

FIELD ARCHAEOLOGY  
OF  
THE CLIFTS PLANTATION SITE  
WESTMORELAND COUNTY, VIRGINIA

by  
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for  
The Robert E. Lee Memorial Association

1980

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FRONTISPIECE, The Clifts Plantation site, after excavation (facing north).

## ACKNOWLEDGEMENTS

As in any large-scale archaeological undertaking, many people have contributed to the success of the excavations at The Clifts Plantation. I am accordingly indebted to a great many people. I find it difficult to adequately express my appreciation to the Directors of the Robert E. Lee Memorial Association and the Association's staff and its Executive Director, Admiral Thomas E. Bass, III, who together made everything possible. In addition I am grateful to the staff of the Virginia Research Center for Archaeology for their help in times of need, and to former Commissioner of Archaeology, William M. Kelso for the guidance he has provided from the beginning.

I am grateful to the members of the field crew who for two very long field seasons did such careful and above all efficient work, with great good humor, in some pretty miserable weather. Among them were Dr. Robert W. Keeler, Alice Guerrant, Elizabeth Barber Clarke, Robert Trammel, Stephen Sensbach, Anne Harris and Perry Tourtelotte.

Dr. J. Lawrence Angel of the Smithsonian Institution graciously provided the analysis of the skeletal material from The Clifts' cemetery. Joanne Bowen is responsible for the analysis of the faunal remains from the site. I am extremely grateful to both of them for their efforts. Finally, Janet E. Long, who served as Laboratory Supervisor during the entire project, deserves my greatest thanks. Her contributions have been crucial to every aspect of the excavation.

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September 1980

## INTRODUCTION

Between 1976 and 1979, archaeological investigations were undertaken at The Clifts Plantation Site (44 WM 33), located at Stratford, Westmoreland County Virginia. The excavation were funded by a generous grant from the Lilly Endowment, Inc. to the Robert E. Lee Memorial Association, and overseen by the Virginia Historic Landmarks Commission and the Virginia Research Center for Archaeology.

From the beginning, it was hoped that archaeology at The Clifts would provide data which could be used to further our understanding of how traditional English ways of life were adapted to meet the exigencies of life in the tobacco-growing Chesapeake region, and how initial accommodations gave way to new ones, as changing social and economic circumstances dictated. A beginning has been made in this direction (Neiman 1978, Neiman 1980), and more progress toward this goal will be forthcoming in the near future.

The following report is intended as a foundation for the work that is still to be done. It presents an overview of the excavation and an outline of the basic data recovered. The emphasis is on the description of archaeological features, the character of their contents and their dates of deposition. This same emphasis has been and continues to be dominant in the field of historical archaeology, perhaps not without reason since dated classes of phenomena are about all the archaeologist has to work with. While an attempt has been made to stick to "the facts," there is no pretense that all of them, or even the relevant ones, have been touched upon. Since all observations on the external world, including the archaeological record, are theory-dependent, data which at first seem trivial have a habit of later becoming crucial. All descriptions, however straight-forward they may seem,



are descriptions from some point of view. The descriptions provided here document, with appropriate buttressing arguments, changes which occurred in the layout of The Clifts during the course of its occupation from circa 1670 to 1730, thus providing the chronological framework without which more explanatory approaches to the study of change through time in architecture and artifact assemblages cannot even begin. More detailed research into such topics is ongoing and the results will appear in the next few years. From an explanatory perspective, the task of understanding the archaeological record at The Clifts, and the socio-cultural changes represented in it, has only just begun. At this level the fruits of archaeological labor ripen maddeningly slowly. This report is intended to help insure that when they do, they will be worth eating.

A few words to the reader: Given the size of The Clifts and the number of features uncovered, it has been necessary to reproduce the site plan in the form of the foldout which accompanies this report. The provenience numbers mentioned in the text and the features which they denote will be found there. Second, given constraints of time, it has proven impossible to adequately illustrate the artifacts recovered from the site. Rather than follow the usual course of including drawings of a few particularly complete specimens, I have opted to include tables which list by artifact class all the specimens recovered from the major trash pits at the site (Appendix I). In doing so aesthetics have been sacrificed for completeness (or at least one form of it), a not altogether happy result which will be reversed in the near future.

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CHAPTER I

THE DOCUMENTARY RECORD:

The Popes, Lees and The Clifts

The Popes: Nathaniel, Thomas, Joanna and Nathaniel

In 1644 Virginia's native population made a last-ditch attempt to rid their land of invading Englishmen. They were unsuccessful. In the treaty which followed their defeat, the Indians of the Tidewater were forced to recognize the overlordship of the English King and the legitimacy of the English occupation south of the York River. In return the English promised to refrain from taking up more land north of the York, confining themselves to the eastern end of the Middle Peninsula where patents had already been granted. The promise, like many which followed, was short-lived. Virginians craved more land, and there was little the government of the colony or its Governor, Sir William Berkeley, could do to prevent them from obtaining it. In 1648 Northumberland County was formed north of the Rappahannock River. In the following year, under pressure from the House of Burgesses, the Governor was forced to open the entirety of the York, Rappahannock and Potomac drainages to settlement (Craven 1949:362-364). As the influx of settlers spread, new counties were formed in quick succession: Lancaster in 1651, Westmoreland in 1653, and Rappahannock in 1656.

In Westmoreland land was patented at a remarkable rate. By 1660 much of the acreage in the county had been taken up, including all the land on navigable water (Eaton 1942). As seems to have been the case in the Northern Neck in general, much of the land was owned by a relatively small number of individuals (Morgan 1975:219). Grants in excess of 1000 acres were not uncommon. Over thirty of them were made in the county during the period, the largest for 6000 acres. In addition to large single tracts, wealthy men often owned separate parcels of several hundred acres each, scattered throughout the county (Eaton 1942). The resulting state of affairs

was well described by John Clayton in 1684: "Everyone covets so much and there is such vast extent of land that they spread so far that they cannot manage well a hundredth of what they have" (quoted in Morgan 1975:220).

Among the first large landowners in Westmoreland was Nathaniel Pope (1). Like many members of the seventeenth century Chesapeake gentry, he was something of an Horatio Alger. He arrived in the Chesapeake in 1637 as an illiterate yeoman and settled near the Maryland town of St. Mary's. Within a decade he was styling himself "gentleman." Pope's Maryland career came to an end in 1647, a result of his having chosen the losing side during Ingle's Rebellion (Carr: n.d.). He left St. Mary's, moved across the Potomac and set up a plantation at Mattox Creek.

Although living at Mattox Creek (Appomattox) by 1648, Pope did not take out his first Virginia land patent until 1651. The grant was for 1050 acres situated seven miles down river. He renewed this grant in 1656, with the addition of 550 acres on its western flank (Virginia Land Patents, Book 4:32). The acreage was located behind a series of high bluffs on the Potomac. It was to become the site of The Clifts Plantation. Later in the decade, Pope acquired two additional tracts, one at Chapawamsick Creek in present-day Stafford County, the other at the head of Mattox Creek, totaling 2550 acres (Virginia Land Patents, Book 4:41,201).

Political and economic success followed. By 1655 Pope had become a Justice of the Peace and Lt. Colonel in the militia in newly formed Westmoreland (Westmoreland I:36). At his death in 1660, with an estate valued in excess of 350 pounds current money, in addition to forty head of cattle, fifty swine, and a long list of debtors, he was probably the county's wealthiest resident. His wealth was apparently the product of the labor of his fifteen indentured servants in his tobacco fields and his activities



as a merchant, purveying such items as cloth and tools to his neighbors in exchange for their tobacco (Westmoreland II:8). That the range of his entrepreneurial activities included both sides of the Atlantic is hinted by his testamentary request that his son-in-law William Hardidge be paid "two hundred pounds that I stand engaged to him out of my estate in England" (Westmoreland Deeds and Wills, Book 1:115). Hardidge, who had married Pope's daughter Margaret, was a Westmoreland merchant with Bristol connections.

