

# A MEDIEVAL POTTERY KILN SITE ON THE CAMLEY GARDENS ESTATE, MAIDENHEAD

by GLADYS PIKE

THE site, at SU 860817, was discovered by Miss J. L. Dillaway in 1964, during building operations in the field formerly known as Randall's Field. Quantities of potsherds were found in soil dumped for levelling purposes in the north of the field. These were dated by Miss Dillaway to about the 13th century A.D., and this date was confirmed by Mr Alan Hunter, Archaeological Assistant at Reading Museum.

Subsequently, on the south side of the field, large sherds of similar pottery were seen in the sides of the builders' trench defining the east wall of the house which was to be known as 7, Hardwick Close. Permission for a limited excavation was given by Mr Allaway, site manager for Sterling Homes Ltd, and it now seems probable that the excavated trench revealed part of the flue and furnace chamber of a kiln similar to those which were excavated later.

As the builders continued, their cuttings showed the unmistakable features of pottery kilns. Furnace chambers with central pillars, and two opposed flues leading into stokepits appeared in the service trenches of the future houses of Hardwick Close and Arlington Close. Eleven medieval kilns were located in the Fontwell Close-Arlington Close area. Of these, four were fully excavated (kilns 2, 3, 4 and 7); portions of kilns 1, 5, 8, 9 and 10 were already destroyed by the building operations, and kiln 6 had been so badly damaged by the mechanical excavator used on the site that its construction could not be determined. Considerable quantities of pottery were rescued from every kiln.

## GENERAL DESCRIPTION OF THE KILNS

A varying amount of damage had been done

by the ravages of time and the mechanical excavator, but the following facts emerged from the excavations:

(a) ORIENTATION All the kilns were laid out in a roughly N—S direction, and generally N.W.—S.E.

(b) CLASSIFICATION The four kilns totally excavated, and probably the others, belong to Type 2c (as defined by J. W. G. Musty in his forthcoming publication *Medieval Ceramics of the British Isles*). Mr Musty was kind enough to send drawings and descriptions of his various types so that the Camley kilns could be fitted into his scheme.

## (c) CONSTRUCTION OF THE KILNS

### *Furnace chambers*

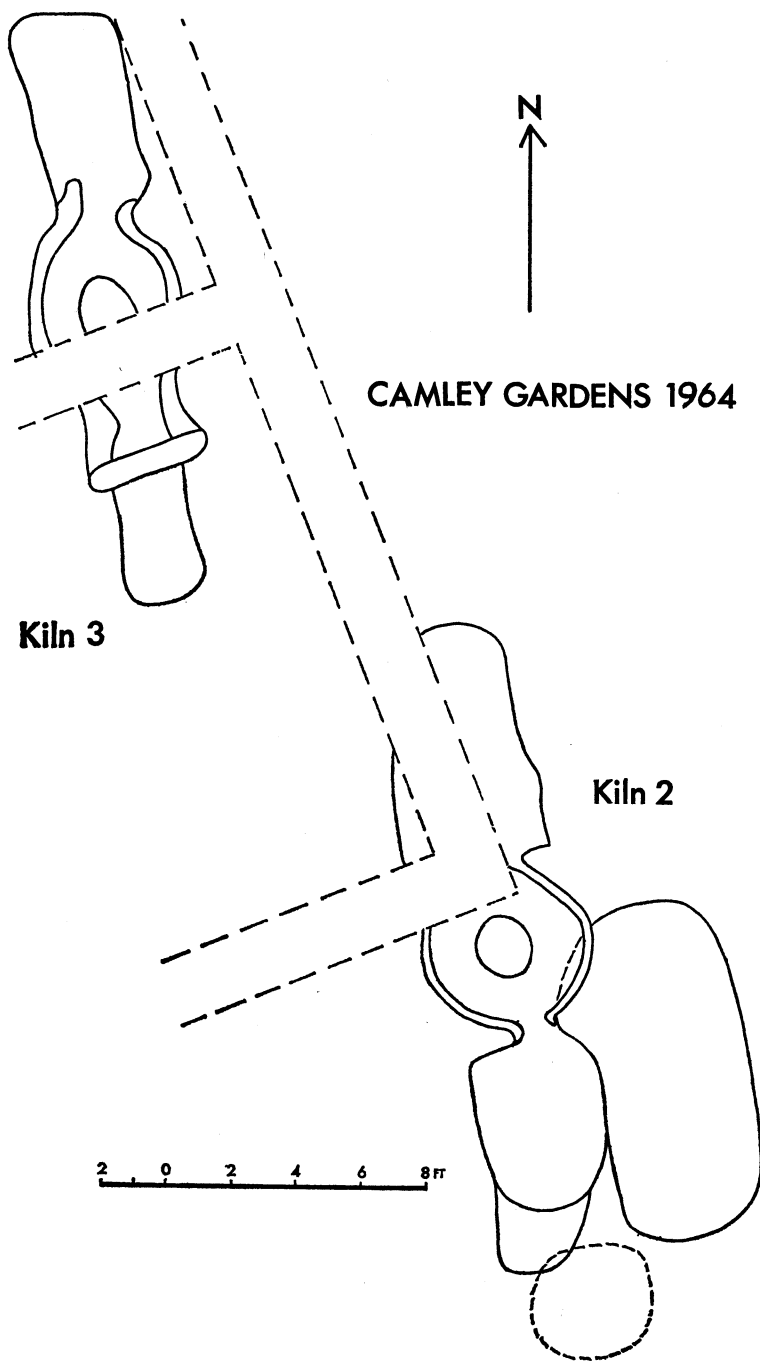
These were circular or oval basins cut into the clay marl (kilns 2 and 7), clay (kiln 3) or sand (kiln 4). The floor was usually covered with a layer of sand burnt red by the fire.

