EXCAVATION OF A SAXON *GRUBENHAUS* AND ROMAN DITCH AT KENT ROAD, ST. MARY CRAY

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INTRODUCTION

In the late summer of 1982, an open plot of ground in Kent Road, St. Mary Cray, became available for archaeological investigation by kind permission of the owners, the London Borough of Bromley. The land was formerly occupied by the terraced houses and domestic gardens of nos. 10–20 Kent Road, and was excavated by the Orpington and District Archaeological Society from September 1982 until May 1983, after which period the site was sold for development. These investigations were prompted by the known existence of Romano-British and Saxon sites in this area of St. Mary Cray, including a Romano-British bath-house (Palmer, 1974) and a pagan Saxon cemetery (Tester, 1968; Tester, 1969) at the intersection of Poverest Road and Cray Avenue, together with a Romano-British corn drier in Lower Road (Fisher, 1978) while there is a wide scatter of abraded Romano-British pottery over much of the area.

The site lies about 150 m. east of the headwaters of the River Cray, which is now about 4 m. wide at this point. The level alluvial plain is about 150 m. wide, and the site is about halfway up the very gently sloping valley side. The natural subsoil at the site is gravel, with some lenses of brickearth and some of clay, overlying Upper Chalk.

EXCAVATION PROCEDURE

The site was cleared of vegetation and five small trenches were dug. Below the modern layers, one of these revealed a non-natural, nearly vertical, cut into the gravel and produced coarse Saxon pottery, while a second produced Romano-British pottery. A rectangle which

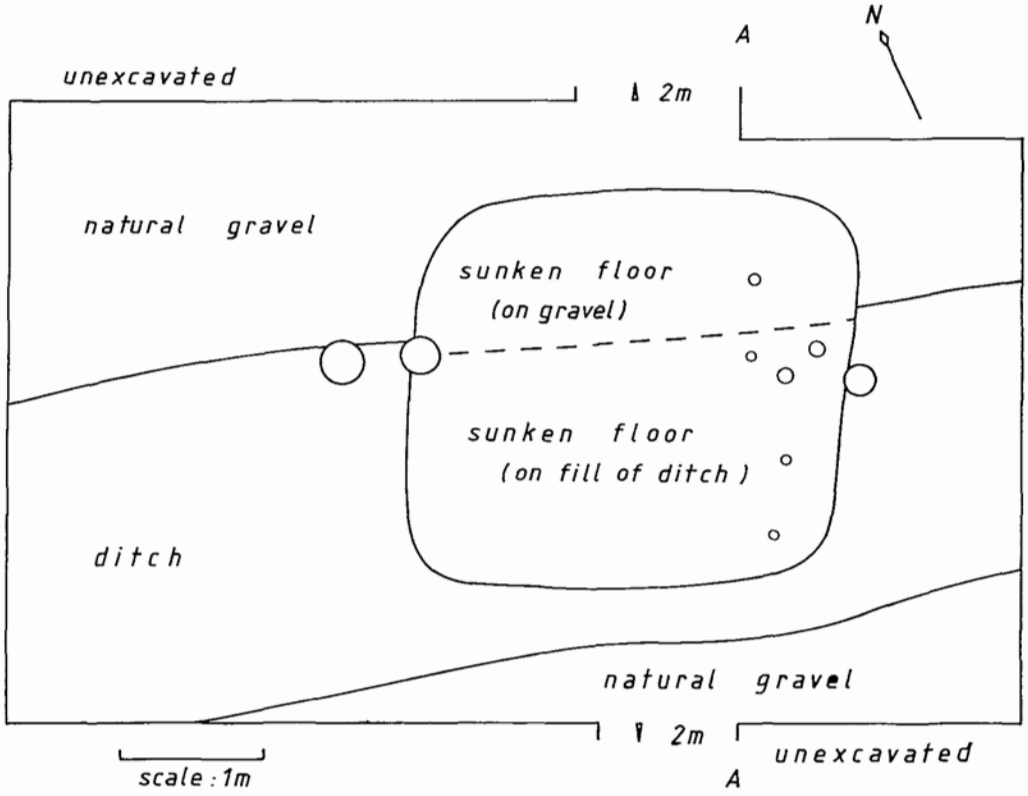

Fig. 1. Plan of Features.

included these two trenches was therefore excavated. The excavation (N.G.R. TQ 47076739) revealed a ditch, together with a shallow sub-rectangular depression, subsequently shown to be a *Grubenhaus*, located partly in the upper part of the filled ditch and partly in the natural gravel alongside the ditch. These features are shown in plan and in section in Figs. 1 and 2, respectively. The excavation was performed in two stages, the area to the west of A–A (Fig. 1) being excavated first, enabling observation of the north–south section at A–A (Fig. 2) through the *Grubenhaus* and ditch. The remaining area to the east of A–A was then excavated.

PHASE I – THE ROMANO-BRITISH DITCH

This feature had been dug directly into the natural subsoil, which is mainly sandy gravel consisting of poorly sorted sub-angular flints of sizes up to about 15 cm. across. The gravel, which contains a few lenses of yellow brickearth, is overlain by about 60 cm. of modern topsoil containing eighteenth- and nineteenth-century material and a few abraded Romano-British sherds. Between the gravel and the topsoil is a patchy disturbed layer of strips of very chalky soil about 5 cm. in thickness, perhaps the result of marling.

The ditch, which runs approximately east–west, is V-shaped and is between 2 m. and 2.5 m. wide and 1.2 m. deep. These dimensions relate to the surface of the gravel, and the original overall dimensions would have been somewhat greater as they would have included an upper part dug through the then existing topsoil.

A length of 7 m. of the ditch was excavated, all that could be dug in the time available. The ditch fill was of three main types. The lowest fill was excavated in two 1 m. sections only, because this part of the excavation was hampered by a considerable influx of ground water necessitating constant baling whilst trowelling. This lowest fill consisted of poorly sorted flints up to 15–20 cm. across, together with yellow-brown sandy gravel. Along the central line of the ditch, flints predominated, but near the sides, the yellow-brown small gravel formed the majority component. The upper boundary of this lowest fill formed a flattened U-shape within the V-shaped ditch. This material must be the primary fill of the ditch, formed principally by flints and sand dislodged from the sides, with the larger flints having tumbled further towards the centre of the ditch.

Above this layer, the ditch fill consisted mainly of dark sandy silt with occasional small flecks of burnt clay and charcoal. However, the central lower portion of this upper fill consisted of rather paler material containing much bone, including 130 cattle horn cores, mingled with flints of the type described previously.

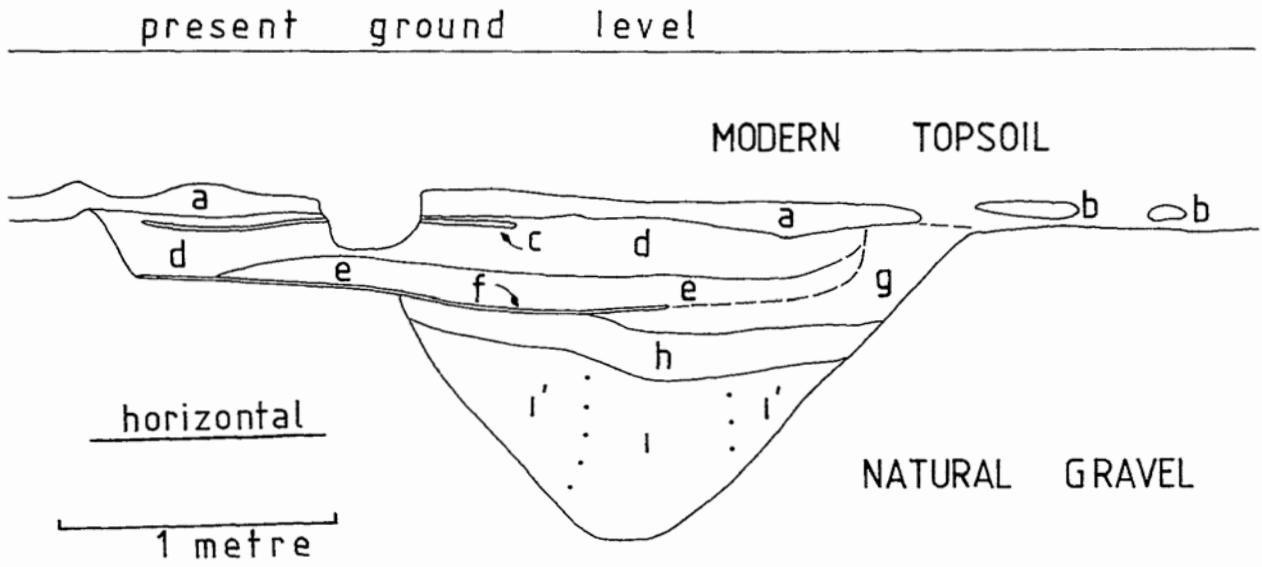

Fig. 2. Section through *Grubenhaus* and Ditch at A–A.

