

# The Spread of Maling

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## SUMMARY

*A worked-out clay pit on the western edge of the valley of the Ouseburn in Byker, Newcastle upon Tyne was levelled over the second half of the 1860s. A component of the fill was waste from the C. T. Maling Ford Pottery across the Ouseburn. During archaeological monitoring of development works on the site in 2014, a sample of this waste, including preserve jars, smaller containers, pieces of saggar and a variety of kiln furniture, was recovered. The assemblage provides a glimpse of production at the family-owned pottery which by the 1860s was gaining a near national monopoly in the market for commercial ceramics and had already formed what was to be an enduring and secure business bond with another family company, James Keiller & Sons of Dundee, through supply of their iconic marmalade pots.*

## BACKGROUND

**A** WATCHING BRIEF was carried out by Alan Williams Archaeology for BI Brims Construction during development in 2014 of student accommodation on a 0.28 hectare site on the north side of Coquet Street, Byker, Newcastle upon Tyne (fig. 1). Although the site lay in an area of considerable archaeological sensitivity, a little way to the south of Hadrian's Wall and Wall Ditch and possibly across the line of the Military Way, monitoring confirmed that potential for survival of early remains had been lost. Much of the site was used for clay extraction as part of St Ann's Brickfield<sup>1</sup> over the first half of the nineteenth century, and the remainder had been truncated by the construction of the Quayside Branch Line Railway.<sup>2</sup>

## THE CLAY PIT AND LATER DEVELOPMENTS

Map evidence suggests that prior to the excavation of the clay pit, the site was undeveloped and in either agricultural or horticultural use. From the later seventeenth century, industries, including potteries and glassworks, developed to the east of the site along the valley of the Ouseburn. With the need for construction materials for these industrial developments and housing for the workforce, brick pits were frequent in the Byker area which had accessible deposits of superficial clay. Industries expanded towards the site: Wood's plan of 1827 shows a tannery north of Stepney Bank, possibly Harrison's Tannery. The Harrisons are also listed in a number of trade directories of the period as brick makers and may have had an interest in the site along with Walter Scott, a local builder, who is named on a mid-nineteenth-century plan showing the clay pit.<sup>3</sup> Once the exhausted clay pit had been levelled in the third quarter of the nineteenth century, R. & F. Harrison's Tannery expanded across the area from its existing site to the north. It was one of a number which developed around the Ouseburn on the back of the large-scale facilities for slaughtering cattle shipped in to the Ouseburn from elsewhere in the country and abroad. Two substantially complete wooden tanning pits and partial remains of a third survived on the site.<sup>4</sup>

