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Roman Tile and Pottery Kiln at "Black Boy" Pits, St. Stephens, near St. Albans.

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ON March 29th, 1932, the writer noticed at the top of the exposed face of gravel in the "Black Boy" pit, owned by Messrs. Oliver and Sons, Limited, and situated $2\frac{3}{4}$ miles to the south-west of Verulamium, a quantity of brick and tile débris. Closer examination revealed the remains of a Romano-British up-draught kiln. The position of the kiln is shown in Figures 1 and 2.

With the assistance of Mr. E. H. Coleman, the writer excavated the kiln, a plan and sections of which are shown in Figure 3. The work of excavation was made rather difficult, as the kiln was situated at the top of the vertical face of the pit, which was 26 feet deep. A view taken during excavation is given in Figure 4. Unfortunately several feet of the main flue had been destroyed during the process of gaining the gravel prior to the discovery of the kiln, but sufficient of the kiln remained to enable its lay-out and constructional details to be determined.

Mr. W. F. Grimes, of the Department of Archæology of the National Museum of Wales, who has made an extensive study of Romano-British kilns, suggests the plan and section, also in Figure 3, as the possible original form of the "Black Boy" kiln. The kiln was almost identical in form with those excavated at Holt, Denbighshire, and described by him.¹ A model of the kiln illustrated in Figure 5, built to a scale of one inch to one foot, with part cut away to reveal the interior, possibly gives a clearer idea of its construction.

The kiln was of the normal up-draught type, consisting of a lower combustion chamber A, in which the fuel was burned, and an upper oven E, in which the tiles and pottery to be fired were placed. The oven floor B, was supported by a series of cross walls arched over the main flue. The oven floor, built of clay and

¹ W. F. Grimes—"Holt, Denbighshire"—*Y Cymmrodor* Vol. XLI. 1930.

"BLACKBOY" PITS.

