

THE REMAINS OF A SEVENTEENTH CENTURY CLAY PIPE KILN AT 13 CASTLE STREET, AYLESBURY, AND THE PIPES FROM A PROBABLE KILN SITE AT WHITEHALL STREET

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On behalf of Buckinghamshire County Museum, the remains of a seventeenth-century clay pipe kiln were examined in the interior of a house at 13 Castle Street, Aylesbury. Pieces of a cylindrical container (the muffle), in which the pipes were fired, were recovered from what was probably the stokehole. No kiln structures directly associated with the stokehole survived but two flues were found in the vicinity, one of which may have been associated with the stokehole. The pipes from this kiln are illustrated as well as those of a similar date from a probable kiln site at Whitehall Street.

The Excavation

During the course of extensive modifications to the five houses, Nos. 7 - 15, Castle Street, a brick-built flue running north-west - south-east was observed in March, 1979. The fill of this flue and a burnt spread surrounding it contained a large number of clay pipe fragments (Fig. 2 - Area A). In July an opportunity arose to open up a small area further north of the original find and against the outside of the seventeenth-century rear wall, but within the present structure of No. 13. Prior to the excavation a fireplace had been removed from the area where the trench was laid out. The area examined was 2 m. north-south by c. 1.15 m. The longer axis was truncated during the course of the work due to problems of spoil disposal; the northern 0.7 m. remaining unexcavated after a depth of c. 0.5 m. has been attained. Lack of time prevented excavation of material earlier than the stokehole. Although difficulties were experienced with the lighting, the work being carried out in half-light, it is felt that no features or relationships were missed.

The County site number is CAS 4451 and the Museum accession number 526.79.

Features Post-Dating the Stokehole

Two principal features, a wall (10) and a flue (3), presumably of a clay pipe kiln, were found post-dating the stokehole. The wall (not illustrated), which was of three phases, ran east-west and lay in the extreme south of the trench. Its relationship to the flue was indeterminable.

The northern end of the trench contained a brick-built flue (Fig. 3) running north-west - south-east. This was similar to the flue discovered further to the south in March. The south-west side of the excavated flue was two bricks thick, the inner face being three courses high, and the outer line two courses high, but set at a higher level so that

