

A Roman Pewter Hoard from Appleford, Berks.

By DAVID BROWN

IN 1968 a hoard of Roman pewter and other objects were found during gravel extraction at one of Amey's pits at Appleford, Berks. This particular pit occupies the fields immediately to the south-west of the village of Appleford (PL. VI, B), an area known as Appleford Field. The find was made some time in the spring, but did not come to light till the autumn, and then only by a fortunate chain of coincidences.

In August 1968, Mrs. P. Frearson brought two pewter plates (nos. 17 and 18) to the Ashmolean Museum to have them identified. A few days later Professor Stuart Piggott called at the museum to say that Mr. H. Shorten of Woolstone had two pieces of pewter, a small jug and a large inscribed plate (nos. 1 and 24), which had come from a local gravel pit; he thought at Appleton. This seemed more than coincidence, and I made a number of enquiries locally to see if anything more was known of the find. There are no gravel pits at Appleton, but several at Appleford near Abingdon, and in the villages nearby, and it seemed likely that the find had been made there. Mr. E. Sutton visited the pits around Appleford, spoke to the workmen and located the site of the find. Meanwhile Mr. Shorten had brought his two pieces in to the museum.

Gravel extraction at the Appleford pit is by means of a large bucket on the end of a dragline. First the dragline clears the topsoil down to a clean gravel surface; then in a second operation the gravel is extracted down to the blue-grey clay below. The pit is left open to be filled with waste ash from the nearby Didcot power station; eventually the topsoil will be replaced and the land re-used. If any patches of dirty gravel, black soil or the like, are encountered after the removal of the topsoil and during the actual extraction process, they are scooped up and thrown aside into the bottom of the pit. It was on one such dump of thrown-back material that some of the workmen in the pit subsequently found the first pieces of pewter. At the time they were not recognized for what they were; they looked 'more like so many battered hub-caps and dustbin lids than anything else'—an opinion repeated more than once after they reached the museum! This first finding seems to have taken place some time in March 1968.

It was not until early September that Mr. Sutton visited the pit and went down to the dump where the first pieces had been found (PL. VI, A). There was quite a lot of pottery lying about; he started to collect it, then he found a lead weight, and then, much to his surprise, he started finding more pewter plates. There followed two very exciting days in which Mr. Sutton, with the very active support of Mr. Gordon Plummer, managing director of Amey's Aggregates, Dr. and Mrs. J. R. Harris and myself, excavated the whole of the pile of waste at the bottom of the pit, finding in all another 18 vessels and the ironwork and other objects described below. Subsequently I returned to the site with Mr. Eric

Foster of the Research Laboratory for Archaeology and the History of Art at Oxford and a new and improved metal detector which was then being developed. The dump of waste was worked over again and a few more fragments of the iron chain were discovered. None of the other nearby dumps of waste in the bottom of the pit contained any metal objects at all.

At Amey's request, an announcement of the finding of the hoard was delayed until December, by which time the iron objects had been cleaned and treated at the Ashmolean, and put on exhibition beside the still-battered pieces of pewter. The hoard was featured in the *Illustrated London News* and in local newspapers,¹ and as a result of this publicity Mr. F. J. Denzey, headmaster of the Chilton County School, wrote to say that he had a pewter plate from the find in the school museum, and that he knew of another one elsewhere. Mr. Denzey readily brought his plate in to the museum, and shortly afterwards the other one as well. This brought the total number of vessels to 24, but there was still no way of knowing if any more remained in private hands. It had never been known how many vessels had been picked up by the workmen when the hoard was first found; their various recollections were fully accounted for by Mrs. Frearson's and Mr. Shorten's pieces, and Mr. Denzey's had been an unexpected addition.

A test of the completeness of the hoard was suggested by the vessels themselves. Over the years they had lain crushed together in the ground, so that now each piece was distorted and marked with the rim and base of the piece lying next to it. In addition, when the plates had been scooped up by the drag-line the edge of the bucket had caught the pile so that now many of the plates had a recent dent in one side. If, with these various marks as a guide, the pieces could be fitted back into their correct positions with respect to one another and there were no gaps, the hoard could be claimed to be complete.

Most of the pieces had been in one of two groups, a pile of the small bowls and a pile of the plates. The bowls (PL. VII, A), fitted over the rim of the very squashed piece, 11. On one side, 6 fitted upside down with 9 upside down above it; a small piece, probably the fluted bowl, 3, fitted inside 9. On the other side, 10 was perched on the rim of 11 with 8 upside down, folded over its rim. The large pile of plates had been caught by the bucket and the pieces no longer fit together very well, as the photograph (PL. VII, B) shows. Nevertheless, the positions of the pieces are not in doubt—at the bottom 15, then 19, then 14 upside down, then 23, then 21; the edge of 15 fitted in upside down between 19 and 14. The largest plate, 24, was almost doubled up by the impact of the edge of the bucket, and must have been sticking out on the top or the bottom of this pile. Plate 22 has on it the impression of a rim which could be from plate 16 or 21, but it is not possible to decide between the two since the plate had been straightened before being brought to the museum. Plates 12 and 13 have the marks of each other, but of no other pieces; so too do plates 17 and 18.

¹ *Illustrated London News*, Dec. 21, 1968, 30-31; and subsequently in *Nature* 221, Jan. 11, 1969, 127. Both these accounts are superseded by the notes in *J. Rom. Stud.*, LVIII (1969), 231, 239, pls. 16 and 17, and this report.

This leaves 1, 2, 4, 5, 7 and 20 which have no particular marks on them at all. The result is perhaps not quite conclusive, though the fact that there are no marks which cannot be accounted for is good evidence that the hoard is now complete.

The Directors of the Amey Group have placed the hoard on loan in the Ashmolean Museum where it is now exhibited. The various objects have been treated in the museum's laboratory by Miss A. C. Western and Mrs. K. Kimber; the ironwork was dealt with at once, but the treatment of the pewter involving cleaning and straightening has been a slower process which is now only just complete. Miss Western has described the method of treatment of the iron in a paper in *Studies in Conservation*,² and intends to do the same for the pewter in the near future. Both methods are essentially quite simple and are extremely worthwhile in terms of appearance and the amount of detail which shows up on the cleaned objects.

POSITION AND CONTEXT OF THE FIND

The soil surrounding the objects dumped in the bottom of the gravel pit was brown loamy earth, in parts very gravelly; the immediate surrounding of the objects was peaty, full of rotting plant and twig remains. This must have lain in a waterlogged position, and probably in the bottom of a well rather than in a specially dug pit, for the scraps of iron, pottery, vegetable and bone refuse would not have been so likely there. The gravel hereabouts is very loose, and the well shaft would have needed some revetment if it was to survive for long. Above the watertable it is likely that this revetment would have rotted and the sides collapsed, making the well invisible from the surface. Lower down, some trace of timber or wicker revetment would have been expected, though none was found. It is possible that the objects and the peaty deposit lay right at the bottom of the well, below the bottom of any revetment.

It will be clear from the description above that the immediate surroundings of this well had been removed long before the find came to light, so there is no way of knowing if there was a building of any sort nearby. It seems certain at least that there was no stone building, for there is no masonry debris lying about and the workmen in the pit said that they had not found any. Sherds of Roman pottery can be picked up all over the area, but these come no doubt from the Roman-period ditches which pattern the site (PL. VI, B). Subsequently, the excavation of an area of these ditches was undertaken by Mrs. J. Greenaway of Reading Museum; finds include pottery of the 3rd and 4th centuries, and a pit or well with part of the wicker lining still in position. This provides some sort of context for the well and its hoard.*

We have then to deal with the filling of a well which includes a group of 24 pewter vessels. In addition there are iron objects, fragments of pottery, querns, animal and human bones, pieces of leather and a quantity of vegetable debris. The iron and pewter lay amongst the vegetable debris; some of the pottery and

² A. C. Western, *Studies in Conservation*, xvii (1972), 83-87.

* During 1973 the Oxfordshire Archaeological Unit carried out further excavation in the northern part of the field.

animal bones were amongst the more earthy soil, and the human bones all were. These objects should be thought of as a 'well group' built up over a period of years. The only certain hoard items within that group are the 24 pewter vessels.

DESCRIPTION OF THE OBJECTS

The pewter hoard (FIGS. 1-4, 9)

In describing the vessels I have concentrated on the technical aspects for each piece, and on any decoration, for the shape seems to be adequately shown by the drawings. A few words about the manufacturing process here will save a lot of repetition, and explain the points I have tried to notice.

Pewter was cast in moulds and then polished. Objects made of more than one casting, such as the small flagon and the pedestal bowl, were soldered together before polishing. The polishing was done on a lathe, and on most of the pieces signs of this rotary polishing are clearly visible at some point or other. On the flat pieces, the plates and shallow bowls, there is invariably an unpolished area in the middle of the underside; this is the area which was covered by the face-plate of the lathe. It shows particularly clearly on the back of plate 17 (PL. VIII, A and FIG. 3), together with a number of compass drawn circles and arcs. These marks are not decorative, as has been suggested, but functional; they may be explained in this way.

For satisfactory polishing, the casting must be well centred on the lathe, and for this the centre point of the casting must be found. With only the cast circular footring on the base of the plate as a guide, this is done by drawing arcs with a compass centred on the opposite ends of diameters, as it were at the four cardinal points around the edge of the footring. With a radius approximately equal to the radius of the footring, these arcs intersect to form a square. If the radius is exactly right then the square vanishes to a point which is the centre, as on plate 17 (PL. VIII, A and FIG. 3) if the radius is a bit too big or a bit too small, the centre of the plate must be estimated as the centre of the square, as on plates 12 and 18 (PL. IX, A, B). This was obviously accurate enough. Then, with compass point at the centre of the plate a number of circles are drawn on the underside. These form a guide in positioning the base of the plate against the face-plate of the lathe—a number of circles, some too large, some too small, allow the plate to be centred correctly. The plate is held in position by a nail, or something similar, which goes right through the centre of the plate; and, so that the plate doesn't slip when the lathe is rotating, the underside is gripped by three spikes which project from the edge of the face-plate of the lathe. When the polishing has been completed and the plate removed from the lathe, the centre hole which goes right through the plate, and the 3 smaller spike holes are filled up with plugs of metal as can be seen in the photographs.

