but the weave here, based on a 3/1 construction, works on the same principle and seems likely to have a similar origin. Dr J. P. Wild (pers. comm.)

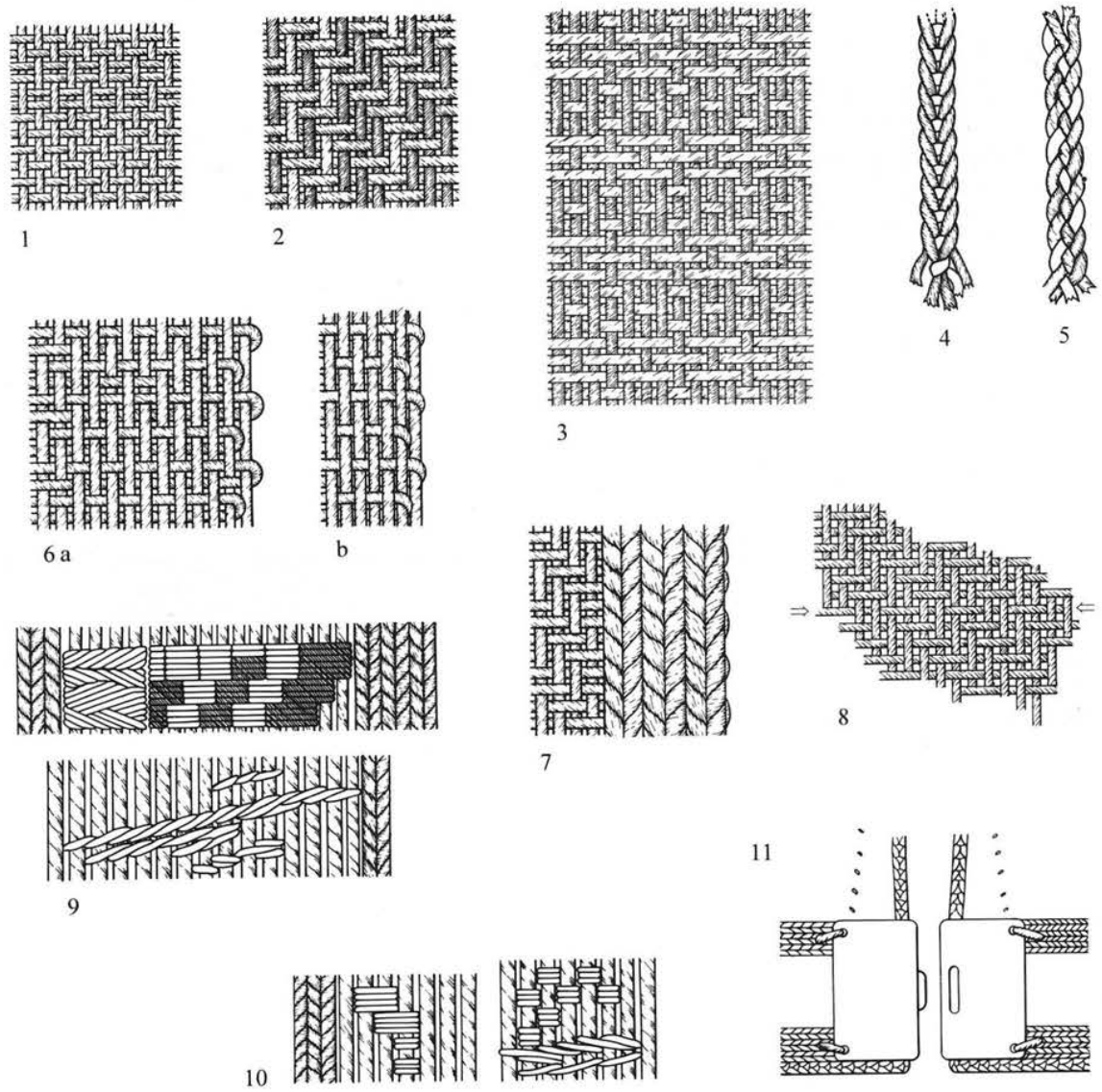


Figure 139 Textiles. 1) Tabby weave with paired threads, ?stripe, grave 8 *C*. 2) 2/2 twill, stripes in ?warp, pigmented wool, grave 9 *A*. 3) Textile layer, 3/1 twill with stripes, *Rippenköper*, grave 37. 4) Guilloche plait from edge of sleeves, grave 5 *C* and *D*. 5) 4-thread cord, ?from beads, grave 8 *A*. 6) Tubular selvedge on twill; (a) passage of wefts (b) wefts pulled in to cord, grave 5 *A*. 7) Tablet-woven border on 2/2 twill, grave 16 *C*. 8) Fine 2/2 twill with mistake arrowed, grave 21 *C*. 9) Tablet-woven bands from wrist clasp edge cords, centre pattern in horsehair on stationary cords, *D*, 'soumak' wrapping, *C*, wraps tapestry blocks, chestnut and black hair, grave 5 (reconstruction). 10) Patterns on tablet-woven band, wrist clasp *F*, grave 10. 11) Reconstruction of wrist clasps on sleeve of garment from grave 5, with tablet-woven cuff band, seam opening and guilloche plait edging

has pointed out that the 2/1 *Rippenköper* appears first in a Roman context at Mons Claudianus and its presence at Snape perhaps suggests service in the military Roman world.

Tabby weaves

The tabby weaves are all tiny fragments, two perhaps from tapes; one of these, from grave 19, of wool, showed the fine Z-spun warp and coarse S-spun weft yarns characteristic of narrow bands, though no selvedges are preserved. All the others are Z-spun yarn throughout. The appearance of the fibre of a possible tabby scrap from grave 5 suggested fine hair, but was too deteriorated to be sampled. Fragments preserved in grave 10 under two brooches, one in close folds with tight spin and thread count 16/14–16, the other from grave 8, a finer scrap with

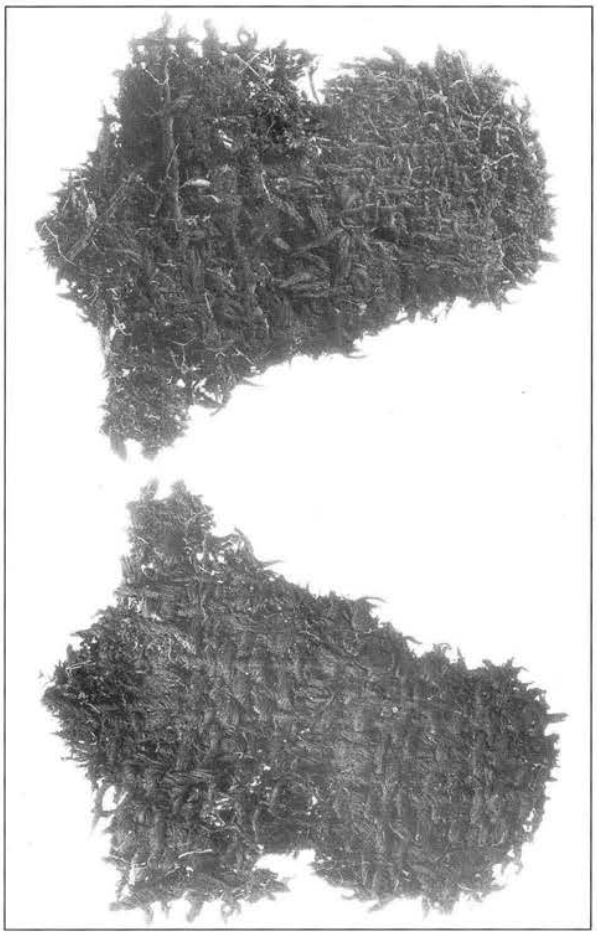


Plate XLIV 3/1 twill with stripes (*Rippenköper*), grave 37 (both sides shown)

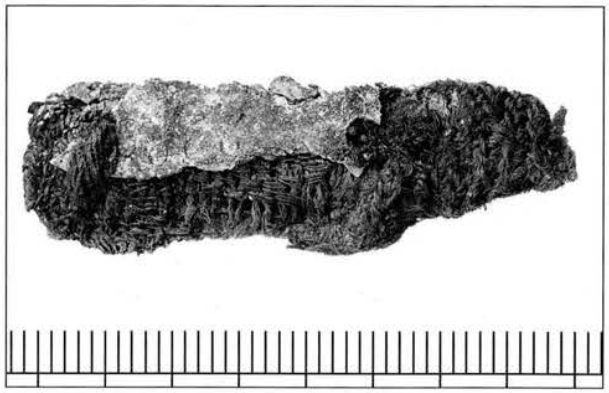


Plate XLV tablet-woven band from wrist clasp *D* grave 5, horsehair pattern, tapestry blocks.
Scale in mm

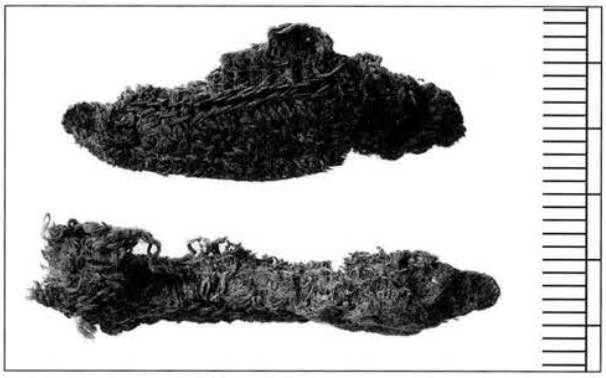


Plate XLVI tablet-woven band from wrist clasp *D* grave 5, horsehair pattern, wrapped, 'soumak'.
Scale in mm

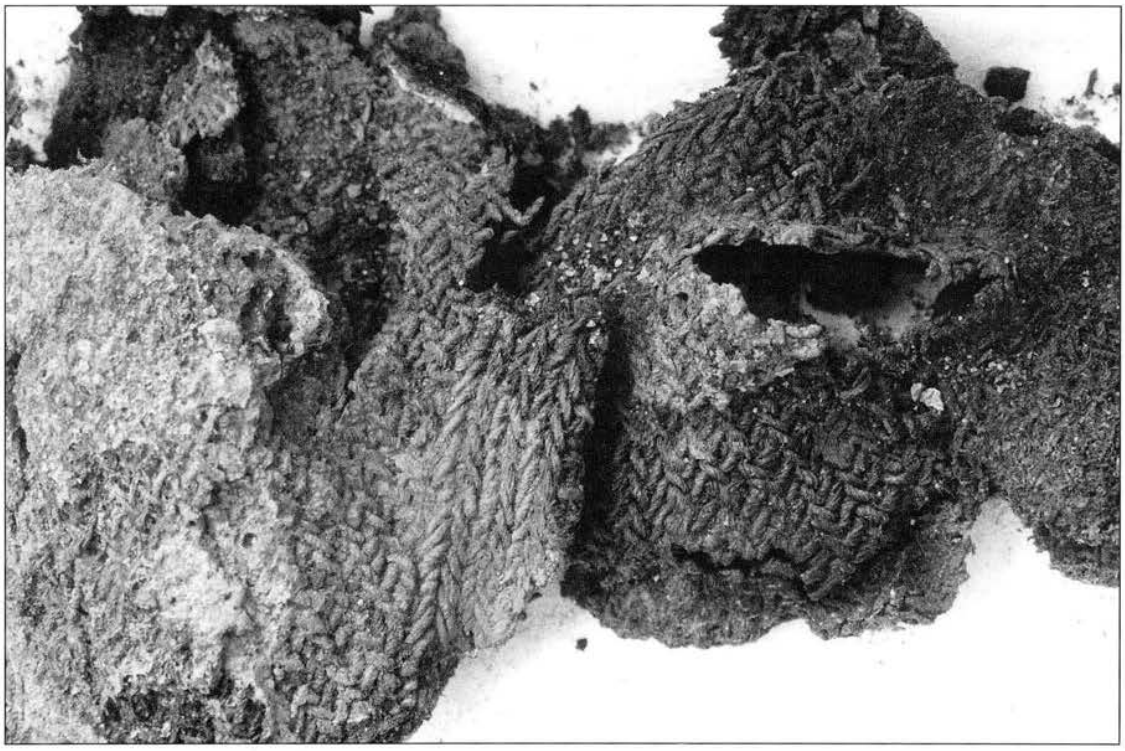


Plate XLVII Tablet-woven border on twill, grave 16 *C*

two paired throws suggesting a stripe (Fig. 139.1), could have come from women's veils. They were probably of flax, though these must have been soft even weaves, of very different quality from the unevenly spun and woven flax of the remains of the cloth wrapping the bronze bowl in grave 68. The hemp tabby curling round a brooch in grave 19 again suggests a headveil, tucked under the pin to keep it in place; the good preservation here allowed a positive identification.

Tablet-weaves

Tablet-woven borders on twill cloaks or blankets, like that on the twill covering a woman's burial in grave 16 (Pl. XLVII; Fig. 139.7) made simultaneously with the fabric, are a feature from the Roman Iron Age onwards (Nockert 1991, 82–3; Hald 1950, 63ff.). This border is narrow, only six cords, and perhaps comes from the side edge of a weave. Tablet-woven bands of which fragments survive as here in the metal wrist clasps from women's burials were made separately and sewn as cuffs on the long sleeves of their garments. Other well-preserved Anglo-Saxon examples, from Mildenhall and Mitchell's Hill, Icklingham, Suffolk (Crowfoot, G. 1951, 26–28 and 1952, 189–191) were solid undecorated bands, but the fragments from graves 5 and 10 from Snape have sufficient remains of fine horsehair pattern to indicate that they were woven in an elaborate technique that has been described by Margareta Nockert as 'a complete innovation of the Migration Period' (Nockert 1991, 83).

In her study of the magnificent textiles of that period from Högom in Sweden Dr Nockert suggests that the origin of these braids should perhaps be looked for in the Near East or Mediterranean region (1991, 88–89). Bands like those from Snape come under her classification of 'warp-twined bands with patterns in different kinds of weft-wrapping and a tapestry-like technique' (1991, 83). As far as can be seen, the Snape bands from the grave 5 wrist clasps had edge borders with tablets threaded alternately in pairs at both sides; the stationary tablet warps of the centre pattern section are clear where they have lost much of their horsehair decoration, but remains of two of the different kinds of pattern wefts described by Dr Nockert can still be identified:

> A pattern section always begins and ends with one or more lines of weft wrapping, which run from edge to edge. The pattern weft can, for example, pass over all threads from two tablets, back under the threads from one tablet, under one and so on. This kind of weft wrapping is synonymous with *soumak*. (1991, 83–84).

Remains of this soumak wrapping can be seen on the band fragment from wrist clasp 5 *C* (Fig. 139.9b, Pl. XLVI).

> The contours of the pattern are done in weft-wrapping. The weft passes several times round all threads from one or two tablets. In this way vertical slits can be formed in the weave between the differently coloured fields, just as in tapestry weave or *kelim*. (1991, 85).

This pattern was clear when grave 5 *D* was first examined and drawn, with slanting lines of wraps in alternate wrapping in black and chestnut horsehair, though some of the delicate hairs disintegrated before photography (see Pl. XLV). The tiny scraps from grave 10 (Fig. 139.10) show remains of both types of pattern wefts. An even smaller fragment recently excavated, in a wrist clasp at Barrington, Cambs., shows traces similar to the soumak wrapping (Crowfoot 1998, 246). Dr Nockert has pointed out that the pattern wefts cover the entire warp and there is no active main weft in the pattern sections, so that the patterns are not, as sometimes previously described, brocaded (Nockert 1991, 83).

Many of the pieces from Scandinavian sites, particularly those from the Högom warrior's grave published by Dr Nockert, are in magnificent condition (Pls XLVIII and XLIX), wide bands with colour preserved showing animals and human praying figures. The slightly later date of the Snape fragments, compared with these examples of the Migration Period perhaps suggests that they should be regarded as old pieces, treasured and re-used, as so often happens with beautiful fragments in medieval ecclesiastical material.

One interesting feature of the grave 5 bands is a very neatly made 'guilloche' plait, surviving on the fragments from both clasps. On *C* it is preserved for 16mm, fastened to the edge of the tablet cuff; on *D* a fragment hangs loose from the corner, suggesting that it continued down to decorate the sleeve opening, like the ornamental stitching on a sleeve from Högom (Nockert 1991, 76–8). A similar plait was used to decorate the edges of bands of the 10th century among the relics of St Cuthbert at Durham; it can be simply made with two 2-hole tablets (Crowfoot, G. 1956, 447, fig. 13.6).

Much of the published work on Anglo-Saxon textiles comes from the Anglian region; of southern and western cemeteries, though studied and catalogued, many remain unpublished. The available comparative northern material has been recently very much expanded by the work of Penelope Walton Rogers at Textile Research, York, on cemeteries at Norton-on-Tees, Teesside; Castledyke, North Lincs; and on the very large collection from West Heslerton, N. Yorks. (Walton Rogers, forthcoming). Two of these sites have produced fragments of tablet-woven bands with remains of similar patterning to the Snape bands — at West Heslerton again in horsehair, and at Norton-on-Tees possibly in silk.

Costume

As usual in Anglo-Saxon cemeteries, the costume evidence at Snape depends on the arrangement of the grave-goods and the interpretation of the fragments of textile that they may have preserved. The best provided of the women's graves (5, 10 and 16) follow the usual Anglian pattern (Owen-Crocker 1986, 28ff.) — an undergarment with long sleeves, their cuffs decorated with tablet-woven bands and fastened with wrist clasps, worn with an overgown either tubular or of the 'peplos' pattern, fastened on the shoulders with a pair of brooches; a necklace of beads; a belt with a buckle. None have the array of 'girdle hangers' worn by later colonists, only the essential knife. Seven women had pairs of shoulder brooches, the others pins or a brooch and pin to fasten their overgowns. Only three had wrist clasps and two had a third central brooch which may have held up the loose front of the gown as there was no sign of cloak material on it.

The fabric of these garments at Snape is always twill for both under and overgown; there is very little variation in quality. As far as can be seen from the small fragments surviving in the brooches and wrist clasps, both garments were of very similar weights and where best preserved, of well-spun even weaves. The only lightweight fabrics, the

tabby fragments probably of flax and hemp, are always found associated with brooches and their position suggests that they come from the headveil rather than any undergarment such as a shirt. Evidence from later sites suggests that the overgown could be of linen tabby (as at West Heslerton; Walton Rogers forthcoming a), a lighter garment falling into the soft folds shown in manuscript paintings and sculptures (Owen-Crocker 1986, figs 25–31); at Snape there is no available evidence of anything but solid woollen garments, of fabrics like coarse tweeds.

The evidence on men's clothing is always more difficult to find, since they wore no jewellery and textile remains come only from belt buckles and fittings and their knives. Weapons may sometimes have lain in contact with their clothing but in most cases fabric traces suggest that they were wrapped when buried with their owners; the sword and spears in boat grave 47 show folds of coarse twill and threads, some possibly from ties, including one fine tabby tape. It can be assumed that like the Scandinavians of the Migration Period graves, they wore tunics and trousers and were covered by their cloaks. The fragments left on buckles often show two twill weaves of slightly different quality. There is no way of knowing if their garments were carefully cut and sewn, with shaped sleeves and skirt gores (Nockert 1991, 125–130), or loom-shaped like the earlier Germanic bog-finds, woven in four pieces, rectangular front and back, with tablet-woven borders at neck and hem and the sleeve pieces tapering to the wrists (Owen-Crocker 1986, 70–71). The large areas of textile in graves 36 and 37 suggest cloaks or blankets — the originally handsome ribbed twill in grave 37 probably the former — but unfortunately no borders survived, nor any brooches or pins for fastening.

The fragments of wood and metal in grave 32, identified as parts of a lyre, show patches of coarse woollen textile, probably twill. Some even coarser threads curling round the stud pins at first suggested a selvedge or starting border but their position indicates that this could have been a fragment of the wrist-strap fastened by the pins (see below, p. 217). No fabric was found in this position at Bergh Apton (Lawson 1978, 92–95) or with the very small wood remains at Morning Thorpe, but perhaps the other traces of textile indicate that here at Snape the lyre was buried in a bag, as suggested for that found at Sutton Hoo, although there the evidence indicated one probably of beaver-skin (Bruce-Mitford 1975, 451–2).

Tests for dye in textile samples

by Penelope Walton Rogers

Introduction

Altogether sixty samples of textile were provided for dye analysis by Elisabeth Crowfoot. The samples came from twenty-three different graves and included twills, tabbies and tablet weaves. Most of the textiles sampled were wool (above, p. 208), as it seemed unnecessary to test the obviously white plant-fibre textiles. Preservation ranged from poor to excellent.

Each sample was exposed to our standard examination procedure for natural dyes, namely extraction into solvents, followed by absorption spectrophotometry (Walton 1988). Where tannin dyes were suspected, thin-layer chromatography was also used (Walton and Taylor 1991).

Few authentic dyes were detected and it is beginning to appear likely that many Early Anglo-Saxon textiles were used undyed (see below). An unusual purple colorant was, however, detected in a number of graves and this has posed some intriguing questions concerning the source of the colorant and its relation to Anglo-Saxon burial practice.

Woad-dyed cloth and braid

The blue colorant indigotin was detected in a twill from grave 5 brooch *A* and a tablet braid from grave 16 brooch *C*. Indigotin may be derived from woad, indigo or related species but in an Anglo-Saxon context the dye is most likely to be woad. The woad plant, *Isatis tinctoria* L., was grown in Britain long before imported indigo became available — probably as early as the Iron Age — and was used for shades from sky-blue to deep blue. The behaviour of the dye in the braid from grave 16 suggested the presence of an additional yellow or brown dye, which would have changed the blue to green or black.

