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## AN EARLY TUDOR KILN AT HAREPLAIN, BIDDENDEN

By D. B. KELLY, B.A., A.M.A.

IN May, 1969, Mr. B. Stent, of Brissenden, Hareplain, ploughed a slight mound in one of his fields, revealing an area of burnt soil and a mass of potsherds. The discovery was brought to the notice of Maidstone Museum by Messrs. V. J. Newbury and A. Miles and the site excavated by the writer, assisted by Messrs. T. Ithell and A. Miles.<sup>1</sup>

### THE SITE

The kiln (N.G.R. TQ 83183948) was about 50 yds. east of Common Farm, on the east side of the road running from Three Chimneys to Hareplain, in the parish of Biddenden. Common Farm, though much altered, is a timber-framed building of sixteenth-century date, with a later oast attached. Immediately to the south of the kiln is a pond, probably the source of the clay used. The site is on the Weald Clay.

### THE KILN (Pl. I; Fig. 1)

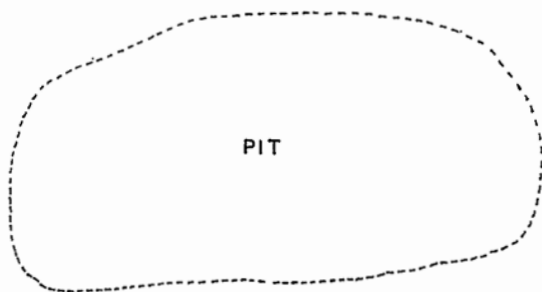
The axis of the kiln lay N.W.-S.E. The natural yellow Weald Clay, on which it rested, was only 1 ft.-1 ft. 6 in. below the ground level and above it was undifferentiated plough soil. Even before the last ploughing most of the kiln must have been destroyed. The oven floor remained, however, as a purple-red clay about 4 in. thick. Below it, the natural yellow clay was burnt to a mottled red colour to a depth of 2-3 in. The base of the oven wall or lining, of a crumbly orange-red clay, remained along the north-east and south-west sides, with an opening at both ends of the kiln.

No trace of the flues survived, but both to the north-west and south-east of the kiln the natural clay was burnt in patches to an orange-red of varying intensity. On the north-west side the full extent of this burning was uncovered, but on the south-east it was interrupted by a buried ditch which had, until recently, bordered a hop-garden. By the edge of this ditch, however, the burning had become very faint.

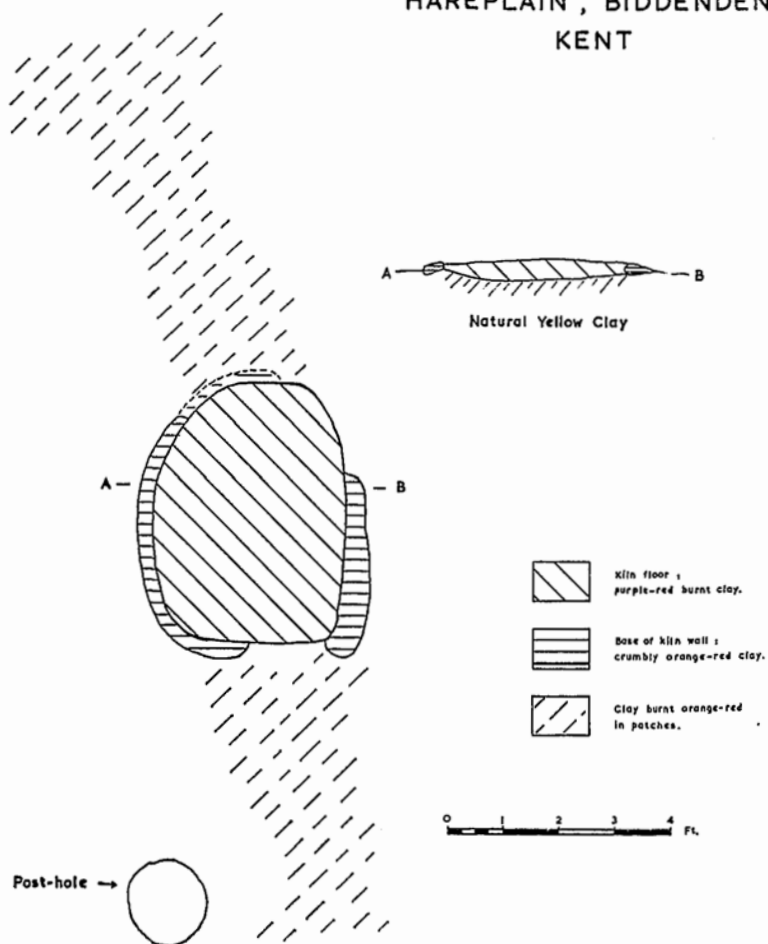
The kiln could thus have been either of the double flue up-draught or horizontal through-draught type. The former seems to be the most probable, in view of the experiments carried out at Leeds<sup>2</sup> and the

<sup>1</sup> The writer gratefully acknowledges the help given. Mr. B. Stent kindly delayed sowing the field, so that the kiln could be investigated.

<sup>2</sup> *Current Archaeology*, No. 4 (September 1967), 96.

