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PEWTER STILLS BY Peter and Trish Hayward

By publishing this article this website hopes to draw attention to this unusual and previously unrecognised use of pewter. If a reader identifies one in their possession or knows of one not mentioned here then this website would welcome to be told of it. (email to - johnsbank@me.com)

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PEWTER STILLS

Trish & Peter Hayward

This article is a summary of a talk given at the Society's meeting in April 2013 but with an additional still that came to light two days after the meeting. This additional still is the first surviving example to have the mark of an identifiable maker.

Three known British pewterers' touches depict flagons. No fewer than 26 depict stills. This alone suggests that making stills or parts of stills was considerably more important to the pewterers' craft than making flagons, and there is other evidence to support this. Despite this, whilst there have been numerous articles on flagons and most major collections have several examples, as far as we know, there has never been an article on pewter stills and we are unaware of any pewter collection that has one. Indeed, Cotterell and Port are the only pewter authors to mention them (Cotterell 1925 pp34-5 and 1929 p136; Port 1917 pp206-7), and in the last 85 years they have been totally neglected by pewter collectors, pewter researchers and pewter authors. This article attempts to rectify that.

What is distilling?

Distilling was regarded as alchemy as it was considered to be extracting the essence of the substance. One old book explained the principle of distilling as being *'the art of separating or drawing off the spirituous, aqueous and oleaginous parts of a mixt body from the grosser and more terrestrial parts, by means of fire and condensing them again by cold'* (Cooper 1800 p1).

It was a two stage process. First, an ingredient was infused in water, wine or spirits of wine. Second, it was heated so that it vaporized and then condensed.

A different product resulted, which, basically, was the concept of alchemy.

Different ingredients would need infusing for different lengths of time. Sometimes fermentation, not just infusion, would take place before the distilling step (Cooper p7 onwards & p124).

For what were stills used?

We now tend to think of distilling as an industrial process to produce alcoholic drinks, but until well into the 18th century that was not the case. Distilling was widely practised in the home, and not just in very large households. A still features on the frontispiece of *The Queen-Like Closet*, a recipe book of 1670 by Hannah Woolley, and the frontispiece of Nathaniel Bailey's *Dictionary Domesticum* of 1736 features a domestic scene (Fig. 1) with two stills by an open door and a retort in the foreground.

Contemporary cookery books commonly feature sections on producing cordials, perfumes and medicines by distilling, suggesting these were widely made. The most frequently used ingredients were herbs, flowers, roots, seeds, berries, bark, rind, and spices - although instructions for medical distillations might include rotten apples, succory, cinnamon, cardoman, cress, angelica and aniseed (eg French 1667 pp25-6 and Cooper 1800 pp48 & 51 on). Milk and honey were also distilled for medical purposes. Less appealing ingredients for distillations were blood, urine, frogspawn and man's brains. Minerals such as sulphur and pearls were also unlikely ingredients (Y-Worth 1705 p137).



Fig. 1: Frontispiece of Bailey's Household Dictionary of 1736

The parts of a stills

Whilst contemporary cookery books have plenty of references to distilling, they say little about the equipment. However, there are some early books specifically on distilling, and one of them published in 1667 by Dr French, a Doctor of Physick, is particularly useful because of its copious illustrations of the equipment used. Two others, by a pharmacist William Y-Worth in 1705 and by a London distiller A Cooper 1757 and 1800, have lengthy text but only a few illustrations.

Stills have a number of parts (Figs. 2, 3). Starting at the bottom, they are:

Furnace. For a domestic still, this was usually built of brick as in Fig. 2, but stills could also stand on feet over an open fire as in Fig. 3.