The walls were daubed with a 2-3 in layer of the local clayey marl, which was sometimes strengthened with lumps of re-used kiln fabric and nodules of flint, or flint alone. The walls (except in kiln 7) had a finishing coat of fine marl, about  $\frac{1}{2}$  in. in thickness. This was daubed on by hand, and fingerprints are clearly visible in the photograph (plate VIII).

### *Central pillars*

In the middle of the furnace chamber of each kiln there was a pillar, round or oval in shape. This was usually a separate construction to the chamber, but the pillar of kiln 3 had been left as a standing block of clay. A  $\frac{1}{2}$  in finishing layer of fine marl, similar to that used on the walls of the furnace chambers, was daubed all over the pillars, again with the exception of kiln 7.

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*Fig. 1. Plan of site*

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Signs of repair work were observed on the sides and pillars of kilns 2, 3 and 4.

These pillars must have been used to support one end of the floor supports while the other end rested on the outer walls of the furnace chamber.

### *Floor supports*

The remains of these could only be found in kiln 4 (plate VIII), but their composition was such that when broken they would be unrecognizable from the normal debris found in every furnace chamber.

### *Kiln floors*

The kiln floors, which must have lain on the supports, had, in every case, collapsed into the furnace chamber and, with the possible exception of some flat tiles from kiln 9, been cleared away, possibly for use elsewhere by the potters.

### *Flues*

The furnace chambers had two flues in opposition to each other, one at the north and the other at the south end. The flue walls were a continuation of those of the chambers. They were very short, being only 1 ft—1 ft 3 in. in length, and widening from about 1 ft 2 in. to 1 ft 4 in.

A bridge, some 4 in. in depth, continued the upper part of the furnace chambers over the flues.

### *Re-entrants*

In some cases the walls of the flue extended a few inches into the furnace chamber or stoke pit, so forming a small re-entrant area between the flue chamber or stoke pit wall.

### *Stoke pits*

Mr Musty has found that all medieval kilns with an internal structure supporting a platform were up-draught kilns. The wood used for fuel would be shovelled into the flues from both outlets, which should therefore be called stoke-holes or stoke pits. Combustion would take place in the flues and hot gases would rise through the kiln floor, baking the pots and then passing through the hole in the dome of the kiln.

### *Roof*

Curved pieces of kiln fabric, with the marks of osiers on one side, were found in the four kilns which were fully excavated, and this suggests that the kilns had domed roofs made of osiers daubed with marl. Unfortunately, however, no stake holes were found on the lips of the furnace chambers. Such holes, which mark the places where the ends of osiers had been thrust into the walls of the furnace chamber, were a feature of the Exeter kiln excavated by Lady Aileen Fox.

## DETAILED DESCRIPTIONS OF THE KILNS

### KILN 1

Part of a flue and furnace chamber were seen in the sides of the builders' trenches. This is the kiln described in the introductory paragraphs.