Lichen purple on a tablet braid

A trace of purple dye was detected in the tablet braid from grave 19 brooch *D*. Although weak, the dye appeared in two separate extractions, one in alkaline conditions, the other acidic. The spectra obtained in both cases indicated the presence of the lichen dye, variously known as orchil, cork or lacmus (Taylor and Walton 1983). Lichens which yield this dye, such as *Ochrolechia* spp., *Umbilicaria* spp. and *Evernia prunastri*, are to be found on rocks in northern and western Britain, although they do not appear to be available in East Anglia or southern England. The Anglo-Saxons seem to have made limited use of the purple dye (Walton 1988), apparently eking it out on small items such as embroidery yarns, as at Kempston, Beds. (Taylor 1990, 41–2; Crowfoot 1990, 51–2) and tablet braids, as at Snape.

A red tape

The narrow tape from grave 19 brooch *E* also showed a trace of dye, in this instance a red, comparable with a very dilute dyeing with madder or bedstraw. Madder from Dyers' Madder, *Rubia tinctorum* L., was commonly used in the Late Anglo-Saxon period (Walton 1988) but wild madder or bedstraw may have been used instead in the 5th and 6th centuries (Walton and Taylor 1991, 7). The Snape dye was unfortunately too weak to allow the exact dye-plant source to be identified. Madder-type dyes have previously been identified in an Early Anglo-Saxon braid at Mucking, Essex (Crowfoot 1998); in the head-dress of a richly dressed woman at West Heslerton, N. Yorks. (Grave 2BA604; Walton Rogers forthcoming a); in two patterned soumak weaves, one from the boat burial at Sutton Hoo (Whiting 1983), the other from Taplow Barrow, Bucks. (Taylor 1990, 42); and in fine diamond twills from Broomfield Barrow, Essex (Whiting 1983). In the pagan period therefore, the use of this dye is only attested in fine cloth and patterned weaves, especially those worn by the wealthy and aristocratic, and in small items such as braids.

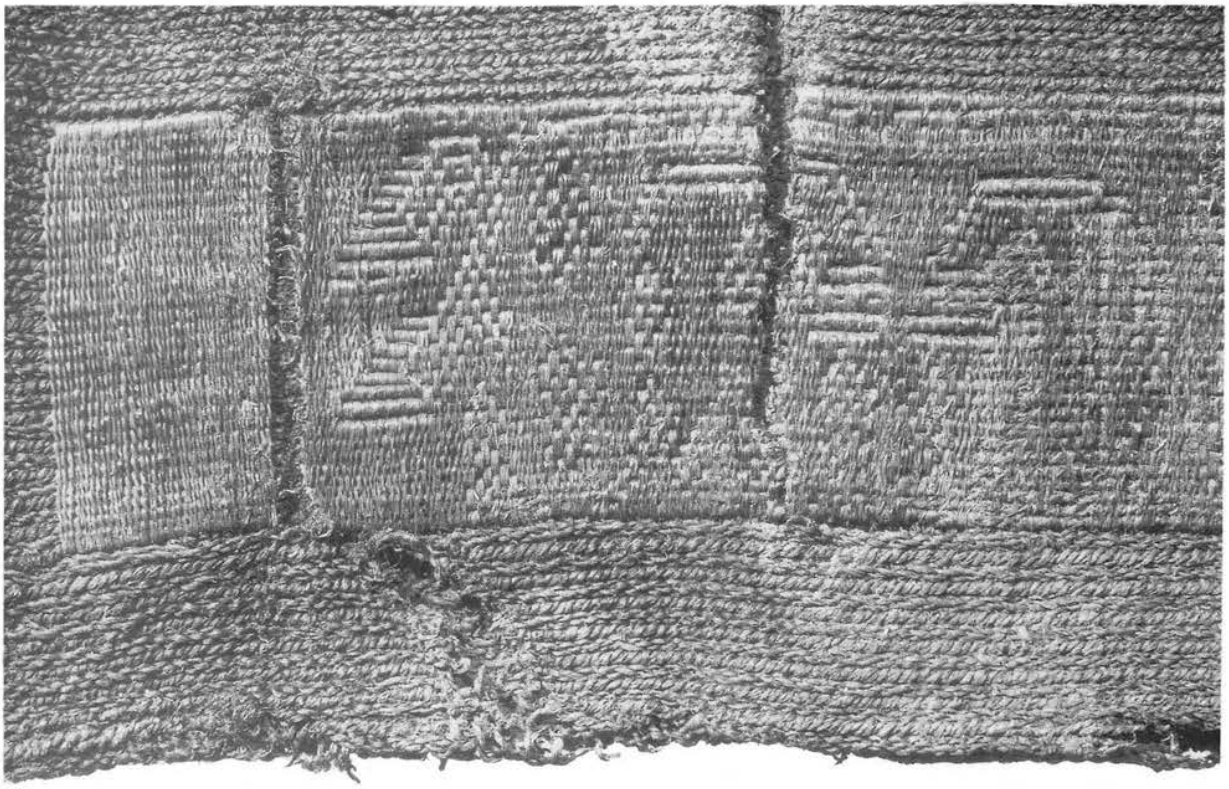


Plate XLVIII Tablet-woven band with horsehair pattern from Högom

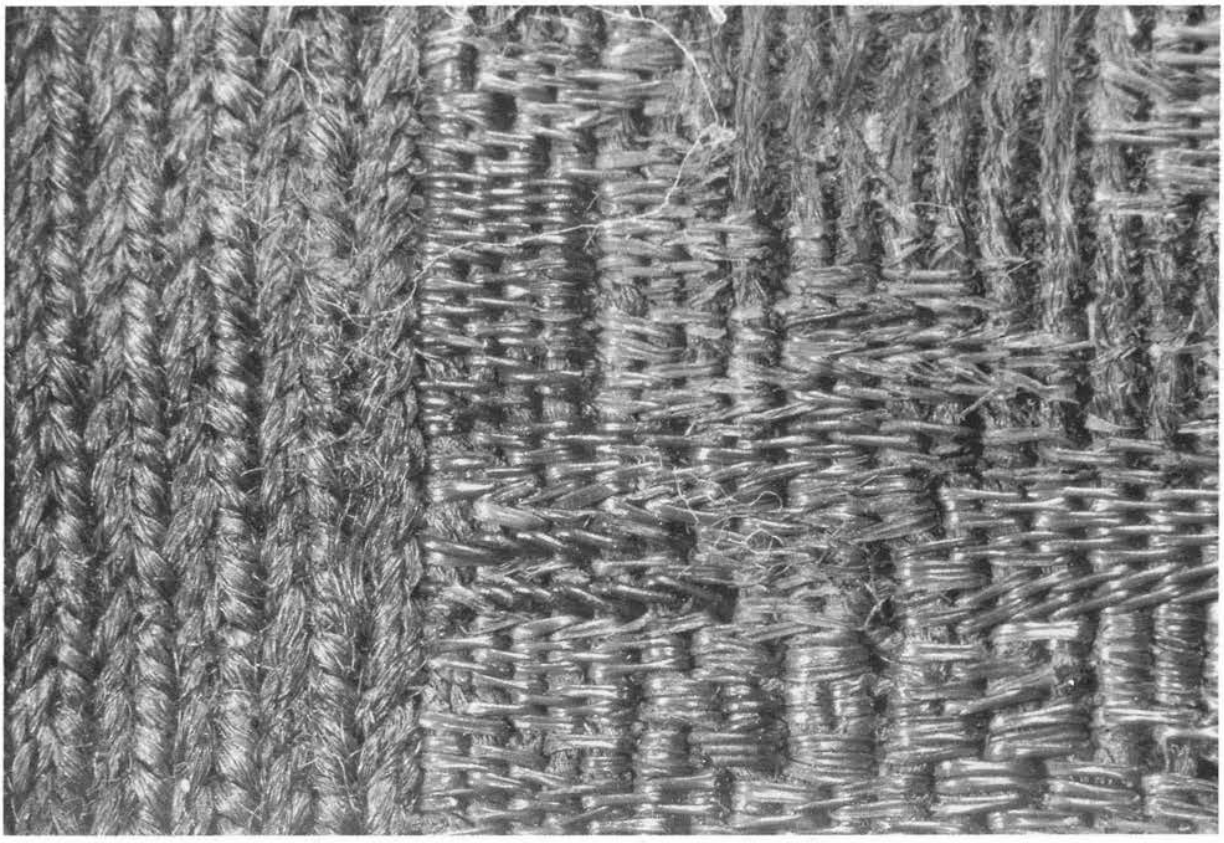


Plate XLIX Enlarged detail of Plate XLVIII, showing pattern technique. From Nockert 1991 (fig. 103)

Tannin dyes

Two samples of a textile on brooch *B* in grave 5, on extraction showed strong absorption at short wavelengths. This suggested the presence of a yellow or brown organic substance, although not necessarily a dye. The extracts were further examined by thin-layer chromatography, using systems designed for yellow and brown colorants (Walton and Taylor 1991). The chromatograms showed no indication of yellow dye (from comparison with the behaviour of known dyestuffs) but both samples showed two spots comparable with the tannins of, for example, oak galls. Tannins occur in many natural substances, such as autumn leaves, tree-barks and nuts. We cannot therefore be sure whether the textile from grave 5 was dyed with tannins or heavily stained by some contaminant in the grave. Since, however, there was none or very little of the same substance in other textiles from this grave and since it appeared in both samples of the same textile, a tannin-bearing dye is possible. This would mean that the textile was originally brown, grey or black.

Undyed cloth

The remaining fifty-four samples from textiles showed no evidence for having been dyed. In previous work on Early Anglo-Saxon cemetery textiles this typically small number of positive results has been attributed to the poor preservation of the samples. More recently, work on the remains from Hochdorf in Germany, has shown that dye may still survive in considerable strength on mineralised textiles (Walton Rogers 1999). Furthermore, some of the Snape samples were in excellent condition. The decay of dyes during burial is poorly understood, but if dye had ever been present in a textile such as the well-preserved twill from brooch *C* in grave 28, surely some residue would have survived in detectable form?

It has already been shown that, as far as the Early Anglo-Saxon period is concerned, dyes, especially reds and purples, tend to be more frequently detected in textiles from high-status burials and in small items such as braids and embroideries. Only woad blues and relatively dull tannin colours have been found in ordinary full-size cloths, at Snape as elsewhere; natural fleece colours also provided some variation from white (see above p. 208). The evidence, therefore, is beginning to suggest that bright colours were used only in a limited way in the 5th to 7th centuries and that most clothing was blue, brown, grey or natural white — perhaps with more lively colours in the braids at cuff and neckline.

Alkanet-like purple colorant

In fourteen of the textile samples taken from six graves (16, 36, 37, 38, 43, 47), another purple organic material was detected. Its absorption pattern was very close to that of the dyestuff alkanet, although there is a strong yellow component in the Snape colorant which is only faintly recorded in acidic extracts from alkanet.

The dye alkanet derives from the roots of the plant Dyers' Alkanet, *Alkanna tinctoria* Tausch (formerly *Anchusa tinctoria* L.) which was reportedly used by early civilisations of the Mediterranean (Brunello 1973, 329). However, it has rarely been detected on early textiles and there are no records of it in any other samples from archaeological sites in Britain. The number of examples in the Snape cemetery — sometimes including all of the textiles in one grave — was suspicious and samples of a soil block from grave 37 were therefore tested. The soil samples proved to contain the same alkanet-like material. This suggests that the colorant is a contaminant permeating the burial, rather than a deliberately applied dyestuff. The following theories for the presence of the purple may be considered:

a) The colorant is from some modern agricultural spray. Although possible, modern synthetic colorants tend to have simpler absorption spectra than those noted.
b) It has formed as a result of the decay process of the body. Yeasts and metabolic products can stain bones but not, in the author's experience, the surrounding soil.
c) It is the result of contamination from plants growing on the site. Originally open heathland, the site has most recently been farmed for oil-seed rape. Dyers' Alkanet, *A. tinctoria*, is a native of southern Europe (Cardon and du Chatenet 1990, 29 and 160–1) and it is unlikely to have been growing in the area at any stage, but other members of the Boraginaceae, the family to which alkanet belongs, contain the same colouring principle, alkannin (Thomson 1957, 111). It is possible that there is some native species which yields alkannin plus the yellow substance recorded in the Snape spectra. On the other hand, there is no recorded evidence that the colorants from dye plants can wash out and stain the surrounding environment while the plant is still growing. Plant roots that had invaded grave 37 were tested for dye content but these did not show any greater concentration of dyestuff than in the textiles or soil-sample.
d) The colorant derives from some material placed in the grave at burial. The presence of grasses, bracken or flower stems strewn over the body has been noted in several Early Medieval graves (see p. 240). It is therefore possible that an alkannin-containing plant has been placed on some of the bodies as part of the burial ritual. A root of dyers' alkanet *A.tinctoria* has been found in the shrine of 3rd-century St Maurua in Bohemia, for example (Samhylová 1993).

On the present evidence the third and fourth theories seem the most likely candidates, and the fourth the most tempting given the evidence for a wide range of organic inclusions in graves at Snape.

Fibre identifications of textile samples

by Harry Appleyard

The identification of animal fibres is determined by the following criteria: general appearance of the fibres, *i.e.* regularity of fibre diameter along the length of the fibre and the amount by which cuticular cells protrude from the fibre, scale pattern, cross-sectional shape, thickness of cuticle, presence and type of medulla and pigment distribution.

Some of the fibres were so badly damaged by bacterial action that much of the detail had been destroyed and then it could only be said that they were of animal origin. Some fibres were very friable, and useful cross-sections could not be cut.

V. The Lyre Remains from Grave 32

by Graeme Lawson

Introduction

Remains of lyres, an ancient class of stringed musical instrument of ultimately prehistoric origin, form an established category of grave-goods amongst pagan Anglo-Saxon and contemporary Germanic inhumation cemeteries. Whilst earlier, ancestral types included instruments with simple and in many cases naturally hollow resonating bodies (such as gourds and tortoise-shells) the Early Medieval lyre, we now know, was typically of dug-out construction, carved from a solid block of wood. Moreover, its superstructural framework, comprising two arms and a connecting cross-bar (to which the strings were attached), was by this time so firmly integrated into its design that arms and body were carved in a single continuous unit, from one piece of timber. Only the cross-bar remained structurally discrete, and in most cases steps were taken to disguise even this separateness, resulting in an elegant structure of smooth, uninterrupted outline. It is, however, the essentially tripartite form of this superstructure which distinguishes the lyre from the two other important groups of stringed instrument, the harp and the lute, both as yet unrepresented in the Early Anglo-Saxon archaeological record, and which gives the lyre much of its unique musical character.

Amongst Early Medieval examples the two well-known, richly ornamented instruments from the royal barrows at Sutton Hoo, Suffolk and Taplow, Bucks., support historical and iconographical evidence for the importance of lyre-playing as one of the various accomplishments expected of the aristocratic male in traditional Germanic societies. However, occasional discoveries of similar instruments in simpler inhumations, as at Saxton Road, Abingdon, Oxfordshire and at Bergh Apton, Norfolk, confirm that they were owned and played at other, less elevated levels too (Bruce-Mitford R.L.S. and M, 1970; Lawson 1978). In their fine, specialist manufacture and complex structure these apparently lower-status instruments are indistinguishable from their royal counterparts; only their decorative metalwork seems notably less sophisticated. The simpler, diagnostically less sensitive forms of these metal attachments and the ephemeral nature of the fragile wooden structures which they support combine to make their remains notoriously difficult to identify. Recent recovery of extremely fragmentary evidence from sites such as Morning Thorpe, Norfolk (Lawson 1987), suggests that such instruments may be less rare than their survival rates have seemed to indicate hitherto. Finds of stray components from later, largely urban contexts confirm the long-term vitality and ubiquity of the lyre-playing tradition throughout the North Sea and Western Baltic areas: such instruments clearly continued in circulation, in much the same form, until at least the 11th century, as at York (Hall 1984), Hedeby, Schleswig-Holstein (Lawson 1984) and Birka (Björkö), Sweden (Arbman 1939, 129; Reimers 1980).

The discovery and ongoing research

The recovery of the lyre remains from grave 32 was a piece of great good fortune, not only because of the rarity of such finds in general but because grave 32 was the last major feature of the site to be investigated, completed on the final day of the excavations. Fortunately, while the finds and associated organics were still *in situ*, it was already suspected that the fragmentary wooden remains beneath the shield and in the region of the body's left shoulder might represent a single complex structure of some unusual significance. It was therefore decided to remove these soil blocks intact for micro-excavation in the laboratory. Once there, suspicions that the remains might belong to a musical instrument comparable with the Sutton Hoo and Bergh Apton finds hardened when Jacqui Watson, while conducting timber identifications, recognised similarities to the shapes of parts of the instrument from Taplow Barrow, Buckinghamshire, now in the British Museum. In October 1993 the present writer was able formally to confirm its musical identity, as a lyre, on the basis of the remains of components *Bi–iii*, the form of which is entirely consistent with the upper part of one arm of a lyre's superstructure. It was also possible to suggest that two small copper alloy figure-of-eight loops with associated iron and organic remains (*Bvi* and *vii*) might represent parts of one of that instrument's most important performance-related features, its wrist-strap.

The recovery, identification and ongoing conservation and analysis programmes may provide a useful case study for future excavation and post-excavation treatment, both of potentially music-related remains and of fragile composite wooden structures in general. Instruments of this type must have been familiar objects in Anglo-Saxon times, but it is extremely rarely that we are able to identify their remains in the ground today: indeed musicians' graves may well have been present amongst many of the pagan Anglo-Saxon cemetery sites so far excavated, but the odds are inevitably stacked against the survival of a lyre's fragile, mainly organic, diagnostic elements. Perhaps as a result, only a handful have so far been recognised, the most recent properly excavated example being that of the musician's burial, grave 97, at Morning Thorpe, Norfolk. Even that find was so insubstantial that several years were to elapse before its musical character was first suspected, during routine finds-survey work by the present writer (Lawson 1987), and indeed this was to remain largely tentative until corroboration was finally provided by details of the present find. This is in fact an important distinguishing feature of the Snape discovery, which has affected the course of its study almost from the outset: it was in a very real sense a discovery waiting to be made. Consequently it was possible to institute quickly a specially tailored, fully integrated scheme of conservation, analysis and documentation. This work is ongoing and is to be the subject of further publications as results emerge.

The instrument

All the pieces and traces associated with, or thought to be associated with, the lyre were located within an area of the grave both well-defined and broadly consistent with the placements observed in all but one of the other simple musical inhumations of the Early Medieval period: set against and slightly to one side (in this case the left) of the upper torso and cradled in the crook of the left arm, almost as though in preparation for performance (Lawson 1987, fig. 462). Within this area there were four concentrations of lyre-related material (Fig. 140), all more or less sheltered beneath the shield: one over the left shoulder (*Biv–v*), a second (the most substantial) over the right

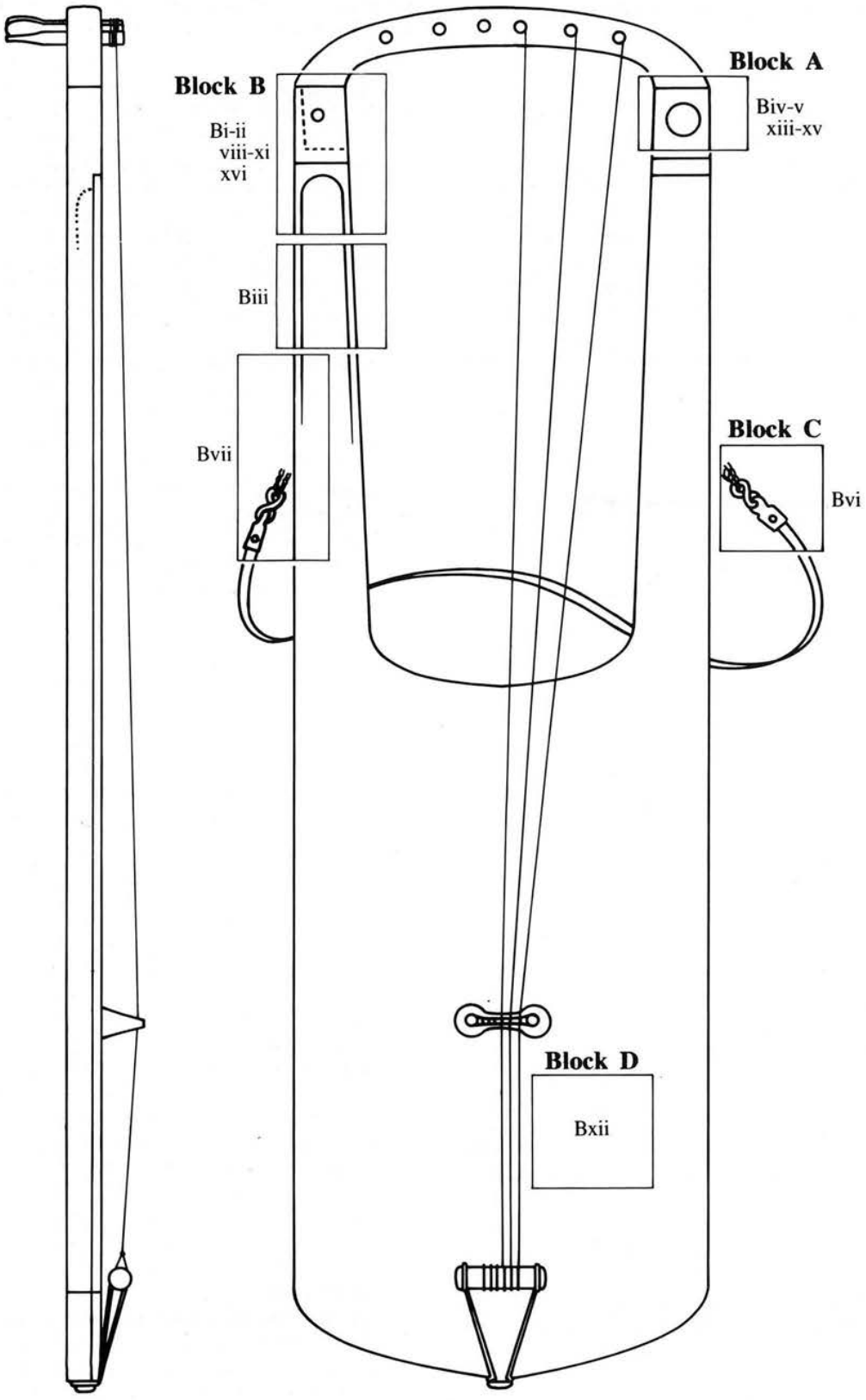


Figure 140 The constituent remains of the lyre (framed) showing their probable original juxtaposition and context; the suggested form of the missing structure is derived from other Early Medieval instruments. Scale approx. 1:3