At his death Nathaniel Pope (1) willed his Mattox Creek plantation, along with the tract at the head of the Creek, to his younger son Nathaniel (2) (Westmoreland Deeds and Wills, Book 1:115). Nathaniel (2) married Mary Sisson and survived barely long enough to produce a child, Nathaniel (3), who in the early part of the next century acquired a reputation as a "practitioner at law," and eventually served as Queen's attorney and Justice of the Peace in Westmoreland before his death in 1719 (WMQ (1)12: 193-194).

Nathaniel Pope's elder son Thomas inherited "that land and plantation situated upon the cliffs." He was also named his father's executor, although at the time of his father's death he had not reached the age of majority. The court therefore appointed John Washington, his brother-in-law, to serve as guardian (Westmoreland II:10). Young Thomas wasted little time in augmenting his inheritance. In 1661 he and Washington jointly secured two land patents, the first for 1200 acres adjacent to Nathaniel (1)'s tract at the head of Mattox Creek, and the second for 10 small islands, lying across the mouth of Cedar Island Creek, later Pope's Creek (Virginia Land Patents, Book 5:167,171). In 1664 he renewed his father's patent for the Clifts tract and patented an additional 854 acres adjacent

to it on the west, making its western boundary Pope's Creek. (Virginia Land Grants, Book 5:193). That Thomas felt it necessary to repatent the original portion of the tract may indicate that the land had not been seated up to that time. However, in a 1670 deed in which Pope sold a 150-acre parcel of the property, he included the phrase "which 2450 acres I am now seated upon" (Westmoreland Deeds and Wills, Book 1:356-357). Apparently between 1664 and 1670, he left the Mattox Creek plantation which his brother had inherited and took up residence at the mouth of Pope's Creek. At roughly the same time, circa 1670 according to archaeological evidence, The Clifts Plantation was established on the opposite end of Pope's river-front property as a tenant farm. The documents cited above indicate occupation of The Clifts began no earlier than 1664. However, the identity of these early tenants remains a mystery.

Soon after his father's death, Thomas seems to have established a reputation as a merchant. In 1663 the County Court appointed him "for to bring in English weights" (Westmoreland III;7). In the same year he initiated the first of many legal actions for debt against his neighbors (Westmoreland III:10). Soon thereafter Thomas left Westmoreland to begin consolidating a base for his merchant activities across the Atlantic in Bristol, one of the principal ports of the tobacco trade (Westmoreland Deeds and Wills, Book 1: 206). For the remaining twenty-odd years of his career he seems to have divided his time between Westmoreland and Bristol, making money at both ends of the tobacco trade as planter, factor and merchant. The variety of his activities found expression in the different epithets attached to his name in the Westmoreland and Bristol records, including both "planter of Westmoreland" (Westmoreland V:404, Westmoreland Deeds and Wills, Book 1:266,356) and "merchant of Bristol"

(Westmoreland IV:89,266).

The precise extent of Pope's Bristol operations remains obscure. In 1663 he married Joanna Gotley in the Parish of Phillip and Jacob (Ralph 1952:26). His father-in-law was a Bristol butcher who was also involved in the Virginia trade (Davis 1963:144). Two of his children were baptised in the Parish of Phillip and Jacob in 1666 and 1669 (WMQ (2) 4:38-39). In 1671 he became a burgess of Bristol, with his father-in-law as sponsor (Williams 1977). Twelve years later, his name appears once in the Bristol Port Books: "Accounts of money collected for wharfage outwards ... Thomas Pope, in the Industrie, 9 hhds. of goods" (McGrath 1953:175). The entry confirms his involvement in shipping goods to Virginia to sell to his neighbors. Throughout the period, Pope maintained a house at Noble's Corner in Barton Regis, an area at that time in the suburbs of Bristol proper (VHM 3:423).

Although there is no record of his wife's ever having ventured across the Atlantic, Thomas' trips between Bristol and Westmoreland were apparently frequent. Throughout the 1660's, 1670's and early 1680's he appeared in Westmoreland, and in the Westmoreland records, to sell land (Westmoreland Deeds and Wills, Book 1: 266,356-57), to sue his neighbors (Westmoreland V:54-146, passim), to act as attorney for other Bristol merchants (Westmoreland IV:184,266) and to supply cider, beef and bacon to the County militia during Bacon's Rebellion (Westmoreland IV:345). Periods in which he was in the county include 1664-1665, 1669-1670, 1672, 1674, 1676-1678 and 1683.

Prompted "by the casualties and dangers attendant upon a sea voyage," Pope made his will in Bristol in 1684 (VHM 3:422). Soon thereafter he

returned to Westmoreland. In February 1685, he petitioned the County Court to be allowed the administration of the estate of a Thomas Page "who died on the seas in a voyage from Barbados to Virginia leaving all his goods and merchandize in the power and possession of the said Thomas Pope" (Westmoreland V:350). The incident raises the interesting possibility that Pope had merchantile interests in Barbados as well. During the period in question, Virginia did carry on a small but lively export trade, based primarily around cattle, with the Carribean colony (Morgan 1975:139). Pope died in Virginia in 1685 (Westmoreland V:404).

Our knowledge of Pope's Virginia operations, not to mention The Clifts and its first proprietors, suffers from a lacuna in the Westmoreland records for the late 1670's and the 1680's. The probate inventories and estate accounts for this period, including the inventory and account of Thomas Pope's estate taken in 1685, have been lost. Nor does a copy of these documents survive in the Bristol records (Williams 1977). However, there can be little doubt that he was one of the wealthiest men in the county, like his father. The extent of the local importance of the transactions into which he entered is suggested by the fact that the the county justices held a special, private court at his house on Pope's Creek in April 1685, soon after his death, in order to facilitate the administration of his estate. The court-appointed trustees, John Washington and William Hardidge, having assumed the enormous bond of 2000 pounds sterling, were charged with the management of the "goods and merchandizes in order for the purchasing of tobaccoes" which Pope had in his possession at his death. In addition they were authorized to ship what tobacco Pope had already bought "aboard the ship John of Bristol, or any other ship or ships the sd. Pope and Company were ... obliged

to freight in" (Westmoreland V:404-405).

Thomas Pope willed "my plantation at or near Pope's Creek in Westmoreland" to his eldest son Thomas Jr., with a third interest to his wife until her death (VHM 3:423). In 1687 Thomas Jr. appeared in Westmoreland Court with a letter from his mother Joanna empowering him to assume management of his father's estate from trustees Washington and Hardidge (Westmoreland V:542). Little is known about him. He was in Westmoreland in 1692 when he was successfully sued by a former servant for his freedom corn (Westmoreland VI:54). He died sometime during the following two years. In 1694 Sarah, his widow, and her new husband Ebenezer Pike, merchant of Cork, appointed Lewis Markham and Capt. Lawrence Washington to manage Pope's Creek Plantation, "to let the said plantation and the lands of the said Thomas Pope ... all the stock, negroes and slaves ... and from time to time ship tobacco for England (Westmoreland Deeds and Wills, Book 2:20). At this point Pope's Creek Plantation drops below the threshold of historical visibility, not to resurface for twenty years.

