

SOME SUFFOLK KILNS:

IV. SAXON KILNS IN COX LANE, IPSWICH, 1961

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For over forty years it has been known that the Carr Street-Cox Lane area of Ipswich was likely to prove to be the site of a pottery industry of the Anglo-Saxon period. In 1961, excavation for the erection of an extension to the premises of the Ipswich Co-operative Society revealed traces of five kilns. One, badly disturbed, had made Ipswich ware of 7th-9th century date; the remaining four, two of which it was possible to excavate and record in some detail, were of the Late Saxon period (9th-12th centuries), producing Thetford ware. The excavations were carried out by the Ipswich Museum, where the material recovered is housed.

In addition to an account of the pottery, by J. G. Hurst, the results of a magnetic survey, by M. J. Aitken, are recorded, and a detailed description, by Calvin Wells, of human remains found on the site.

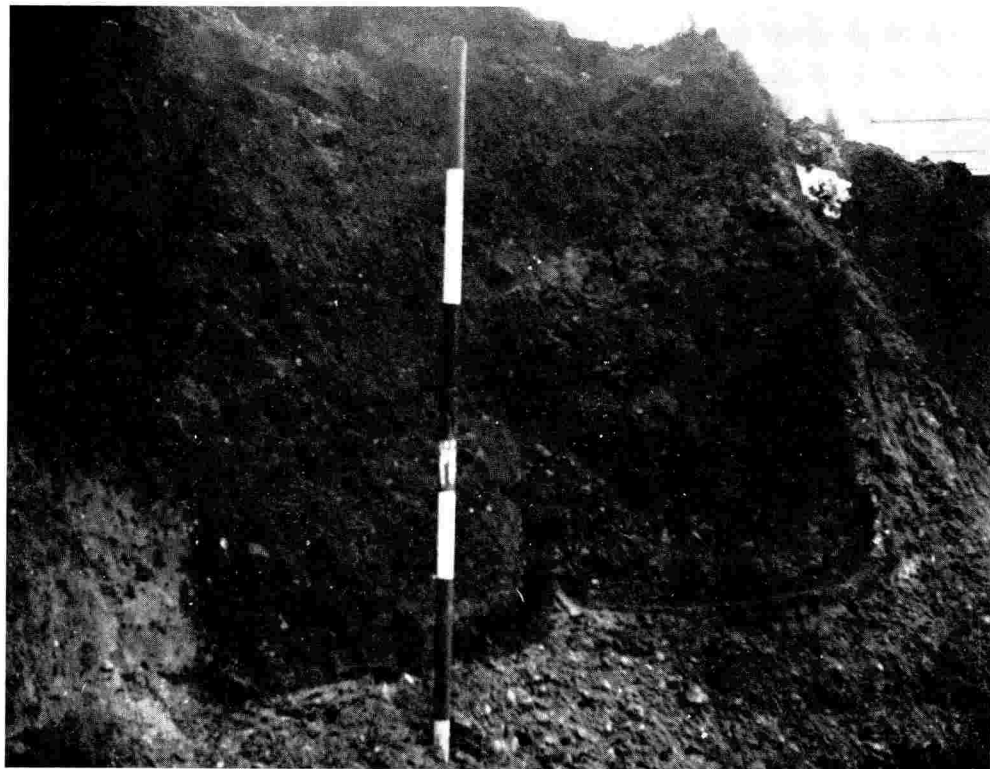
The evidence for the presence of kilns making Ipswich ware and Thetford ware in the Carr Street-Cox Lane area of Ipswich has been reviewed by J. G. Hurst and S. E. West.¹ Photographs of a Thetford ware kiln discovered in 1928 behind the Co-operative Society's building are published and show the remains of a kiln with whole pots *in situ*, but a controlled excavation with measured drawings was not carried out, and little is known of the structure of the kiln. Wasters of Ipswich ware had also been found prior to 1920, and more came to light with Thetford ware in 1935.

Excavations for the foundations of Martins Bank in the Buttermarket produced stratified deposits which firmly established the sequence of pottery types. In 1957 and again in 1958, the Co-operative Society gave permission for excavation of a site in the vicinity of the 1928 kilns. No kilns were found, but an interesting series of pits provided material for the survey given above by S. E. West, who supervised the excavations on behalf of the Ministry of Works.

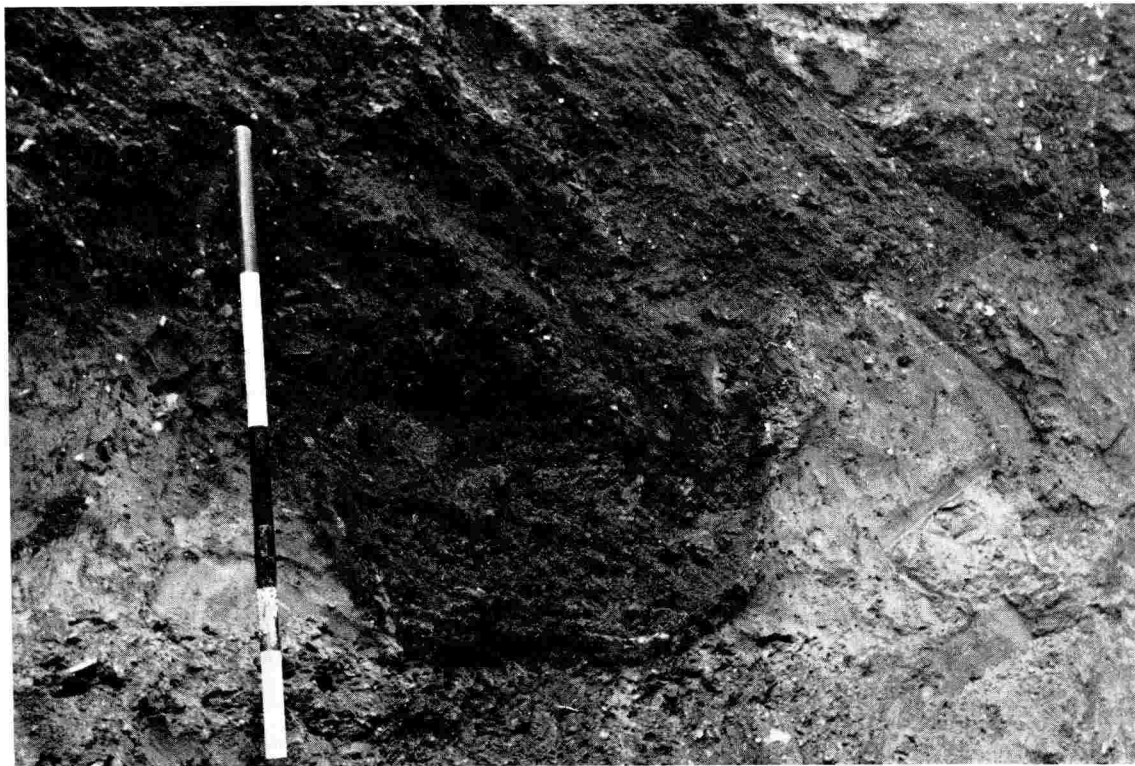
In January 1961, work began on a large new extension to the Co-operative Society's Carr Street building, bounded by Cox

¹ *Proc. Camb. Ant. Soc.*, 1 (1957), pp. 29-60.

