

§ TOBACCO PIPES and SMOKING EQUIPMENT

The English kaolin tobacco pipe is possibly the most valuable clue yet available to the student of historical sites, for it is an item that was manufactured, imported, smoked, and thrown away, all within a matter of a year or two. Fortunately the shape of the pipe's bowl underwent an easily recognizable evolution that had begun before the start of the seventeenth century and was still going on well through the nineteenth century. In addition, pipes were extremely cheap (selling in 1709 for as little as two shillings a gross), thus making them available to all economic levels of colonial society. They were as expendable as cigarettes, though vastly more durable, ensuring that their fragments survive in the ground in prodigious quantities.

The Indian habit of smoking tobacco by means of a device formed "like a little ladell"⁷ became fashionable in England in the 1570's, and by the early seventeenth century the clay pipe had become commonplace. The earliest types, those of the late sixteenth century, were very short-stemmed, some being no more than $1\frac{3}{4}$ " in length, though the average was about $3\frac{1}{2}$ ". By the third quarter of the seventeenth century the average stem length was between 11" and 12", and by the end of the century many were a little longer still. Lengths of 13" or $13\frac{1}{2}$ " seem to have been common during the first half of the eighteenth century (Frontispiece), though advertisements referred to both short- and long-stem pipes. In the second half of the eighteenth century a few pipes were made with stems of enormous length, 2' and more (popularly termed "churchwardens," a name coined in the nineteenth century), while others

⁷ Adrian Oswald: "English Clay Tobacco Pipes," *The Archaeological News Letter* (London), Vol. 3, No. 10 (April 1951), p. 153; quoting from William Harrison's *Great Chronicle* of 1588.

reverted to an earlier and more manageable size and were no more than 9" or so from heel to mouth. Boston newspapers carried advertisements offering "long London Tobacco Pipes" in 1716 and 1742, "Boxes of short Pipes" in 1761, "long and short Pipes" the next year, and "long and midling Pipes" in 1763. More helpful was the advertiser in the *Boston Gazette* (May 28, 1764) who offered his customers "glaz'd 18 inch London Pipes per Box," but whether these were considered long or extra-long remains anybody's guess.

It should be noted that as a rule the length of the stem had no bearing on the size of the bowl, but it did have a very considerable influence on the size of the hole that passed through it. This was made with a wire that was pushed down the solid stem while it was still supported in the mold. When the stem was short, a fairly large hole could be made by using a thick wire, but when the stems became longer and the wire had further to travel a thick wire was more liable to stick through the side than was a thin. In consequence, therefore, smaller wires were generally used as the stems became longer. This, at least, is the theory, though it is possible to find wires of differing thickness in use in the same period by the same maker. (See p. 300.) There is no denying, however, that the holes in pipe stems became smaller and smaller through the seventeenth century and on into the second half of the eighteenth, a fact first noticed by Mr. J. C. Harrington of the United States National Park Service. In September 1954, after a careful study of many thousands of pipes both in America and in England, Harrington published a chart showing the percentages of different diameters (gauged in sixty-fourths of an inch) represented among well-dated

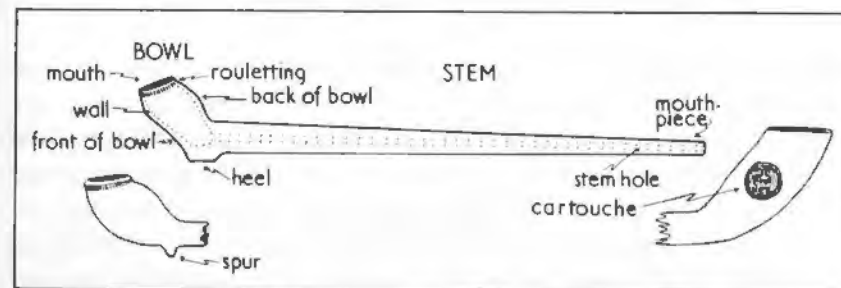


Fig. 95. The parts of a tobacco pipe.