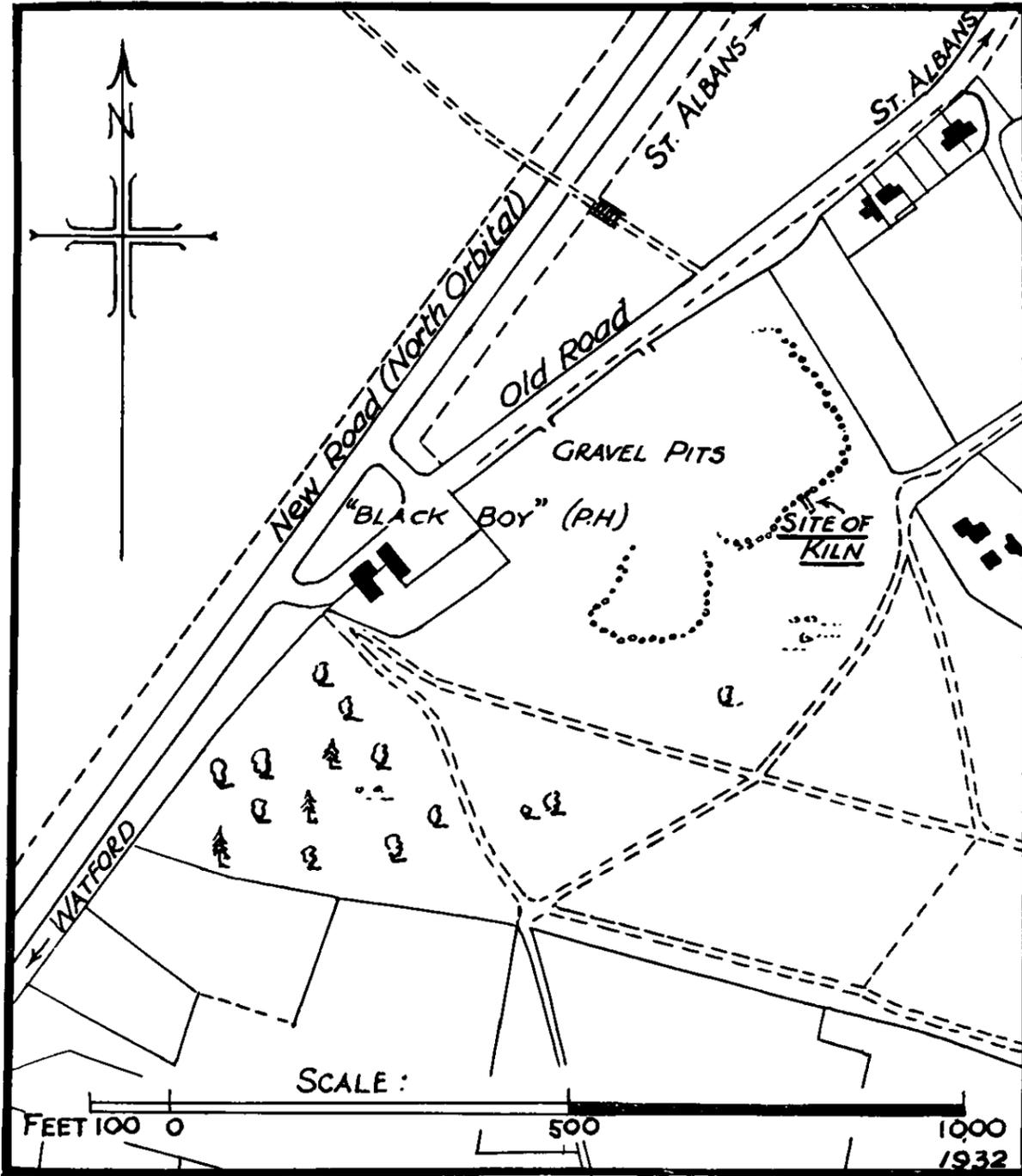


FIG. 1.

"BLACKBOY" RECTANGULAR TILE & POTTERY KILN

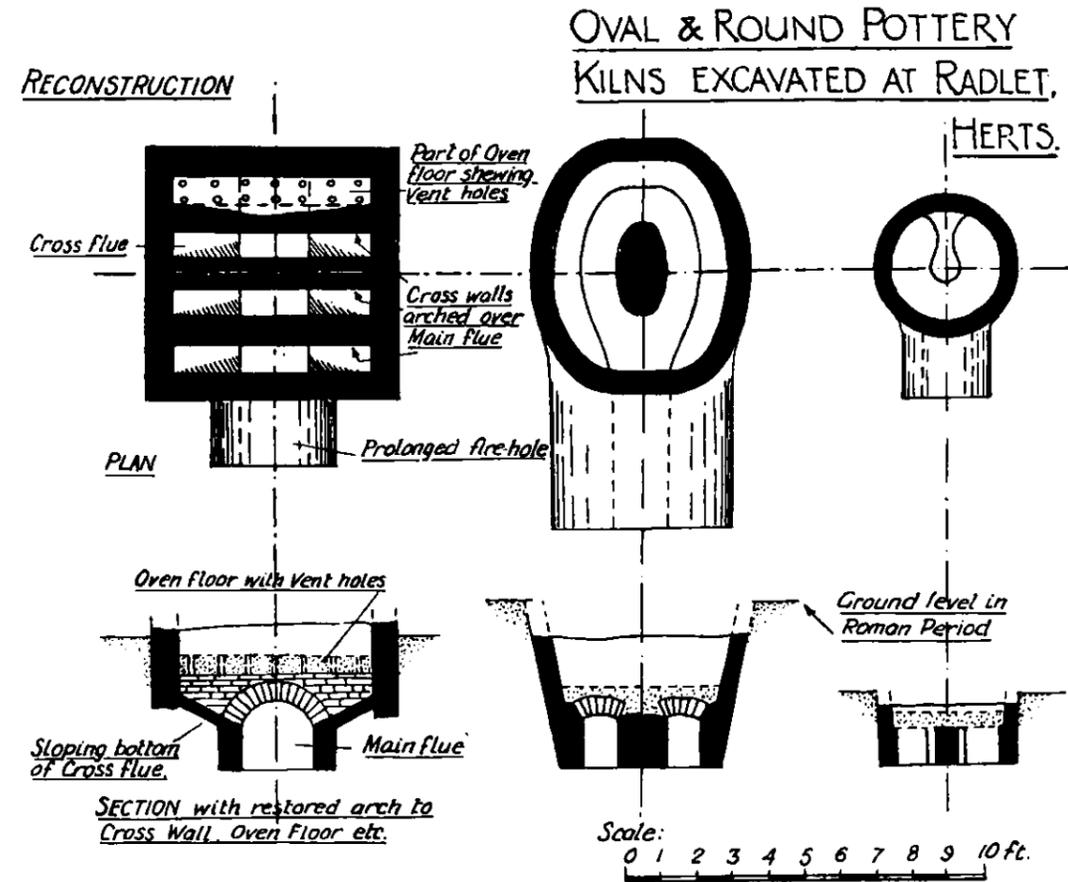
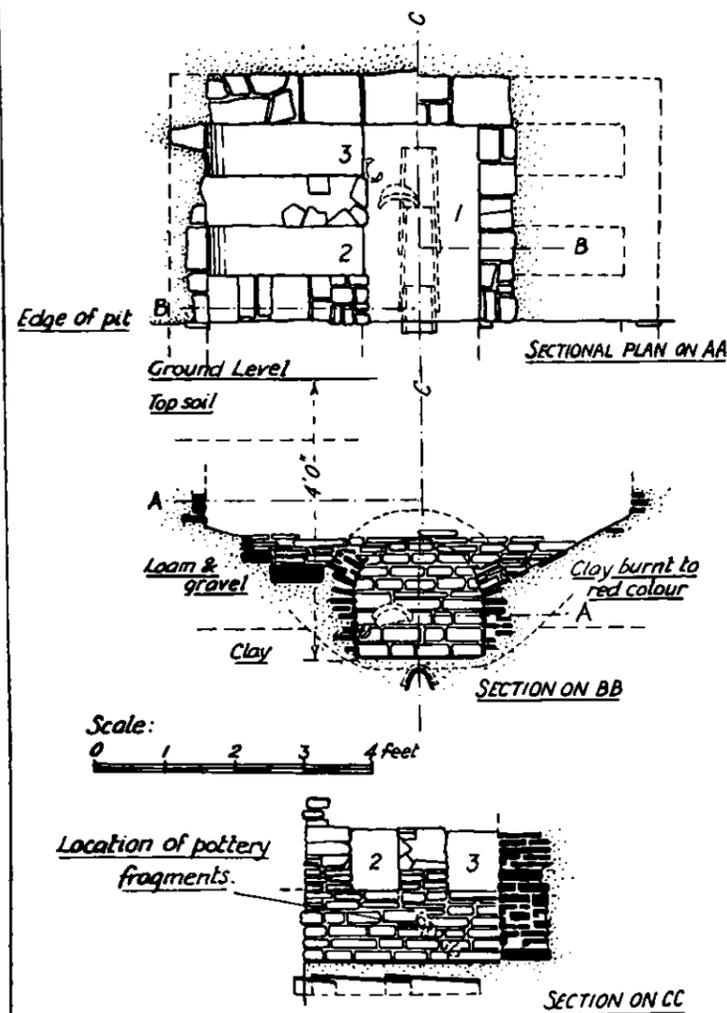