This pattern of compass-drawn arcs and circles is sometimes very faint, or not visible at all; but the filling of the central hole and the spike holes (always 3) is visible on all the larger plates and on most of the small ones. In the descriptions of the individual pieces I have described these traces of manufacture as 'normal

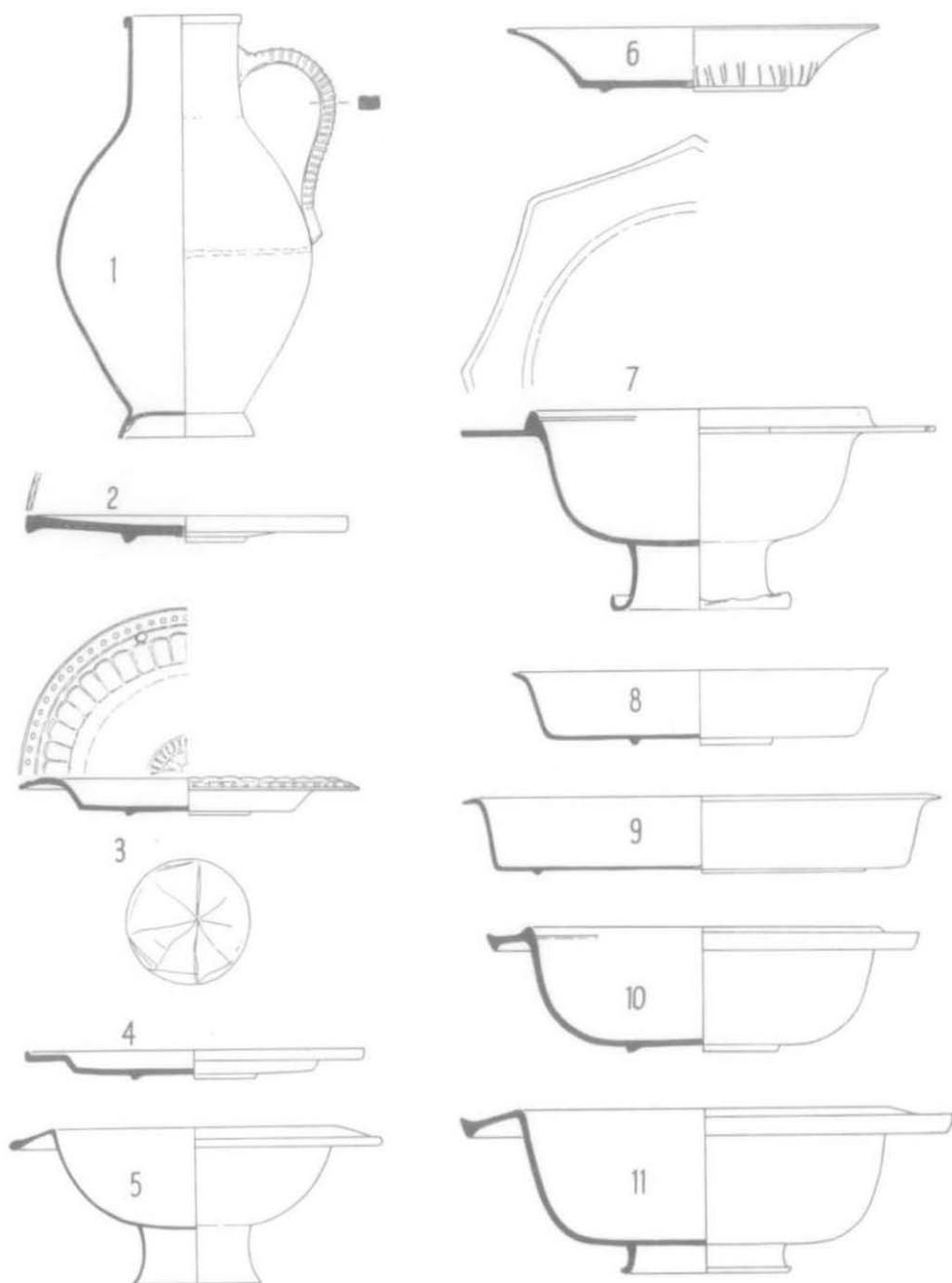


FIG. 1
Pewter (1/3)

lathe-mounting scars' and 'compass work'. I have also recorded the diameter of the unpolished area on the base of the plates, for this must be approximately equal to the diameter of the face-plate of the lathe. Measurements of the foot-rings record the overall or outside diameters.³

1. Small flagon with ribbed handle; made in 4 pieces, two for the body, one for the concave base, one for the handle. The junction of the two body pieces shows as a line of shallow scoops on the outside (PL. X, A) and by rough scabs and blobs of solder on the inside. The foot is splayed out to make a seating for the base which is pushed in from below and soldered into position (PL. X, B); beads of solder show up around the inside of the join. The outer surface is lathe-polished. The handle, ribbed on three sides and with a contraction hollow on the fourth, is tongued through the wall at the top, and laid flat against it and soldered on at the bottom; the joins are very messy.

Height 0.17 m.

2. Flat, slightly dished, platter (PL. XI, A, B); cast in one piece; the rim points downwards like a second footing; upper side polished and worn; underside unpolished, left as cast; central hole bunged up from below, but otherwise no signs of lathe-mounting. A single groove and a line of scallops are incised around the edge. On the underside is the lightly incised graffito NARINA (PL. XIII, C and FIG. 9). Mr. R. P. Wright suggests that this is a name derived from the nomen Narius.⁴

Overall diam. 0.133; footing diam. 0.053 m.

3. Fluted bowl, cast in one piece. The decoration is cast in low relief and appears only on the inside of the bowl (PL. XI, A, B). In the centre is a rosette surrounded by a ring with 35 spokes; the walls are fluted, probably 43 flutes, and there is a band of 77 raised beads around the rim. The raised decoration makes rotary polishing impossible, and there is no sign of it or of any other sort of polishing; nevertheless the surface of the bowl is very smooth. A small hole has been drilled through the rim just inside the bead row, and there is a criss-cross of scratches inside the footing on the underside. Corrosion has eaten a large hole in the side of the plate; this is the only significant case of deterioration of any of the pieces of the hoard.

Overall diam. 0.140; footing diam. 0.052 m.

4. Small plate, cast in one piece (PL. XI, A, B); rotary polished save for patch on base, but there is no visible sign of face-plate spikes or central hole.

Overall diam. 0.140; footing diam. 0.055; unpolished diam. 0.062 m.

5. Small bowl; the foot was made separately and soldered on. Marks of rotary polishing all over except the bottom of the bowl and the inside of the foot, but no signs of lathe-mounting. The bowl is now badly buckled.

Overall diam. approx. 0.15 m.

6. Small bowl with convex walls; cast in one piece, rim thickened by folding inwards; rotary-polished all over except inside footing; filled central hole and spike scars. Decorated with a band of vertical burnished grooves around the outside.

Overall diam. 0.16; footing diam. 0.073 m.

7. Octagonal flanged bowl on a tall foot; made in two pieces, the foot being soldered to the bottom of the bowl (PL. XII, A); polishing as no. 5, all over except inside foot and on the bottom of the bowl. A lightly inscribed line follows the edge of the flange, and there is a broad shallow groove inside the lip of the bowl.

Diameter of the flange, max. 0.190; min. 0.175 m.

8. Shallow bowl, cast in one piece; rotary-polished all over except inside footing, but without signs of lathe mounting.

Overall diam. 0.15; footing diam. 0.52 m.

³ I have described the manufacture of Roman pewterware in more detail in a volume of studies of *Roman Craftsmen and their techniques* (edited by D. E. Strong and D. Brown), which is due to be published in the near future.

⁴ R. P. Wright, *J. Rom. Stud.*, LIX (1969), 239.