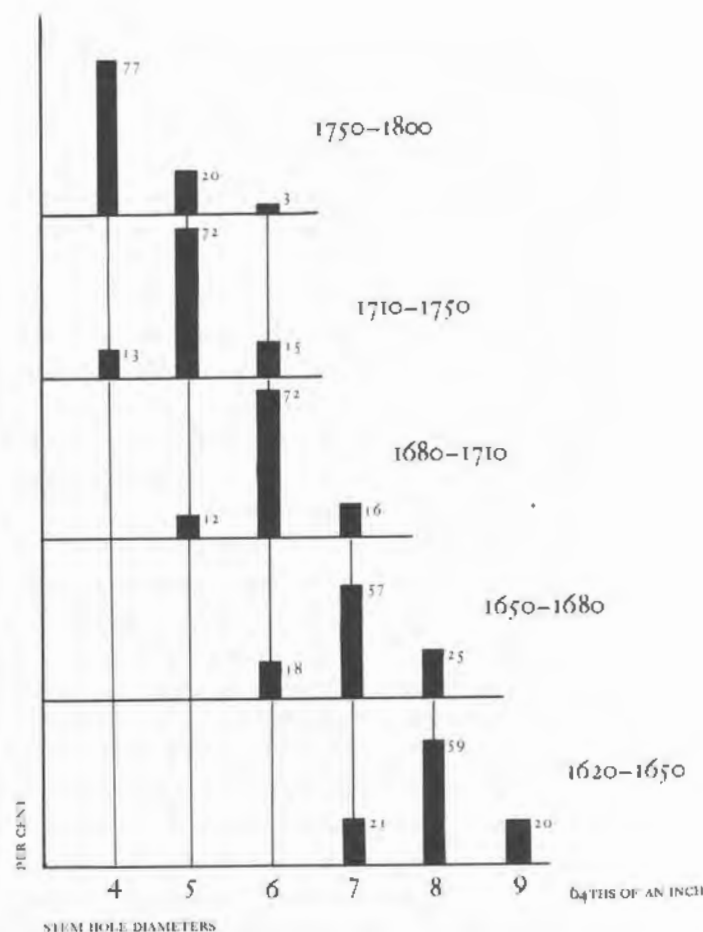


Fig. 96. Chart showing variations in hole diameters through the stems of clay tobacco pipes.

English pipes in five successive time periods from 1620 to 1800. (Fig. 96)

At first, what has come to be known as the "Harrington Theory" was received with considerable merriment among pundits of the pipe, but it soon became apparent to those who took the trouble to test the chart that there was a good deal of truth in it—though Harrington himself had made it very clear from the start that he considered the sampling too small and that much refine-

ment would be necessary when more groups of archaeologically datable pipes became available for study. He also pointed out that associations of only twenty or thirty pipes would probably be insufficient to produce an accurate answer.

So far as I know, no real effort has yet been made to redefine Harrington's date brackets, though much new information has been unearthed in the past decade. However, Dr. Lewis Binford produced a straight-line regression formula based on the Harrington chart enabling a mean date to be arrived at for any assemblage of stem fragments, be it large or small. That formula is as follows:

$$Y = 1931.85 - 38.26X$$

Y being the mean date for the group, 1931.85 the theoretical date when the stem hole would disappear altogether, 38.26 the number of years between each sixty-fourth-of-an-inch decrease, and X being the mean hole diameter for the group. This last is arrived at by first determining the diameter of the bore of each fragment (using a set of wood drills of graduated sizes), multiplying the number of fragments by the number of sixty-fourths, next adding together the total of fragments of all sizes and then all the products, and dividing one into the other, carrying the answer to three places of decimals. Thus:

Hole diameter	Fragments	Product
7/64	35	245
6/64	79	474
5/64	50	250
4/64	20	80
	184	1049 = 5.701

Extremely helpful though this is, it is still based on Harrington's original chart, and the question remains as to how accurate his dates really are.

In the course of excavations in Williamsburg in the summer of 1963 a large quantity of broken pipe stems was found tramped into the ground to make a walkway, all undoubtedly laid down at the same time and most of them the products of a single maker, for

nearly 150 bowl fragments bore the initials RM astride the heels. There were, in all, approximately 12,000 stem fragments, and on the basis of other archaeological and historical evidence it was deduced that they were deposited in the early 1740's. Using the Binford formula and taking arbitrary samplings from the collection, the following results were obtained:

No. of Pipes	Formula date
19	1726.38
35	1738.09
54	1733.67
105	1733.29
129	1742.09
290	1736.59
295	1740.55
296	1738.26
383	1737.74
591	1739.79
932	1740.55
1111	1740.55
4746	1741.70
9272	1740.55
11164	1740.55