PLATE XXXVIII

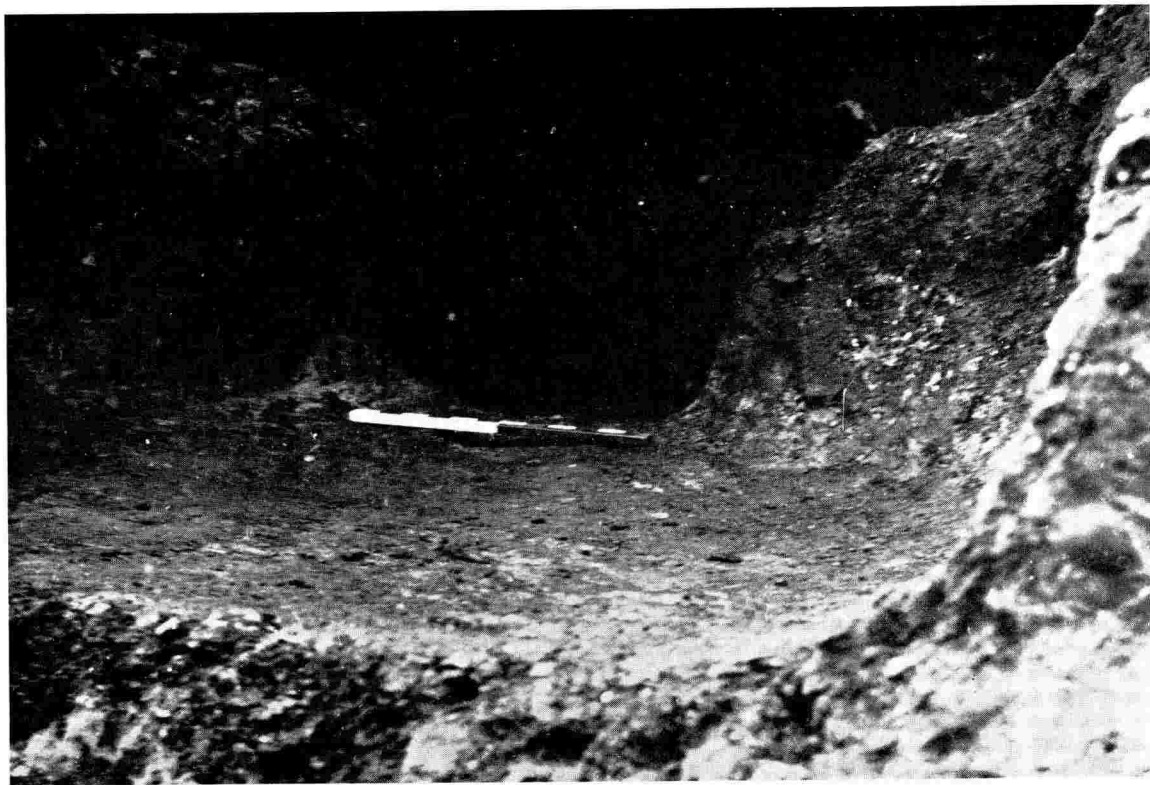


Kiln I; seen in south face of contractor's excavation.



Kiln II; seen in north face of contractor's excavation.

PLATE XL



Kiln I; looking south.



Kiln IV; looking south-east.

4. 3 ins. of trampled ash, which may indicate that this lay immediately outside the furnace-arch, in the stoke-hole.
5. 2 ft. of white ash.
6. Black sand with some pottery. Circumstances did not permit excavation to the bottom of this layer.

It was difficult to interpret this deposit. At first it was thought to be part of a bowl-shaped kiln similar to Kiln IV, but the shape might equally have been produced by the section of the stoke-hole of a kiln otherwise destroyed by the surrounding later rubbish pits. In that case it would appear that the bottom of the stoke-hole was represented by the white ash (5), the upper surface of which had been trodden into a hard crust (4), and that this overlay an earlier rubbish pit, or the stoke-hole at an earlier firing of the same kiln—a likely solution as the pottery was of the same type.

KILN IV (Plate XLI, Fig. 67)

This kiln was the most complete of those found, and although falls of the loose overlying silt and of masonry from demolished buildings caused some damage and necessitated re-excavation on more than one occasion, a reasonably accurate record of the structure was obtained.

The kiln differed completely in form from Kiln I. It was circular, with an inside diameter at the top of the wall of 5 ft., tapering to a flat, circular base of diameter approximately 4 ft. The floor lay 7 ft. below the modern surface. The furnace-arch, 1 ft. 6 ins. in width, had been supported by two round pilasters, but although both of these were uncovered and seen, one was destroyed by a fall of masonry before photographs could be taken.

The floor and walls were completely smooth, without any indication of a central pedestal or of an upper firing-floor or fire-bars. It would therefore appear that in all cases the potters had not only been successful in maintaining a sufficient draught without these aids to achieve good well-fired pottery, but were also conversant with the technique of excluding air in the final stages in order to create a reducing atmosphere necessary for the production of grey pottery.

The kiln was in fine, undisturbed condition, and arrangements had been made for samples for dating to be taken by the Cambridge University Department of Geodesy and Geophysics, but circumstances prevented the arrival of the necessary equipment and specialists.

The considerable quantity of ash under the furnace area and stoke-hole indicated a long period of use, but in spite of the heat which must have been generated over a prolonged period a mass of unfired clay lay directly underneath the ash.

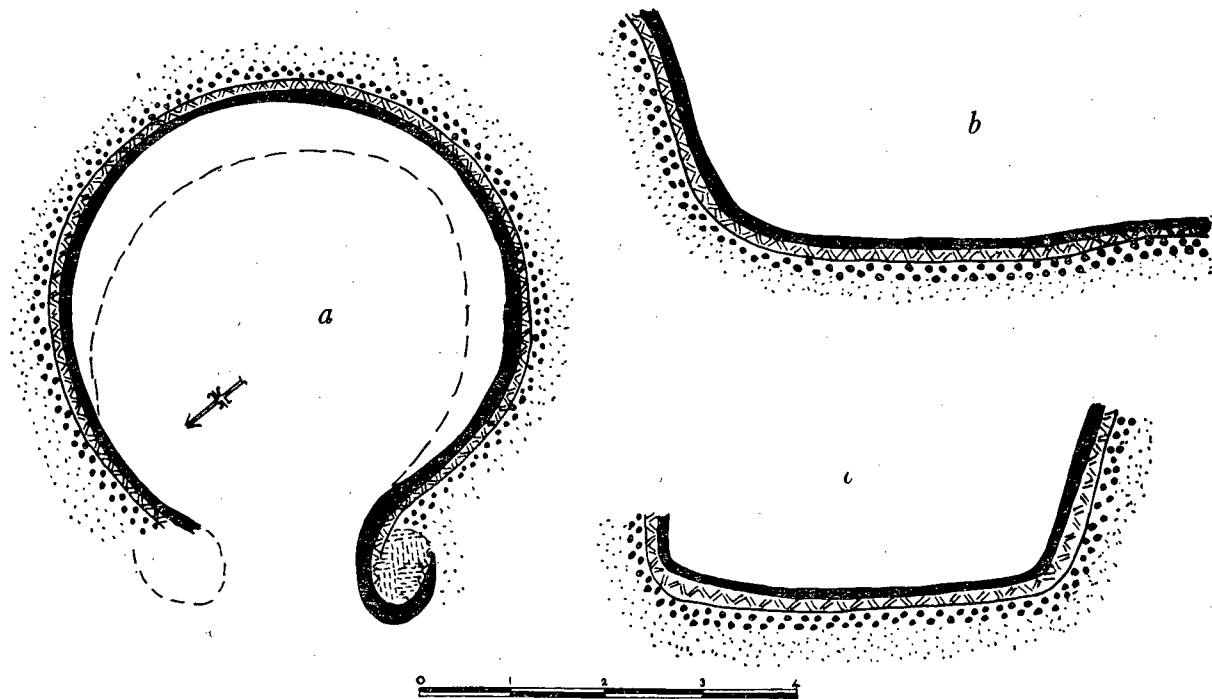
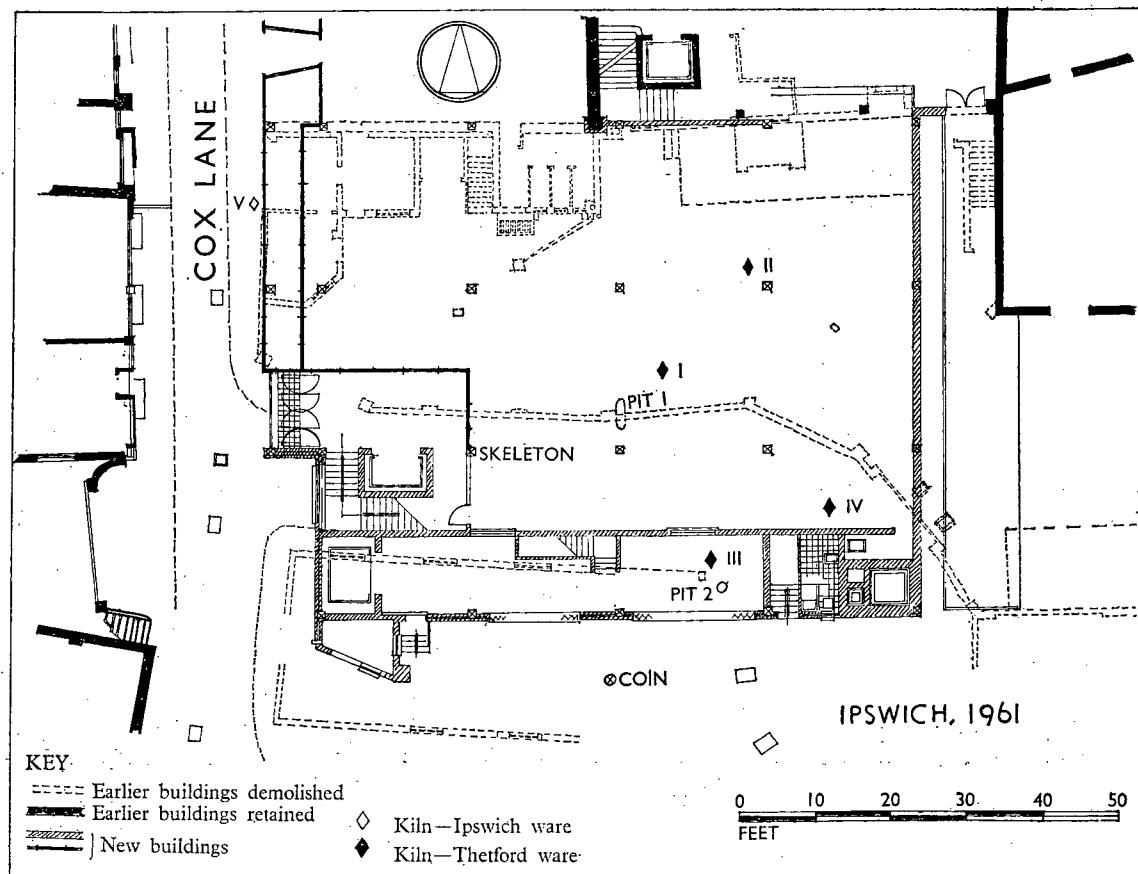