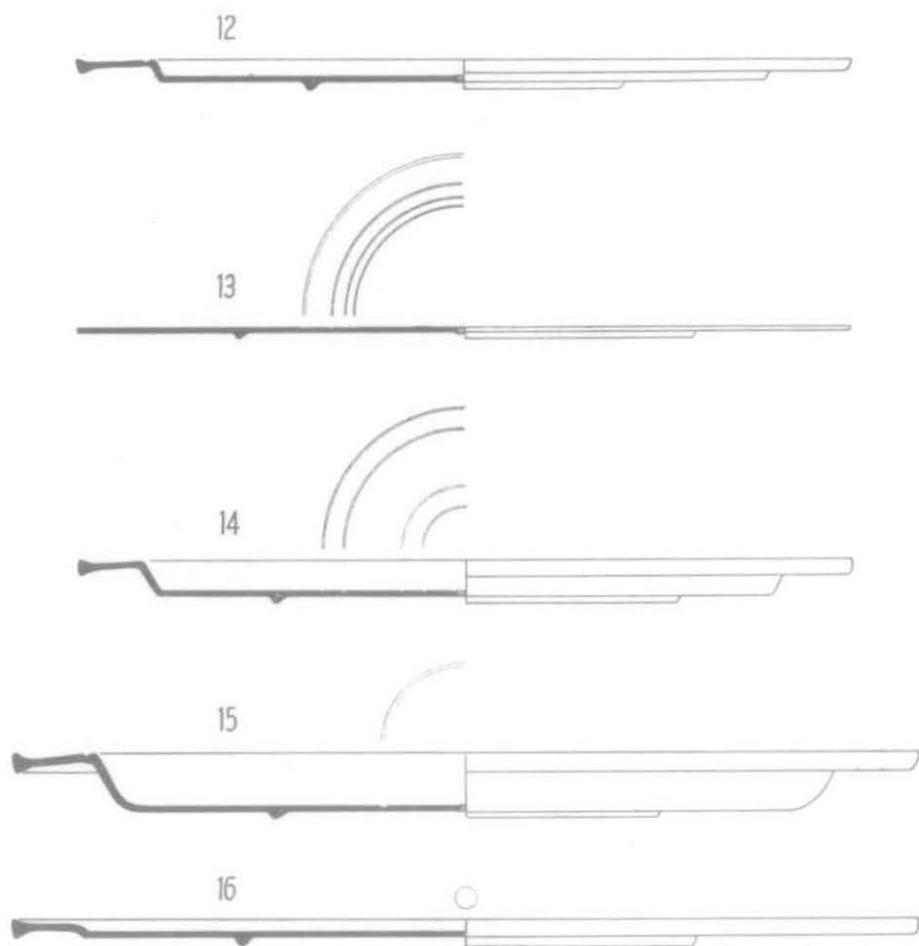


FIG. 2
Pewter (1/3)

9. Shallow bowl, cast in one piece; rotary-polished with normal lathe-mounting scars, though the filling of the central hole is not visible on the inside.

Overall diam. 0.197; footring diam. 0.138; unpolished diam. 0.068 m.

10. Hemispherical bowl, cast in one piece; shallow groove inside lip of bowl; traces of rotary polishing clear on rim and flange only; no sign of lathe-mounting. A hole in the wall of the bowl has been mended with a patch applied to the outside.

Overall diam. 0.180; footring diam. 0.068 m.

11. Hemispherical bowl; made in two pieces, the foot being soldered to the base of the bowl. Polishing as nos. 5 and 7, all over except on the base and inside the foot. The neat join between the bowl and the foot shows up well on the cleaned surface (PL. XII, B).

Overall diam. 0.20 m.

12. Flat plate with flanged rim; rotary-polished with normal lathe-mounting scars and compass work. In this case the compass setting was an overestimate, producing a convex-sided square (PL. IX, A).

Overall diam. 0.304; footring diam. 0.128; unpolished diam. 0.128 m.

13. Flat plate without rim. This piece is the remains of a larger plate from which the rim has been cut away; presumably it was splitting off as many of the others show signs of doing. Grooves on the floor of the plate and one around the edge which was used as a guide line for the cutting down. Rotary-polished, normal lathe-mounting scars and compass work.

Overall (cut down) diam. 0.305; footring diam. 0.182; unpolished diam. 0.12 m.

14. Flat plate with flanged rim. Grooves on floor of plate; rotary-polished with normal lathe-mounting scars and compass work. The polishing lines are very clear and the surface is very little worn as though the plate had not been used much; even so the rim is splitting off.

Overall diam. 0.30; footring diam. 0.164; unpolished diam. 0.124 m.

15. Flat plate with curving side wall and flanged rim; groove on floor of plate; rim splitting off; rotary-polished with normal lathe-mounting scars and compass work.

Overall diam. 0.355; footring diam. 0.158; unpolished diam. 0.105 m.

16. Flat plate, narrow flanged rim; rotary-polished, normal lathe-mounting scars and compass work. A doodle scratched in the centre of the plate, a square and part of another square, is reminiscent of the pattern in the centre of plate 21.

Overall diam. 0.36; footring diam. 0.178; unpolished diam. 0.116 m.

17. Flat plate with curving side wall and flanged rim; two bands of grooves on the floor of the plate; the beading along the edge of the rim has been given a cogged effect with 203 vertical chisel cuts; rotary-polished, normal lathe-mounting scars and compass work as described on p. 187 and illustrated on Pl. VIII, A. In this case the compass setting was estimated correctly and the arcs intersect at a point.

Overall diam. 0.36; footring diam. 0.185; unpolished diam. 0.13 m.

18. Flat plate with curving side wall and flanged rim; a pair to plate 17. Concentric grooves on floor of plate; 212 cuts in the edge of the rim. Rotary-polished, normal lathe-mounting scars and compass work. Two pads of metal sticking to the outer edge of the rim at opposite ends of a diameter look like the remains of casting risers. In this case the compass setting was an underestimate producing a concave-sided square (PL. IX, B).

Overall diam. 0.36; footring diam. 0.184; unpolished diam. 0.124 m.

19. Flat plate with triangular rim pointing downwards; the plate was slightly dished to allow the footring to stand flat; rotary-polished, normal lathe-mounting scars and compass work.

Overall diam. 0.385; footring diam. 0.162; unpolished diam. approx. 0.09 m.

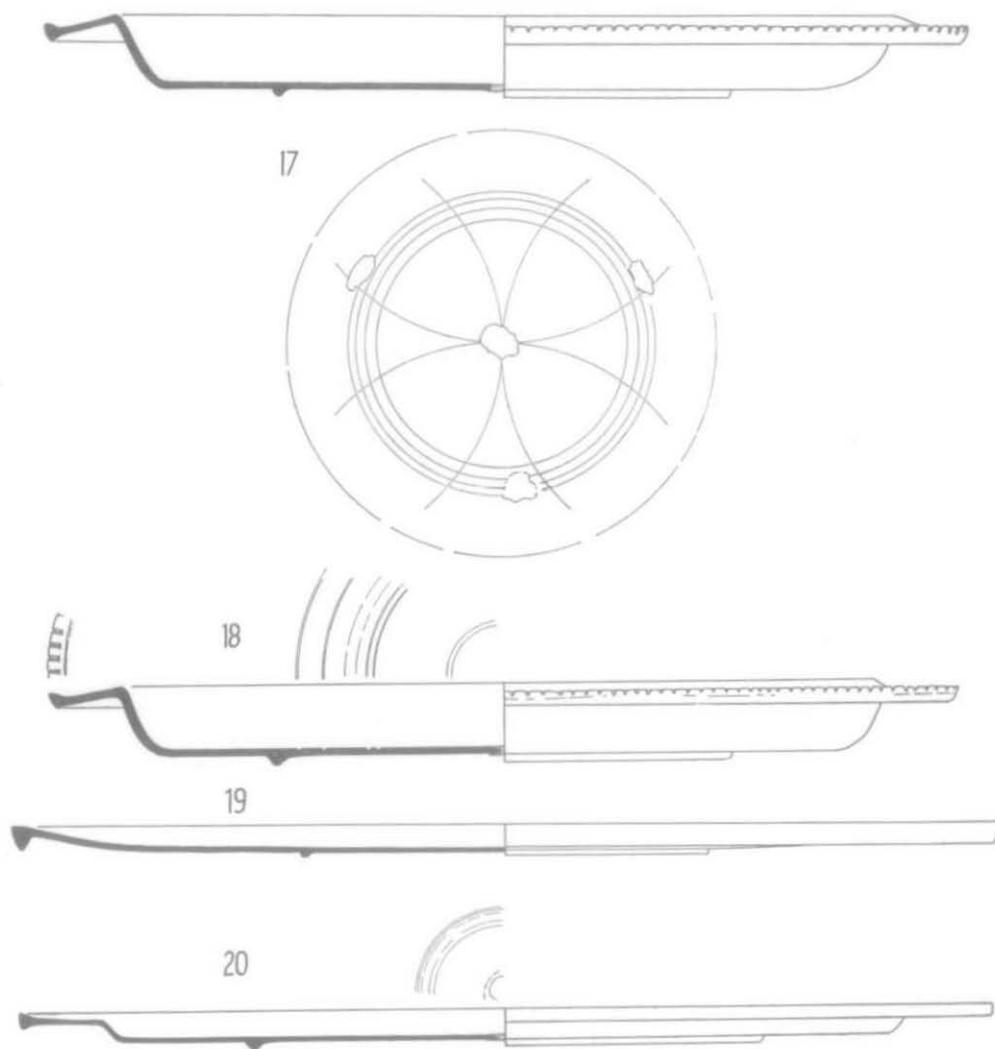


FIG. 3
Pewter (1/3)

20. Flat plate with flanged rim ; concentric circles on floor of plate ; rim splitting off ; rotary-polished with normal lathe-mounting scars and compass work.

Overall diam. 0.384 ; footring diam. 0.202 ; unpolished diam. 0.098 m.

21. Flat plate with a flanged rim. In the centre of the plate is a roundel of decoration made with a chisel-ended punch ; the pattern (PL. VIII, B) is the same as that on plate 9 of the hoard from Appleshaw, Hants.⁵ Rotary-polished, normal lathe-mounting scars and compass work. Scars of three risers (?) equally spaced around the edge of the rim. Overall diam. 0.46 ; footring diam. 0.222 ; unpolished diam. approx. 0.13-0.14 m.

22. Flat plate with flanged rim ; apparently a pair to plate 21, although not decorated ; rim splitting off ; rotary-polished, lathe-mounting scars and compass work. On the upper side of the flange of the rim there is a very lightly scratched inscription which Mr. R. P. Wright reads as follows : ' Three graffiti have been cut on the upper surface of the rim : (i) One horizontal stroke and eight digits are lightly cut, but the group seems to be a secondary cutting as the terminal digit is shortened to avoid overriding the first letter of the next graffito. (ii) The primary text, more deeply cut, reads MIILLUNAE, *Mellunae* or *Meliunae*, a name which seems to be unmatched. (iii) A tertiary graffito in very shallow cuts following (ii) reads : SOMIA. This name seems to be unmatched.'⁶ The drawing (FIG. 9) reproduces the more visible parts of this inscription.