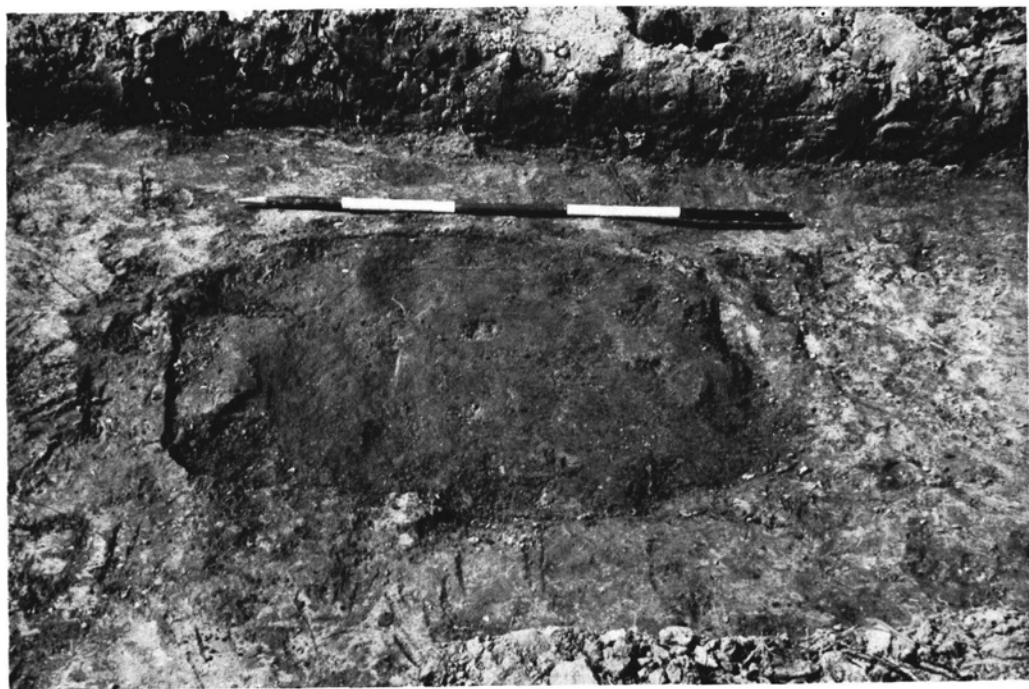


EARLY TUDOR  
KILN  
HAREPLAIN, BIDDENDEN  
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FIG. 1. Hareplain, Biddenden: Plan of Kiln Area.



*Photo: D. B. Kelly*

Hareplain, Biddenden: the excavated Kiln Base from the North-east.

suggested method of use of the earlier Laverstock kilns.<sup>3</sup> The remains of the near-contemporary kiln at Knighton, Isle of Wight, are similar and this was taken to be a double flue up-draught kiln.<sup>4</sup>

Some 20 ft. north-west of the kiln was a large pit, which, as found, appeared as a shallow depression only some 6 in. deep. It was filled with wood ash, potsherds, including some from wasters, and fragments of the clay kiln cover. A few other pieces of this cover were found amidst the scatter of pottery around the kiln. They were hardened and reddened by the heat and the clay had been bound with chopped reeds or grass, of which the impressions remained. No pieces of clay rings, saggars or other kiln furniture were found. The only other feature uncovered was a circular hole, to the south of the south-east flue, 18 in. in diameter, with vertical sides and a concave bottom. It was dug 1 ft. 5 in. into the clay and may have been a large post-hole, though not necessarily contemporary with the kiln.<sup>5</sup>

The remains of the kiln floor were substantial and solid enough for samples to be taken for a remanent magnetic survey. This was carried out by Mr. H. N. Hawley, of the Oxford Research Laboratory for Archaeology, in October 1969, and his report appears as an appendix.

#### THE POTTERY (Figs. 2-6)

Potsherds from the kiln were scattered around it, but in a fairly compact area. A search over the rest of the field produced only two or three sherds, all of later periods.

There were no vessels in anything approaching a complete state, and of the several hundred sherds collected only a handful could be joined. Among the sherds were several that were clearly wasters. These were all over-fired and are of a reddish brown fabric with a deep purple-grey surface outside, their appearance and hardness being almost like a stoneware. A few of the glazed sherds have glaze or other signs of firing along one or more edges, as though they had been from pots that cracked during the firing or had been left in the kiln during one or more subsequent firings.

The ware produced in the kiln is hard and orange-red in colour, with small sandy grits, scarcely visible to the eye. Occasionally, especially in handles or the thicker parts of vessels, there is a grey core, and a handful of sherds are grey throughout. Externally the pottery shows considerable variation in colour, ranging from pinkish buff, through reddish brown, to purple-grey. Of the 259 vessels listed

<sup>3</sup> John Musty, D. J. Algar and P. F. Ewence, 'The Medieval Pottery Kilns at Laverstock, near Salisbury, Wiltshire', *Archæologia*, cii (1969), 85-91 and 150.

<sup>4</sup> L. R. Fennelly, 'A Late Medieval Kiln at Knighton, Isle of Wight', *Proc. Hants. F.C.*, xxvi (1969), 97-110.

<sup>5</sup> A post-hole was found at one end of the Knighton kiln (*ibid.*, 99).