FIG. 67.—Kiln IV. *a*, Plan; *b*, Longitudinal section; *c*, Transverse section.
 For Key see Fig. 66.

Fig. 65.—Plan of Cox Lane Kilns.
Based, by permission, on the plan prepared by W. J. Reed, Esq., F.R.I.B.A.,
Chief Architect to the C.W.S.



Lane (Fig. 65). The excavations revealed a number of rubbish pits, and on 16 January two kilns appeared in section (Plates XXXVIII and XXXIX; Fig. 66, *b*).

Permission was given to the Ipswich Museum staff to have access to the site, and to excavate the kilns, subject to a minimum of interference with the progress of the work of the contractors.

The method used in preparation of the foundations created considerable problems from the point of view of archaeological investigation. The ground behind the existing building was in process of being cleared to a depth of 14 ft. (16 ft. below floor level of the existing building which is +31.67 O.D.). This entailed the removal by the drag-line of vertical slices from the face of the 'cliff' thus formed. Inevitably, therefore, kilns were partly destroyed as they were revealed, and archaeological excavation had to be carried on from this vertical surface, working from ladders or spoil-heaps.

The site had been occupied by buildings, the footings of which still remained, and where these lay over the disturbed silt of rubbish-pits, the sudden collapse of large blocks of masonry rendered the task of excavation from a lower level both difficult and hazardous. On a number of occasions those engaged on the work took evasive action only just in time, and sections were destroyed by falling debris before drawing could be completed. In spite of this, operations met with a measure of success sufficient to give some idea of the structure of the kilns, of which five in all came to light, their bases lying usually 6 or 7 ft. below the existing surface. It was found possible to excavate partially two kilns (numbered I and IV), but pottery obtained from the others will also be described in the report which follows.

KILN I (Plates XXXVIII and XL, Fig. 66)

This was an oval kiln, lying almost due north and south, and was first revealed in a clean-cut section made by the drag-line. The greatest diameter was 4 ft. decreasing to 1 ft. at the furnace-arch. From observations made by Dr. Martin Aitken whilst taking samples for archaeomagnetic dating, it would appear that the drag-line had cut away rather less than half, as the degree of vitrification of the crust, after decreasing away from the furnace-arch, showed an increase at the northern limit, probably indicating that the kiln had been provided with two furnaces, one at either end, as indicated in Fig. 66, *a*.

The side-walls were vertical and the floor smooth, with no indication of either a central pedestal or a raised floor, an even more primitive type of oven than that in the common Suffolk pedestal kilns of the Roman period.

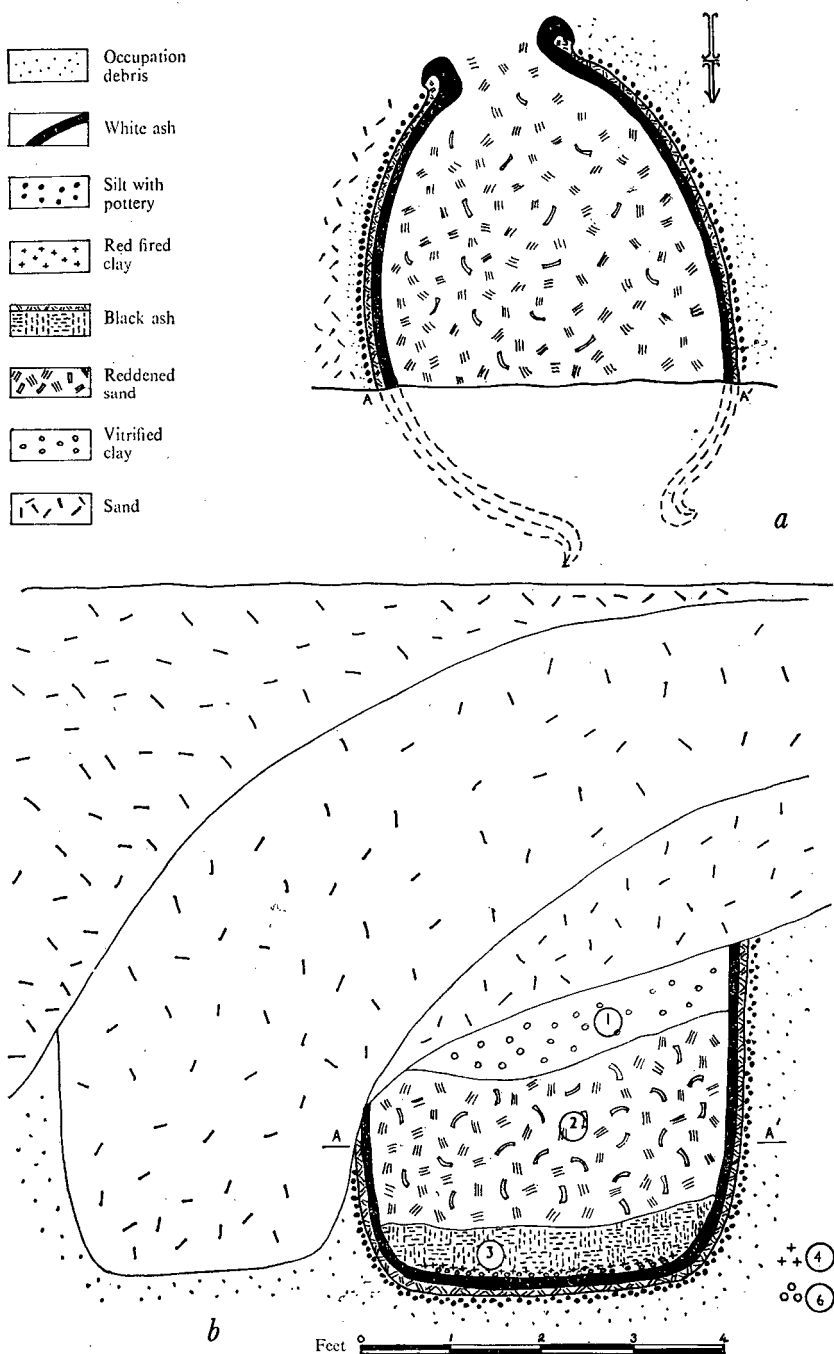


FIG. 66.—Kiln I. *a*, Plan; *b*, Section.

The kiln had a clay lining 2 ins. in thickness. This was vitrified from within to 1 in. in depth, and then reddened. The surrounding sand was burnt red for 1 in.

The walls were broken down by the overlying occupation, the east wall being present to a height of 1 ft. 3 ins., the west wall to 3 ft. 3 ins., and the arch to 10 inches. The base of the kiln lay 6 ft. 6 ins. below the surface.

Three rubbish pits, each cutting the one below, lay over the kiln, destroying the upper part, and these contained sherds of later periods and are not considered in this account of the kiln. Below these the interior of the kiln was filled with layered deposits as follows:—

1. White ash 6 or 7 ins. in depth with some pottery.
2. Black silt to a depth of nearly 2 ft., with numerous sherds.
3. 6 ins. of red fired clay, probably representing the fallen roof of the kiln-chamber; some sherds.
4. A thin layer of black ash under layer 3.
5. Black ashy layer under arch; continuation of layer 4.
6. White ash under layers 4 and 5.

The report on archaeomagnetism given below refers to this kiln, from which the only samples were taken.

In general, it may be supposed that pottery found in layer 3 and below it can definitely be assigned to this particular kiln; there is a possibility that the upper layers may represent sweepings from one or more neighbouring kilns, but in this case the point is one of purely academic significance, as there is virtually no difference between the pottery from the upper and lower levels.