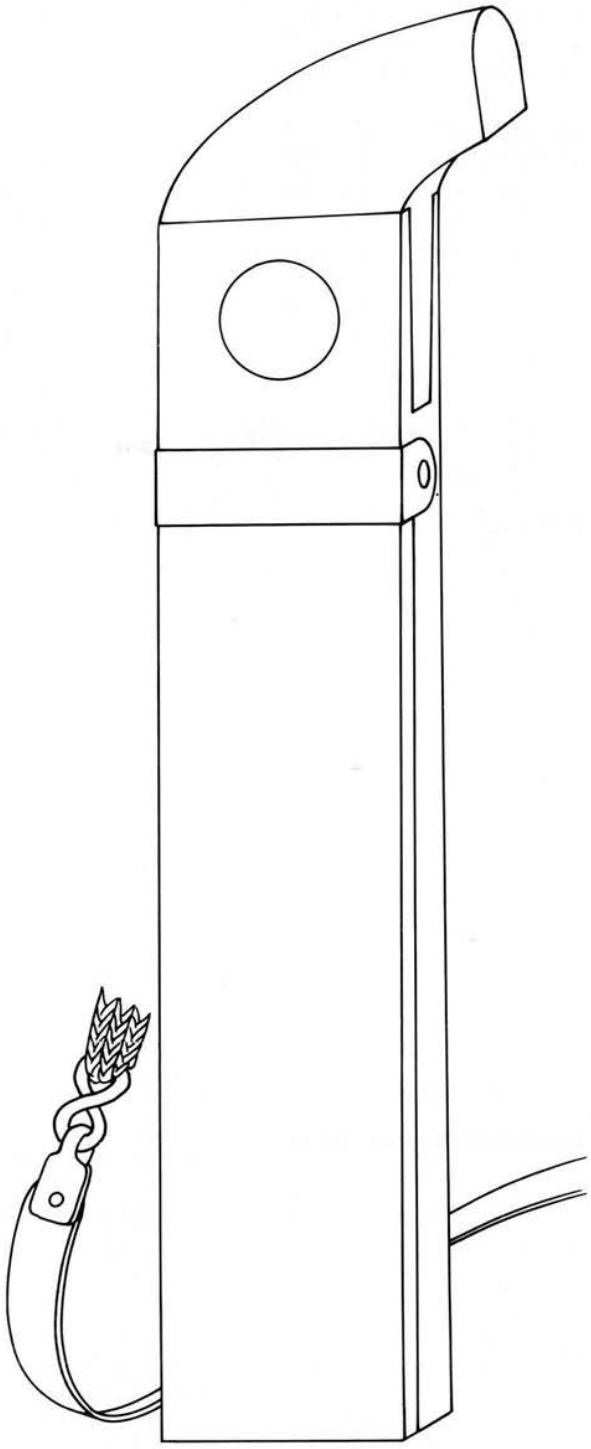


Figure 141 Oblique view of the lyre left arm top, showing its probable original external appearance. It features the mortice-and-tenon joint, disc-headed rivet, resonator cover of thin wooden sheet held in place at the upper end by an Ae strip, and the ?wrist strap (attachment point uncertain). Scale approx. 1:1

collar-bone (*Bi–iii*), and two single items (*Bvi* and *xii*) next to the left elbow and wrist respectively.

(a) The first complex, located over the left shoulder, beneath the shield, was lifted and excavated off-site. It yielded a small composite wooden structure representing the mortice-and-tenon joint at the upper end of the instrument's right[1] arm (*Biv*). Remains of a copper alloy disc-headed rivet (*Bv*) were still in place, penetrating both mortice and tenon and apparently positioned in order to secure the joint. Remains of a further piece of wood, comprising wooden sheet perhaps from a carrying case, lay flat against the head of the disc and its parent structure, sandwiching between them a layer of textile in which an impression of the disc can still be seen (*Bxiii*). Other associated organics included, next to the joint itself, a quantity of fibrous material (*Bxv*) and, nearby, one detached small wooden fragment bearing a copper alloy pin *in situ*, probably one of the fixtures around the rim of the wooden sound-board (*Bxiv*).

(b) This soil block, located over the right collar-bone, beneath the shield, was also lifted and excavated off-site. It was found to contain the best-preserved portion of the instrument, representing much of its left arm (*Bi–iii*) (Pls L, LI, LIII and LIV). At the upper end it includes a mortice-and-tenon joint which is a mirror image of that of *Biv*, again pierced by the copper alloy shaft of another disc-headed rivet. A thin sliver of wood is inserted alongside the shaft and may have acted as a tightening wedge to secure it firmly in place. Metal salts from the rivet are most likely the agent responsible for preserving the whole structure. The tenon shows the wood selected for the now otherwise missing arch of the instrument to have been maple (*Acer* sp.). At its lower extremity the arm, which is also of maple, has been neatly and extensively hollowed out from the front (Pl. LIII). Remains of a cover of thin wooden sheeting pinned across the cavity, representing the sound-board, probably of oak (*Quercus* sp.), survive *in situ*. Also preserved are its means of fixture: one of a number of copper alloy attachment pins (compare *Bxiv* above) and a number of fragments from a binding-strip which held down and concealed its upper end. The two pins and the rounded ends of this strip, which they pierced, are still located *in situ* (*Bi* and *iii*) (Pl. LIV). Closely comparable strips have been identified at Bergh Apton and Morning Thorpe where they perform exactly the same function (Lawson 1987, fig. 461), but this example is now easily the best-preserved. Other associated finds include, amongst miscellaneous organics, one small fragment of wood with an iron nail *in situ* (*Bi*) and two more substantial pieces, one representing more of the hollowed arm (*Biii*) and another which, with textile adhesions resembling *Bxii* above, may also be part of a carrying case (*Bxvi*). A small figure-of-eight loop of copper alloy with textile adhesions and an iron concretion appear to represent one of a pair of attachments for a thin leather strap, probably a wrist-strap (*Bvii*) (Pl. LII). Such straps have been identified in two later Anglo-Saxon manuscript illustrations and among the lyre fittings at Bergh Apton (Lawson 1978, 92–5) and Taplow (Bruce-Mitford R.L.S. and M. 1983, 713–5).

(c) A second, matching copper alloy figure-of-eight loop lay in the vicinity of the left elbow (*Bvi*): attached to it, once again, are textile adhesions and remains of a looped and riveted iron strap-terminal (compare *Bxiv* above). The strap residue preserved between the iron plates shows it to have been of leather. Identification as the other end of a wrist-strap may be further supported by its placement in the grave, some distance down the opposite arm of the instrument.

(d) One further small piece of wood, found next to and preserved by the corrosion of belt buckle *E*, may also belong to the instrument. Its location in the region of the left wrist is consistent with its identification as a fragment of the main part of the body or resonator of the instrument, which is otherwise lost (*Bxii*).

The instrument thus has several unusual and interesting features. First, the presence of the pair of figure-of-eight strap-loops lends strong support to the previously tentative identification of such straps at Bergh Apton and Taplow. The musical importance of such an accessory can hardly be overstated: by suspending the instrument from the wrist it offers the player's left hand complete freedom of access to the rear of the strings, enabling the development of sophisticated two-handed playing techniques. Without it the left hand would be reduced merely to a supporting role.

Second, the presence of the copper alloy binding strip, and its clearly defined relationship with the attachment of the thin wooden sound-board (Fig. 141), ties in closely with comparable features at Bergh Apton and Morning Thorpe. Omitted both at Sutton Hoo and in the lyres from Cologne and Oberflacht, its intended purpose is still unclear; in the absence of any obvious structural explanation, it is tempting to suggest a cosmetic role. Similar structural redundancy has been noted elsewhere in respect of the rivets and plates supporting the main mortice-and-tenon joints at Sutton Hoo, Taplow and Bergh Apton (Lawson 1980, 121) where they appear if anything to weaken rather than strengthen their structures. Indeed, this might equally apply to the disc-headed rivets surmounting the joints at Snape too.

Third, identification of the use of more than one (and at least two) wood species in a single instrument represents another important breakthrough in our evaluation of the sophistication in instrument manufacture at this time. Materials were clearly being chosen in order to suit the particular and contrasting requirements of each individual component: oak, easily split into thin sheets, for the sound-board; maple, favourite of cup and bowl manufacturers, for the dug-out body and curved arch. Such considerations, incidentally, confirm the need to keep under close review the significance of the subject of that problematical Old English riddle, *Exeter Book* No. 53, for which multiplicity of timbers has previously been used, curiously, to argue *against* the reading 'lyre' (Lawson 1980, 77; *c.f.* Williamson 1977, 301).

Finally, and perhaps most strikingly, the instrument is remarkable for the fineness of its construction. Even within the context of fine Anglo-Saxon instrument-building it has unusually refined features. The extension of the body cavity into the arms, for example, is in no other lyre so far advanced as it is in *Bii* and *iii*, where barely 10mm of solid wood separate it from the lowest point of the joint-mortice (Fig. 142). With its thin walls the result must have been an extremely lightweight structure, considerably lighter than at Sutton Hoo. Curiously, the other delicate lyre so far excavated, that of grave P100 at St Severinskirche, Cologne, also shares with the Snape instrument the unusual curvature at the upper extremity of its arm cavity (*c.f.* Lawson 1987, 168; fig. 461 i & ii). Whether this represents simply independent evolutionary convergence or whether it suggests a closer technological relationship, it is not yet possible to say.

Discussion of the man

Although the lyre is the most obviously unusual item in grave 32 it is by no means the only feature of importance to music archaeologists. If lyres are still poorly represented in the archaeological record, their cultural context, and in particular the nature of their ownership, is even less well understood; consequently such finds may yield crucial contextual evidence, not only through study of associated objects and deposits but also through consideration of the location of the burial, both within the cemetery and in the broader human landscape.

In common with many of the other, non-musical graves at Snape, grave 32 is notable for its exceptional preservation of textiles and other organics, including grave-lining materials, clothing and even insect remains deriving from post-depositional decay. These afford a detailed insight into funerary practices and the physical circumstances of burial unique among Early Medieval musicians' graves excavated since 1945. Beyond the general placement of grave-goods, adornments and clothing accessories, which were quite modest and undistinguished, little remained at Bergh Apton or Morning Thorpe to suggest just how those graves were prepared, furnished and covered. Textile remains were limited to small mineralised fragments and impressions, presumably of clothing, adhering to copper alloy and iron objects (Crowfoot 1987, 176). At Snape, in addition to a normal range of male Anglo-Saxon grave-goods, including a spear and shield, an organic liner probably once of textile and traces of a covering of vegetal matter were preserved (pp. 75–9). These represent the most comprehensive record yet found of any Anglo-Saxon musician's equipment. Only grave P100 at St Severinskirche, Cologne, provides a more complete assemblage. There, unusual conditions in a stone-lined cist, preserved not only the instrument but the player's clothing, right down to his woollen outer garments, leather gloves, leather footwear, linen underclothes and stockings. Also remaining, strewn around the body, were traces of vegetal matter identified as flower stalks (Fremersdorf 1943, 133–9). Now paralleled at Snape, these serve as a poignant reminder that such burials, whilst clearly of musicians, nevertheless represent the work, and the loss, of others as well.

Of actual grave-goods, other than items of personal equipment, a wooden bowl is the only piece represented, attested by the presence of a small copper alloy rim reinforcement found at the foot of the grave. Although this is paralleled at Morning Thorpe by a small pottery vessel, positioned to the right of the head, and at Cologne by a wooden flask set beside the right foot, such vessels are a common enough feature of pagan Germanic provision for the dead and do not constitute special, music-related furnishing.

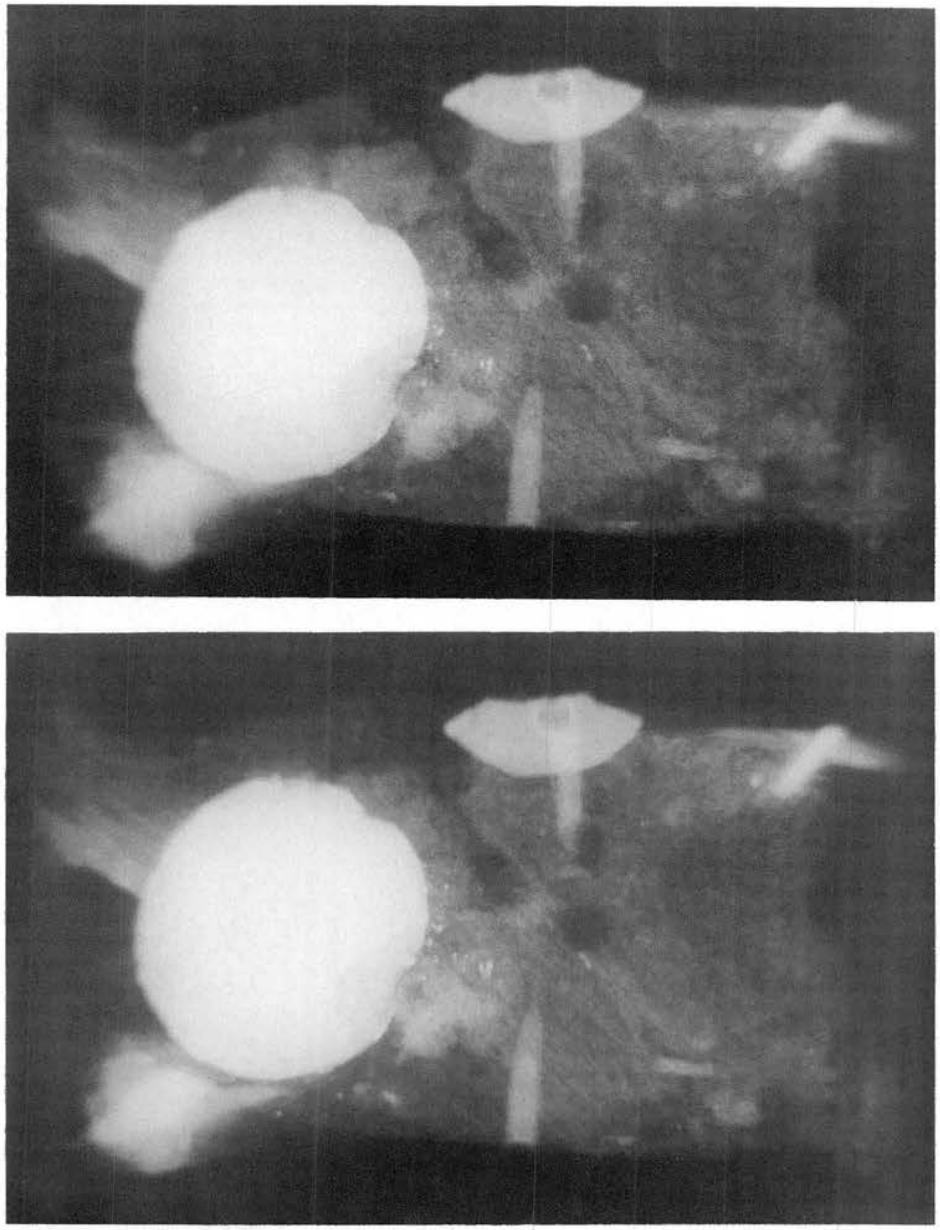


Plate L Stereo-radiograph of top left arm of lyre (*Bi–ii*); frontal view showing disc-headed rivet, Ae strip-end and pins, and other metal tacks and pins still *in situ*

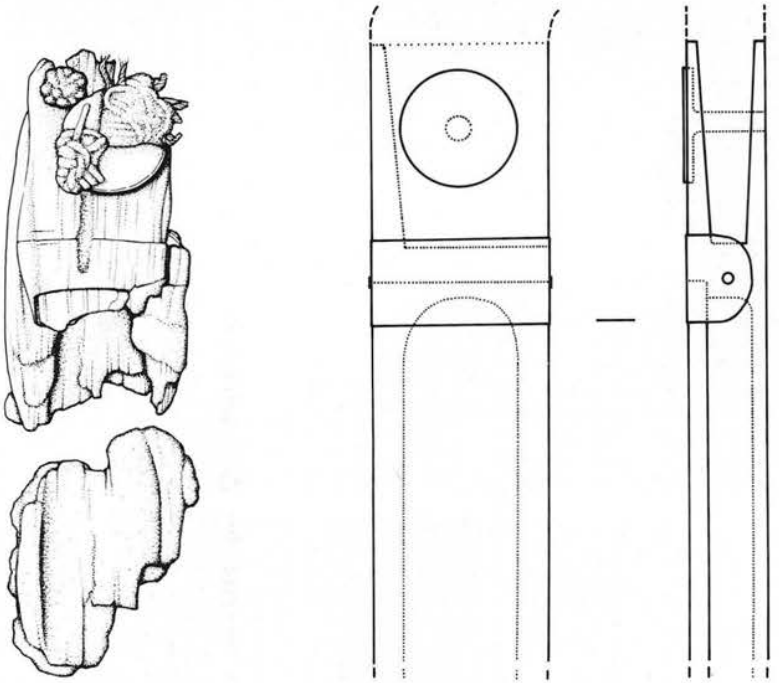
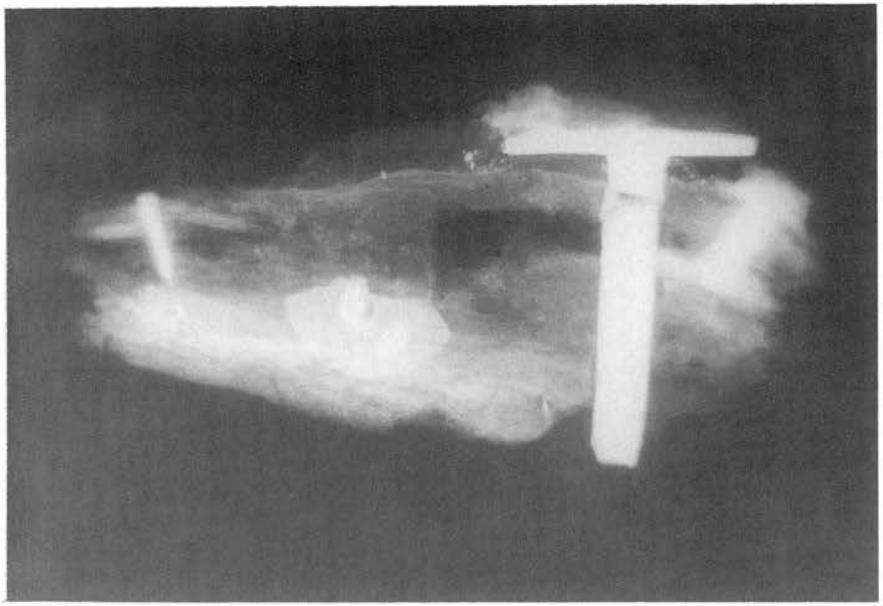


Figure 142 Montage of components of the lyre left arm top, interpreted without allowance for shrinkage (*c.f.* Lawson 1987, fig. 460). Scale approx. 1:1