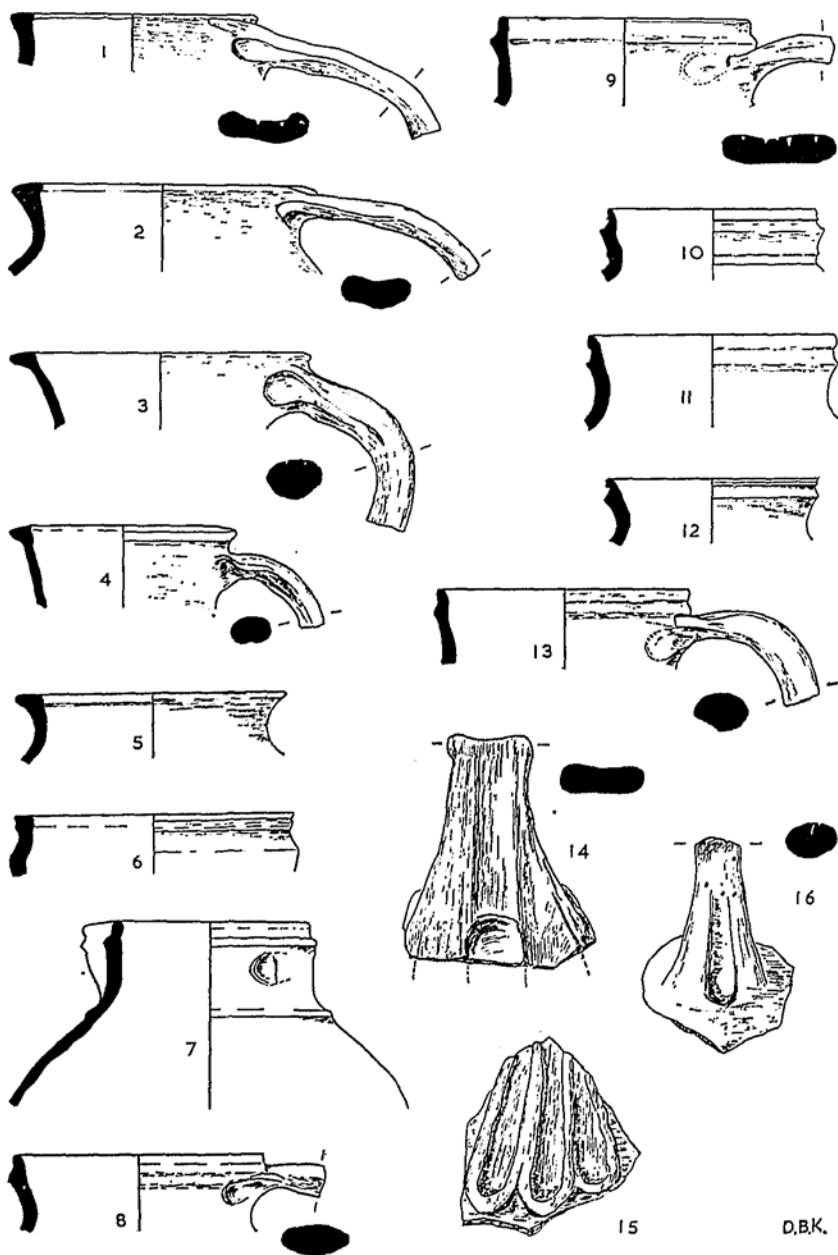


FIG. 2. Hareplain Kiln, Biddenden: Jugs. (4)

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below, 45 are pinkish buff, 80 reddish brown and 134 purple-grey, but this can only be taken as a rough count, since a gradual change from one colour to another sometimes appears on a single sherd.

The pottery is mostly unglazed. The glazed sherds, with few exceptions, come from the bases of fairly large vessels, which, where identifiable, are usually bowls or dishes. The exceptions are from vessels of a type represented by only one example each. The glaze is almost always a purple or purplish brown, which may cover the inside of the base of the pot completely or in patches. Occasionally, it has splashed on to the wall of the pot adjoining the base. On a few sherds the glaze is a speckled olive green or orange.

The main products of the kiln were large jugs or 'gotches', some with bung-holes, bowls and dishes. Cooking-pots, mostly with a rim seating for a lid, were fairly common and lids and smaller jugs were made. There were, in addition, a small number of miscellaneous vessels, described below. The numbers of each type found were as follows:

Jugs	97
Bowls and dishes	111
Cooking pots	42
Lids	9

## JUGS (Figs. 2 and 3, nos. 1-23)

Parts of 97 jugs were found.<sup>6</sup> Their rims are of two types, flat-topped or moulded.

- I. The flat-topped rims are thickened externally at the lip and have a flat or very slightly curved top, either horizontal or slightly depressed. (Fig. 2, 1-5.)
- II. The moulded rims have a narrow, beaded top, either upright or slightly everted with a moulding or bead below (Fig. 2, 7-13). No two jugs have an identical profile, but the variations are slight and the rims illustrated are characteristic.

There were 38 flat-topped jugs (Type I) and 37 with moulded rims (Type II). The rim diameters of 33 Type I jugs, but only 15 of Type II could be measured with any degree of accuracy:

Rim diameter:	6 in.	5½ in.	5 in.	4½ in.	4 in.
Type I:	6	13	8	5	1
Type II:	-	3	4	4	4

<sup>6</sup> The total number of jugs was obtained by counting the handles. These are either attached to a portion of the rim or loose. Rim sherds which show only a part of the handle attachment are not included in the overall total of jugs, but are used in counting the number of jugs of each type.

