

AN ANALYSIS OF 17TH CENTURY CLAY TOBACCO PIPES FROM THE CHANEY'S HILLS SITE (18AN1084)

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Abstract

This paper examines a collection of 1,689 17th century clay tobacco pipe fragments recovered during 1998-99 excavations at the Chaney's Hills site (18AN1084) in Anne Arundel County, Maryland. After Phase I-III excavations were performed at the site by ACS Consultants (Ballweber 1999), extensive additional Phase III excavations were conducted by Anne Arundel County's *Lost Towns Project*. An analysis of the clay tobacco pipe assemblage from the site, augmented by the existing archival records and recovered ceramics, supports the theory that Chaney's Hills was occupied from 1658 until just before Richard Chaney's death in 1686.

Introduction

Archeologists studying colonial period sites frequently use clay tobacco pipes as one of several tools for dating human occupation. The potential for dating and seriating archeological deposits based on clay tobacco pipes has been documented by scholars such as Harrington (1954), Binford (1961), Hanson (1971), Crass (1988), Gibb and Luckenbach (1997), and many others. Dating archeological deposits based on tobacco pipe fragments involves the statistical analysis of pipestem bore diameters and the identification of makers' marks, bowl forms, and stylistic patterns. This paper employs each of these diagnostic methods in an attempt to refine the occupation date of Chaney's Hills, a colonial period site currently under continued investigation by Anne Arundel County's *Lost Towns Project*.

Location and Historical Setting of the Chaney's Hills Site

The Chaney's Hills site is located in Riva, southern Anne Arundel County, within Maryland Archeological Research Unit 7 of the Western Shore of the Coastal Plain Province (Figure 1). The 3.7-acre site lies within the southwestern portion of an 89.7-acre parcel south of Governor's Bridge Road and west of Riva Road, near Flat Creek, a tributary of the South River. In June of 1998 the site was identified during a county-required Phase I archeological survey of a proposed 160-acre subdivision. ACS Consultants of Columbia, Maryland conducted the Phase I

survey, as well as Phase II and III archeological investigations involving the 17th century occupation of the site (Ballweber 1999). Additional Phase III investigations conducted by *The Lost Towns Project* revealed the footprints of two mid-17th century earthfast structures. A 26-by-20-foot building, the larger of the two footprints, has an unusual 17th century period layout with a front entrance set off to the left and two side-by-side rooms divided by an interior fireplace (Figure 2).

Documentary Evidence

The archival record indicates that several land transactions took place at Chaney's Hills during the period 1658-1707. In 1658, Richard Chaney requested 100 acres of land for himself and his wife, Charity (Maryland State Archives [MSA] 1658:74). In 1659, a land patent for 100 acres was issued to Richard Chaney, and the property was alternately referred to as Cheney's Hills or Chaney's Hills in the same document (MSA 1659:263). This was apparently the first historic period occupation of the site. A 1707 court record indicates that John Gray purchased Chaney's Hills from Richard Chaney (MSA 1707:265).