It will be seen, therefore, that although 295 fragments produced a "correct" date of 1740.55, five pieces less put it four years earlier, while one more put it two years less. It was not until 932 fragments were used that a more or less consistent answer could be relied upon. Nevertheless, the very fact that the Harrington-Binford system produced a date for the pipe fragments within ten years of that suggested by other means demonstrates its valuable contribution to historical-archaeological studies. Unfortunately, however, its range of acceptable accuracy seems to be restricted to the period c. 1680-1760, with the probability of error increasing rapidly as one moves away from that bracket in either direction. The following short list of samples from sites of various dates will serve as an illustration:

Tobacco Pipes and Smoking Equipment

No. of fragments in deposit	Formula date	Date deduced on other evidence
90	1631	1645-53
924	1636	1645-60
300	1622	1650-60
648	1698	1690-1700
91	1709	1702-10
17	1731	1725-35
271	1751	1745-60
121	1758	1750-65
213	1767	1760-70
485	1747	1762-72
290	1753	1770-80
772	1747	1775-80
51	1755	1775-90
168	1751	1817-20

Although the large quantity of fragments needed to produce a consistent date was present in none of these instances, it is significant that within the period of reliability even quite small groups of stem fragments were capable of producing useful answers, whereas beyond it even the larger groups could provide no greater accuracy than could the small. It should be noted that the foregoing examples show the pipe-dating discrepancies falling consistently earlier than that provided by other evidence. It might be argued, of course, that even a thirty-year tolerance might be helpful in enabling the novice to get a broad idea of the era to which his site belongs, though when I ventured to make this point a lady archaeologist of my acquaintance retorted that if the excavator was unable to pin his site down to such a bracket through his knowledge of other artifacts, he had no business to be digging it.

Among the fallacies nurtured by earlier students of the pipe was the belief that the reason so many stem fragments are found is because smokers passed the pipe from mouth to mouth in the Indian fashion, each smoker breaking a piece off the stem to give himself an unsullied mouthpiece. Broadly speaking, this is nonsense. Pipes were carefully tapered so that the lips easily closed over them, and consequently the removal of more than 2" or 3" would have defeated that purpose. Furthermore, broken pipes are found

whose fractured stem has been carefully filed or ground down to shape a new mouthpiece. It is extremely unlikely, therefore, that a smoker would have been satisfied to smoke a jagged-ended, thick-mouthed pipe. The obvious explanation for the prevalence of stem fragments on colonial sites is that pipes were long and fragile, and when dropped or knocked broke into numerous pieces. With this said, however, I must note that Colonial Williamsburg owns a mid-eighteenth-century pair of steel ember tongs (*see* p. 309) having three semicircular notches on the inner faces of the arms just above the pads, which, when the tongs are closed, create three circular holes of two sizes that could well have been used to break very small pieces from the mouthpieces of clay tobacco pipes. On the other hand, the notches could be purely decorative. Before leaving the matter of mouthpieces, I should mention that some were coated with a brown or green lead glaze for a distance of about 1", while others were dipped for a similar distance into red wax—presumably having first had a plug placed in the hole. Both glazing and waxing appear to have been an eighteenth-century innovation and were by no means common.

Prior to Harrington's study of stem holes, the dating of tobacco pipes had relied on the evolution of the bowl form, and for the seventeenth century this is still the most reliable guide. However, as was demonstrated when more than 12,000 stem fragments were found together in Williamsburg, bowls are comparatively scarce, for the stem fragments were accompanied by only 800 bowls, the stem of each pipe therefore theoretically breaking into fifteen pieces.

The first study of bowl evolution (on which nearly all others have been based) was published by the English archaeologist Adrian Oswald in 1951. Figure 96 demonstrates the development of the bowl through the seventeenth into the nineteenth century in a somewhat simplified form.

