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The Excavation of a 19th-Century Clay Tobacco Pipe Kiln in Boston, Lincolnshire

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INTRODUCTION

THE area of Boston bounded on the north by Lincoln Lane, on the south by West Street, on the east by the River Witham, and on the west by Rosegarth Street, was the centre of operation of a fairly high proportion of the pipemakers of the town during the 19th century. An indication that pipemaking had been carried out in earlier periods in the same area is given by the existence of Pipemaker's Lane, which by the 19th century appears no longer to have been connected with the trade.

An opportunity came to excavate when much of the area was cleared for redevelopment. One of the pipemaking sites, at 28, Rosegarth Street (O.S. TF326441), was selected from documentary evidence, and was identified on the ground without difficulty by the large quantities of ash, pipestem fragments and some vitrified brick. Permission to excavate was granted by the Boston Borough Surveyor, Mr. C. R. Theobald, and the excavation took place during 1967 and 1968.

The kiln is first mentioned in White's *Directory of Lincolnshire* of 1856, under the name of Edward Manning, who was born in 1821, and whose father, Joseph Manning, was also a pipemaker. His name continues to be associated with the kiln until his death in 1892, when the work was taken over by his son, Joseph, who went on until 1919, when he also died at the age of 70. The kiln does not appear to have been used after that time, and the only pipemakers then left working in the County were the Starr family of Grantham, who continued until about 1927.

A number of local residents still remember Joseph 'Pipey' Manning as a tall man, with a large '10 gallon' hat, pushing a barrow loaded with pipes around the public houses and shops. The kiln itself was in a building off the yard of the 'Hop Pole' public house, and although he actually lived at 20, Pinfold Lane, Joseph later took to sleeping near the kiln, and it was there in the kiln room, that he died in 1919.

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THE EXCAVATION

The kiln and the building in which it was situated, were built on a foundation of alternate layers of chalk and ash containing pipes and debris from another kiln. (Section. Fig. 3). The natural soil on which this foundation layer had been laid contained sherds of Delftware, Nottingham stoneware, and single sherds of Undeveloped Stamford ware, shell-gritted and green glazed wares, in addition to three worn fragments of pipestem. On top of the chalk layers were thin patches of clean sand and mortar, indicating the construction level of the kiln and the building. A number of post-holes were found in the chalk which contained traces of wood identified as oak or ash, and which presumably indicate the use of scaffolding during the construction. Above this on the north side of the kiln was a layer of rubble 30 cms. deep on which had been laid a brick floor. On the south side of the kiln this floor had been removed when an additional feature, a possible drying chamber, was put in. Overlying the floor, and the drying chamber, was a rubble layer caused by the demolition of the building.

Three steps, with oak edging, led down from the floor level in front of the kiln into the stokehole. The floor of the stokehole was of brick, and was covered with ash containing a large quantity of pipes which were presumably the remnants of the final firing of the kiln. Also on this floor were found fragments of unfired pipes.

The kiln itself (Plan, Fig. 1) was a rectangular structure of brick, with a circular firing chamber about 1.5 m. in diameter. It was of updraught type, and the floor of the firing chamber, which was of highly vitrified fire-brick, had ten vents to carry the heat from the fire into the chamber above. The central part of the floor of the firing chamber had been destroyed during demolition, and it was not possible to reconstruct it accurately. The fire would appear to have been supported on iron bars above an ash pit, whose floor was level with, and a continuation of, the stokehole floor. The kiln was packed and emptied from the stokehole, and the entrance bricked up during firing. The fuel used was coal.

On the south side of the kiln was a second rectangular structure, which consisted of two narrow flues running parallel to one another and on either side of a chamber 1.25 m. deep by 0.9 m. wide. The northern flue had a floor of loose bricks supported on iron bars above an ash pit, and the southern flue had a similar floor of broken saggars¹ bases. The two flues were built of brick, and the floor of the chamber between them was made up to the same level with compressed ash. It is possible that this structure was a second kiln, but it seems unlikely that it would have been capable of reaching the required temperature to fire the pipes. An alternative possibility is that it was a drying chamber used for thorough drying of the pipes prior to firing. Beneath this feature was a pit whose contents were dateable to about 1861 (see Pipe No. 10 below) thus proving the 'drying chamber' to have been added some years after the building of the kiln. Some of the bricks in the 'drying chamber' were made by Cliff and Sons, Wortley, Leeds, a firm which seems to have started about 1810 and closed down in 1922. Besides being ordinary brick makers they specialised in fire bricks.