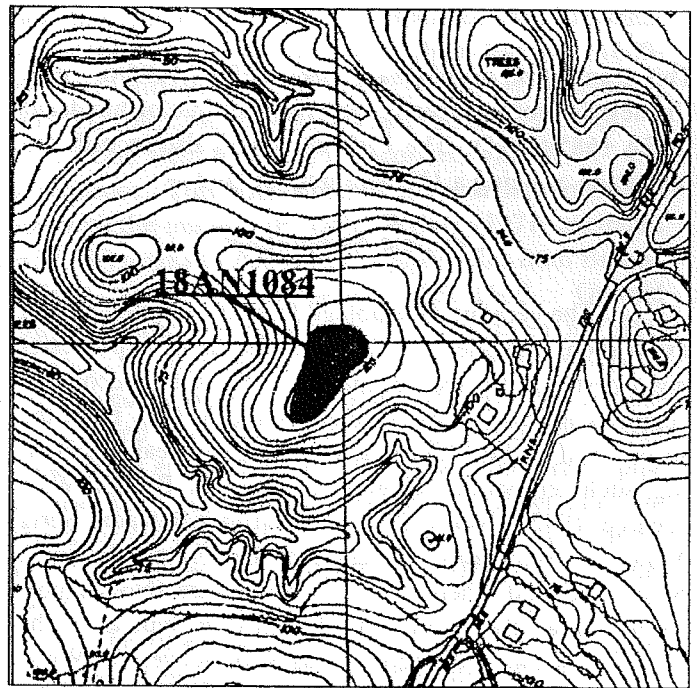


FIGURE 1 Topographic setting of the Chaney's Hill Site

Pipe Analysis

The Phase I and II assemblage from Chaney's Hills includes 38 pipestem and bowl fragments from surface collections and shovel test pits, and 164 pipe fragments from 12 5-by-5-foot test units. Only 99 of the total 202 pipe fragments recovered were measurable stem fragments. The Phase III excavations, totaling 85 units, produced 1,487 pipe fragments, 695 of which contained measurable bores.

Each of the 794 clay tobacco pipestem and bowl fragments with intact bores were measured in increments of 1/64" from 4/64" to 9/64". The measurements were then evaluated using Harrington's (1954), Binford's (1961), and Hanson's #5 (1971) formulas. These statistical formulas are based on J.C. Harrington's observation of steadily decreasing bore sizes from the period of 1620-1800 (Figure 3). Although the formulas are similar in nature, the slope of the single line of regression varies by 6.59, and the theoretical date at which the bore size would equal zero varies by 43.79 years between formulas. The formulas apply two standard deviations, which incorporates 95% of the samples. The controversial, but popular, tobacco pipe dating methods are characterized by the majority (57%-77%) of a single bore size being more prevalent within each of the five successive time periods.

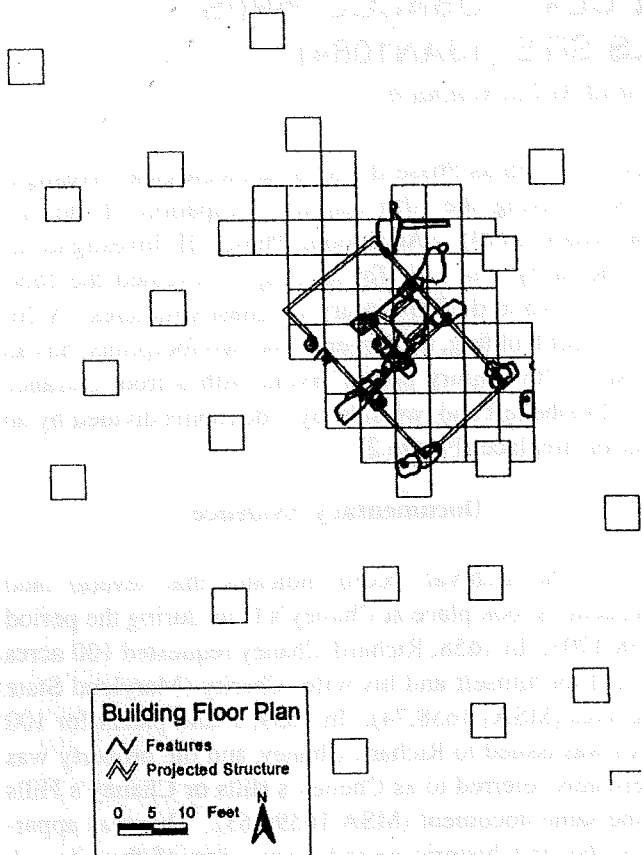


FIGURE 2. Chaney's Hills site plan.

This transaction would have been before 1685/6, since Chaney did not own the property at the time of his death (MSA 1685/6:311). The 1707 document also records the plantation as being a 117-acre tract of land.