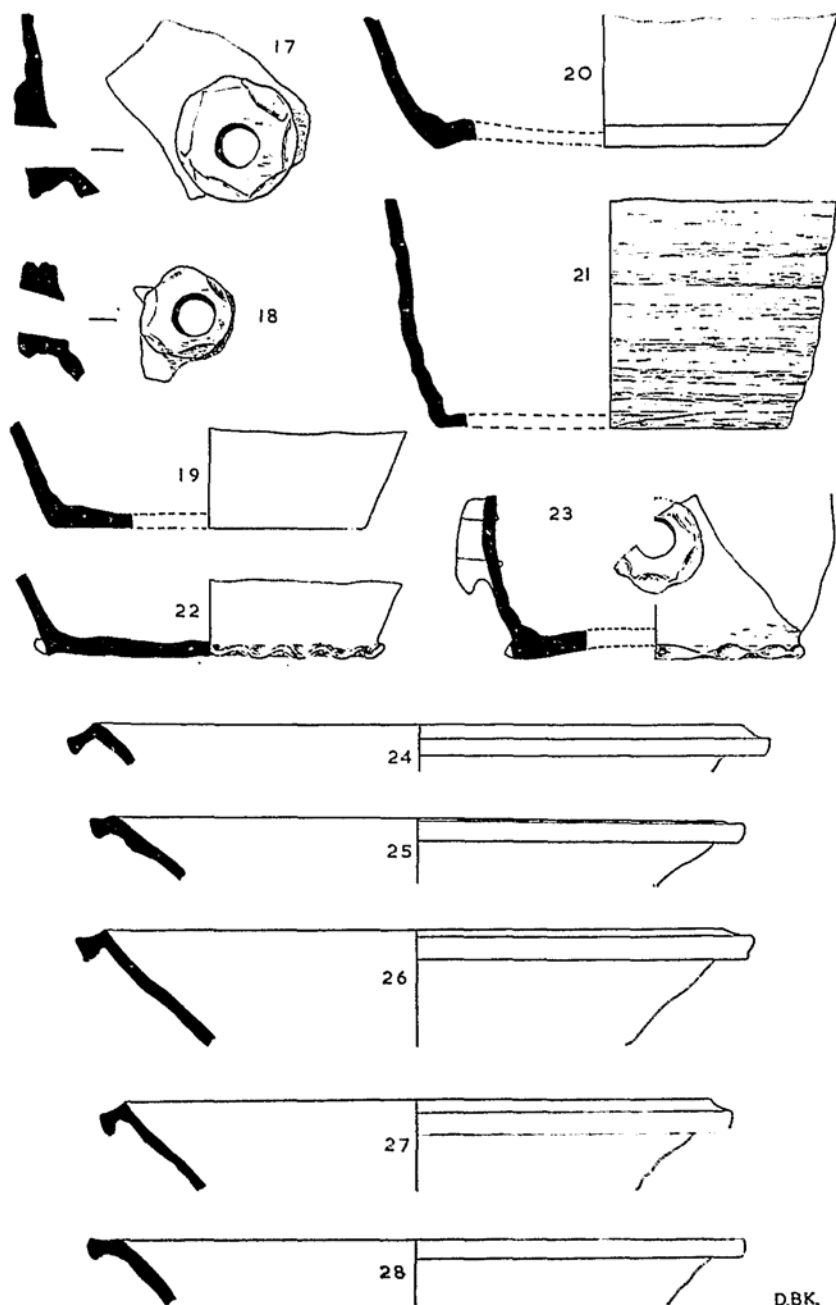


FIG. 3. Hareplain Kiln, Biddenden: Jugs, flanged Bowls and Dishes. ( $\frac{1}{4}$ )

Two jugs, one of each type, had their lips pulled out to form a spout (Fig. 2, 7).

Two sorts of handles were present, strap- and oval-sectioned. There were 57 strap-handles and 40 oval-sectioned, and of these 45 of the strap- and 8 of the oval-sectioned type were pricked. Of the Type I jugs 26 had strap- and 8 oval-sectioned handles, and for Type II there were 10 strap- and 10 oval-sectioned handles.

All the handles were attached to the rims by a single thumb-press on either side and, in a number of examples, the handle had come away from the rim in firing, leaving only the thumb-press. At the lower end, the strap-handles were fastened to the body by three thumb-presses, sometimes very prominent (Fig. 2, 14-15), and the oval-sectioned handles by three or, less often, a single thumb-press (Fig. 2, 16).

Twenty-one bung-holes were found, all of them roughly frilled by thumb and fingers (Fig. 3, 17-18, 23). The bases are mostly plain and flat (Fig. 3, 19-21), but four were frilled by thumb-pressing (Fig. 3, 22) and one by knife-trimming (Fig. 3, 23). The body of these jugs is mostly smooth externally, but occasionally exhibits a slight rilling. The prominent rilling on one sherd (Fig. 3, 21), taken to be from a jug, is the only example. The insides of one certain and two possible jug bases were glazed, but otherwise all the jugs were unglazed.

Of the total number of jugs, 17 were pinkish buff, 25 reddish brown and 55 purple-grey in colour. These colours are fairly evenly distributed among the Type II jugs, but 28 of the 38 Type I jugs are purple-grey. As 26 Type I jugs have strap-handles, 20 of them purple-grey, and 12 of the 21 bung-holes are purple-grey, the proportions suggest that the Type I jugs with the stronger rims and heavier handles may be those supplied with the bung-holes.

### *Type I*

1. Purple-grey outside, orange-red inside; pricked strap-handle.
2. Purple-grey inside and out; strap-handle.
3. Reddish brown inside and out; pricked, oval-sectioned handle.
4. Purple-grey inside and out; oval-sectioned handle.
5. Purple-grey inside and out.
6. Pinkish buff outside, orange-red inside. Flattened rim, but with moulding below; a single example.

### *Type II*

7. Pinkish buff inside and out; spout.
8. Pinkish buff inside and out; oval-sectioned handle.
9. Reddish brown inside and out; pricked strap-handle.
10. An over-fired example; ware and inside dark reddish brown, outside dark purple-grey.

11. Reddish brown inside and out.
12. Purple-grey outside, reddish brown inside.
13. Light purple-grey inside and out; oval-sectioned handle.

*Handles*

14. Base of plain strap-handle; dark reddish brown inside and out.
15. Base of strap-handle; purple-grey inside and out.
16. Base of oval-sectioned handle; light reddish brown inside and out.

*Bung-holes*

17. Pinkish buff inside and out.
18. Reddish brown inside and out.

*Bases*

19. Flat base; reddish brown outside, pinkish buff inside.
20. Base from a waster; over-fired, dark reddish brown throughout.
21. Base from a waster; over-fired, reddish brown, dark purple-grey inside; knife-trimmed at junction of wall and base.
22. Base frilled by thumb-pressing; dark purple-grey outside, light purple-grey inside.
23. Base frilled by knife-trimming and with part of bung-hole; dark purple-grey inside, reddish brown and purple-grey outside.

## FLANGED BOWLS AND DISHES (Figs. 3 and 4, nos. 24-37)

Rim-sherds from 111 bowls and dishes were found.<sup>7</sup> There are three main rim-forms:

- I. Thick flange with concave upper surface and undercut. This may be (a) down-turned, (b) horizontal, (c) up-turned (Figs. 3 and 4, 24-31).
- II. Thick, horizontal flange with flat top, usually undercut (Fig. 4, 32-4).
- III. Up-turned flange with concave upper surface and pointed top (Fig. 4, 35).

The numbers of each type of bowl and dish are as follows:

Type	Bowls	Dishes	Total
Ia	13	11	24
Ib	21	14	35
Ic	6	—	6
II	20	10	30
III	15	—	15
Total	75	35	110

<sup>7</sup> For the purpose of this report vessels with an internal angle between base and wall of 140° or more are called dishes and those with an internal angle of 130° or less (usually 120°) are called bowls.