Overall diam. 0.45 ; footring diam. 0.224 ; unpolished diam. 0.14 m.

23. Flat plate with heavy triangular rim ; circles inscribed around the centre of the floor of the plate ; rotary-polished, normal lathe-mounting scars and compass work. On the base, inside the footring, is the graffito : PACATA⁶ (PL. XIII, B and FIG. 9).

Overall diam. 0.38 ; footring diam. 0.194 ; unpolished diam. 0.10 m.

24. Large flat plate with heavy triangular rim ; inscribed circles around centre of the plate. Although much larger, the plate is a pair to plate 23, the shape and the form of the rim being exactly the same. Rotary-polished, normal lathe-mounting scars and compass work. On the base, inside the footring, is the graffito : PACATA EMITA PARTA SVA LOVERNIANVS DONAVIT (PL. XIII, A, and FIG. 9). *Pacata*, a name, is written in the same style and size as on plate 23. The rest of the inscription is in larger letters, and is obviously secondary. If *EMITA* is read as a mistake for *EMPTA*, the inscription can be translated, ' Lovernianus presented his own purchased acquisitions,' or more simply, ' Lovernianus presented the things he had bought.' *Lovernianus* is a name derived from the Celtic *Lovernios*, meaning ' son of a fox'.⁷

Overall diam. 0.50 ; footring diam. 0.25 ; unpolished diam. 0.10 m.

The ironwork. (FIGS. 5-7.)

I have had the benefit of discussing these iron objects with Dr. W. H. Manning. His comments and references have been incorporated into the notes which follow :

25. Cauldron chain of double-looped links, divided by a decorative knot into two arms each ending in a hook ; 11 links in the upper arm, 5 in each lower arm. The hooks are made up of three rods of metal, two in front and one decoratively twisted behind ; they are forged into a knob at the end and bound together by a collar at the top. The plain pieces at the front join together to make a loop at the top ; the decorative rod ends in a tapering spiral behind. At the top of the chain, two large suspension rings of different sizes are joined to the top link by a single stout ring with butted ends. A free-swinging hook is attached to the link which is second from top.

Overall length 1.47 m. (4 ft. 10 ins.).

Professor Piggott described and listed a number of iron cauldron chains in his

⁵ *Archaeologia*, LVI (1898), 10.

⁶ R. P. Wright, *J. Rom. Stud.*, LIX (1969), 239.

⁷ As note (6) ; I am indebted to Mr. Wright and Mr. Mark Hassall for reading and interpreting this inscription.

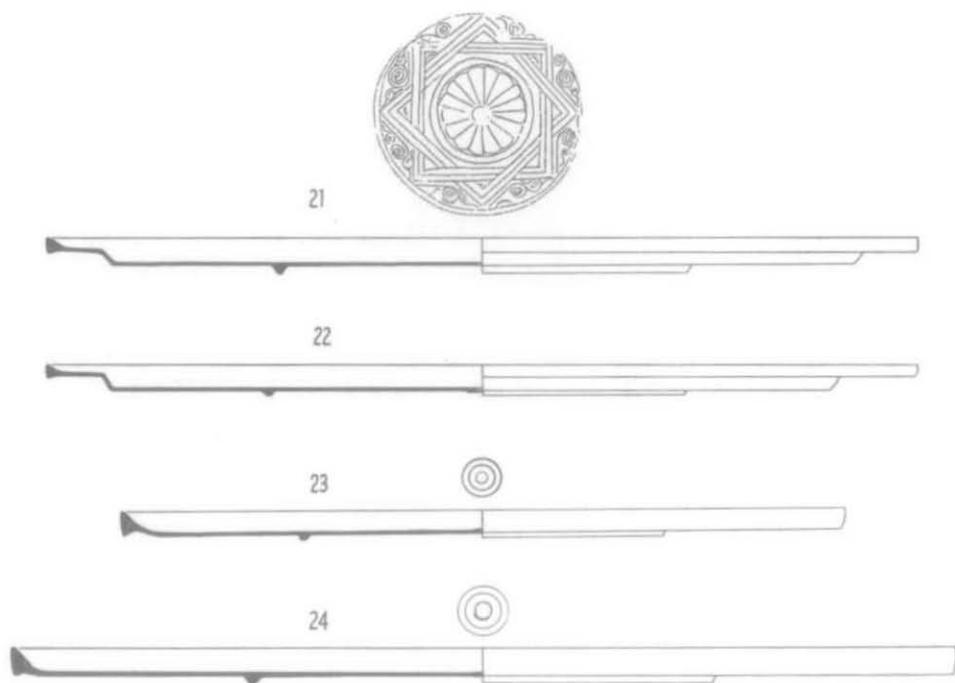


FIG. 4
Pewter (1/4)

discussion of three Scottish hoards of ironwork of the Roman period in 1955.⁸ Two of these, from Cirencester, Glos., and Great Chesterfield, Essex, are more or less complete examples of chains like this one, and there is a third complete example at Winchester.⁹ These three examples all have a decorative iron cage and a large ring at the top—a device incorporating a swivel allowing the chain and cauldron to revolve. This adds a foot or so to their height; Great Chesterfield measures 7½ ft., Cirencester about 6 ft. 6 in., Winchester just over 6 ft., compared with the Appleford 4 ft. 6 in. without cage and swivel. All four examples have the same sort of composite hooks with twisted metal decoration and all are made of double-looped links. These links were easier to make than those on a normal length of chain in which each new link had to be forged on to the last one; in the case of double-looped links, a whole series of rings could be forged independently and then bent to shape and fitted one inside the other later. The Great Chesterfield, Winchester and Appleford chains have exactly the same decorative knot of iron at the point where the chain divides; the Cirencester chain is broken at this point and a plain S-shaped hook holds it together.

The free-swinging hook at the top of the Appleford chain has a parallel at Cirencester, and on a chain depicted on a relief dedicated to the Deae Matres in Bonn.¹⁰ The scene shows an old man skimming scum off the top of a cauldron which is suspended from a chain, not a double-linked chain, but otherwise like these. These hooks were probably for hanging up the ladle and other hooks used in the cooking. Although the Winchester and Great Chesterfield chains do not have free-swinging hooks, they do have decorative hooks on the lower part of their swivel cages and these could have been used for the same purpose. The similarity of these four chains is remarkable, linked as they are by both technical and decorative details. With any other object I would say that such similarity shouts of a common workshop origin, but I hesitate to do so in the case of ironwork, for I suspect that a skilled blacksmith could make or copy more or less what he chose. In 4th century Roman Britain there must have been many blacksmiths making chains like this.

The remarkable chain from the 7th century Sutton Hoo ship burial deserves mention here,¹¹ for it too shows the same combination of double-looped links and decorative knotwork. It is much larger and more elaborate, and it is made up of a variety of elements not all of which are matched in the Roman chains. Yet the double-looped links and decorative knot are not found in the contemporary Scandinavian cauldron chains, and their presence at Sutton Hoo argues for continuity of tradition among East Anglian blacksmiths from the Roman period.

26. Iron steelyard with two suspension points and hooks, sliding weight and hook, omega-shaped meat hook and two weights, and several unplaced links. The weights are of lead; the sliding weight weighs 794.5 grams, the weight attached to the omega hook 245.6 grams, and the smallest weight 112.4 grams. The yardarm has a square section, and is distinctly notched along the upper and lower edges; the exact position of some of the notches in the centre of the bar where the arm is bent is uncertain, but their number can be estimated precisely.

Overall length 0.44 m.

Steelyards of this sort, with two suspension points and two scales, allow a range of light and heavy objects to be weighed. Normally there is a slight overlap between the scales, and both scales weigh things in the same units. In this steelyard, as drawn, the upper scale is the low scale and the lower scale is the high scale. Movement of the sliding weight from one notch to the next corresponds with an increase of one 'unit'

⁸ S. Piggott, *Proc. Soc. Ants. Scot.*, LXXXVII (1952), 42-44.

⁹ West Gate Museum; I am indebted to Professor Piggott and Mr. Manning for information about this chain.

¹⁰ E. Esperandieu, *Recueil General des Bas-reliefs* . . . , XI, no. 7762.

¹¹ R. L. S. Bruce Mitford, *The Sutton Hoo Ship Burial: A Handbook* (2nd ed. 1972), 38-39, figs 16-17, and the reconstruction now exhibited in the British Museum.