(a = chalky layer; b = clay; c = greenish loam; d = very dark loam; e = brown to dark brown sandy loam; f = sand; g = medium brown loam, containing specks of charcoal, chalk and burnt clay; h = dark brown loam with large flints, more abundant towards the ditch centre; i = large flints with brown gravel; i′ = yellowish sandy gravel with flints).

The stratigraphy of the ditch may be interpreted in terms of a comparatively rapid initial partial filling mainly by flints from the sides to give a U-shaped section, followed by a slower accumulation of silt, but with some flints still occasionally falling in and then finding their way to the lowest centre of the ditch on account of their weight; during this period much bone was deposited in the ditch.

About 16 kg. of Romano-British pottery was recovered from the length of the ditch excavated, and is described more fully in the relevant appendix. A significant quantity of it consisted of BB2, among which mid- to late-second century pie dishes were well represented, together with coarse local wares including some Patch Grove. A relatively large amount of samian (80 sherds) was recovered which was entirely later second-century Central Gaulish. There were only a few sherds of colour-coated wares and nothing in the ditch was necessarily later than late second-century (except the coin mentioned below). Well stratified in the ditch about 35 cm. below the natural gravel surface were the dispersed fragments of a fine complete beaker (Fig. 4, no. 14). It is probably Upchurch region ware and is assignable to late second/early third century. It seems to have been broken *in situ*. Taking all the pottery evidence, a late second-century or possibly early third-century date for the main ditch fill seems certain. Only one coin, a bronze of Licinius I (A.D. 308–324) was found in the ditch and this was in an area showing signs of disturbance; it would seem inadvisable to allow this single coin to alter the estimated age of the ditch fill.

There is little evidence that the lowest primary silt levels of the ditch contain pottery which is earlier than the main fill. Among the sparse pottery found in the primary fill was a substantial proportion of Patch Grove ware, often considered to date to around A.D. 50–200, and other coarse wares. However, a few sherds of late second-century samian, including a stamped base, were found in the lowest levels. This, of course, need only indicate a very thorough cleaning out in or after the late second century of an already existing ditch, rather than indicating a late second-century *terminus* for the initial construction of the ditch. However, it would be unsafe to conclude from this slender evidence that the ditch necessarily had an extended operational life, though that may well in fact be the case.

The ditch traverses a very gentle slope and is directed at about 60° to the line of greatest slope. Trenches were excavated for 3 m. on each side of the ditch to investigate the possibility that it was a side ditch of a road, but no traces of metalling were found. It is certainly too small to be of a defensive nature. It seems likely to be a drainage or boundary ditch, or possibly combined both functions. It is about 350 m. from the ditch (Tester, 1968) from the fill of which fourth-

century pottery was obtained. If the ditch does extend in a direct line towards the river, it would meet the river almost at right angles in 150 m. It may or may not be relevant that a spring emerges in a rear garden on a direct line with the ditch about 50 m. from the river.

PHASE II – THE *GRUBENHAUS*

This feature consisted of a level, approximately rectangular, sunken platform located partly in the natural gravel on the north side of the ditch and partly in the ditch fill (Fig. 1). Its longer sides were almost parallel to the direction of the ditch. It was about 30 cm. deep relative to the natural gravel surface, and would presumably have been (30 + x) cm. deep when constructed, where x was the depth of the topsoil, presently 60 cm.

There were three post-holes; two were only 55 cm. apart near the centre of the west edge and one was near the centre of the east edge. All were between 25 cm. and 35 cm. in diameter; the larger western pair appeared to contain flint packing while the smaller eastern hole contained no packing. The two western post-holes were positioned just inside the edge of the ditch, and therefore did not enter the gravel squarely. The east post-hole was positioned in the softer ditch fill. This is, therefore, a *Grubenhaus* of the two-poster type, but one of the gable posts must either have rotted and been replaced, or else the original hole was unsatisfactory, perhaps owing to striking the sloping ditch side, and had to be replaced. Traces of an irregular row of stake-holes, mostly circular, were found near the east side of the *Grubenhaus*; their diameters and positions are indicated in Fig. 1. No traces of wooden flooring or revetting were observed.

The fill of the *Grubenhaus* consisted almost entirely of a very dark loam with small lenses of dark greenish soil of a rather greasy texture. A paler layer up to 13 cm. thick underlay the darker layer, particularly on the south side. The main dark fill, which contained pig, cattle and sheep bone, represents animal and possibly vegetable refuse disposal. The edges of the *Grubenhaus* were sharply defined where it cut the gravel, which it did obliquely, but where it cut the ditch fill, the latter merged more gradually into the *Grubenhaus* fill, and the inclination of the cut to the vertical could not be determined. None of the finds was so closely associated with the floor surface of the *Grubenhaus* that it could be considered to be probable occupation material.

DISCUSSION

Although much of the interest of this site derives from the *Grubenhaus*, consideration of this will be preceded by some observations on the Romano-British ditch. It is very probably a land boundary/drainage ditch, having regard to its situation relative to other Romano-British features in the vicinity, and may have possibly drained into the nearby river, though no attempts were made to determine its course outside the excavation area. The main ditch fill can be securely dated to around the late second century, or possibly early third, but the construction date may have been considerably earlier. The large numbers of cattle bones in the ditch fill and their high proportion relative to other animal bones indicate the importance of cattle, presumably grazing on good water meadow pasture, in the economy. The presence in the ditch of unbutchered horse bones seems to indicate that the local supply of food was reasonably adequate.

Regarding the *Grubenhaus*, the dimensions of this structure are similar to the smaller of the *Grubenhäuser* at Mucking, and it would be approximately the twentieth, if placed in the size sequence of 195 sunken huts which has been given for that site (M.U. Jones, 1979). It is similar in size to two of the *Grubenhäuser* at Heybridge, GH1 and GH4 (Drury and Wickenden, 1982). Its layout is orthodox except that the pair of post-holes at the west side is unusual, though GH3 at Heybridge has two post-holes at the west side paired laterally, rather than lengthwise as at St. Mary Cray.

Approximately 4 kg. of sherds of Saxon pottery and 5 kg. of Romano-British sherds were recovered from the *Grubenhaus* fill. The pottery is more fully described in the relevant appendix, but to summarise, the Saxon ware consists mainly of undecorated hand-made coarse pots in a soft dark grey to black fabric with a highly burnished black surface. Substantial portions of three pots have been reconstructed. Importantly, eleven fragments of four carinated decorated bowls were present, as were some sherds bearing *schlickung*. The Romano-British pottery includes a significant amount of Oxford ware with some late Alice Holt material. It consists mainly of individual sherds which do not form substantial portions of vessels, but does include much of an Oxford flanged bowl (in two separately located contiguous parts), and a few other sherds which were contiguous. The sherds were comparatively unabraded. These points are mentioned because the question as to what extent the Romano-British material is residual is of considerable interest.

Seven coins were found in the *Grubenhaus* fill; their date range is A.D. 268–375. None of the coins had been pierced, though one had

been indented. This contrasts with, for example, West Stow, where many coins had been pierced (West, 1969). None of the Saxon small finds are at all closely datable; but they are discussed in the relevant appendix.

The age of this *Grubenhaus* is of considerable interest. Though the Saxon coarse pots are in themselves not closely datable, the presence of *schlickung* is an indicator of an early date (Jones, Myres, and Evison, 1969). A principal consideration is the presence of the decorated carinated bowl sherds, which conjoin and certainly do not appear to be residual, and are appropriate to the fifth century. A further factor is the relatively unabraded state of some of the late Romano-British pottery and the large amount of the Romano-British pottery compared with the Saxon pottery. All these circumstances must suggest a date within the fifth century, and the Saxon pottery would fit comfortably into the middle of that period.

