

ART. VII.—*Excavation in Eskdale: the Muncaster Roman kilns.* By R. L. BELLHOUSE, B.Sc.

Read at Carlisle, September 1st, 1960.

THIS report may conveniently be regarded as Part II of my paper, in CW2 lx, on the excavation of what was thought to be a new kiln, but proved to be Miss Fair's kiln A. The report left several questions unanswered, the most important being the making of pottery at this place. Further work was therefore arranged for August 1960 when we hoped, by the examination of kiln B, to discover what evidence there was to support the widespread belief that pottery was made here. Miss Fair's kiln B has now been examined; the work occupied my party, which consisted of Mr and Mrs Anthony Whitehead, Miss Audrey Ashworth and Commander A. L. Lawford, from 8-12 August. The position of the kiln has been known for some time because parts of its structure show through the soil at the eastern end of tree-covered granite outcrop; we expected our work to be seriously hampered by the presence of roots, but in the event, only one tree prevented complete recovery of the plan of the firing-chamber. This time we had Miss Fair's notebook and photographs for reference, of which numbers 11, 16 and 17 survive, no. 17 being particularly valuable as it enabled us to pinpoint her excavation of 3 and 4 April 1923. Her first note, however, is dated 3 February 1923, as follows:

"Kiln B. A flue followed up leading from a broken and confused mass of masonry at east end of mound of debris which may have been stokehole. This masonry is of granite, very hard baked grey brick and masses of burnt clay used for luting the whole together. Flue should be traced into interior of kiln where there are signs of granite and brick masonry as in kiln A."

A later entry, dated 3 April 1923, is as follows:

“Kiln B (south of Drive) investigated at south end. Substantial substructure of granite blocks — above which tiles and thick hardburnt clay luting. Rim of coarse red ware vessel found. Tiles found *tegulae mammatae* very hard baked $7\frac{1}{2}$ in. long, 4 in. wide, $\frac{1}{2}$ in. thick (sketch adjoining of tile with slot 1 in. wide and 2 in. long). Flanged tiles heavily diamond broached to give hold of luting. Massive fire-bricks, heavily diamond broached forming pedestals to support superstructure, $1\frac{1}{2}$ in. thick. Box flue tiles, many heavily diamond broached to hold clay luting 14 in. long, 5 in. wide, $\frac{1}{2}$ in. thick. All these types were used in construction.”

Finally, the entry for 4 April 1923, the day the dig was filled in:

“Above the tile-work, beneath turf is a layer of yellowish clay superimposed on confused mass of *tegulae mammatae*, flanged *tegulae* and heavier fire-bricks all luted together with a plaster of baked clay, two courses of double flues located, separated by massive partition of thick fire-bricks. Below the upper flue runs a lower double flue . . .”

Our excavation proved the accuracy of Miss Fair's reporting, but revealed much more; the site of her excavation was identified with the aid of photograph 17 and opened up. We found a clay and granite wall and some interesting openings in a fused mass of brick and clay, enough to remind us of kiln A.

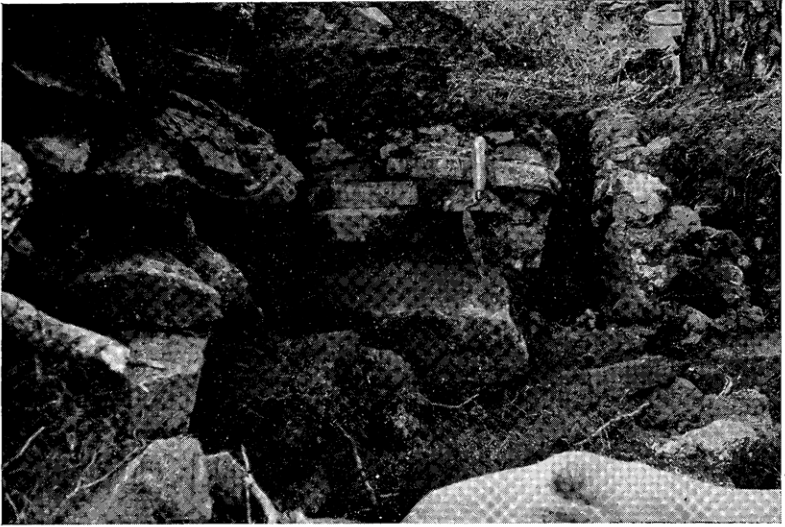
As the work of stripping the soil from the structure progressed it became clear that very thorough robbing had taken place at some time. One wall of granite and clay survived because it backed against the granite outcrop; from its alignment we assumed that the axis of the kiln might be north-south, as in kiln A, and accordingly divided our forces and opened a trench just over the wall in the field to south of the kiln, in an attempt to discover traces of the stokehole. Immediately below the turf we found a small amount of unburnt brownish clay, a pot-handle in medieval green glaze and, below, brown loam with some small pieces of brick and tile. We