In 1714 Thomas Pope Jr.'s daughter Mary, his only heir, and her husband Samual Randall Jr., a Cork merchant, appointed Thomas Wills of Bristol as their attorney to sell "an estate in Virginia called the Nettle Patch Plantation at the mouth of Pope's Creek ... containing 500 acres ... with a parcel of negroes and buildings thereon." The plantation had been rented by a Lewis merchant, recently deceased, on a lease good until Mary Randall came of age or was married (Essex Deeds and Wills, Book 14:369). Three years later Daniel McCarty, a Westmoreland gentleman, bought the Nettle Patch Plantation, despite its name, for 150 pounds (Westmoreland Deeds and Wills, Book 6:156-159).

The Clifts Plantation was inherited by Thomas Pope Sr.'s sons Richard and John. Again, Joanna Pope retained the traditional third dower interest in the property; she gained another third when her son John died in 1700 (Westmoreland Deeds and Wills, Book 6:324). The involvement of Richard and John with The Clifts seems to have been minimal. Their mother played the major role in managing the plantation from Bristol. A fourth son of Thomas Pope Sr., Nathaniel Pope (4), did come to Westmoreland in the early eighteenth century. However, the records offer an often cloudy picture of his activities and the precise nature of his association with The Clifts.

The earliest positive identification of Nathaniel (4) in the county dates to February 1704, when he appeared in Westmoreland Court in connection with a debt case (Westmoreland Deeds and Wills, Book 3:212). His career was probably similar to his father's; he is called "merchant" and "mariner" in the records (Westmoreland VIII:59,327). By July 1704, he had consolidated his social position in the county by marrying Elizabeth Pierce Bridges, widow of William Bridges, gentleman and militia Captain (Westmoreland VII:260). Elizabeth was the daughter of William Pierce, a Justice of the Peace and Colonel in the militia, who, with land holdings totalling over 4300 acres was one of the big men of the county (Eaton 1942:53, Westmoreland VIII:59).

Nathaniel (4) was apparently soon accepted as a trustworthy community member. In 1705, at the urging of Sara Pierce, his mother-in-law, the Westmoreland Justices placed her orphaned grandson William Pierce under Nathaniel's guardianship (Westmoreland VIII:6). Two years later, the Court ordered the child's previous guardian, Thomas Marson, to cover the expenses incurred by Nathaniel Pope, "merchant, now in England," in raising the child (Westmoreland VIII:59). Nathaniel returned to the county that same



year, but three years later was out of the colony again when his wife collected damages from a runaway indentured servant in his behalf (Westmoreland VIII:73,174).

The first mention of Nathaniel (4) in connection with The Clifts is in a letter of attorney from his mother dated 1708. In it Joanna Pope revoked all powers she had given to "John Sturman of Nomini on Potomac, ... merchant, for the management of a certain plantation of mine called The Clifts Plantation." In his place she made "my son Nathaniel Pope of Pope's Creek ... my true and lawful attorney to take possession of and manage the said plantation called The Clifts ... in such manner as my son shall think fit for and during the space of twenty years" (Richmond Deeds, Book 5:116-117). Two years later she authorized "Thomas Wills of the city of Bristol, merchant, and Nathaniel Pope, merchant, to sell ... The Clifts Plantation, ... together with all my lands, tenements, stock in trade, negroes and merchandizes thereunto belonging." The letter goes on to (curiously) specify that if Nathaniel disputed any of Wills' actions, he was to be disqualified from acting on his mother's behalf (Essex Deeds and Wills, Book 13:425). Several questions remain about these documents, among them whether Nathaniel's management of The Clifts actually predated his mother's legal authorization in 1708, or whether his management entailed residence on the plantation at any time. The reference to "Nathaniel Pope of Pope's Creek" is of little help since his wife's deceased husband, William Bridges, had owned land in the vicinity (Westmoreland Deeds and Wills, Book 8:246). Given the character of the evidence, Nathaniel and Elizabeth Pope's residence at The Clifts remains only a possibility.

The one certainty to emerge from Joanna Pope's letters of attorney is that at least a portion of the labor force at The Clifts was black.

in 1709, Black slaves had apparently been present at The Clifts since 1706. In that year the Westmoreland Court tried and executed five slaves for "felony and burglary," one of them "Dick, a negro slave belonging to Joanna Pope of the city of Bristol." Four years later, John Sturman, Mrs. Pope's "late attorney" collected twenty five pounds as compensation on her behalf (Westmoreland VIII: 32,177).

#### Thomas Lee

In 1716 the Popes sold The Clifts to Thomas Lee. The transaction took place in England and was accomplished in two pairs of indentures. In the first, dated December 1716, Joanna Pope and her son Richard "of London, mariner;" transferred the 1443-acre tract to Nathaniel Pope "of London, also mariner," for 290 pounds sterling. Two month later, as he had previously agreed, Nathaniel in turn sold the plantation to Thomas Lee for 375 pounds. Both transactions were recorded in Westmoreland Court in July 1718, at which time Elizabeth Pope "came into court to relinquish her dower." The deal was ceremoniously consummated in August when Thomas Sorrell, Clerk of Court and Nathaniel Pope's attorney, "did give Thomas Lee Esquire possession and seizen of the manner house [sic] erected on the second clift" (Westmoreland Deeds and Wills, Book 6:324-345). Today the high bluff on the Potomac behind which The Clifts Plantation Site is located is still known to local watermen as "the second cliff."

Although Nathaniel Pope apparently returned to Virginia in 1717 (Westmoreland VIII:327), both he and his wife drop out of the court records thereafter. The reference to Nathaniel as "mariner of London" hints that he had given up life in Virginia for good. Archaeology indicates that occupation of The Clifts continued uninterrupted through the period

of the sale to Thomas Lee. However, the county records remain silent on the identity of its proprietors, now Lee's tenants.

Thomas Lee, the fourth son of Richard Lee of Westmoreland was born in 1690 into a family which for two generations had maintained a place at the top of Virginia's political hierarchy. As a young man, Thomas Lee wasted little time establishing a similar position for himself. His rise from district Naval Officer and agent of the Fairfax Proprietary (1712), to Justice of the Peace (1720), member of the House of Burgesses (1726), and member of the Governor's Council (1732) has been chronicled elsewhere (Armes 1936).

In the early years of the century, Lee lived at his father's Machodoc Plantation, located in Westmoreland on Lower Machodoc Creek. Shortly after his father's death in 1715, he and his brother Henry assumed management of the 2600-acre plantation under a complex lease agreement with their elder brother Richard, a London merchant who had inherited the property (Westmoreland Deeds and Wills, Book 6:187). Since Henry Lee inherited a sizable tract of his own on which he shortly built Lee Hall, it seems likely that Thomas was controlling the operation of Machodoc from the beginning. He personally went to England in 1716 to obtain the lease from his brother Richard. He purchased The Clifts on the same trip.<sup>1</sup>

Thomas Lee married in 1722 and until January 1729 continued to live at Machodoc when his house was burned to the ground by arsonists. Sometime thereafter he moved to The Clifts tract and into the large brick mansion which he had built there, about a quarter mile from the old "manner house." He renamed the plantation Stratford.

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1. Thomas reported his success to his brother Henry in a letter dated September 1716: "I have had all the kindness from our brother I could desire .... I hope to purchase the Clifts land here" (Lee n.d. , 1:355).

Just when the construction of Stratford mansion was begun, and when Lee first occupied his new house have been matters of conjecture for years. Both events are probably related to the abandonment of The Clifts. The course of the road which today traverses the "manner house" itself, connecting Stratford mansion to its landing on the Potomac dates to the eighteenth century. Since access to the landing was essential to the entrepreneurial end of Lee's operations, the road is likely part of the original fabric of Stratford.