Ceramic Assemblage

The ceramic assemblage from the Chaney's Hills excavations provides an additional means of hypothesizing a best date for the occupation of the site. Recovered ceramics include types typically found at sites from the second half of the 17th century in the Chesapeake, including such temporally diagnostic types as Border Ware (Pearce 1992), North Devon Sgraffito Slipware, Sprig Molded, Blue and Manganese Decorated Rhenish Stoneware, and Rhenish Brown Stoneware (Noël Hume 1969). Lead-Back Tin Glazed delftware, typical of the first half of the 17th century, was also recovered. White Saltglazed Stoneware, very common on 18th century sites, is not present on the site.

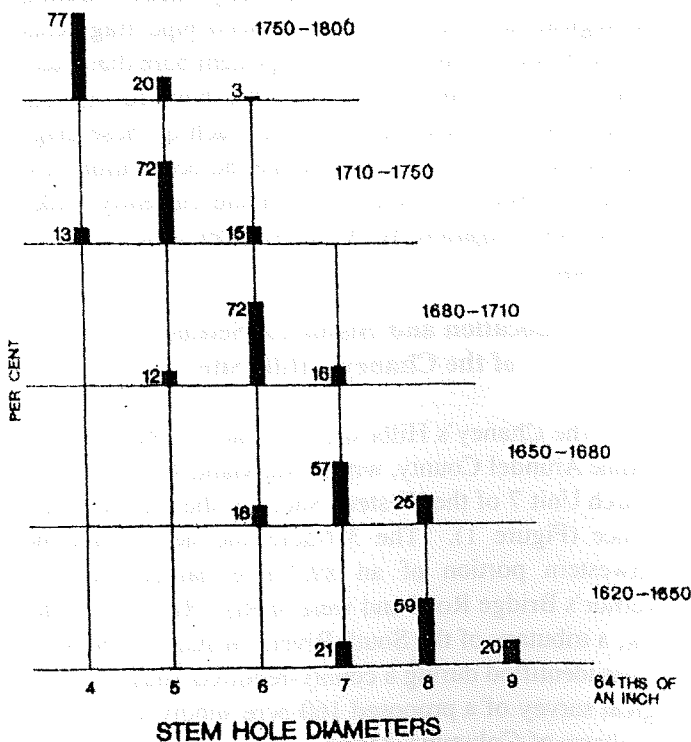


FIGURE 3. Harrington bar-graph.

The 21 of 38 tobacco pipestem fragments from the surface collection and shovel test pits which are measurable provide a date of 1693 using the Binford (1961)-Harrington (1954) formula¹ and 1691 using the Hanson formula² (1971) respectively. The 78 of 164 stem fragments from the 12 test units which are measurable yield a date of 1681 using the Binford-Harrington formula and 1680 using the Hanson formula. The calculation of these dates should be viewed cautiously, given the relatively small size of two Phase I and II samples. The 85 units excavated in Phase III contained 1,487 stem fragments, of which 695 are measurable. The Phase III assemblage provide a date of 1692 using the Binford-Harrington method and 1689, using the Hanson method. The entire assemblage of pipe fragments provides a date of 1691 using the Binford-Harrington method and 1689 using the Hanson method.

Makers' Marks

Aside from numerous rouletted rim decorations, the majority of the tobacco pipes recovered from the Chaney's Hills site are not marked. The collection contains only seven marked fragments: a spur, two bowls, and four stem fragments (Figure 4). However, the absence of makers' marks in the third quarter of the 17th century is not uncommon, and marked pipes regained popularity in the last quarter of the century (Noël Hume 1969:304).