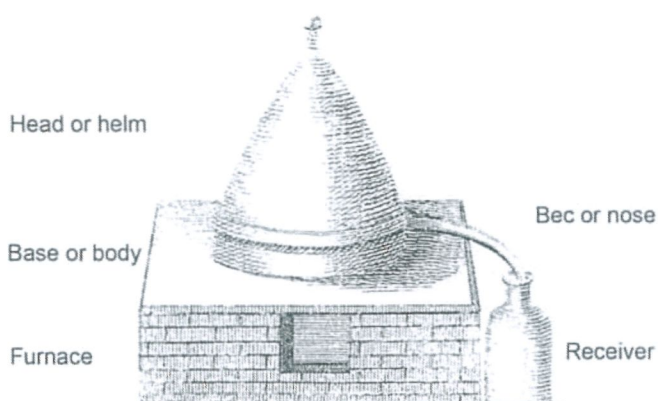


Fig. 2: Still from Cooper's Complete Distiller of 1757.

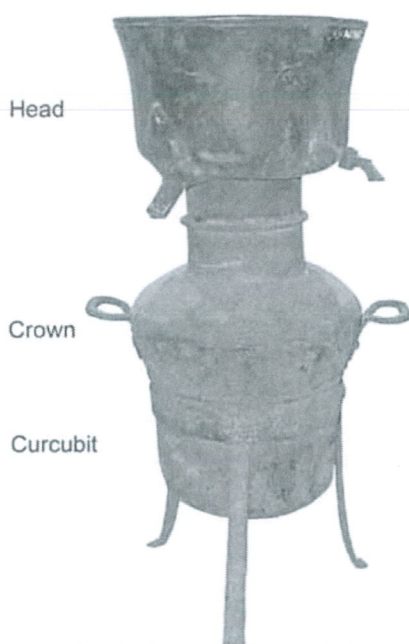


Fig. 3: Copper still at the Science Museum, 56cm high, accession no. A639450.

Base or body. The part which sits in the fire and contains the substance to be distilled. If the base is in two parts, the lower part may be called the *curcubit* and the upper part the *crown*. The base was most commonly made of copper, but it could be of glass or pewter, though no surviving pewter examples are known.

Head or helm. The part into which the vapour rises. In use it must be sealed or *luted* to the base to make the join airtight. The vapour may condense in the head, or it may be conveyed from the head into a separate condenser. The head was often of pewter.

Bec or nose. The part that conveys the distillate or vapour from the head. In a hot still with a separate worm (see below), it is called a *transferrer, crane or neck*. This is another component that was often made of pewter.

Receiver. The vessel in which the condensed vapour is collected.

Types of stills

The simplest type of domestic still is the *cold still* (Figs. 4, 5). The head is a tall cone, often made of pewter, with a collar at the bottom that fits on to the base. The rising vapour condenses on its inner surface and runs down into a gutter at the bottom which is drained into the receiver (not shown) by a pipe - the bec. A wet towel could be wrapped round the head to keep it cool. Cold stills were slow, but good for odiferous plants such as rose and mint from which the 'essence' comes across easily. A cold still virtually identical to those shown here is depicted in a Padua fresco of c1380 showing an alchemist at work, so the design remained unchanged for centuries.



Fig. 4: Cold still head at Moseley Old Hall.

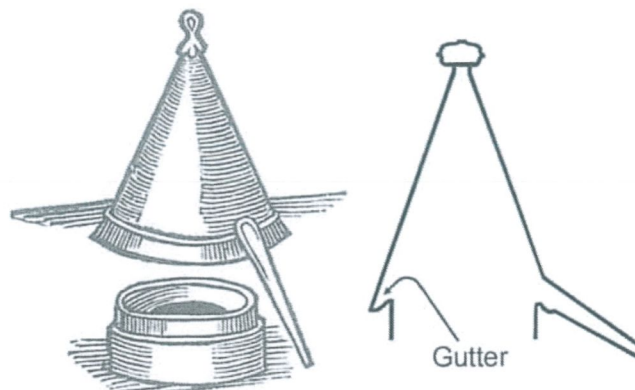


Fig. 5: Left: 'common cold still' from French's Art of Distillation 1667 p17. Right: cross section of the Moseley Old Hall cold still head.