Traditionally, Lee is thought to have begun construction of the mansion about 1722, the date of his marriage. The only support for this claim is a 1725 agreement between Thomas Lee and a brick mason for finishing a "ceiling of one room of the said Lee's house" and "repairing two chimneys of brick at the quarter by the riverside" (Westmoreland Deeds and Wills, Book 8:132). The worth of this bit of evidence turns on interpreting the phrase "quarter by the riverside" as a reference to The Clifts. However, archaeology reveals that The Clifts was not a quarter, nor did any buildings there have brick chimneys. Hence the house mentioned was probably Lee's residence at Machodoc.

More suggestive in this regard is a petition which Lee presented to the Westmoreland Court in March 1729, two months after Machodoc burned. In it Lee asked the Court to allow him to "turn the road leading from the crossroads at the white oak down to his plantation, he designing to build a dwelling house on the top of the hill where the road now passes" (Westmoreland IX:255). The hill, crossroads and oak tree were adjacent to Machodoc (Westmoreland IX:270). It is unlikely that Lee would have been contemplating building a new house near Machodoc in 1729, if Stratford were already in the works. Why he abandoned this project in favor of Stratford is unknown.

What little evidence there is points to a date of circa 1730 for the development of Stratford, a date which is consistent with the archaeological evidence for the date of The Clifts' demise.

While the Westmoreland-County records have allowed the reconstruction of the chain of title to The Clifts, they provide no evidence concerning the identity of its proprietors from circa 1670 to 1705 and from circa 1716 to 1730. In addition, evidence for occupation by Nathaniel (4) and Elizabeth Pope in the intervening period is very shaky. Nevertheless, a few general suggestions concerning the economic position of the individuals involved can be offered.

#### The Clifts

Although the occupants of The Clifts throughout its sixty-year existence were tenants and not actually the plantation's owners, they were far from poor. The 1716 reference to the principal dwelling on the plantation as a "manner house" points to such a conclusion, whether the phrase was intended in the strict, legalistic sense as the house at which subtenants on the tract paid rent, or in a looser sense as the most commodious building in the neighborhood (cf. Barley 1961:xxi).

The archaeological remains of the "manner house" demonstrate that it was large by even late eighteenth-century Chesapeake standards, for which good comparative evidence exists. The federal Direct Tax listings of 1798 for St. Mary's County, Maryland, just across the Potomac from The Clifts offer a detailed enumeration of all standing buildings in the county. These data are summarized in Table 1. The main dwelling at The Clifts, with three rooms, excluding a porch, closet and service room, falls in the upper seven percent of the sample.

TABLE 1  
FEDERAL DIRECT TAX LISTINGS; DWELLING SIZES IN  
ST. MARY'S COUNTY, MARYLAND\*  
1798

Number of Rooms	Dimensions (Feet)	Number of Houses	Percentage of Houses
1	16x12 20x20 20x16	59	46
1 or 2	24x14 24x16	17	13
2	32x12 36x20 32x16 20x26 26x28	43	34
3	34x16 50x20	5	4
4	30x32 48x30 44x38	4	3

\* Sample includes Upper and Lower St. Mary's Hundreds. Porches and sheds are not counted as rooms. Adapted from Stone 1976.



In addition to the size of the manor house, the existence of a separate quartering house for the plantation's laborers from the beginning of the occupation at The Clifts points to the wealth of its early proprietors. In the labor-intensive tobacco economy of the Chesapeake, the ownership of servants and slaves was the key to economic success. Provision of separate housing for laborers implies there was a sizable number of them. The Westmoreland room-by-room inventories for the period offer a general idea of just how large the number was.

TABLE 2

SEPARATE HOUSING FOR LABORERSWestmoreland County Room-by-Room Inventories  
1660-1677

<u>Decedent</u>	<u>Date</u>	<u>Number of Laborers on the Home Farm</u>	<u>Probable Laborer Housing</u>	<u>Estate Valuation (lbs. tobacco)</u>
Thomas Speke	1660	11	"Quarter"	?
John Lee	1674	13	"Store" "Shoemaker's Shop" "Kitchen"	219,231 lbs.
John Appleton	1676	6 (?)	"Store" "Wash House"	40,410 lbs.
John Ashton	1677	6	"Quarter"	93,528 lbs.

Only ten room-by-room inventories survive for the 1660-1677 period in Westmoreland. In only four of them are structures named which might have offered sleeping space for laborers outside the main dwelling (Table 2). These four estates fall in the wealthiest ten percent of the inventories for the period. Although the sample of room-by-room inventories is small,

it suggests that the minimum number of laborers for which separate housing was usually provided was roughly six. Estates with six or more servants or slaves fall in the top twenty percent of the inventory sample. These figures and their implications for labor-force size and wealth at The Clifts are in line with the results of ongoing work on a much larger inventory sample from seventeenth-century Maryland, where mean dwelling-house size was 16 by 20 feet and most dwellings lacked quarters. In Maryland inventories where separate quarters can be identified, total labor force usually far exceeds the minimum number suggested by the Westmoreland data (Walsh 1979). There can be little doubt that throughout the sixty-year occupation of The Clifts, its proprietors were better off than the majority of their neighbors.

Several factors can be isolated which might have induced individuals at this relatively high economic level to farm rented land. The first is the skewed distribution of land which characterized all of Virginia, but was especially severe in the Northern Neck, including Westmoreland. Because the Northern Neck was opened for settlement after the emergence of both a locally responsive administrative system at Jamestown and the local big men to influence it, land there was even less equitably parceled out than in the regions settled earlier. Even in the late eighteenth century, Virginians were well aware that the Northern Neck had more than its share of great plantations and land barons (Main 1973:248).

The result of engrossing large tracts of land was an artificial scarcity which was apparent in Virginia in the late seventeenth century. Immigrants and younger native sons on the way up might have trouble acquiring their own land, even if they had the financial means. In 1678 Thomas Ludwell, the colony's secretary, wrote to the Privy Council that their proposal to

limit voting to landowners was unfair because of the "many tenants here having more tithable servants than their landlords" (quoted in Morgan 1975: 221). The situation persisted into the eighteenth century. In the 1720's in Christ Church Parish, Lancaster County, the seat of Robert "King" Carter, forty-one percent of the householders were tenants, and many of them owned large numbers of servants and slaves (ibid.). In Westmoreland, Thomas Lee, a tenant for roughly twenty years of his adult life, offers an example of how the effects of the artificial land shortage were felt by the wealthy, especially younger sons.

An additional inducement to becoming a tenant on land which, like The Clifts, had river frontage lay in the decentralized arrangements for marketing tobacco which characterized the early Chesapeake. The advantages of a waterfront location were considerable in the seventeenth century, before the widespread appearance of local merchants and centrally located warehouses where tobacco could be collected and stored awaiting shipment. In the fall and winter, English ships cruised the rivers draining into the Chesapeake Bay, stopping periodically to send out smaller craft to pick up hogsheads of tobacco along navigable creeks and inlets. Most planters were responsible for getting their tobacco onboard a ship, and proximity to navigable water made the task easier (Craven 1949:236, Carr 1974:139-141).

The Westmoreland records offer a glimpse of this system in operation. George Blayden gave the following deposition in Westmoreland Court in 1674, several years after The Clifts was presumably seated:

George Pearce, Roger Newberg, Edward Giles, seamen belonging to the ship Reformation, about the last of May past, being aboard sloop they then belonged to and riding against Mr. Pope's Clifts / had in in their possession / a sow ..., and did afterwards make their boasts how and in what manner they stole the said sow. And also about the 10th of June last, the said seamen did bring aboard the said sloop, them riding against Curritoman Creek another marked sow shoat ... (Westmoreland IV:188).