The shapes were dependent on the mold makers, and each pipe-maker had his own molds. Although the forms followed the same

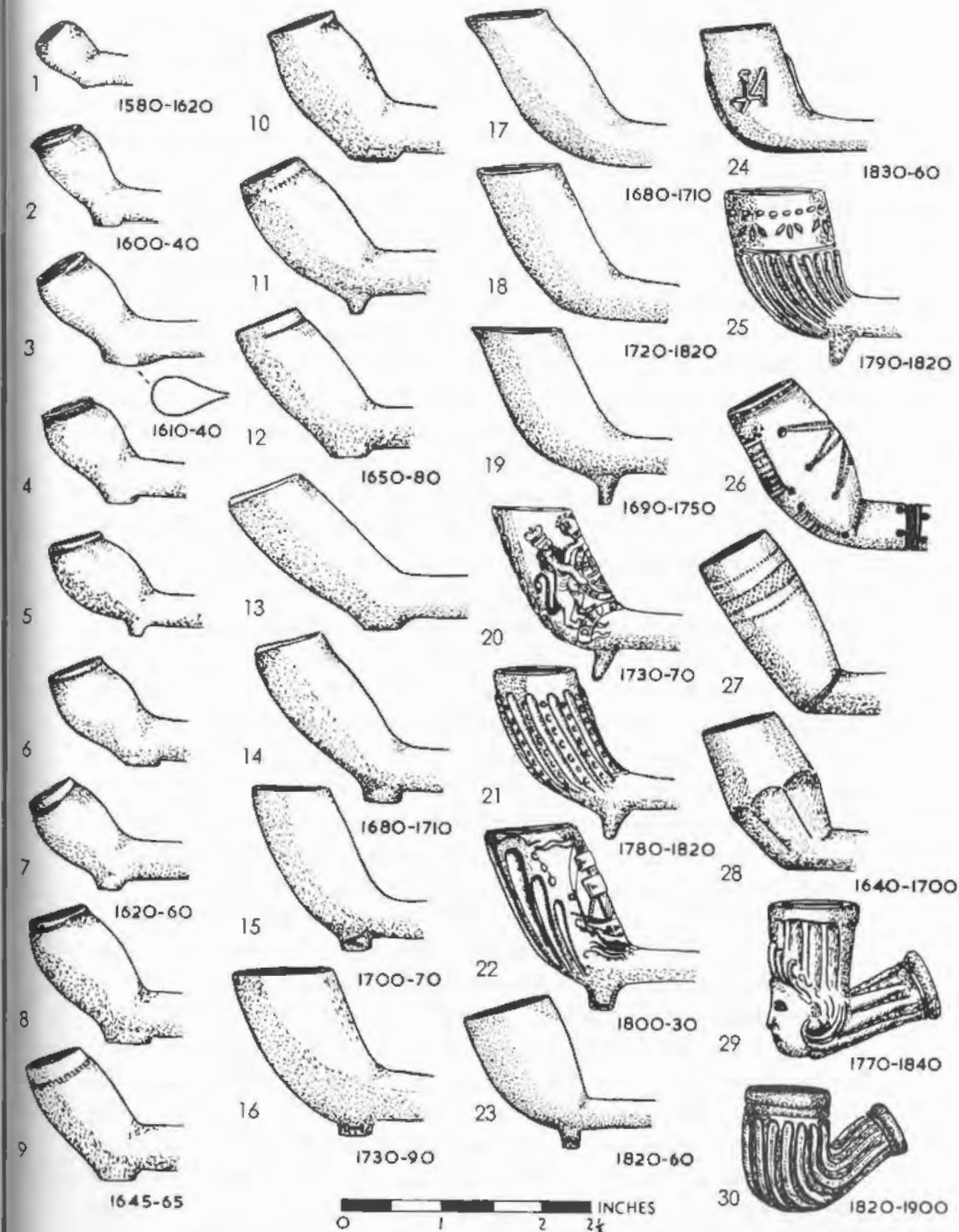


Fig. 97. A simplified evolutionary series of English clay tobacco pipes, plus examples of locally distributed American types. Nos. 1-24 are English; 25 and 30, American of uncertain provenance; 26-8, Virginian; 29, North Carolinian.

general evolutionary trends, it is clear that the pipes made at Chester or Broseley differed from those produced in Salisbury and that the latter were not the same as those made in Bristol—unless the manufacturers happened to buy their molds from the same maker. When one reaches the nineteenth century, decorative bowls were extremely common, and while I have illustrated three examples of styles attributable to different periods I make no pretense that they are adequately representative of the entire class.