### KILN 2

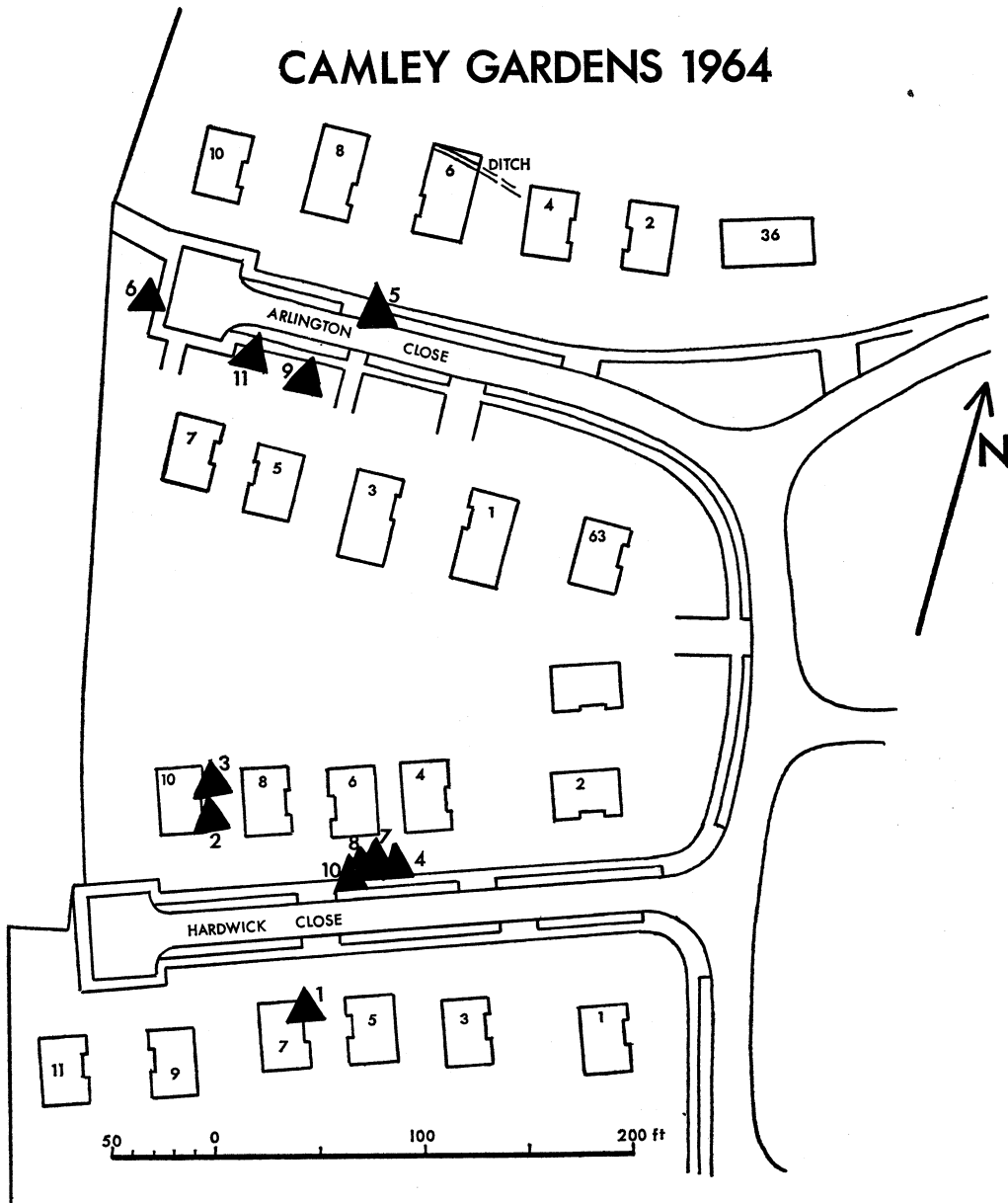
Orientation: N.W.—S.E.

*Furnace chamber* The chamber was circular in shape, with an internal diameter of 4 ft 10 in. The wall was 1 ft 9 in. in depth from the bottom of the cutting and its thickness decreased from 1 ft 2 in at the base to 1 ft 3 in at the lip. It was composed of a mixture of marl, re-used lumps of kiln fabric and large nodules of flint, and it was lined in the customary manner. The floor was concave, and had a smooth surface of red sand.

*Pillar* The pillar was originally round, with a diameter of 1 ft 7 in, but had been widened by 5 in on the S.E. side at some period later than the original construction, whose base was defined by a circle of large flints.

*North-west flue* Only 5 in of this flue remained, the rest having been cut away by the builders.

*North-west stoke pit* This was damaged, but it was possible to take some measurements. It sloped gently towards the flue over a distance of 7 ft 7 in. The eastern edge was straight, while the western curved slightly. The greatest width was 3 ft 9 in. The pit was filled with chalk marl, flints, a little charcoal and flecks of red burnt material, together with much pottery resting in three horizontal layers.



*Fig. 2. Plan of kilns 2 and 3*

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*South-east flue* The bridge was intact, and the flue was 1 ft in length and widened from 1 ft to 1 ft 5 in, the angle between the sides being about 15°.

*Re-entrants* A slight trace of a re-entrant remained on the west side of the south-eastern stoke pit.

*South-east stoke pit* The stoke pit was 5 ft 4 in. in length, 3 ft 9 in. in width at the centre, and 1 ft 5 in deep at the same point. The western edge was straight and the eastern curved, as in the opposing pit.

This stoke pit was approached by a narrow path, 4 ft 2 in long, entering the pit from the south end. Two rough steps had been cut in the path at 1 ft 6 in and 2 ft 6 in from the end.

A roughly rectangular area of marl, reddened by burning and 2 ft 6 in by 2 ft by about 3 in. in depth, lay at the east edge of the path and partly overlaid it. It may have been the hearth of some temporary structure, although no post holes were found.

The floor of the stoke pit was of red burnt earth on which lay large quantities of pottery, in three horizontal layers divided from one another by two layers of greyish sand, each about ½ in. in depth. The usual flecks of burnt material, chalk nodules and pieces of kiln fabric were also present.

*?Wood pit* Flanking the eastern side of the south-east stoke pit, and with its base 2½ in below stoke pit level, was a shallow depression with oval ends. It measured 10 ft 2 in by 3 ft 11 in through the centre, and contained large flints, kiln fabric and sherds.

*Habitation layer* 10 in below ground level, and covering both the south-east pit and the possible wood pit, there was a later habitation layer defined by flint nodules and chalk. At this level, and over the wood pit, a spindle whorl, half a pair of scissors, a tiny bronze thimble, an iron nail with a square head and some slivers of bone were found. Pottery from this level included sherds with a fine green glaze which was not present in the material associated with the kilns.

KILN 3 (plates VII and VIII)  
Orientation: N.W.—S.E.

*Furnace chamber* The southern section had been destroyed by a building trench. The flat oval base was 1 ft 2½ in. in depth at its northern end. The walls had been repaired on both sides to a height of about 3 in.