Apparently The Clifts served as one of the stopping places for ships collecting tobacco from Westmoreland's planters. Popes Creek to the west and Currioman (mentioned in the deposition) to the east were the centers of the tobacco-collection catchments immediately adjacent to The Clifts. Both were located roughly four miles from it.

The domestic complexes at The Clifts and Popes Creek Plantations were strategically placed with these marketing arrangements in mind (Fig.1). Rather than being centered on the areas which would be cultivated in turn over the course of the twenty-year cycle of swidden tobacco cultivation, a situation which would have minimized the movement of labor and materials from the homelot to outlying fields, they were sited on opposite edges of Thomas Pope's 2400-acre tract. Because of the bluffs along the Potomac, the servicable landing sites were here as well. The locational dictates of agricultural logistics were overridden by the lure of propinquity to a landing (cf. Earle 1975:27-29). Although planters had to put up with sailors stealing their pigs, as well as collecting hogsheads of tobacco, this decentralized marketing system persisted through most of the seventeenth century. It had the signal virtue of requiring a minimum of organizational effort at the Chesapeake end.

However, the late-seventeenth and early-eighteenth centuries witnessed the increasingly frequent interposition of local middlemen between planters and the agents of English tobacco merchants (Carr 1974:139-141). While this development probably alleviated some of the logistical difficulties of getting tobacco onboard ship from an inland freehold, it did not lessen the desirability of a plantation on navigable water. Planters located on a river or deep creek found it easier to become

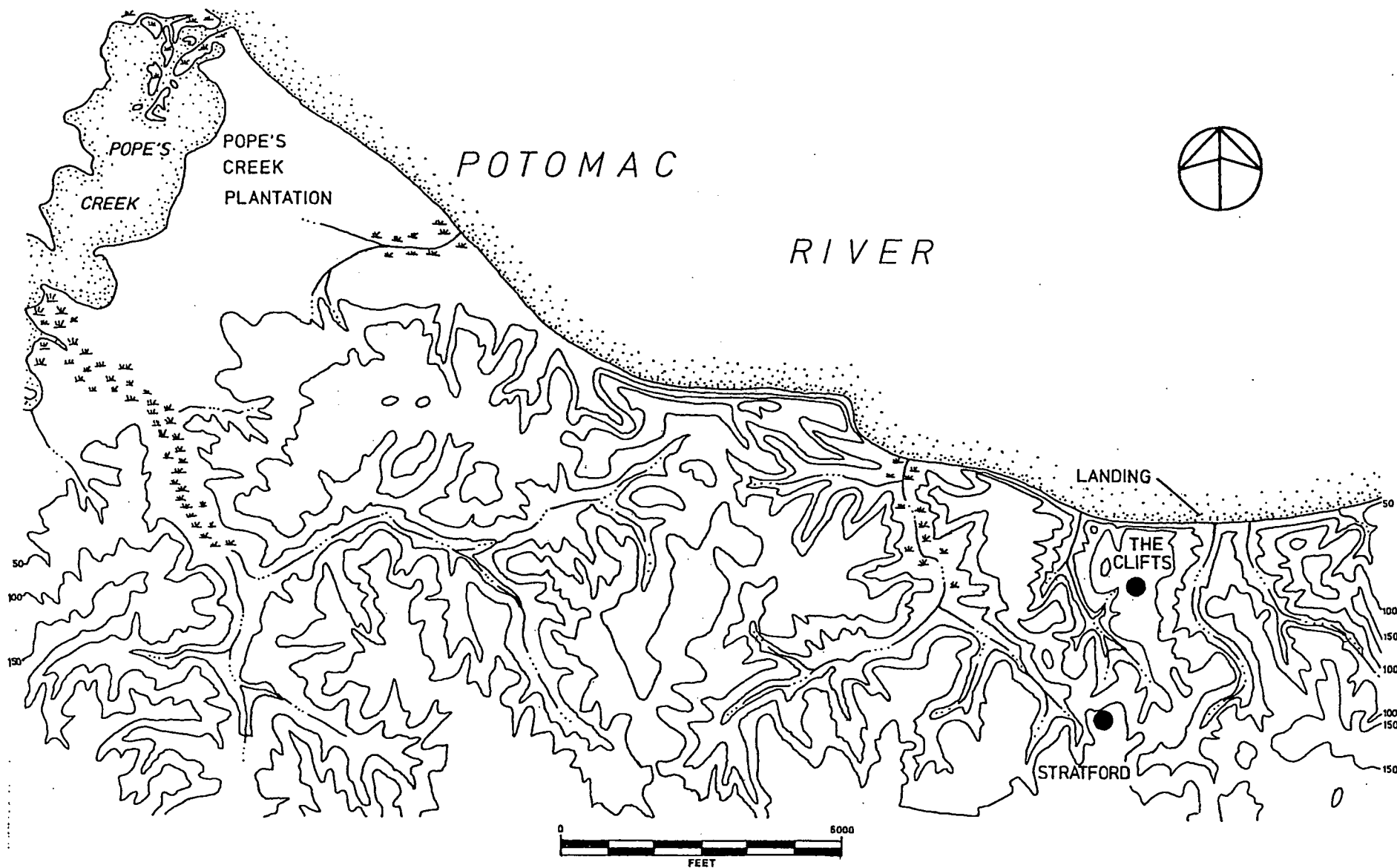


FIGURE 1. Topographic map of the Clifts region.

local merchants since they controlled the outlets through which tobacco had to pass on its way to England. Such entrepreneurial activities were the foundation to great wealth in the Chesapeake (Land 1967). Throughout its sixty-year occupation, The Clifts remained a desirable piece of property, even under a lease.

Rents were not exorbitant. In some cases during the seventeenth century, leases of sizable tracts of land could go for as little as a token payment and the promise to make certain improvements (Bruce 1907:416-418). More typically rent of a plantation might run from five to twenty-five percent of the yearly produce of a single man. If he had several servants, a tenant could easily pay this amount and keep a fair surplus for himself (Morgan 1975:223). In Westmoreland rents were still reasonable in the early eighteenth century. During the 1720's a plantation could be leased for from ten to fifteen percent of its annual output (Westmoreland Inventories I:242).

Most of this chapter has been devoted to assembling what little documentation there is on The Clifts and the individuals connected with it. The resulting chronicle is rather meagre. It has been possible to place the plantation's unknown proprietors fairly high on the economic continuum. For an historiography of res gestae and individuals, this is a poor foundation. But as a starting place for an account of how social persons met the challenges offered by their changing conditions of existence it is entirely adequate.



CHAPTER II

ARCHAEOLOGY AT THE CLIFTS

### Site History

Since the destruction of The Clifts, the surrounding area has been little altered. The gently sloping plateau on which the site is located became an agricultural field, which it remains today. The road from Thomas Lee's Stratford mansion to the landing on the Potomac still follows its original course. The site of the Clifts has been known at least since 1929, when the Robert E. Lee Memorial Association purchased the Stratford tract, and probably long before. Artifacts littered the surface of the plowed field in which it was located.