The head of a *bucket head still* (Figs. 6-8) has a much smaller cone - or sometimes a dome - which is surrounded by a large bucket of cold water (the *refrigeratory*) to keep it cool. Again the distillate collects in a gutter inside the cone and drains out through the bec. The bucket has its own outlet pipe at the bottom to allow the water to be changed when it starts getting too warm. The head was usually connected to the base via a column or *neck* in which the vapour started to cool. This can be quite tall, as in Figs. 6-8, or rather



Fig. 6: Bucket head still at Moseley Old Hall.



Fig. 7: The inside of the bucket of the Moseley Old Hall still.

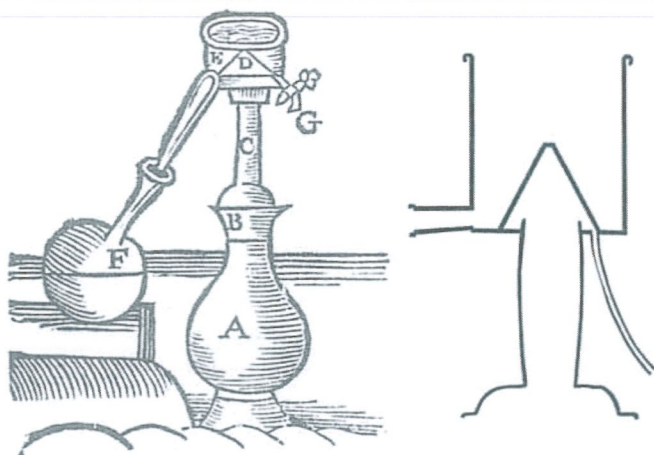


Fig. 8: Left: bucket head still (described as an 'alembic') from French's *Art of Distillation* 1667 p33. The drawing shows the head C, D on a copper base A, B. Right: cross section of the Moseley Old Hall bucket-head still.

shorter as in the copper bucket head still of Fig. 3. Bucket head stills were good for non-alcoholic cordial waters.

In a *hot still* (Fig. 9) the vapour doesn't condense in the head but is transferred into a separate condenser consisting of a coiled tube immersed in a barrel of cold water. The tube was, appropriately, known as the *worm* or *serpentine*. Pewter seems to have been the preferred metal for the worm, and the transferrer could also be made of pewter. Hot stills were used for commercial distilling, but they were also used when distilling alcoholic liquids, eg when making cordial waters by distilling wine over herbs and spices.

Whilst these are the main types of still, contemporary literature shows many variations. In the pair of stills in Fig. 1, condensation takes place neither in the head nor in a worm but in the outlet pipe (bec) itself. However, glass seems to have been the usual material for stills like this,