THE FINDS

PIPES

- A. Pipes found predominantly in the foundation levels, predating the kiln and deposited between c.1830 and c.1850. (Fig. 2, Nos. 1-9)
1. Maker unknown. Bowl type c.1800-1840. At least 70 examples represented in the excavation.

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2. Initials I.N. on the spur. This possibly refers to James Nettam, whose son was baptised in 1802, and whose occupation is noted in the Parish Register as a 'pipeman'. About 100 were found in the excavation, and examples are known from Old Leake, Sibsey and elsewhere in Boston.
- 3-5. These pipes all have the initials L.T., and were made by Laurence Thompson, who is known to have been working in Boston from 1826 to 1842. The Directories list him as working in St. George's Lane and in Pinfold Lane, both of which are very close to the Rosegarth Street kiln site.
3. Initials on spur. At least 60 represented in the excavation, and further examples known from villages around Boston and as far afield as Spalding.
4. Initials moulded on bowl. Two slightly differing versions of this design are known, both of which were represented in the excavation. About 15 pipes in all. Numerous examples are known from around Boston and up to Wainfleet. There are also duplicates in Scunthorpe Museum and Gunnersbury Park Museum, London.
5. Initials on spur, Masonic symbols on bowl. Out of about 100 pipes of this design only three were found to have initials, the others all having plain spurs. There is, however, little doubt that they were all made by the same maker.
- 6-8. Plain pipes. Makers unknown.
9. Bowl type c.1820-1860. Pipes of this design have been found elsewhere in Boston in association with L.T. pipes, and are most probably made by Laurence Thompson.

Among other pipe fragments found in the foundation level, and not illustrated, was one by Robert Winn, who was working in Boston from 1815 to 1827, and one by Dirk van der Valk, who became a master pipemaker at Gouda in Holland in 1771.

- B. Pipes found predominantly in a pit beneath the 'drying chamber' and dateable, on the evidence given below, to c.1861. (Fig. 2, Nos. 10-12)
10. There were 74 bowls of this type in the pit, and 12 of them were found to have pencil writing on the bowls. In some cases the writing was indecipherable, but the others were marked with initials and/or dates, while two have names which may possibly have been the names of ships. The legible marks are as follows: (a) E.R. (b) The Brooch. (c) R.H.P. July 3rd. (d) W.P. (e) R.H.P. (f) Aug. 11th. (g) Denmark. 12 Aug/61. (h) J.V. It is perhaps significant that about two-thirds of the pipes in this group, including all of the marked ones, appear to have been smoked, and it may well be that they were rejects from a batch which had been brought in for re-firing in order to sterilise them. The initials on the bowls could then be for easy identification of the owners. Evidence for the firing of used pipes to 're-condition' them is given by J. A. Daniell in 'The Making of Clay Pipes in Leicester.' (*Trans. Leics. Archaeological and Historical Soc.*, Vol. XL, 1964-65.)
- 11-12. About 13 examples of No. 11 and about 6 examples of No. 12 were represented in the pit. Both types are found elsewhere in the Boston area.
- C. Pipes found largely in the make-up of the 'drying chamber' but not represented in the final phase of the kiln's production. Deposited after 1861. (Fig. 2, Nos. 13-23).
13. Initials E.M. on the spur. Made by Edward Manning of Boston. Two slightly differing types of this pipe are known. The one illustrated is the earlier and is not represented in the final phase, whereas an almost identical type, but with thicker walls and no milling around the top of the bowl, was still being produced in 1919. The pipes are fairly common in the Boston area, and one example of the later type is known from Long Sutton.

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14. 'E. MANNING' moulded on one side of the stem, 'BOSTON' on the other side. One complete pipe was found and the length of the stem is 9 cm. Other finds of this type were fragmentary, representing about 14 pipes in all. The actual date for the pipe would be between c.1860 and 1892, but it seems to have been made up to 1919. Only about 6 other fragments are known, including one from Spalding.
15. Some examples of this type were also found in the latest deposits, and its distribution spreads as far as Spalding. Nos. 16-23 show other pipes from this level, probably deposited c.1860-90. Also in the same level was a stem fragment with the stamp of E. Southorn, who was working in Broseley, Shrops. in 1863 and died in 1876. 5 other stems with the mark of the same maker were found in the surface levels.
- D. (Fig. 2, Nos. 24-34) Pipes found mainly in the latest levels, all of which were included in the final batch of pipes produced by Joseph Manning in 1919. The overall date range is c.1860-1919. Complete examples are known of Nos. 24, 25, 31, 33 and 34, which all have stems 9 cms. long.
- E. (Fig. 2, Nos. 35-39) Pipes found only in the final batch dating to 1919. A complete example of No. 37 was found and the length of the stem was 7.75 cms.