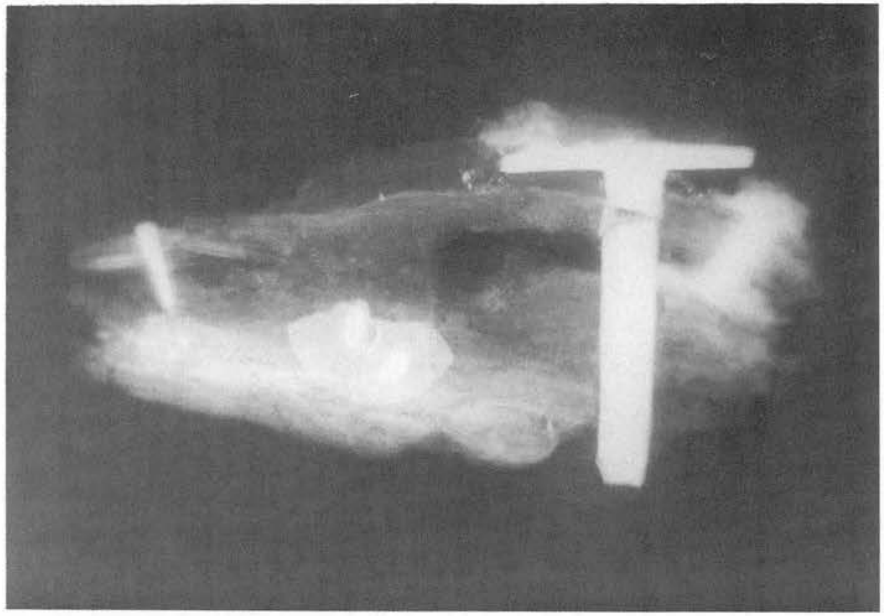
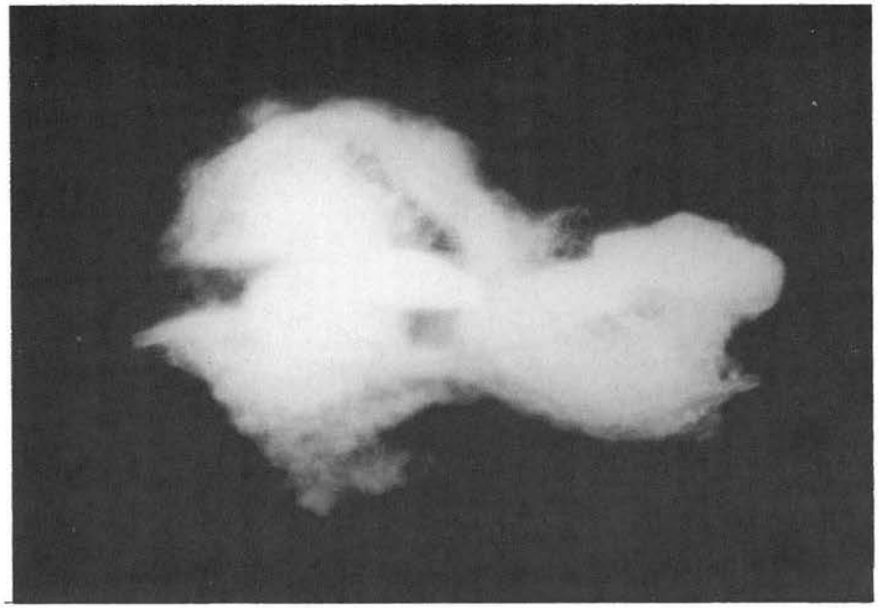


Plate LI Stereo-radiograph of top of left arm of lyre (*Bi–ii*); side view showing disc-headed rivet, Ae strip-end and pins and other metal pins and tacks still *in situ*



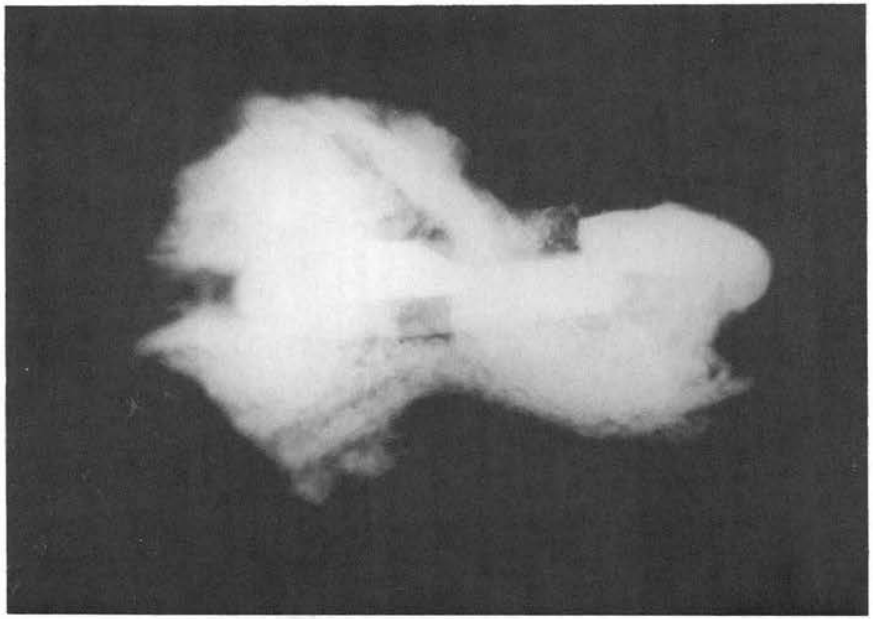


Plate LII Stereo-radiograph of lyre Ae and Fe concretion *Bvii* showing Ae figure-of-eight loop preserved within

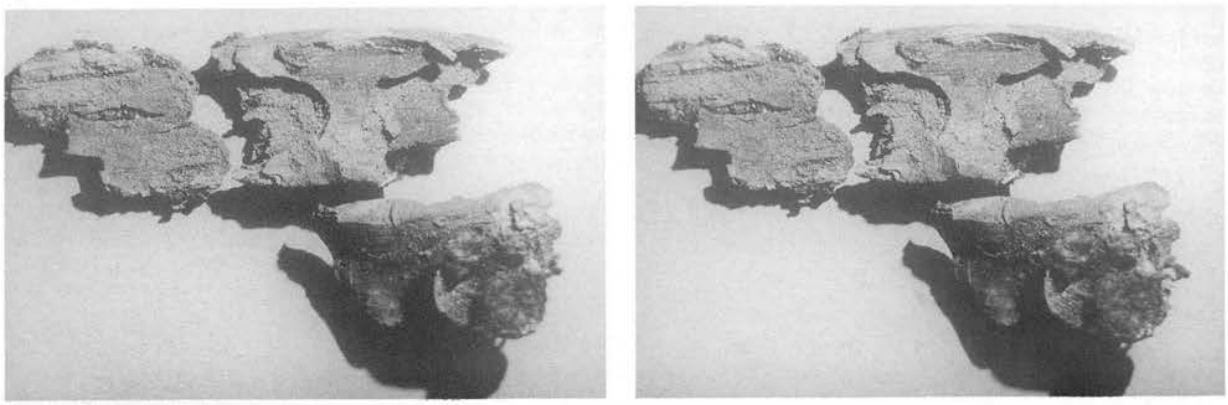


Plate LIII Stereograph of top of left arm of lyre (*Bi–ii*); frontal view with detached frontal portion (below) set aside to show (upper right) joint mortice and (upper centre-left) round top of arm cavity visible in longitudinal section in fracture surface

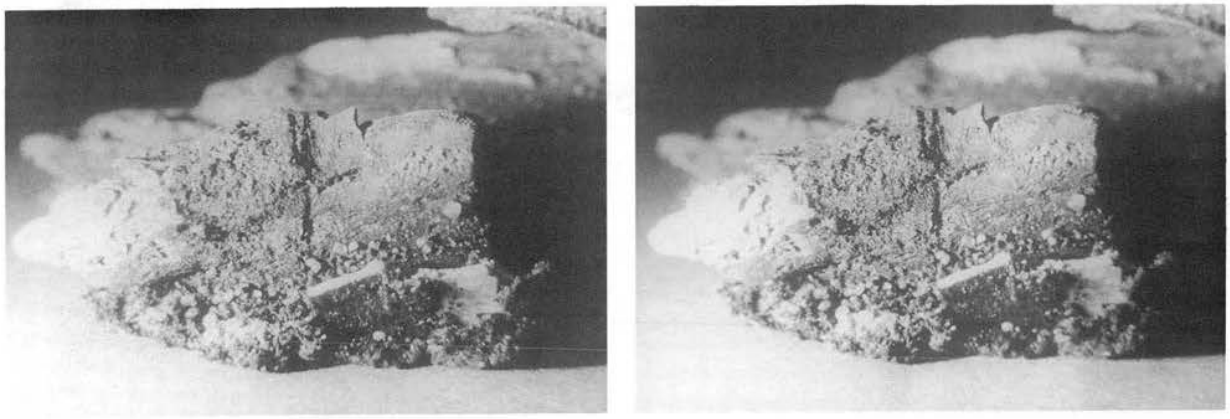


Plate LIV Stereograph of top of left arm of lyre (*Bi–ii*); side view showing Ae strip-end *in situ*. Front surface of instrument is uppermost, top is to right

The smaller items of personal equipment found in the grave seem equally unspecific: the knife lying at waist level and the strike-a-light and steel found nearby. However, larger items of equipment contribute significantly to establishing the identity and status of the person with whom they were buried. Most obviously, the presence of weaponry confirms that the body is male, as in all the lyre graves so far excavated; indeed the only female association yet noted, at Morning Thorpe, is residual. Moreover, the presence of such a fine musical instrument implies that the burial was not merely that of a musician but that of a specialist musician, someone for whom music was more than just one of a number of casual interests or activities. This conclusion has already been argued elsewhere in respect of the lyre graves of Bergh Apton and Morning Thorpe, and seems equally appropriate to Continental finds such as Cologne (Lawson 1978 and 1987; see also Fremersdorf 1943). There must have been some compelling reason for such an elaborate and costly item to be disposed of in this fashion: although now fragmentary, there is no evidence that it was in anything other than good working condition at the time of burial, nor is there anything amongst the accompanying grave-goods to suggest that either the individual or those responsible for his burial were especially wealthy. Moreover, the precise location of the instrument within the grave, cradled in the arms of the body, is particularly prominent, evidently symbolic of a significant, indeed intimate relationship with the dead. In both these respects it follows closely the pattern observed at Bergh Apton, Morning Thorpe and their Continental parallels, and contrasts with the instruments in the royal barrows at Sutton Hoo and Taplow, which were evidently of less central importance, included and positioned peripherally amongst the other grave-goods and the furnishings of the chambers.

Whether such specialist musicians represent professional entertainers or musically trained amateurs is difficult to assess. Such a distinction may itself be of doubtful validity in 6th- and 7th-century England. Nevertheless from these three East Anglian individuals a pattern does now seem to be emerging: that of a modestly furnished inhumation, with simple but functional weaponry, in which the lyre is prominently situated, resting in the arms of the dead man. Seen in this context the only other Anglo-Saxon inhumation for which records exist, adolescent male grave B42 at Saxton Road, Abingdon, Oxfordshire, takes on an increasingly irregular appearance: there, prominence was given to the sword while the instrument was laid instead at his feet, more after the manner of the royal graves (Leeds and Harden 1936). For the time being unique, its exact significance and relation to the East Anglian finds remain unclear. Nevertheless, it seems increasingly likely that somewhere amongst these graves we may now have the first archaeological evidence for the Anglo-Saxon *scop* or poet-musician, that pivotal yet, today, still shadowy figure of our earliest English literature.

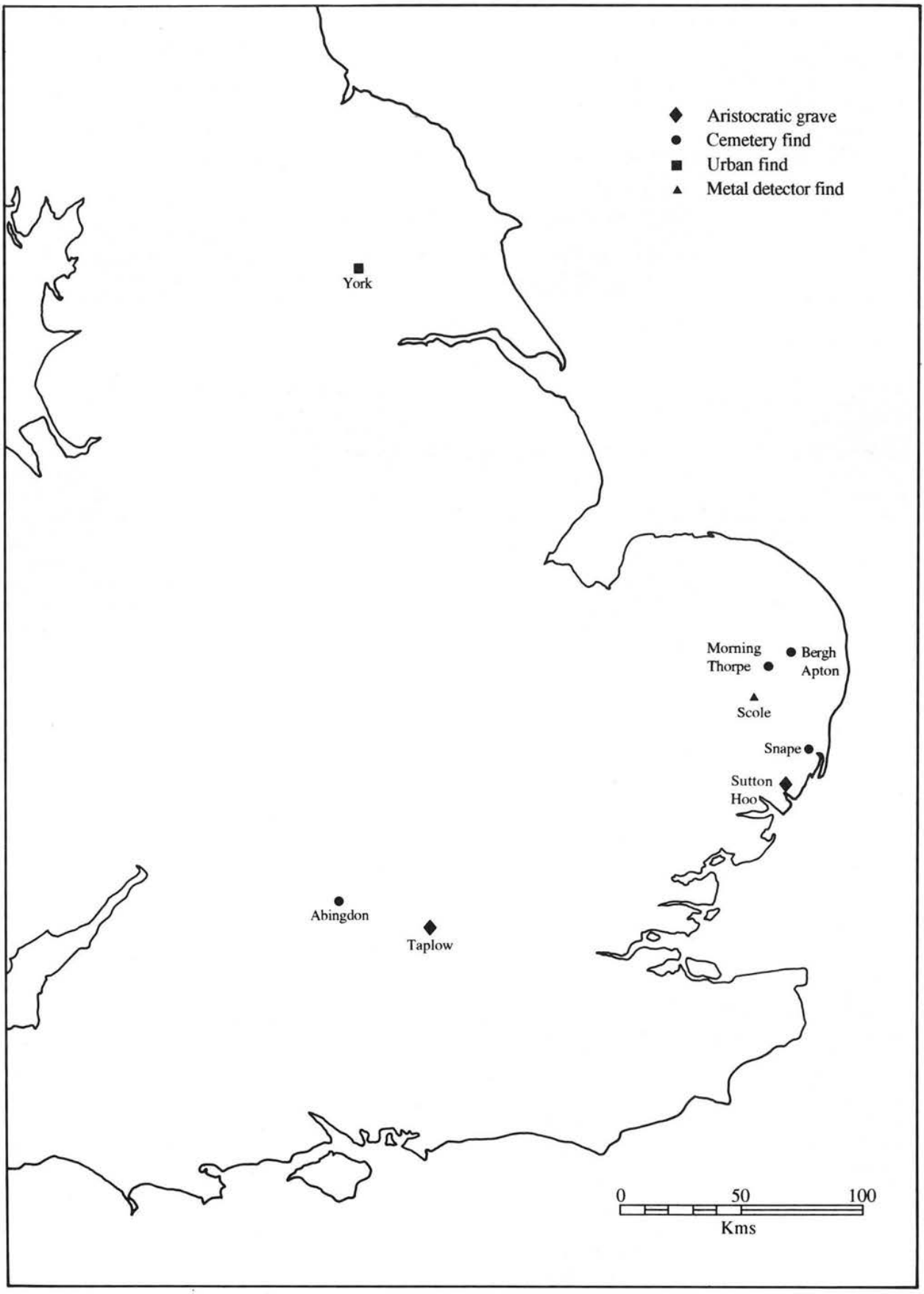


Figure 143 Distribution of Early Medieval lyres. The Snape find set within the current distribution of finds of established identity (unconfirmed examples not included)

What do we know about the *scop* of pagan Anglo-Saxon England? Surviving poetic records, both Old English and Latin, yield tantalisingly few clues, yet enough remains to confirm his role as poet-musician with stringed instrument, typically (though not necessarily exclusively) in the context of court and mead-hall. In *Beowulf* we hear of Hrothgar's *scop* performing the story of the Creation, no doubt sitting by the king's feet after the manner of the musician in the poem *The Fates of Men*. In the lament *Deor* the eponymous poet describes his sadness and loss at having yielded his place as *scop* to the court of the Heodeningas, a loss that was evidently financial as well as artistic in its impact. The poem *Widsith*, originally composed by such an individual some time during the closing years of the pagan period, is often taken to be a fuller autobiographical statement of the *scop's* way of life. It includes amongst his roles that of praise-singer and, although exaggerated and complicated by later interpolation, a clear reference to travel as a significant element in his life.

What do grave 32 and the East Anglian group as a whole add to this historical picture? First, he is equipped as a fighting man with shield and spear, a warrior-musician in fact, an aspect which curiously figures nowhere in the Old English literature, although it is plainly repeated at Morning Thorpe. Indeed, it is interesting to note that if this really is the grave of a *scop*, apart from the instrument itself, there is nothing either in the form or the contents of the grave to distinguish it from other non-musical graves nearby. This is repeated in all such lyre-graves so far identified. There are, as far as can be seen, neither ornaments nor tools, nor any other gadgets, exclusive to a musician's craft or way of life. There is no sign of anything which might represent a plectrum or a tuning-key, and no specialist instrument-making tools. Moreover, except remotely at Sutton Hoo[2], no lyre has yet been found in association with any other musical instrument, despite the fact that instruments of several other, contrasting types are known, or are believed, to have existed at this time: from simple folk whistles to elaborate, composite pipes of reed, wood, bone and horn. Even the remarkable use of horsehair in reinforcing, perhaps darning, the edges of the musician's garments, which might otherwise have suggested a possible link with the use of hair in stringing (as preserved in Later Medieval traditions), is not unique to grave 32.

Perhaps most intriguing of all, however, is the addition which this new musician makes to what was already becoming a noticeable cluster of such finds within the east of the East Anglian region. Despite continuing music-archaeological survey work throughout England, no fewer than five of the seven graves now firmly identified from the pagan Anglo-Saxon period lie in north-east Suffolk and south-east Norfolk, within a circle of less than eighteen miles radius (Fig. 143). Cemetery excavations further afield merely reinforce this singularity, which is becoming increasingly difficult to dismiss as a mere artefact of taphonomy or technique. Some degree of local specialization may well be indicated, perhaps deriving from the presence nearby of an important cultural centre. The emerging emporium of Ipswich, the royal presences in both the Sutton Hoo and Snape cemeteries, and the royal estates at Rendlesham (Bede, *HE* iii. 22) provide no shortage of possible associations.

The existence of such foci of artistic activity and patronage should in a general sense come as no surprise, but hard evidence associating them with particular sites or regions must be of considerable interest, not only to the prehistory of music and musicians but also to the study of the cultural background to *Beowulf* and our oldest English poetic relics. Even without more concrete proofs, graves like Snape 32 already provide us individually with direct archaeological links, and if not with the very creators of *Beowulf* itself, then at least with those directly responsible for the preservation and communication of the body of ancient traditions within which it was composed. It is to be hoped that future finds will continue to provide much-needed clarification.

Endnotes

1. In the convention used here, the right arm of the instrument is the arm set towards the right, seen from the audience's (and illustrator's) viewpoint: this of course lies to the player's left during performance.
2. A small copper alloy bell 28mm in height was found during post-excavation examination of an iron concretion from Area IV.2 at the west end of the Sutton Hoo ship-burial chamber, probably between the gilt shield-rim and the sceptre (Bruce-Mitford 1983, 890–899). Although not in intimate association with the lyre, this is nevertheless the only such juxtaposition to have yet emerged.

VI. Other Organic Remains

The Charcoal

by Rowena Gale

Charcoal was associated with inhumations, cremations, ring-ditches and burnt stone features as well as a few other features and surface scatters. Nearly all charcoal was sampled and analysed for species identification, including pieces discovered amongst the material from the 1862–3 and 1972 excavations. All identifications are listed individually in the relevant catalogue entries and together in Table 3.

Methods

Samples containing large amounts of charcoal, for example those from the burnt stone features, were sub-sampled to produce realistic quantities for identification. These samples mainly contained relatively large, firm-textured fragments (>10mm in the longest axis). Samples from contexts including logboat grave 4, some coffin stains and from the cremation pyre area, contained few fragments of charcoal and these tended to be small (measuring <2mm in the longest axis) and friable. Because of the paucity of material from these contexts, identification was attempted and usually produced some results. Some fragments, notably from graves 8, 9 and the pyre area, were partially vitrified: when wood or charcoal is burnt at temperatures above C800°, modifications (including plasticity of the cell walls) may occur in the cellular structure (Prior pers. comm.).

Charcoal fragments from each sample were sorted into groups based on the anatomical features present on the transverse surface when viewed using a ×20 hand lens. Representative samples from all groups were selected for detailed examination at higher magnification.