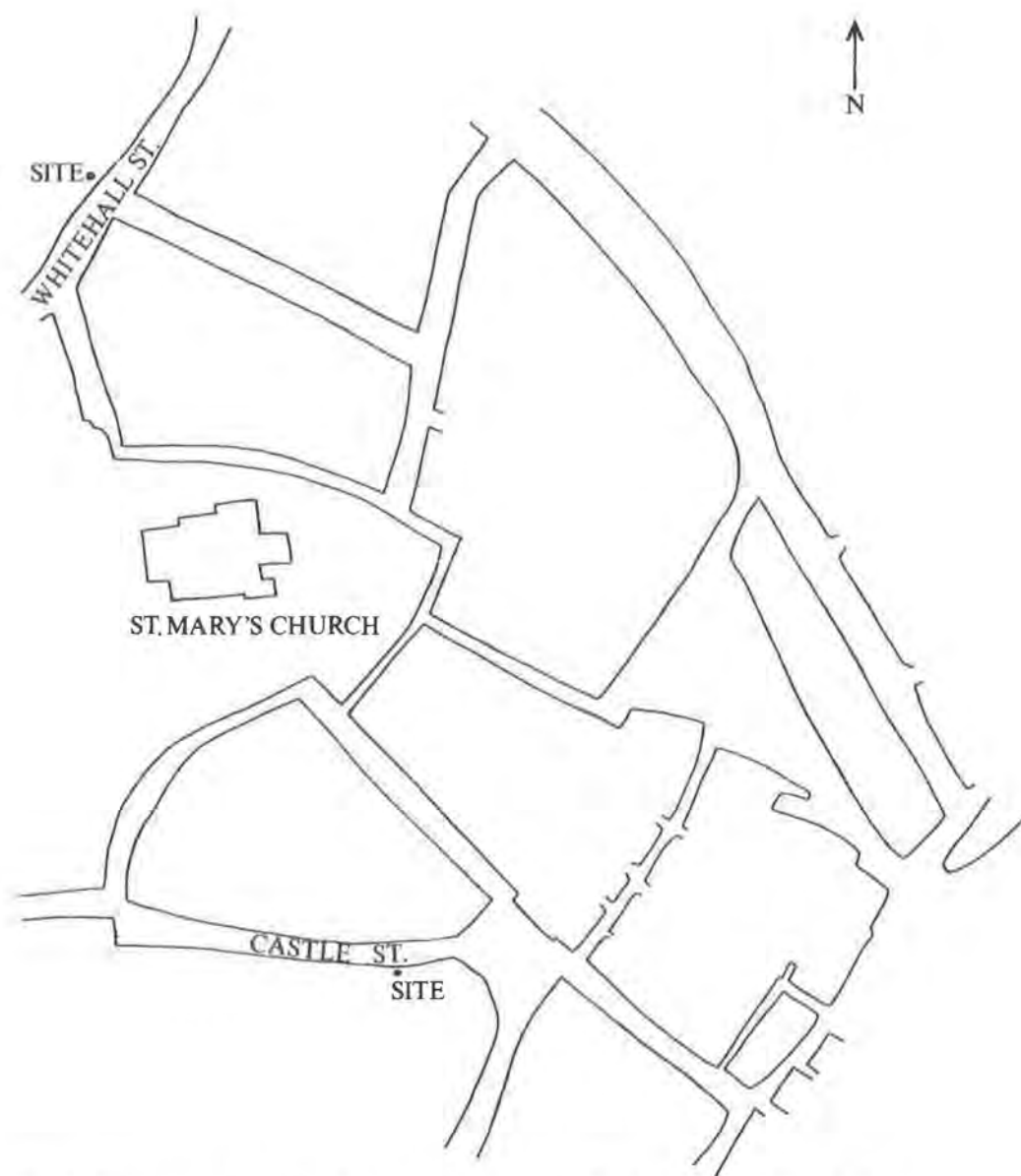


Fig. 1. The known clay pipe kiln sites in Aylesbury — Castle Street and Whitehall Street.

the top was one course higher (section — Fig. 3). The mortar remaining on the top of the uppermost bricks suggested at least one higher course. The other side and the north-west end were only one brick thick, mortared, laid end-to-end on their beds with two courses surviving. The floor of the flue was of bricks $0.11 \times 0.21 \times 0.03$ m. laid on their beds and unmortared. These floor bricks were covered with a thin layer of fine

ash which had also settled between these bricks. The internal width of the flue was c. 0.4 m. with a surviving length of 0.65 m; the overall width being 0.77 m. and the overall length 0.94 m. The open end (south-east) had been damaged and presumably would have continued to a stokehole on the east of the area examined. To the west of the flue (at the end) were further bricks, mortared, abutting the flue and the west wall of the house. Their function is unknown.

The Stokehole

Following the removal of the wall (10) and the flue (3), part of a pit was delimited; the southern and eastern parts of the feature being outside the area of excavation.

The pit (14) was roughly circular in shape about half lying within the area examined. (See Fig. 3). The excavated part measured 0.89 m. north-south and 0.95 m. east-west. The top part of the pit (c. 0.2 m.) had sides which were nearly vertical while the remainder of the sides were 30 to 45 degrees from the horizontal. The pit had a flat bottom with the eastern part being c. 0.03 m. shallower. The maximum depth was 0.4 m. The lower sides and bottom of this pit had been quite severely scorched leaving a fairly hard surface.

The primary fill was a thin spread of very fine loam, containing pieces of clay pipe. These pipe pieces appear to have been from one of the firings and not to have been used in construction of the muffle. Above this, the majority of the pit was filled with kiln debris mixed with some grey brown loam (16) — the loam being more prominent in the uppermost levels. This debris consisted of well-fired hand-made brick, tile, and a large quantity of muffle pieces. The majority of the brick and tile occurred in the upper levels whilst the lower half consisted almost entirely of sections of muffle. Some grey clay was present, presumably unused or unusable pipe clay.

The uppermost level of the pit was filled with a grey brown loam with some small pebble. This layer (15) was only 0.03 m. thick and contained some half bricks and roofing tile.