When the distribution of pipes from the kiln is plotted it coincides exactly with the 'market radius' of Boston, which has been calculated at about 16 miles radius, and which is based on market day links with towns and villages by carrier and sailing packets listed in Whites Directory of 1826. (G. Joan Fuller. 'Geographical Aspects of the Development of Boston, Lincs. between 1700 and 1900 A.D.' *East Midland Geographer*, No. 2, Dec. 1954).

KILN FURNITURE

There was no saggarr material in the levels before 1860,² although kiln debris of different kinds, such as highly vitrified brick and packing material containing pipe fragments were plentiful. Also present in the pre-1860 levels, but not after, were numerous pieces of pipe-clay rolls of about the same thickness as pipestems, but without the bore through the centre. Many of these have a series of impressions of part of the bowl pattern of pipes found in the same levels, including Nos. 2, 3 and 5. These rolls must have been used when stacking the pipes ready for firing, and it would appear that they were stacked in a circular manner, whether in saggars or not is difficult to say, with the bowls downwards and to the centre and the stems pointing upwards and outwards. The rolls of fresh pipeclay were placed firmly around the ring of pipes, resting on the backs of the bowls, and they would then support the succeeding layer of pipes. None of these were found in conjunction with the saggarr material, all of which came from the post-1860 levels.

The saggarr material and kiln furniture was of several different types, some being fireclay with varying amounts of grit included, some fireclay containing fragments of pipe, and some very coarse, lightweight material containing large amounts of pipeclay and pipe fragments. Most of the saggars were cylindrical, although some sherds of rectangular ones were found. Some of the saggars were simply cylinders with separate bases and lids, others had base and sides in one piece. Some of them were lime-washed inside, and joints between bases and sides had been sealed with lime-wash, pipeclay or fireclay. The fireclay saggars containing no pipe fragments were from 38 cms. to 43 cms. in diameter, with thicknesses of 1.3 to 1.9 cms. Only one piece was complete enough to measure the depth, and this was 23 cms. The saggars containing pipe fragments, and therefore presumably 'home-made', were smaller, varying in

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diameter from 33 cms. to 38 cms. and in thickness from 1.3 to 1.9 cms. All of the rectangular saggars, and all those with bases and sides in one, contained pipe fragments.

Other kiln furniture included various types of prop and some pieces of 'batts', or shelves, of a light, pipe-filled, pipeclay fabric, in some cases with long pieces of pipestem for strengthening, running around parallel to the edges and about 2.5 cms. in. The props were of three different types. Type 1 is a simple, solid cylinder, of which two sizes were found. The first was 5.5 cms. high, and 7.4 cms. in diameter, and the second was 8.4 cms. high, and 7.9 cms. in diameter. Type 2 (Fig. 4 No. 1) was a waisted, solid cylinder 12 cms. high, and 8.3 cms. in diameter. Type 3 (Fig. 4, No. 2) was a truncated cone 18 cms. high, with a diameter of 7.6 cms. at the top, and 11.4 cms. at the bottom. Fig. 4, No. 3 is a piece of kiln furniture of uncertain function. Fragments of two of these were found, and they were of a very crumbly, pipe-filled fabric. The dimensions were, 22 cms. high, 23.3 cms. wide and 6 cms. thick, with the hole being about 3.3 cms. across. A number of other pieces of kiln furniture were found, but they were too fragmentary to reconstruct.

POTTERY

In the levels underlying the chalk foundation of the kiln were found a few sherds of pottery of the following types:

One sherd of shell-gritted ware, one sherd of undeveloped Stamford ware, two sherds of red earthenware with a black glaze, two sherds of white, glazed earthenware, and eight sherds of Delftware, including some with blue, yellow, purple and mauve colouring.