It is of very considerable interest that a rather similar assemblage at Heybridge (with only one fourth-century coin, however) has been interpreted in terms of the contemporary use of late Romano-British pottery and the involvement of Saxon settlers in the life of the late Roman town (Drury and Wickenden, 1982). This type of situation cannot be ruled out at St. Mary Cray; however, it is perfectly possible that Saxon settlers recovered discarded, perhaps slightly damaged, late-Roman pottery for their own use. This would remove the postulation of direct trade with a continuing Romano-British pottery industry.

With regard to the economy of the Saxon settlers, it is possible that the considerable occurrence of pig among the animal bones in the *Grubenhaus*, together with evidence for red and roe deer, may indicate the greater relative importance of woodland in that period.

The final area for consideration is the possible relationship between the *Grubenhaus* and the Saxon cemetery 450 m. across the river at Poverest. As these seem to be contemporary (Myres' view, reported in Tester, 1969, of Saxon pottery from the Poverest cemetery was that it dated to 'the Hengist and Horsa horizon in Kent'), it is reasonable to draw the conclusion that the *Grubenhaus* may represent part of the settlement area associated with the cemetery. It would indeed be desirable, if opportunity offers in the future, to investigate whether there are further early Saxon features near to the single *Grubenhaus* here reported. It should be noted that subsequent to the excavation, extensive building foundation trenching carried out to the south of the *Grubenhaus* revealed no features of interest; the probable area of greater interest may, however, lie to the north.

THE COARSE POTTERY

The Ditch

The weight of sherds recovered was 16 kg. and a representative selection is shown (nos. 1–23, Figs. 3 and 4). Their condition varied from small and eroded to larger sherds with sharp fractures. Dating considerations depend on the following: (a) The samian is limited to later second-century Central Gaulish (see report below); (b) the presence of a complete, fragmented late-second/early-third century beaker (no. 14) probably broken *in situ*; (c) the presence of a good deal of later second-century/early third-century BB2 (nos. 7, 8, 10, 11, 15, 22 are representative); (d) the absence, except for three or four sherds from contexts subject to some disturbance, of Oxford, Nene Valley, and later Alice Holt wares. Although three sherds of late second-century samian were found in the very bottom of the ditch, so was material represented by nos. 20 and 23. Some Patch Grove ware of standard type was present (not illustrated).

The Grubenhaus: the Saxon Pottery

The weight of sherds recovered was 4 kg. and a representative selection is described (nos. 24–34; Fig. 5). The material consists mainly of thick black sherds in Fabrics I, II, III and IV, (these Fabrics are described at nos. 24, 25, 29 and 30, respectively) and is hand-made. Much is highly burnished. The great majority come from roughly made round- or flat-bottomed undecorated bowls (nos. 24–26 are representative). A few sherds bear *schlickung* (no. 29, not illustrated, is representative), which is believed to be characteristic of the earlier Migration period. Four decorated carinated bowls were represented (nos. 31–34). These are much finer than the coarse bowls but are also Fabric I, and this might possibly suggest a local origin; all are consistent with a fifth-century date.

The Grubenhaus: the Romano-British Pottery

The weight of sherds recovered was 5 kg. and the selection shown (nos. 35–43, Fig. 5) is representative, but emphasises the colour-coated and fine wares, which together constitute 0.8 kg. (33 sherds). In addition to residual sherds similar to those from the ditch, late-Roman sherds were also present. These included Oxford (nos. 40–42) and Alice Holt material (0.7 kg., 39 sherds; see the report below). A few sherds of Nene Valley (no. 39), one sherd of Hadham ware, and two sherds of late third/fourth-century cream-slipped ware, were also present. Some of this later material consists of small abraded sherds, but some does not, a notable example being no. 42.

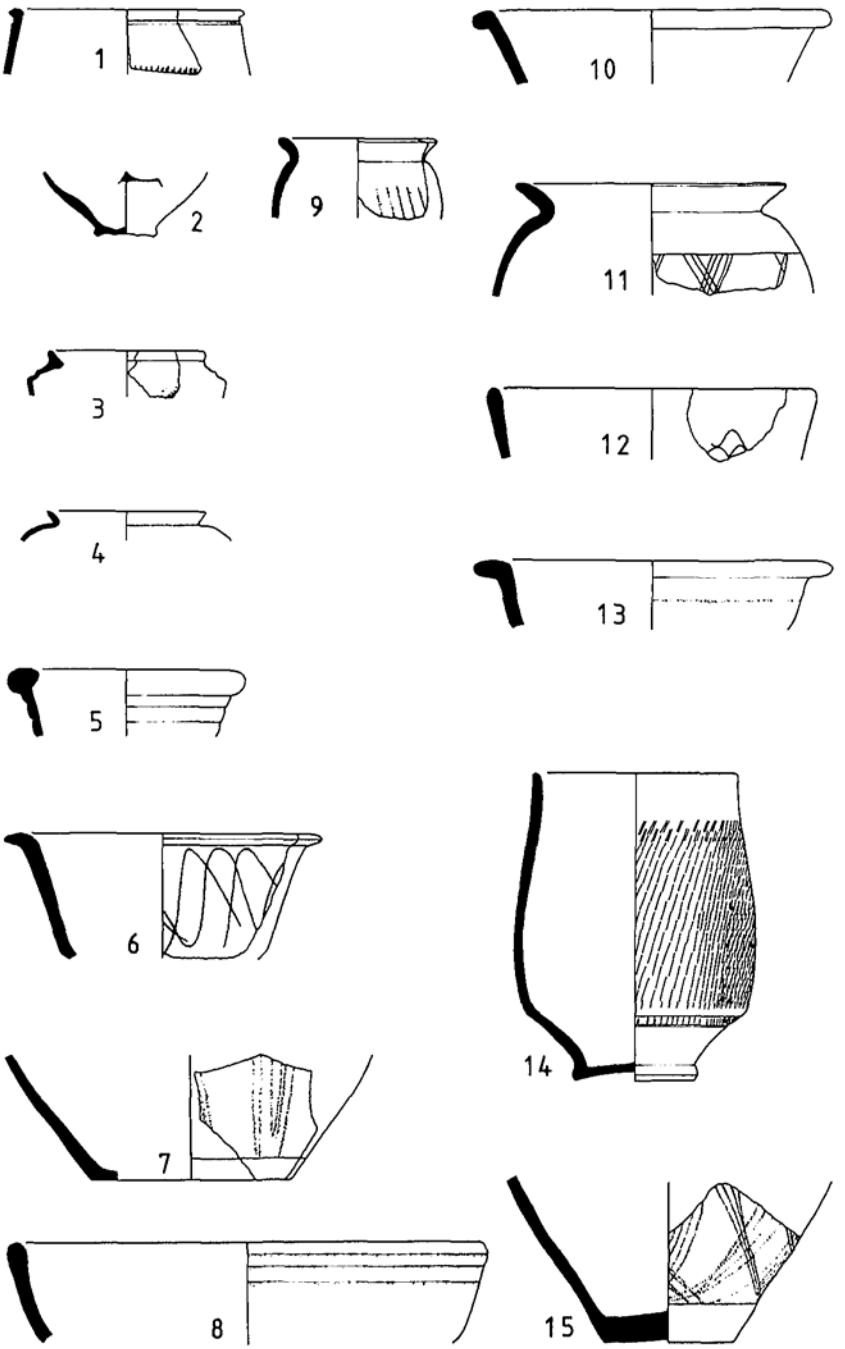

Fig. 3. Coarse Pottery (Scale: ½).