KILN II (Plate XXXIX)

This kiln lay under the foundations of the existing building, and remained in position only long enough to allow photographs to be taken, when it collapsed.

It would appear to have been a circular kiln of much the same type as Kiln IV (described below). No member of the Museum staff was present at the time of the collapse, and only one pot (Fig. 71) was recovered by workmen.

KILN III

The remains of a kiln had been sliced in two by a rubbish pit of a later period, itself overlaid by 1 ft. of modern rubble (layer 1). Underneath this, west of the modern pit the sequence was as follows:—

2. 2 ft. 6 ins. of black silt with ox-bones, and probably of Elizabethan or later date.
3. 6 to 9 ins. of burnt clay, probably representing kiln roof-fall.

The walls and base were constructed of clay, 3 ins. in thickness, the clay of the side-walls being vitrified for $1\frac{1}{2}$ ins. and reddened for a similar thickness, the base vitrified to a depth of 1 in. and reddened for the remaining 2 ins., with 3 ins. of reddened sand below.

Owing to the occurrence of several falls during the course of excavation, it was not possible to obtain and draw a direct measured section of this kiln, but a note was taken of the various layers encountered for which some measurements had been taken as work progressed.

Beneath the overlying deposit, which was some 5 ft. in thickness, and probably datable to the sixteenth century and later, the sequence was as follows:—

1. A 9 in. layer of black silt with some rubble.
2. Black ashy silt, 4 to 5 ins. in depth.
3. A pinkish-brown sandy layer with ash, ranging from 3 or 4 ins. on the north side to 8 or 9 ins. on the south.
4. A black ashy layer, about 8 ins. in greatest depth below (3) immediately above floor.
5. Thin white ashy layer on floor of furnace arch.

It might have been expected that the different form of kiln was designed for the production of a special type of pottery, but in general the pottery seems to have been much like that produced in Kiln I, the structure of which was so completely different.

KILN V

Underneath the pavement of Cox Lane, and almost abutting on the rear of the existing building, was exposed a small remnant of a kiln floor, evidently much damaged when the lane was paved, but still *in situ*. The few sherds recovered from this site were of Ipswich ware. Although it was unfortunate that the only Ipswich ware kiln was in such poor state, it does provide evidence of the continuity of pottery manufacture on this site. Whether the introduction of the fast wheel and production of Thetford ware was the result of the importation of skilled labour from the Rhineland,² or whether it resulted from the application of the new methods by native potters, remains a problem not yet capable of solution.

MISCELLANEOUS FINDS

A number of specimens recovered by workmen, but not referable to any specific kiln were also collected, and where they are of sufficient interest are noted and figured here.

² J. G. Hurst, *Middle Saxon Pottery* in 'Anglo-Saxon Pottery: A Symposium', *Med. Archaeol.*, III (1959), 28.

An object of particular interest was a bone skate made from the metacarpal of an ox (Fig. 68). Similar skates from both ox- and horse-bones were found in the Saxon level on the site of Martin's Bank in the Buttermarket in 1956. This would appear to be the earliest instance so far to be put on record of the use of such bones

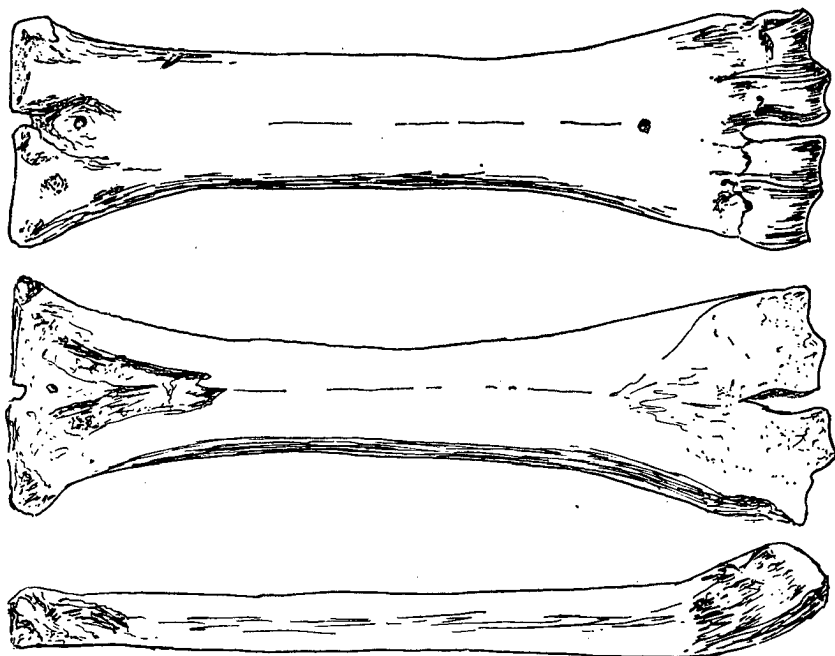


FIG. 68.—Bone skate. (§).

for this purpose, for otherwise the first mention is by William FitzStephen (1154–1189) in his *Vita Sancti Thomas*,³ in which he gives an account of life in the City of London, including a note on sports and pastimes. He describes in graphic detail the use of large blocks of ice as toboggans, and goes on to describe how the young men tied to their feet the shin-bones of various animals, propelling themselves with a pole shod with iron, swiftly as the flight of a bird or of the bolt from a cross-bow—and not without bodily hurt! The use of skates of bone appears to have been continued at least to the sixteenth century, and possibly later.

³ Transcribed in *Materials for the History of Thomas Becket*, (Rolls Series), edited by James Craigie Robertson, M.A., vol. III (1877), pp. 8–12.

In addition, some pits exposed during the operations were examined, and the contents recovered.

PIT 1

A pit accidentally discovered by one of the workmen when the filling collapsed under his foot, below the 14-ft. level, contained a whole pot and other sherds of Thetford ware. It would appear to have been the base of a rubbish pit which had been destroyed by the drag-line at an earlier stage of the excavation.

PIT 2

Fragments of kiln debris, and pottery including wasters and charcoal, may indicate the presence of another kiln, or may be referable to Kiln III.

PIT 3

Vertical boring for a stanchion revealed human remains at a depth of 8 ft. below the O.D. 22.60 level (15 ft. from the old ground surface), and may indicate a well.

In this pit was the skeleton of a man who had evidently met a violent end. He had been thrown in head-first on top of a thick layer of burning timbers which had scorched his skull.

It is difficult to arrive at a satisfactory date for this occurrence, but the pottery with which he was associated included Thetford ware datable to the eleventh or early twelfth century. This would appear to be too late to suggest that the happening was due to the Danish incursions (993 and 1010). The skeleton presented features of such interest that the remains were submitted to Dr. Calvin Wells for a report which appears as an appendix to this paper.

COIN

A survey with the proton-magnetometer was found to be almost impracticable owing to local conditions, but resulted in a suggestion from Dr. Aitken that examination at one point might yield results. Time did not allow of full excavation, and a test was therefore conducted with a 4 in. auger. This indicated the presence of a rubbish pit, producing small sherds of Thetford ware, but at a depth of 12 ft., where the base was reached, the bore produced a single damaged coin, a silver penny of Aethelred II, later identified by Mr. R. H. M. Dolley as of the Stamford Mint, and of a moneyer hitherto unrecorded for that type, LIFINC or LEOFING, and dated to *c.* 995.

THE POTTERY

by J. G. HURST, M.A., F.S.A.

MIDDLE SAXON: KILN V—IPSWICH WARE

Fig. 69, *a*, small cooking pot, 'sandy' ware with upright rim, group 1, type B. (See page 248, Fig. 41, for type series).

Fig. 69, *b*, cooking pot, 'sandy' ware with some grits, upright rim, group 1, type D. Neck pierced for suspension.

Fig. 69, *c*, large cooking pot, thick 'pimply' ware, short upright rim, group 1, type A. Overfired and distorted waster. Irregular girth grooves on the shoulder.

Fig. 69, *d*, cooking pot, 'sandy' ware, tall thin flared rim, group 2, type G.

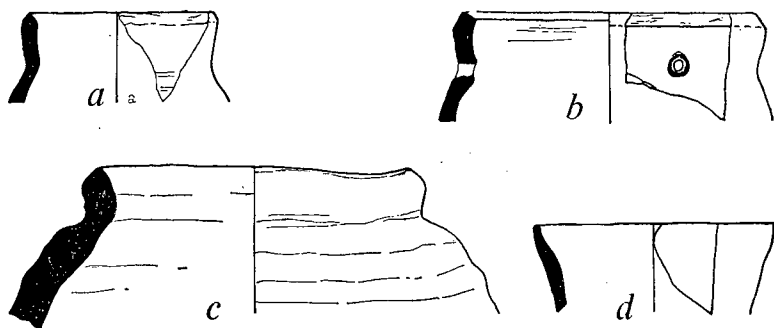


FIG. 69.—Ipswich ware from Kiln V. (4).