FIG. 3.

N.D

"BLACKBOY" PITS.

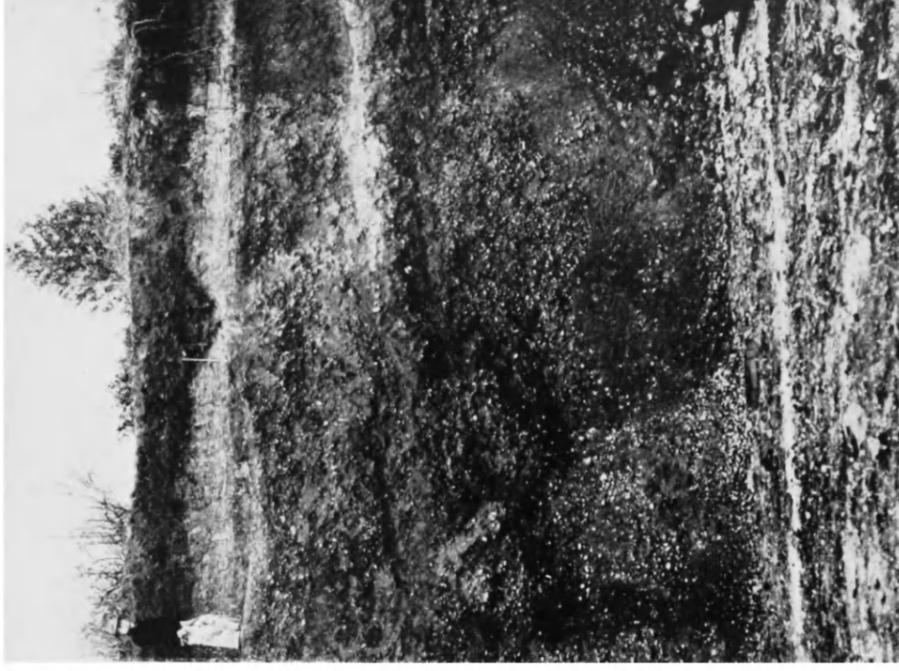


FIG. 2.

"BLACKBOY" PITS.



FIG. 4.

"BLACKBOY" PITS.