The bulk of the pottery from the excavation came from the foundation levels, and must have been deposited between c.1830 and 1850. The whole range of domestic pottery was represented, including pancheons, jugs, bowls, plates, cups, saucers, and a few decorative wares. The largest quantities of sherds belonged to the following types: plain white glazed earthenware, including one with the maker's stamp I.H.³; coarse, red earthenware with black glaze, or with yellow glaze over white slip, or with pale yellow slip and brown mottling; Nottingham stoneware and similar types; white earthenware with blue transfer printed designs, including "willow pattern"; and a number of sherds of Mocha ware. There were also a few sherds of transfer printed designs in red, green and brown; more Delft ware, all blue this time; some Pratt ware, some Wedgwood black basalt ware and numerous odd sherds of decorative and sometimes hand-painted, earthenware and porcelain.

The stokehole and surface levels contained a nondescript collection of early 20th century domestic pottery, which included two stone ginger beer flagons and a dark green transfer printed dinner plate with the mark of a crown, surmounted by the initials S.F. and Co.⁴ and with the word 'BRAY', presumably the name of the design, beneath.

OTHER MISCELLANEOUS FINDS

A number of food bones were found, mainly in the surface levels, and shellfish were represented throughout, with mussels as the most common, followed by cockles, oysters and one or two whelks.

The foundation layers contained seven brass buttons, one mother-of-pearl button, and one perforated bone disc 1.6 cms. in diameter. Also in the foundations were found a clay marble and a bone knife-handle, whilst in the soil below the foundation was a small, bronze D-ring.

A few fragments of glass were also found, consisting mainly of window and wine bottle glass. The filling of the kiln contained a small piece of the handle of a malacca walking-stick with a silver terminal, the hallmark of which dated to 1912/13.

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CONCLUSION

The presence in the foundations of the kiln of kiln debris and large numbers of pipes by Laurence Thompson suggests the possibility that this may be rubbish deposited after the destruction of the Thompson kiln, which is last mentioned in 1842. Certainly the evidence of the various colours of transfer printed pottery indicates that the earliest possible date for the foundation was *c.*1830. As the Rosegarth Street kiln is known from directory evidence to be in existence in 1856, then it would seem that the most likely date for its construction is in the decade 1845 to 1855. It then remained in production until 1919. The excavation produced a number of fairly closely dateable groups of pipes which serve as a useful framework for a typology of 19th century pipes.

ACKNOWLEDGEMENTS

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APPENDIX I

LIST OF BOSTON PIPEMAKERS.

The names are in alphabetical order, and the dates represent the known working period as shown by documentary evidence:-

Abbreviations used in the list are as follows:-

| | |
|--|--------------------------------|
| b. — Year of birth. | d. — Year of death. |
| bap. — Baptism of children. | P.R. — Parish Register. |
| bur. — Burial of children. | M.B. — Marriage Bonds. |
| D. — Trade Directories. | Inv. — Probate Inventory. |
| Polls. — Voter's list. | Pipe — Pipe with maker's name. |
| B.B.G. — Register of Boston Burial Ground. | |

| <i>Surname</i> | <i>Christian Name</i> | <i>Date</i> | <i>Source</i> |
|----------------------|-----------------------|---------------|---------------------|
| BORKWOOD | Edward | 1834-39 | D. |
| CHENNER | John | 1842-50 | D. |
| FEAREY | Thomas | 1861 | D. |
| HARFORD | James | d.1676 | Inv. |
| JEWSON | Leonard | d.1900 | B.B.G. |
| LASKEY | John | d.1703 | P.R. |
| LAWRENCE | Thomas | 1819-39 | D. |
| LEE | Robert | 1818-24 | P.R. (bap.) |
| MANNING | Edward | b.1821-d.1892 | P.R./D./Pipe/B.B.G. |
| MANNING | Henry | 1876 | D. |
| MANNING | John | d.1877 | B.B.G. |
| MANNING | Joseph | 1821-49 | P.R./D. |
| MANNING | Joseph | 1896-d.1919 | D./B.B.G. |
| MARJASON | Joshua | 1826-68 | P.R. (bap.)/D. |
| MARSDEN | William | 1826-31 | P.R. (bap.) |
| MANNING, RYLOT & CO. | | 1835-49 | D. |
| NAYLOR | John | 1776 | M.B./Pipes. |
| NETTAM | James | 1802 | P.R. (bap.) |
| OVERTON | William | 1815 | P.R. (bap.) |