*Pillar* The pillar, which had been partly destroyed, seems to have been circular in shape, and had been left as a standing block of clay when the furnace chamber was scooped out. The height of the portion remaining was 1 ft 1½ in. Beneath the final daub of clay, on the north side, was a thin layer of charcoal and pottery which suggested that repair work had taken place.

*North-west flue* This was 1 ft 2 in. in length and widened from 1 ft to 1 ft 1½ in, with an angle of about 10° between the sides.

*Re-entrants* The re-entrants and the flue itself were full of sand burnt to a deep chocolate colour, some charcoal and many potsherds.

*North-west stoke pit* This was 6 ft in length, 4 ft 5 in. in width, and sloped gently towards the flue. The eastern edge was straight and the western curved (as in kiln 2). The floor was slightly concave.

The content consisted of brown clay with patches of black, sooty clay and the usual red flecks. Sherds were very scarce.

*South-east flue* This flue was 1 ft 1 in. in length and had a constant width of 1 ft 2 in.

*South-east stoke pit* The sides were vertical and the end very steep. The length (4 ft 7 in) was normal, but the width was only 2 ft 7 in.

The content was similar to that of the opposing pit but sherds were even rarer. A whetstone and half of a buckle, neither of which were diagnostic, were found on the surface of the in-fill.

KILN 4 (plate VIII)  
Orientation: N.W.—S.E.

*Furnace chamber* The chamber was circular, with a diameter of 4 ft 10 in. Signs of two levels were observed in the walls and floor. The first

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floor, of smooth red sand, lay 1 ft 2 in below the lip of the chamber. An earlier floor, also of burnt sand, was discovered 3 in below the surface of the upper level near the N.W. flue, but 8 in beneath it at the S.E. flue. The excavation of the two floors began under exceptionally dry conditions, but they could not be separated when the weather broke.

The content of the chamber consisted of black sooty clay, chalk nodules, and the usual red flecks and much pottery. The fragments of collapsed roof were quite large with clearly visible osier marks.

*Pillar* The pillar was first excavated to the upper level. It was oval in shape, 2 ft 6 in by 1 ft 5 in, with its longer axis in line with the flues. It was made of clay marl reinforced by many potsherds and chalk nodules. A number of large sherds were embedded in the  $\frac{1}{2}$  in layer of fine marl on the top of the pillar.

A shelf,  $\frac{3}{4}$  in wide and 5 in above the lower level, on the N.W. side of the pillar suggested that it had been made at two different periods. Probably the original pillar had been razed to the level suggested by the shelf, and reconstructed using the original 5 in of pillar as a base. There were signs of horizontal construction at both ends. The final dimensions of the pillar at the lower level were 2 ft 11 in by 1 ft 10 in.

*Kiln floor supports* The floor had collapsed, but traces of six floor supports remained, all of which had collapsed outwards and rested against the outer walls of the furnace chamber on small piles of pottery which were lying on the floor. One support was almost complete. It was circular in section and consisted of a core of kiln in-fill, burnt wood and sherds, coated by a layer of clay  $\frac{1}{2}$  in thick. It was 1 ft 1 in. in length, with a diameter of 6 in decreasing to 4 in at the end nearest the central pillar.

*North-west flue* The bridge had collapsed slightly, so that measurement was difficult, but the walls of the flue were 1 ft 3 in. in length and 1 ft 2 in apart, widening to 1 ft 4 in at all levels.

*North-west stoke pit* This pit was difficult to define. A spread of clay and sharp flints

covered a shallow depression in the clay. The in-fill of both the northern flue and stoke pit was similar to that of the furnace chamber.

*South-east flue* The upper floor was now 1 ft 2 in below the lip of the furnace chamber. The length of the flue was 1 ft 1 in and its width 1 ft 2 in widening to 1 ft 4 in, with an angle of  $15^\circ$ . The cheeks of the flue were strengthened with large nodules of flint. The floor of the lower flue was 8 in below the upper level. It was 1 ft 3 in long but the width and angle were the same as those of the upper level.

*South-east stoke pit* This measured 6 ft 2 in. in length, and 4 ft 8 in in width, and 3 ft 1 in. in depth. The end shelved rather steeply and the sides were almost vertical.

A kite-shaped depression surrounded this outlet, forming a border narrowing from 1 ft 8 in at the S.W. end to zero at the flue.

The in-fill was similar to that of the furnace chamber with the addition of a quantity of burnt flint.

### KILN 5

Only the end of the N. stoke pit could be excavated, since the remainder was already covered by a new road. The area excavated was a semi-circle having a radius of 3 ft, the centre taken at 2 ft from the road kerb.

The content was similar to that of kiln 4.

### KILN 6

Excavation had revealed an area of burnt marl flanked by what appeared to be the usual stoke pits on the N. and S. when the whole structure was destroyed by the builders. A large quantity of pottery had, however, already been recovered.

### KILN 7

This miniature kiln was close to kiln 4 and probably related to it in some way (see fig. 2).

*Furnace chamber* The chamber was about 2 ft 10 in diameter, but the walls were ill-defined. They were constructed of burnt marl, as in the other kilns, but the finishing layer of fine daub was absent.