THE SPREAD OF MALING

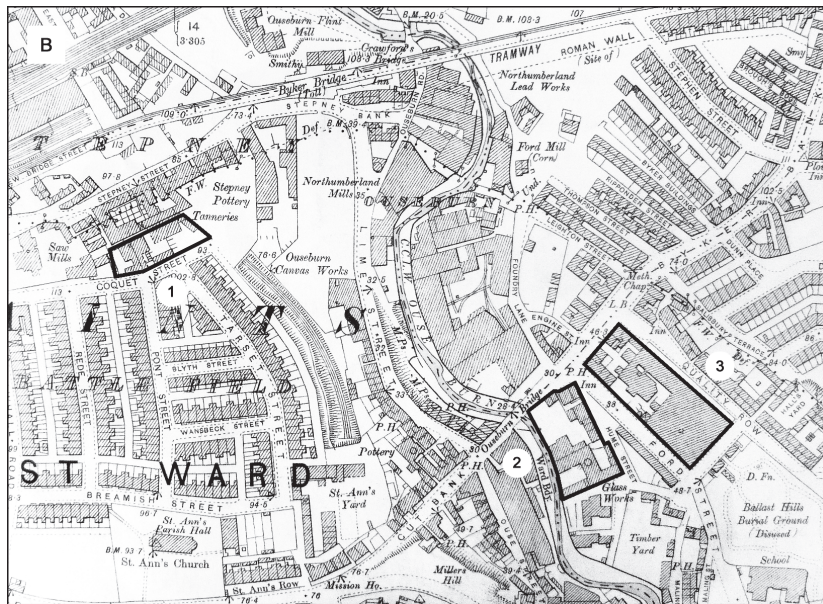
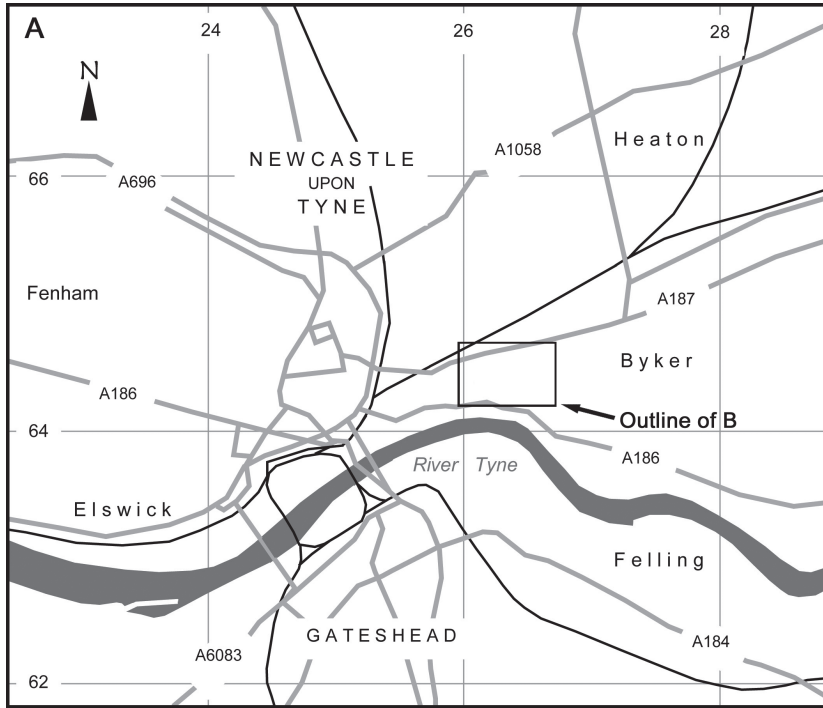


Fig. 1A The location of Byker, east of the centre of Newcastle and north of the River Tyne; 1B Second Edition Six Inches to One Mile Ordnance Survey (1895) showing the Coquet Street site (1) and the Maling potteries, Ouseburn Bridge (2) and Ford A (3) to the east of the Ouseburn.

## MALING POTTERY WASTERS AND KILN FURNITURE

Spoil used to infill the worked-out clay pit, drawn from local development and industrial sites, included dumps of ash, loam and clay in substantial tip lines. A quantity of pottery wasters and kiln furniture was recovered from the infill during the archaeological monitoring, generally within layers of ash. Most of the wasters derived from the C. T. Maling Ford Pottery, located to the east of the Ouseburn, identifiable by maker's stamps and by form. From the 1850s and up to the early 1880s, the pottery concentrated on the production of commercial wares in a refined white-earthenware. A large element of production was marmalade pots for James Keiller and Sons of Dundee, but many other forms and markets were catered for.

## CATALOGUE

The assemblage consisted of wasters, some biscuit fired, some glazed, and kiln furniture including saggars.

## WASTERS

Wasters recovered from the site included marmalade or 'marmalade type' preserve pots, paste or spread pots and ointment jars all in a refined white earthenware. A range of profiles is shown on figure 2. All are probably Maling. Some domestic transfer-printed wares were also present but they cannot be ascribed to a particular pottery. They are not discussed further here but are catalogued in the site archive report held with Tyne and Wear HER.

1. *Marmalade or 'marmalade type' preserve pots*

1A James Keiller & Sons. Marmalade Pots. Minimum of 23 vessels. 'Maling K' impressed on the base of master (fig. 3). In addition to this, four of 16 bases were stamped with a small, single letter code (M, I, K, P). All transfer labels included 'International Exhibition 1862' but none had 'Grand Medal of Merit Vienna 1873' providing a context for the deposition of the wasters in the clay pit. Letters frequently found under the oak wreath garland on Keiller's pots are thought to provide a sequential, possibly calendrical, numbering system (Mathew 2000); alternatively, the sequence may refer to batches. Of the pots in the present assemblage with the relevant area of label surviving, two had no letter code, four 'E' and one 'D' (fig. 4).