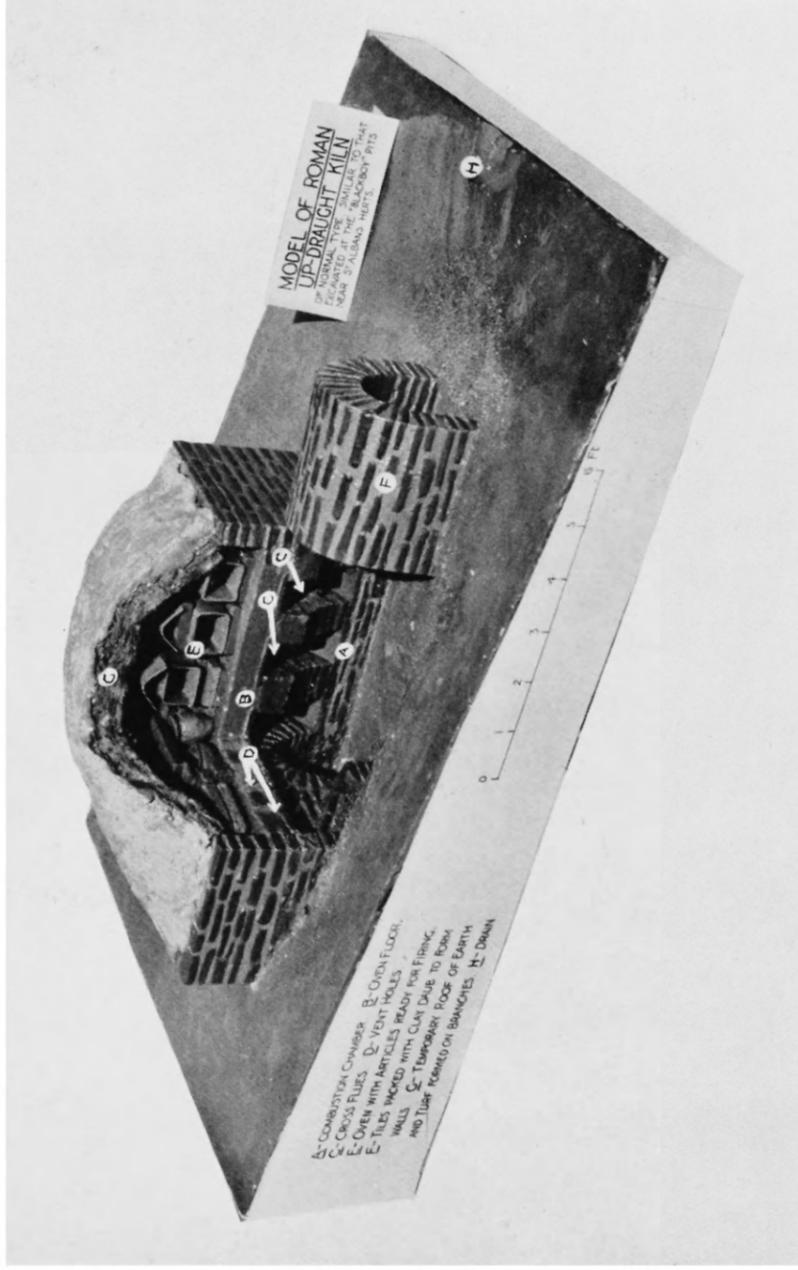
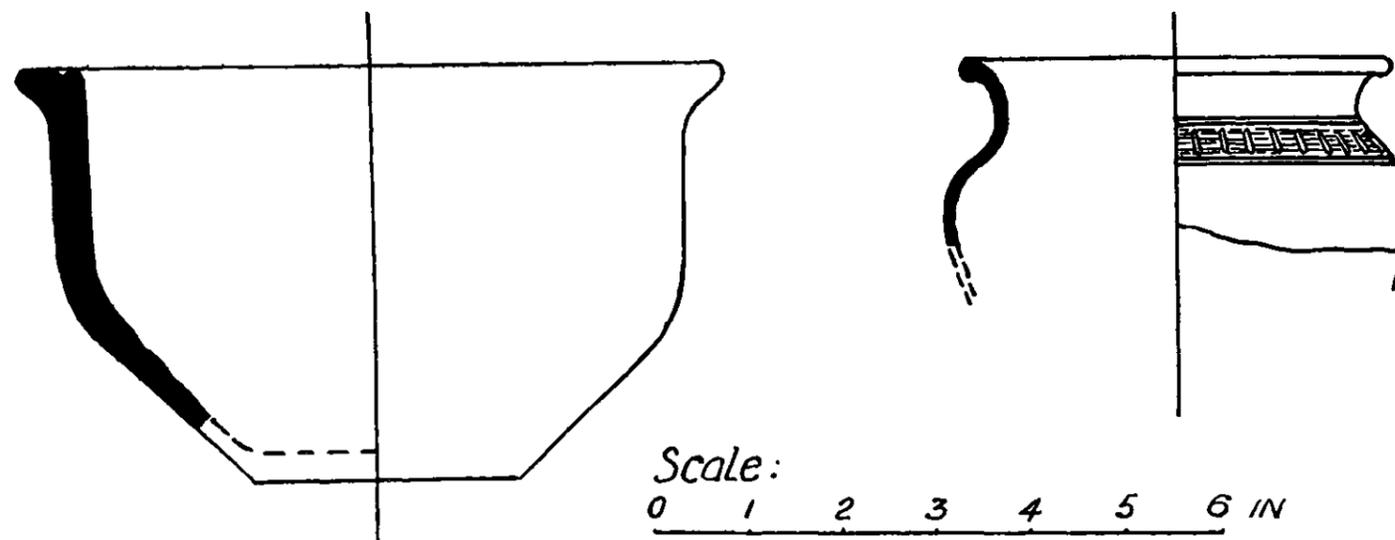