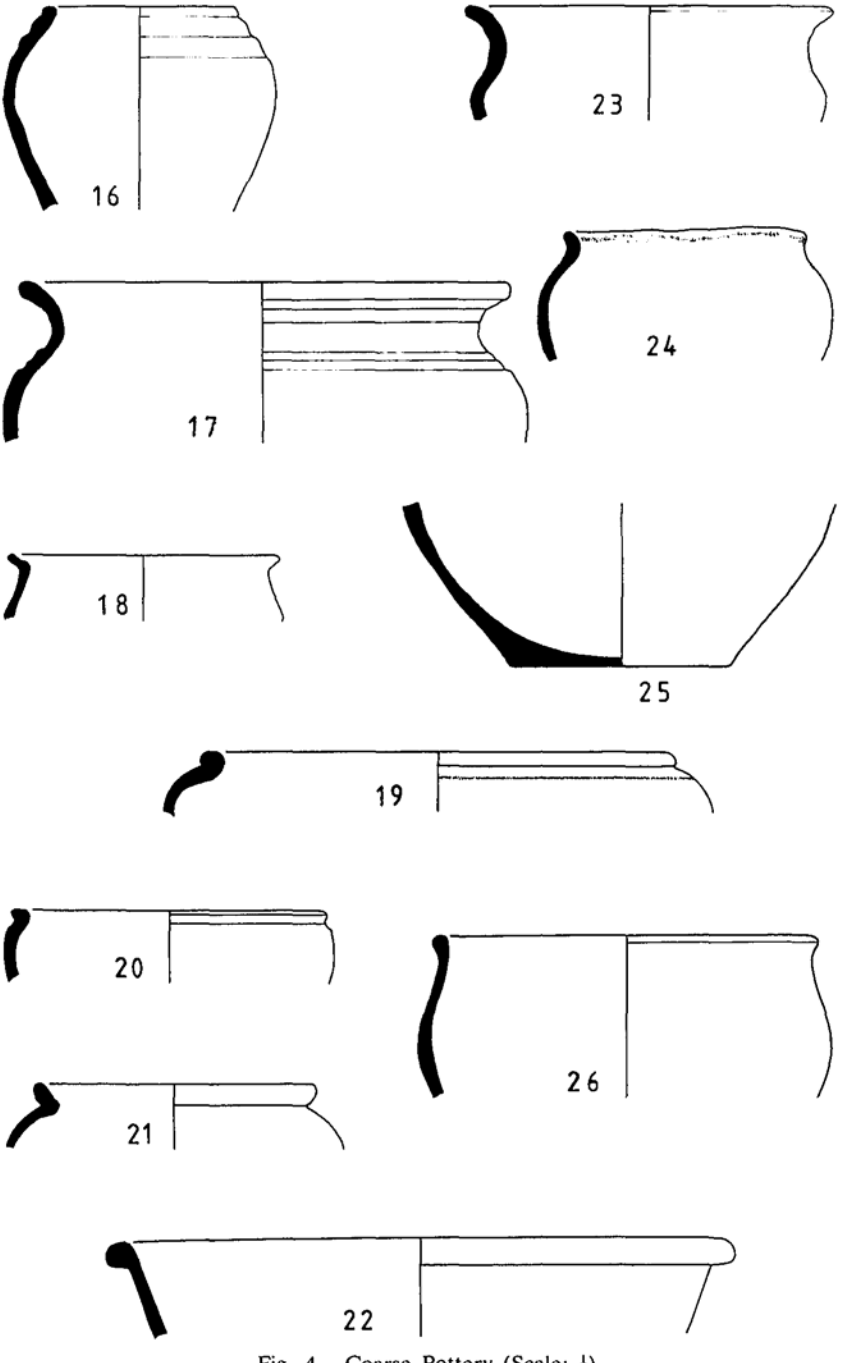

Fig. 4. Coarse Pottery (Scale: $\frac{1}{4}$).

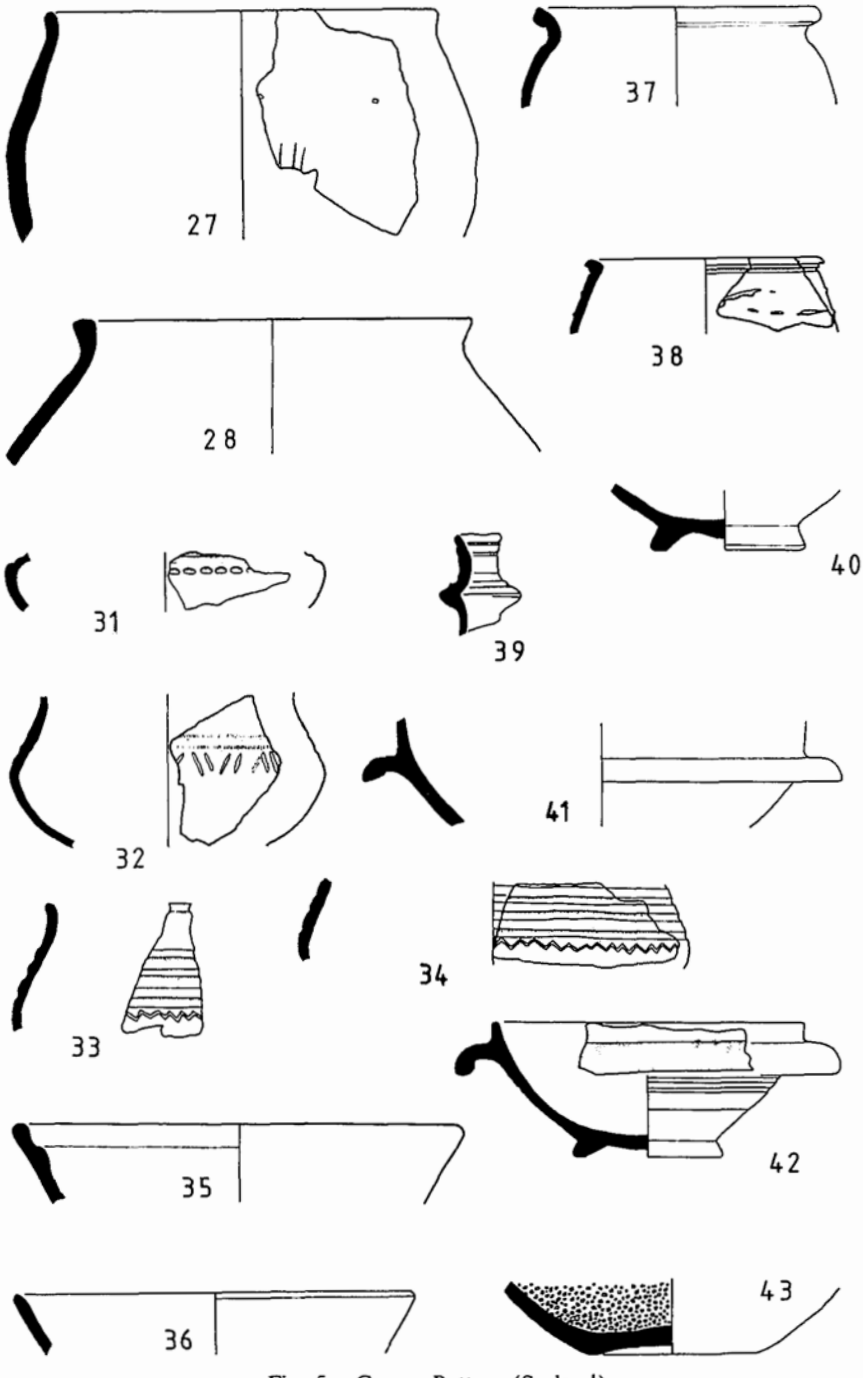

Fig. 5. Coarse Pottery (Scale: $\frac{1}{4}$).

The Ditch

1. Cornice-rimmed colour-coated beaker with rouletting. Dark brown colour-coat on white fabric. Sparse black or brown ironstone inclusions, 0.2 mm. Probably Köln, A.D. 120–200.
2. Base of colour-coated beaker with some rouletting visible. Glossy chocolate colour-coat on brownish pink fabric. Sparse mica inclusions, up to 0.3 mm. Rhenish, probably Lezoux, A.D. 120–200.
3. Small mica-dusted jar. Pink surfaces, the outer sparsely dusted with yellow mica flakes, 0.1 mm. and less in size. Fabric fine, grey with brick-red outer layers. Sparse red and black ferruginous inclusions, 0.2–0.4 mm., sparse angular white inclusions, 0.5 mm. Signs of commencement of an indentation at lower right of sherd.
4. Small everted-rim jar, pink inner and outer surfaces. Smooth and fine. Fabric similar to 3, but with almost no inclusions.
5. Rim sherd of unusual form. Parchment surface and fabric. Abundant angular and rounded clear, grey and brown quartz inclusions 0.1–0.2 mm.
6. Hand-made everted-rim bowl. BB1. IV.G.2. (these symbols are Southwark form designations, Marsh and Tyers, 1978). Looped lightly-incised decoration. Black outer and inner surfaces, both burnished. Grey fabric with very abundant rounded and angular quartz inclusions 0.2–0.4 mm. Hadrianic and later.
7. Base of jar with lowest side burnished and lightly burnished groups of vertical lines. Dark grey surfaces. Pale grey inner fabric with purplish-brown outer layers. Sparse round black inclusions, 0.1–0.2 mm., and sparse angular quartz, 0.1–0.3 mm. Similar to II.F.8 or 9, and probably later second/early third-century.
8. Small everted-rim jar with very lightly applied closely-spaced lattice. Grey surfaces, reserved zone lightly burnished. Chocolate fabric with thin grey outer layers. Moderate rounded quartz inclusions, 0.1–0.3 mm. Similar to Brown and Sheldon 1974, no. 95, and there dated A.D. 140–160.
9. Plain-rim dish or bowl, BB2, with faintly-burnished horizontal lines on black outer surface; inner surface also black. Rather soft black fabric. Poorly sorted quartz inclusions, sparse, rounded and angular, clear and milky, 0.1–0.4 mm.
10. BB2 bowl with rounded D-shaped rim. IV.H.6. Grey lightly burnished surfaces. Fabric pale grey with medium outer layers. Moderate angular quartz inclusions, 0.1–0.4 mm. Hard-fired. This sherd, together with no. 22, is representative of several other examples. Later second-century.