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| | | | |
|-----------|-----------|---------|----------------------|
| RICKERBY | Thomas | 1800 | P.R. (bur.) |
| ROLLINSON | William | 1829 | P.R. (bap.) |
| RYLOT | James | 1827-52 | P.R. (bap.)/D./Polls |
| SPALL | John | 1842-57 | D. |
| STEVENS | Thomas | 1820-30 | P.R. (bap.) |
| STOCKS | Charles | d.1885 | B.B.G. |
| TAYLOR | Elisabeth | 1820 | P.R. (bap.) |
| THOMPSON | John | d.1787 | P.R. |
| THOMPSON | John | 1800 | P.R. (bap.) |
| THOMPSON | Laurence | 1826-42 | D. |
| TURPIN | William | 1790 | D. |
| TWELL | Richard | 1833 | P.R. (bap.) |
| WARRENER | John | 1817-32 | P.R. (bap.) |
| WINN | Robert | 1815-27 | P.R. (bap.)/D. |

APPENDIX II

THE METHOD OF MAKING CLAY PIPES

The method of making pipes seems to have changed very little since the early 17th century. The earliest known pipes were entirely hand-made, but it was not very long before makers were using two piece metal moulds. The earliest known moulds, dating to the 17th century, were of brass, but later iron was used. To make a pipe, the required quantity of clay was rolled out into a rough shape with a bulb at one end, from which the bowl was later formed. Skilled workers could produce these very rapidly, and would make sixteen to a 'pipemaker's dozen' to allow for the high rate of breakage during the various processes. After the roll has been made, a wire was carefully inserted along the stem, almost to the bulb, to make the bore. The roll was then laid in one half of the mould, the other half placed on top, and the whole was put in a large vice and tightened up. Each mould had its own metal stopper, which was pushed into the mould to form the bowl. In some cases this operation was performed by hand, but more often the stopper was attached to a lever above the vice, thus enabling the stopper to be forced more easily into the mould. With the stopper withdrawn the wire was pushed the rest of the way along the stem and through into the bowl. The mould was then removed from the vice and the top of the bowl trimmed by passing a knife through a slot near the top of the mould. The pipe could then be removed from the mould and the wire withdrawn. When the pipe had dried a little the seams, which had formed where the two parts of the mould joined, were trimmed by scraping with a knife, and the pipe was ready for firing.

Examples of pipe making equipment can be seen in Grantham Museum, where there is a vice and several moulds; in the City and County Museum, Lincoln, where there are also moulds and pipes; and in the Guildhall Museum, Boston, where a display of pipes, kiln furniture and photographs of the Rosegarth Street kiln, which was the subject of this report, can be seen.

Notes

- ¹ Saggars are fireproof containers into which pipes, and pots, are packed during firing.
- ² C. M. Mitchell, F.S.A., F.M.A. of Leeds City Museums states in correspondence that evidence from six known pipe kilns in the city suggests that saggars were not used until about the 1860's.
- ³ Possibly J. Heath of Hanley, Staffordshire, Potteries, c.1770 - 1800.
- ⁴ S. Fielding and Co. Ltd., Staffordshire Potteries, 1879 -. Made earthenwares, majolica, etc. This is the standard printed mark of c.1891-1913. The name of the individual pattern (e.g. BRAY) was often included in the period 1880-1917. (G. A. Godden, *Encyclopedia of British Pottery and Porcelain Marks*, 1964).

CLAY PIPE KILN. ROSEGARTH STREET. BOSTON. LINCS.

1967-68.