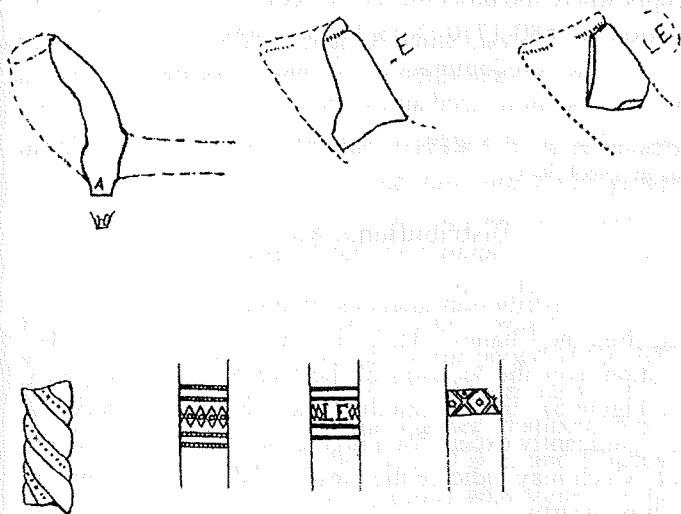


FIGURE 4. Marked white clay pipe fragments from the Chaney's Hills site.

One stem and two bowl fragments display "LE" initials in two different variants. Both bowl fragments are

incised "LE" in a plain manner, while the initialed stem decoration displays a diamond pattern bordered by two rows of rouletting above and below. These initials and marks may indicate the work of pipemaker Llewellyn Evans as attributed by Alexander (1979:37). Llewellyn (also Llewellyn, Lluellin, and Lluellyn) Evans was a Bristol pipemaker freed from an apprenticeship on May 31, 1661. Elizabeth Evans, Llewellyn's wife, continued to use the "LE" mark after her husband's death in 1688 or 1689 (Crass 1988).

One pipe bowl fragment is marked with initials on each side of a spur. A clearly molded "A" and a lightly molded "H" appear, independently, on each side of the spur. Tobacco pipes with spurs are generally associated with the second half of the 17th century and were commonly marked with initials (Oswald 1961:56). Two English pipemakers bear the same "HA" initials and no less than nine pipemakers also have "AH" initials. One possible attribution for this initialed pipe fragment is Henry Artus, a Bristol pipemaker who was active between 1680-1720. Artus's name appears on the Bristol Apprenticeship Rolls, which also lists him as an apprentice to Llewellyn Evans.

Three pipestems display ornamentation without initials. One stem is decorated with dots encased within connecting diamonds bordered by two sets of parallel rouletting. Often designated as Bristol-style diamond chain, this type of decoration is associated with Llewellyn Evans (1661-1688) and the two William Evanses (1600-1697) as attributed by Oswald (1960:60), Alexander (1979:37, 1983:240), and Hurry and Keeler (1991:56).

One stem fragment is decorated with an "X" and dot sequence. This ornamentation is commonly in association with the initials "IF" (JF). Walker (1971) attributes the IF (JF) marks to James Fox, a pipemaker from Bristol, England, active in the period 1651-1669. Oswald (1961:58) indicates that James Fox was freed in 1654. However, identical pipes found at the Chalkley site in Anne Arundel County call into question Walker's attribution based on a documented date for the site of 1677-1685 (Luckenbach et al. 1995:48). This type of decorated pipe has also been recovered at the Middle Plantation site (Doepkens 1991:202) in Anne Arundel County and the St. John's site located in St. Mary's City (Hurry and Keeler 1991:63).

The final decorated stem is adorned with spiral fluting characterized by a single, spiral line of incised dots on the concave portion of rounded grooves. This type of stem decoration is characteristic of late 17th and early 18th-century pipe makers from Chester, England (Noël

Hume 1969:305). Identical stem fragments have been recovered at Port Royal (Marx 1968). This type of decorated pipe has also been recovered on historic Onondaga Iroquois sites (Bradley and DeAngelo 1981:121).

Forty-four of the Chaney's Hills pipe bowl fragments are decorated with various styles of rouletting, a common decorative technique in the 17th century (Noël Hume 1969:303). Rouletting is sometimes referred to as "milling" or "watch-wheel surround" and is the decoration at or near the top of a pipe bowl [or on a stem]. This type of decoration is hand-applied with either a toothed wheel or a denticulated knife before firing (Alexander 1983:206).