In the late 1960's and early 1970's, the site was casually surface-collected by members of the Archaeological Society of Virginia, Williamsburg Chapter. In 1972 it was the scene of limited excavations by a group of amateur archaeologists. Several archaeological features were encountered during this work. The brick-lined cellar beneath the manor house was emptied of its original fill. In the process, a portion of the original subsoil surface adjacent to it on the west and several architectural features relating to the manor house were wholly or partially destroyed, apparently unrecognized by the excavators. Much of the fill in two overlapping trash pits, roughly 80 feet to the west (288C-R,S-D)\*, was also removed. A small hole was dug into a trash pit on the opposite side of the site (274E-G). Finally, several test trenches, some of them cutting into subsoil, were dug on irregular diagonals across what has proven to be the site of The Clifts' servants' quarters. These excavations were conducted without strict provenience controls,

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\* Numbers in parentheses are provenience numbers assigned during the full-scale excavation of The Clifts. A complete site plan, with feature designations, is included with this report (Foldout).

with little if any awareness of horizontal or vertical stratigraphy. Although information was destroyed, the damage was not severe enough to produce gaping holes in the picture of the site's development which has emerged since then. The artifacts produced by these excavations have not been included in the artifact summary in this report (Appendix I) since provenience data, where extant, has proven unreliable. The features involved are dealt with in the relevant sections of this report.

The full-scale excavation of The Clifts was accomplished in two field seasons, the first running from June to December 1976 and the second from April 1977 to January 1978. The first season was primarily devoted to removal of plowzone from the site and the excavation of the garden area and cemetery to the east of the manor house. During the second season, the domestic structures, outbuildings and associated features west of the manor house were excavated.

#### Archaeological Methods

The methods employed in excavation and analysis largely determine the utility of the resulting body of archaeological data. The Clifts was first surveyed on a grid of 50-foot squares, around an arbitrarily placed datum point which later proved to be situated at the front door of the manor house. The grid was oriented with the structures at the site (13 degrees east of true north). The 50-foot grid squares were then subdivided into 10-foot square horizontal excavation units. There were no balks. These 10-foot square units were numbered consecutively as excavation progressed, beginning with the number 204. The plowzone from these excavation units was removed by hand and screened through

quarter-inch hardware cloth, with the aid of a mechanical sifter. A total of 132 squares of plowzone were wholly or partially stripped in this fashion (204-303, 347-350, 353-355, 357-359, 367, 369-389). The plow - zone covering the remainder of the site was removed mechanically.

The excavation of features below plowzone was carried out by natural and cultural stratigraphic units. In 10-foot squares stripped by hand and screened, each stratigraphic unit was given a letter designation, in addition to the square number (for example, 289A). Plowzone was given the appropriate square number, without alphabetic designation. The letters "I," "O" and "U" were not used in an effort to avoid possible confusion with similar-appearing characters. In those squares where stratigraphic units outnumbered available letters of the alphabet, labeling continued with the same square numbers and a new series of letters, beginning with "AA," "AB" and so forth. For the sake of simplicity, stratigraphic units which fell between two or more adjacent grid squares were given a single number, usually the number of the square which most of the unit occupied.

Stratigraphic units in those areas of the site where the plowzone was mechanically stripped were also given alpha-numeric designations. In such cases, each feature or complex of associated features was given a number and the stratigraphic units within it given letters in the fashion outlined above. For example, post holes belonging to a single fence line might receive the number "306," while the individual holes and molds were assigned letters in the order of excavation.

Excavation proceeded in reverse order of deposition, with the most recent stratigraphic units removed first. Fill from these units was screened through quarter-inch hardware cloth. Samples of soil from

selected features high in ash and/or artifact content were washed through window screen and floated.

Detailed records were kept of all aspects of the excavation. In addition to the alpha-numeric labels described above, each feature was given a descriptive name ("post hole," "fence ditch") and each stratigraphic unit comprising it was described as to dimensions, fill composition and color and spatial relationship to tangent units. These data were recorded in the Excavation Register, one page per unit.

Plan drawings of domestic structures and some outbuildings were made at a scale of 1 inch equals 2 feet. Burials were mapped at 1 inch equals 1 foot. The remaining features at the site were planned at 1 inch equals 4 feet. All features, save burials, were drawn in section (usually along the longest axis) at 1 inch equals 1 foot. Where stratigraphic relationships were especially complex, multiple sections were cut and recorded. Section and plan drawings were keyed to descriptive data on stratigraphic units in the Excavation Register by means of the numbering system described previously.

In addition to the drawings and descriptive data, an extensive photographic record was kept throughout the course of the excavation in 2½-inch black-and-white and 35-millimeter color formats. Features were photographed in section and before and/or after excavation. Overall photographs were taken of various portions of the site at several stages in the excavation in 4x5-inch color and black-and-white formats, in addition to the two smaller formats.

### Dating

Archaeology is a technique for recovering from material objects data relevant to a better understanding of the past. Its worth must be measured by the extent to which it contributes to the development of historical social science. It follows that archaeological units of analysis require a temporal dimension, scaled to rates of change in the phenomena under study. As the excavation of The Clifts showed, the sixty-year period of the plantation's occupation saw important social and economic adjustments to changing material conditions of existence. A site chronology which permits division of that period and assignment of cultural phenomena to the divisions is a prerequisite for meaningful description and analysis.

A four-phase chronology has been developed for The Clifts. The method employed in its construction is one of the oldest in the archaeologist's tool kit: presence-absence seriation. Table 3 presents the results of a two-step manual solution to the seriation problem. In mathematical terms, the first step involves permutation of the rows of the data matrix to minimize the function:

$$\sum R_j$$

where  $R_j$  is the difference between the numbers of the first and last rows in the  $j$ th column having present values. Similarly the second step permutes the columns of the matrix to minimize the function:

$$\sum R_i$$

where  $R_i$  is the difference between the numbers of the first and last columns in the  $i$ th row having present values. In Table 3 the rows are provenience units and the columns are ceramic ware types which may occur in them.

PRESENCE-ABSENCE SERIATION

[illegible]

As Doran and Hodson (1975) point out, this method makes a number of assumptions about the data, the most important of which in this context being that the ceramic types employed are well enough represented on the site, and the provenience units likely enough to contain examples of them, that most of the ceramic types in use prior to the filling of a unit or group of units will be represented in it. For this reason, only the more popular ceramic types and the larger trash deposits at The Clifts were included in the initial data matrix. The resulting ordering of stratigraphic units is wholly consonant with stratigraphic relationships among them (where these exist), and with dating evidence provided by datable, stratified artifacts of other sorts (eg. marked pipe bowls, wine bottle and drinking glass, etc.). This and the paucity of holes in the lower diagonal of the permuted matrix argue the validity of the procedure. Although the row and column orderings of the permuted matrix are really only estimates of the true situation, internal and external evidence suggests that they are very good ones.

It should be stressed that no claims are made that the column ordering has any validity beyond The Clifts. It merely portrays the order in which ceramic types were introduced at this one site. While some ware types were present quite soon after their initial dates of manufacture (eg. Burslem), others did not appear at The Clifts until well after they had gone into production (eg. Rhenish blue-gray stoneware). On the other hand, it is evident that ware types will continue to show up in stratigraphic units long after they ceased to be manufactured and/or used at the site (eg. Morgan Jones), a result of the complex depositional processes at work.



The continuous row order of the permuted matrix has been partitioned into four discrete temporal phases and absolute dates assigned to each on the basis of a wide variety of evidence, the most important of which is reviewed here. The proposed beginning of Phase I and site occupation is 1670, a date suggested by the presence of pottery made by Westmoreland potter Morgan Jones in all the major early trash deposits at the site. Jones was operating a kiln in the County as early as 1669 (Westmoreland IV:104), offering a terminus post quem. A terminus ante quem for Phase I is provided by the palisade at The Clifts, erected in 1675, a matter to be further discussed later in this report. Morgan Jones' wares turn up in only the four earliest seriated pits in sufficient quantity and in large enough pieces to suggest the ware was in use when the pits were filled. Since Jones left Westmoreland in 1681 (Kelso and Chappell 1974:53), these four pits were probably filled no later than circa 1685, providing a date for the end of Phase I and the beginning of Phase II.