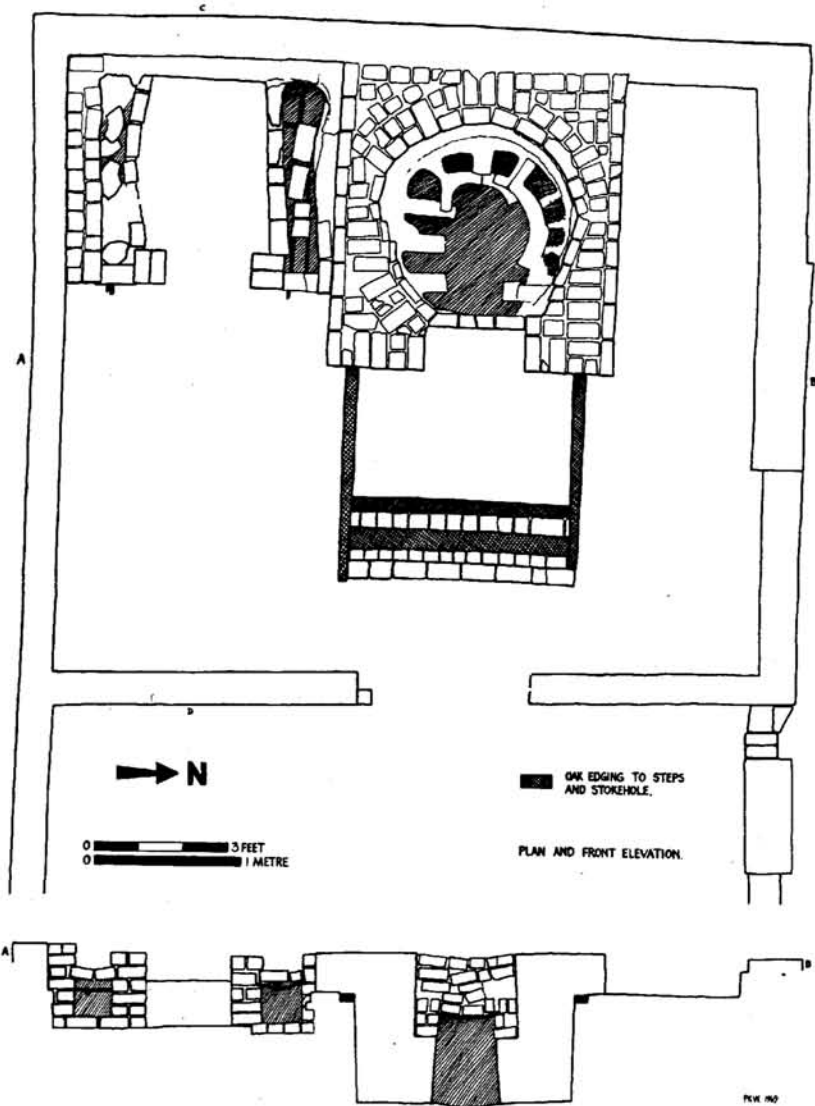


Figure 1. Plan

CLAY PIPE KILN. ROSEGARTH STREET. BOSTON. LINCS. 1967-68.