11. Everted-rim BB2 jar with open lattice decoration. II.F.6. Burnished reserved zone. Medium grey interior and exterior. Fabric: grey between purplish-brown outer layers, moderate angular quartz around 0.1 mm. Later second/early third-century.
12. Rimless dish, BB2, with wavy decoration. IV.J.2. Burnished grey inner and outer surfaces. Grey inner fabric between chocolate outer layers. Abundant inclusions of angular quartz, 0.1–0.2 mm., and amorphous black material, 0.2–0.3 mm. Second-century.
13. Bowl with everted flattened rim. Burnished bands, one on side, and others on top of rim. Grey interior and exterior surfaces. Fabric pale grey between grey outer layers. The distinctive fabric has a striated appearance under microscope, with abundant clear rounded quartz, 0.1–0.3 mm., and sparse rounded reflective black inclusions, 0.1 mm.
14. Beaker with plain rim, grey inner and outer surfaces. Extensively rouletted in an expert manner giving a cut-glass appearance with the effect of an overall pattern. Reserved zones burnished. Pale grey inner fabric, purplish brown thin outer layers. Sparse angular quartz inclusions up to 0.1 mm., fine fabric. Slightly unusual form, but Hull 1958, nos. 135, 143 and 144 are fairly similar. General style suggests late second/early third-century. Found virtually complete, in approximately 40 fragments. Small round hole remains, and the type of cleavage around its edges suggests the beaker may have been struck by a missile such as an arrow. Possibly north Kent marshes.
15. Base of jar with lowest side burnished and burnished open-lattice decoration. II.F.8, decoration as II.F.6. Dark grey inner and outer surfaces, hard-fired, but rather roughly-made. Fabric dark grey inner between brown outer layers. Abundant angular quartz, 0.1–0.3 mm. Later second-century.
16. Hand-made jar with everted rilled rim. Grey-brown inner and outer surfaces. Dark grey inner fabric between pale brown outer layers. Abundant amorphous black inclusions 0.1–1 mm., sparse angular white inclusions 0.1 mm. Hard-fired.
17. Hand-made jar, with rilled neck showing traces of glossy black burnish, surfaces otherwise grey. Soft grey fabric with pale brown inner layer. Abundant black amorphous inclusions, 0.1–0.7 mm., and some large (1 mm.) yellow-grey amorphous inclusions.
18. Recessed everted-rim bowl, grey inner and outer surfaces. Grey fabric with sparse rounded quartz inclusions, 0.1 mm., and very sparse rounded black inclusions, 0.1 mm.

19. Bead-rimmed jar, incised line below rim, dark grey outer surface, brown and dark grey inner. Slightly corky surface appearance owing to decomposition of shell-tempering in surface layer only. Chocolate fabric. Shell-tempered, fragments 0.1–2 mm. in size, only other inclusions sparse quartz, 0.1 mm.
20. Hand-made flattened-bead-rim jar. Pinkish brown suraces with smooth texture. Fabric grey with pinkish brown outer layers. Black ferruginous inclusions abundant, 0.1 mm. From bottom silt of ditch.
21. Grey-ware jar with recessed semi-bead rim. Medium grey sandy inner and outer surfaces. Hard-fired. Grey inner fabric between pale brown outer layers. Abundant semi-angular quartz inclusions, 0.05–0.1 mm., with a few large pieces, 0.2–0.3 mm.
22. BB2 bowl with rounded D-shaped rim. IV.H.6 or 7. Dark grey inner and outer surfaces. Narrow dark grey inner fabric between brown outer layers. Moderate sub-angular quartz, 0.2 mm., sparse angular white inclusions, 0.05 mm. Hard fired. Later second-/early third-century; this sherd is representative of several other examples.
23. Hand-made necked jar, lightly rilled. Dark grey, slightly glossy surfaces, smooth texture. Soft chocolate fabric. Abundant inclusions of black ironstone and shell, 1 mm. From bottom silt of ditch.

Saxon Pottery from the Grubenhaus (all hand-made)

24. Plain bowl, unevenly finished surface and rim, highly burnished black exterior and interior. (N.B.: The uneven nature of the rim, of which nearly 180° was recovered, is shown in the diagram which depicts the exterior of the rim. Diagrams 26–28, showing bowls where less rim was recovered, are conventionally depicted with linear upper edges, but recovered portions of rim are in fact irregular, similar to this example.) Soft black fabric (Fabric I), abundant sub-angular quartz, 0.05–1 mm., sparse powdery white inclusions, 0.4 mm. Slight glitter on inner surface due to quartz and a little mica. The partial forms shown here and in nos. 25 and 26 are typical of early Saxon undecorated bowls (Hills, 1977, 91–106; Hills and Penn, 1981, 90–111). Fabric I sometimes contains very small amounts of mica which are not easily seen under the microscope in the fabric owing to random orientation, but can be seen (together with quartz crystals) as a slight surface glitter where the burnishing action has exposed them flat on the surface.
25. Base of flat-bottomed bowl. Outer surface brownish grey, inner black and burnished with slight glitter due to quartz. Fabric

similar to Fabric I but with moderately frequent rounded voids, 1 mm., some carbonaceous and some whitish; probably seed-tempered (Fabric II).

26. Bowl similar to no. 24 but larger and with more strongly-formed rim. Black surfaces (outer partly grey-brown), burnished, some surface quartz glitter. Fabric II.
27. Bowl showing vertical linear incised decoration. Surfaces black, outer burnished. Fabric I. Slight surface glitter due to quartz and a little mica. Decoration somewhat similar to Hills and Penn, 1981, nos. 1898, 1907, 2207. Two large milky quartz crystals set in outer surface parallel to edge may or may not be decoration.
28. Bowl with rather unusual flattened rim. Harder-fired than the other examples. Outer surface brown-grey, burnished, inner surface similar colour, not burnished. Fabric dark grey with very thin brown surface layer. Fabric I.
29. (*Not illustrated*) Four joining sherds, part of wall of large vessel, probably bowl. Grey and brown surfaces, outer covered with *schlickung* (a particular type of applied roughening) except extreme top, where burnished; inner lightly burnished. Fabric black, containing very abundant sub-rounded clear quartz, 0.2–0.4 mm., some pieces especially in *schlickung* up to 2 mm.; also moderate whitish inclusions, 0.05 mm. and less (Fabric III).
30. (*Not illustrated*) Four joining sherds, part of a wall of large vessel, probably bowl. Grey exterior surface, grey-brown interior. Fine brown fabric, only inclusions abundant shell, 0.1–2.0 mm. (Fabric IV). Shell present in surface (not leached or burned out).
31. Decorated carinated bowl. Black surfaces, slightly burnished, with slight quartz glitter. Shallow finger-tipping under linear corrugations. Fabric I. Similar to Jones and Jones, 1975, Fig. 53, no. 7. This example and nos. 32–34 are much finer than the preceding examples.
32. Decorated carinated bowl, two joining sherds. Lightly incised double-V decoration below shallow linear corrugations. Black inner and outer surfaces, both burnished, with slight quartz glitter. Fabric I. Similar to Jones and Jones, 1975, Fig. 53, no. 11, and perhaps significantly, to Tester, 1968, no. 28A.
33. Decorated bowl with lightly incised continuous-V decoration under linear corrugations. Black-burnished inner surface with slight quartz and mica glitter; outer surface brownish-grey burnished. Fabric I, but grey with slight pink inner layer in places. Four joining sherds.
34. Decorated carinated bowl very closely similar to no. 33 but

probably not the same vessel. Four joining sherds. The form and the components of the design of this example and no. 33 are similar to aspects of no. 386, 217, and no. 530, 219 (Myres, 1969), and nos. 9, 10, 34 and 35 (Drury and Wickenden, 1982); however, an individual parallel incorporating all features of form and decoration is difficult to find.