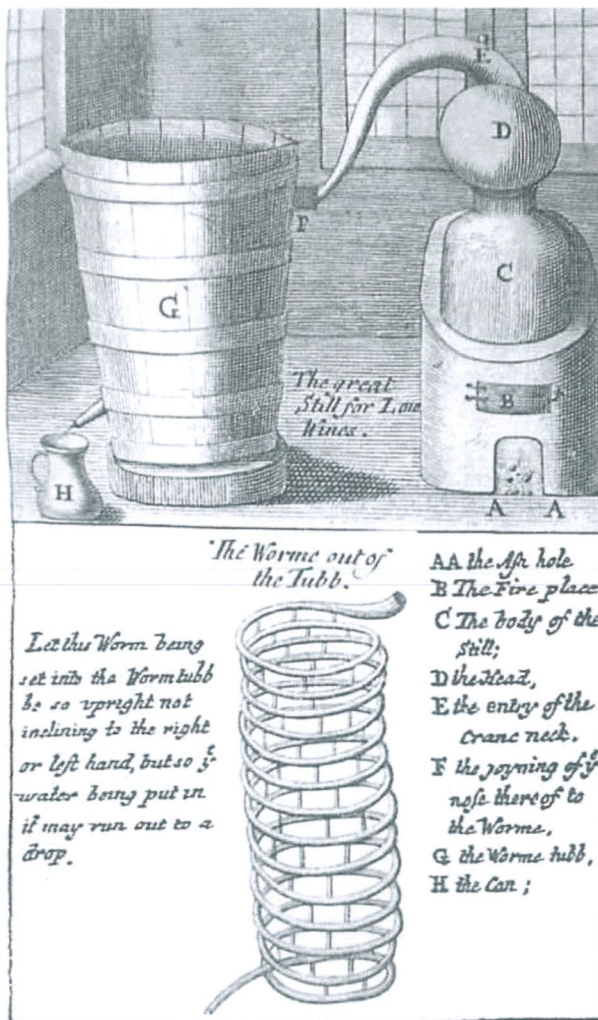


Fig. 9: Hot still from Y-Worth's *Compleat Distiller* p2.

and we have no evidence they were ever made of pewter. In Fig. 10, the left image shows some one-piece stills or *retorts*, often made of glass, where again condensation occurs in the bec portion. The right image shows how stills could be cascaded if repeated distillation was necessary.

In a *balneo* or *balneum marie* the furnace heats a water bath and the base sits in this (Fig. 11). They were slow, but were used when it was important not to overheat the substance to be distilled, eg when distilling waters from flowers. The left image in Fig. 11 shows a single still, but the right one shows 8 small stills sharing one water bath. In a *balneo* the base did not sit in the furnace, and so was often made of glass rather than copper. However, it could also be made of pewter (Cooper 1800 p109).

The term *alembic* or *limbeck* is frequently encountered in contemporary literature, but its usage seems inconsistent. Both bucket head and hot stills are sometimes described as *common alembics*, and the stills in Fig. 1 are also described as *alembics*, but the term never seems to have been applied to cold stills.



Fig. 10: Left: retorts, and right: cascaded stills, from French's *Art of Distillation* 1667 pp78, 31.

Size

Whilst domestic stills were rather smaller than commercial stills, they were still much larger than most of the other wares pewterers made. The Worshipful Company's records refer in 1613 to a limbeck of 16½lb and in 1639 to a still of 16lb (Welch v.2 pp 65, 100). The Company's sizings of 1674, 1691 and 1772 say still heads should weigh between 9lb and 18lb, though there are minor difference between the three dates (Welch v.2 p148, J. Pewter Soc. Spring 1980 p30A (insert) and Spring 1984 p96). The weights refer to stills ranging from 9 to 14 'inches at the bottom' (1674), 'inches wide' (1691) or 'inches over' (1772). These must be referring to a cold still, though it is not clear whether the dimension is the maximum diameter, at the bottom of the cone, or the diameter of the collar which projects below the cone and is slightly smaller. The *Compleat Appraiser* in 1758 gives weights of 27lb, 31lb and 36lb for still heads of 11", 13" and 15" (Hayward 2003 p39). This is significantly more than the Company's sizings, although possibly it is using a different measurement as it says 'the diameter is to be taken to the very outside of the verge or rim that goes into the lead bottom', ie the diameter of the collar, not the maximum diameter of the cone.