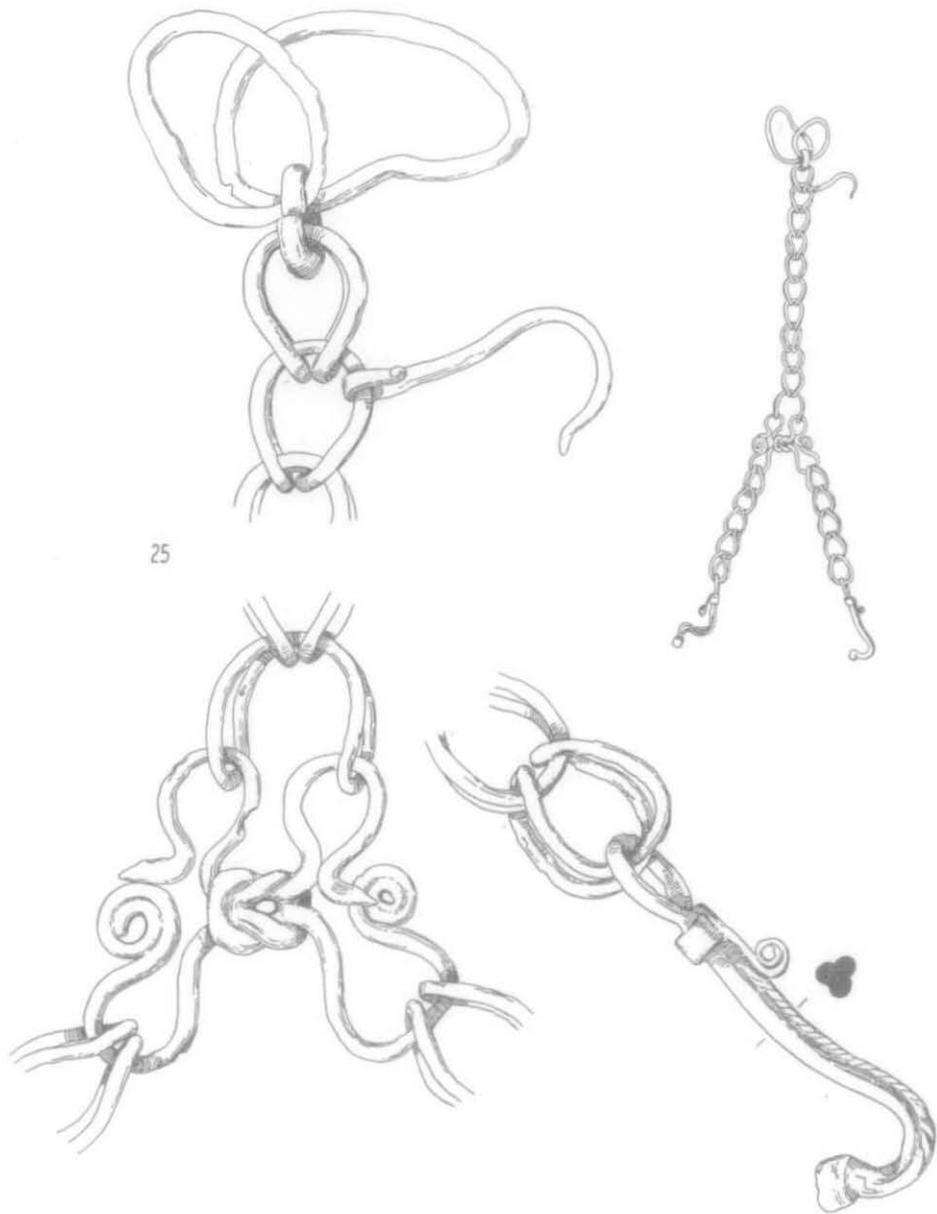


FIG. 5
Ironwork (1/4 and 1/20)

to the load on the hook. Knowing the geometry of the bar and the mass of the sliding weight the size of this 'unit' can be calculated.

For the upper scale :

$$\text{Average distance between notches} = \frac{16.7}{6} = 2.78 \text{ cm.}$$

$$\text{Distance between point of suspension and point of loading} = 7.5 \text{ cm.}$$

$$\text{Unit load on low scale} = \frac{2.78 \times 794.5}{7.5} = 294.5 \text{ grams.}$$

For the lower scale :

$$\text{Average distance between notches} = \frac{26.35}{25} = 1.05 \text{ cm.}$$

$$\text{Distance between point of suspension and point of loading} = 4.0 \text{ cm.}$$

$$\text{Unit load on high scale} = \frac{1.05 \times 794.5}{4} = 208.6 \text{ grams.}$$

The unit load on the upper scale approximates to the Roman pound, the libra of 327 to 328 grams, but the unit load on the lower scale is less than two-thirds of this amount. If the iron hook belonging to the sliding weight had been included, and some allowance had been made for links to join them together, both unit loads would have been increased slightly bringing that for the upper scale yet nearer to the libra. And, if the small lead weight which is shown attached to the loading hook had really been attached to the sliding weight, the unit loads would have gone up still further making that for the upper scale more than the libra while that for the lower scale remained less. This may seem the best compromise solution, though in fact, no amount of juggling with the weights can affect the difference between the two scales which is determined by the geometry of the bar and the positions of the notches marked on it. The ratio of the units being measured by the two scales will always be 1.41 : 1.

Complicated explanations can be devised for this difference, but none of them are satisfactory. For example, the steelyard might have been designed in the first place to weigh things in two different sets of units but, if so, why does it have a high and a low scale rather than two scales covering the same range of weights? Or, the units could be made the same on both scales if an additional weight was added to the slider when switching from the low scale to the high scale, but this would destroy any advantage to be gained from having the two scales on the same instrument. The alternative to this sort of explanation is that the steelyard was incredibly inaccurate! Calculation of the actual ranges of the two scales depends on the way the weights are arranged, and on some experiments with the steelyard itself. With the weights arranged as in the drawing, the upper scale measures from 0 to 10 units (= 0 to 9 librae) and the lower scale measures from 5 to 33 units (= 5 to 23 librae).

27. Iron scythe blade with thickened triangular back edge.

Length of fragment 0.51 m.

This is probably part of an enormous blade such as those from Great Chesterford,¹² or the recent finds from Barnsley Park villa, Glos. (now in the British Museum).

28. Iron padlock with sliding bolt now rusted into the lock. The box part of the lock is held together by six dome-headed rivets. An iron loop once fitted into the woodwork of a door or the lid of a box remains locked onto the padlock. This type of padlock is common enough, though very cumbersome.

Length 0.315 m.

¹² R. C. Neville, *Arch. J.*, xiii (1856), 1-13.

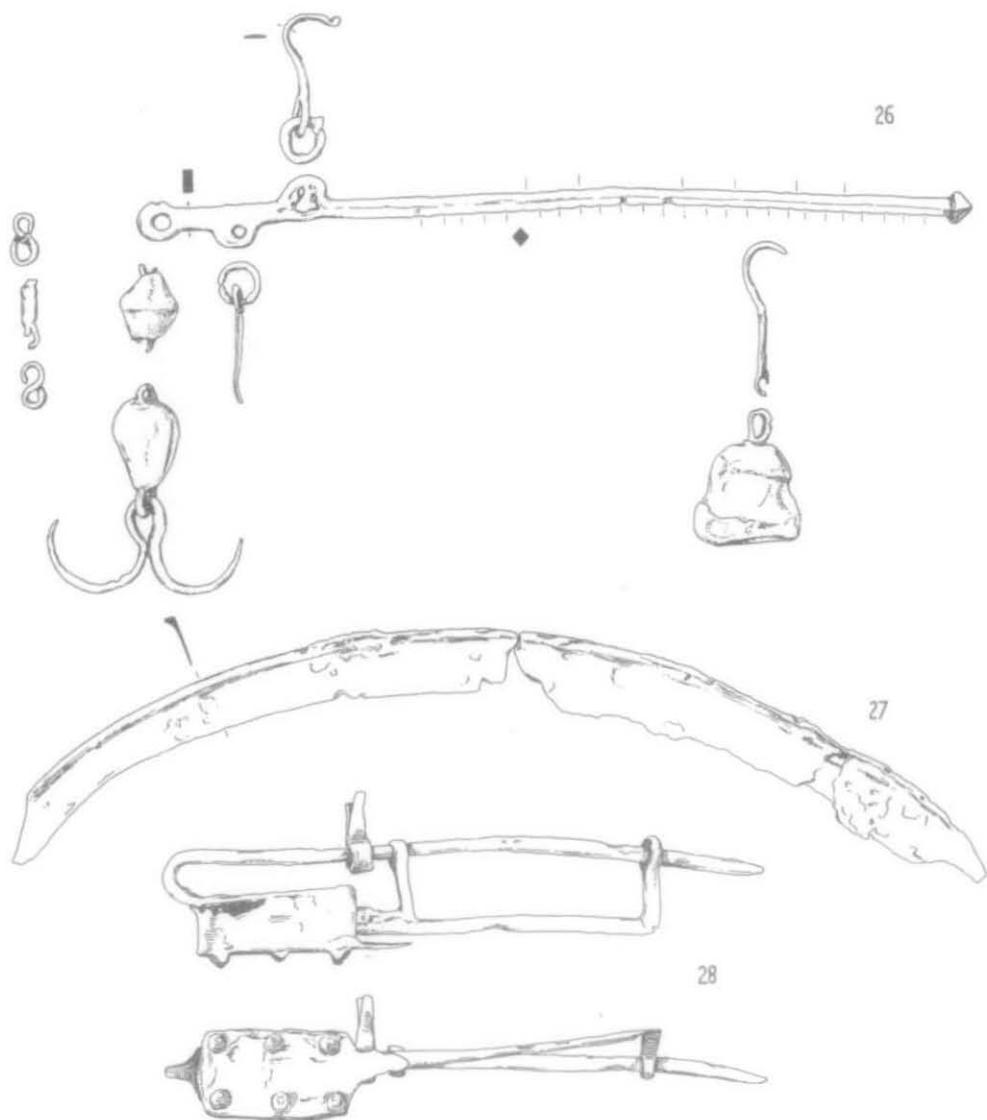


FIG. 6
Ironwork (1/4)

29. Handle of an iron shovel. Quadrangular bar with two patches of twists ; flattened at the handle end and provided with a hook and suspension ring. Similar pieces come from Carrawburgh mithracum, Verulamium and from recent excavations at Shakenoak, near North Leigh, Oxon.¹³

Length of fragment 0.45 m.

Twisting of this sort seems to have been common on the handles of tools connected with fire and the hearth, as it still is on many pokers. The custom presumably dates from the time when the continual heating and cooling would have tended to split the wrought iron ; the twisted shaft would prevent the split metal from breaking up.

30. Oval pan with folding handle ; the join between pan and handle (drawn in two positions) is a delight in its simplicity.