Roman Pottery from the Grubenhaus

35. Ledged bowl or dish, grey surfaces. Chocolate fabric, moderate rounded whitish inclusions, 0.05–0.1 mm.
36. Rimless bowl or dish, dark brownish grey surfaces. Dark chocolate outer fabric, dark grey inner layer. Abundant quartz, 0.05–0.1 mm.
37. Everted-rim jar, grey surfaces. Pale grey inner fabric with medium grey outer layers. Abundant clear quartz, 0.1–0.2 mm.; very sparse mica, 0.1 mm.
38. Rim of colour-coated cornice-rimmed beaker. Glossy dark chocolate slip on very white fabric. Barbotine decoration, slip over. Fabric fine and hard, no inclusions over 0.01 mm. Köln – for analytical evidence, see below, p. 00.
39. Top of colour-coated flagon. Chocolate slip over parchment fabric. Rather irregularly formed. Very sparse inclusions of mica, 0.05 mm., red ironstone, 0.1 mm., and quartz, 0.1 mm. Nene Valley.
40. Foot-ring base, probably of flanged bowl similar to nos. 41 or 42. Darkish orange red slip over orange fabric, with grey interior in places. Hard granular fabric, moderate red and black ironstone, 0.1 mm., and sparse larger pieces, 1 mm.; sparse chalky inclusions, 0.1 mm. Oxford region. C51 or C52, A.D. 240–400+. (Type designations are those of Young, 1977.)
41. Flange of flanged bowl, probably similar to nos. 40 and 42. Orange-red slip over thin orange outer layers, grey interior. Moderate red and black ironstone inclusions, 0.1 mm. Oxford region. C51, A.D. 240–400+.
42. Flanged bowl imitating Dr. 38. Orange-red slip over thin orange outer layers with grey interior. Hard granular fabric, abundant black and red ironstone, 0.1 mm., and very sparse chalky inclusions, 0.2 mm. White slip decoration on flange. Over half this vessel was recovered, in two pieces, with sharp fractured surfaces but interior well worn. Oxford region. C52, A.D. 350–400+.
43. Base of mortarium. White slip over thin orange buff outer layer, grey interior. Hard, finely granular, fabric. Sparse to very sparse black inclusions, 0.05–0.15 mm. Grits are clear, milky, or

brownish quartz, 1.5–2.0 mm. Oxford region. WC7, A.D. 240–400+.

THE ALICE HOLT WARE

M.A.B. Lyne

The Romano-British pottery recovered from the *Grubenhaus* consisted largely of residual first and second-century pottery, possibly drawn from the surrounding ditch fill, together with some late fourth-century material. This latter included some abraded Alice Holt pottery none of which need be earlier than A.D. 350. Six rims were present, three everted-rimmed cooking-pots, two grey ware hook-rimmed jars, and a beaded and flanged bowl. Apart from these rims, also present were body sherds from a large Class 1C or 4 Alice Holt storage jar with ?scroll combing and a rilled sherd from a buff-surfaced hook-rimmed jar. Most of this material was fairly comminuted and abraded.

The pottery recovered from the ditch contained two sherds from Type 1.11 cordoned jars (Phase 2, A.D. 60–150) (Lyne and Jefferies, 1979).

CHEMICAL ANALYSIS OF ALICE HOLT AND KÖLN SHERDS

In two instances, chemical analysis of pottery sherds by inductively coupled plasma (ICP) emission spectrometry was undertaken in order to test their classification as to source. The method has been described (Walsh and Howie, 1980) and Dr. J.N. Walsh of the Department of Geology, King's College, is thanked for his co-operation and for making available the NERC-funded spectrometer, as are Messrs. S.J. Adams and J.M.V. Storey of the Departments of Geography and Earth Sciences, and of Chemistry, respectively, Queen Mary College, who were responsible for the experimental work and computing on which this summary report is based. This investigation forms part of a larger programme of which fuller details will be submitted for publication in an appropriate place in due course.

The Alice Holt Material

Alice Holt pottery has been analytically characterised by the ICP method (Hart and Adams, 1983) and, owing to the interest of the occurrence of the late Alice Holt ware in the *Grubenhaus*, it was decided, at the suggestion of Mr. Lyne, to test by chemical analysis

his attribution of these sherds. A random sample of seven sherds was taken and since six of these were small body-sherds and only one a rim-sherd, they provided a fairly stringent test of the attribution to Alice Holt made on a visual basis alone.

The sherds were sampled and analysed for 23 elements as described previously and submitted, together with the main Alice Holt data base of 67 kiln-source sherds, to a BMDP Euclidean-distance centroids-clustering procedure. Five samples clustered with the Alice Holt group, two joining early, and three later, but before 9 of the known Alice Holt samples. One sherd clustered with the three known Overwey samples; products of the outlying Overwey kiln site are not considered to be visually distinguishable from products of the main Alice Holt site. One sherd did not cluster with the Alice Holt material. Slightly different statistical treatment gave essentially the same results. Thus, the analysis of five sherds is consistent with an Alice Holt origin, the analysis of one is consistent with an Overwey origin, and one sherd is very unlikely to come from either source.

The Köln – Nene Valley Problem

Recent work based on chemical analysis of hunt cups and similar wares, having white fabrics and occurring on British sites, has shown that the Köln material may be the more numerous (Anderson, Fulford, Hatcher and Pollard, 1982). It seemed of interest to test sherd no. 38 by ICP analysis to confirm or reject the tentative visual assignment to Köln based on the very white fabric and superior fineness. The resulting values, for the 7 elements accurately reported by Anderson *et al.*, place no. 38 between the two Köln groups A and B, but well outside the Nene Valley values (deviation of 13.5 σ for Nene Valley A and 13.3 σ for Nene Valley B over 7 elements). The analysis thus points strongly towards a Köln origin for this sherd.

THE SAMIAN WARE

A.P. Detsicas, M.A., F.S.A.

Bottom Silt of Ditch

Two unidentifiable scraps, Form 36, Central Gaulish, late-second century, broken stamp on Form 33, Central Gaulish,]MM//O, with a number of possible reconstructions, but A.D. 150+ in all cases.

Lower Middle Fill of Ditch

Forms 31R (4 vessels), 33, 27, many scraps of ?18/31, 33 or 27, 37

(rim-band), 37, style of Criciro or Sacer, 33 stampted]CV/// (the possibilities of reconstruction of this stamp are numerous), all Central Gaulish, late-second century.

Upper Middle Fill of Ditch

Forms 33 (+ several scraps), 45, 35, ?31R, all Central Gaulish, late-second century.

Top Fill of Ditch

Forms 31, 27, 23, 37 (scraps), 37 (rim-band) 37 ? style of Divixtus or Advocisus, all Central Gaulish, late-second century.

Saxon Contexts

Forms 27, 35, 37, Curle 11 and scraps, Central Gaulish, late-second century.

THE TILE

A moderate quantity of tile was recovered, 16 kg. from the ditch and 12 kg. from the *Grubenhaus*. *Imbrex, tegula*, box, and plain tiles were represented. The largest piece was a complete side of a box-tile and most were in fragments around 10–20 cm. in size.

THE COINS

S.M. Archer

No. 2 is from the Ditch; nos. 3 and 10 were unstratified; the remainder are from the *Grubenhaus*.

1. *Victorinus* (268–70), Æ antoninianus. *Obv*. IMP C VICTORINVS P F AVG, radiate bust r. *Rev*. not clear. Sear 3062–71. Heavily corroded, with about one-third missing. Wt. 1.17 g. diam. *c*. 19 mm.
2. *Licinius I* (308–24), Æ reduced follis. *Obv*. IMP LICINIVS P F AVG, Bust r., laur. dr. and cuir. *Rev*. GENIO POP ROM, Genius stg. l., loins draped, r. holding *patera*, l. *cornucopiae*. mm. T F / ATR (= Trier). *RIC* vii, 172, nos. 119–21, A.D. 316. Quite worn, but most of detail visible. Wt. 3.51 g., diam. 19 mm.