The results obtained from the analysis of recovered makers' marks can be used to date the Chaney's Hills site to between 1651 and 1720, with the most likely dates between 1661 and 1689.

Bowl Forms

Two of the nine nearly complete pipe bowls from Chaney's Hills are narrow with straight sides and circular bases (Figure 5). Two more bowls are bulbous or belly-style; one has a large circular base and the other a smaller base with a spur. The remaining five bowls are trade or "export" pipes and do not contain any type of heel or spur on the base area. According to Oswald's (1961) chronology of bowl types, these bowls date from 1650 to 1730. The dates of these bowl forms are earlier and more expansive than the stem bore analysis, which provided a range of 1680 to 1693.

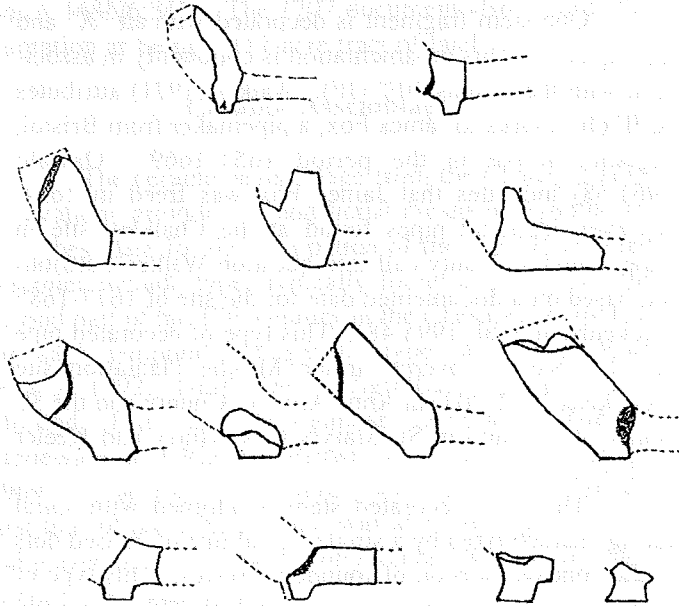


FIGURE 5. Bowl forms from the Chaney's Hills site.

Heels

The Chaney's Hills excavations recovered 28 pipe base fragments, which are classified into six heel categories. Five (18%) of the fragments are of the American trade style characterized by the absence of a heel or spur. It is possible that these pipes, also known as export pipes, were faster and easier to make without a heel, and therefore more profitable. The absence of a heel would also be more beneficial for transit by reducing possible breakage. This export pipe also bears a resemblance to traditional Indian style pipes (Noël Hume 1969:305). Other 17th century sites have produced a predominance of trade pipes. The Chalkley site (Luckenbach et al. 1995) and South River Landing sites (Rule and Evans 1982) yielded trade pipes at rates of 40% and 52% respectively.

Three of the pipe bowl heels (11%) resemble the Coventry style characterized by a high, forward flared step. This style is associated with the period of 1685-1716, and may be the work of John Pottifer of Coventry (Oswald 1984:216-220). This type of heel occurs only rarely in the Chesapeake region.

Three large, circular heels are found on belly-bowls, and fall within the period of 1650-1689 (Oswald 1951:156). Two heels (7%) have spurs, and their very small and round heel is associated with the period 1680-1720. Another two heels display a pronounced narrowing at the base of the pipe. These round-shaped heels slope steeply where the bowl meets the heel. This style suggests a period of 1680-1710 (Noël Hume 1969:303).

The predominance of heel fragments (N=13, 46%) are medium-sized and slope gently to the body of the pipe. This style suggests a period of 1650-1680 (Noël Hume 1969:303).

Distributional Analysis

A distribution analysis of pipe fragments recovered from the Chaney's Hills site shows a fairly even distribution over the location of the two building footprints (see Figure 6). In between the structures, the numbers fall off significantly except for a high concentration in a single unit, which may indicate the presence of an outbuilding or trash pit nearby.