Grave	*OP*	*Object*	*Description*
Inhumation burials			
2	0939	Fill	Several fragments *Quercus* sp., oak, stem,
3	0568	Coffin stain	11 fragments *Quercus* sp., oak, heartwood
	0732	Shield grip	*Quercus* sp., oak, heartwood
4	0931	Boat grave	Few narrow fragments (<2mm), too small for positive identification, transverse surfaces *cf.* Rosaceae/Ericaceae, ?root
	0945	Boat bow stain	Mass of very small fragments, *Quercus* sp., oak, ?sapwood (no tyloses visible) but not narrow stem
	1003	Above boat floor	4 fragments *Quercus* sp., oak, sapwood
	1004	Above boat floor	5 fragments *Quercus* sp., oak
	0121	-	2 fragments *Quercus* sp., oak, stem
5	0465	-	3 fragments *Quercus* sp., oak, heartwood
		-	9 fragments *Quercus* sp., oak, ?stem
6	0780	-	2 fragments *Quercus* sp., oak, very small fragments
8	0809	-	Large quantity *Quercus* sp., oak, probably sapwood but not from narrow stem
	1002	-	Large quantity *Quercus* sp., oak, sapwood and heartwood
	0823	-	20 fragments *Quercus* sp., oak, stem burnt at high temperature (partially vitrified)
	0625	Plank/branch	46 fragments *Quercus* sp., oak, stem
	0135	-	1 fragment *Quercus* sp., oak, ?sapwood, slow grown
9	0483	Plank/branch	Large quantity *Quercus* sp., oak, stem and sapwood
	0521	Plank/branch	Large quantity *Quercus* sp., oak, stem
	0603	Plank	*Quercus* sp., oak, sapwood and heartwood
	0604	Plank	*Quercus* sp., oak, sapwood, probably from wide stem/narrow pole, fast grown
	0626	Plank/branch	Large quantity *Quercus* sp., oak, stem, almost vitrified
	0697	-	*Quercus* sp., oak, heartwood
	0736	Plank/branch	Large quantity *Quercus* sp., oak, stem
	0771	-	Large quantity *Quercus* sp., oak, stem
16	0953	-	7 fragments *Quercus* sp., oak, stem
17	0142	Plank	*Quercus* sp., oak, heartwood
	0190	Plank	Large quantity fragments *Quercus* sp., oak sapwood from wide stem or branch
	0197	-	45 fragments *Quercus* sp., oak, stem
18	0615	Grave fill	32 fragments *Quercus* sp., oak, stem
20	0450	Ring-ditch	1 fragment *Salix* sp., willow/*Populus* sp., poplar
	0775	Ring-ditch	Large quantity *Quercus* sp., oak, heartwood
21	0934	-	13 fragments *Quercus* sp., oak, stem
		-	9 fragments *Salix* sp., willow/*Populus* sp., poplar
		-	4 fragments *Corylus* sp., hazel
	0935	-	1 fragment *Corylus* sp., hazel
	0950	-	2 fragments *Corylus* sp., hazel
		-	1 fragment *Salix* sp., willow/*Populus* sp., poplar
	0534	-	4 fragments *Corylus* sp., hazel
		-	2 fragments *Quercus* sp., oak
27	1447	-	14 fragments *Quercus* sp., oak, sapwood and ?heartwood
		-	3 fragments *Quercus* sp., oak, probably root
32	2284	-	1 fragment, poor condition, ?*Ulex* sp., gorse
33	2259	Upper level of pit	1fragment *Ulex* sp., gorse, stem
	2269	Upper level of pit	1 fragment *Ulex* sp., gorse, stem
35	2181	Sample 1	26 fragments *Quercus* sp., oak, stem
		-	11 fragments *Quercus* sp., oak, heartwood
		Sample 2	15 fragments *Quercus* sp., oak, stem, fast grown
		-	6 fragments *Quercus* sp., oak, heartwood
		Sample 3	7 fragments *Quercus* sp., oak, stem
		-	5 fragments *Quercus* sp., oak, heartwood slow grown
37	2283	-	1 fragment *Corylus* sp., hazel, stem
39	1729	-	12 fragments *Quercus* sp., oak, stem and heartwood
		-	9 fragments *Ulex* sp., gorse
43	2021	-	1 fragment, friable, ? *Quercus* sp., oak
	2022	-	8 fragments *Quercus* sp., oak, stem
	1893	-	5 fragments *Quercus* sp., oak, sapwood (not narrow stem) and heartwood
	1895	-	1 fragment *Quercus* sp., oak, stem
	1896	-	13 fragments *Quercus* sp., oak, stem
	2020	-	3 fragments *Quercus* sp., oak, stem
45	1993	Coffin stain	3 fragments *Prunus* sp., probably *P.spinosa*, blackthorn
46	2018	Quadrant 1841	Large mass of roundwood – *Ulex* sp., gorse, stem
	2019	-	Large quantity roundwood – 55 fragments *Ulex* sp., gorse, stem
	-	-	3 fragments *Prunus* spp., which includes *P.avium*, wild cherry, *P.padus*, bird cherry, *P.spinosa*, blackthorn
47	1881	Logboat grave	3 fragments *Prunus* spp., which includes *P.avium*, wild cherry, *P.padus*, bird cherry, *P.spinosa*, blackthorn

Grave	*OP*	*Object*	*Description*
Cremation burials			
85	0255	-	Mass of fragments *Quercus* sp., oak, stem and heartwood, some slow grown
Cremation pyre			
	0422	-	6 fragments *Corylus* sp., hazel
	0443	-	5 fragments *Pinus* sp., pine, *sylvestris* group, which includes Scots pine
	0458	-	1 fragment *Quercus* sp., oak, ?stem
		-	1 fragment *Corylus* sp., hazel
	0479	-	6 fragments *Pinus* sp., pine, *sylvestris* group, which includes Scots pine
		-	1 fragment *Corylus* sp., hazel
Ring-ditches			
2062	2240	-	3 small fragments, very friable, *Prunus* spp., which includes *P.avium*, wild cherry, *P.padus*, bird cherry, *P.spinosa*, blackthorn
Burnt flint features			
1771	1781	-	Large mass of roundwood:
		-	18 fragments *Ulex* sp., gorse, stem
		-	8 fragments Rosaceae, subfamily Pomoideae which includes *Crateagus* sp., hawthorn, *Malus* sp., apple, *Pyrus* sp., pear, *Sorbus* spp., rowan, whitebeam and wild service tree
		-	6 fragments *Quercus* sp., oak
1775	1791	-	Large mass of roundwood:
		-	35 fragments *Ulex* sp., gorse, stem
		-	10 fragments *Prunus* spp.
		-	8 fragments *Quercus* sp., oak, stem
		-	1 fragment Rosaceae, subfamily Pomoideae
1779	1795	-	Large mass of roundwood:
		-	15 fragments *Quercus* sp., oak, stem
		-	11 fragments *Ulex*, sp., gorse, stem
1794	1828	-	5 fragments *Ulex* sp., gorse, stem
	1859	-	42 fragments *Ulex* sp., gorse, stem
		-	Large quantity of roundwood: 56 fragments *Ulex* sp., gorse, stem
1815	1817	-	3 fragments *Ulex* sp., gorse, stem
		-	2 fragments *Quercus* sp., oak, stem
		-	1 fragment *Prunus* spp.
1849	1861	-	Large mass of roundwood:
		-	35 fragments *Ulex* sp., gorse, stem
		-	14 fragments *Quercus* sp., oak, stem
2251	2317	-	Large mass of roundwood:
		-	68 fragments *Quercus* sp., oak, stem, fast grown
		-	40 fragments *Ulex* sp., gorse, stem
		-	1 fragment *Prunus* spp.
	2260	-	12 fragments *Quercus* sp., oak, stem
		-	8 fragments *Ulex* sp., gorse
		-	5 fragments *Prunus* spp.
	2230	-	Large mass of roundwood:
		-	32 fragments *Ulex* sp., gorse, stem
		-	6 fragments *Quercus* sp., oak, stem
2251	2318	-	Large mass of roundwood:
		-	15 fragments *Quercus* sp., oak, stem, some with 14 annual rings
		-	8 fragments *Ulex* sp., gorse, stem
		-	1 fragment *Rosa* sp., rose/*Rubus* sp., bramble
Other features			
1900	1901	Post-hole	Large mass of roundwood: 54 fragments *Quercus* sp., oak, stem
2263	2333	-	6 fragments *Quercus* sp., oak, stem
2306	2305	-	6 fragments *Quercus* sp., oak, sapwood (not narrow stem) and heartwood
1392		Urn in area 0907	3 fragments *Quercus* sp., oak, stem, partially vitrified
Miscellaneous			
	0168	-	2 fragments *Quercus* sp., oak, stem
	0136	-	1 fragment *Quercus* sp., oak, stem, fast grown
	0495	-	1 fragment *Quercus* sp., oak
		-	1 fragment *Ulex* sp., gorse, plus some cokey looking material
1782	1785	Charcoal scatter	6 fragments *Ulex* sp., gorse, stem

Table 3 Charcoal identifications

Each fragment was fractured to expose clean flat surfaces in the transverse, tangential longitudinal and radial longitudinal planes and mounted in washed sand. These were examined at magnifications up to ×400 and anatomical features were matched to authenticated reference material.

The origin of the fragments (*i.e.* roundwood, sapwood and heartwood) was noted. Samples arising from stems or branches measuring up to 25mm in diameter were classed as roundwood, whereas samples arising from wider stems or branches but not apparently from heartwood (*i.e.* with some curvature of the annual growth rings; tyloses absent) was noted as sapwood. Samples with little or no curvature of the annual growth rings and with tyloses present were classed as heartwood.

The genera identified, or tentatively identified, are classified according to *Flora Europaea* (Tutin *et al.* 1964–80).

Results

(Table 3)

The majority of the graves in which charcoal was found included oak (*Quercus*) and in many cases this was the only woody species identified. Few charred wooden grave-goods, morphologically recognisable as such, accompanied the bodies. A few graves included oak heartwood, for instance the burial container in grave 3 which strengthens its interpretation as a logboat fragment. In the majority of graves though, there was a mixture of roundwood, sapwood and heartwood or only roundwood, which would appear to support the observations made elsewhere of planks or branches being incorporated into the fill of the grave. However, in some instances, the origin of the charcoal was less evident and the inclusion of roundwood in so many graves may indicate perhaps the use of some structure (such as a hurdle), which incorporated stems and poles. The possible implications of these various wood remains is discussed further in the section on burial rite (below pp. 243–4).

Use of wood resources

The charcoal derived from several distinct groups of features and indicated well defined preferences in use. For example, oak was strongly associated with both inhumation and cremation burials. Oak is strong, tough and durable, and suited to many forms of construction and carpentry, particularly for outdoor use. It may therefore have been deliberately selected for funerary artefacts such as coffins or hurdles for carrying cadavers (as in grave 21), especially as oak also had many mystical and religious connotations (Cooper 1978).

The presence of oak in the cremation graves again appears to show this deliberate selection. The complete absence of other wood fuels, such as gorse (*Ulex*), seen so abundantly in the burnt stone features, suggests the preferential selection of oak for funerary use; it also argues against the burnt stone features having been used as cremation pyres.

The presence of pine (*Pinus*) charcoal in the cremation pyre area was unique on the site. The status of *Pinus* in southern England by the Anglo-Saxon period is uncertain. It is known to have been common in the Mesolithic (Rackham 1990) but pine communities declined significantly during the following millennia. Its gradual retreat from southern England to more northerly latitudes allowed (perhaps isolated) stands to survive in some areas as, for example, at the Wytch Farm Oilfield, Dorset (Cox and Hearne 1991), where pollen and charcoal were identified from Mid Iron Age deposits (3rd and 2nd century BC).

It is therefore conceivable that in some regions small pockets of pine were still present in the early centuries of the next millennium. By the 12th century locally grown pine timber was apparently unavailable in East Anglia and consignments were imported from the Baltic (Rackham 1986). The pine fragments from Snape were small and gave no clue to their likely origin, whether locally grown or imported as an artefact.

Woodland management

A great quantity of roundwood was present in many of the contexts but most notably in the burnt stone features. Potential evidence of morphological features characteristic of coppice rods had been lost through fragmentation of the charcoal. The dimensions of wood cells are greatly reduced on charring, depending on the temperatures and period of burning. Therefore, the comparative assessment of the fragments from Snape from unmonitored pyrolysis as to their likely origin from fast grown stems was difficult. A few oak fragments appeared to have wide annual growth rings typical of fast grown stems but, in general, it was impossible to assess the bulk of the material with any accuracy. The predominance of stem material tended to suggest that coppice woodlands were present in the area.

Gorse has many economic uses (Lucas 1960) and has been cultivated and coppiced in regions where other wood was sparse (*e.g.* parts of Ireland). However, at Snape where other species were evidently available, gorse was perhaps more likely to have been cut at random from plants growing in scrub.

Conclusions

The identification of the charcoal has indicated preferential use of the woody resources available. Oak (*Quercus*) was evidently important in economic terms and probably in ritual practices in both inhumation and cremation burials. Woods used for fuel included oak and gorse (*Ulex*) roundwood. While this may have been gathered from coppiced woodlands, the evidence is inconclusive.

Insect remains preserved by metal corrosion products

by Mark Robinson

During conservation of the metal small-finds, it was noticed that invertebrate remains had been preserved by corrosion products in the vicinity of several copper alloy objects (Table 4). Material was identified at the English Heritage Environmental Archaeology Laboratory at the University Museum, Oxford.

Discussion

The flies *O. capensis* and *O. leucostoma* have both been reared from a variety of foul organic materials, including carrion (Smith 1989, 136). *O. leucostoma* and perhaps *O. capensis* are strongly attracted to corpses once they have reached a stage of ammoniacal fermentation. *O. capensis* larvae comprise the second stage of faunal succession on buried human corpses, probably appearing several months after burial, especially when the corpse has not been exposed to the open air for long before burial, which would

Grave	*Object*	*Taxon*	*Quantity*
10	F	Beetle — *Grammostethus marginatus* (Er.)	1
10	F	Fly — *Fannia* sp. Larva	1
32	E	Fly — *Ophyra capensis* (Wied.) or *Ophyra leucostoma* (Wied.) larvae	*c.*250
32	E	Beetle — *Trox scaber* (L.)	pair of elytra and 1 pronotum
32	F	Weevil — *Otiorhynchus ovatus* (L.)	1

Table 4 Mineralised invertebrate remains identified from small finds

result in colonisation by other species of Muscidae and Calliphoridae (blow-flies) (Smith 1973; Smith 1986, 126). The larvae of the fly *Fannia* sp. have also been recorded from corpses (Smith 1986, 122).

The beetle *Grammostethus marginatus* is usually found in moles' nests (Halstead 1963, 10), but as a beetle which feeds on Diptera larvae underground, it would probably have found a suitable habitat around a buried corpse. *Trox scaber* is associated with dry carcasses and carrion in very advanced stages of decay amongst other foods (Smith 1986, 149). It was perhaps able to gain access to the corpse in grave 32 at a late stage down a rodent burrow as evinced by the nibbled plum stone. The weevil *Otiorhynchus ovatus* feeds on various plants and does not provide any useful information on the burial.

VII. The Cremated Bone

by James Steele and Simon Mays

All cremated bone known from the site was submitted for analysis including the material recovered between 1985–92, the contents of an 1862 urn, one found in 1970 and the cremations from the 1972 sewer trench first examined by Wells (1973). All material was sieved through 2mm and 4mm meshes with any non-bone removed. In total, data has been compiled on thirty-two individuals from the site (see Table 5 for a breakdown by age and sex). Additionally, several spreads of bone suggested as being from a cremation pyre and a few tiny scatters of bone insufficiently large to yield information were examined. The identified animal bone is discussed further elsewhere (Chapter 6 section IV). The nine cremations from 1972 were excluded from the calculation of summary statistics as some bone appears to have become mixed since Wells' examination (notably graves 73 and 74) and some material may have been lost. These made Wells' identifications, reached by different methods, uncheckable and they are distinguished in the table below.

Demographic aspects

Estimation of sex was made from sexually dimorphic aspects of the skull, or failing this, from overall skeletal size/robusticity. Juveniles could not be sexed; their age at death was estimated using dental development, epiphysial fusion or bone size. Cranial suture closure (Perizonius 1984) was used as a very approximate guide for ageing adults. Sexing of the remains is often uncertain, ranging from probable identifications for most, to possible for a few.

	Male	*Female*	*Unknown*	*Total*
Sex/age unknown			4	4
Infant/juvenile			4	4
Juvenile			(3)	3
Adolescent/young adult		(1)		1
Young adult	1 (2)	1 (1)		5
Young/middle adult	1			1
Middle adult		1		1
Middle/old adult	1	2	1	4
Old adult				
'Adult'	1	(1)	6 (1)	9
Total cremations				32

Table 5 Breakdown of cremations by age and sex. Identifications by Wells (1973) in brackets

Quantification

Quantification of the bone weights, fragment numbers and sizes for the non-sewer trench material is shown in Table 6. Modern studies suggest that a burnt adult corpse will yield about 2–2.5kg of bone (Wahl 1982) although the Snape cremations yielded only about 10–15% of that figure. This is probably partly due to the serious truncation to sixteen of the twenty-three caused by ploughing. Comparisons show that the intact adult cremations contain (on average) over four times as much material as the truncated assemblages although these are still considerably less (about only 25%) than the total bone weights that might be expected. Notwithstanding the difficult conditions for the rescue of the 1972 sewer trench material, Wells' reaction was that this bone had also been collected initially 'with gross inefficiency' (Wells 1973, 57).

The intact adult cremations contained a greater representation of the lighter, smaller-sized fragments of bone, and truncation *per se* appears to correlate with a loss of these smaller fragments. Skull and postcranial/unidentified fragment weights from the 4mm sievings suggested that there was no noticeable collection bias in favour of either skull or postcranial fragments for burial. This accords with Wells' findings with the 1972 cremations ('fragments seem to have been preserved randomly from most parts of the body'; West and Owles 1973, 57).

Bone colour and pyre temperature

Experiments by Shipman *et al* (1984) have shown that the temperature reached by burnt bone can be estimated from bone colour. Most of the bone in the Snape cremations is of a white or greyish-white appearance, indicating a sustained pyre temperature probably in excess of approximately 940°C. This is similar to the evidence from other cremations of this period (*e.g.* Illington, Norfolk: Wells 1960; Mucking, Essex: Mays 1992), and is similar to temperatures achieved in modern crematoria (Wahl 1982).

In the Snape assemblages, fragments of cortical bone sometimes occur which appear dark grey or blackened on broken surfaces (as seen in section), suggesting that the

Weights of bone (grams)

	All cremations				*Adult cremations only*			
	No	*Mean*	*S.D.*	*Range*	*No*	*Mean*	*S.D.*	*Range*
Intact	7	476.0	331.9	172.2–1146.8	5	597.6	317.2	369.8–1146.8
Truncated	16	111.9	138.4	1.4–572.3	10	142.9	168.1	11.1–572.3
Total	23	222.7	269.1	1.4–1146.8	15	294.5	309.9	11.1–1146.8

Estimated number of fragments

	All cremations				*Adult cremations only*			
	No	*Mean*	*S.D.*	*Range*	*No*	*Mean*	*S.D.*	*Range*
Intact	7	3303.0	1973.6	1120–6628	5	3859.0	2043.5	1558–6628
Truncated	16	467.4	401.8	6–1306	10	585.7	459.1	61–1306
Total	23	1330.4	1718.2	6–6628	15	1676.8	1969.7	61–6628

Estimated mean fragment size (mm)

	All cremations				*Adult cremations only*			
	No	*Mean*	*S.D.*	*Range*	*No*	*Mean*	*S.D.*	*Range*
Intact	7	7.6	1.8	5–10	5	6.8	1.5	5–9
Truncated	16	10.0	2.7	6–14	10	10.4	3.3	6–14
Total	23	9.3	2.8	5–14	15	9.2	3.0	5–14

Table 6 Summary statistics for bone from the cremations excluding the 1972 sewer trench material

broken surfaces were less burnt. This indicates that the bone has shattered during incineration, and fragments have fallen to cooler parts of the pyre. Additionally, fragments of yellowish white trabecular bone were occasionally noted in some assemblages. It is probable that these fragments were not fully burned due to their shifting to cooler parts of the pyre as the bones disintegrated during the cremation process.

Pathologies and skeletal variants

The bone examined had few pathologies. Each is described in detail within its own catalogue entry. Pathologies noted included:

Porotic hyperostosis (pitting in orbital roofs likely indicative of anaemia); grave 70.
Sutural ossicles (supernumerary bones in cranial vault sutures); graves 89 and 91, and from the pyre cremated bone.
Tibial periostitis; grave 73.

Conclusions

Of the twenty-three cremations from the 1985–92 excavations, fifteen were adults (four male, four female, the rest unsexable) and four children; the age of the remaining four could not be determined. Many of the burials were truncated by later disturbance, but even those not affected contained relatively little bone — on average about 25% of the weight expected from a complete individual. This, in part at least, appears to reflect incomplete recovery of bone from the pyre in antiquity. This same inference was made by Wells when he studied the sewer trench material. Firing temperature in excess of about 940°C appears to have been attained, similar to other Anglo-Saxon cremations.

VIII. The Pottery Stamps

by Teresa Briscoe

The Anglo-Saxon cemetery at Snape has produced a total of thirty-five pot stamps, many of interest (Fig. 144; *n.b.*, three are doodles and not illustrated). The Archive actually lists some forty stamps but four of these cannot be traced amongst the Ipswich Museum's Snape material and it cannot be certain that they derive from Snape. The other stamp is a double numbering. The following discussion is based on the corpus of 20,000 stamps contained in the Archive of Anglo-Saxon Pottery Stamps. One consideration that needs taking into account from the outset is the considerable number of stamp types from Spong Hill, Norfolk and Loveden Hill, Lincs., (2,282 and 1,909 respectively). One must therefore expect uncommon stamps to turn up in both these places, especially as some appear to have stamp links with each other.