3. *Constantine II* (as Caesar, 317–37), Æ 3. *Obv.* CONSTANTINVS IVN NOB C, bust l., laur. and cuir. *Rev.* PROVIDENTIAE CAESS, Camp gate with two towers, star above. mm. possibly PT RE (= Trier). *LRBC*, 14, Period I, A.D. 324–30. Well worn/pitted, but most of detail visible. Wt. 2.88 g., diam. 19 mm.
4. *Constantine I or II*, Æ4. *Obv.* CONST . . ., cuirassed bust r. *Rev.* GLORIA EXERCITVS; two soldiers stg., each holding spear and leaning on a shield; between them, two standards, mm. not clear. *LRBC*, Period II, A.D. 330–35. Pitted, struck on a small flan. Wt. 0.86 g., diam. 14 mm.
5. *House of Constantine*, Æ4. *Obv.* bust r. *Rev.* as last but one standard. mm. possibly TRS (= Trier). *LRBC*, Period III, A.D. 337–41. Well worn and pitted, rendering emperor's name illegible. Wt. 1.55 g., diam. 14 mm.
6. *Urbs Roma commemorative issue* (330–46), Æ3/4. *Obv.* VRBS ROMA, helmeted bust of Roma l., wearing imperial mantle. *Rev.* No legend; she-wolf stg. l., suckling Romulus and Remus. mm. TR. (= Trier). Sear 3794. Worn and pitted. Wt. 1.79 g., diam. 16 mm.
7. *Pop Romanus commemorative issue* (330–46), Æ4. *Obv.* POP ROMANVS, bust of the Roman people l., laur. and dr., *cornucopiae* over l. shoulder. *Rev.* no legend; bridge with tower at each end and river beneath. mm. CONS / A. Sear 3800. Fairly worn; has been bent into a saucer shape with obv. on the concave side, purpose not known but no trace of a mount. Wt. 0.81 g., diam. 14 mm.
8. *Irregular copy of 'Fallen Horseman' type*, Æ4. *Obv.* Bust r., part of blundered inscription: IIVI *Rev.* Barbarous imitation of FEL TEMP REPARATIO type, soldier advancing l. spearing fallen horseman. Probably struck *c.* A.D. 354–58. Quite worn/pitted; struck on a very small flan, off-centre on *obv.* Wt. 0.77 g., diam. 11 mm.
9. *Valentinian I* (364–75), Æ3. *Obv.* D N VALENTINIANVS P F AVG, pearl diademed, dr. and cuir. bust r. *Rev.* GLORIA ROMANORVM. Emperor advancing r., dragging captive with r. hand and holding labarum in l. mm. O FII / LVGS (= Lyons). *RIC*, ix, 46, no. 20a, A.D. 367–75. Quite worn, and pitted. Wt. 2.52 g., diam. 17 mm.
10. *Illegible* Æ. Probably fourth-century Roman, but bent and heavily corroded. Wt. 1.45 g., diam. 15 mm.

THE SMALL FINDS

From the Grubenhaus

1. Triangular bone or antler comb with circle-and-dot decoration bordered by incised lines and with scalloped and pierced edge. Laminated from three sections by iron rivets, whose rusting has caused splitting. Similar to Hills and Penn, 1981, no. 2094, and generally resembles other combs there illustrated.
2. Detached teeth of comb. Found separated from no. 1 and may or may not belong to it.
3. Double-sided bone or antler comb riveted from three sections. Very smoothly finished. Teeth formed by sawing after the three sections were joined. Resembles West, 1969, Fig. 10, nos. 5 and 6.
4. Copper or copper alloy pin or brooch, just possibly zoomorphic (bull's head?), corroded.
5. Carved bone object of uncertain purpose, possibly connected with spinning. Serrated end but too irregular for pottery stamp.
6. Sandstone hone, worn by use.
7. Part of another hone, fine grained sandy limestone.
8. (*Not illustrated*) Iron bloom, irregular shape, weight 10.1 g., 20–35 mm. diameter. The iron is fairly free from other metals; analysis (electron microprobe) shows Fe, 82.7%; Cu, 2.6%; Al, 0.4%; Cl, 0.5%; Si, 13.3%; others, 0.5% (O neglected). Thanks are due to Mr. C. Mole, of the Department of Geology and Earth Sciences, Queen Mary College, for carrying out this analysis.
9. (*Not illustrated*) Round-headed carved bone-pin, upper end, diameter of shaft 3.5 mm., diameter of head 7 mm., length 19 mm.
10. (*Not illustrated*) Bone-pin, lower end, length 51 mm. Does not join to no. 9 but could be the same article.
11. (*Not illustrated*) Copper or copper alloy strip, perforated, possibly part of a hinge.
12. (*Not illustrated*) Piece of quernstone, probably Millstone Grit.

From the Ditch

13. Copper or copper alloy leather ornament.
14. Iron spiral, purpose unknown.
15. Spindle-whorl fashioned from a piece of Patch Grove pottery.
16. Piece of quernstone with serrated surface, probably Niedermendig lava. Two other similar pieces were also found.

In the ditch and the *Grubenhaus* were also found several well-

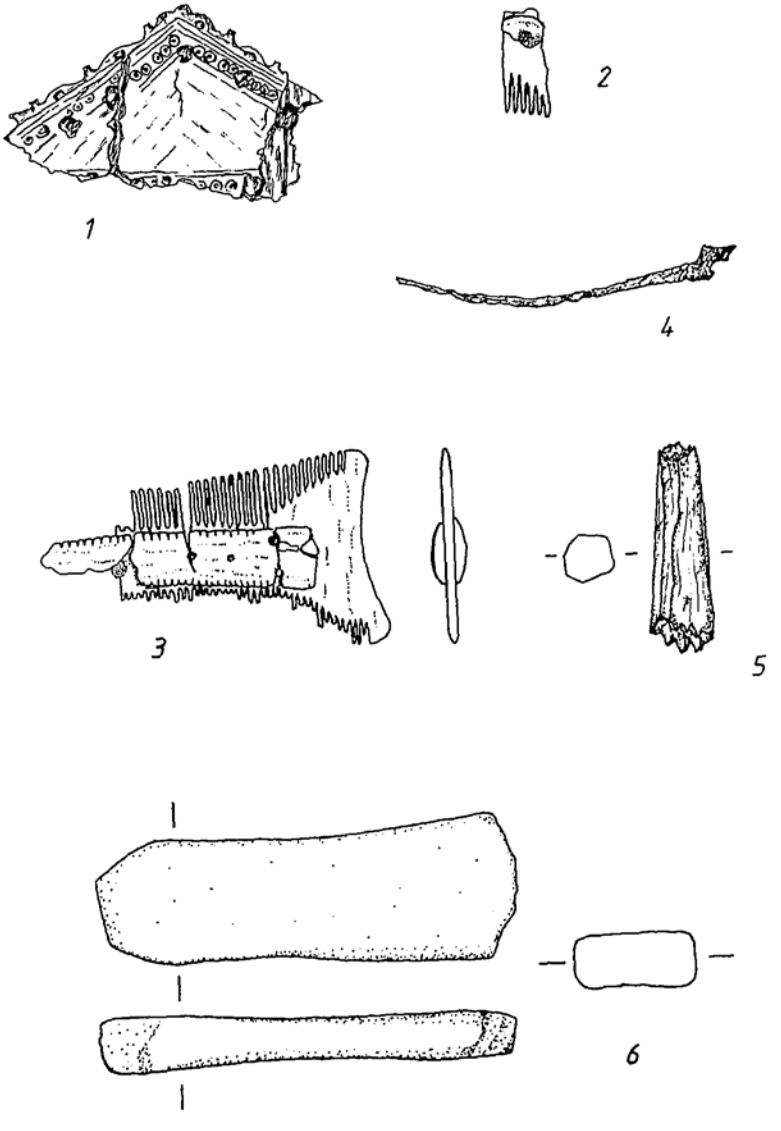

Fig. 6. Small Finds (Scale: $\frac{1}{2}$).

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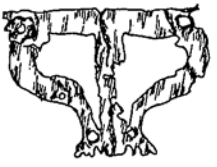

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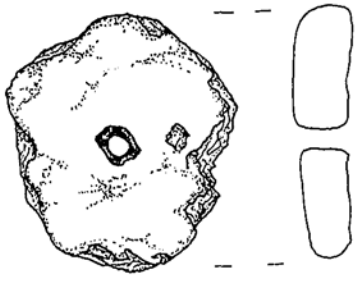

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Fig. 7. Small Finds (Scale: ½).

preserved iron nails, several scraps of glass, probably window-pane, and small pieces of copper alloy and lead.