There is, unfortunately, a great deal that we do not yet know about the so-called evolution of bowls and stems, and there is reason to suspect that present stylistic and dating criteria have been oversimplified. According to Randle Holme's *An Academie or Store House of Armory & Blazon* (c. 1682) there were then no fewer than ten pipe types, for which there were "seuerall Molds for seuerall fashions as. Lark heele pipes, Flat heele pipes, Round bolls or head, Long Bolls, Long shanks, Midle shanks, Short shanks or ends, Wrought pipes in the head and shank, Smooth pipes, [and] Gleased pipes."⁸ The last two almost certainly refer to styles of finishing after removal from the mold; i.e., burnishing and glazing. It would appear that in the latter part of the seventeenth century there were three stem lengths, long, middle, and short, a revelation which casts doubt on the validity of the theory that the stem-hole wire (or "Shanking Wyer" as Holme called it) became progressively smaller as stems grew longer. Holme's "Lark heeles" were probably what we term *spurs* (e.g., Fig. 97, No. 11), while his "Round bolls" are paralleled by my example in Figure 97, Number 10, and the "Long Bolls" by Number 12. As for the "Wrought pipes in the head and shank," they were almost certainly those with relief decoration.

In addition to the evidence of stem holes and bowl shapes, pipes may also be dated through the correct identification of makers' marks. Here again Adrian Oswald's published work provides the fullest available information. In the first half of the seventeenth century, marks were generally stamped on the flat base of the heel and took the form of initials, full names, or occasionally a rebus. In the third quarter, marks were less common, but they became plentiful again in the last quarter of the century. At this time they were normally reduced to two initials, one on either side of the heel or

spur, or occasionally more fully on the back or side of the bowl in incised circles or relief-molded cartouches. These last are particularly characteristic of Bristol pipemakers. The side cartouches extended into the first quarter of the eighteenth century, but the heel-flanking initials as well as the back circles went right on through the eighteenth and nineteenth centuries. By about 1690, Bristol pipemakers were producing pipes without either heels or spurs (apparently in imitation of the traditional Indian styles) for export to the American colonies. Some of these were embossed with the makers' initials on either side of the bowl base. Although such plain bowls continued to be made until the latter years of the eighteenth century, the majority of marked examples belong to the years c. 1690–1730.

Makers' initials are also found straddling the stem, running around it as part of ornamental bands, and stamped in circles on the top—all occurring in the first half of the eighteenth century. In the second half, and on through the nineteenth century, one often finds Liverpool, Glasgow, and Irish makers' names in rectangles stamped on one side of the stem and that of the town along the other.

Stems were sometimes decorated with large, multiple, diamond-shaped fleur-de-lis stamps, a style most popular in the mid-seventeenth century. Toward the end of the century and into the early 1700's, Chester pipemakers decorated stems with bands of ornament that sometimes included spiral fluting and cartouches containing tavern signs or the arms of the City of Chester. The most striking stem decoration yet encountered comes from a mid-eighteenth-century site in Delaware where fragments of two pipes were found coated with a thin brown slip around multiple, irregular reserves exposing the white pipeclay beneath and creating a dramatic, though none-too-pleasing, polka-dot effect.

A few English pipe bowls of the seventeenth century were decorated with groups of raised dots in the shape of trees or bunches of grapes, while on rare occasions the fronts of the bowls were pinched and pared into the shape of a human face. Decorative bowls became much more common in the eighteenth century, a considerable number of them being molded with the arms of the monarch or with the crest of the Prince of Wales. Because the British royal arms appear not only on pipes, but on slipware pottery, on coins, tokens, etc., engraved on glass, and molded on iron firebacks, it may be

⁸ Holme, op. cit., p. 271; for full citation, see fn. 1, p. 37.

useful to enumerate the changes made to the royal arms in the seventeenth, eighteenth, and early nineteenth centuries.