Besides these four rims only four other sherds were recovered from the kiln; these were all Ipswich ware. It is not possible to suggest a date for this kiln which might fall anytime within the bracket A.D. 650–850. It is of interest, however, to see that there was considerable rim variation in the same kiln and also that both 'pimply' and 'sandy' wares were not only contemporary, but presumably made in the same kiln. This has been suspected from other sites.

SAXO-NORMAN: THE PRODUCTS OF THE KILNS

COOKING POTS

The kilns were producing Thetford ware ⁴ cooking pots almost exclusively. In both Kilns I and IV cooking pots accounted for

⁴ J. G. Hurst, 'Saxo-Norman Pottery in East Anglia Part II, Thetford Ware', *Proc. Cambs. Antiq. Soc.*, L (1956), 42-60. (Hereafter referred to as Hurst (1956).)

98% of the pottery found. In Kiln III 20% of the pottery was from other types of vessel but as there were only 60 sherds saved altogether this might not represent a true picture of the products of this kiln. The Thetford ware from the kilns was fairly uniform being a hard well-fired grey 'sandy' ware. Most of the walls of the cooking pots were thin and showed careful potting. In nearly all examples the rim diameters fall within the bracket of 4 to 6 ins. There were three main types.

(a) *Rouletted.* The most common type of decoration was bands of rouletting on the shoulders of the cooking pots. This usually took the form of small finely cut diamond notches (Fig. 70, *i*), but a few examples were much coarser with large badly cut diamond notches (Fig. 70, *d*). To save space in the list of pottery the former are called small and the latter large rouletted cooking pots. In Kiln I there were nine large rouletted sherds and 40 small ones while in Kiln IV there was only one large rouletted sherd and 61 small ones.

(b) *Grooved cooking pots* had emphatic girth grooves usually all the way down inside and on the upper half outside (Fig. 74, *a*). These usually had everted rims hollowed inside and squared outside, Fig. 72, *c*.

(c) *Plain cooking pots* were often thicker than the grooved examples with plain profiles without grooves. Examples in Kilns I and IV often had rounded everted rims (Fig. 72, *a*) while in Kiln III there were more upright rims of Early Medieval form, Fig. 73, *a*.

The bases of the cooking pots from all the kilns were always flat or slightly concave. There were no sagging bases at all except in Pits II and III, Fig. 74, *e*. The bases usually had signs of cheese-wire removal from the wheel and there were many examples of rough tooling at the basal angle, Fig. 70, *q*.

Two other forms of decoration, besides rouletting, were found very occasionally. There was a single example from Kiln I of incised horizontal grooves (Fig. 70, *n*) and six examples from Kiln I and three from Kiln IV of incised wave decoration (Fig. 72, *h* and *i*).

In the table below the different percentages of the three main types of cooking pot are set out for each kiln and layer. On the right are given the numbers of examples counted from each layer. No body sherds were kept from the kilns so the counts depend on the large rim fragments which were collected.

| | <i>Rouletted</i> % | <i>Grooved</i> % | <i>Plain</i> % | <i>Number of</i> <i>examples</i> <i>counted</i> |
|-----------|-----------------------|---------------------|-------------------|-------------------------------------------------------|
| Kiln I | | | | |
| Layer 1 + | 0 | 71 | 29 | 45 |
| Layer 1 | 9 | 59 | 32 | 147 |
| Layer 2 | 10 | 63 | 27 | 410 |
| Layer 3 | 0 | 67 | 33 | 29 |
| Kiln IV | | | | |
| Layer 1 | 17 | 59 | 24 | 60 |
| Layer 2 | 17 | 66 | 17 | 278 |
| Layer 3 | 7 | 71 | 22 | 14 |
| Layer 4 | 22 | 56 | 22 | 9 |
| Pit I | 10 | 55 | 35 | 20 |
| Kiln III | | | | |
| Layer 5 | 2 | 12 | 86 | 37 |
| Layer 6 | 0 | 20 | 80 | 15 |
| Pit II | 0 | 17 | 83 | 42 |

These figures are of interest since they suggest that the pottery from the upper layers of Kilns I and IV, which forms the largest bulk of the finds, is broadly contemporary in date with that actually associated with the kilns themselves. Also, except for the larger amount of rouletted sherds in Kiln IV, the proportions of grooved and plain cooking pots is very similar. In addition Pit I is clearly shown to be contemporary with Kilns I and IV.

Kiln III with its Early Medieval forms was clearly later than the other two. There is a preponderance of plain cooking pots, though there are still grooved examples, but rouletting has largely disappeared. It may, therefore, be suggested that rouletting and grooving is an early feature which later disappears. Pit II is shown to be contemporary with Kiln III and it was in fact quite close to it. There was only one cooking pot recovered from Kiln II but as this was grooved it may be suggested that this was broadly contemporary with Kilns I and IV.

OTHER VESSELS

It is not possible to say much about the other types of vessel

from the kilns as there were so few of them. There were fragments of strap handles and spouts from spouted pitchers in Kilns I, IV and III. There were 'D' spouts from both Kilns I and IV and a 'U' spout from Kiln IV. There was, however, a freestanding tubular spout from the later Kiln III. This is important since it has previously been suggested that these spouts were late.⁵ From Kiln III and Pit III there were spouted pitchers or storage jars with thumbled bands round the neck suggesting that this was a late feature too. There were only odd sherds of storage vessels with applied thumbled strips. Bowls were very scarce, only two being found. There were also two fragments of cresset. It is only with the cooking pots, therefore, that it is possible to draw any conclusions.

CONCLUSIONS

It is certain that Kiln III was later than Kilns I and IV as Kiln III had Early Medieval pottery in quite large quantities. Kilns I and IV, and presumably also Kiln II, contained Thetford ware only. Kiln III still had a large proportion of Thetford ware types but grooved cooking pots only accounted for 16% of the total and only 1% was rouletted. This suggests that rouletted grooved cooking pots were going out at this time. Gp.-Capt. G. M. Knocker found at Thetford that rouletting was common in his early periods while it rapidly fell off later. Grooved cooking pots do not form a very high percentage of the total at Thetford but the grooved cooking pots from Ipswich usually have hollowed rims. This trait was almost exclusively connected at Thetford with rouletting, rounded rims being commoner later.⁶ There seems to be a tendency in Thetford ware for hollow rimmed grooved cooking pots with rouletting to be early and for plain round rimmed cooking pots to be later. It is not possible to say that odd sherds are early or late but in any large assemblage the proportions of rouletted and plain, or grooved and plain cooking pots might now be regarded as significant for dating. It is possible to suggest that Kiln IV was earlier than Kiln I since it had more rouletting, the proportions of grooved to plain cooking pots remained remarkably constant in both kilns.

It is important that all the bases were flat and that there were no sagging examples until Pits II and III. At Norwich flat bases are also almost universal from occupation sites and also from the Pottergate kilns.⁷ This is in marked contrast to Thetford itself

⁵ Hurst (1956), p. 50 and Fig. 3, Nos. 1 and 4.

⁶ I am indebted to Gp.-Capt. G. M. Knocker for showing me his graphs of the different percentages of pottery types found at Thetford in different periods.

⁷ Material collected by the Norwich Castle Museum in 1963. E. M. Jope published three earlier discovered wasters in *Norfolk Archaeol.*, xxx (1949-52), 304, Fig. 9, Nos. 1-3.

where sagging bases account for between 60 and 80% of the cooking pots during the early periods while flat bases rise to nearly 50% in the eleventh century. There seems to be a strong regional variation here. It is of considerable interest that the Torksey sequence, in which the earlier Kiln II has flat bases and the later Kiln I has sagging bases, seems to follow that at Norwich and Ipswich rather than that at Thetford. In addition the earlier Torksey cooking pots are rouletted while this died out by the time of the later Kiln II. Hollowed rims, however, persist throughout.⁸

DATING

It is very difficult to give absolute dates to the kilns. Kiln III is after the first introduction of Early Medieval pottery which is thought to occur during the first half of the eleventh century,⁹ though this may not have happened at the same time in Ipswich as at Norwich and other centres. Unfortunately it was only possible to sample Kiln I magnetically but the results of this reading might suggest a date of *c.* 950–1000 for Kiln I¹⁰ and presumably Kilns II and IV and Pit I are not far removed from this in date. Kiln III and Pit II might, therefore, be between 1000 and 1050 and Pit III should be later, perhaps about 1100, and certainly post-conquest. It is a pity that the Aethelred II coin was not associated with any of the kilns. The pottery found with this, however, was grooved so that this pit might well be contemporary with the early kilns. These are only tentative dates at the moment and it is to be hoped that more samples from future excavations will help to clarify both the Thetford pottery sequence of types and give more help on absolute dating. The Ipswich ware Kiln V cannot be much later than the early ninth century so there is quite a gap in time and it must be supposed that the pottery industry was continuous on this same site. It is not quite clear how the finds from the 1928 kiln fit into the sequence since although they are mainly grooved cooking pots with flat bases the rims are quite rounded.¹¹

LIST OF THE POTTERY

KILN I—THETFORD WARE

Layer 1+

Fig. 70, *a*, strap handle from a spouted pitcher or storage vessel with applied thumbled strip up the centre.