1B Minimum of four vessels. Presumably Maling but with no identification stamp. Very solid with deep, angular foot ring. No transfer labels.

1C Minimum of four vessels. 'The One Pound Pot' impressed on base of master (fig. 3). Ribbing below collar groove extends c. 20 mm. No transfer labels.

1D Minimum of four vessels. Ribbed body. Examples recovered are delicate and thin-walled. 'Maling' impressed on base (fig. 3). Miniature version also produced. Minimum of two vessels, also with 'Maling' on base. No transfer labels

1E (not illustrated). Similar to 1A but base of master impressed only with 'Maling'. Minimum of six vessels. No transfer labels.

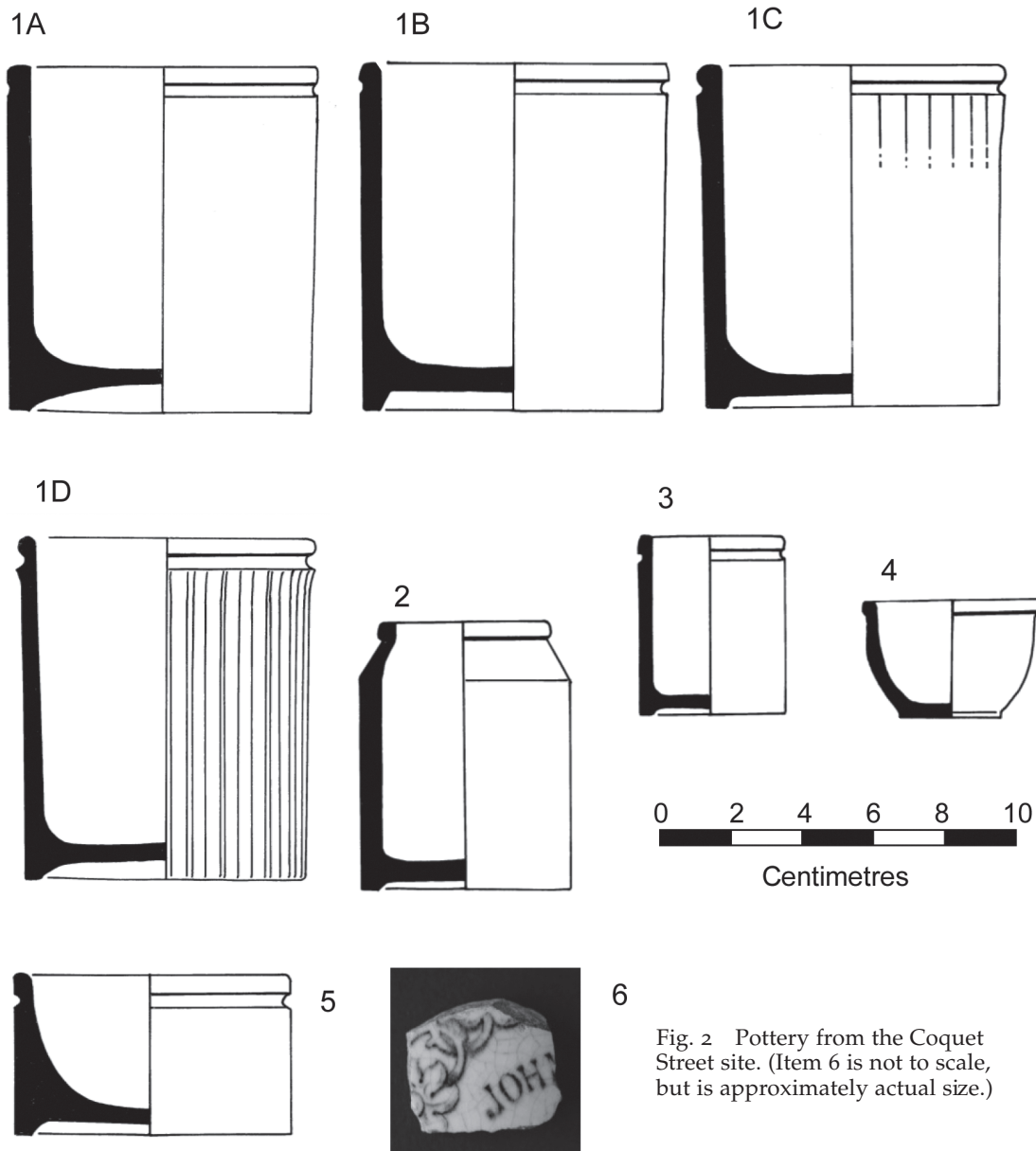


Fig. 2 Pottery from the Coquet Street site. (Item 6 is not to scale, but is approximately actual size.)