Worms could be very much heavier still. In 1801, for example, William Scott III of Edinburgh (PS8302) advertised for sale worms of 3 and 9 hundredweight (336 and 1008lb). Making items of pewter this size must have been a real challenge to the pewterer's skill, and it is, perhaps, no surprise that two pewterers obtained patents for making worms, John Skin of London (PS8557) in 1684 and Stephen Maxwell of Glasgow (PS44) in 1787 (English patents 240 and 1617). Skin's patent was for casting worms, but we have no details of his invention. Maxwell designed a large-diameter worm with two-stages, half in one tub and

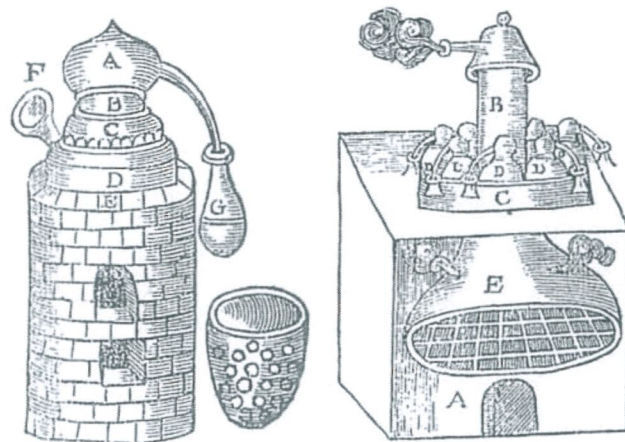


Fig. 11: Balneos from French's *Art of Distillation* 1667 pp21-22.

half in another, using pipes up to 14" in diameter. By the early 19th century specialised machinery was available for making worms as the bankruptcy sale of J E Yates included a machine and blocks for coiling worms (*Morning Chronicle* 18 December 1818).

The Company's 1772 sizing tells us that still heads were to be made of lay and alembics of trifle. In the context, 'still head' here presumably refers specifically to a cold still. The *Compleat Appraiser* tell us that worms were made of hard metal.

Who made pewter stills?

Only one of the surviving stills we have managed to find has an identified maker, so to determine who made stills we need to look at other sources of information, in particular, touches that depict stills and documentary references.

Fig. 12 shows all the known pewterers' touches that depict stills¹. The four in the box at the bottom left have been recorded on other 17th century wares (a baluster measure, a cup and two flagons), but the pewterers have not been identified. The remaining 22 are the marks of identified pewterers from the London touch plates, though none of these marks has actually been recorded on a still. We only know of the existence of these marks because they appear on the London touch plates, and we have no idea how many more marks depicting stills we might find if we had touch plates for provincial pewterers. Thus whilst they provide evidence that many London pewterers made stills, it would be unsafe to deduce that London must have been the dominant centre for still making.

The earliest of the 26 touches is dated 1618 and the latest was struck in 1800, so they cover a wide date range. They also depict a wide range of still types:

- 1st column, top two marks: cold stills, the first showing both the head and the base.
- 1st column, bottom two marks: what appear to be retorts, though this is not certain.
- 2nd and 3rd columns: bucket head stills, without the base.
- 4th column: complete hot stills.
- 5th to 7th columns: the worms of hot stills.

Documentary references enable us to glimpse a broader picture. Between 1566 and 1690 the Worshipful Company's Records mention 6 London pewterers who were making stills or parts of stills:

- In 1567 James Taverner (PS9220) was in trouble for filling the knops of 26 stills with lead (Welch v.1 p254), presumably knops for cold stills.
- In 1613 William Dixon (PS2883) was found to have sold a limbeck of base metal and was ordered to make a new one (Welch v.2 p65).
- In 1639 Nicholas Wright (PS10361) had some substandard stills seized (Welch v.2 p100).
- In 1655/6 the Plumbers' Company complained that James Simkin (PS8540) was casting still bottoms (Welch v.2 p121).
- In 1661 William Aylife (PS281) was fined for not putting a touch on a worm (Welch v.2 p128).

- In a search of 1690 Robert Lock (PS5927) had stills, still heads, still pipes, still tops and still knobs (Homer 2001 p33).

The records also mention one provincial pewterer, Thomas Cole of Exeter (PS1801), who had substandard still heads and limbecks when searched (Homer 1996 p134).