⁸ For Kiln I see G. C. Dunning in *Med. Archaeol.*, III (1959), pp. 44-5 and Fig. 19. Information on Kiln II kindly supplied by Mr. M. W. Barley. Report forthcoming in *Ant. Journal*.

⁹ J. G. Hurst in *Norf. Archaeol.*, XXXIII (1963), pp. 155-6, with other references. *Archaeometry*, V (1962), pp. 4-27.

¹¹ Hurst (1956), p. 33, Fig. 1, Nos. 8-12.

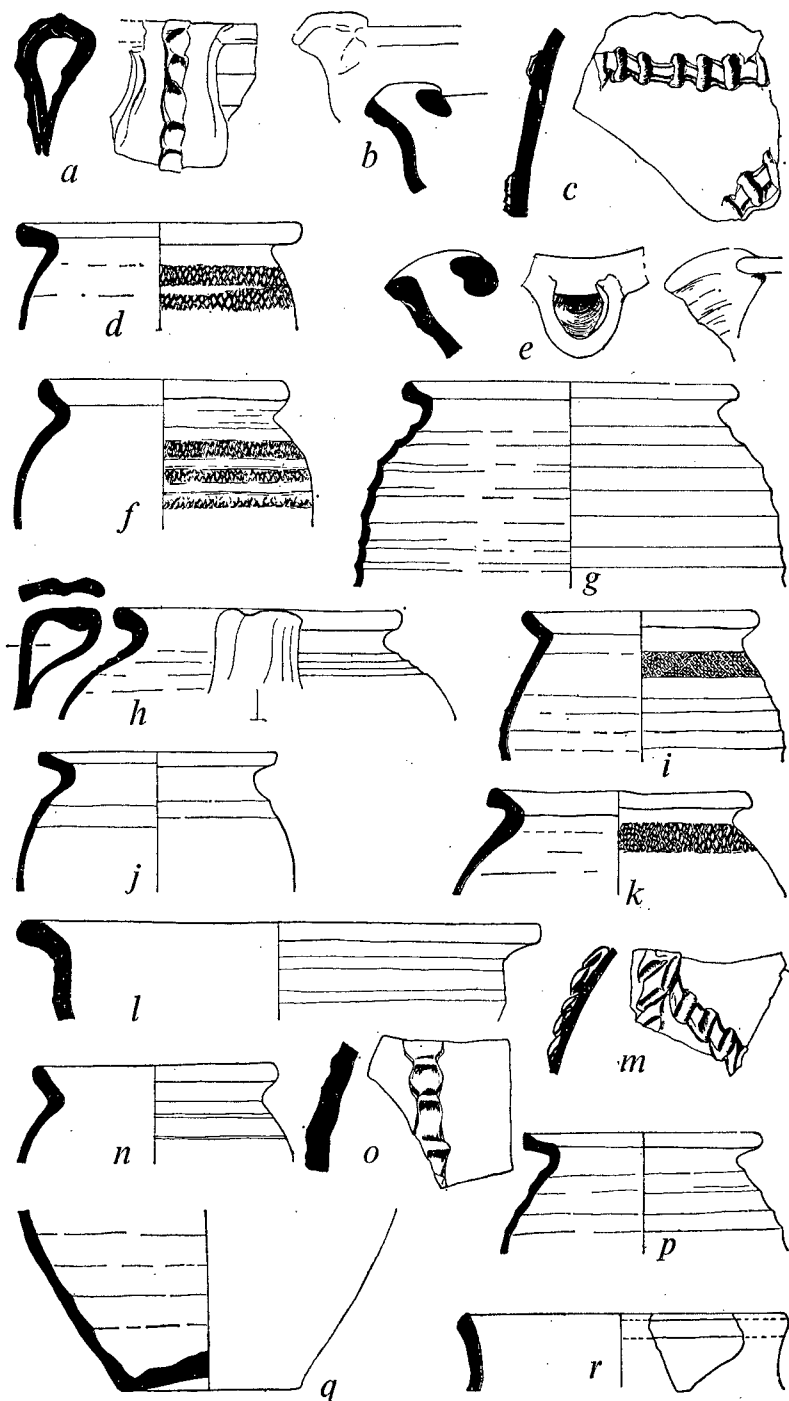


FIG. 70.—Thetford ware from Kiln I. (‡). (r, Ipswich ware).

(Not illustrated, sherd with applied thumbled strip. 25 flat bases of cooking pots. 32 rims of grooved cooking pots and 13 plain).

Layer 1

Fig. 70, *b*, rim of spouted pitcher with 'D' spout projecting onto the rim.

Fig. 70, *c*, sherd from large storage vessel with sharply tooled applied strips.

Fig. 70, *d*, cooking pot with sharply everted rim, bands of large rouletting.

Fig. 70, *e*, 'D' shaped spout similar to Fig. 72, *b*.

Fig. 70, *f*, rouletted cooking pot as Fig. 72, *d* but rim less everted.

(Not illustrated, stem of a cresset similar to Fig. 74, *b*. Nine cooking pots with small rouletting as Fig. 70, *i*. One cooking pot with incised waves as Fig. 72, *h* and *i*. 33 flat bases of cooking pots. 75 grooved cooking pots and 50 plain).

Layer 2

Fig. 70, *g*, large cooking pot with everted rim hollowed inside. Thin body with marked girth grooves. 256 similar grooved cooking pots.

Fig. 70, *h*, small wide strap handle from spouted pitcher. This would have had three handles and a spout similar to Fig. 70, *b* and *e*. Not illustrated, two other strap handles and two spouts.

Fig. 70, *i*, small cooking pot with band of small rouletting. 30 others similar.

Fig. 70, *j*, girth grooved cooking pot as Fig. 70, *g*, but smaller diameter.

Fig. 70, *k*, cooking pot with band of large rouletting. Six other similar examples.

Fig. 70, *l*, grooved straight-sided deep bowl with thickened everted rim. This was the only large bowl found in any of the kilns.

Fig. 70, *m*, sherd from large storage vessel with applied thumbled strips.

Fig. 70, *n*, small cooking pot with incised parallel lines on the shoulder. This was the only example from the various kilns though other sherds had an incised wave decoration, Fig. 72, *h* and *i*. There were five sherds with wave decoration from layer 2. There were also 110 plain cooking pots and 76 flat bases.

Layer 3

Fig. 70, *o*, sherd from a large storage vessel with applied thumbled strips. Thicker wall than Fig. 70, *m*.

Fig. 70, *p*, small cooking pot with girth grooves. 18 others similar.

(Not illustrated, 10 plain cooking pots and six flat bases. Strap handle from a spouted pitcher).

Layer 4

Fig. 70, *q*, concave base roughly finished off. Typical of the other bases from the kiln. Three others similar and nine grooved cooking pots.

Layer 5

(Not illustrated, seven grooved cooking pots and one flat base).

Layer 6

(Not illustrated, one grooved cooking pot).

From the wall of the kiln an Ipswich ware rim, Fig. 70, *r*. 'Smooth' ware not 'pimply' or 'sandy' as Kiln I.

KILN II—THETFORD WARE

Fig. 71; and Plate XLII, complete cooking pot, overfired waster, body grooved inside on the lower half and outside on the middle. No other sherds were recovered from this kiln.

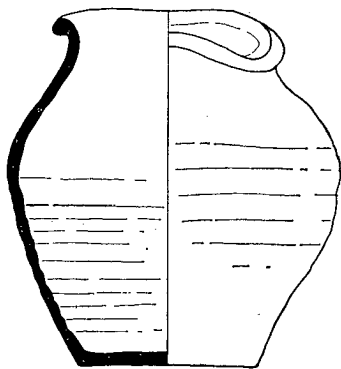


FIG. 71.—Thetford ware 'waster' from Kiln II. (4).

KILN IV—THETFORD WARE

Layer 1

(Not illustrated, 35 grooved cooking pots and 14 plain. 10 flat bases and 10 cooking pots with small rouletting).