2. Jar for cream, paste, spreads, ointment or other use.

Minimum of six vessels. No transfer labels.

3. Miniature paste, spread or ointment pot.

Minimum of two vessels. No transfer labels

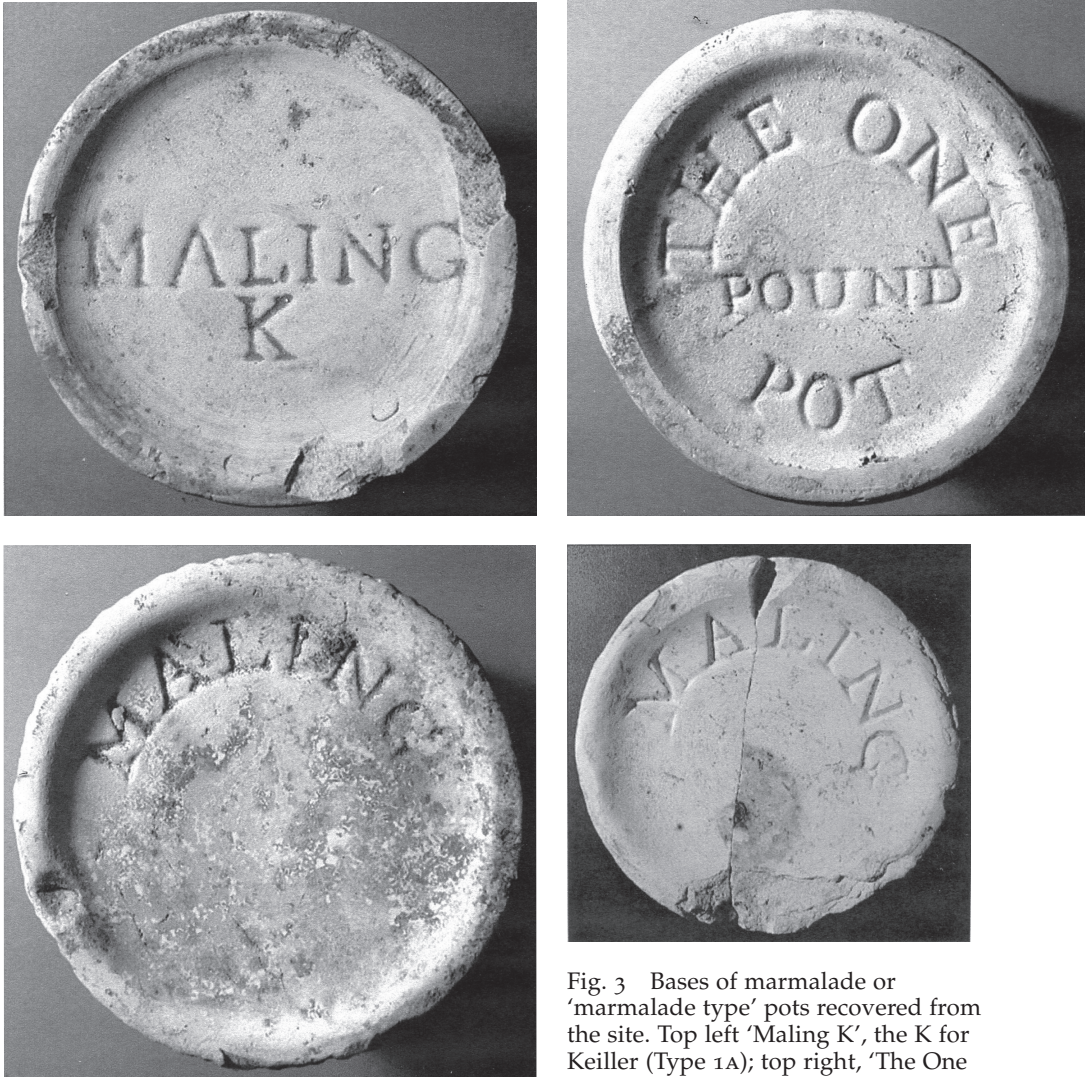


Fig. 3 Bases of marmalade or 'marmalade type' pots recovered from the site. Top left 'Maling K', the K for Keiller (Type 1A); top right, 'The One Pound Pot' Type 1C; bottom left, ribbed pot 'Maling' Type 1D. Bottom right, miniature version of 1D.