From the Sun Insurance Registers² we know of three London pewterers whose shop signs depicted stills: William Cowley (PS2024) at the Angel & Worm in 1713 and 1720, Simon Halford (PS4241) at the 'Pewterer Still' in 1730 and Edward Yorke (PS10535) at the 'Still Head' in 1736 (Forsyth 2003). Probate inventories and sales of stock give us four more names: James Preston of Boston (PS13066) had stills in 1665, John Dowell II of Coventry (PS11700) had still bottoms in 1678, John Smith of Aberdeen (PS8658) had a small worm in 1799 and William Drabble of London (PS2951) had worms, stills, necks and heads in 1831.

In the 18th and 19th centuries advertisements, trade cards, catalogues and trade directories give us many more names. Outside London, in Bewdley we have John Caruthers Crane (PS72) selling worms and swan necks and Ingram & Hunt (PS5094) selling limbecks, in Bristol the Brights, Burgum & Catcott and the various Edgar businesses all selling worms, in Edinburgh William Scott III (PS8302) selling worms, and in Waterford Samuel Woods (PS10342) selling stills and worms. In London, T & H Compton (PS1867) sold alembics and balneums.



Fig. 12: Pewterers' touches depicting stills.

George Hollis (PS4802) sold stills and worms, and a further 9 described themselves simply as worm makers: Thomas Appleton (PS2423), Fasson & Son (PS3269), J.J. Frei (PS3604), John Grainge (PS3977), Meakin & Spackman (PS15708), William Nettlefold II (PS6722), Richard Rooke (PS7992), William Walker (PS9732) and James E. Yates (PS10515). John Griffith of Bristol (PS4105), Nathaniel Meakin I of London (PS6318), Brown & Compton (PS13472) and the partnership between Thomas Compton I (PS100) and John Appleton I (PS208) were also described, in other contexts, as worm makers.

Putting all this and other information together, we have identified by name 66 pewterers who made pewter stills, plus a further 13 who were predominantly coppersmiths but whose product range included worms. The 66 range in date from the 16th to the end of the 19th centuries. They include 8 from Bristol, 5 from other English provincial towns, 3 from Scotland and 1 from Ireland. The remaining 49 are from London. These 66 pewterers are probably only the tip of the iceberg.

Surviving pewter stills

In 1925 Cotterell reported that there were three pewter stills in the Wellcome Historical Medical Museum. The contents of that Museum have since been disbursed, many of them going to the Science Museum in London. The Science Museum still has three pewter stills, though only two of them were formerly in the Wellcome collection. In addition, we have found stills in two National Trust houses, Moseley Old Hall in Staffordshire and Dyrham Park in Gloucestershire. Each of these houses has one cold still and one bucket head still, showing that large houses needed stills of more than one type to cope with the range of substances to be distilled.

Table 1 summarises the 7 pewter still heads we have tracked down. None of the three bucket head stills is marked, but three of the four cold stills have a touch.

The only identified maker is Thomas Stevens of London (PS8921, 1720-c1743).

All four cold stills are very similar in design. The cone finishes in a substantial knob which makes the still easier to lift. At the bottom, a collar coming down from the inner edge of the internal gutter could be luted to the still base. The angles of the outlets or becs vary, but they all taper and project well away from the cone so as to clear the base. On the Thomas Stevens still, the taper of the bec is particularly pronounced, reducing from an external diameter of 5.5cm at the top to only 1cm at the tip.

The Thomas Stevens still weighed approximately 7.1kg or 15½lb. This is roughly the weight prescribed by the Worshipful Company for a 13" still (specified as 15lb in 1674 and 16lb in 1691 and 1772). As the still has a maximum diameter of 34cm (13½") and a bottom-collar diameter of 31cm (12¼"), this suggests the Company may have used the maximum diameter as its measurement, but we cannot be sure because we could not weigh the still very accurately. It was not possible to weigh any of the other stills.