Layer 2

Fig. 72, *a*, cooking pot with thickened rim and plain ungrooved body. 46 others similar.

Fig. 72, *b*, cooking pot with small rouletting. 47 similar.

Fig. 72, *c*, cooking pot with hollowed rim and girth grooves. 182 others similar.

Fig. 72, *d*, small bowl with 'O' spout. Only two bowls were found from all the kilns, this and the larger one from Kiln I, Fig. 70, *l*.

Fig. 72, *e*, spouted pitcher with 'D' spout.

Fig. 72, *f*, spouted pitcher with 'U' spout under the rim.

Fig. 72, *g*, plain strap handle from a spouted pitcher.

(Not illustrated, 39 flat bases).

Layer 3

Fig. 72, *h* and *i*, two cooking pots with incised wave pattern. *i* is also grooved.

(Not illustrated, 10 grooved cooking pots and three plain. Two flat bases and one cooking pot with small rouletting).

Layer 4

Fig. 72, *j*, slightly concave base of cooking pot. Two others similar.

Fig. 72, *k*, plain strap handle of a spouted pitcher with band of uneven diamond notch rouletting.

(Not illustrated, five grooved cooking pots and two plain. Two cooking pots with small rouletting and one with wave decoration).

Layer 5

(Not illustrated, two grooved cooking pots).

KILN III—THETFORD WARE AND EARLY MEDIEVAL WARE

Layer 5

Fig. 73, *a*, cooking pot with almost upright rim of Early Medieval type but grey 'sandy' Thetford ware. 31 other plain cooking pots many with rims of Early Medieval rather than Thetford shape.

Fig. 73, *b*, small cooking pot with rim hollowed inside and band of small regular diamond notch rouletting.

Fig. 73, *c*, rim of a small storage jar or spouted pitcher with applied thumbled strip round the neck. Another similar.

Fig. 73, *d*, spouted pitcher with free-standing tubular spout.

Fig. 73, *e*, large spouted pitcher with 'D' spout.

(Not illustrated, two strap handles, sherd of a storage jar, four grooved cooking pots and 10 flat bases).

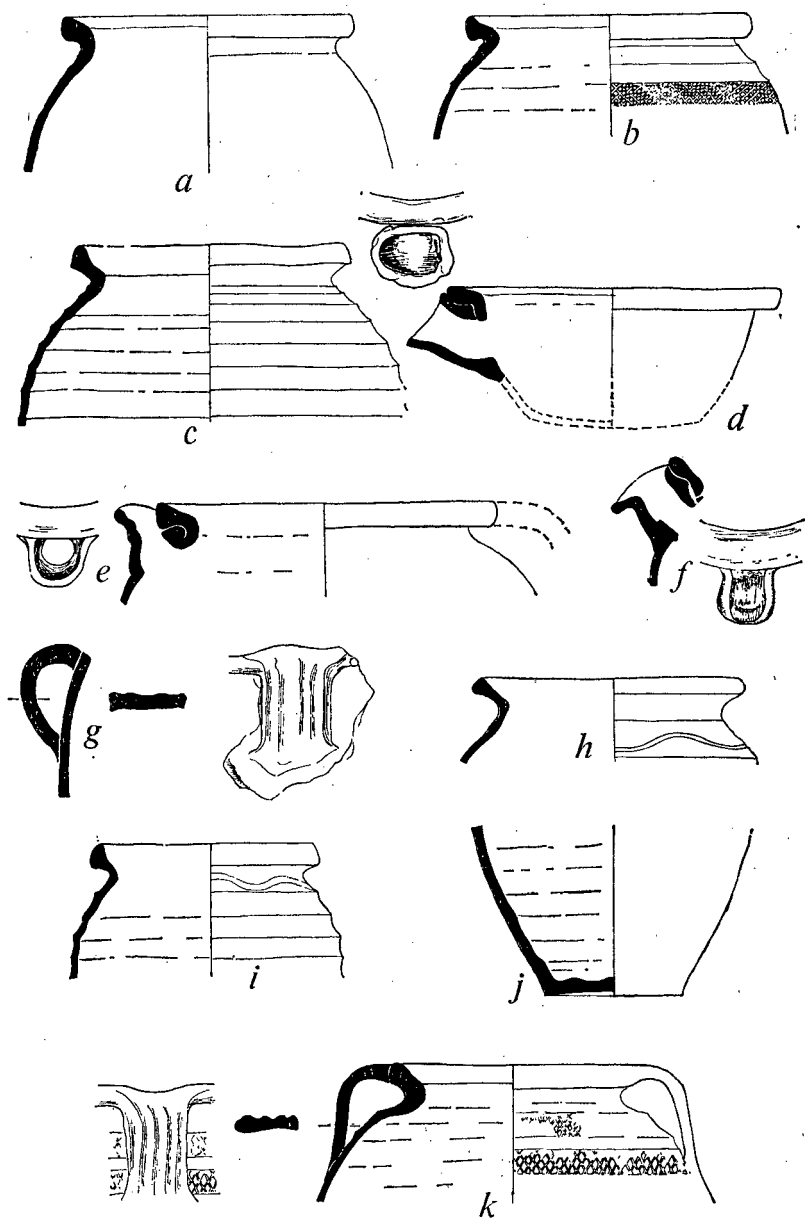


FIG. 72.—Thetford ware from Kiln IV. (4).

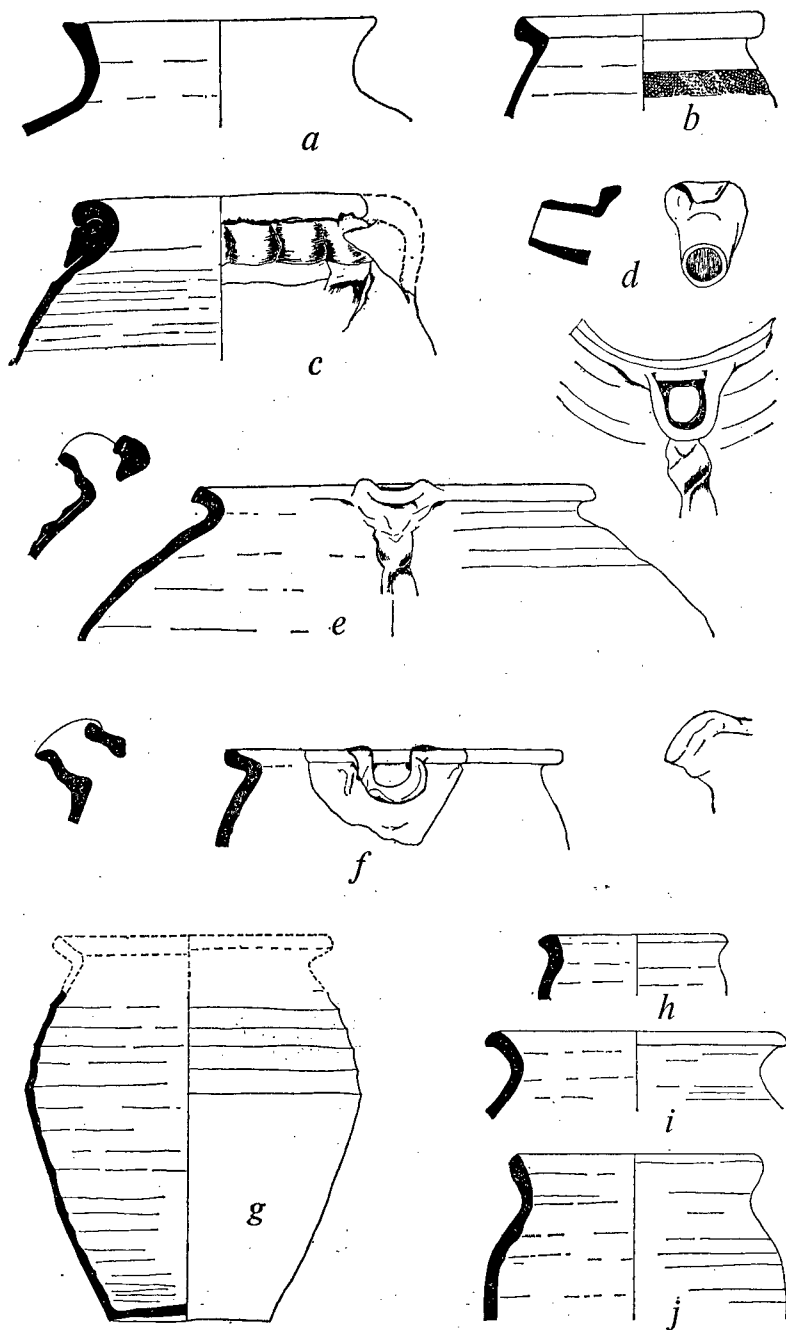


FIG. 73.—Thetford ware from Kiln III. (†). (j, Ipswich ware)

Layer 6

Fig. 73, *f*, large vessel with 'D' spout.