As with all cemeteries, the very common stamps are largely undiagnostic; by these I mean the circular cross stamps (A4ai/ii), which are the most common motif in the archive, the rectangular grid stamps (C2ai–vii) and the rosette type (A5ai). The only useful information which may be helpful at the present time is if a site produces a preference for one stamp type against the other ones. At Snape we have four A4ai/ii stamps against three of the rosette type, and in addition there are four examples of the A4aiii, which have the bowed cross edges. Unlike the ubiquitous A4ai stamps, the D4ai stamp from pot *0653* (grave 60) is comparatively rare. In the area in which we are concerned, examples come from Spong Hill, Brooke, Morning Thorpe and Illington in Norfolk and from Lakenheath and Boss Hall (Ipswich) in Suffolk. In the Thames area, examples come from Northfleet and Canterbury as well as Eynsham, Oxon., and Barton

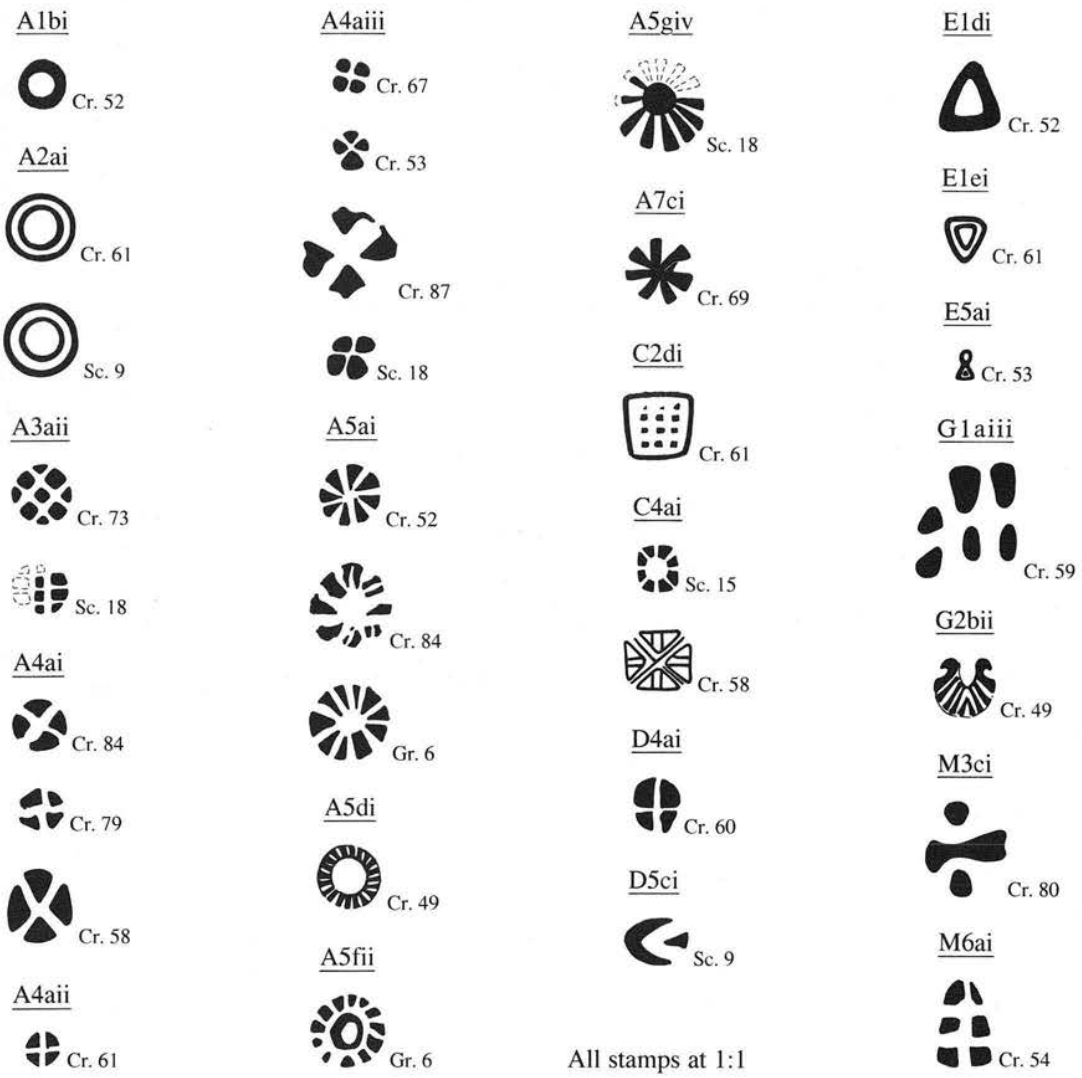


Figure 144 All pot stamps known from Snape, arranged by type. Scale 1:1

(Cirencester) in the Upper Thames complex. There are no C2a types, but two examples of the less common circular version (A3a). Two of the very common stamps found in East Anglia and eastern England generally are the double concentric circle (A2ai) and the dot-in-circle (A1bi). Of these, Snape has only two examples of the A2ai type and one of the A1bi. There are two examples of the rectangular 'Union Jack' (C4ai) stamp from Snape. They are of different sizes and appear on pots *0651* (grave 58) and *0902* (scatters, No. 15). This type is fairly common and the distribution is widespread, as is the C2di stamp on pot *0560* (grave 61).

Of the less common stamps, the A7ci on pot *0882* (grave 69) has parallels at Spong Hill, and Longthorpe, Cambs. The plain outlined triangular stamp Eldi on pot *0642* (grave 52) is a very simple stamp but there are only eight other examples in the archive. These come from Loveden Hill (4), West Keal, Lincs. (2), Lackford and Sudbourne, Suffolk (Fig. 145a). The last is, in my opinion, a visually identical stamp with the Snape example, being of the same size. Moreover, both stamps are associated with the simple single-ring stamp (A1bi), both of which are of the same size. The proximity of the two places makes the supposition that they are the work of the same potter extremely likely. The E1ei stamp on pot *0560* (grave 61) belongs to a small variant group of ten examples within what is, in itself, a not very common type. It is marked by having a shield shape rather than a true triangle. The distribution is interesting, examples coming from Loveden Hill (3), Cleatham (5) and one each from Ixworth and West Stow, Suffolk (Fig. 145b).

The G2bii stamp on pot *0559* (grave 49) is a unique stamp. It resembles examples from Mucking and from the continent, but the two wings at the tips of the crescent do not appear anywhere else. Similarly, the 'keyhole' stamp (E5ai) on pot *0643* (grave 53) is a rare stamp, of which the Snape example belongs to the smallest type. There are other examples of about this size from Loveden Hill, and Field Dalling and Gt. Ellingham, both Norfolk (Fig. 145a). These very small examples suggest that they might relate to similar stamps applied to some great square-headed brooches.

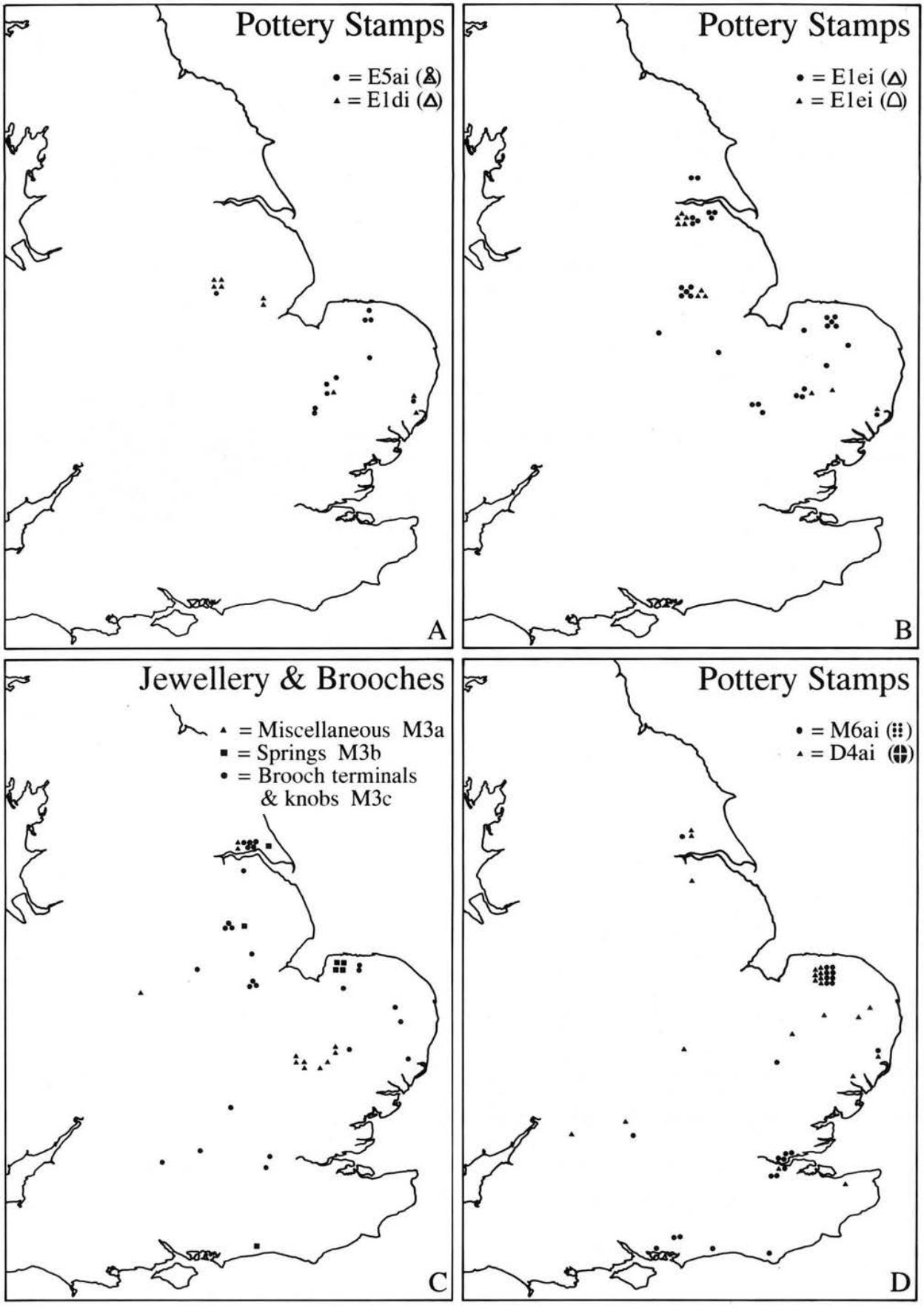


Figure 145 Pot stamp distributions. a) E5ai, E1di. b) E1ei, E1ei subgroup. c) M3a, M3b, M3c. d) M6ai, D4ai

The M3ci 'brooch' stamp on pot *0318* (grave 80) is of great interest. When brooches are used to decorate Anglo-Saxon pots, it is usually the lower finial of cruciform brooches that are used, or the side-knobs. In the case of the Snape pot, the lower middle part has been used, presumably from a broken brooch, but from a cruciform of unusual type. An example of a similar whole brooch comes from the cemetery at Brough-on-Humber. The way that the decoration has been applied, in a line round the neck of the pot, is paralleled by the use of brooch terminals on pots from Spong Hill and Castle Acre (Fig. 145c), but these are all made with the same type of brooch terminal, and are associated with other stamps and/or decoration. The Snape example has the brooch stamp on its own with no other decoration.

The 'tree' stamp (M6ai) on pot *0644* (grave 54) is another rare stamp which is found mostly in the Thames estuary and the south coast cemeteries (Fig. 145d). There are however, ten examples from Spong Hill and one each from Sancton, N. Humbs. and Lt. Wilbraham, Cambs. The most westerly examples come from Abingdon, Oxon. and Southampton.

The A5fii stamp on pot *0462* (grave 6) is a fairly uncommon version of this type but it has a widespread distribution. A similar rosette stamp comes from No. 18 of the scatter material. Although a poor impression, the segments appear to 'swirl', suggestive of the 'wheel-of-fire' type, A5giv. The distribution is widespread but there is a group of examples from the Cam/Lark area, and another from the East Norfolk sites of Markshall, Spong Hill and Witton with yet another from Eye, Suffolk.

The two versions of the right-facing swastika (type J1aii) on pot *0641* (grave 51, Fig. 112) are probably hand drawn rather than stamped. They are larger than many and the 'club' ends have one parallel from Loveden Hill.

Discussion

Overall, the Snape stamps seem to relate rather more to the sites in Essex and the Thames estuary than to the more inland East Anglian sites, especially those of the Lark Valley. The presence of brooch terminals at the more easterly Norfolk sites and of course at Spong Hill are consistent with this and would suggest a common cultural origin. The complete absence of the use of brooch knobs at Snape would seem to reinforce this as they are missing from all the Norfolk sites except Spong Hill. The assemblage generally seems to suggest a people somewhat isolated and one might have expected more links with the sites north of the Waveney. Martin Carver's suggestion of a kingdom or tribal area of the Sandlings (Carver 1989, 152) is perhaps borne out by this distribution. A similar pattern can be discerned for Norfolk north of the Yare and the area stretching from Illington to Cambridge. There are two examples of the dot-in-circle stamp which are found at Caistor St Edmund and these are common in the cemeteries and sites of the Lark Valley, around Cambridge and in central Suffolk.

The use of the lower central part of a cruciform brooch is, as stated above, unique to Snape. The brooch used would have been one similar to that from Brough-on-Humber. The brooches shown by Reichstein (1975) do not include any of this type. The use of protruding 'eyes' each side of a raised line, above the actual terminal, appears to be Scandinavian and he illustrates a number from Norway. They do not, however, have the central 'dumb-bell' of the Snape and Brough brooches. The only British brooches of this type that I have been able to find are two from West Stow.

The distribution of the M6ai stamps appear to bear out the ties which Snape seems to have with the south-eastern part of the country. With ten examples from Spong Hill but none from Loveden Hill, this would appear to confirm this idea.

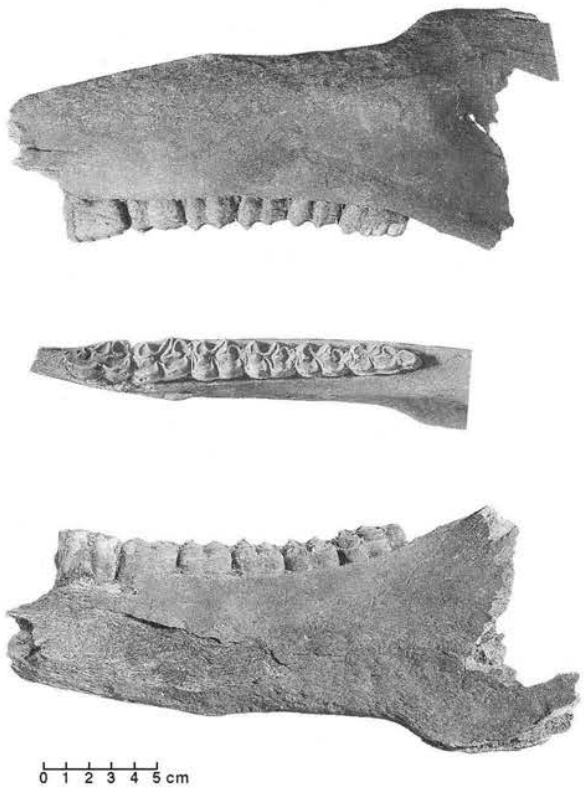


Plate LV External, occlusal and internal views of the left mandible of horse head *S* grave 47

IX. The Horse Head from Grave 47

by Simon Davis

During excavation of Area B in 1991 an equid skull was found associated with grave 47. The skull had an iron snaffle-bit in its mouth and the remains of tack were scattered in the surrounding ploughsoil. The top of the skull and upper jaws had been ploughed away, but the mandibular tooth rows and adjacent rami, especially of the left side, are well preserved. The rest of the skeleton has not been found and the burial, it is suggested, was an intentional horse head burial (Chapter 6 section IV). It is interesting because finds of equid skulls with a bit are rare, and the Snape find is well dated.

The Snape equid is without doubt a horse, *Equus caballus* since the molars and premolars have 'U' shaped internal folds, and in the molars the external fold partially penetrates between the metaflexid and entoflexid (Fig.

Tooth	*ACH*	L_1	L_2	L_3	W_a	W_b	W_c	W_d
P_2	15	-	12.6	13.8	10.4	13.4	13.6	6.9
P_3	18	25.7	16.5	9.0	14.6	15.7	14.4	4.2
P_4	24	23.7	14.9	8.0	14.6	14.3	12.1	3.5
M_1	17	22.3	13.6	4.9	14.2	13.3	11.6	2.5
M_2	17	23.2	13.2	6.4	12.7	12.1	10.4	2.3
M_3	20	29.8	12.3	8.1	11.7	11.0	10.1	2.2

Table 7 Measurements of the left mandibular cheek teeth of the Snape horse, in mm. ACH is the approximate crown height measured from root 'saddle' to occlusal surface, as shown in Levine (1982)

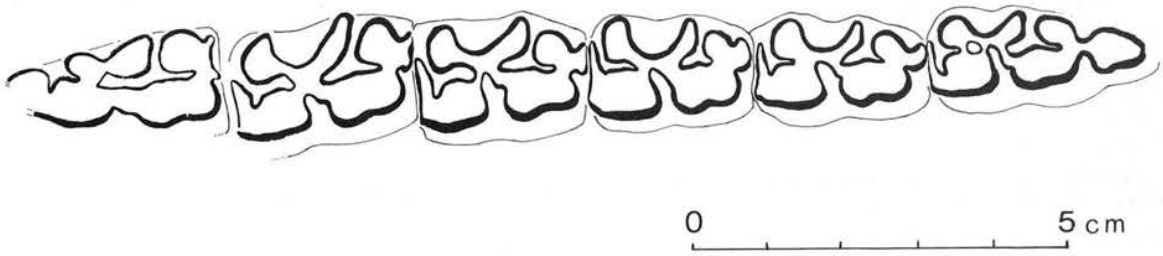


Figure 146 The cheek teeth of the left mandible, horse head from grave 47, in occlusal view to show the enamel folds. Scale 1:1

146 and Pl. LV). The third molar has an anomalous circle of enamel between the metaflexid and external valley.

Age at death

The cheek teeth are all well worn, with crown heights ranging between 15 and 24mm. Comparison of these heights with data from New Forest ponies (Levine 1982) suggests an age at death greater than 17 years. The Snape horse was certainly an old individual and I would suggest that it may have been 20–30 years old. Only one, unidentifiable, isolated and broken incisor is preserved with part of its occlusal surface. It still possesses a near circular infundibulum, which suggests a somewhat younger age than that indicated by the cheek teeth. Given the poor state of the incisors, the cheek teeth would seem to provide a better guide for an age estimate.

Size and sex

Comparison of the Snape tooth measurements (Table 7) with those from an Iron Age pony from Hampshire (Davis 1987) indicates that the Snape horse was rather small, probably a pony. The presence of a canine tooth suggests that the Snape horse was more probably a stallion.

Bit wear

The mammalian tooth comprises three hard tissues, cementum and dentine which are bone-like substances and a much harder crystalline enamel which, in equids, is arranged as a series of complicated folds. This structure, and the high crown, has evolved as an adaptation to grazing tough grass and the inevitable soil and sand particles which enter the mouth. Their abrasiveness cause the tooth gradually to wear down. Since enamel is harder than dentine and cementum, the enamel folds stand proud and give the occlusal surfaces of the cheek teeth a rough surface rather like a carpenter's file.

A horse bit lies within the space (diastema) between incisors and first premolar (P_2) and rests on the sensitive gum of the mandible. Application of pressure via the reins and bit onto the gum of the diastema gives the rider control of the horse's head, and hence the ability to control the animal. However, a resting horse is sometimes able to 'take the bit between its teeth' by lifting it with its tongue onto the front half of P_2. The bit cannot usually be pushed any further back than the anterior half of the first lower premolar since it is effectively stopped by the fleshy corners of the mouth. Continual biting on an object as hard as an iron bit, unlike the grass and soil particles, produces equal wear on both enamel and dentine/cementum. In addition the enamel in this region suffers 'spalling' damage (*i.e.* cracking/crazing; Anthony and Brown 1991).

Despite the presence of an iron bit in the Snape horse skull, no signs of the kinds of damage and wear described by Anthony and Brown can be observed. The Snape P_2s show normal wear surfaces with the enamel folds standing proud of the intervening dentine and the P_2 enamel lacks spalling damage. There are several possible explanations for the lack of 'bit-wear' on the Snape P_2s. For example the Snape horse may not have been wearing a bit during its last few weeks of life, but was merely buried with it in its mouth. An alternative possibility is that the Snape horse did indeed wear a bit during its last few weeks of life, but it did not behave in the manner described by Anthony and Brown.

Chapter 6. Overall Results

I. The Cemetery

by William Filmer-Sankey

Introduction

Having presented the evidence derived from both the 1985–92 excavations and from the earlier work in the Catalogue (Chapter 4), and having looked at the detailed interpretations of selected aspects (Chapter 5), the time has come to see what broader conclusions can be drawn about the Snape Anglo-Saxon cemetery. This chapter therefore covers the interpretation both of the cemetery as a whole, and of different burial types and other features.

In discussing the character of the cemetery, it is vital to remember that we can do no more than interpret the existing, partial evidence in order to draw wider conclusions. The dangers of this approach were made clear early on in the project. The fact that (with the exception of the 1862 ship burial) only cremation burials had been found was interpreted as meaning that the cemetery was similar in character to Spong Hill, where densely packed cremations are in the overwhelming majority. This, with hindsight wholly incorrect, interpretation was then used as the basis for a sampling strategy to determine the size of the cemetery (described above, pp. 11–12). If it had not been for the chance discovery of an inhumation grave, the true nature of the site would have remained totally unknown. At the same time, however, the factual basis for making deductions about the nature of the entire cemetery has improved vastly as a result of the 1985–92 excavations. These examined a total of 2300m^2, forty-six inhumation graves, twenty-three cremation graves and various other features (Table 8).[1] Assuming that the limits of the cemetery derived from the 1989–90 2m wide trenches are correct, the total area of the cemetery would have been in the region of 11,200m^2. The 1985–92 excavated area is thus equivalent to a 20% sample, large enough to draw statistically valid conclusions. It should always be borne in mind, nevertheless, that a 'statistically valid' conclusion is not necessarily the same as the truth!

Date of excavation	*1862—3*	*1970—2*	*1985—92*	*Totals*
Cremations (total 52; 1 empty)				
urned	19	8	17	44
unurned	-	1	6	7
bronze bowl	-	1	-	1
male	-	2	3	5
female	1	3	2	6
uncertain/empty	18	5	18*	41
infant	-	3	4	7
adult	1	7	13	21
uncertain	18	-	6	24
Inhumations (total 47 graves; 48 bodies)				
ship/boat	1	-	3	4
lining	-	-	11	11
layer	-	-	12	12
coffin	-	-	1	1
bier	-	-	1	1
none/uncert/unexc	-	-	18	18
male	1	-	13	14
female	-	-	11	11
uncertain	-	-	23	23
infant/juvenile/adol	-	-	10	10
adult	1	-	2	3
uncertain	-	-	35	35
Ring-ditches (without central burial)	-	1	4	5
Cremation pyre	-	-	1	1
Burnt stone features	-	-	7	7

* includes cremation 78 which had no bone and therefore total cremations = 52

Table 8 Summary of excavated features

Location

The Anglo-Saxon choice of that particular site for their cemetery must have been influenced by the presence of at least one Bronze Age barrow. The collared urn (grave 48) found upside down and containing cremated bone, just below the surface of the ship burial mound excavated by Septimus Davidson, can surely only derive from an existing tumulus which had been built over to make the ship burial mound. In addition to this, it is at least possible that some of the other mounds noted by the 1862 excavators may have been prehistoric, while a number of the ring-ditches in Area B may well also pre-date the Anglo-Saxon use of the site (below, pp. 236–8). No other features of pre-Anglo-Saxon date were found during the excavation.