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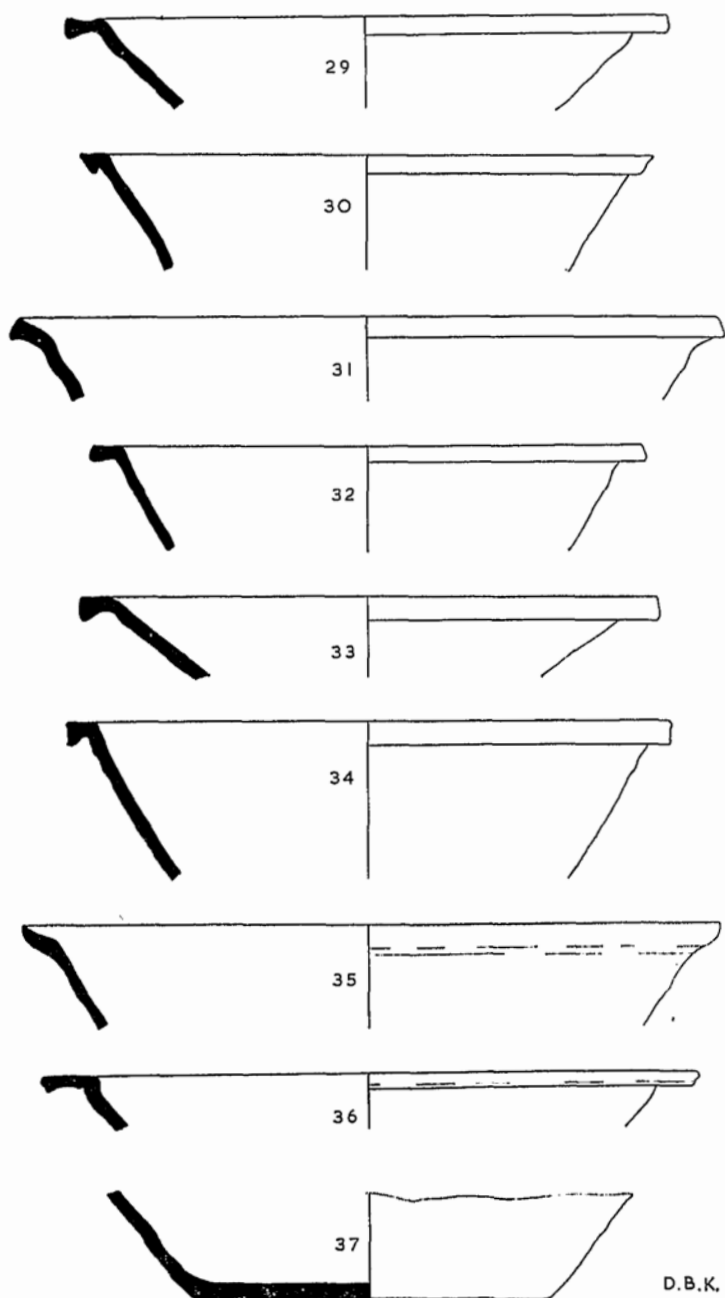


FIG. 4. Hareplain Kiln, Biddeden: flanged Bowls and Dishes. (4)

A single atypical bowl has a very wide, thin horizontal flange (Fig. 4, 36) (Type IV).

Rim diameters range from 11 in. to 14 in. No complete profile was obtained but, to judge by those sherds from which it was possible to measure diameter and angle of the wall, the height of the bowls was about 6 in. and of the dishes  $3\frac{1}{4}$  in. The bases are flat and between 5 and 6 in. in diameter (Fig. 4, 37).

In colour 17 vessels were pinkish buff, 36 reddish brown and 58 purple-grey, proportionally very similar to the numbers obtained for the jugs. Of ten certain bases, seven were covered or partly covered with a patchy purple glaze. A few rim-sherds had splashes of glaze on the underside of the flange, where it joins the wall, as though the bowls had been fired stacked upside down one above the other.

#### *Type Ia*

24. Bowl; light purple-grey, with dark purple band below flange outside.
25. Dish; reddish brown inside and out.
26. Dish; reddish brown inside and out; patches of glaze at junction of flange and outer wall.
27. Dish; reddish brown inside and out.

#### *Type Ib*

28. Bowl; orange-red outside and on top of flange, pinkish buff inside.
29. Dish; reddish brown inside and out; patches of glaze at junction of flange and outer wall.
30. Bowl; dark purple-grey inside and out.

#### *Type Ic*

31. Bowl; purple-grey inside and out.

#### *Type II*

32. Bowl; purple-grey and reddish brown outside, purple-grey inside.
33. Dish; reddish brown outside, light purple-grey inside.
34. Bowl; pinkish buff inside and out.

#### *Type III*

35. Bowl; dark purple-grey inside and out.

#### *Type IV*

36. Bowl; reddish brown inside and out; single example, with very wide flange.

37. Base of bowl; reddish brown; patchy purple glaze on inside of base, splashed on to wall, and speckled purple glaze on outside of base.

COOKING-POTS (Fig. 5, nos. 38-51)

The sherds of the 42 cooking-pots found display a great variety of rim-forms. They can be divided into six groups, all with a well-marked shoulder, except Type V.

- I. Recurved rim, giving the pot a distinct neck (Fig. 5, 38).
- II. Short, thick rim, sharply everted from the shoulder (Fig. 5, 39-42).
- III. Sharply everted rim, but wider than Type II and having a concave upper surface to provide the seating for a lid (Fig. 5, 43-7).
- IV. Almost upright rim, with concave inner side (Fig. 5, 48).
- V. Sharply everted, incurving rim with inner ledge for a lid; the wall of the pot below the rim not far from vertical (Fig. 5, 49).
- VI. Sharply incurved rim with a prominent inner ledge to take a lid (Fig. 5, 50-1).

The numbers of each type are:

- I, 1; II, 21; III, 10; IV, 5; V, 1; VI, 4.

In colour 7 are pinkish buff, 17 reddish brown and 18 purple-grey. Only the single example of Type V carries any glaze and this should perhaps be regarded as a storage jar. Rim diameters range from 6 to 10½ in., but are mostly from 6½ to 8½ in. Bases are flat and plain.