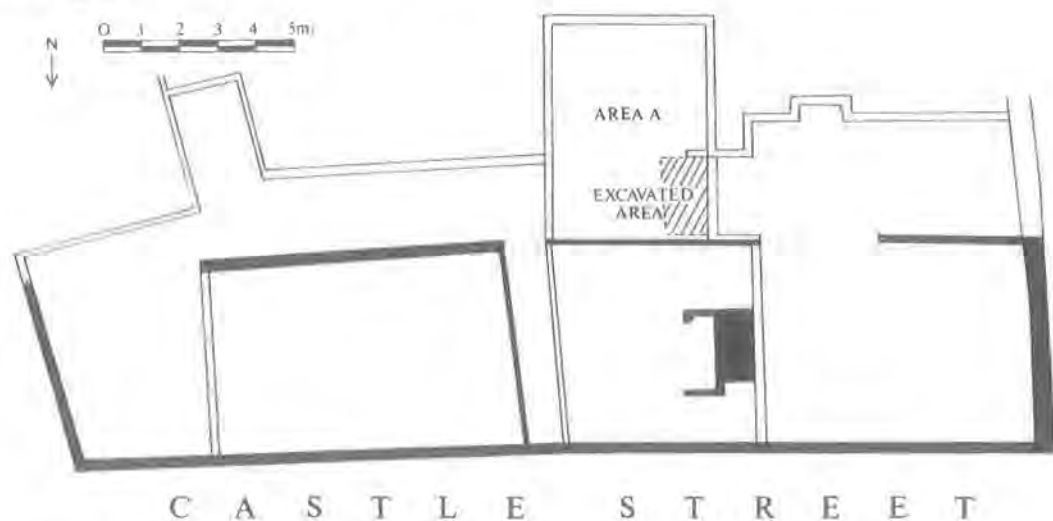


Fig. 2. 7 – 15 Castle Street. Original seventeenth-century building in black.