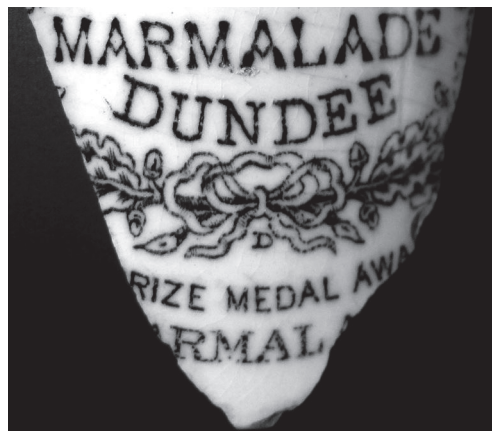
4. *Miniature ointment pot.*

Minimum of eight vessels. All sherds delicate and thin walled. No transfer labels.

5. *Low, cylindrical miniature with collar groove.*

This type of pot frequently contained the popular Victorian delicacy 'bloaters' (herring) paste. No transfer label.

Fig. 4 Sherd of a Keiller's marmalade pot with uppercase D underneath the oak-leaf-garland. Whether this was a calendrical code or signified a production batch has not been securely established.



6. *Fragment of a pot of uncertain form with part of a floral motif and the name JOHN.*

This is a container made for John Moir of London and Aberdeen. Amongst a range of other preserved foodstuffs, they also produced marmalade and jam, sold in pots very similar to Keiller's and produced by Maling.

#### SAGGARS AND KILN FURNITURE

Large fragments of saggars, or fire boxes, fire-clay containers used to hold pottery in the kiln whilst firing, were also recovered, in one case welded together with deformed preserve-pots (Type 1D) following a failed firing. Much kiln furniture was recovered from ash layers including cockspurs, stilts and more irregularly formed extruded-struts which were used to separate pots during a glaze (or 'glost') firing.

#### THE MALING POTTERIES

Domestic pottery had been manufactured by the Maling family at North Hylton Pot Works on the River Wear since 1762 (Jewitt 1878, 2; Moore and Ross 1989, 2). In 1817, production was transferred wholesale to the east bank of the Ouseburn on the River Tyne by John Maling and his sons, John and Robert. The works, the Ouseburn Bridge Pottery, 'manufactured white and printed ware, chiefly for the Dutch market' (Jewitt 1878, 3). It prospered. The family also took over the existing Old Ouseburn Pottery which had been built around 1780 (Jewitt 1878, 4).

Christopher Thompson Maling (CTM), Robert's second son, managed the Ouseburn Bridge Pottery from 1853. In 1859, following marriage to Mary Ford, the daughter of a wealthy Scottish glass manufacturer, and possessed of a substantial settlement from the marriage, he set up an entirely new pottery on a two acre plot of land adjacent to his Ouseburn Bridge Pottery. Ford Pottery (after Mary's maiden name) was to be a very different establishment, targeted largely towards the commercial market for attractive pottery containers holding, and frequently advertising, preserved foodstuffs and many other small-quantity goods. For the Malings, marmalade was to become their bread and butter. An account of the beginning of CTM's association with the Keiller family of Dundee is provided in Moore and Ross (1989, 4). It is unsourced, but not necessarily apocryphal:

Whilst on a trip to Scotland he is said to have struck up a friendship with the redoubtable Keiller sisters of Dundee, already well established as makers of jams and marmalades. The sisters placed an order for a crate of earthenware jars, followed by another, and then another, until C. T. Maling found that jam jars were taking up more and more of his order book.