Length with handle extended 0.51 m.

Similar iron pans with folding handles come from London and Colchester, and bronze ones from hoards at Wotton, Surrey, and Sturmere, Essex. Wheeler cites another bronze example from Rheims, and four iron ones from Egypt. Kennett, discussing the British bronze examples, calls them Coptic, though I can see no reason for this ; they are more likely to have been made locally.¹⁴

31. Socketted morticing chisel ; square blade, chamfered to give on octagonal socket. The socket is now broken ; it seems to have been of the closed type.

Length 0.215 m.

32. Thick iron binding ; U-shaped, broken across the rounded end ; two bolt holes in one arm, three in the other.

33. Three fragments of thinner binding strips with holes.

34 and 35. Fragments of thin iron strip without holes.

36 and 37. Two oval-sectioned bolts, or perhaps the two ends of one bolt. These are more neatly made than ordinary nails, and their oval sections argue against their having been used for hinge pins.

38. An iron horseshoe. This may be part of the well group, but it was found lying on the top of the dump in the bottom of the pit at the beginning of the second day's search, and I suspect that it had been put there by the workmen to encourage us !

Stone and Pottery Fragments. (FIG. 8.)

39. Fragment of an upper quern stone ; conglomerate sandstone with large nodules of quartz.

Diam. 0.56 m.

40. Fragment of a lower quern stone ; conglomerate gritstone ; radial, or near radial, grooves on the upper surface.

Diam. 0.76 m.

41. Two-handled flagon ; soft orange body with a bright orange slip ; not a local fabric, perhaps from the Colchester area or even the continent.

42. Bowl ; buff micaceous body, bright red slip ; a local product typical of the Dorchester kilns.

43. Base of a bowl in distinctive creamy white ware with a brown painted design. I have called this pottery 'Parchment ware'. It is a local fabric, mostly of the 4th century, made in small quantities and traded, so it seems, as far and wide as Oxford mortaria and red colour-coated wares ; there are pieces at Richborough and Segontium. The main shape is a bowl with straight sides and a thick rim, and painted decoration in orange or brown on the inside and outside. The ware is obviously comparable to

¹³ S. S. Frere, *Verulamium I* (1971), 164 and A. R. Hands *et al.*, *Excavations at Shakenoak*, iv (1973), 132-3.

¹⁴ R. E. M. Wheeler, *London in Roman Times* (1930), 118-119 ; M. R. Hull, *Roman Colchester* (1958), 247 ; D. H. Kennett, *Jahrbuch Rom. Germ. Zentralmuseum Mainz*, xvi (1969), 123-148. Add to these several French examples listed by S. Boucher, *Vienne-Bronzes Antiques* (1971), no. 358.

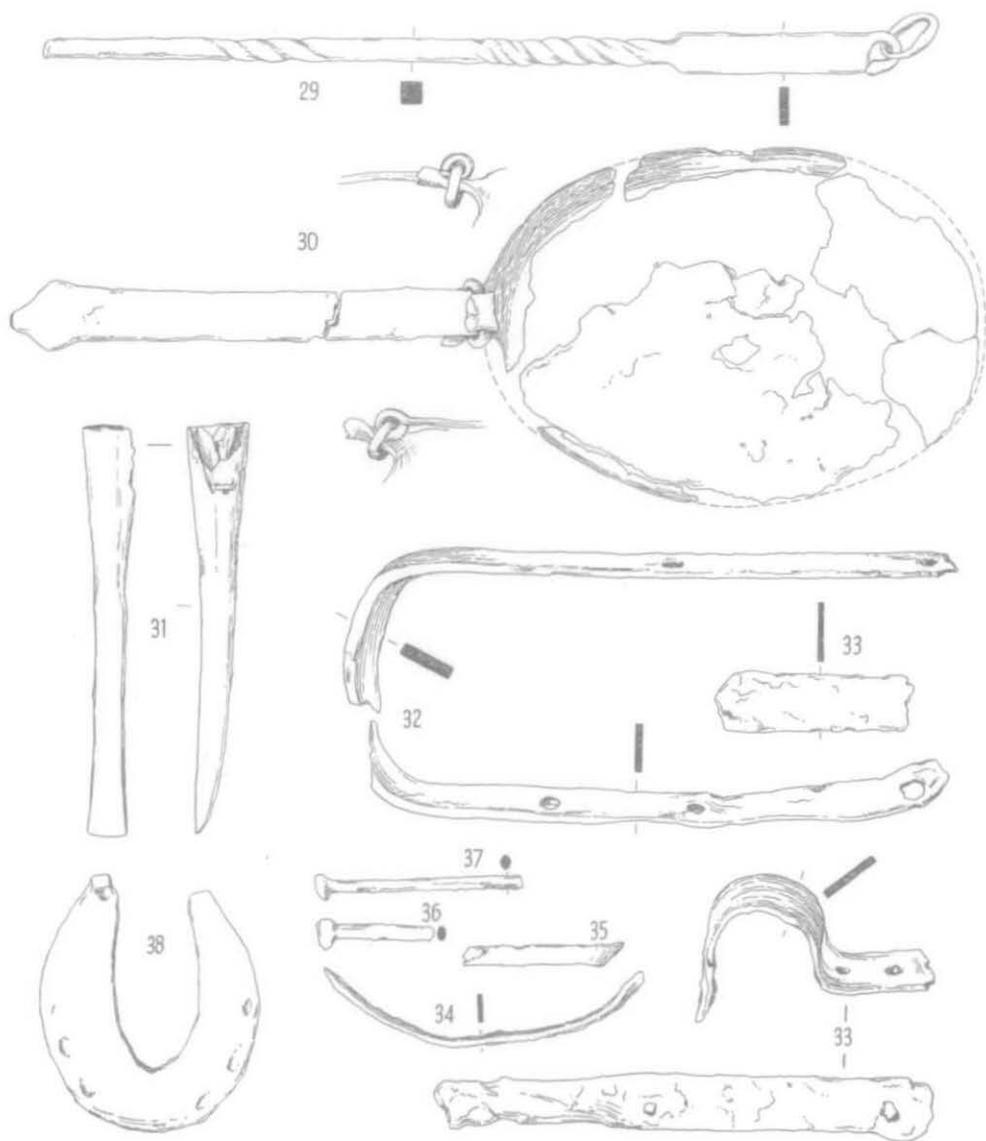


FIG. 7
Ironwork (1/4)

the painted bowls from Crambeck and the New Forest, though in shape and fabric it is quite distinct from these.¹⁵

44. Flanged rim bowl ; black-burnished ware.

45. Bowl in hard grey ware, black-burnished surface.

46. Small jar with girth grooves ; fine grey fabric, brownish surface.

47. Fragment of similar ware in grey fabric.

Various other fragments of pottery include red colour-coated wares of local origin, one with a fragment with overlapping rosette stamps ; and a fragment of combed flue tile.

Animal Bones.

The peaty deposit contained a quantity of animal bones only a few of which were collected ; all these belonged to the species *Bos* and *Cervus*.

Human Bones.

Fragments of a human skull were found mixed up with earthy soil, presumably part of the well filling above the waterlogged peaty deposit. The brow ridges are massive rather than slight ; the teeth are fully erupted, though little worn.

Other Organic Material.

A sample of the peaty material was taken, but in view of the disturbed nature of the deposit, it has not been submitted to any expert for examination. Its most obvious contents are pieces of a hob-nailed leather shoe and a fruit stone, from a plum or some such.

Discussion of the find

It has already been argued that the find represents the filling of a well. The objects all belong typically to the 4th century, and there is no reason to suppose that the well was not in use for a good many years. The presence of buildings nearby can only be guessed at, or inferred on the basis of Mrs. Greenaway's excavations. The date at which the pewter was hidden cannot be stated precisely, though it is probably accurate to say that it happened at the end of the Roman period.

The pewter represents the family plate of some reasonably prosperous household. Several large hoards of this sort are known : Appleshaw, Hants ; Barnwell, Cambs ; Attleborough and Hockwold, Norfolk ; Icklingham, Suffolk ; Duston, Northants ; Manton, Wilts ; Manchester ; and there are numerous smaller groups.¹⁶ My study of the Appleford pieces has led me on to an examination of the composition of these other hoards, and this is not yet complete, though several points have been obvious from the start. None of the hoards represents a single matching set of equipment such as one might get if one went into a shop and bought it all at one time. For instance, among the Appleford pieces, nos. 17 and 18 are obviously a pair ; nos. 21 and 22 also seem to be a pair, though only one is decorated ; nos. 23 and 24 are a pair (though of different sizes they are

¹⁵ See now, C. J. Young, in *Romano British Coarse Pottery* (ed. A. P. Detsicas), 1973.

¹⁶ Appleshaw (Brit. Mus.), *Archaeologia*, LVI ; Bardwell (Bury St. E. Mus.), *Britannia*, II, pl. 37 ; Attleborough (Norwich Mus.) ; Hockwold (Norwich & Bury) ; Icklingham (Brit. Mus., Ipswich, Cambridge, Bury) ; Lakenheath (B. M.) ; Duston (Northampton) ; Manton (Devizes) ; Manchester, Lysons, *Reliquiae Romano Britanniae*, 1813, Vol. 1, part IV, pl. V ; and the general surveys of W. J. Wedlake, *Excavations at Camerton* (1958), 82-93 and C. A. Peal, *Proc. Camb. Ant. Soc.*, LX (1967), 19-37.