From 1403 to 1603, when James I became king, the arms were divided into four quarters (reading from top left to bottom right) comprising the three fleur-de-lis of France in the 1st and 4th and the three lions passant guardant (leopards) in the 2nd and 3rd. From 1603 until the flight of James II, the charges of the previous arms were compressed into the 1st and 4th quarters, while the 2nd received the lion rampant of Scotland and the 3rd the harp of Ireland. With the accession of William III the arms of Nassau were added as an escutcheon on the center of the shield, these arms comprising a lion rampant with rectangular billets around it. From 1702 to 1707, until the union with Scotland, the Stuart arms were restored in the form established in 1603. But after the Union and until the death of Queen Anne, the three leopards of England shared the 1st and 4th quarters with the lion of Scotland, while the fleur-de-lis occupied the 2nd quarter and the Irish harp retained the 3rd. In 1714, with the accession of Hanoverian George I, quarters 1 to 3 remained the same, but the 4th was divided into four elements to accommodate the arms of the Electorate of Hanover. These comprised: (1) two Brunswick leopards; (2) a Luneberg lion rampant surrounded by hearts; (3) (below) a Westphalia running horse; and (4) in the center an escutcheon charged with the crown of Charlemagne. There were no further changes until 1801, when the Hanoverian arms of the 4th quarter were moved onto a central escutcheon surmounted by the Elector's cap and replaced by the three English leopards which then appeared in both the 1st and 4th quarters, the lion of Scotland ousting France from the second quarter. Another minor change occurred in 1815 when the Elector's cap was replaced by a crown in keeping with Hanover's change from electorate to kingdom. Because Queen Victoria could not succeed to the kingdom of Hanover, the Hanoverian escutcheon was removed in 1837, thus creating the simplest royal arms since the death of Elizabeth I. There have been no changes since.

The majority of armorial tobacco-pipe bowls bear the 1714-1801 Hanoverian arms, but a few have been found bearing the post-Union arms of Queen Anne. So many ornamental devices were used in the nineteenth century that it is likely (though I have not seen

one) that the Victorian arms were also used. The arms of London were frequently borrowed in that period, those being a shield charged with a cross and with the sword of St. Paul in the 1st quarter.

Pillar-molded or gadrooned bowls became popular in England and America in the late eighteenth century and continued into the nineteenth, but by mid-century English styles had become much more adventurous and the bowls were decorated with arms and crests of counties, with the insignia of Freemasonry or of the Royal Order of Buffaloes, with figures of soldiers or of ships. Sometimes the whole bowl was cast in the shape of a barrel or even a boot.

In addition to English pipes, a small number of Dutch specimens are found on eighteenth-century American sites, most of them in Florida and the Gulf States but some of them in other areas during the Revolutionary War. These Dutch pipes have somewhat egg-shaped bowls very often with evidence of vertical paring on the sides, thin walls, narrow stems, and generally highly burnished buff surfaces. Makers' marks are stamped on the backs of the bowls, on the bases of small heels, or on either side of spurs, nearly always in diminutive letters or minuscule shields of arms. Equally small pictorial marks were impressed on the bases of the small heels, among them a fish, a windmill, a milkmaid carrying two buckets, and a figure whom the Dutch describe as the "lady of easy virtue." The thin stems are often elaborately molded with fleur-de-lis, rosette, and foliate motifs, and the name GOUDA (their principal place of manufacture) is frequently included in the embossed decoration.

A few French pipes are found on early Federal sites and may be identified by the superior quality of their molded bowls, which may be shaped as faces, figureheads, or other elaborate devices. Pipes made either in the United States or for the American trade occur in large quantities in the first quarter of the nineteenth century, usually with pillar-molded or gadrooned lower bowls with broad collars above adorned by thirteen stars.

Large numbers of locally made pipes occur on Virginia sites from the second quarter to the end of the seventeenth century, some of them of great elaboration involving the use of blended clays to produce "agate" effects and employing stamps and rouletting wheels to create various impressed devices. Many of the latter are distinctly Indian in character, giving rise to the strong possibility

that they were made by the Indians and smoked by the colonists. By mid-century, cruder copies of the plain English pipes were also produced in Virginia and New England, but as no positively identified kilns have yet been found we do not know exactly where or by whom they were made. It may also be noted that very crude hand-rolled, red-clay copies of late-seventeenth-century English pipes (though with stamped ornament) are found in appropriate contexts in Jamaica. It is reasonable to suppose that the continuing exploration of early sites in others of the erstwhile British colonies will produce more evidence of local pipemaking.

Similar studies are needed in the area of nineteenth-century pipemaking in America. Until recently it was assumed that the so-called Indian-head pipes with reed stems were unknown before the early 1800's, but excavations at the Moravian settlement site at Bethabara in North Carolina have revealed similar bowl types (Fig. 96, No. 29) in a potter's waster pit dating at least as early as 1771. No doubt other such surprises are in store for us.