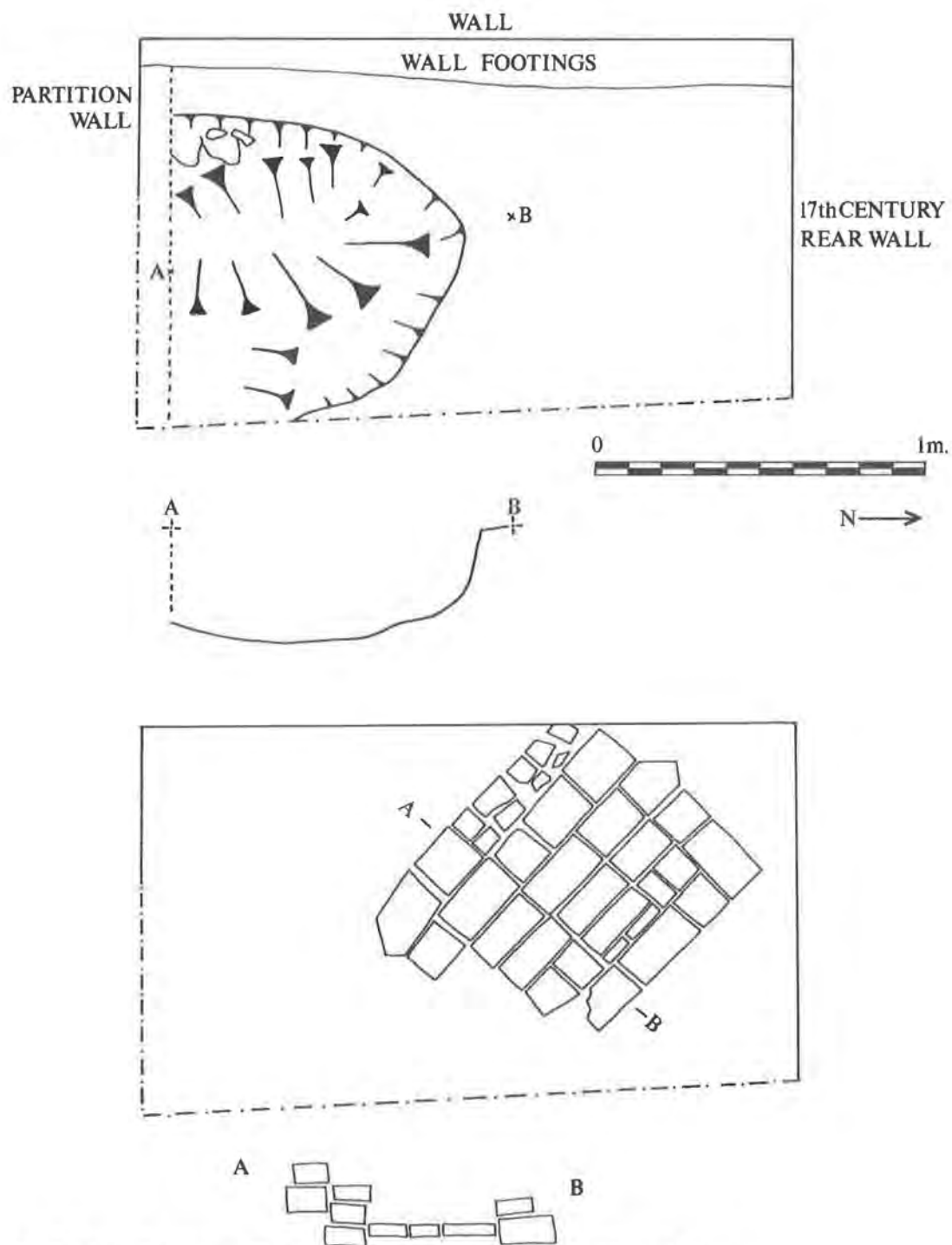


Fig. 3. Top: plan and profile of stokehole. Bottom: plan and section of flue.

The Kiln Furniture

A large number of pieces of muffle (a cylindrical container for holding the pipes during firing) were recovered from the ash pit. These consisted of fired clay pipes embedded into clay — presumably usable pipe clay — usually in one layer, but in one piece recovered, the pipes were in three layers. The overall thickness of the muffle pieces varied between 0.01 to 0.04 m. The pipes were laid in the clay in a vertical plane at an angle of 45 degrees, herringbone style (Fig. 4). Pipe bowls as well as stems were used in the construction of the muffle and in many cases pipes only appeared to be missing the stem tip. The pipes used for the muffle did not appear to be wasters.

Some of the pieces of muffle had a rounded edge, in the form of a rim, which suggested a diameter of 0.32 — 0.34 m for the top of the muffle. The rim pieces generally indicated a circular form for the muffle. Two pieces were almost straight but this may have been due to a partial collapse of the muffle before the clay had dried. The sides of the muffle appear to have been nearly vertical and so the overall form was apparently cylindrical.

Lug-like attachments occurred on the sides of the muffle. Twenty-six of these were recovered, the majority having their tops either level or slightly above the rim of the muffle. In other cases they were set c. 0.02 m. below the rim and in two instances they were much lower down the body. There appear to be two different types of lug resulting either from different degrees of firing (the more probable) or possibly from the use of different types of clay. The commoner form was rounded with its top parallel to the rim. The other type of lug found was 'overfired' (cracked and very brittle) and was more angular with all four sides well pinched in. This type was attached to the muffle below the rim. The attachment of the lugs was strengthened by horizontal pieces of stem acting as pegs. The outer side of the lugs was flattened and had impressions similar to those which would be found when clay has been pressed against a brick wall, i.e. when the mortar between two bricks is not flush with the bricks and a ridge of clay is formed.

The muffle pieces recovered were in two states of preservation. The most commonly occurring were in a fragile state with layers of fired clay flaking off, the colour on the outside being blue grey and the inside white with a red to buff core. The other type was very stable with little or no flaking and a white or buff exterior and white interior. Although this may have been due to different types of clay being used, it was more likely that the muffle received differing degrees of heat and the more fragile muffle pieces were nearer the heat source. The majority of this fabric had a type of glaze, a self-induced flux. All the rim pieces were in the more stable fabric, again suggesting that parts in this fabric were further from the heat source.

The function of the lugs would appear to be to create a gap between the muffle itself and the wall of the kiln, enabling a free flow of hot air throughout the kiln.

No evidence was found of supports within the muffle for packing the pipes during firing. However, many very thin pieces of fired pipe clay (less than 0.001 m.) were recovered from the fill of the pit and, while some must be pieces flaked off from the interior of the muffle, others could have been used as packing.