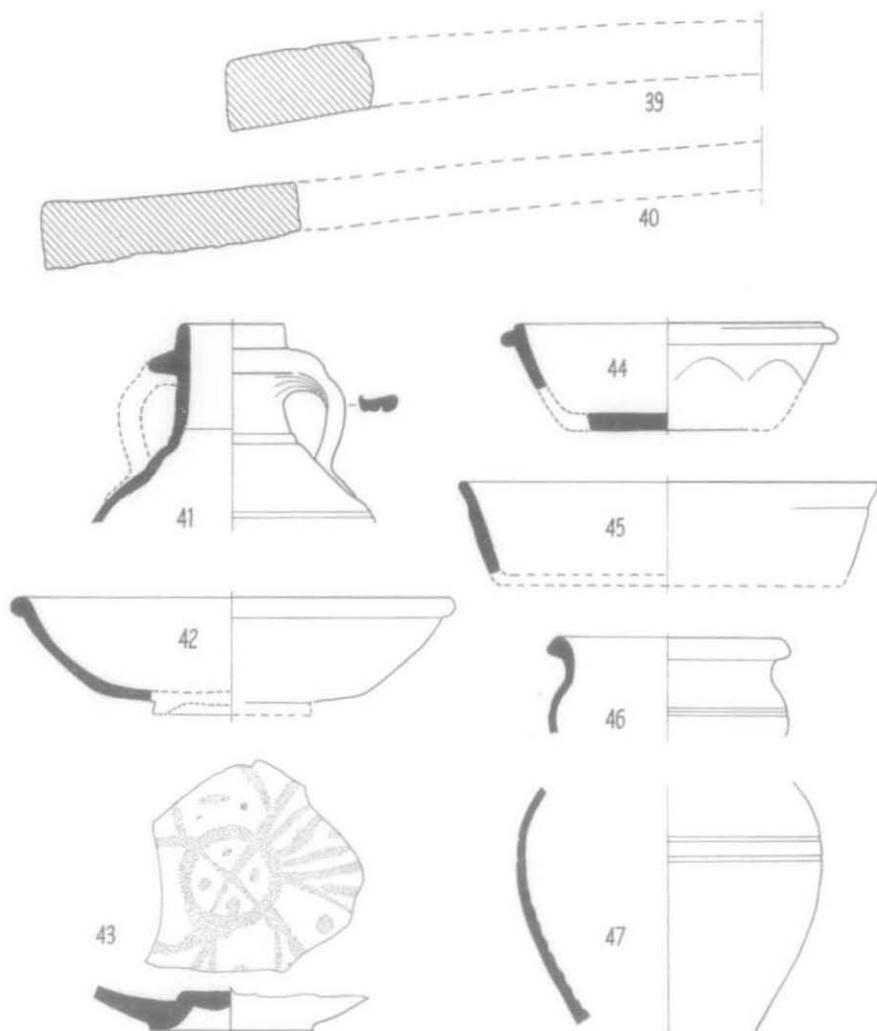


FIG. 8
Quernstones and pottery (1/4)



FIG. 9

Graffiti on pewter (1/2)

linked by the identical rim form and by the Pacata inscriptions); and nos. 8 and 9 look as though they too are a pair, though of different sizes. Otherwise the pieces do not obviously match up with each other, though several of the plates have similar rim forms. The impression is of a group of vessels which had been acquired bit by bit over a number of years, and this is confirmed by the differing degrees of wear on the plates. Some of the pieces may even have been second-hand, for the secondary nature of the Lovernianus inscription on plate 24 suggests that the Pacata inscription was already there when Lovernianus bought it. The question of how many years collecting is represented by a hoard such as Appleford can only be answered by reference to the changing shapes of vessels in pewter and other materials. The deeper sort of plate with a curving wall like nos. 17 and 18 was being made in bronze in the middle of the 3rd century,¹⁷ while the flat plates with a thick triangular rim like nos. 23 and 24 repeat the shape of the famous silver missorium of Theodosius of A.D. 388.¹⁸ These are two isolated fixed points which indicate the likely time range represented by the Appleford hoard. A hundred years is not much in the life of a pewter plate as can be seen from the condition of the numerous pieces on sale in antique shops today.

The large number of late Roman pewter hoards and their widespread distribution together with the increasing evidence of widespread manufacture¹⁹

¹⁷ J. Werner, *Marburger Studien* (1938), 259-267; and a bronze plate from Niederbieber, *Bonner Jahrbucher*, cxx, 281.

¹⁸ R. Delbrueck, *Die Consulardiptychen*, 1929, 235-242, N. 62.

¹⁹ P. D. C. Brown, *Cornish Archaeology*, ix (1970), 107-110, and Witcombe, *Glos. (Society of Antiquaries, Portfolio of Roman Britain*, iv, 3) and Westbury, Wilts. (Devizes Museum, 709).

indicate how common the metal was. Unfortunately, individual hoards are not related directly to individual buildings, save in the case of Appleshaw, Hants. Here a hoard of 32 pieces was buried in a hole in a cement floor which was presumably part of the villa to which the hoard belonged. The site is in the midst of a group of opulent villas north of Andover; it has not been excavated, but parts of buildings have been found 80 yds. from the findspot of the hoard, and the house sounds like a large one.²⁰ The nearest comparable building to the findspot of the Appleford hoard is the villa at Dropshort just west of Sutton Courtenay, only about a mile away. This villa is known to have patterned mosaic floors; parts of it were excavated a few years ago, and the preliminary report describes the villa as a large one.²¹ This sounds the sort of place that might have owned the pewter hoard; a smaller house would barely have had room to spread it out, let alone use it. The hoard fills an area of 25-30 sq. ft.

It is fairly obvious that pewter was cheaper than silver, and it seems probable that it was also cheaper than bronze and that pewter had supplanted bronze for the making of this sort of vessel in 4th century Roman Britain. Late Roman hoards of bronze vessels in Britain include only those vessels which are spun or beaten²²—two methods of manufacture not suited to pewter. Plates and bowls such as these from Appleford which are cast, are everywhere of pewter. With the exception of the Mildenhall treasure silver vessels were not hoarded in the same way though there can have been no shortage of silver as the hoard of scrap from Traprain Law shows. There must have been some households which had sets made up partly of silver and partly of pewter; there is no evidence for this among the pewter hoards though there are scraps of pewter from Traprain.²³ This may point to a recognized difference in value between silver and pewter, so that when the time came to flee the more valuable silver was carried away while the less valuable and much heavier pewter was buried to be recovered on returning.

APPENDIX

THE APPLEFORD COIN HOARD

On the last day of 1954, a hoard of coins was ploughed up in Appleford Field at a point which must be about 200 yards north of the area of gravel working which produced the pewter. A note about the hoard appeared in *Oxoniensia*,²⁴ but the two pottery jars which contained the coins were not illustrated and it is for this reason, and to complete the record of the site that the hoard is described here. Dr. C. M. Kraay's note of 1954, reprinted verbatim, is: 'Apart from a handful of earlier coins extending back to Gallienus, the great bulk of the hoard was made up of the issues of Constantine the Great and his sons from about

²⁰ C. H. Engleheart, *Proc. Hants Field Club*, 9 (1920), 215-216. Engleheart's often-quoted date of 350 A.D. for the Appleshaw hoard is based on the coin series at a neighbouring site and the similarity of wall plasters from the two sites (*Archaeologia*, LVI, 6)!

²¹ *Journ. Rom. Stud.*, LIX (1969), 198.

²² Kennett, see note 14; M. D. Cra'ster, *Antiq. J.*, I (1970), 344.

²³ A. O. Curle, *The Treasure of Traprain* (1923), 100.

²⁴ C. M. Kraay, *Oxoniensia*, XX (1955), 92-93.

320-347. The latest coins were five examples of the FEL. TEMP. REPARATIO types of Constantius II and Constans, so that the hoard must have been buried within a few years before 350. Although the coins had been removed from their containers by the finder it was evident from the metal stains that each pot had held different-sized coins. One had contained over 1650 Constantinian issues minted from about 320-326. All except 100 were from the mint of London and were in very fine condition with their silver coating often intact. Of the coins of London, those of Constantine II Caesar far outnumber those of Constantine I or Crispus. Among the remaining coins nearly all the Imperial mints (except Alexandria) were represented by occasional specimens. The second pot contained nearly 4000 coins of which the great majority were issued after 335; GLORIA EXERCITUS (one standard) and VICTORIAE DD AVGGQ NN far outnumber any reverse type, and the great majority were struck at the mint of Trier. The very thin representation of types struck between 326 and 335 (GLORIA EXERCITUS (2 standards), URBS ROMA, CONSTANTINOPOLIS) is remarkable.'

A full analysis of this hoard has not yet appeared, but when it does it is likely to be printed in a numismatic journal rather than in these pages.

The first pot (FIG. 10, A), is grey, quite pale in the break and hard, fired at a relatively high temperature. There is a cordon at the base of the neck; the mouth was probably curled over outwards till it was almost horizontal. The base and lower part of the body have been turned, the upper part of the body has been burnished and there is a rough band between them. There is also an unburnished decorative band flanked by grooves just above the belly of the pot.