*Type I*

38. Pinkish buff inside and out, grey core.

*Type II*

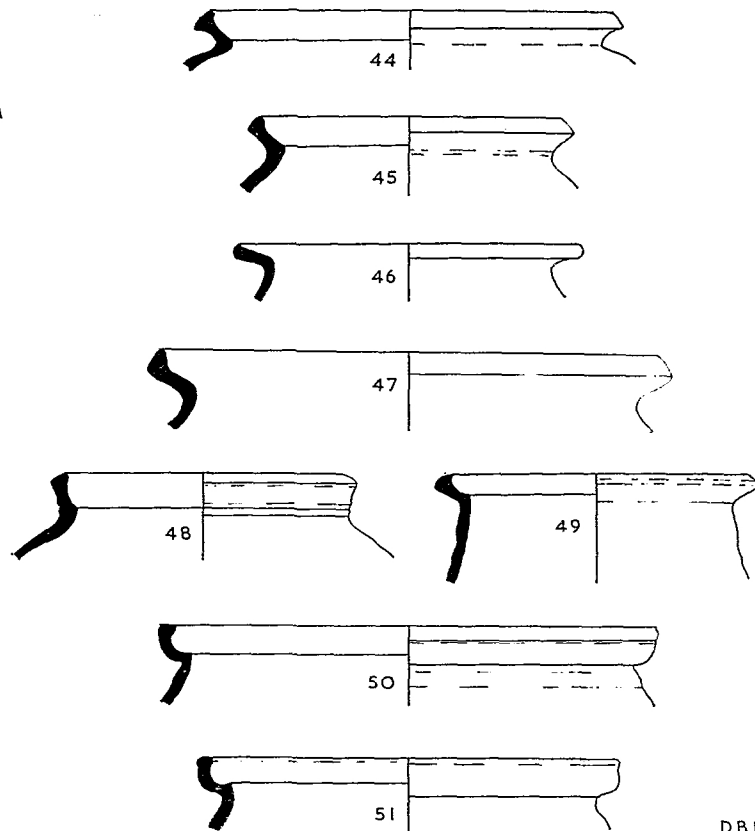
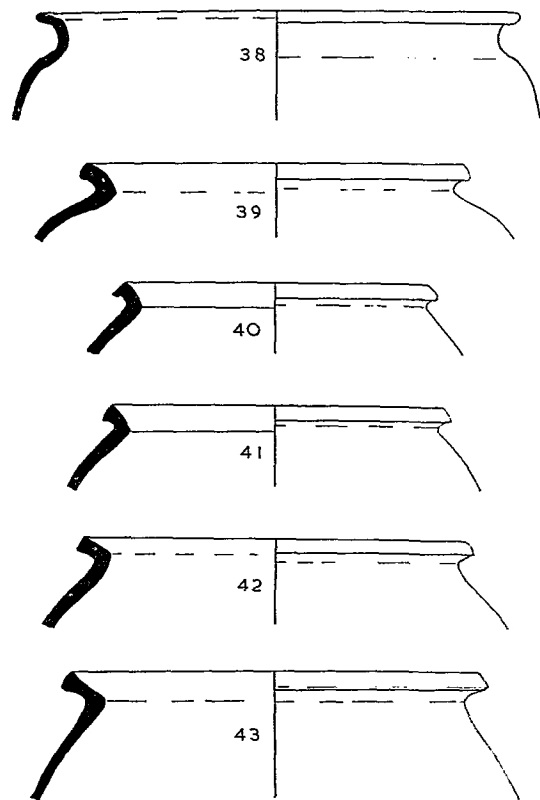
39. Dark purple-grey inside and out.
40. Purple-grey inside and out.
41. Purple-grey outside, reddish brown inside.
42. Pinkish buff inside and out.

*Type III*

43. Reddish brown inside and out.
44. Purple-grey inside and out.
- 45-6. Reddish brown inside and out.
47. Pinkish buff outside, reddish brown inside.

*Type IV*

48. Pinkish buff inside and out.

FIG. 5. Hareplain Kiln, Biddenden: Cooking-Pots. ( $\frac{1}{4}$ )

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### *Type V*

49. Reddish brown inside and out; patches of brown glaze outside.

### *Type VI*

50-1. Purple-grey inside and out.

### LIDS (Fig. 6, nos. 52-8)

Eight of the nine lids, represented by rim-sherds, were measurable: two have diameters of  $12\frac{1}{2}$  in., two of  $11\frac{1}{4}$  in., one of  $7\frac{1}{2}$  in. and three of 5 in. The four large lids have their rims strengthened by thick mouldings. Two of the smaller ones are pricked, presumably to prevent their cracking during firing, since they are in a thin fabric.<sup>8</sup> Two complete and two fragmentary handles were found, of which three are hollow and one solid. The sherds of the lid walls show that all the lids were dome-shaped. Four lids were pinkish buff, two reddish brown and three purple-grey. All four handles were pinkish buff.

52-5. Rims, pinkish buff inside and out. No. 54 pricked.

56-8. Handles, pinkish buff inside and out.

### SMALL JUGS (Fig. 6, 59-61)

The thumb-pressed bases of four small jugs were found. One (Fig. 6, 59) is a smaller version of the large jugs, but three of them (Fig. 6, 60-1) have the splayed bases reminiscent of imported stoneware jugs. It may be of significance<sup>9</sup> that the bases of two Raeren jugs were found on the site (see Fig. 6, 66).

59. Pinkish buff inside and out.

60. Reddish brown inside and out.

61. Purple-grey inside and out; purple-brown glaze on inside of base and broad splash of light brown glaze outside.

### PLATES OR SHALLOW DISHES (Fig. 6, 62-3)

Single sherds only of two different vessels.

62. Purple-brown glaze outside, light brown glaze inside.

63. Grey ware and surfaces.

### DISTILLING BASE (Fig. 6, 64)

A single sherd from the shoulder of a distilling base.<sup>10</sup> The reconstruction is based on a similar vessel from Hartford, Hunts.<sup>11</sup> There

<sup>8</sup> This feature occurs on a lid found at Bodiam Castle. (*Sx A.C.*, lxxvi (1935), 230 and fig. 5, P.26.)

<sup>9</sup> Copies of imported stoneware jugs were made at the Cistercian ware kiln at Potterton, Yorks. (*Antiq. Journ.*, xlv (1966), 264 and fig. 7, 27.)

<sup>10</sup> Identified by Mr. Stephen Moorhouse. See Stephen Moorhouse, 'Medieval Distilling Apparatus in Pottery and Glass', *Med. Arch.*, forthcoming.

<sup>11</sup> *Proc. Camb. A.S.*, lviii (1965), 139-40 and fig. 1 (upper pot). The pot contained a coin hoard in which the latest coins were minted in 1503.