Discussion

It seems that there were at least two clay pipe kilns on this site; one represented by the stokehole which may have been associated with the flue originally found, the other

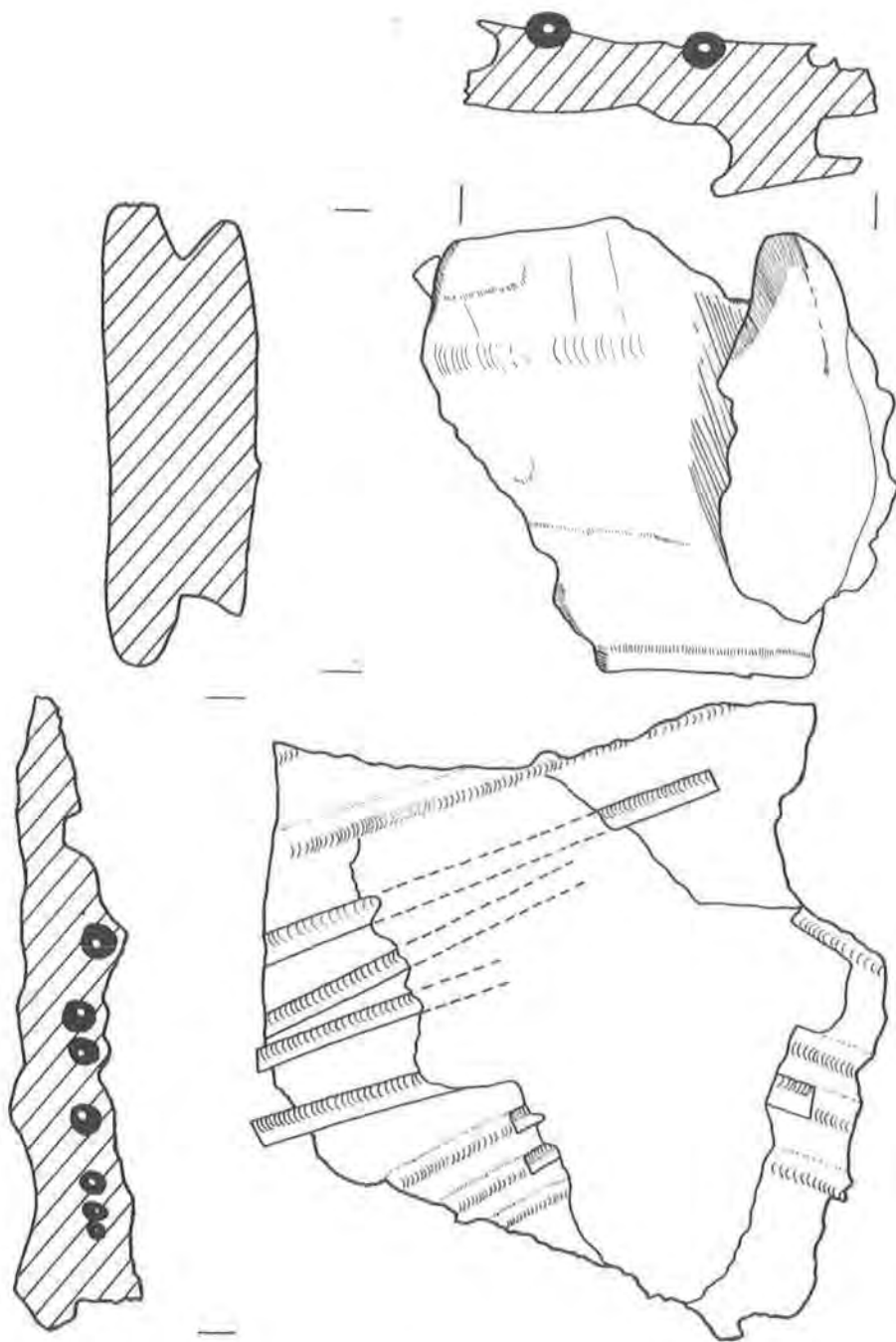


Fig. 4. Top: Muffle piece showing direction of embedded pipes.
Bottom: Lug-like attachment on muffle side. (Scale $\frac{1}{2}$).

kiln represented by the flue sealing the stokehole.

The Aylesbury kilns are very similar to one excavated at Aldgate, London, which had a rectangular brick flue and a circular stokehole (Thompson, 1978). The superstructure above the flues must have held a fire area and a firing chamber. The diameter of the muffles suggests that either the firing chamber was small or that more than one muffle was used during each firing. The length of the flue would have allowed for two muffles side by side. Their height was presumably just over one pipe length (c. 0.3 m). Possibly muffles could be stacked on top of each other, at least two high. If they were stacked, then the muffles would receive differing degrees of heat which would explain the different states of the muffle pieces recovered.