The second pot (FIG. 10, B), seems to be in much the same fabric though it is

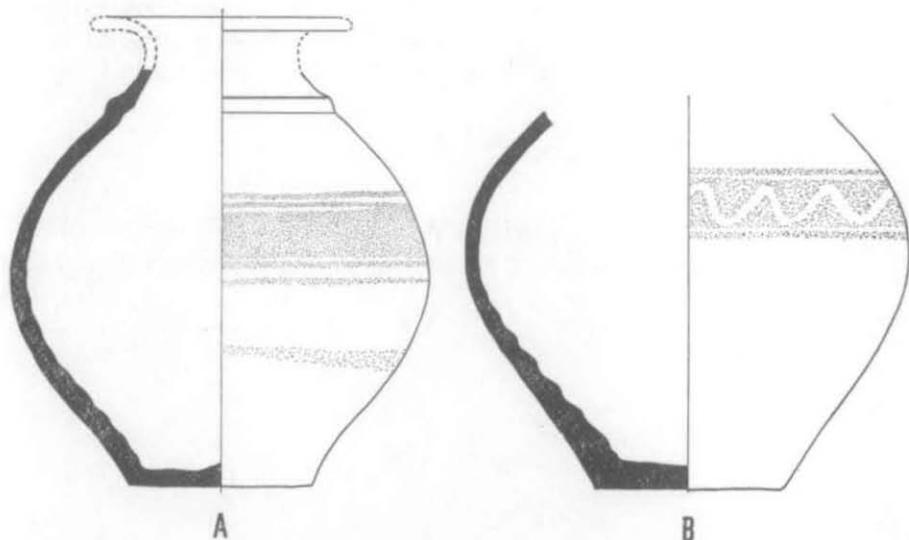


FIG. 10
Pots containing coin hoard (1/3)

darker on the surface and darker in the break. Details of the neck and rim are missing. The turned and burnished areas overlap—as they were presumably intended to do—leaving only the single unburnished band around the belly ; this is embellished with a burnished wavy line.

The general form of these vessels is best paralleled by a number of so-called handleless bottles from the Sandford kiln site,²⁵ though the Sandford fabric is softer than these pieces. Hard, smooth-surfaced, grey pottery like these two pieces is common on sites in the region though not in dated contexts. Its use for containers for this coin hoard gives a firm date for its manufacture, in the second quarter of the 4th century.

The hoard, as Dr. Kraay has shown, obviously represents two hoards, and if these were in two pots as the evidence suggests, is it possible that one pot dates from the closing of the first hoard and the other from the closing of the second ? The markings inside pot A show that it contained the earlier hoard, which was the smaller ; and it is the smaller pot, so that is in agreement. This hoard closed about 327. If it was not put straight into pot A, it must have been kept intact elsewhere and put into its pot about 347, the date of closing of the second hoard. But, if the two hoards were buried at the same time, why weren't they put together into a single pot ? It seems more likely that the first hoard was already in pot A, and probably already buried in the ground, and that pot B with its hoard was buried alongside it in 347. This would be an example of banking by burying, the careful saver having taken careful note of the position of his first hoard so that he was able to relocate it and add to it twenty years later. Neither date need indicate any calamity in the area ; they are merely dates in the life of one man who chose to bury his talents. And, from the way in which each hoard comes predominantly from a single mint, it looks as though he received his money *en masse* rather than by saving, perhaps as a gratuity, perhaps as pay. Whether pay or gratuity, when older, the man required more money and obtained it. This leads to the rather surprising deduction that pot A was made about 327, and pot B about 347.

The Society is grateful to the Council for British Archaeology for a grant, and to the Amey Roadstone Construction Ltd. for a generous donation, which have met the cost of this paper.

²⁵ T. May, *Archaeologia*, LXXII (1921), 223-242.

PLATE VI



A. Mr. E. Sutton at the site of the find. Didcot power station in the background.

Ph. : Mrs. E. Harris



B. Airphoto of Appleford Field, south-west of the village.

Ph. : Fairey Air Surveys

PLATE VII



A. The group of small bowls piled up in the way they lay in the ground.



B. The group of plates piled up in the way they lay in the ground.

Ph. : Ashmolean Museum

PLATE VIII



A. The back of plate 17 showing typical compass work and lathe mounting scars.



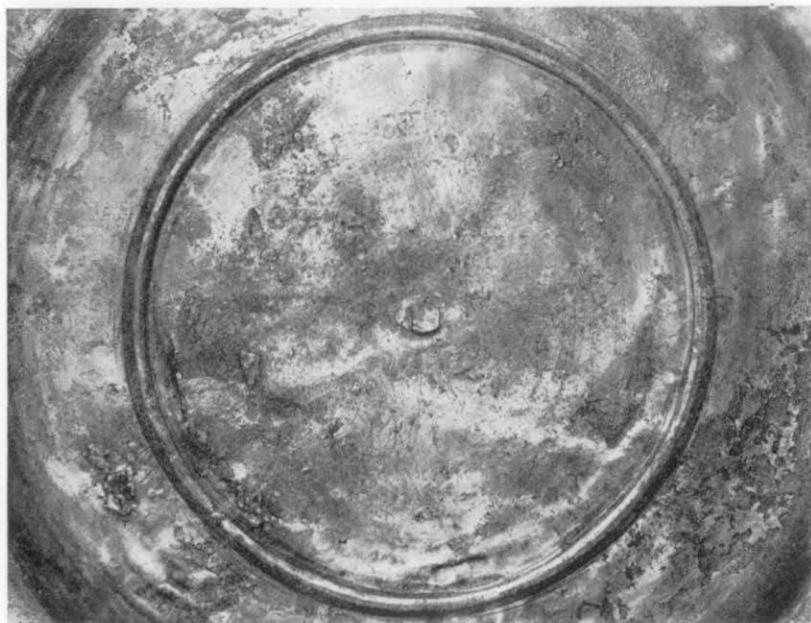
B. Punched pattern at the centre of plate 21.

Phh. : Ashmolean Museum

PLATE IX



A. The back of plate 12 showing compass work and lathe mounting scars.



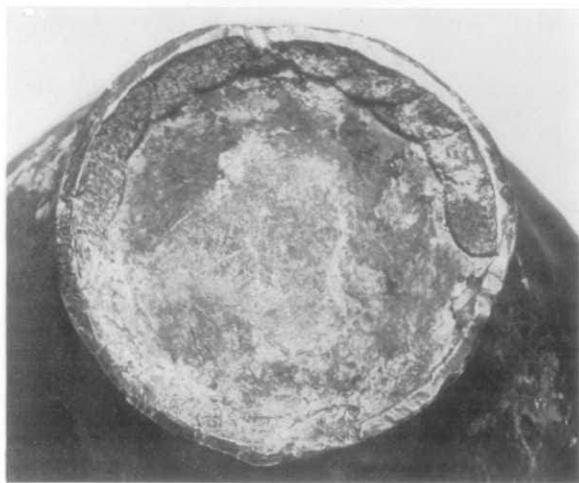
B. The back of plate 18 showing compass work and lathe mounting scars.

Phot. : Ashmolean Museum

PLATE X



A. The flagon, item 1, showing the joint around the belly and the signs of rotary polishing.



B. The bottom of the flagon with overlapping spots of solder.

Phh. : Ashmolean Museum

PLATE XI



A & B. Front and back views of the small pieces, items 2-4.

Phh. : Ashmolean Museum

PLATE XII



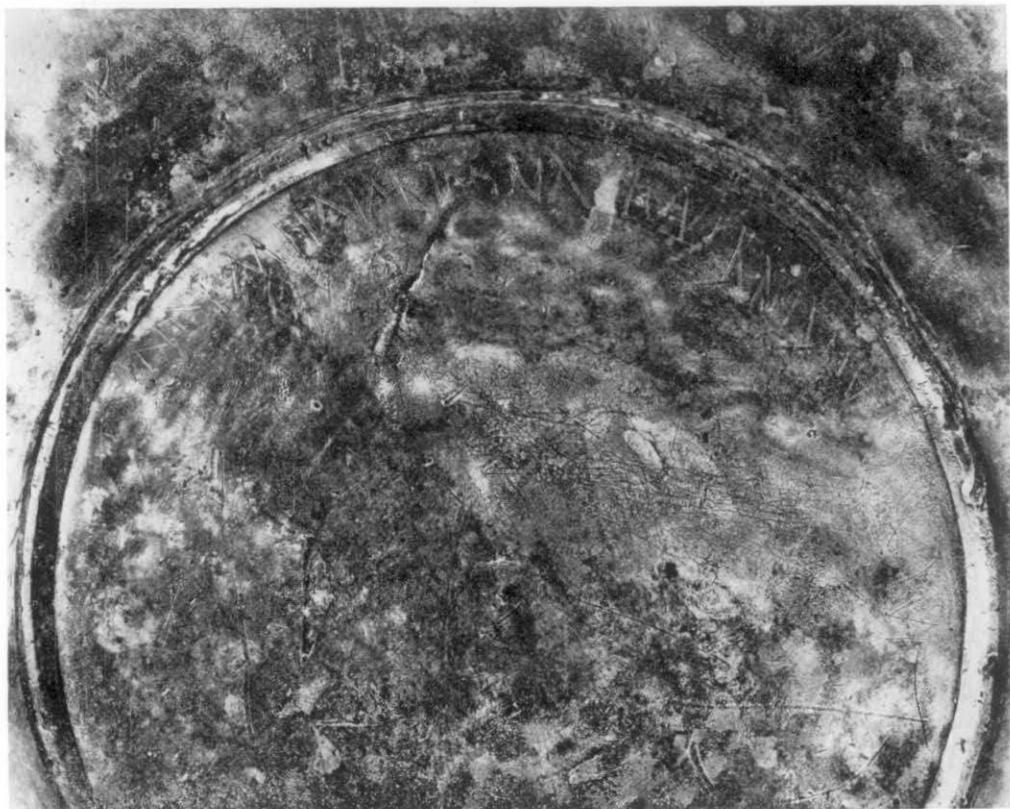
A. The join of pedestal to bowl of the octagonal flanged bowl, item 7 ; beads of solder remain on the inside of the join.



B. The join of pedestal to bowl of item 11 ; rough on the inside, but a neat join on the outside.

Phot. : Ashmolean Museum

PLATE XIII



A. Graffiti on back of plate 24.



B. Graffito on back of plate 23.



C. Graffito on back of plate 2.

Phh. : Ashmolean Museum