Fig. 73, *g*, bottom part of a cooking pot with grooving outside on the shoulder and all the way down inside. Almost flat base with cheese-wire marks of removal from the wheel. Two other grooved cooking pots.

Fig. 73, *h*, rim of a small plain cooking pot.

Fig. 73, *i*, rim of simple plain everted rim cooking pot of Early Medieval form. 10 other plain examples.

(Not illustrated, 15 flat bases and two sherds of storage vessels).

Fig. 73, *j*, Ipswich ware cooking pot, 'smooth' ware with upright rim, group 1, type A, with girth grooves. Also from Kiln III a thick Ipswich ware sagging base and a large thick body sherd.

PIT I—THETFORD WARE

Fig. 74, *a*; and Plate XLII, complete cooking pot with pronounced grooves on the upper half outside and all the way down inside, hollowed rim and concave base well furred with use.

(Not illustrated, another complete cooking pot very similar. 10 other grooved cooking pots).

Fig. 74, *b*, base of a pedestal cresset with pronounced ridging.

(Not illustrated, seven plain cooking pots, 12 flat bases, a 'D' spout and a strap handle from spouted pitchers and two large rouletted sherds).

PIT II—THETFORD AND EARLY MEDIEVAL WARE

Fig. 74, *c*, small cooking pot of Thetford type but with thin everted rim of Early Medieval form. 33 other plain examples.

Fig. 74, *d*, rim of a larger cooking pot with simple Early Medieval rim, brown ware.

Fig. 74, *e*, one of the very few sagging bases. There were none in any of the kilns and they clearly go with the Early Medieval forms.

(Not illustrated, seven grooved cooking pots, 12 flat bases and one sherd of a large thick storage vessel with vertical applied thumbled strip).

PIT III—THETFORD AND EARLY MEDIEVAL WARE

Fig. 74, *f*, very rough thick storage vessel with strap handle and vertical thumbled strip as Fig. 70, *a*.

Fig. 74, *g*, spouted pitcher or storage vessel with emphatically thumbled applied strips round the neck and vertically.

Fig. 74, *h*, almost complete cooking pot with flat base.

(Not illustrated, another very similar).

(Not illustrated, two sagging and two flat bases. A large base and sherds of Early Medieval cooking pots).

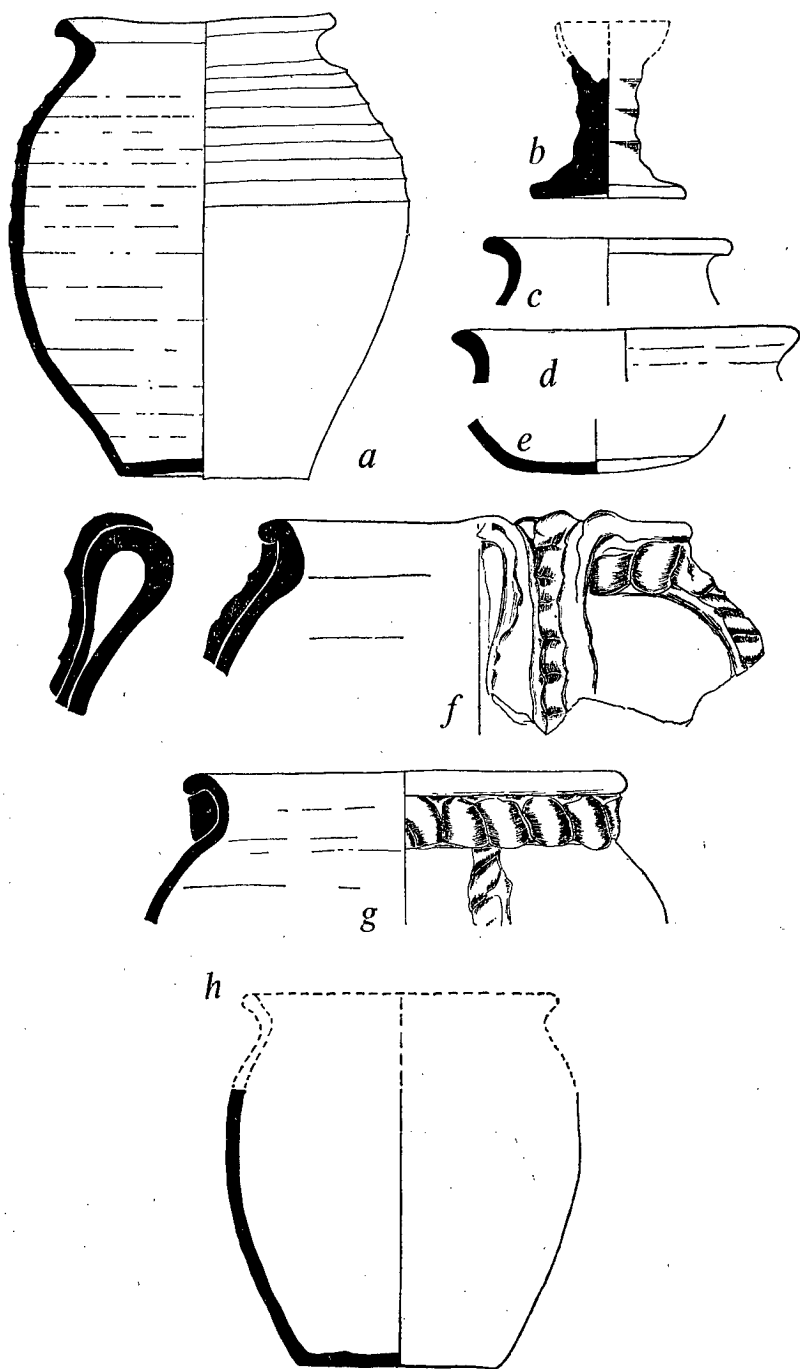


FIG. 74.—Thetford ware from rubbish pits. (4).
a and *b*, Pit 1; *c*—*e*, Pit 2; *f*—*h*, Pit 3.

PLATE XLII

(Not drawn).

FIG. 74 *a*.



FIG. 71.

FIG. 75 *c*.

FIG. 75 *b*.

FIG. 75 *a*.

Kiln V; group of Thetford ware, and
(bottom centre) two Ipswich ware pots.

UNSTRATIFIED—THETFORD AND IPSWICH WARE

Fig. 75, *a*; and Plate XLII, almost complete cooking pot waster grooved inside and out.

Fig. 75, *b* and *c*; and Plate XLII, two small grooved cooking pots with flat bases.

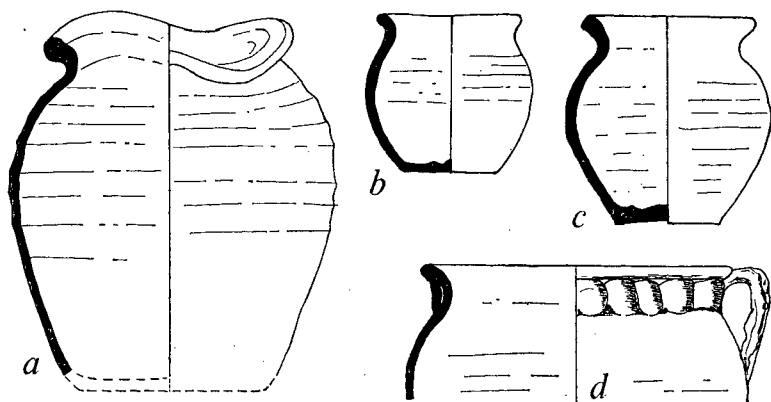


FIG. 75.—Pottery found by workmen. (4).
a and *d*, Thetford ware; *b* and *c* Ipswich ware.

Fig. 75, *d*, spouted pitcher or storage vessel with applied thumb band on the neck and small strap handle. This could not have had three handles since there is sufficient of the rim remaining to show that this is not possible.

MAGNETIC SURVEY AND DATING

by M. J. Aitken, M.A., D.PHIL., F.S.A.

A. Proton Magnetometer Survey

The magnetic location technique is essentially for sites away from modern habitation and activity; consequently the Cox Lane site was embarked upon with the foreknowledge of likely failure, and undertaken only because of the importance of the site from the archaeological and archaeomagnetic points of view. In the event, the magnetic hazards were far worse than ever anticipated. For instance, it was not realised in advance that Ipswich still retained an electric tram service, and the short notice (48 hours) at which the Oxford Archaeological Research Laboratory responded to the call for a survey did not allow the usually thorough enquiries. However, the trams did not operate on Sunday mornings, so that for a few hours it was possible to make proton magnetometer measurements.