Requirements of the pottery were to standardise the product, and then produce great numbers of these standardised items. The new Ford Pottery was far more productive than Ouseburn Bridge Pottery, able to make with its 13 kilns in one week what the old pottery, and its two kilns, could produce only over a year (Moore and Ross 1989, 5). The key was mechanisation, a marked change from earlier — and at the time, still widely existing — business models across the region. In CTM's own words:

With the exception of three potteries in the district ... machinery has been very little applied to the manufacture of earthenware, and even at these works, not nearly to the extent to which it is capable of being profitably adopted. One manufactory on the Tyne, Ford Pottery, having the best machinery, supplies at least 80 per cent, of the jars used by the confectioners of marmalade and jams etc. in England and Scotland (C. T. Maling's 1863 paper to the British Association).

Quantities of marmalade pots sent to Keiller's alone were enormous. In 1867, Charles Maxwell a junior partner at Keiller noted that: '... one of the Newcastle potteries is to a large extent employed in turning out the well-known printed jars for marmalade. Of these there are about 1,500,000 required every year, costing upwards of £6,500' (Mathew 1999).

By 1878, Jewitt in his work on British Potteries, could provide perspective on the pottery's capabilities and achievements, a year before the opening of Maling Ford B Pottery (widely considered to be the largest pottery in the world at that time):

The works [Ford A] were erected for the purpose of manufacturing by machinery the various goods produced by Mr. Maling, the main bulk of which are marmalade, jam and extract of beef pots. These are of a very fine and compact white body, with an excellent glaze made from borax without any lead; and it is said that at least 95 percent, of these pots used by wholesale manufacturers in Great Britain are made at this establishment. The pots being entirely made by machinery are necessarily much more uniform in size and weight and thickness than those produced by any other process ... (Jewitt 1878, 4).

#### PRODUCTION OF COMMERCIAL WARES AT FORD A

Production at the Ford Pottery was broken down into a rigid sequence of tasks per vessel type and with regard to progression through the factory. Most of the work was carried out by a (nominally) unskilled female workforce.

The outline below is largely based on a description of processes provided by Les Dixon, General Manager of Maling from 1948 to 1963 included in the 1981 Tyne and Wear Museums publication *Maling: A Tyneside Pottery* (17–27). Although relating to a later period of production, it specifically references earlier practices.

#### *The Clay Body*

The body used for the refined-earthenware pottery at Maling was formed of a mix of clay, flint and stone. The clay was not local. Up to the advent of water ballast, it had been brought

cheaply to the River Tyne from the south of England as ballast on return trips of sailing colliers. Flint and stone (ideally chert), also brought in by water, was ground down to a fine powder and added to the clay; this prevented distortion during firing and made a harder and more durable pot (Bell *et al.* 1981, 17). Mixed as a liquid, the clay and powdered flint and stone concoction was filtered and put through a pug mill to form a homogenous mass which was extruded and cut into appropriate lengths per intended manufacture.

#### *Forming a Pot*

At Maling, many containers (hollowares) were made by the process known as jollying (or jollying). A clay master of a particular vessel type was formed. For a preserve pot (excluding such examples as the ribbed types), this was simply a cylinder with a foot ring. The factory mark was often stamped or incised on the base of the master. A plaster of Paris mould was then cast around it from which the master was removed following a period of drying and shrinkage. Many thousands of moulds of each vessel form were made, each with a hollow attachment point at the base. To produce a pot, the mould was set on a rotating spindle connected to a steam-powered belt-drive. A ball of clay, the requisite volume for the vessel, was placed in the mould, the spindle put into gear, and a profile tool, the 'jolly', lowered into the mould. This opened out the soft clay and drew it up the inner face of the mould, forming both external and internal faces of the pot. Removed from the mould after drying, and shrinking, to a chalky 'white hard' state, the pot was 'topped and turned'. This involved spinning to remove any surface imperfections, form the rim shape and incise the collar groove.

#### *Biscuit Firing*

The first or 'biscuit' firing followed. In coal-fired biscuit kilns pots were stacked in saggars. These were oval, or round, fireclay containers which protected the pots from fumes and flame. Firing arrangements at Ford A are uncertain, but at Ford B, each biscuit kiln held 1,400 saggars and took around 56 hours to fire (Johnson 2007, 1–2). Following removal from the kiln, each pot was again checked for imperfections, brushed and cleaned.