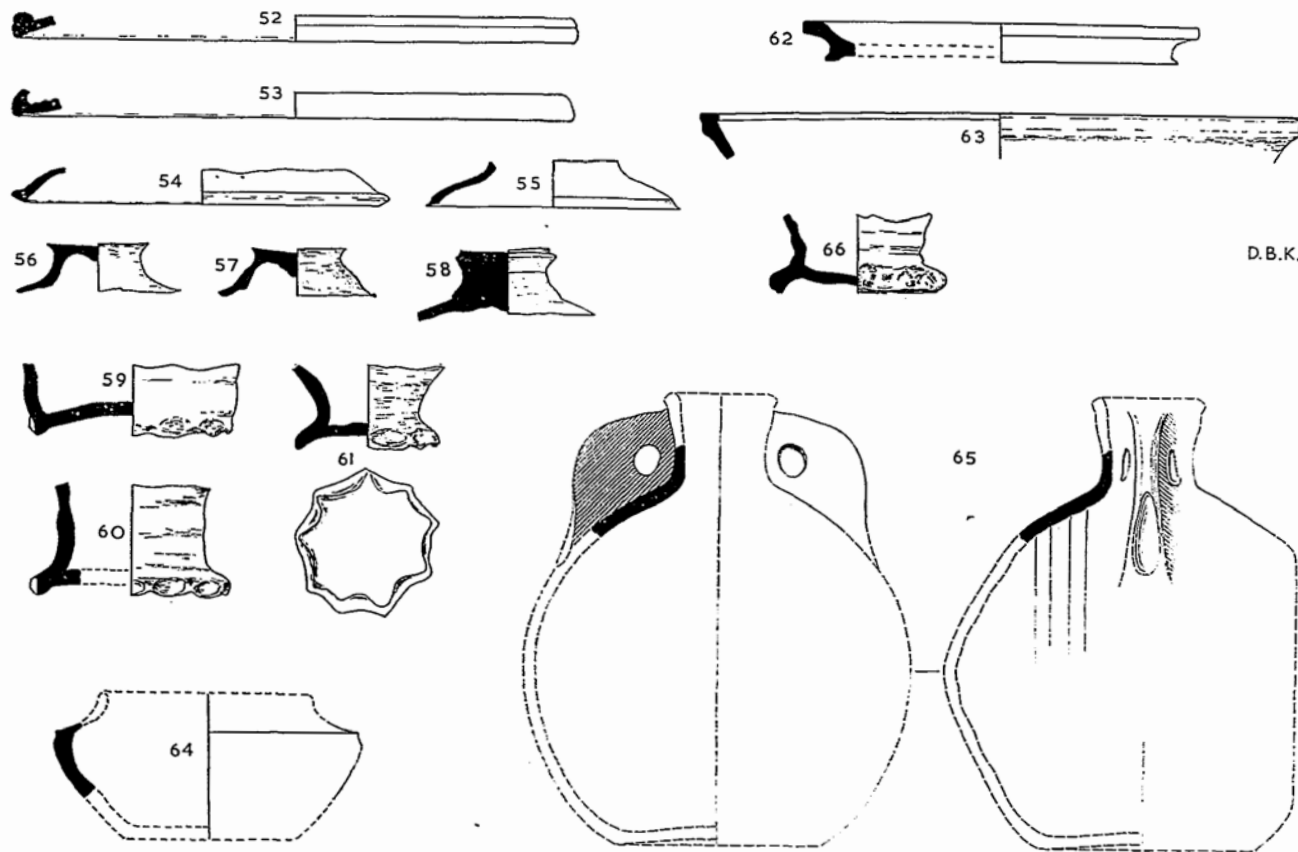


FIG. 6. Hareplain Kiln, Biddenden: Lids, small Jugs and miscellaneous Vessels. (1)  
(No. 65 drawn by G. C. Dunning.)

are two sherds from the angle of wall and base which have the same orange glaze, but they are from different vessels and both too large to fit this pot.

64. Reddish brown outside; inside an orange glaze, speckled brown.

#### COSTRELS (Fig. 6, 65)

A handle and a body sherd from two different costrels. Dr. G. C. Dunning has kindly described and discussed the handle in a section below. The second sherd is from the domed side of a costrel and is in a grey ware with a mottled purple and red external surface, covered with a patchy greenish brown glaze.

#### IMPORTED STONEWARE JUGS (Fig. 6, 66)

The bases of two Raeren jugs,<sup>12</sup> of which the better preserved is illustrated.

66. Grey stoneware, light purple-brown inside, brown and grey mottled glaze outside.

#### THE DATE OF THE KILN

The only excavated site in central and Wealden Kent at which comparable pottery has been found is Pivington, now in the parish of Pluckley, on the Greensand ridge some seven miles north-east of the Hareplain kiln.<sup>13</sup> Here, in the early sixteenth century, a hall-house (Phase III) was built after an earlier house had been demolished and the ground level raised by a deposit of clay. The pot-sherds (Group C) sealed by this clay 'blanket' are comparable with the products of the Hareplain kiln in the forms present—large jugs with bung-holes, bowls, cooking-pots with ledged rims and lids—and in the hard, red wares with mauve or grey surface, though none of the sherds are from the Hareplain kiln.<sup>14</sup> A latton coin-weight of the early sixteenth century was found in the demolition layer of the Phase II house and a jetton of the same period in a late Phase II context.<sup>15</sup> Hence, an early sixteenth-century date is reasonable for this group of pottery at Pivington.

From the filling of a well excavated at Tarring, Sussex, dated by

<sup>12</sup> J. G. Hurst, 'Stoneware Jugs', in Barry Cunliffe, *Winchester Excavations, 1949-1960*, i (1964), 142-3 and references therein. J. G. Hurst in L. Keen, 'Excavations at Old Wardour Castle, Wiltshire', *W.A.M.*, lxii (1967), 74.

<sup>13</sup> S. E. Rigold, 'Excavation of a Moated Site at Pivington', *Arch. Cant.*, lxxvii (1962), 27-47.