There was the usual kiln content, including lumps of collapsed roof and pottery. Many of

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the sherds belonged to vessels far too large to have been fired in the kiln.

*Pillar* The pillar was oval in shape, 2 ft 2 in by 1 ft (measured through the centre). It was made of chalk marl reinforced by large flints. The final coat of daub was again missing.

*North-west flue* The walls were difficult to define but certainly continued the walls of the furnace chamber. No trace of a bridge was found, but the flue was full of pottery embedded in dark brown burnt sand, soot and charcoal.

*North-west stoke pit* This stoke hole was difficult to define, and could only be investigated for a short distance as the builders disturbed it. It was filled with sooty black clay (see kiln 3), and there was no pottery.

*South-east flue* The flue and its contents were exactly similar to its northern counterpart.

*South-east stoke pit* There was no trace of a pit at the southern end of this small kiln.

It has been suggested tentatively that kiln 7 was used for glazing. In that case pots would be baked in the normal manner in the large kilns, then dipped in a lead glaze and transferred to the small kiln for the final firing.

### KILN 8

This kiln, and also kiln 10, was difficult to identify because of interruptions caused by the building work, and the short time available for excavation. Both kilns were followed as far as possible from the walls of the builders' trenches cut along the pavement in front of 6, Hardwick Close, and much pottery was recovered. Signs of a furnace chamber, and a rather shallow stoke pit were recognized in the southern face.

### KILN 9

A trench, cut for a gas main under the future 5, Arlington Close, appeared to have gone

through the furnace chamber of a kiln. In a sooty deposit lay pieces of burnt marl, potsherds and a number of heavy pieces of fired clay which resembled flat tiles when reconstructed. These measured about 6 in by 3 in by 1½ in. Some had a smooth surface on both sides, others only one smooth face. It seems probable that the remains of a kiln had been found.

### KILN 10

A north stoke pit (recognized by its curve) was visible in the south face of the trench in which kiln 8 was also discernible and was separated from the stoke pit of kiln 8 by a narrow baulk of clay.

### KILN 11

Traces of the northern stoke pit of another kiln were found in a trench 10 yd east from the end of Arlington Close.

### PROTON MAGNETOMETER SURVEY

Dr Tite of the Research Laboratory for Archaeology and the History of Art, Oxford, conducted a proton magnetometer survey of the area bounded by Hardwick Close and Arlington Close. No further kilns were detected, apart from those known from trench sections.

### DATING OF THE KILNS

Mr Dunning, the medieval specialist, examined some of the pottery at the time of the excavation, and considered it to be 13th century. More recently Mr J. G. Hurst of the Historical Monuments Commission confirmed this dating, except for the pottery from kiln 6, which he considers to be 15th or even 16th century A.D. Since kiln 2 contained the earlier pottery, the earlier of the two magnetic dates is the more likely for the construction of that kiln.

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### MAGNETIC DATING APPENDIX—CAMLEY, KILN 2

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Some twenty-two orientated samples of baked clay were extracted [1] from the kiln: eight from the floor, four from the base of the walls, and ten from the base of the pedestal.

After removal to the laboratory and storage there in the same orientation as found in the kiln, the samples were measured in the spinning magnetometer. Except for two samples whose magnetization was too weak for an accurate measurement and one which was presumed to have been disturbed since firing (declination  $33^{\circ}\text{W}$ ) the directions of remanent magnetization lay between  $1^{\circ}$  West and  $12^{\circ}$  East in Declination (with respect to true North) and between  $59^{\circ}$  and  $66^{\circ}$  in Inclination. Significant viscous components were noted and their magnitudes estimated by short term measurements (duration about 5 or 10 minutes). From these it was calculated that the true average thermoremanent direction was  $2.8^{\circ}$  more Easterly in Declination and  $0.7^{\circ}$  shallower in Inclination than the measured average direction. With this correction applied, the direction obtained is:—

Declination  $D=8.7^{\circ} (\pm 0.7^{\circ})$  East of true North

Inclination  $I=61.6^{\circ} (\pm 0.45^{\circ})$

The errors quoted are the standard errors of the

mean values and represent limits at the 68% confidence level.

Reference elsewhere [2] will show that this direction is most closely paralleled by the Cistercian ware kiln at Potterton, Yorkshire, for which a date in the second half of the 15th century or the first half of the 16th century has been suggested [3]. The direction found for Potterton was  $D=9.9^{\circ}$  East,  $I=61.4^{\circ}$ . However, because of the repetition in time of the magnetic direction (see reference 2) there is ambiguity in the magnetic result and an early 13th century date is acceptable. Granted that on archaeological grounds the kiln is pre-1300 A.D., the nearest magnetic parallel is the Stamford ware kiln [4] at Stamford School, Lincolnshire, for which a direction of  $D=13.5^{\circ}$  East and  $I=60.4^{\circ}$  was found [2].

#### REFERENCES

- [1] Aitken, M. J. Weaver, G. H. 1962. Magnetic Dating: Further Archaeomagnetic Measurements in Britain, *Archaeometry*, 5, 4-22.
- [2] Aitken, M. J., Hawley, H. N., Weaver, G. H. 1963. Magnetic Dating: Further Archaeomagnetic Measurements in Britain, *Archaeometry*, 6, 76-80.
- [3] Wilson, D. M., Hurst, D. G. 1964. Medieval Britain in 1962 and 1963, *Medieval Archaeology*, 8, 297.
- [4] Ibid, 294-296.