#### *Decoration*

For a Keiller marmalade pot, the next stage was decoration. This involved the application of a transfer (see fig. 5). Transfers were printed on tissue paper from large copper plates, scribed by hand with multiple motifs; the transfer medium linseed oil mixed with ink.

#### *Glaze or Glost Firing*

Each pot was then dipped in glaze and left to dry. At Maling, glaze was lead-free, formed of frit, clay, borax (sodium borate) and flint, all ground to a fine dust and mixed with water.

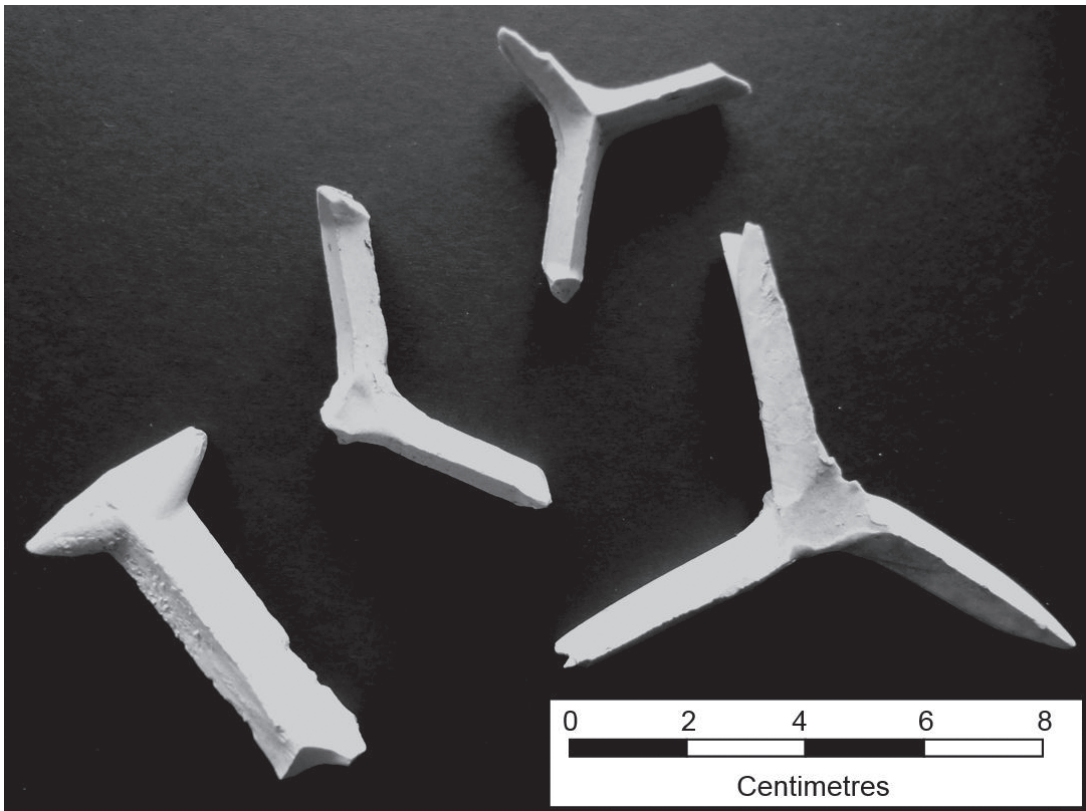
The final glaze firing also involved the use of saggars to protect the glazed pots from fumes and flames. Pots were placed on stilt pins and cockspurs to prevent their glaze from fusing to the sagger or each other. Many cockspurs were found on the site along with stilts (see fig. 6) and roughly-extruded rolls of clay. A sagger-load of ribbed preserve pots (type 1D in the





Fig. 5 (left) The transfer label applied to all the Keiller marmalade jars found at Coquet Street.

Fig. 6 (below) Kiln furniture recovered during the watching brief. Three fragments of stilts (to the left) and a complete 'cockspur'. All were used to separate pots during a glaze or 'glost' firing. The cockspur was used with Marmalade-type pots.



catalogue) which had disastrously failed during a glaze firing was found on the site. Thin-walled and delicate, it is perhaps no coincidence that the load was formed of these pots which had melted and slumped during the firing. Cockspurs formed a part of the conglomerate.