Comparative Pipestem Bore Diameter Distributions

Tobacco pipestem assemblages from selected 17th century Chesapeake sites (see Figure 7), as adapted from Gibb and Luckenbach (1997), provide a context for assess-

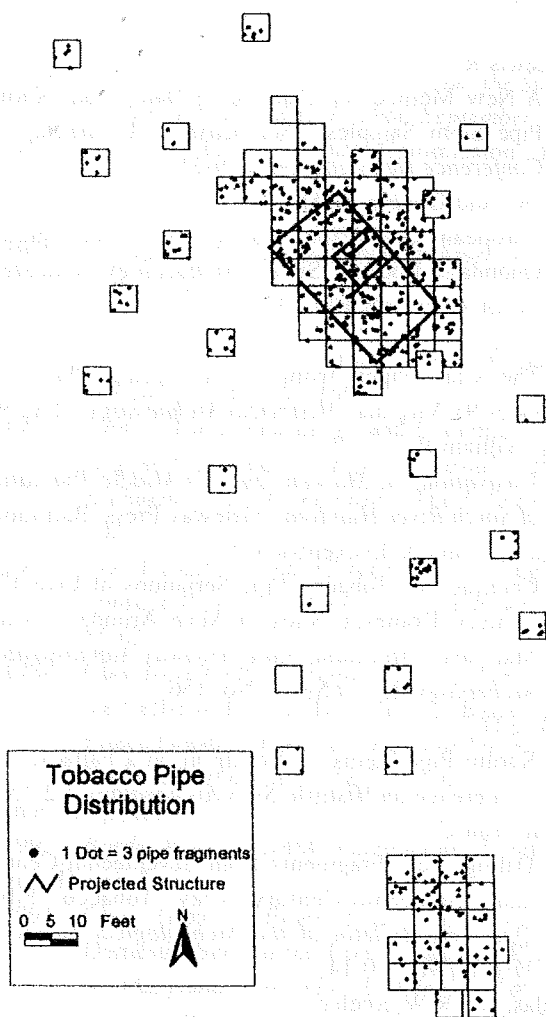


FIGURE 6. Distribution map of white clay tobacco pipes from the Chaney's Hills site.

ing and comparing the Chaney's Hills stem assemblage. The stem distributions analyzed fall into three groups indicative of different periods of occupation. For instance, the Group 1 assemblage from the Compton, Town Neck, Mattapany, Sewell, Broadneck, Smith's Ordinary, and Burle sites provides a mode of 7/64", which compares with the Harrington distribution for the period 1650-1680. The large concentration of 6/64" diameter stems in the Group 2 assemblage from the Garden, Patuxent Point, Melon Field, Cordea's Hope, Swan Cove, and Chaney's Hills sites suggests later occupations with some overlap. Group 3, including the Leavy Neck, Tanyard, and King's Reach sites, contains a predominance of 5/64" stems and lack of 4/64" stems, suggesting a range of 1690-1720 or 1730 based on Pogue's (1991) assessment of the King's Reach site. Approximately half of the measurable bores from Chaney's Hills fall within the 6/64" measurement, while over 30 percent of the bores measure 7/64" and 10 percent measure 5/64".