### PRELIMINARY REPORT ON THE POTTERY

JOY L. DILLAWAY

#### *Vessel types*

A wide range of domestic pottery shapes have been identified: cooking pots of various sizes with sagging bases, pie dishes, skillets, pans, storage jars, and ovoid pitchers with sagging bases.

A variety of handles occur: tubular on skillets; round or oval pulled, or large strap on

pitchers. Most of the strap and some of the oval handles have one side thicker than the other for a right hand grip. Only one handle with a thumb stop has so far been found. The commonest method of attachment is by pegging.

Pitcher lips, where they occur, are of finger thickness.

Rim shapes vary from early Norman types to



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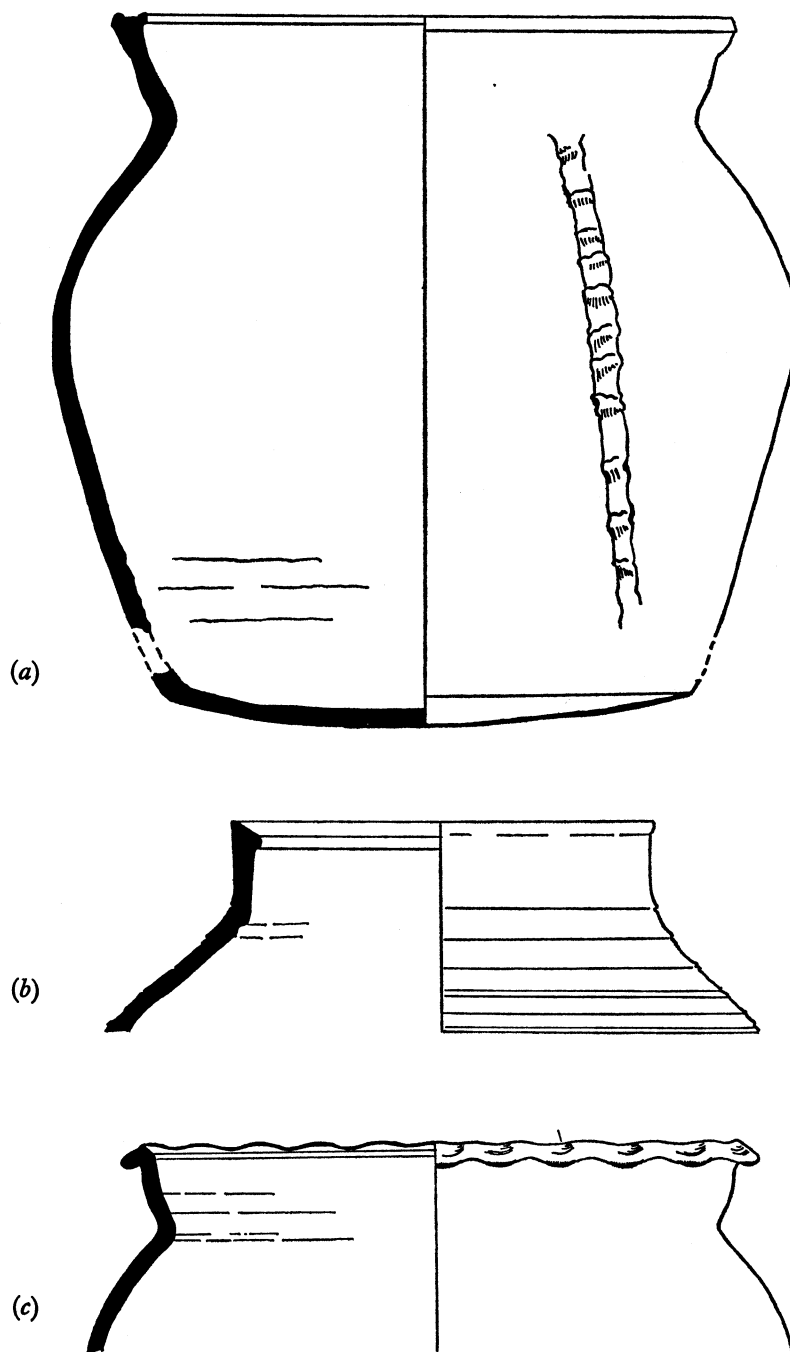


Fig. 3

- Top (a) Storage jar, applied slip, kiln 7  
 Centre (b) Cooking pot, furrowed decoration, kiln 2  
 Bottom (c) Cooking pot, thumb print rim, kiln 7