The siting of important Anglo-Saxon cemeteries and settlements in the area of existing prehistoric earthworks has been noted at Sutton Hoo and elsewhere, and cannot be coincidental. Richard Bradley has interpreted the practice as demonstrating the way in which newly arrived elites laid claim to new areas by establishing links with their 'predecessors' (Bradley 1987). In this context, it is of particular interest that the buriers of the 1862 ship apparently chose deliberately to swamp an existing barrow, thus demonstrating not so much a continuity with the past, but a desire to be seen to overwhelm it. The significance of this, when taken together with the dating evidence, is considered further below (p. 266).

There must, however, have been more to the choice of site than simply the presence of an existing burial mound (or mounds). There are at least two other tumuli of presumed prehistoric date known to lie within 1000m of the cemetery (Fig. 2), so the question of 'why there?' still

needs answering. The key may lie in the fact that, as argued above (p. 1 and Fig. 3) the site was visible both from the sea and the river Alde. Indeed, when viewed from out to sea, the ship burial mound (assuming that it had a not unreasonable original height of 5m or more) would actually have appeared as a silhouette against the sky. Anyone familiar with the problems of navigating along the Suffolk coast line will know that landmarks along the shore line are very hard to pick up against the uniform and relatively featureless background of the land behind. The most easily visible landmarks are those which, although perhaps some distance inland, appear as a silhouette against the skyline. It has long been known that Suffolk church towers were used as navigational marks for precisely this reason, with even the distinctive spire of Wickham Market church (12.5km inland) being used as a sea mark (Arnott 1955, 25).

If church towers were used as navigational marks in the medieval period, why should tumuli not have had a similar function in the Early Medieval period? We know in fact that they were: the dying Beowulf asks that his mound be positioned on Hronessness, so that it will be visible to sailors. If, as Sam Newton has argued, *Beowulf* is a product of the East Anglian kingdom, the poet was in all likelihood reflecting his own experience (Newton 1993).

In short, the location of the Snape Anglo-Saxon cemetery (or at least of the ship burial and any other Anglo-Saxon mounds with it) is likely to have been decided not only by the presence of existing mounds, but also by the fact that it could serve a navigational purpose, identifying the mouth of the river Alde. There is of course no reason why the Bronze Age tumuli should not have been placed for the same purpose.

Size and layout

The Anglo-Saxon cemetery is best described as 'pear-shaped', with its long axis on a WNW–ESE alignment. Its dimensions are 200m × 70m, which compare with *c.*90m × 70m at Spong Hill and *c.*140m × 70m at Mucking Cemetery II. The tumuli are clustered around the southern and eastern sides of the cemetery, with the cremation and inhumation burials intermixed with the mounds in those areas, but extending further to the north and west.

The only area of excavation which undoubtedly included the edge of the cemetery (Area B), showed that the graves thinned off at the edges, rather than coming to an abrupt halt, as is so clearly the case (for example) at Morning Thorpe and Yeavering. If the cemetery was surrounded by some form of boundary, as must have been the case at Morning Thorpe (Green *et al* 1987, fig. 5) and Yeavering (Hope-Taylor 1977, fig. 26), the density of graves never became great enough for it to act as a constraint. Indeed, the overall density of graves in Area A is unusually low, with (on average) one inhumation per 16.3m^2, and one cremation per 21.45m^2 (Fig. 6).[2] Although there are some areas of relatively dense concentrations (notably graves 10–12 and 16–18 in Area A; Fig. 6), the overall impression is of a sprawling cemetery, in which space was not a constraint.

It was argued above (p. 15) that the finding of fragments of cremated bone in the fills of two inhumation graves and in a rabbit burrow adjacent to boat grave 47, combined with the particularly severe soil erosion, indicated that cremation burials had once existed in Area B, but had been totally destroyed by ploughing. Certainly, the evidence from Area A and those trenches north of the road which produced graves, indicates that the inhumation and cremation burials are intermixed throughout the cemetery, and that there are approximately equal numbers of each type. There is in short no evidence for 'zoning' of burial rites as has been noticed at Spong Hill.

Assuming that the grave density does remain reasonably constant throughout the cemetery, and that the roughly equal proportion of inhumation to cremation burial is also constant, the Snape Anglo-Saxon cemetery would have contained a total of 1000 burials, divided equally between inhumation and cremation.

Date

Although there is no evidence for spatial 'zoning' of the different burial methods, with the two rites appearing totally intermixed, this should not be taken to imply that they are also chronologically indistinguishable. Accurate dating of the individual graves and other structures is hampered by the usual problems of Anglo-Saxon cemeteries. The site has produced only three 'absolute' dates, from C14 samples taken from two 'burnt stone features' and from the horse's head associated with grave 47. There are no cases of multiple overlapping or intercutting graves, so that the construction of a 'horizontal stratigraphy' (so useful on continental sites) is impossible.

At the same time, there are a few individual relationships between cremation and inhumation graves, a burnt stone feature and a funeral pyre. Thus the pottery, burnt bone, burnt copper alloy and iron fragments found in the upper fill of an inhumation (grave 5) are interpreted as the remains of a pre-existing cremation burial disturbed by the digging of grave 5. The two urned cremations (graves 88 and 89) found at the head of an inhumation (grave 17) appear to have been placed in the inhumation grave cut during backfilling and are thus exactly contemporary with it. The substantial scatter of cremated bone (grave 99, with no pottery and only five fragments of metal) in the upper fill of an inhumation (grave 11) is, in itself, hard to interpret, but is most likely to be contemporary with or later than the inhumation. Finally, the very badly truncated remains of an urn and cremated bone (grave 90) were found within the area of the ring-ditch surrounding an inhumation (grave 20). Other cremations in the immediate area were much better preserved (*e.g.* graves 87 and 92) and the poor state of grave 90 could be explained by its having been inserted into the top of an existing tumulus covering grave 20. It would thus have been particularly vulnerable to plough damage as the mound was flattened.

In summary, there are possible examples of individual cremation burials pre-dating, being contemporary with and post-dating individual inhumation burials.

A burnt stone feature (*1775*) was cut by an inhumation (grave 46), with a considerable amount of burnt stone from the former being found in the fill of the latter. Finally, it seems most likely (though certainty is impossible) that the suggested cremation pyre (below, p. 252) underlay an inhumation (grave 10).

These relationships provide some elements of a relative chronology. For an absolute chronology, however, we remain largely dependent on dates derived from object

typologies. Although many of these have been reworked and immensely improved during the past few years, they remain a less than perfect tool, not least because of the impossibility of knowing the relationship between the date of the grave-goods and the date of the grave. In any case, Snape has produced relatively few of the most clearly diagnostic types.

Despite these caveats, a picture of the chronological development of the cemetery can be built up. To begin at the most basic level, all features (with the exception of the Bronze Age collared urn in grave 48, and the possible exception of some of the ring-ditches (see below)) are what is conventionally labelled pagan Anglo-Saxon (*i.e.* broadly 5th to 7th century). It will be noted that the C14 date for one of the burnt stone features (*1849*) gave a rather early date range of cal AD 260–416 at 1σ (GU–5235; 1680±50BP). The other however, from burnt stone feature *1794*, fell clearly within the period cal AD 415–544 at 1σ (GU–5234; 1580±50BP), and the early date may be accounted for by the incorporation of a long-living species (oak) into the sample.

For more detailed dating, and particularly for deciding the chronological relationship between the cremation and inhumation burials, we must rely on typology-based dates. The following objects can be used in this way: urns (following Myres 1977 in default of a more up-to-date system), spearheads (following Swanton 1973), shield bosses (following Dickinson and Härke 1992), cruciform brooches (following Mortimer 1990) and wrist clasps (following Hines 1993).

To begin with the urns, it is particularly unfortunate that the promised analysis of the Spong Hill urns is not yet available. It has been clear for a long time that Myres' dating is suspect, but nothing has yet replaced it. None of the Snape urns belong to any of Myres' more distinctive types, though some (such as that from grave 51) would appear to be early (5th century? or earlier 6th century) and some (such as that from grave 54) to be late (7th century?) (Myres 1977, I, 37–41 for the urn from grave 51 and I, 56 for the urn from grave 54). The bulk is undistinguished and could date from any time within the pagan period (Stanley West pers. comm.).

Ten inhumation graves from the 1985–92 excavations contained a total of twelve spearheads. In addition to this are the fragments of two spearheads found associated with, and believed to derive from, the 1862 ship burial (above, p. 7). All the blades are very corroded, making confidence about their exact form difficult (impossible in the case of one of the two ship burial blades). Seven different Swanton types can be identified, however, most represented by a single example. The spearheads in graves 1, 3, 6, 17 and 21, are of Swanton's types H2, the 'vast majority of which belong to the latest 5th and the 6th century', though there are rare indications of a later survival (Swanton 1973, 107–111). The blade in grave 45 is of type C2, which spans the entire pagan period (Swanton 1973, 51). The larger C3 version of the same leaf-shaped form was found in grave 47, the boat grave, as one of a bundle of three. It is a 6th-century type, but has a strong survival into the 7th century (Swanton 1973, 55–9). Types D1 and D2 are also represented by single examples, from graves 31 and 36 respectively. Type D1 spans the entire pagan period, while D2 (an example of which occurs in mound 1 at Sutton Hoo) is a 6th-century development.

There is a possible example in grave 20 of Type H1, for which Swanton suggests a relatively early date, describing the type as 'characteristic of the latest 5th and earliest 6th centuries, with a strong likelihood that the whole was entirely superseded by the second half of the 6th century' (Swanton 1973, 103–7).

Finally there are three spearheads (the final two in the bundle in boat grave 47 and one from grave 37) which may fall into Swanton's type F1. The uncertainty derives not so much from their corroded state as from the fact that they do not match Type F1 (or any other type) very closely, being very small (*c.*110mm) and having virtually no blade. It was initially thought that they might be arrow heads, but the finding of two in a bundle with the Type C3 spearhead in grave 47 indicates that they are spears. Given that we have suggested that both graves 37 and 47 may have contained juveniles, it is possible that this is a young man's spear type. If they are of Type F1, they have a 6th-century date range (Swanton 1973, 91–2).

Five inhumation graves (3, 6, 21, 32 and 47) contained shield bosses. Those from graves 3, 6 and 21 belong to Dickinson and Härke's Group 3, which they date broadly to the 6th century, while noting a bias towards the mid to later part of the century (Dickinson and Härke 1992, 15). The shields from graves 32 and 47 seem to have been identical, both having not only Group 6 bosses but also two pairs of *c.*30–50mm diameter studs placed vertically on the board. Group 6 is dated to the later 6th–early 7th century (Dickinson and Härke 1992, 20–1), which ties in well with the radiocarbon date of cal AD 543–652 at 1σ (GU–5233; 1460±70BP) from the horse's head burial adjacent to grave 47.

Three inhumation graves produced a total of five cruciform brooches. In grave 10 were three brooches, while graves 14 and 16 produced one each. Although the particularly florid brooch from grave 16 is of a distinctive type (paralleled by that from Sporle, Norfolk, for example (Leeds and Pocock 1971, fig. 4a)), a date for four of them more precise than '6th century' is impossible (Dr C. Mortimer, pers. comm.). The exception is brooch *D*, one of the trio from grave 10, which may be as early as the 5th century.

Dates for the three pairs of wrist clasps are similarly vague. Those from grave 10 (the most decorated) belong to Hines' type C5, for which 'a 6th-century date may be presumed' (Hines 1993, 72).[3] The pairs from graves 5 and 16 fall into Hines Type B7, the majority of members of which are 6th-century (Hines 1993, 41), and Type B13b, which has a similarly 6th-century focus.

In summary, the grave-goods from Snape (with the slight exception of the shield bosses, some of the spearheads and one of the brooches) are generally not of types that allow for a very precise dating. Any hope, therefore, of phasing the individual graves is forlorn. At the same time, a tentative conclusion about the chronological relationship between the inhumation and cremation burials can be reached by combining all the slender threads of dating evidence.

It seems that, while the cremation burials span the entire 'pagan' Anglo-Saxon period from the late 5th/early 6th to the 7th centuries, the inhumation burials may be more restricted, perhaps to the latter half of the 6th and early 7th centuries. Only two of the datable grave-goods — the brooch from grave 10 and the spearhead from grave 20 — fall outside this range, which would fit in well with

the 1862 ship burial for which a date of around the mid 6th century was suggested (above p. 196). It seems probable therefore that the cemetery originated (like Spong Hill) as a cremation cemetery. The 'burnt stone features', with their relatively early C14 dates, were an element of this cemetery. In around the mid 6th century, the rite of inhumation was introduced alongside cremation, which continued in use. It is tempting to see the 1862 ship burial as a 'founder grave', initiating the rite of inhumation in an already existing cemetery. Both rites then continued in tandem until the early 7th century, when the site was abandoned.

Endnotes

1. The actual area of the excavation was *c.*3450m^2, but a proportion of this was, of course, outside the limits of the cemetery.
2. These figures on grave density have been derived from Area A only. Area A was the only part of the excavation where we can be reasonably confident that most, if not all, the graves survived to be excavated.
3. Hines' Type C5 has only two examples. He writes 'There is as yet no dating evidence for this form; a 6th-century date may be presumed but further discussion must wait upon a comprehensive publication of the cemetery at Snape'. Sorry!

II. Inhumation Graves

by Tim Pestell

Ring-ditches

Excavation at Snape revealed eight ring-ditches, of which one was definitely annular (around grave 25) and two were possibly penannular (around graves 20 and 34). Ring-ditch *2066* (extending beneath a baulk) was probably annular. Traces of four more ring-ditches, *1735*, *1780*, *2265* and *2449*, (seen in the 1972 sewer trench) were either too fragmentary to categorise, or only partially excavated.

Ring-ditches have usually been taken to indicate the former existence of barrows, ditch upcast being used to form an earthen mound. However, it is equally clear that not all barrows had ditches (for example Snape mound 5), nor is it certain that all ring-ditches necessarily contained mounds.

The principal difficulty in interpreting the ring-ditches is their lack of dating evidence. Only those around graves 25 and 20 were definitely Anglo-Saxon, although that around grave 34 almost certainly was too. A prehistoric use of the site is attested by the Bronze Age collared urn found in mound 1 in 1862 (grave 48), suggesting that a tumulus had been re-used by the Anglo-Saxons, in common with many other examples at this time (Van de Noort 1993, 70). The possibility therefore exists that several or all of the other ring-ditches may be of a Bronze Age date. Since Bronze Age ring-ditches are morphologically identical to their Anglo-Saxon counterparts, when surviving as only faint plough-damaged examples it is impossible to distinguish between the two. This difficulty is heightened by the fact that no dating evidence was found in any of the five remaining ring-ditches excavated or partially excavated (*1735*, *1780*, *2066*, *2265*, and *2449*), despite 100% sampling where possible. Prehistoric material from the site is scant, restricted to the collared urn from the 1862 ship burial; a possible Bronze Age sherd probably from Snape, amongst the loose pottery fragments from the 1972 sewer trench;[1] and a small collection of struck flint, excavated 1985–92, which has 'nothing really diagnostic ... so one cannot even attach a prehistoric date with much confidence' (E. Martin, flint report in site archive). This paucity of evidence, coupled with the lack of datable material in the features associated with ring-ditches *1735*, *2066* and *2265*, makes it difficult to present a positive case for their prehistoric date. However, an absence of datable finds from such sites is not uncommon and this may have been exacerbated at Snape by finds loss through plough damage. The features within ring-ditches *1735* and *2185*, apparently empty, are also known from other prehistoric barrow excavations. Similar examples were found in recent excavations at Bixley, Norfolk, where several have been interpreted as Bronze Age graves, where soil conditions have destroyed all traces of the burials (Ashwin and Bates 2000). In particular, the lack of central features to many prehistoric ring-ditches make it possible that, for instance, ring-ditch *1735* may derive from an earlier use of the site. The arc of ring-ditch *1780*, apparently a curve made from straighter sections, is also paralleled in a number of prehistoric examples, for instance Sweet Briar Road, Norwich (Lawson *et al* 1986, 61). A difficulty with the Snape ring-ditches is that only *1780*, with a diameter of 7.3m, approaches the usually larger size of Bronze Age examples. However, the clustering of small ring-ditches around larger barrows is known elsewhere in Suffolk in this period (*e.g.* Nayland with Wissington; Lawson *et al* 1981, 23), so it is possible that a relict Bronze Age barrow cemetery may also be represented at Snape. Certainly, such a concentration of tumuli would be consistent with their known distribution in Bronze Age Suffolk, which has four main concentrations, including the East Suffolk Sandlings (Lawson *et al* 1981, 75).

Equally, the possibility of an Anglo-Saxon date for many or all of the ring-ditches must be considered. Although three ring-ditches were apparently buried with nothing at their centre, most obviously ring-ditch *2066* which had three-quarters of its arc revealed, there are several possible explanations. Grave 34 demonstrated that plough damage could cause the removal of nearly all of an inhumation, the ditch here being deeper than the actual burial, in contrast to those around graves 20 and 25. Several graves may therefore have been completely destroyed, their former presence now signalled only by the fragmentary survival of their surrounding ditches, for instance *1735* and *2265*. Moreover, such graves need not have contained inhumations; the small feature at the centre of ring-ditch *1735* had more in common with the base of a cut for a cremation than with either an inhumation or robber-pit. Alternatively, there may have been no central burial, empty ring-ditches of Anglo-Saxon date also occurring at Portway, Andover, Hants. and Brightlingsea, Essex (Cook and Dacre 1985, 58–9; Clarke 1991, 272). Finally, the size of the ring-ditches is more consistent with those found in many Anglo-Saxon cemetery excavations (Hills 1977, 171).

What is certain is that two, definitely, and three, almost certainly, of the ring-ditches excavated were of Anglo-Saxon date. In being a visible marker of a grave, they have often been seen as indicating high status because of the increased effort expended in their construction (Welch 1992, 72). Some caution is necessary. The potential for other markers such as canopies or structures around graves

	BODY				GRAVE CUT		FILL INCLUSIONS						
No	*Sex*	*Age*	*Body position*	*Head*	*Orientation*	*Container*	*Grave goods*	*Sherds*	*Wood 'planks'*	*Wood lumps*	*Burnt flint*	*Cremated bone*	*Object*
1	M				E–W	ship	y						
2	F		EC	W	269	lining with posts	y			SL			
3	M		EC	W	270	?logboat	y			SL			
4		?juv	F	W	263	logboat	y	y		SL	y		
5	F		E	W	259		y	y		F			?smashed cremation
6	M		F	W	269	lining	y	y		F		y	
7		juv		W	271		y			SL			
8	F		E	E	269	layer	y		y				
9			EC	W	289	layer	y		y				
10	F		F	W	290	lining	y	y		F	y	y	boat bow
11	F		F	W	258	layer	y			BS			cremation
12	?M	mid-old		W	276		y			SL		y	
13		infant			238	layer				F			
14	F	juv		W	300	lining			y				
15		?juv	?F	E	300	lining							
16	F	y. adult	F	W	276	layer	y	y		F			
17	M		F	W	284	?coffin	y		y				2 cremations
18			F	E	251		y			F			
19	F+?		F & O	E&E	295	lining	y			SL			
20	M		EC	W	276		y		y	SL			quern stone fragment
21	M		EC	W	285	?bier	y		y	F			
22					?	?	?						
23					276	?	?						
24					292	?	?						
25	?M		E	W	270	liner	y	y					
26					228	?	?						
27	F		F	W	266		y		y	SL	y		
28	F		F	W	239	layer	y	y		F&SL	y		
29					260	?	?						
30					203	?	?						
31	M		E	W	262	layer	y			F			
32	M		EC	W	274	lining	y			F		y	
33					0	?	?			F			
34		infant			284	layer							
35					290					SL			
36	M		F	W	299	layer	y			F			
37	M	juv			296	lining	y			SL&F			
38			?F	W	267	layer	y			SL			
39				W	262	?layer			y		y		
40	?F		E	W	284	layer	y						
41		?juv			270		y			F	y		
42		inf/juv			294					Smear			
43			E		280	lining	y						
44			O	W	270								large stone on back
45	M		E	W	309	lining	y			F	y		
46											cuts BSF		
47	M	adoles	?E	W	289	logboat	y	y	y	SL	y	y	included flint flakes

Abbreviations
Body position: E extended; EC extended, feet crossed; F flexed; O other
Wood lumps: BS black sand; F flecks; SL small lump

Table 9 Summary of inhumation grave attributes

should make us wary of automatically attributing status to burials having small barrows or ring-ditches. This is perhaps reinforced by the general lack of discernibly richer or 'higher status' grave-goods found within those graves surrounded by ring-ditches. Ditchless small barrows formerly over inhumations, implied by their isolation from surrounding graves (for example Morning Thorpe, Norfolk, grave 246; Green *et al* 1987, 102), might also have once been far more common than excavated remains need necessarily show. Nevertheless, there does seem to be a clustering of graves around the ring-ditch to grave 20 which might indicate a more important burial surrounded by satellite graves in much the same manner as the founder graves seen in Merovingian cemeteries

(James 1979, 81) or Hope-Taylor's model of 'polycentric' cemetery development (1977, 262). A wider view of the site makes it clear that the ring-ditches themselves form satellites to larger barrow burials, for instance that of grave 34 to mound 5, and grave 20 to the presumed site of the mound 1 ship barrow. These relationships may be further strengthened if ditch *1780*/mound 6 and ditch *2449* are Anglo-Saxon, being satellites to mounds 4 and 1 respectively.