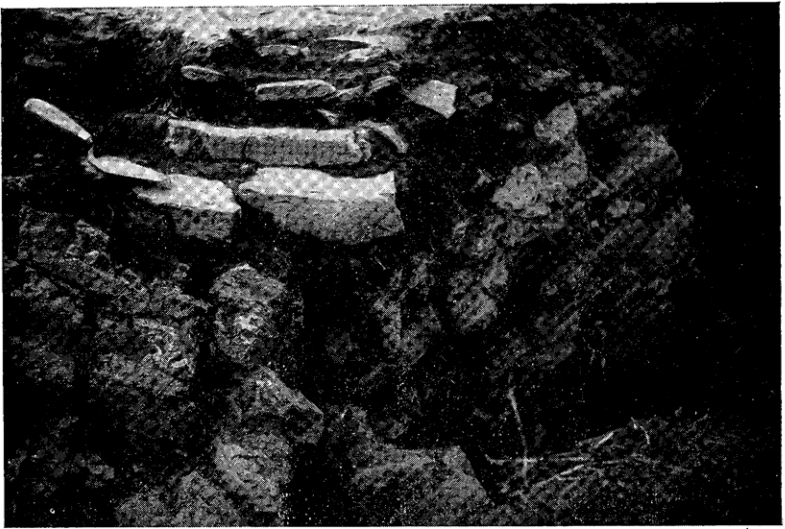
View along the robbed south wall towards the end wall. Sheet to left covers a mass of tree roots.



Internal south-west angle, the approximate extent of Miss Fair's excavation. The granite boulder, bottom centre, rests on red tile and supports the rebuilt piers. Note the rebated voussoir immediately above the boulder.



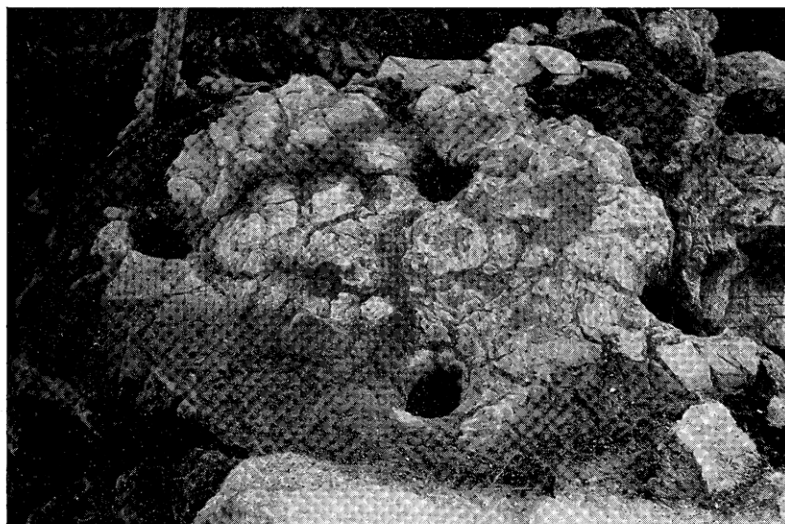
The firing floor piers viewed from the south side: stoke-hole to right. "The apertures of two flues remain . . ." (Report of the 1884 discovery).



Collapsed piers meeting along the centre-line of the kiln with level courses of wasters above forming a new firing floor. ". . . and the arched entrance to the main flue can be distinctly traced . . ." (Report of the 1884 discovery).



The remains of the firing floor against the back wall of the kiln. North wall to right completely robbed. South-west internal angle at extreme left.