The Finds (Fig. 5)

From the excavation and the flue lying outside it (Area A – Fig. 2), a total of one-hundred and eight pipe bowls were recovered. Further bowls were present within the muffle structure but could not be examined as the clay of the muffle walls masked them. The pipes fell into nine classes (Fig. 5) of which types 1 - 3, and probably 6 - 7, were produced on this site. Types 1 - 3 have long elongated bowls similar to Oswald's types G8 - 9 (Oswald, 1975) and must be dated to the end of the seventeenth century. Of the sixty-five pipes of types 1 - 3, about a third were stamped with the maker's mark, EK, which would appear to be the mark of the pipe-maker on this kiln site. Type 6, with a large bulbous bowl and spur, and type 7, with a larger body, date to the middle of the seventeenth century, according to Oswald's classification (Oswald, 1975). It is thought that the types 1 - 3 and 6 - 7 were produced at Castle Street due to the number found, and also the fact that they had been used in the construction of the muffle. The bowls used in the muffle construction make up 25% - 30% of the total number of bowls found of each type. Type 4 is similar to Oswald's G6 (Oswald, 1975), with a large bulbous bowl and large base. Only two examples were found, both from Area A. Since both types 1 - 4 and 6 - 7 were found in the same contexts, the date the kilns were in operation was probably c. 1670 - 1690.

Although the dominant stamp numerically was EK, the marks of seven pipe-makers were present on the pipes from the Castle Street site. Some of the same bowl types bear the marks of different pipe-makers; five different stamps for instance occurred on type 2.

Type 9, the upright cylindrical pipe, has the mark of ROB GADNEY OXON; he is recorded in the Hearth Tax returns for Oxford during the period 1667 - 1677 (Oswald, 1975). The only other mark attributable to a known pipe-maker is the mark HF, which occurs four times. This is the mark of Henry Flooke, recorded in 1692 at High Wycombe (Oswald, 1975); more of him later. The mark IS occurring once could be John Smith of Aylesbury, first recorded, as a pipe-maker, in 1709 when baptising a son, or John Suthers, recorded as a pipe-maker in 1695 at the Aylesbury Quarter Sessions. The marks WL and TD with a rose (a very common mark on the pipes found in Aylesbury) both occur once. The mark of George Weaver on type 5 again appears on only one pipe and is of a type that dates to the end of the seventeenth century. Unfortunately no record has yet been found of a local pipe-maker with the initials EK.

Listed overleaf are the nine types, with the total number of examples of each type occurring, the contexts in which they were found (bracketed numbers), and the makers' marks occurring on them.