<sup>14</sup> *Ibid.*, 38, 42-4; cf. fig. 6, especially nos. ii, iii, vii, xi. The jugs, not illustrated, have oval and pricked strap-handles and flat-topped rims; one of them could be taken to be from the Hareplain kiln were it not for its white-painted decoration, a feature wholly absent at Hareplain.

<sup>15</sup> *Ibid.*, 45.

the excavator to about 1500, come globular jugs with bung-holes and flanged dishes.<sup>16</sup> These are mostly unlike the Hareplain pots, but one of the dishes illustrated (Fig. 3, 2) is very close to Hareplain 36, a single example. This Tarring group was used as a parallel for the pottery found at Knighton, Isle of Wight.<sup>17</sup>

The main types of vessels produced at Knighton, in a kiln of the same type as Hareplain, were large jugs or pitchers with bung-holes and wide flanged dishes, of which there were 166 and 23 respectively, other products being represented by only one or two examples of each. These two types were also the commonest at Hareplain, though here there was also a considerable number of cooking-pots. The Knighton jugs are comparable in general shape to the Hareplain ones, though the rims are different, except for the relatively uncommon type (d) (Fig. 37, 7), which is like Hareplain Type II. Of the dishes which are illustrated, types (a) and (c) (Fig. 38, 18 and 14) compare with Hareplain Types Ic and III. The costrel (Fig. 40, 1), too, is apparently close to the Hareplain example.

Further afield, two sites in Huntingdonshire<sup>18</sup> have provided groups of pottery including flanged dishes and bung-hole pitchers and assignable to the late fifteenth or early sixteenth century from the presence of Cistercian ware and imported stoneware.

A date of around 1500, then, may reasonably be assumed for the Hareplain kiln. Unfortunately, the archæomagnetic measurements taken provided only a poor (Class C) result (see Appendix). However, the 'group C' pottery at Pivington is dated to the early sixteenth century and the Hartford distilling base to after 1503. Now that Raeren stoneware jugs are known to have been imported as early as the late fifteenth century, they are here not so useful for dating as was once thought, but, none the less, they are most plentiful in the first half of the sixteenth century and regarded as 'type fossils' of this period. It is suggested, then, that the Hareplain kiln may be dated to the first quarter of the sixteenth century.

#### NOTE ON DISTRIBUTION

Apart from Pivington, which presumably used Ashford as a market, no other excavated site in the area has produced pottery comparable to that from the Hareplain kiln. A scatter of pottery sherds of various periods from Lamb's Cross, Chart Sutton, includes three thumb-frilled

<sup>16</sup> K. J. Barton, 'Worthing Museum Notes for 1961: A late fifteenth-century well at Tarring', *Sx. A.C.*, ci (1963), 28-34.

<sup>17</sup> See note 4, 106-8.

<sup>18</sup> J. G. Hurst, 'The Pottery', in C. F. Tebbutt, 'St. Neot's Priory', *Proc. Cambs. A.S.*, lix (1966), 59; S. Moorhouse, 'Excavation of a Moated Site near Sawtry, Huntingdonshire', *Proc. Cambs. A.S.*, lxxiii (1971), 80-3.

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bung-holes and pieces of jug handle which could come from Hareplain. This site is about six miles north-north-west of Hareplain (N.G.R. TQ 791483). In March 1972, a miscellaneous collection of sherds picked up on a field at Staplehurst was brought to the museum and this included some sherds from the Hareplain kiln: two handles of Type I jugs and two rim sherds of Type II cooking-pots. These came from a field adjacent to Aydhurst, four miles north-west of the kiln (N.G.R. TQ 782435).

## THE COSTREL FROM THE BIDDENDEN KILN

By G. C. DUNNING, B.Sc., D.Lit., F.S.A.

THE fragment is made of light red sandy ware, green glazed on the outside. It is a complete lug, moulded by hand and not knife-trimmed along the edges, attached to the neck and upper part of the body of the costrel, and is pierced by a round hole for suspension. Sufficient of the neck is present for its diameter to be determined. The inside surface of the body has faint wheel-marks in a vertical direction, showing that the vessel was thrown in two separate parts which were then luted together round the circumference.

The Biddenden costrel can be restored and fitted into the sequence of late medieval costrels by comparison with the few other examples that have been published.<sup>19</sup> Technically, it is allied to the large costrel which is a relic of Bosworth Field (1485), on which the wheel-marks also run vertically. In form, however, it appears to be closer to the costrel from the pottery kiln at Knighton, Newchurch, Isle of Wight. On this costrel the wheel-marks are horizontal, that is, in the same plane as the base. Another close parallel, found in Kent, is the front part of a costrel from Richborough, found in association with a group of fifteenth-century pottery outside the north wall of the Saxon Shore Fort. On this costrel the wheel-marks also run vertically. The front is mammiform, and its apex is finished in a flattened area 1 in. in diameter. From these analogies the Biddenden costrel has been restored in the drawing as about 9 in. high and 7 in. wide, dome-shaped in front and flattened at the back (Fig. 6, 65).

<sup>19</sup> L. R. Fennelly, 'A Late Medieval Kiln at Knighton, Isle of Wight', *Proc. Hants. F.C.*, xxvi (1969), 97-110. For the typology of the Knighton costrel see pp. 108-10 and fig. 40.

D. B. KELLY

APPENDIX

ARCHÆOMAGNETIC MEASUREMENTS ON THE HAREPLAIN  
POTTERY KILN

By H. N. HAWLEY

EIGHTEEN samples of baked clay were extracted from the kiln: three were taken from the base of the wall, the remainder being floor samples. The individual measurements were rather scattered and the site was given a Class 'C' result, i.e. poor, but worth considering.

The result obtained from the floor samples was  $I = 62.3 \pm 1.0^\circ$ ,  $D = 7.7^\circ \text{ E} \pm 1.3^\circ$ , a result closely comparable with West Cowick 1d (1450-1530,  $59.0^\circ$ ,  $5.7^\circ \text{ E}$ ), Potterton (1450-1550,  $61.4^\circ$ ,  $9.9^\circ \text{ E}$ ) and Ramsey (1500-1540,  $62.8^\circ$ ,  $10.7^\circ \text{ E}$ ). Thus an archaeological date of 1500-1520 for Hareplain is perfectly compatible with the magnetic measurements.