As well as pipes of clay, a few were of metal. There are silver examples dating from the second quarter of the seventeenth century whose stems unscrew in the middle for portability; but the majority of metal pipes belong to the latter part of the eighteenth century, when they were made of either iron or brass. They are said to have been designed for travelers and huntsmen, for whom the clay pipe was too fragile. However, the metal pipes could be painful if jolted into someone's eye, and they were not widely used. Nevertheless, fragments have been found in American excavations. In addition, the remains of a pewter pipe of uncertain date were found at Jamestown.

Supplying the smoker with fuel for his pipe proved to be one of history's most influential endeavors, and the changes wrought by it have left their mark on the world in which we live. While it would be possible to write an entire book on the artifacts, from anchors to wire, that were employed in the service of tobacco, we are here only concerned with those that kept the pipe going during the actual smoking process. Next to the weed itself, the fire was the most important accessory, coupled, of course, with a means of bringing the two together. While lighting one's pipe from a candle was probably the most convenient method (e.g., Hendrick Terbrugghen's

Boy lighting a Pipe, 1623), the embers from domestic hearths were frequently used, picked up by a pair of long steel tongs, the ends resembling those of ordinary fireplace tongs but the handles separate above a pivot with a spring between them to hold the ember-seizing pad ends together. Such tongs were used in both the seventeenth and eighteenth centuries, and some have removable tampers and even whistles as terminals. Dated examples occur from the late seventeenth to the mid-eighteenth century.

Much smaller tongs, also with spring grips, were often used, generally through the seventeenth and into the early eighteenth century. They were normally about $3\frac{1}{4}$ " long and of steel or brass. The ember-seizing ends were almost pointed and together somewhat resembled the beak of a heron. The two arms were linked and pivoted in the same manner as their larger counterparts, the thicker of the two having a small spring against which the other pressed. These tools are frequently found broken, at which times the thicker of the two arms often resembles a miniature ice skate, an appearance partially derived from the flat disc at the handle end. The other handle also ended in a disc, though turning outward and intended for use as a pipe tamper. This small, and by no means rare, tool has rightly been described as a "smoker's companion," but more often than not it fails to be identified or is classed as a surgical instrument.

In the seventeenth century the embers into which the small tongs were dipped were generally contained in earthenware braziers or chafing dishes and were stood on the table. However, the same kind of burner was used as a heater for wooden foot warmers, the boxes being open, or having a door in one side and holes or slots in the top. Good examples of both types are to be seen in seventeenth-century Dutch paintings, notably Jan Miensz Molenaer's *Tavern of the Crescent Moon* (before 1668), Jan Steen's *Twelfth Night* (1688) and *Welcome for the Visitor* (before 1679), and Cornelis de Man's *The Chess Players* (before 1706). The pottery braziers were of two shapes, the most common being roughly triangular with three short legs and a single looped or cylindrical handle. These are generally of lead-glazed red earthenware, and both ware and handle types are clearly shown in two of Molenaer's paintings, the already cited *Tavern of the Crescent Moon* and *Peas-*

ants in the Tavern. The second and more elaborate type of brazier comprised a bowl with a slotted or punctured bottom over a hollow pedestal foot, the latter generally having a triangular aperture in the side to encourage an upward draft. One such foot in "Metropolitan" slipware was found at Jamestown and, being decorated, was clearly not intended to be hidden in a foot warmer. Smokers' braziers were also made in more expensive and ornamental materials, such as brass and even silver gilt. An example of this chafing dish type is shown in Willem Pietersz Buytewech's *A Merry Party* (about 1615). Small sheet-brass braziers with a turned wooden handle attached to one side were common in the eighteenth century. They generally stood on a cast-brass collarlike foot, made in at least two sections and decorated with patterns of circular holes and crescents. Parts of these feet are found on American archaeological sites of the mid-eighteenth century—and are generally classed as *unidentified*.

Next to the means of lighting his pipe, the smoker's most important tool was the tamper or stopper. These were commonly of brass, and from at least as early as 1660 they were cast with elaborately ornamental handles. (Fig. 98) Close dating is not always as easy as it looks, for the designs were frequently retrospective; for example, a profile of Charles I would have been popular in the reign of Charles II, while a coin mounted on the handle might already have been old (and therefore interesting) when it was so used. The best clue to an early date is provided by the size of the tamper itself, for those that were of small diameter (Fig. 98, No. 1) fitted small bowls—and small bowls were generally early. A sophisticated type appeared in the early eighteenth century (and continued through it) in the form of a closed-ended tube topped by a signet ring; the tube served both as a tamper and as a case for a pocket corkscrew attached to the ring handle.