## JAMES KEILLER &amp; SONS

Over the nineteenth century, Keiller's of Dundee almost singlehandedly spread marmalade across the world. They were 'The first in the country to produce it as an article of commerce' (Bremner 1867, 467). Enveloping and advertising this world brand was the marmalade pot, 'the main tangible symbol of the great Dundonian enterprise' (Mathew 1999, 4) which was, in construction, purely Maling. There was an enduring and successful link between the two eminent family businesses.

From 1857, Keiller's had two centres of marmalade and confectionery production; the original plant in Dundee and a new factory in St Peter Port, Guernsey in the Channel Islands. This last was set up as an off-shore operation to evade import duties for their principal raw-material requirement, sugar. The survival of a batch of business letters from Alexander Keiller at Dundee to his brother William, managing operations in St Peter Port, written in the early 1870s, includes reference to dealings with Maling (Mathew 1999). Pots were despatched in crates from the Tyne to Dundee or Guernsey in vessels chartered by Maling, frequently alongside coal, also for use by the Keiller factories: 'C. T. Maling has chartered the *Rosa* to load about 90 crates and 4 keels of coal' (29 December 1871).

By the nature of the communications, it was the problematic which often featured:

C. T. Maling writes that he commences to load the *Rosa* with crates yesterday. This vessel has 75 tons of coals. We have asked Maling if he cannot get a vessel to take the crates only, but he is unwell at present & does not appear to have anyone at his place of business to look after matters properly (4 January 1872).

C. T. Maling has had a breakdown of his shafting & has got behind with our and your pots. I fear we will have to send you the 100 crates [earmarked for Dundee] so soon as we can get them from Maling (12 January 1872).

The letters also refer to the increasing cost of Maling pots due to growing demand from other companies:

... He [CTM] is being tempted by new houses by a long price to supply them with pots. C. T. Maling's price is now 2/8d pr dozen for printed OM [orange marmalade] pots. Of course, we have a contract with him for 4500 crates, or as many as contain the next season's make whatever that may be at 2/3½d. The old price we paid for last season's pots was 1/10½d (30 September 1872).

From Guernsey and Scotland, Maling pots, and their contents, were spread worldwide. Between 1857 and closure in 1879, Keiller's St Peter Port factory was the main distributor of marmalade beyond British shores. There were extensive markets in Australia, New Zealand and Canada — particularly where Scottish people gathered together — and some strongholds of consumption in Asia where the Treaty Port of Shanghai was a considerable market due to the sizeable British community. There were also markets in Bombay and Ceylon (Mathew 1998a, 83; Mathew 1998b, 46). The African market was all traded through the Cape. In Europe, the main links were with Paris and Vienna.

## NOTES

<sup>1</sup> St Ann's Brickfield in Byker (Tyne and Wear HER No. 4156) is named on the First Edition Ordnance Survey of the mid-nineteenth century but had gone by the time of the Second Edition at the end of the century. Its exact extent is not certain but reflected the use of the area north of St Ann's Church towards Stepney Bank to exploit clay for bricks.

<sup>2</sup> The Quayside Branch Line Railway (Tyne and Wear HER No. 4326) was opened in 1870 and closed in 1969. It curved from the NER main line and transported goods to and from the Quayside. It ran through a tunnel under the development site, out to the south into a cutting, then back into a tunnel under St Ann's Yard.

<sup>3</sup> Tyne and Wear Archive Service DT, SC/254.

<sup>4</sup> Subsequent to the levelling of the clay pit, industrial buildings were constructed over the site. This included an addition to R. & F. Harrison's Tannery expanding from its base immediately to the north. A strip of this part of the complex survived within the northern part of the development site where ground surface had been raised up above the general fall to the south within later buildings. This preserved the remains of three tanning pits. Pits 1 and 2 were well preserved, Pit 3 surviving only as a remnant of its west lining wall. The tanning pits, substantial rectangular structures, were formed of tongue-in-groove pine planks set in clay. In the site report held by the Tyne and Wear HER, they are compared with a number of other examples excavated on Tyneside. A paper on Tyneside tanning pits is in preparation by the writer.

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