The three bucket head stills are also broadly similar, although here there is a little more variation. Below the bucket, all have a column standing on a foot, but in the Moseley Old Hall example the column is slightly barrel-shaped rather than straight-sided. That would have been more difficult to make and must have been done for a reason, but it is not clear what functional advantage it confers. Two of them have iron rods rising from the foot to support the bucket, but the Science Museum one does not. As the bucket would have been heavy when filled with water, the extra supports make sense. The shapes of the buckets vary a little, but all have a conical condenser in the bottom. The becs are stayed by another rod on all three examples, but the Moseley Old Hall bec is gently curved rather than straight. Finally, they all have a stubby outlet to drain the water from the bucket, and the Dyrham Park one still has its tap.

Table 1: Surviving pewter still heads

Illus.	Location	Type	Touch?	Size
Fig.13	Science Museum 1954-85, purchased 1954	Cold	no	Base dia. 28cm, base-to-top 48cm
Fig.14	Science Museum A639458 ex Wellcome ³	Cold	Thomas Stevens, PS8921	Base dia. 31cm, base-to-top 49cm, weight 15½lb
Fig.15	Science Museum A631167 ex Wellcome ⁴	Bucket head	no	Top dia. 27.5cm, height 55 cm
Fig.4	Moseley Old Hall	Cold	RL, PS6060	
Figs.6,7	Moseley Old Hall	Bucket head	no	
Fig.16	Dyrham Park	Cold	IS, PS18253	
Figs.17,18	Dyrham Park ⁵	Bucket head	no	

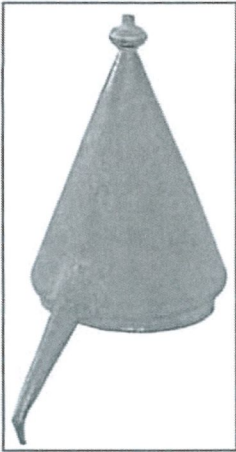


Fig. 13: Cold still head 1954-85 at the Science Museum.



Fig. 14: Cold still head A639458 by Thomas Stevens at the Science Museum.



Fig. 15: Bucket head still A631167 at the Science Museum.

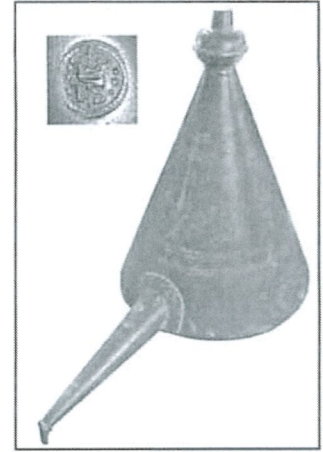


Fig. 16: Cold still head at Dyrham Park.



Fig. 17: Bucket head still at Dyrham Park.



Fig. 18: The inside of the bucket of the Dyrham Park still.

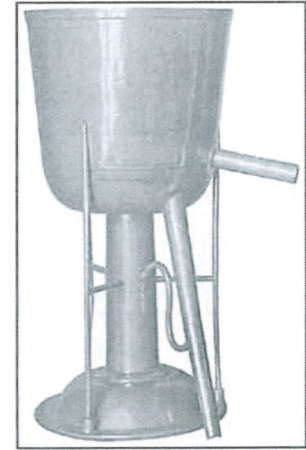


Fig. 19: Bucket head still dated 1766, formerly in the Port collection.

In 1925 Cotterell said he only knew of 6 or 7 pewter stills in total (Cotterell 1925 pp34-5). We have failed to find two specific stills that he noted. One is the third one in the Wellcome collection which Cotterell describes as having two conical condensers, though it is not clear what that means. The second is the bucket head still in Fig. 19. This was then in the Port collection and was illustrated by Cotterell and by Port himself (Port 1917 p206-7). It is dated 1766 and has, so Port said, an iron lining to the column. It is 2 feet high and weighs 18 lb. Cotterell included it in the 1928 Daily Telegraph Exhibition of Antiques and Works of Art at Olympia (P413 in the exhibition catalogue) along with another (P414) which he described as 'conical condenser from a still, c1770, with unknown maker's mark on rim, lent by Major Thompson'. This too has not been found.