Sometimes mistaken for a corkscrew is another smoker's aid, this one in the shape of a miniature steel hatchet. Attached to the handle end was a double "corkscrew" resembling the "worm" for extracting debris from gun barrels; it served a comparable purpose in extracting plugged tobacco from pipe bowls. At the other end of the tool was a small blade with an unsharpened edge to break up tobacco without cutting it, while behind, at what might be termed



Fig. 98. Brass pipe tampers. 1. Amorous couple; third quarter of 17th century. 2. Profile of Charles I; late 17th or 18th century. 3. Nude boy; 17th or 18th century. 4. Hand with pipe, probably early 19th century. 5. Handle in the shape of a Queen Anne coin; early 18th century (?). Ht. of No. 1: 3".

the poll of the hatchet, was a round-sectioned tamper sometimes decorated with multiple collars and grooves. The small diameter of the tampers suggest that these tools may date from the seventeenth rather than the eighteenth century, but unfortunately I know of no examples from dated archaeological contexts.

Tobacco boxes fall into two classes, those used to carry it around on one's person and those to keep it in the home. Pocket boxes are sometimes impossible to distinguish from large snuffboxes, and cheap varieties of both were made of tin, pewter, and brass. Copper boxes with brass lids having stamped and engraved decoration were made in the Netherlands throughout much of the eighteenth century and are identified by the presence of Dutch inscriptions describing designs of ships, harbors, towns, and convivial or Biblical scenes. The majority of such boxes were oblong, but the earliest examples seem to have been oval with both top and bottom of brass. (Frontispiece)

Nonportable tobacco boxes used in the home and in taverns or other public buildings were most commonly of lead, usually with poorly defined cast decoration (tavern scenes, shields of arms, etc.) on the sides; they had removable lids and a press inside to keep the tobacco tight and away from the air. These boxes were often gaily painted, particularly in the early nineteenth century. The archaeologist who finds scraps of lead with molded, paneled ornament would do well to consider the possibility of its having been part of a tobacco box. They were also made in iron, brass, and pewter. In the nineteenth century brown stoneware jars with flat lids were widely used, some of the more elaborately decorated jars coming from the Rhenish potteries of Nassau in the Rhineland as part of their Gothic revival.

Although clay tobacco pipes were relatively cheap, tavern keepers who provided them for their customers were wont to re-use them as long as they remained unbroken. In the interests of hygiene they baked used pipes in what were known as "kilns," iron racks comprising three hoops held together by horizontal straps and with a suspension ring in the mid-section of the second hoop. Slung in this rack, the pipes were baked over the kitchen fire or sealed in the bread oven. Iron feet in the form of bent lengths of strapping were usually attached to the bottom horizontal strap so that once cleansed, the pipes and rack could be stood beside the hearth to cool. Thus skeletal iron tubes found in excavations may well have been pipe "kilns." It is worth remembering that such items listed in household inventories do not necessarily mean that the owners manufactured pipes!

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§ TOYS

In the seventeenth and eighteenth centuries, and earlier still for that matter, the word *toy* meant not only a plaything but also a trifle, a small article of little intrinsic value. Thus such items as buttons, cheap jewelry, and odds and ends that today one might buy at a notions counter in an American store could be classed as toys, as could pottery ornaments, money boxes, and the knickknacks and gewgaws sold at fairs and now collected under the category of *fairings*. I am here concerned, however, only with toys in the sense of children's playthings.

The majority of eighteenth-century toys were miniature versions of well-known objects whose dating criteria can generally be applied to them. This is particularly true of dollhouse furnishings in pottery, glass, pewter, and occasionally silver. Delftware potters made miniature bowls and dishes, but the ware did not lend itself as easily to them as did white-saltglaze stoneware. The latter was much used for this purpose in the period 1730-65, and, as might be expected, it was followed by similar dollhouse items in creamware. Miniature wine glasses are rare, but there is a good range of early-eighteenth-century examples in the Victoria and Albert Museum,