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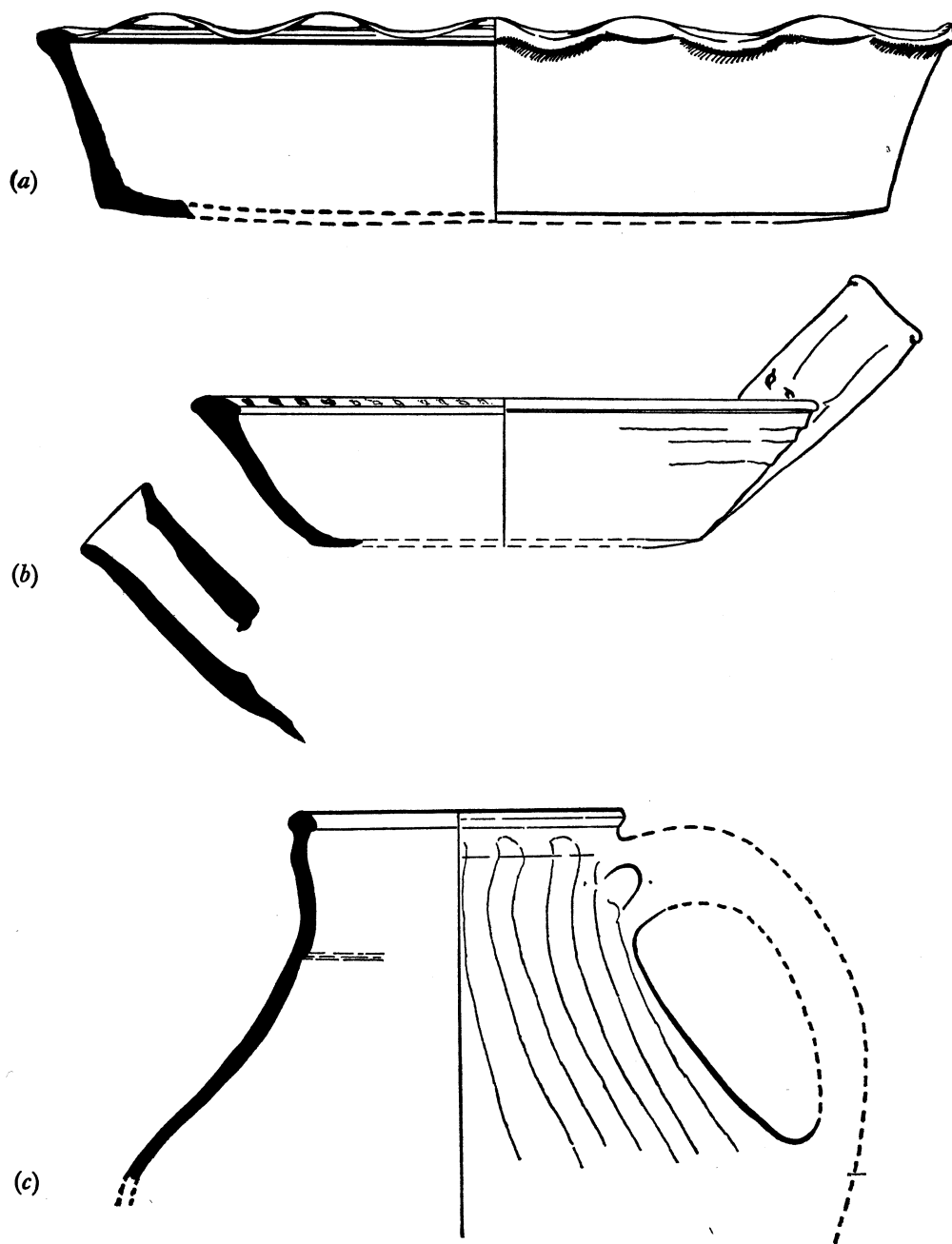


Fig. 4

- Top (a) Shallow dish, thumb print rim, kiln 7  
 Centre (b) Skillet, hollow handle, stab decoration, kiln 4  
 Bottom (c) Pitcher, white slip decoration, ? pulled handle, kiln 4

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some which can be attributed to the 14th century by their mechanized finish.

### *Fabric types*

(1) The most common ware is well-fired with a high silica content, and is usually buff coloured, although light red and grey sherds are also found. Some of the pitcher and pan sherds show decoration which has been lightly fired before glazing.

(2) Light buff or pink sandy ware, fired only just to flux point.

(3) A few sherds of coarse dark grey ware with pounded flint frit were found in the northern area of the site. This pottery had been fired at a low temperature, and some sherds were fragmentary and decomposed. Similar ware with a finer frit and a more oxidised surface came from the ?woodpit of kiln 2, and a few sherds from the in-fill of the S. stokehole of kiln 4.

(4) Wheel-turned pottery with a high quartzite frit content, sometimes with pounded iron-bearing sandstone or ground pottery from wasters, and well fired. The colour of these sherds varies from red-buff to medium grey. Many of the wasters of this ware show fractures caused by the larger quartzite grains during firing.

(5) Fragments of a fine cream fabric were found in the upper layers of kiln 2.

(6) Fragments of very fine ash-grey ware from the stokehole of kilns 8-10. There is no evidence for either this or the fine cream fabric ware being made on the site.

### *Glazes*

There is much evidence of faulty glazing with burnt and bubbled surfaces. Five main types of glazes have been found:

(1) A poor milky-yellow glaze was used widely in the bottoms of pots, open pans and skillets. This glaze occurs on sherds throughout the site.

(2) Thin clear yellow glaze on pitchers and open pans.

(3) Thin clear green glaze, with darker green or brown flecks which may have been caused by fluxing of the glaze and the iron-bearing frit during firing.

(4) A dark green and brown high quality glaze occurs on two pitcher rims in stokehole in-fills near the surface. There is no evidence for these having been made on the site, although the composition of the ware makes this probable.