Similarly, if Anglo-Saxon, the empty ring-ditches *1735*, *2066* and *2265* are reminiscent of the curious features 14 and 20 from Sewerby, E. Yorks. Hirst discussed the possibility that these might have formed slots to hold wattle fences or perhaps even the foundation slot for a circular building 'perhaps a mortuary house or shrine' (1985, 25–7). Such an interpretation might also be applicable to Snape although Blair (1995) has suggested there was a development of square-shaped shrines. The possibility of there having been a structural element to ring-ditches may be suggested in the case of ring-ditch *1780* around mound 6. This was narrow and had a steep profile more reminiscent of a palisade trench for retaining a fence than an open ditch. A later parallel is the tumulus over the Danish ship burial at Ladby which was surrounded by posts (Thrane 1987, 45–6). Anglo-Saxon instances of 'annular palisade ditches' include examples from St Peter's, Broadstairs, Kent, where the (penannular) ditches surrounding graves 277, 280 and 339 revealed 'evidence of numerous stake holes' (Hogarth 1973, 113). None of the latter were seen at Snape but the proportions of the ditch relative to its diameter (Fig. 131) make it reasonable to suggest that this could also have contained some form of structure. More importantly, it stresses another variation in which Anglo-Saxon graves, and indeed tumuli, might be marked.

Barrows

Of the tumuli, only mounds 4 and 5 (both scheduled monuments) remained to be investigated. Mound 4 still stands as a well-defined round barrow *c.*15m in diameter, standing up to 0.8m above the surrounding ground surface. Mound 5 had been eroded from a shape recorded in 1862 as 25.5m in diameter and 2m high, to an irregular 10m diameter blob, some 50mm (*sic*) above the ploughsoil by 1990 when a contour survey was made as part of the site evaluation.

Both barrows have been robbed, mound 4 displaying a clear dishing in its top, whilst at the centre of where mound 5 stood was a square feature, 'grave 33', apparently the base of a robber pit. The mounds seem to have differed in their construction. The clearing of undergrowth around mound 4 revealed it to have an intermittent series of hollows on the north and east sides. Limited excavation to the south revealed feature *1811*, a large but shallow scoop. Together, these suggest that the mound had no ditch as such, but had been surrounded by a series of shallow quarry pits. In contrast, mound 5 produced no evidence for either a surrounding ditch or quarry pits. If Anglo-Saxon, they exhibit parallels to the barrows at Sutton Hoo. Here too, a variety in their construction can be seen, mound 1 having no apparent ditches whilst mound 5, like Snape mound 4, was surrounded by a series of smaller quarry pits (Carver 1992, 357).

The date of both Snape barrows is unclear, although the pottery from robber pit/'grave 33' in mound 5 is Anglo-Saxon. Similarly, no stratigraphic relationships could be observed between the mounds and surrounding flat cemetery. However, if mound 5 was indeed once 25m in diameter, and grave 33 represents its original centre, then it would have covered graves 31, 32 and 34. This would suggest a late, probably 7th-century, building of this barrow. A more likely alternative is that the mound was originally far more steeply banked and had slumped to this size, covering other graves in the process. The positioning of the burnt stone features, graves 44, 45 and 47 (especially), and mound 6, all indicate that they are later than mound 4, which they surround. If the barrow is Anglo-Saxon in construction, it seems to contradict Shephard (1979, 49) who has suggested that barrow burial began in flat-grave cemeteries in the middle and later 6th century AD with a scattering of ring-ditches, gradually supplanted by the more general employment of tumuli. A preferable alternative is that mound 4 is a surviving, possibly re-used, Bronze Age barrow. The question of the relationship between the barrows and surrounding cemetery will inevitably remain a thorny one as long as the dating evidence is so restricted.

Structural features

In common with a number of other Anglo-Saxon cemeteries, Snape produced evidence of structural features associated with graves. They can be divided into those found above and below ground. The most often quoted article in connection with such structures is Hogarth's short 1973 paper on the features discovered at St Peter's, Broadstairs (Kent). Since then, there have been several more cemeteries excavated containing a variety of features similar to the types discovered by Hogarth.

At Snape three inhumations produced evidence for post-holes associated with some form of surface structure. The clearest example was boat grave 47, which had a post-hole on both the north and south sides at the east end. Both were very shallow, only that to the south surviving beneath the surface planning level. The west end of the grave had no actual post-holes but the bulging grave sides to north and south suggest a matching arrangement, and that the grave originally had some four-posted structure above it. Indeed, this structure may have been more complex if these had represented only the main load-bearing posts. A similar arrangement appears to have been used over grave 148 at Morning Thorpe, Norfolk (Green *et al* 1987, 76–77).

Another structure, possibly four-posted, is suggested to have once existed over grave 2. In this case, the grave itself had a complex internal structure (see catalogue and below p. 241) but above ground, two thin clay deposits, *0358* and *0359* were preserved at the east end. These were planned and removed as part of surface cleaning of the site but their position directly adjacent to the south-east and north-east corners of this grave suggests that they once formed pads in the soil to support a structure.

The final example of a feature indicative of an above ground post was found centrally along the south side of grave 21 (Pl. XIII and p. 64). The feature was very clear and straight-edged, strongly suggesting that it contained a plank or post of some form. The lack of a larger hole suggests such a post was driven into the ground. Its disappearance before the next planning level reflects its

shallow and vestigial nature; there was no sign of any similar arrangement to the north of the grave, but bearing in mind the fragmentary nature of this example, any matching arrangement may well have already been destroyed in the ploughsoil.

In themselves these three instances are unremarkable, but they demonstrate the presence of such features in yet another Anglo-Saxon cemetery, and the often fugitive nature of such remains. They force the recognition that many similar structures may have formerly existed both at Snape and in other cemeteries. If the wider use of such above-ground structures is appreciated, it also helps to explain the general lack of intercutting graves found in many Anglo-Saxon cemeteries.

The structure of the graves below the ground also proved varied. Structural features defined by the shape of the grave cut were seen in three instances. In graves 9 and 27 a step or shelf was found within the sand. In grave 9 this was at the east end, in the top of a band of ironpanned natural. In grave 27 the length of the grave was again reduced, at the west end, high up in the grave cut, to produce a narrow shelf. In grave 47 the effect was more of a sloping ledge on the grave north side, as though the grave pit had been dug deeper to the south to produce a trench into which to rest the logboat. A fourth example, running along the southern edge of grave 15 and most marked in the centre may have been caused accidentally by a partial collapse of the grave edge when being dug. However, given that several other cemeteries, notably St Peter's, Broadstairs, Kent, have also produced such ledges and shelves dug into chalk (Hogarth 1973, 111), these features may also have been deliberately constructed.

Three graves, 7, 14 and 37, had apparent 'pillows' of ironpanned sand, upon which the bodies' heads rested. A similar 'pillow' was reported in the chalk natural of a grave at Saffron Walden, Essex (Smith 1884, 314). Finally, grave 39 seemed to overlie a small feature with a fill of very fine light grey/white sand at the east end, noted at the time as almost ash-like. The feature does not seem to have been natural and its relative date is unclear. As the inhumation is directly above, its position is probably not coincidental. It could conceivably represent a deposit, perhaps of ash given the apparent emphasis on burnt matter in so many other graves.

The incorporation of graves in other features

In several cases it seems that there was a practice of digging graves within areas that were visible at the time as semi-silted hollows in the heathland surface. This was first seen in 1985 with the discovery of grave 17, apparently cut through an amorphous patch of light grey sand. Subsequently, two more amorphous patches were found to contain graves 36 and 44. The reasons for believing these patches to represent hollows are their very light silvery-grey fills and very fine sand, reminiscent of the Anglo-Saxon topsoil, although less pink in colour. Their imperceptible grading into the natural subsoil reflects their natural rather than artificial deposition. Similar, smaller, pockets of such sand — down to about 0.2m diameter — were found and removed in many places across the site when cleaning of the subsoil ensured that all graves had been identified. Grave 7 appears to have been cut through a low part of this subsoil but not a true hollow as in the cases of graves 44 and 36.

The use of a hollow in which to dig a grave is untypical but recalls the use of ditches being re-used for inhumations, for instance in Norfolk, graves 43, 44 and 47 in the ring-ditch to grave 40 at Spong Hill (Hills *et al* 1984, 12) and graves 38–40, 43 and 44 in ring-ditch *1021* at Harford Farm (Penn 2000), and with graves 1, 2, 4, 5 and 68 in a ?boundary ditch at Portway, Andover, Hants. (Cook and Dacre 1985, 13–16). The re-use of ring-ditches for burial may have been through association with whoever was buried in the central grave but in the case of hollows, there are no obvious relationships. Alternatively, using hollows may have involved less effort, a shallow grave cut being buried deeper by levelling off the surrounding area into the dip.

Grave depths

In the past there has been some discussion of grave depth as a possible indication of the occupant's status. The evidence from Snape would broadly suggest that the deeper the richer, but contradictory results have been found at different sites, for instance shallower graves being richer at Melbourn, Cambs. (Wilson 1956, 29). A more fundamental problem is that at Snape a formerly uneven ground surface has been levelled by modern agricultural activity. The depth of a grave as excavated need not, therefore, reflect its depth when originally dug, and so further discussion has little merit.

Burial containers

The most remarkable feature of the Snape inhumations is the number and variety of funerary structures or containers associated with the body. The principal difficulty in their interpretation is that they existed only as soil stains, the clarity of which was essential to understand their character. In the case of some, for instance the logboats, this is relatively straightforward. For the majority of others this is not the case. There are three fundamental difficulties in interpretation.

First, the nature of the staining was affected by soil conditions which could show great variety between even small areas of the site. Those graves dug into heavily ironpanned sand were generally the most difficult in which to see stains clearly. The logboat from grave 4 was an example of this, the ironpanned natural (both *in situ* and redeposited) making the isolation and recording of the stain difficult. Soil was also difficult to excavate at the east end of Area A due to the presence of tree roots from the adjacent garden which had disturbed and rapidly dried the sand.

Secondly, the original material from which the container was made was often difficult to determine, remaining only as a different soil colour. It was also clear that charcoal flecks within these stains need not be an indicator that the container was of wood, as several examples from Area B, for instance from graves 37 and 45, had such flecks but when the stain dried out proved to be large areas of textile weave. Consequently, the identification of the material represented by an organic is often extremely difficult to determine. On occasions, identifications may be proposed on interpretative bases, usually the excavators' acquired knowledge of the 'feel' of a stain. These impressions are difficult to relate in words; whilst the identification of organic stains by their colour and feel seems subjective, in many cases their accuracy has been proven. Less clear is whether the

material was of, for instance, wood, textile or hide, and as will be seen this can have a fundamental affect on the interpretation of a burial container.

Thirdly, it was possible that in many graves the container had been distorted in the soil by post-depositional forces. This is reflected in the sections of many grave containers which show a wobbling line which would probably have been straight or curved originally, for example those in graves 3, 17 and even parts of the good boat stain from grave 47. However, these wobbling lines can (and in some cases certainly were) caused partially by even only minimal misalignment of sequential grave plans. Additionally, the stone-free sand is an excellent, mobile, packing material, quickly moulding itself around objects, not only allowing the degrading material to form a stain, but to represent its shape with reasonable accuracy and stability in the ground.

As a result, it has been possible to suggest the use of several forms of container. Of the forty inhumations excavated between 1985–91, twenty-eight (70%) had containers or structures of some form (not including those above the ground) leaving only eleven (30%) without. They can be divided into several types.

Coffins

Coffins have been the most widely recognised form of mortuary container in pagan Anglo-Saxon cemeteries. However, as such stains have normally been very fragmentary, and usually concentrated only on the grave floor, this identification is probably at least partially misplaced. The identification as coffins is natural. They are known as a container used for the disposal of the dead, with both a wide geographical distribution and a currency throughout the Anglo-Saxon period and up to the modern day. Stains interpreted as those of coffins have been seen in several Anglo-Saxon cemeteries, for instance at Spong Hill, Norfolk (Hills *et al* 1984), in graves 32, 46 and 57. Their recognition compared to other container types may well have been biased in reports, being archaeologically more recoverable due to the better survival of wooden planks as stains, especially given the enforcedly speedy excavation of many cemeteries in the past. However, the use of wooden elements such as planks (as used to construct the chamber in grave 31 at Spong Hill; Hills 1977, Hills *et al* 1984) should not lead to an automatic interpretation of a coffin having been used. In only a few cases can it be proven conclusively that the stains observed are those of a coffin, and recent excavations in the churchyard of St Lawrence Jewry, Guildhall, London, have shown that even in the 11th century coffins as we might think of them were not being used, but that planks (here surviving through waterlogging), could consist of loosely-pegged trays, boards under or over the body, or even two planks resting against one another like a pitched 'roof' (Bateman 1997, 116–117). Although these examples are from a Christian context, it serves as a warning that burial containers in the pagan Anglo-Saxon period may also have taken a number of forms. At Snape, evidence for a coffin was particularly strong in only one instance, grave 17. Here, a regular rectangular shape with straight sides was formed of a dark organic stain. There was no evidence that there had ever been a lid, and in common with the suggestion often made for other Anglo-Saxon coffins, a lack of metal fittings suggests that it was held together by wooden pegs. A number of other organic containers were found which might be identified as coffins, in graves 6, 10, 14, 15, 25, 43 and 45. All had reasonably straight edges but the rounded corners of most, very clear in a number of cases, suggest that they may have more in common with other forms of organic container such as those of textile (see below).

Boats

The use of boats for burial was previously known only from the ship graves at Sutton Hoo and Snape, although the practice was more widespread abroad (Müller-Wille 1970; Schönbäck 1983). The discovery of two organic stains consistent in shape and size with dugout-type logboats, used as burial containers in graves 4 and 47, was therefore important in showing the variety of objects used as funerary structures. This was reinforced when analysis of the container used in grave 3 suggested that a part, perhaps half, of a boat may have been used. The container was of heavily charred oak heartwood (as used for the boat from grave 47), with a 'double skin' visible in several stretches, suggesting burning on both sides of the object. During excavation it was thought to be a coffin, possibly made from a hollowed-out tree trunk. Reconstruction from the grave plans and sections showed the sloping west end and the open east end, the curved sides, and especially the rounded bottom of the object, not unlike those seen in the boats from graves 4 and 47 (Figs 15 and 76). There is evidence for the incorporation of bits of boats in graves in later Anglo-Saxon England (Rodwell 1993; Carver 1990b, 117–9) and, at an earlier period, abroad at Slusegård (Crumlin-Pedersen 1991, 249). The major objection to interpreting the grave 3 container as part of a boat would seem to be the essentially parallel-sided shape of the stain and the blunt western end. If the bow tip had been removed (a possibility given the stain suggested to be a piece of bow seen in grave 10; see below, pp. 242–3), this might have caused a loss of rigidity to the structure, allowing the east end to open out and attain the flat, blunt, more rectangular shape seen. Alternatively, if it were a boat made from a hollowed-out log, there is no reason for it not to have had a blunt end, like a punt. It would be dangerous to link this container with the suggested bow tip found in grave 10, but it is of interest that these two graves and boat grave 4 should be clustered so closely together, possibly implying some form of grouping. The implications and use of boat burial are discussed in more detail in Chapter 7.

Biers

The use of biers on which to carry bodies is well known, but the distinction between a bier and other forms of funerary structure is more difficult to determine from organic soil stains alone. The identification of a bier at Snape has therefore been made tentatively in only one instance, grave 21, where a rectangular-shaped organic layer beneath the body was found, perhaps associated with a single vertical edge. The use of the term is here understood to mean some form of rigid structure upon which the body was lain. Rowena Gale points out that the mixture of charred roundwood of hazel, willow/poplar and oak may support this suggestion, perhaps deriving from a burnt wicker hurdle. The charcoal is also atypical, as the first three *genera* are almost totally absent from other graves. The only other possible bier might have been from

grave 8 where the body lay on a layer of dark staining and charred oak which had no vertical edges.

Textile linings and layers

In four cases, the organic staining seen in many graves was proven to consist of textile, when hot weather dried out the stain and lengths of woven thread appeared. This was seen most clearly in grave 37 where large areas of textile were exposed (p. 208). That the whole of these stains were of textile, rather than just the base in the area of the body stain, is suggested by the threads seen in the upper stain in grave 45, and that used draped, perhaps over the gunwhale, into the logboat in grave 47. The presence of entire linings of textile (Pls XVII–XIX and LVI) might also help to explain why the stains encountered in many graves were so thin and could disappear and reappear, as in grave 32, or could be shown to have such a well-rounded bottom, as in grave 2. Nevertheless, it is clear that making positive identifications of the nature of an organic from only a brown soil stain is difficult and another possibility for the material underlying the stains is animal hide. In two cases (graves 20 and 38) the stains were described by the excavators as having the body stain-like greasy 'feel' and look of degraded leather. Their use might be supported by the use of animal hides in cemeteries elsewhere, for instance in graves 1 and 9 at Great Chesterford, Essex. Here it was suggested that hide may still have been attached to horn cores that were found in the graves (Serjeantson 1994, 66–67).[2] Similarly, bear claws in some of the Spong Hill cremations suggest the incorporation of bearskins in the pyre assemblage (Bond 1994, 134).

The use of textile (or hide) rather than wood is helpful in explaining the form of many container stains in those graves with oval shapes, curves, folds and double lines. Thus, the stain at first thought to represent a slumped coffin lid in grave 45 was revealed by surviving threads to have been textile. Similarly, the odd line at the west end of grave 10 could have been one end of a textile length stretched around the grave; the pointed shape of the stain in the upper levels of grave 37 might have been a fold and the curved base associated with post-holes in grave 2 suggests some form of structure holding a lining together. The way in which the textiles may have been incorporated as a container is still not clear, as some rigidity would have been necessary for backfill not to have collapsed a lining. It is possible that other organic incorporations, for instance withies, may have acted as stiffeners, or perhaps more likely, textiles were leaned up against a packing of backfill as was demonstrated in graves 32 and 47 (see below). Since many stains were relatively shallow in depth, it need not have been difficult to create a textile lining. This may also account for many sections which show the organic stain sloping down into the grave (for instance graves 6 and 10; Figs 17 and 24). If post-depositional forces were to act in any way, it is more likely that a rigid structure like a coffin would (especially if lidded) collapse inwards, or if unlidded retain straight edges through backfill packing it on either side. Exactly such an inward collapse trajectory was seen in the staining of the proposed coffin in grave 17 (Fig. 38).

The use of textile linings seems directly related to the use of organic underlayers to several bodies. In a number of cases, for instance grave 19, it is unclear whether the organic should be seen as a 'liner' or 'layer' having a vertical edge on one side of the grave only. Organic stains beneath bodies were seen in ten graves (9, 11, 13, 16, 28, 31, 34, 36, 38 and 40) or 25% of the total number of inhumations excavated. The fact that the upper parts of an organic stain might easily be lost is perhaps best seen in grave 32 where only two stretches of stain were seen in the upper spits. Had these not survived, the organic seen would have been interpreted as only an underlayer to the body.

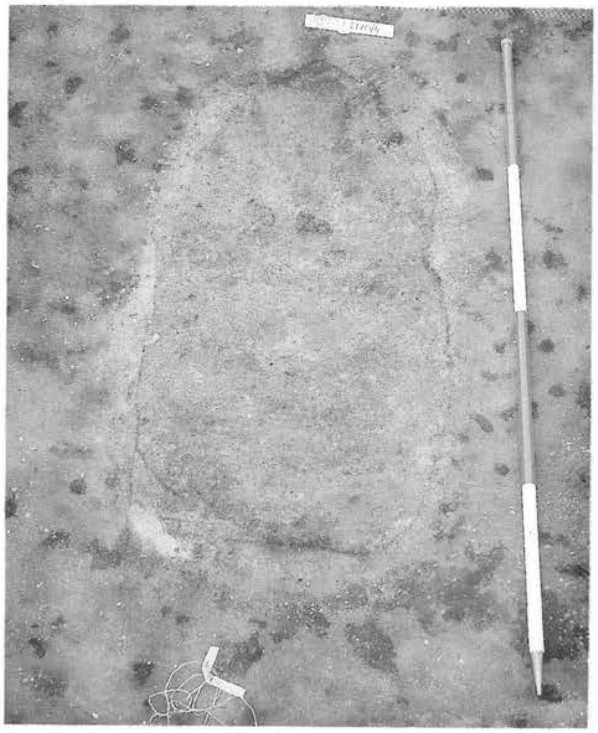


Plate LVI Grave 37, textile lining seen as organic stain lines in the upper fill

The widespread use of these additions to the internal grave structure does not seem to relate to sex, age or phases of the site's use. Indeed, whilst only graves generally 'poor' in terms of grave-goods do not have organic body containers/layers, there are exceptions. For instance, grave 13 was unaccompanied yet had an underlayer, whilst grave 5 was furnished with a respectable assemblage of grave-goods but had no organic stain.

Discussion

On the evidence from Snape it might be that the general interpretation, that dark stains in Anglo-Saxon inhumation graves are the remains of coffins, has been overstated. Instead, linings and underlayers of textile or hide may once have been far more common than the published material suggests. The soil conditions of Snape have been principally responsible for their survival and other East Anglian sites with similarly sandy conditions have also recently begun to produce such stains, for instance Harford Farm, Norfolk (Penn 2000) and the Boss Hall and Buttermarket sites, Ipswich (Scull forthcoming). An older excavation at Little Eriswell, Suffolk also seems to have had such remains, grave 33 being noted as having 'heavy fabrics over the entire body' (Hutchinson 1966, 12).