Specialists or generalists?

The available evidence suggests that in London, but not elsewhere, worm making was usually a business for specialists. 80% of the London pewterers who are described simply as 'worm makers' had been apprenticed to a worm maker.

Pewters who made still heads and other parts for stills do not seem to have been specialists. In London, for example, when Robert Lock was searched he had sadware, pots, tankards and salts as well as parts of stills. Edward Yorke may have used a still as his shop sign, but his mark has been recorded on sadware, mugs and inkstands. Similarly, Thomas Stevens is well known as a maker of baluster measures, whilst William Drabble's bankruptcy sale shows he also made beer engines, mugs, measures, spoons and sadware. The scene is the same outside London, especially with some of the larger businesses such as J C Crane and

Ingram & Hunt in Bewdley, the Brights and the Edgars in Bristol and Stephen Maxwell in Glasgow, all of whom made a wide range of goods in addition to stills.

Links with other trades

A complete still was rarely, if ever, made wholly of pewter, so it is not surprising to find evidence of other trades being involved. Certainly in the 19th century we find a number of coppersmiths who also made pewter worms. For example, John Turton & Co of Liverpool (PS16544) were coppersmiths but advertised in 1824 for a pewter worm maker (Bristol Mercury 7 June 1824). Similarly, James Shears & Sons of London (PS13166) were listed in the Post Office 1841 Directory as copper merchants, coppersmiths, brass & bell founders and pewter worm makers. A particularly interesting link to another trade comes from the London apprenticeship records. Henry Ralphs (PS7688) was apprenticed for 6 years to worm-maker Nathaniel Meakin II (PS6319) and then, whilst Meakin was still active, turned over to a master in the Plumbers' Company for 2 years before becoming a freeman of the Pewterers, not the Plumbers, in 1778 (Webb 2003 p76). This doubtless reflects the close similarity between making pewter worms and making lead pipes.

Webb's transcript of the apprenticeship records also show links between the pewtering and distilling trades as several sons of distillers became apprenticed to pewterers. They include Nathaniel Meakin I (PS6318) who became a worm maker, and a John Jackson of London (PS5114), who was apprenticed to worm maker Edward Allanson (PS152).

Conclusion

Pewter collectors and experts have almost completely ignored pewter stills, but they were an important part of the pewtering trade over a long period. Very few seem to survive. Because they are so big, maybe they were more likely to have been melted down when they were no longer needed. However, it is difficult to believe that only 7 exist. There must be more around, lurking in the basements of stately homes and in museums. It is difficult to track them down, though, as one can never be sure how they will have been described, and searching in catalogues for the word 'still' is a hopeless task as the word is used in so many contexts.

Acknowledgements

We are grateful to the Science Museum for retrieving their stills from store for us to examine and for giving permission to reproduce our photographs of them. We are also grateful to the National Trust staff and stewards at Moseley Old Hall and Dyrham Park for allowing their stills to

be examined and photographed, and to Alyson Marsden for the photographs of the Dyrham Park stills.

Notes

1. The makers are not listed here because they are easy to find by searching for 'still' in a mark on the Society's database of pewterers.
2. For the sources of the information about the individual pewterers mentioned in this paragraph and the next, see the Society's database of pewterers (save for Ingram & Hunt, for which see Holding & Moulson 1994 p11).
3. Accession number A639458 had been allocated to two different stills, a copper still and this pewter bucket head still, so one of them may now have been renumbered.
4. Other dimensions for this bucket head still are: bucket height 23.4cm, stem height 26.0cm, foot diameter 30.5 cm, length of bec 28.5cm. The external diameter of the bec tapers from 2.9cm down to 2.0cm.
5. The bottom of the still was partly obscured when photographed.

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