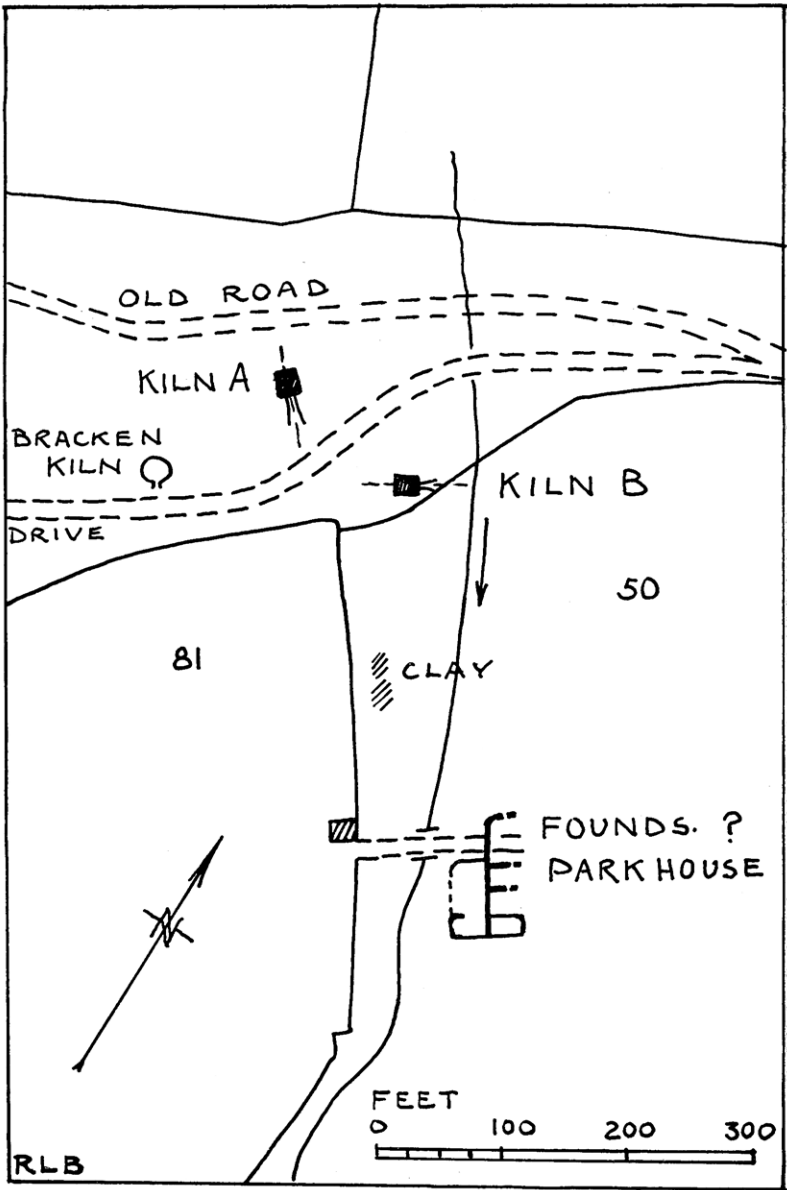


Firing floor viewed from the back wall with three complete vents.

abandoned this trench when we were satisfied that the loam was the natural soil.

Meanwhile further clearance of the kiln indicated the true axis, north-west to south-east, later confirmed by a small trench proving the stokehole. Another green glaze sherd turned up and part of a quern base at the edge of Miss Fair's exploratory hole. The granite side-walls of the kiln had been thoroughly robbed, but their original positions could be determined by traces of unburnt clay to outside and a line of heat-shattered granite to inside, the stone robbers having left the unsound stone in position. At this stage we were able to see that the structure was comparable with kiln A, and that Miss Fair had burrowed into the interior south-west corner, against the end wall and into the spaces between the piers supporting the firing floor. What remained of the firing floor was still overlaid by a thickness of crumbled burnt clay and tile fragments. When this was removed we found its original surface very well preserved with three complete vents in it; in one was part of a cooking-pot rim, in hard slightly gritty fabric, red in colour, no doubt from the typical Hadrian-Antonine fumed ware pot, but with the fuming burnt out. Miss Fair reports a similar find, cf. her notes for 3 April, above. This was the only piece of Roman pottery found.

It was by now equally clear that not only stone but all moveable brick and tile had been robbed, leaving ghost walls and an upstanding monolithic mass of brick and tile, all blue-grey in colour and solidly fused together, supporting about a quarter of the original firing floor. Four brick piers based on large granite blocks could be made out; they were continuous across the kiln with their courses sloping steeply inwards, the blocks being level. However, they were seen to be resting on thick red tiles also sloping inwards, most probably once forming part of an earlier firing floor similar in construction to that of kiln A. We concluded that excessive use or



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drastic over-heating had caused the floor to sag and had occasioned reconstruction of the piers. Although we could not get into the combustion chamber, as we did in kiln A, it seemed safe to assume a similar arrangement of the original piers, *i.e.* one from the back wall and two from each side with corbelling supporting the firing floor. In the first period of use this floor sagged along the centre line of the kiln, probably due to the disintegration of the granite of the piers, particularly towards the centre where they would meet the full blast of the hot gases from the stokehole. New piers were then made on the remains of this floor; the one on the back wall must have been omitted or reduced in size because there is a vent at the centre of the firing floor only a few inches from the wall directly above where it should have been. The new piers also sagged inwards to meet and fuse together along the axis of the kiln, leaving a considerable gap, 9 to 12 in. wide, between their outer ends and the kiln walls. The trough thus formed in the firing floor was made good with level courses of *tegulae* and box-tile wasters set in clay. The first floor and the subsequent repairs used different materials; as already noted the remains of the first floor was of large red tile as in kiln A, the piers of the second floor, apart from the granite blocks, were largely of large tile wasters, many of them being the notched or rebated voussoirs like those from kiln A, and the final levelling was as described above.