Absolute dates for Phase II, 1685 to 1705, are the result of bracketing between Phase I and Phase III. However, the fact that finely combed Staffordshire slipware cups, which characterize the three Phase II pits and were in use on the site when they were filled, are generally dated to 1680-1700 (Noel Hume 1972:135) provides welcome corroboration for the Phase II date range.

The initial date of 1705 for Phase III is suggested by the appearance of Burslem and Nottingham stonewares, both of which were first produced circa 1700. In addition, the fill of a fence ditch (370G), part of a system of ditches which postdate Phase II pits and yet predate the latest major Phase III trash deposit (255A-E) on stratigraphic grounds, yielded fragments of a Rhenish blue/gray stoneware mug with an "AR"

cipher at the rim. This suggests a terminus post quem of 1702 for the ditch system and hence early Phase III as well.

The presence of slip-dipped white saltglaze stoneware defines the beginning of Phase IV ( and the end of Phase III). The initial date of manufacture for this ware is generally agreed to be circa 1715 (Noel Hume 1972:114-115, South 1977:211). Its first appearance in the Westmoreland County probate inventories dates to 1726 (Westmoreland Inventories I:44). In addition, most of the seriated Phase-IV deposits contain sherds of true Buckley (as opposed to a similar appearing red-bodied, black-glazed coarse earthenware, probably of Staffordshire origin, which appears in Phase III). Although manufactured as early as the last decade of the seventeenth century (Davey 1975), Buckley does not generally appear on American sites until circa 1720 (Noel Hume 1972:133). Hence a date of 1720 is proposed for the beginning of Phase IV.

Fragments of only two plain (i.e. not slipped) white saltglaze vessels were recovered from stratified contexts at The Cliffs. Both were tea saucers. The earliest documented date of production for this ware is 1720, and current evidence indicates its use in Colonial America dates to the middle of that decade (Noel Hume 1972:114). In Virginia several examples have been recovered from Robert "King" Carter's mansion Corotoman, which burned in 1729 (Guerrant 1980). The similar paucity of such vessels at The Cliffs points to a comparable date for the end of the occupation: circa 1730.

Although the emphasis so far has been on assignment of dates to groups of seriated stratigraphic units, it should be remembered that the ware types were seriated as well. As is evident in Table 3, the phases therefore apply to the ceramic types in addition to the trash deposits. The initial dates for the phases provide termini post quem, for any

stratigraphic unit containing an example of a ceramic type in the  
seriation.

This discussion has provided a cursory outline of the chronological framework constructed for The Cliffs. Supporting evidence for the chronology, derived from stratigraphic relationships and other datable artifact types found in them, has been omitted. These topics will be dealt with further in the relevant descriptive sections of this report.

CHAPTER III

THE SITE PLAN IN TIME

## Introduction

This chapter offers summary descriptions of all the archaeological features excavated at The Clifts. For descriptive purposes, features have been first grouped together in terms of the cultural unit (eg. manor house) or kind of cultural unit (eg. fence line) to which they belonged. Within cultural units, descriptions proceed with time, that is phase-by-phase.

A brief inventory of cultural units revealed by excavations at the site includes (Figs. 2-6):

- \* The principal dwelling ("the manner house erected on the second clift").
- \* A palisade, built of vertically set split rails, erected around the manor house circa 1675.
- \* Two quarters providing housing for servants and slaves. The first quarter is original to the site; the second quarter replaced it circa 1690.
- \* Two fence systems: the earlier ditch-set fence dates to Phase III; a post-and-rail fence line replaced it in Phase IV.
- \* Two larger outbuildings, a "Barn" and a "Cellar House," both Phase III, and possibly earlier.
- \* Ten smaller outbuildings. Of these six were smoke houses, successive replacements for one another. A seventh was a dairy of Phase-III origin. The remaining three date to Phase IV, but their functions are less certain.
- \* A cemetery, in use throughout the occupation, containing eighteen grave shafts, sixteen of which yielded skeletal remains.
- \* Numerous irregularly shaped pits dug into subsoil and later filled with artifact-laden soil.

### Topographic Setting

The topography along the Potomac's south shore, for a distance of roughly 3 miles on either side of The Clifts, is precipitous. Relatively flat upland, ranging between 100 and 150 feet above sea level (ASL), extends to the river's edge, where it drops almost vertically to form the cliffs from which the plantation took its name. The uplands are dissected by deep, steep-sided ravines which, in the immediate vicinity of The Clifts, run from south to north and drain into the Potomac. The ravines create "fingers" of arable upland which are generally oriented north-south as well.

The Clifts is located on one of these long plateaus, roughly 1300 feet behind the cliffs along the Potomac. The site lies across a saddle at 135 feet ASL (Above Sea Level). The land to the north and south slopes gently upward, away from the site; similarly gentle downward slopes extend roughly 140 feet to the west and 600 feet to the east, where they drop suddenly into deep ravines. The "manner house" was built on the ridge formed by these east-west gradients (Fig.7). The site was presumably chosen not only because it was well drained, but because of its proximity to the deep ravine on the west which served as the water source for the site throughout the occupation. Today a small spring surfaces in the ravine, roughly 500 feet from its terminus near The Clifts. However, in the seventeenth century, before hundreds of years of plowing and ensuing soil erosion, flowing water was probably considerably closer to the site.

Excavations near the edge of the ravine revealed two layers of old plowzone, both averaging 0.3 feet in depth, which filled a shallow depression, wedge-shaped in plan (347A,353A,354A,355A,358A,359A,367A, and 347B,358B,