FIG. 5.

"BLACKBOY" PITS.



FIG. 6.



POTTERY FROM 'BLACKBOY' KILN

FIG. 7.

tile fragments, had collapsed, but when in position would have contained vent holes D, by means of which the hot air, gases, etc., would have been drawn upwards, from the main flue, up the cross flues C, which sloped upwards at an angle of approximately 20 degrees, into the oven containing the tiles being fired.

The structure as a whole was erected below the natural ground level in Roman times. The advantages of this type of construction were:—

- (1) the whole structure was more solid and more capable of withstanding the stresses set up by the great heat,
- (2) the heat losses from the kiln were greatly reduced, and
- (3) since the level of the oven floor was approximately the same as that of the ground, the packing of the oven with heavy tiles was rendered easier.

The structure was built of tiles and clay blocks varying in thickness up to 3 inches, bonded together with clay daub. Pieces of roofing tile (*tegulae*) were frequently used, as shown in Figure 3. The floor of the main flue was of clay, and was situated 4 feet 6 inches below the present ground level. Since the main flue had been excavated in a seam of clay the floor needed draining, and this was achieved by the insertion of a series of *imbrices* running longitudinally down the centre of the main flue about 6 inches below the floor level. This drain met the surface of the ground several yards to the front, or stoking end of the kiln. The ground sloped in this direction, as illustrated in the model, and this would have made the kiln easy to approach for stoking.

The oven may have had straight-sided walls for a good height, and have been either roughly vaulted with branches, turf, etc., as shown in the model, or covered with a layer of turf, etc., laid flat. In any case openings would be left in it to ensure a good upward draught drawing the heat through the oven.

Large quantities of tile, typical examples of which are shown in Figure 6, in varying stages of firing, were recovered from the kiln, and showed that the kiln had apparently been used primarily for the purpose of firing

tiles, including roofing tiles, walling tiles and flue tiles. Fragments of only two pottery vessels, shown in Figure 7, were found buried in the débris. The position of these vessels when excavated is shown in Figure 3.

The pottery fragments were examined by Mr. C. F. C. Hawkes, of the Department of British and Medieval Antiquities of the British Museum. A black bowl, which the writer was able to partially restore, was stated to be of a regular Roman type of the reign of Hadrian or Antoninus Pius (or, say, A.D. 120-150); and the jar neck fragments might be dated about A.D. 100-130 (or, say, Trajan-Hadrian).

In Figure 3 the outline of two pottery kilns excavated at Radlett about 3 miles from the "Black Boy" site by Dr. W. Page,² is given for comparison. In general principle these are similar to the "Black Boy" kiln, although they would seem to have been used solely for firing pottery. The chief difference is that one of the Radlett kilns was oval in plan, instead of rectangular, as in the case of the "Black Boy" kiln, and the oven floor was supported on a central table; while the other was circular in plan with the oven floor supported on a tongue-like column extending from the back wall to the centre of the combustion chamber, in a line with the fire-hole entrance. It is interesting that examples of the three known types of Romano-British up-draught kilns, rectangular, oval and round, have been discovered so close to Verulamium.

Thanks are due to Messrs. Coleman and Benson, of the Building Research Station, for assistance during the excavation of the kiln; to Messrs. Oliver and Sons, Limited, for facilities for carrying out the work; to Mr. C. F. C. Hawkes, of the British Museum, for information regarding the pottery; and to Mr. W. F. Grimes, of the National Museum of Wales, for many valuable suggestions.

² Lond. S.A. Proc. XVII., 261, and St. Albans Arch. Soc. Trans. N.S. 1, 176.