While this detailed examination was going on work continued in the stokehole; this too had been thoroughly robbed but sufficient of the north wall survived to give us a guide to the position of the south wall. A grey line backed by disintegrated granite betrayed its position, giving a maximum width of 3 ft. The earth in the stokehole contained many *tegulae* and box-tile wasters. When all this had been removed the grey line was seen to be a continuous feature across the floor and some way up the opposite wall. The grey stuff was an amorphous cement-

like material containing white particles, clearly the decomposed natural glaze formed by the fusing of the quartz at the surface of the granite of the walls. The white particles would be the unfused felspars. Patches of such glaze still adhering to granite were observed in kiln A. This explains R. G. Collingwood's description of kiln A, based on Miss Fair's notes, "This chamber is built partly of local granite, covered with cement . . ." (CW2 lx 3, extract (f).) A thin charcoal layer on this surface must be left over from the last firing. Four inches below we found the true floor of the stokehole and another charcoal line. It is interesting to note that the two firing floors, indicating two periods of use, are matched by two levels in the stokehole. Large trees made it impossible to extend our work here and one in particular prevented any digging at the point where the stokehole joined the combustion chamber. This was a great pity because, towards the kiln, in the north wall of the stokehole appeared the beginnings of level courses of tile wasters, as if for the stokehole arch and the entrance to the combustion chamber.

No line of *imbrices* came to light on the stokehole floor; as this was a dry site we had cause to review our ideas about those in kiln A, which was a wet site. The simple explanation may be after all that the *imbrices* formed a drain and the tile boxes were collecting tanks for water.

A little of our time was spent in examining other parts of the area. In 1959, no doubt because of the unusually dry weather, scorch-marks in the grass, like those often observed over buried walls, were seen on a low level mound in the field (O.S. no. 50) to south of the kilns. Small pieces of granite showed through the turf to suggest fairly recent stone robbing. Trial pits in several places yielded 19th-century sherds and clear window glass. We concluded that this place might be the lost Park House and marked it on our plan, with a query.

Further to the north on the left-hand side of the cart-

track to the field-gate two small mounds proved to be heaps of pale reddish-brown clay like that observed round kiln B and in the abortive trench by the field wall. Nearby flat blocks of granite showing through the turf suggested a paved surface. But I must warn anyone who visits the site not to be misled by the stone-filled ruts left by a bogged timber wagon. These are a recent feature at several points and will be difficult to explain in a few years' time.

As one passes through the gate to gain the New Drive the cart-track passes between two mounds. That on the right hand is a natural granite outcrop, the other on the left was investigated by a short trench across it which revealed a bank of pale brown clay on the east side, some more 19th-century sherds, and many *tegula* wasters lying in humus-rich soil. The same black soil with tile fragments was found over the wall in the north-east corner of field O.S. no. 81.

We found no clues to the position of the potters' shed described by Miss Fair. It must exist somewhere. Certainly the whole area of the kilns merits further attention at some future date. Systematic "pitting" on a 10-ft. grid is the obvious course for locating the shed and for finding the limits of the working area by revealing the spread of wasters. No doubt puddling floors as well as stacking places for the moulded wares existed once. They could be found, probably close to the little beck to the east, and throw a little more light on the extent and output of this establishment.

The robbing of kiln A might have been done at two distinct periods, for we have in the medieval green glaze ware a hint of activity in the 14th century. I imagine that brick and tile would have been the attraction since ordinary building stone is abundant. Perhaps the material was taken to be used as fire-brick, for example, a bloomery hearth, a matter of some interest when one recalls that there is just such a site a little to the east of the farm buildings at Muncaster Head. If the bloomery is ever

investigated Roman brick should be looked for. The destruction of the outer granite walls could have taken place in the 19th century, most likely for the building of the nearby field walls, after, and as a consequence of, the Enclosure Awards between 1800 and 1850, and before the making of the New Drive in 1884. Any convenient source of easily won stone, even the ruins of Park House, would be thoroughly exploited. A small pivot stone found against the north side of the kiln could indicate the re-making of a gateway, possibly a wider one with stone "stoops" to support a modern gate. The field wall is well made and has small pieces of brick in it, mostly used as chocks to level the bedding for the next stone. Among the capstones we observed a roughly cubical mass from one of the kiln piers; I feel that the wallers would have used much more loose Roman material *if it had been there*.