(5) The ash grey sherds (see above) had an all-over dull glaze or slip of light apple green.

### *Decoration*

A great variety of designs and decorations occur.

Slip was used in loops, scrolls and lines down or around pitchers (fig. 4c); in a roulette pattern of parallel squares on pitchers (fig. 5d); applied slip was used widely on storage jars both on the body and round the neck (fig. 3a).

Pinched and indented decoration was used on the tops of storage jars, pots (fig. 3c) and pie dishes (fig. 4a); stabbing on the rims of skillets and in decoration down pitchers and on handles (fig. 4b, 5a); slashing on many handles (fig. 5a); furrowing was the only decoration used round many pots (fig. 3b), and combing and wheel marks were also commonly used.

One sherd shows the use of a stamp straight on to the surface with a dot in a circle repeat (fig. 5b).

Little elaborate applied decoration has been found, and in all cases, although unrelated, it consists of a white slip with a thin yellow glaze giving a creamy appearance. One such sherd has an applied medallion very like a Long cross penny in appearance (fig. 5c).

### *Records*

No written evidence has yet been found to suggest a date for the site. Tilers are known to have worked in the area in the 13th century but there is no evidence for the tiles used in the kiln construction being made on the site.

Further examination of the quantities of pottery found on the site is continuing, and results will be published when complete.

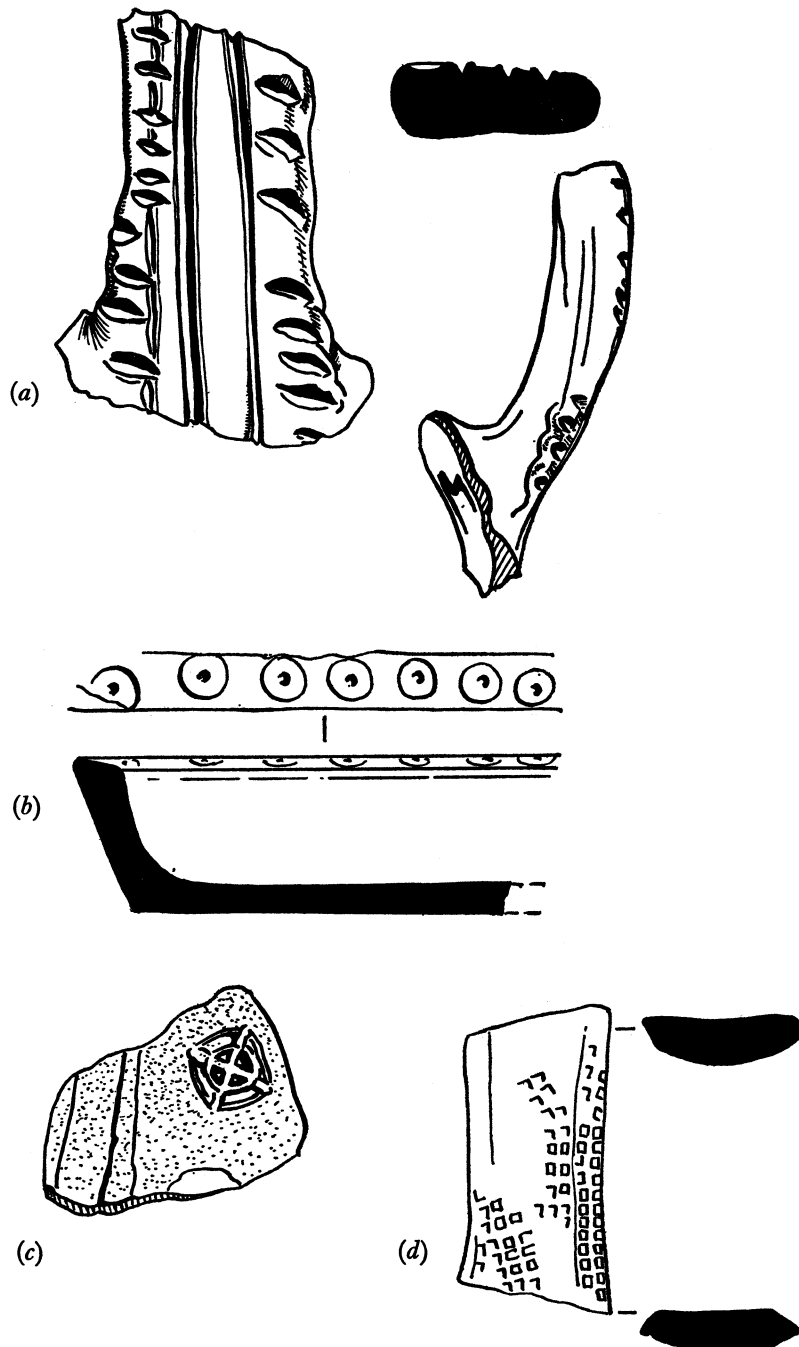


Fig. 5

- Top (a) Strap handle, slash and stab decoration, kilns 8-10  
 Centre (b) Shallow dish, stamped dot in circle repeat decoration, kiln 9  
 Bottom Left (c) Sherd with cross in white slip, kilns 8-10  
 Bottom Right (d) Strap handle, roulette square decoration, kiln 2