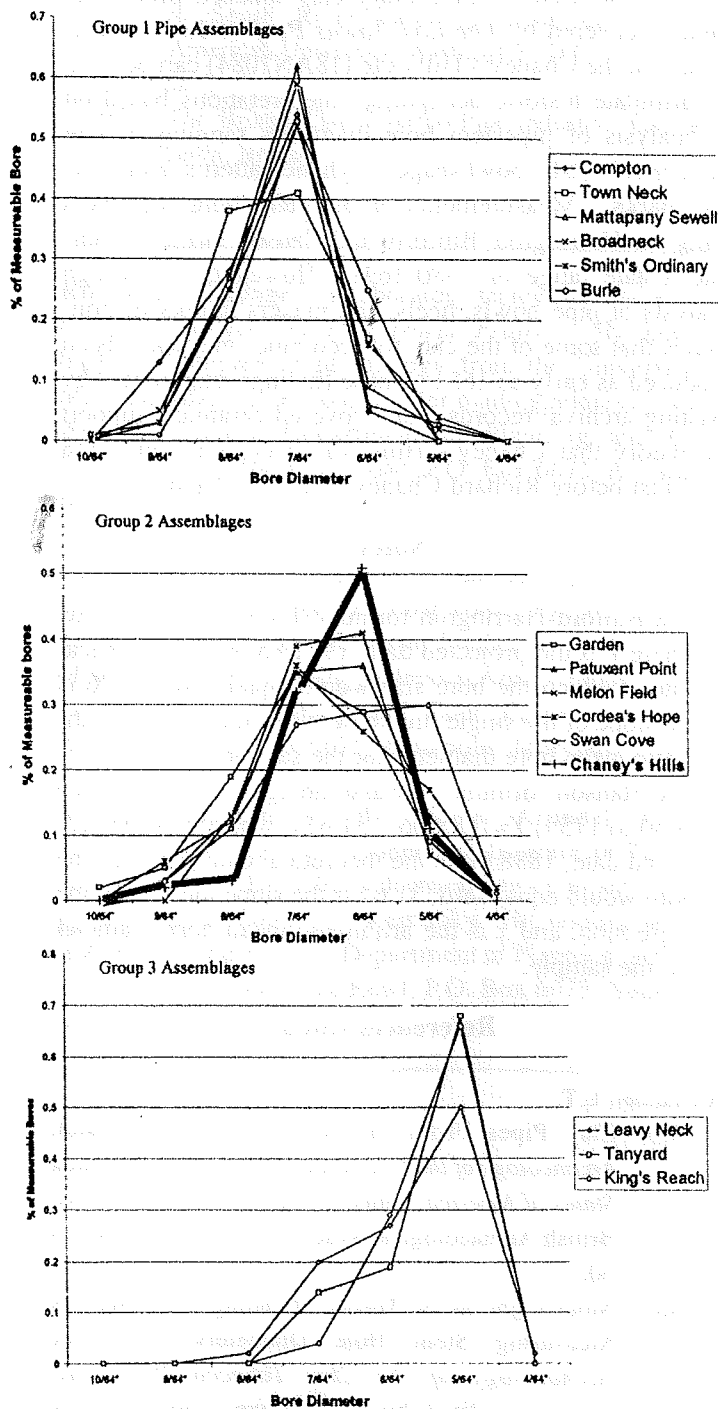


FIGURE 7. Comparative tobacco pipe assemblages from selected 17th century sites (adapted from Gibb and Luckenbach 1997).

Summary

The 1,689 17th century clay tobacco pipe fragments recovered by *The Lost Towns Project* during excavations at the Chaney's Hills site (18AN1084) can be used to formulate historic occupation interpretations based on an analysis of pipestem bore diameters ranging in size from 5/64"-9/64", bowl shapes, stylistic patterns, and makers' marks. Measurements of pipestem bore diameters using the Harrington, Binford, and Hanson formulas indicate a date range of 1680-1691. However, a thorough analysis of pipe bowls, heels, and makers' marks demonstrates that some of the clay tobacco pipes may have been produced as early as 1651. These findings, augmented by existing archival records and recovered ceramics, support the theory that Chaney's Hills was occupied from 1658 until just before Richard Chaney's death in 1686.

Notes

1. The Binford-Harrington formula: $Y=1931.85 - 38.26x$; where Y is the projected date, 1931.85 is the theoretical date at which the bore size would equal zero, 38.26 is the slope of the single line regression, and x is the arithmetic mean bore diameter for the sample.
2. The Hanson formula: (for assemblages dating between 1650 to 1759) $Y=1888.06 - 31.67x$; where Y is the projected date, 1888.06 is the theoretical date at which the bore would equal zero, 31.67 is the slope the single line regression, and x is the arithmetic mean bore diameter for the sample.

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