Miss Fair's "bracken burning kiln" should be mentioned; it may be seen in the bank on the north side of the Drive (see site plan, p. 50) as a circular pit lined with dry-stone walling with an entrance on to the Drive; the soil within it contains coal. I wonder if it was used as a bunker for a steam-roller when the Drive was made?

I make no apologies for having dealt at some length with matters only incidental to the examination of kiln B, and pass on to a reconsideration of the significance of the extracts quoted in my first paper. Perhaps, after all, in the extract from CW1 viii we can identify the 1884 discovery as kiln B. "It is between 3 and 4 ft. high and the semi-circular front has a radius of about 4 ft. The apertures of two flues remain, and the arched entrance to the main flue can be distinctly traced, though a portion of it was destroyed when the kiln was uncovered." This fits the remains exactly, particularly the description of the arched entrance, which is clearly based on the appearance of the collapsed piers, whose courses meet on the centre-line and look exactly like a voussoired arch.

If we accept this as certain we have evidence for only two kilns on this site, not three "destroyed" as in extract (e), likewise the Shamrock kiln of extract (d) can be written off. The clear picture Collingwood gives us in extract (f) of a two-tiered permanent structure is false, although Miss Fair's observations were accurate enough. Finally, in neither kiln did we find any evidence of the firing of pottery.

Our findings may be summarised as follows:

- (1) Kiln B was built to the same plan as kiln A. The measurements of the firing chamber, 6 ft. 3 in. by 6 ft. 3 in., accord well with those of kiln A.
- (2) Kiln B showed reconstruction of the firing floor and supporting piers.
- (3) The kiln walls and the stokehole above ground level have been robbed, likewise all loose brick and tile.
- (4) Box-tile and *tegula* wasters in the stokehole may indicate the kind of wares at the last firing.
- (5) Only one piece of Roman pottery was found; kiln B was not used for the firing of pottery.
- (6) No stamped tiles were found.

APPENDIX I: *The wares.*

Little need be said about the range of standard building-materials found in or near both kilns. Apart from wasters, whole brick, *imbrices* and heavy floor tiles 12 in. by 18 in., and 15 in. by 15 in. survived in the structure of kiln A. All were well made. The notched voussoirs are of interest; they must have been made in quantity judging by the fragments found. Miss Fair's *tegulae mammatae*, after some thought, are explained as the slotted sides of box-tile wasters tapered by fusion and distortion. The stokehole of kiln B yielded a number of *tegulae* of normal width and flange but only some 4 in. deep. None survived with the lower edge complete, but they appear to have had a rather long lobe or tongue, perhaps specially made as eave tiles.

APPENDIX II: *The pottery.*

The single rim fragment from kiln B, possibly once fumed, is from the typical Hadrian-Antonine cooking-pot, Gillam's type

120 (A.D. 125-160). All the other sherds without exception came from the threshold of the stokehole of kiln A.

- (1) Two conjoined pieces of rim from *mortarium* and part base, probably from the same vessel, in brick-red fabric with blue-grey core. Curve of rim like Gillam's types 242, 243, surviving grit variegated. Might have had white slip. A.D. 120-160.
- (2) Part rim and wall of dish in brick-red, rather coarse fabric with traces of grey fuming outside, no latticing. Gillam's type 308. A.D. 130-180.
- (3) Part rim and wall of platter in cooking-pot fabric. Gillam's type 306. A.D. 125-160.
- (4) Several conjoining pieces forming the bases of three cooking-pots. Mr Gillam tells me that they are quite unlike anything he has hitherto studied. The fabric is a hard reddish clay with white grit in it, rather larger than that in the usual Hadrian-Antonine pot. The wall is rather thicker and shows traces of fuming on the outside, while the decoration, the pared or turned band above the base and then the upright latticing on a matt surface, is undeniably 2nd century. My own view is that these pots are local imitations of the usual mass-produced pots. Perhaps they were made in order to meet a breakdown in the supply of pots to the army, an event we might infer from the discovery of repaired cooking-pots on so many Hadrianic sites.

ACKNOWLEDGEMENTS.

I again gratefully thank Mr Ian McWilliam, agent to the Muncaster Estate, for allowing me to do more work on the kiln site, and also thank the Council of the Society for a generous grant.