THE BONES

Conditions for preservation of bone were good, both in the ditch and in the *Grubenhaus* fills. In this report, emphasis has been placed on horn, mandible and long bone as being most indicative of animal age and number.

The Ditch

Bos taurus

This species was well represented, most particularly by horn cores, other parts of the skeleton being also represented but to a much lesser degree.

Horn cores. 153 whole or fragmentary horn cores were present, as an even scatter rather than as a single dump. Of these, about 107 were sufficiently entire to give useful measurements. Frequency distributions of length, maximum and minimum basal diameter, basal circumference, and age-group (determined following Armitage, 1982) show that these were shorthorn cattle; of 126 specimens, 11 were assessed as in age-groups 1 and 2 (young), 86 were in age-groups 3 and 4 (mature), and 29 were in age-group 5 (older beasts). It is intended to submit the metrical data to multivariate statistical analysis. Nearly all the horns sweep gently forwards and upwards, ending at angles of perhaps 45° outwards and 30° upwards. There is a substantial minority of larger adult horns. In only four instances were joined pairs of horns present, but most of the horns have adhering skull. The horns were examined for butchery marks; 20 per cent of the more entire horns bore definite evidence of these, but others, particularly the smaller fragments, may have had cut edges eroded. Most of the cuts were at the base of the horn, often on the skull within 5 cm. of the base of the horn. The direction and position of these cuts are various, but many of them are in a horizontal direction (relative to the animal's head being oriented as in life) just below the horn. The marks are most consistent with the horns being chopped, or simply broken away from the skull after death, perhaps to aid removal of the brain.

There has been some discussion of the occurrence of large deposits of horn cores on Roman sites (*Current Archaeology*, 8 (1984), 241–4 and 286–7) and interpretations of tannery waste or bone-working industries are sometimes advanced. However, a high ratio of horns to

other bones (even metapodials) is expected in primary slaughter waste.

Mandibles. Seven half-mandibles were recovered (4 minimum animals) and the age-group estimated from tooth eruption and wear (Grant, 1982; Sisson and Grossman, 1938). Apart from one young animal estimated at 1½ years (p1, p2, p3 present; P2 visible in crypt) the other animals were older with numerical mandible wear stages in the range 38–51 (it is not possible reliably to translate these scores into ages).

Metatarsals. 16 specimens, 7 whole, 2 with butchery marks. 12 distal ends were present, of which only two were without epiphyses (fuses at 2–3 years). Mean length of entire bones, 222 mm. Mean proximal width, 46 mm. Mean distal width at fusion point, 50 mm. Minimum number of animals, 12.

Metacarpals. 15 specimens, 3 whole, 10 with butchery marks. 9 distal ends were present, of which only two were without epiphyses (fuses at 2–2½ years). Mean length of entire bones, 199 mm. Mean proximal width, 55 mm. Mean distal width at fusion point, 58 mm. Minimum number of animals, 8.

Tibiae. 5 specimens, none whole, 1 with butchery marks. Proximal ends, 0. Distal ends, 2, both fused (fuses at 2–2½ years). Minimum number of animals 2.

Radii. 12 specimens, 4 whole, 7 with butchery marks. Proximal ends, 9 (all fused, fuses at 1–1½ years). Distal ends, 8; 4 fused (fuses at 3½–4 years). Minimum number of animals, 7.

Femurs. 10 specimens, none whole, 7 with definite butchery marks. Ends: 8 present, 4 fused (proximal and distal both fuse at 3½–4 years). Minimum number of animals, 4.

Humeri. 12 specimens, 1 whole, 6 with definite butchery marks (as opposed to breaks). Proximal end, 1 (fused, fuses at 3½–4 years); distal ends, 8 (all fused, fuses at 1–1½ years). Minimum number of animals 6.

Vertebrae. In addition to 61 fragmentary or more entire specimens of *bos*-sized vertebrae, there were present 2 axes and 1 sacrum. Also present, articulated, were an axis and cervical vertebrae 3–7, no. 7 being heavily damaged. The bony caps are ossified but not fused, indicating an age of 3–6 years.

The general evidence from the epiphysis fusion data is that a majority of these animals were about 3–4 years old at death, although it should be remembered that fairly small total numbers are involved.

Sus scrofa

Sparsely present, but two minimum animals were represented by fragmentary mandibles and maxillae and were aged (following Bull and Payne, 1982) by tooth condition. One individual was estimated at

2½–3 years, and several other fragments pointed to individual(s) aged 1–2 years.

Ovis aries/capra hircus
Two individuals were represented by mandibles and were aged by tooth condition, (following Silver, 1963) as about 5 months and 3–4 years respectively.

Equus caballus
At least two animals were well represented. No butchery marks, as opposed to breakages, were present. Present were metatarsals (2 specimens of bone, 1 minimum animal), tibiae (4, 2) and femurs (7, 2), mandibles (5, 1) maxillae (2, 1) and vertebrae. Two articulated sets of vertebrae were present (a) atlas to thoracic vertebra 1, and (b) thoracic vertebra 17 to sacrum. Evidence from longbone and vertebral fusion, and teeth condition indicates one individual below 3–3½ years in age and another over 5 years.

Canis familiaris
Three individuals were represented by maxillae and mandibles; all were small animals.

The Grubenhaus

Bos taurus
This was fairly well represented, by about 4 minimum animals, all fairly mature where this could be determined, as follows.

Horn cores. 8 specimens, 5 minimum animals. Age groups: 1, one specimen; 4/5, one specimen; remainder 3–4. The possibility cannot be excluded that these are residual and come from the ditch fill, whose horn cores they resemble. The relatively small number (about 5 per cent of those in the ditch) tends to show, however, that most of the *Grubenhaus* bone material is not residual.

Mandibles. 4 specimens, 2 minimum animals, MWS values 35–42.

Metatarsals. 5 specimens, 3 whole, none with butchery marks; 4 distal ends, all fused, were present. Mean length, 213 mm. Mean proximal width, 44 mm. Mean distal width at fusion point, 45 mm. Minimum number of animals, 4.

Metacarpals. 7 specimens, 1 whole (length 188 mm.), 5 with butchery marks. Distal ends, 4; 1 unfused. Mean proximal width, 47 mm. Mean distal width at fusion point, 56 mm. Minimum number of animals, 4.

Tibiae. 2 specimens, neither whole, 1 with butchery marks, both with fused distal epiphyses, 2 minimum animals.

Femurs. 4 specimens, none whole, all with butchery marks, 2 proximal and 2 distal epiphyses, all fused.

Humeri. 1 specimen, not whole, butchery marks present, fused distal epiphysis.

Ovis aries/capra hircus
4 animals were presented by specimens of mandible. Their estimated ages were 2, 2½–3, over 4, and over 4 years. One skull with horns was present. The horns are small (about 75 mm. long, 30 mm. maximum diameter) and very flattened. They point about 30° backwards and slightly upwards, curving towards the horizontal.

Another section of horn of a different type was present. It was D-shaped in section, strongly curved, 47 mm. in maximum diameter, 105 mm. long. It had been sawn through partially and then broken off. It is either goat or the Soay type of sheep.

Long bones present were 4 humeri with 1 proximal epiphysis unfused (3–3½ years) and 4 distal fused (*c.* 10 months) and 1 distal unfused (*c.* 3 years); 2 femurs with 4 epiphyses unfused (proximal 2½–3 years, distal 3–3½ years).

Sus scrofa
Well represented. 20 mandible fragments, 8 minimum animals. 19 fragments of maxillae, 4 minimum animals. Estimated ages centre on 2 years: less than 1 year, 2 specimens; 1–2 years, 10; 2–3 years, 21; over 3 years, 4. It should be remembered that these estimates are based on Turkish wild boar and may not be accurate for Saxon pigs. However, the general appearance of the teeth, including tusk-like canines, closely resembles Bull and Payne's illustrations. The remainder of the skeleton was rather more poorly represented; present were 3 humeri, 1 ulna, 1 femur, 6 tibiae and 1 fibula. These had the following epiphyses: 3 humerus distal (*c.* 1 year) all fused; 6 tibiae distal (*c.* 2 years), 5 fused; 1 humerus proximal and 1 femur proximal (both *c.* 3½ years), neither fused.

Cervus elaphus
Represented by a substantial cut section of antler containing the beam and brow and trez-tines, and by a metacarpal (1 epiphysis, proximal, fused) and a metatarsal (both epiphyses fused).

Capreolus capreolus
One shed right antler was present, from a mature beast, together with a tibia (both epiphyses fused).

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