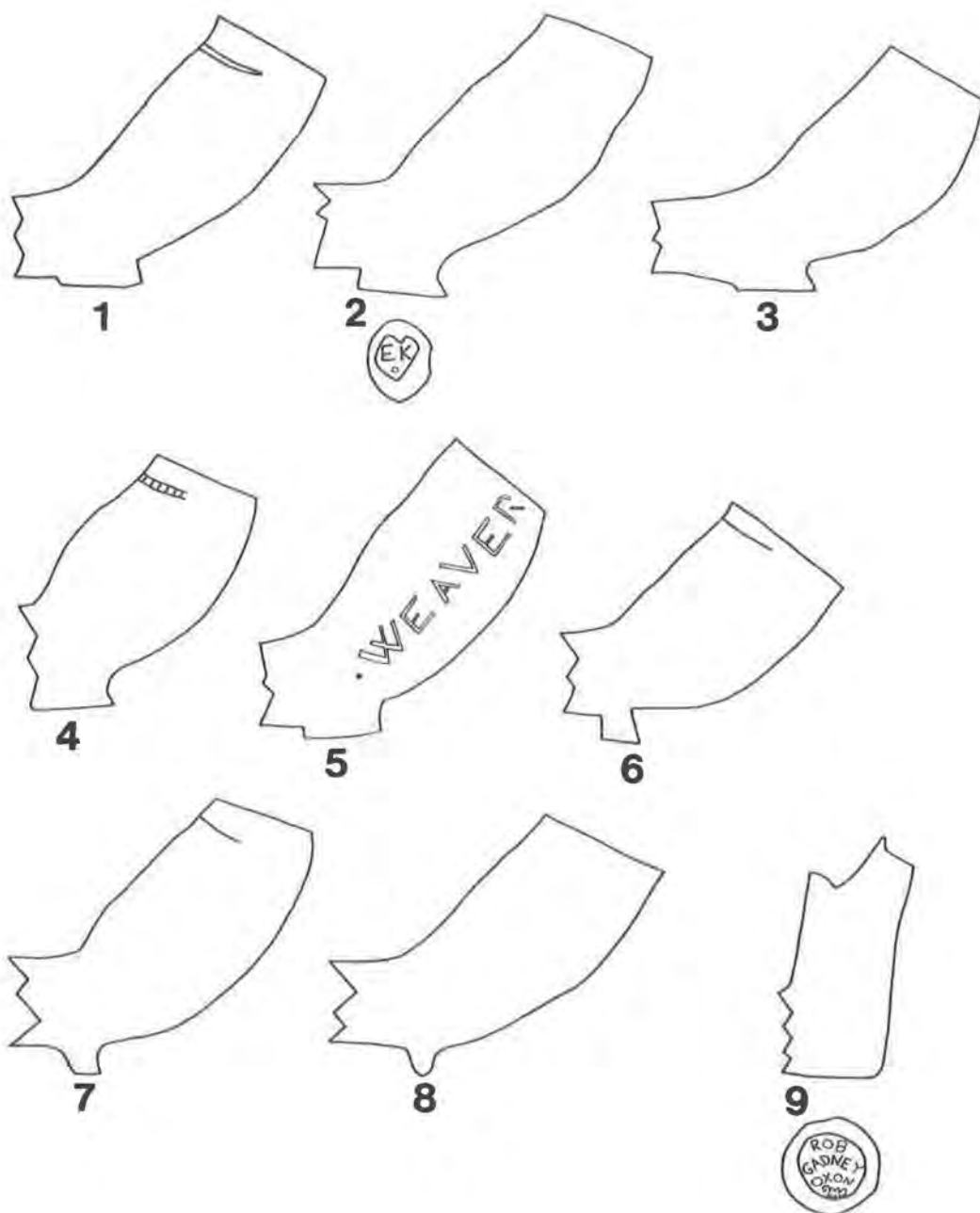


Fig. 5. The types of pipe found at Castle Street. Types 1 - 3 and probably 6 and 7 were produced at the site. (Scale 1:1).

- Type 1: 25 pipes; 1 from (7) stamped EK, 14 from (16) of which 9 are stamped EK, 10 from Area A of which 5 are stamped EK.
- Type 2: 32 pipes; 5 from (8) of which 4 are stamped EK and 1 stamped TD, 5 from (12) of which 2 are stamped HF, 1 from (15), 13 from (16) of which 4 are stamped EK and 1 each of IS, WL, HF, 5 from (17) of which 2 are marked EK, and 3 from Area A of which 2 are marked EK.
- Type 3: 8 pipes; 1 from (2) stamped EK, 2 from (12) stamped EK, 4 from (16), 1 from Area A stamped HF.
- Type 4: 2 pipes; both from Area A.
- Type 5: 1 pipe; from Area A, other side is missing but should read GEORGE in relief.
- Type 6: 7 pipes; 1 from (12), 3 from (16), 3 from Area A.
- Type 7: 10 pipes; 1 from (4), 3 from (15), 4 from (16), 1 from (17), and 1 from Area A.
- Type 8: 2 pipes; 1 from (7), and 1 from Area A.
- Type 9: 1 pipe; from (8).

The excavation only produced seventeen pottery sherds, all of which appear to be local wares of a type not altering the time-scale suggested above for the manufacture of clay pipes on this site. The only other notable find was the top and bottom of a cylindrical glass bottle.

The Whitehall Street Pipes

During re-development work in 1963 on the west side of Whitehall Street opposite the end of Ripon Street, a quantity of clay pipes were uncovered. These pipes (CAS 1821, Mus. Acc. No. 25.63), were examined by Oswald, who dated them to c. 1700 $\pm$ 15. The majority of them are stamped HF for Henry Flook, who is recorded at High Wycombe in 1692 (Oswald, 1975). Many of the pipes are unburnished with a very rough appearance. One waster was present amongst the pipes collected and therefore the pipes are believed to represent a kiln site. Although Henry Flook is recorded at High Wycombe in 1692 and the pipes are dated 1685 - 1715, the presence of pipes bearing the mark HF on the Castle Street kiln site suggests that Henry Flook moved from Aylesbury to High Wycombe just before 1692 — the Castle Street kilns being dated to c. 1670 - 1690. The associations of Henry Flook's pipes with those of the Castle Street pipes show that the two kiln sites were in operation at the same time. Five types of pipe were present on the Whitehall Street site (Fig. 6), although only one example of type 5 was recovered.