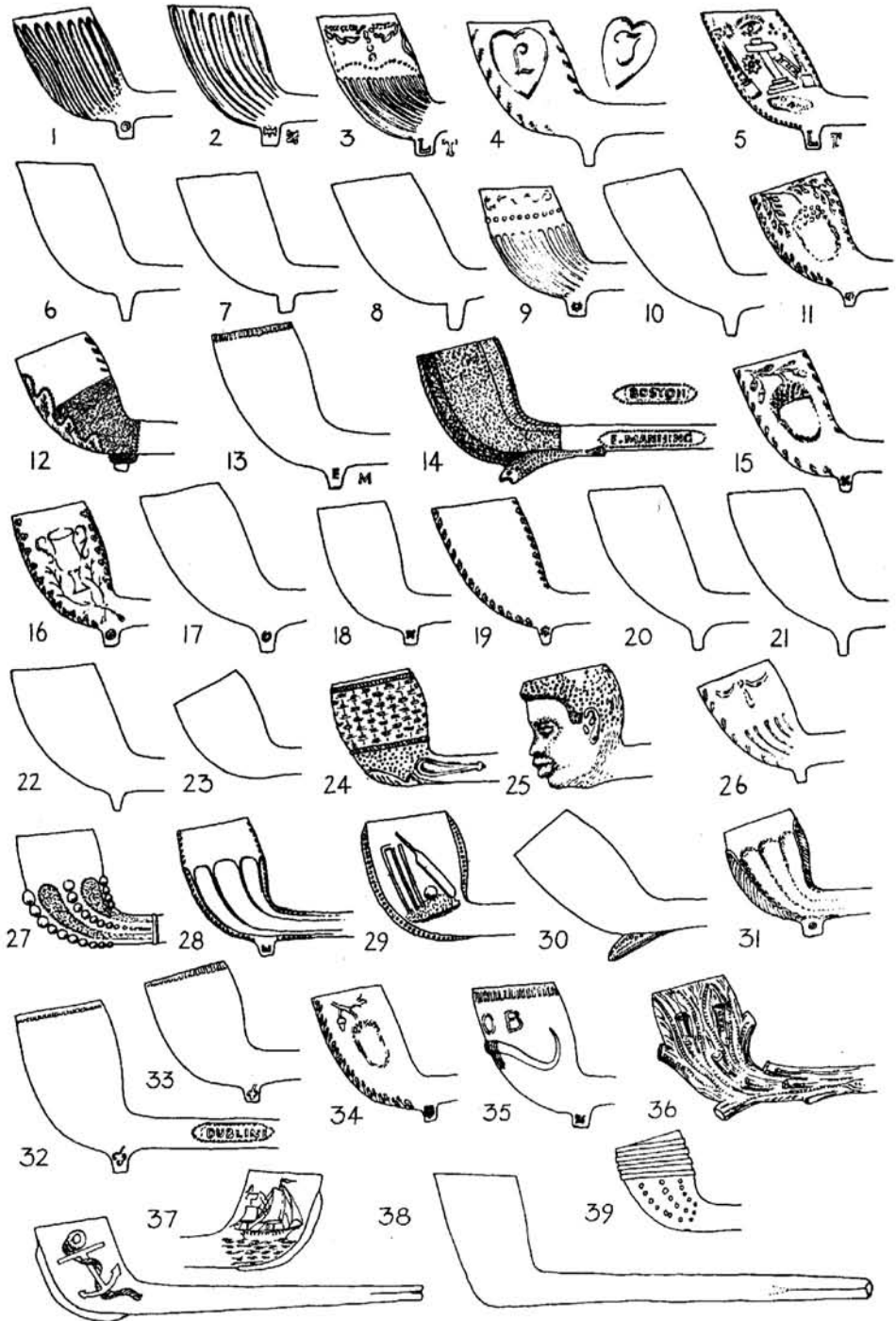


Figure 2. Pipes from the kiln. Scale $\frac{1}{2}$

CLAY PIPE KILN. ROSEGARTH STREET, BOSTON, LINCS. 1967-68.

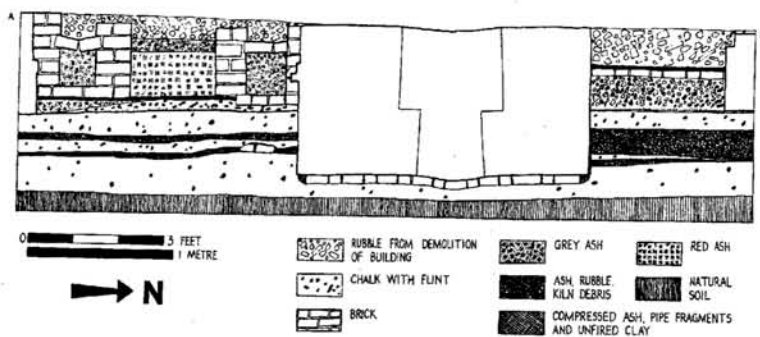


Figure 3. SECTION A-B.

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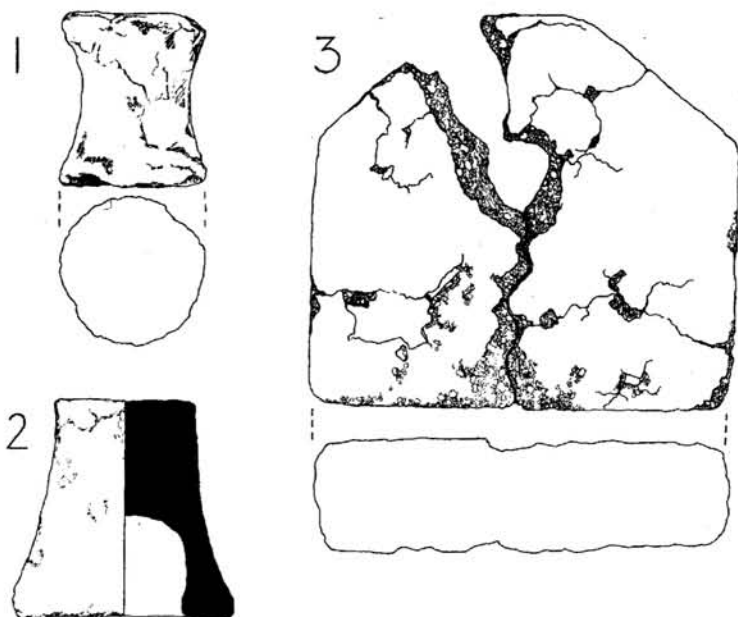


Figure 4. Kiln furniture. (Scale $\frac{1}{2}$)