Type 1 with a pedestal foot and the line of the lip almost parallel to the stem resembles Oswald's G10. This type is in a very yellow clay.

Type 2 with a shorter pedestal foot and more upright than type 1 with a wider bowl. The clay is not as yellow as that of type 1.

Type 3 with a narrower bowl in white clay. Bowls unburnished with a very rough appearance.

Type 4 with a spur in a yellow clay but less yellow than type 2. Thin bowl which is slightly flared at the top.

Type 5 is straight-sided and upright.

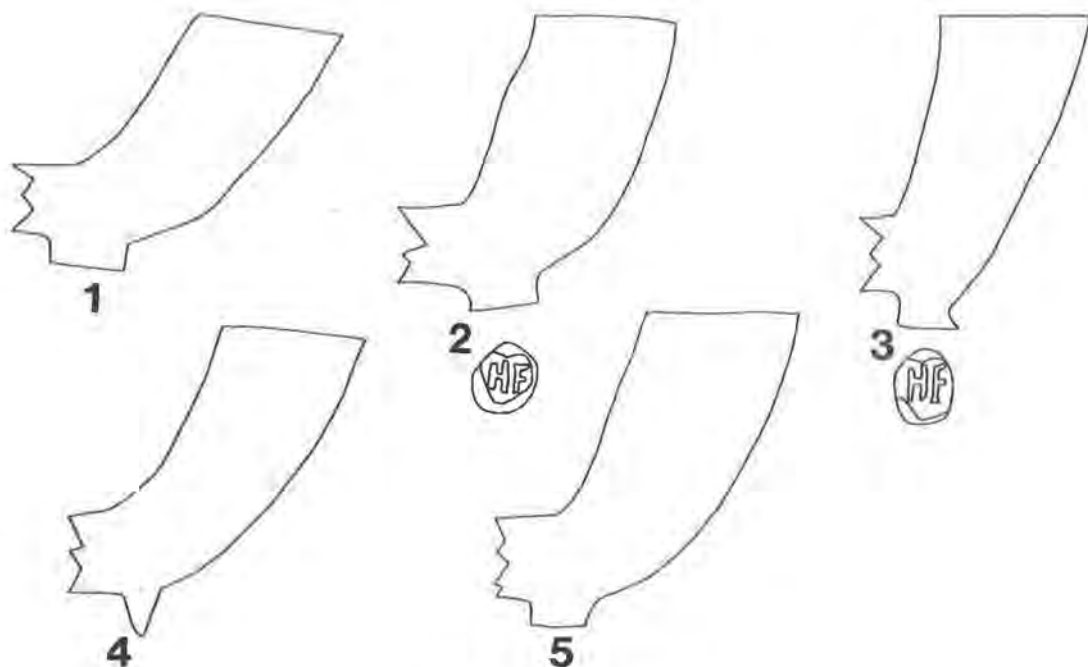


Fig. 6. Type series of pipes from Whitehall Street, (scale 1:1).

Acknowledgements

Thanks are due to the Trustees of the Hickmans Charity — the owners of the Castle Street site — for allowing the excavation to be carried out. The generous co-operation of A. Edmonds, the site foreman for Borrow Brothers and who originally reported the find, must be mentioned as must John Bailey for his examination of the standing structure and M. Farley for his advice on the project and comments on this report.

Addendum

Further work on Aylesbury pipemakers by Mrs. Marian Hall has produced a few additional names. One John Sudell, who also appears as South, Southwell and Sedwell in parish registers, m. 1678, d. 1730, is another possibility for the I.S. stamp from the Castle Street site. Other Aylesbury pipemakers include Edward Carwood, 1693, and James Brandon, 1697, both in Quarter Session records, and Edward Hester, d. 1740, his apprentice Ambrose Knight, 1713; and Charles Hester, d. 1760, all appearing in the parish registers.

It might be worth mentioning that Jeremian Wetherby, who appears in Oswald's list of Aylesbury pipemakers, should perhaps be deleted since he was apparently a Berkshire man later working in London. His wife appears twice for vagrancy and produced a child in common lodgings. After serving his apprenticeship, he worked as a farmer's servant. This information is derived from Quarter Session records.

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