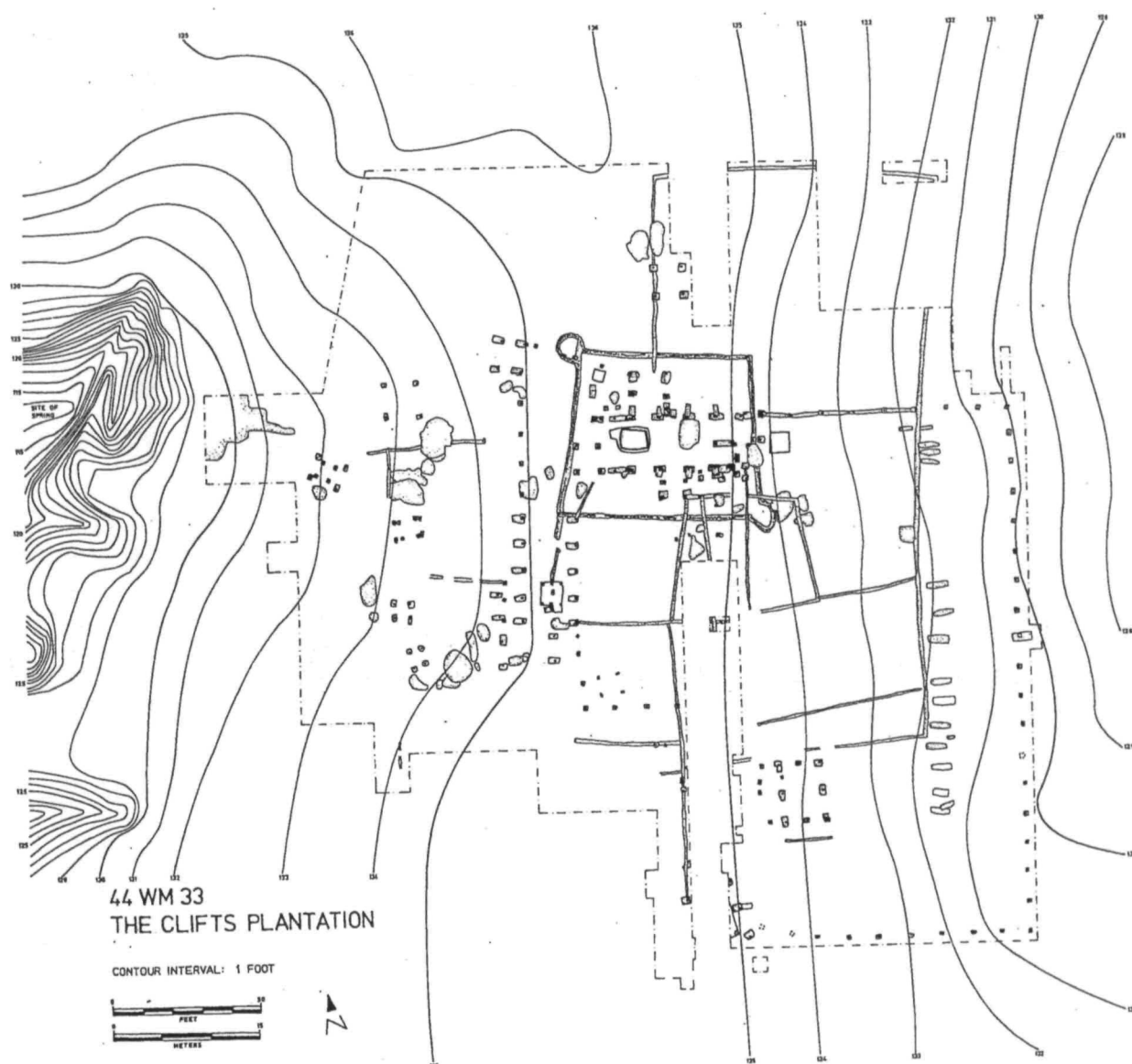


FIGURE 7. Topographic map of The Cliffs.

359B<sup>\*</sup>). The depression apparently marks the site of a path used during the occupation for access to water. The lack of a well at The Clifts, and consequent reliance on the adjacent spring, is at least partially a result of the scarcity of labor in the tobacco-growing Chesapeake.

Given the immediately adjacent topography and the location of the spring and dwelling house, the essential functional partitioning of the Clifts' layout follows quite naturally. The western half of the site, between the dwelling house and the spring, became a service area, the location of outbuildings, servants' quarter and yards. The area to the east of the manor house, which offered a much larger expanse of arable land, became the site of a vegetable garden. Although the site plan would undergo many important changes during the sixty-year occupation, this basic pattern persisted.

#### The Manor House: Phase I

##### Chamber, Hall, Cross Passage and Service Room

The principal dwelling at The Clifts originally consisted of a three-cell core, with exterior dimensions of 18.5 by 41.0 feet. A central hearth separated a chamber on the east from a hall on the west. A cross passage traversed the lower (western) end of the hall. Below it lay a small service room. Original appendages were attached to three sides of the core: on the north a 12.5 by 15-foot "back room," on the east gable end an 8.5 by 9.5-foot closet, and on the south an 8.5 by 9.5-foot porch entry (Figs. 8, 9).

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\* These layers are all denoted by a single designation on the site plan (359B)



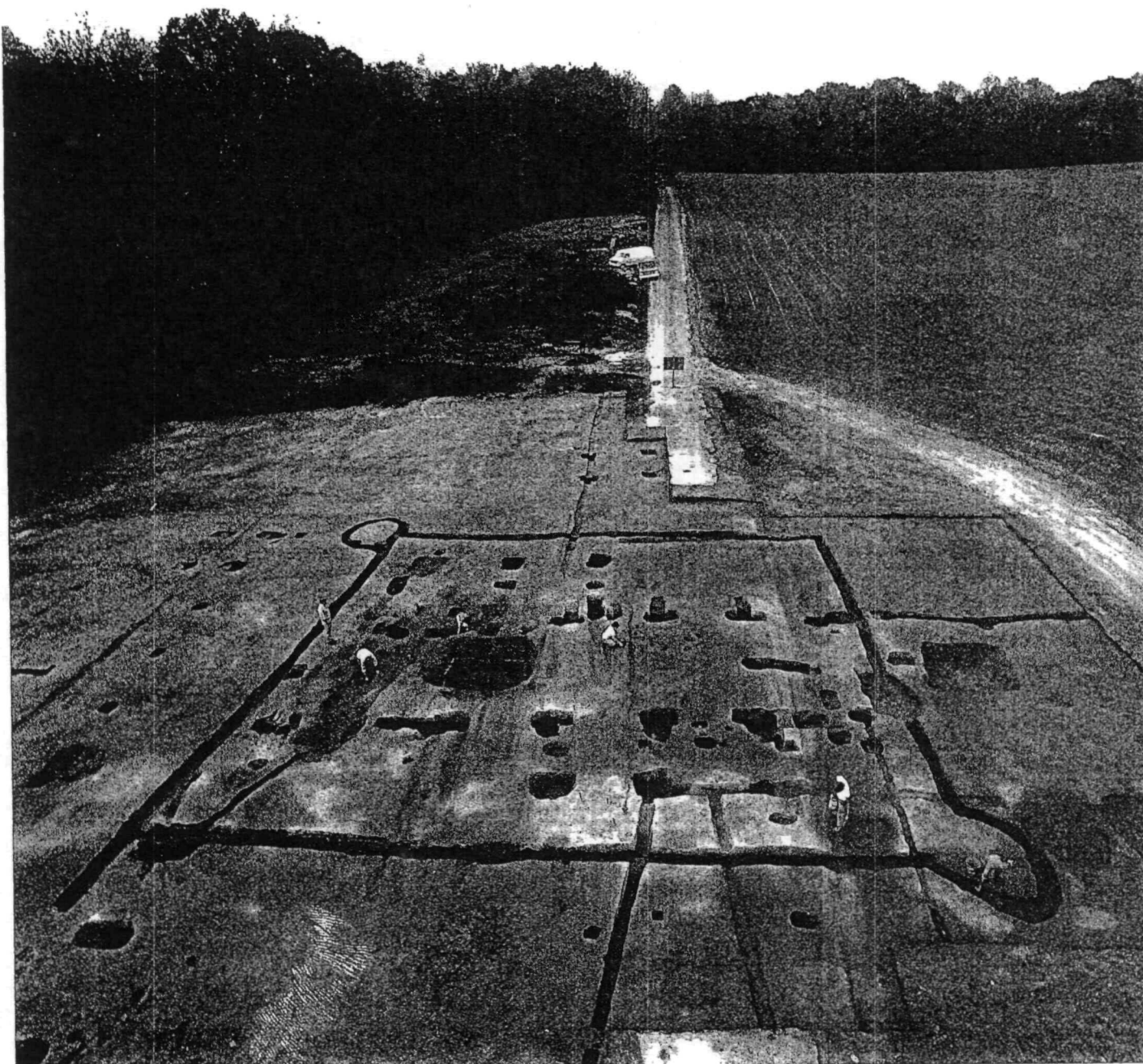


FIGURE 8. The manor house after excavation (facing north).

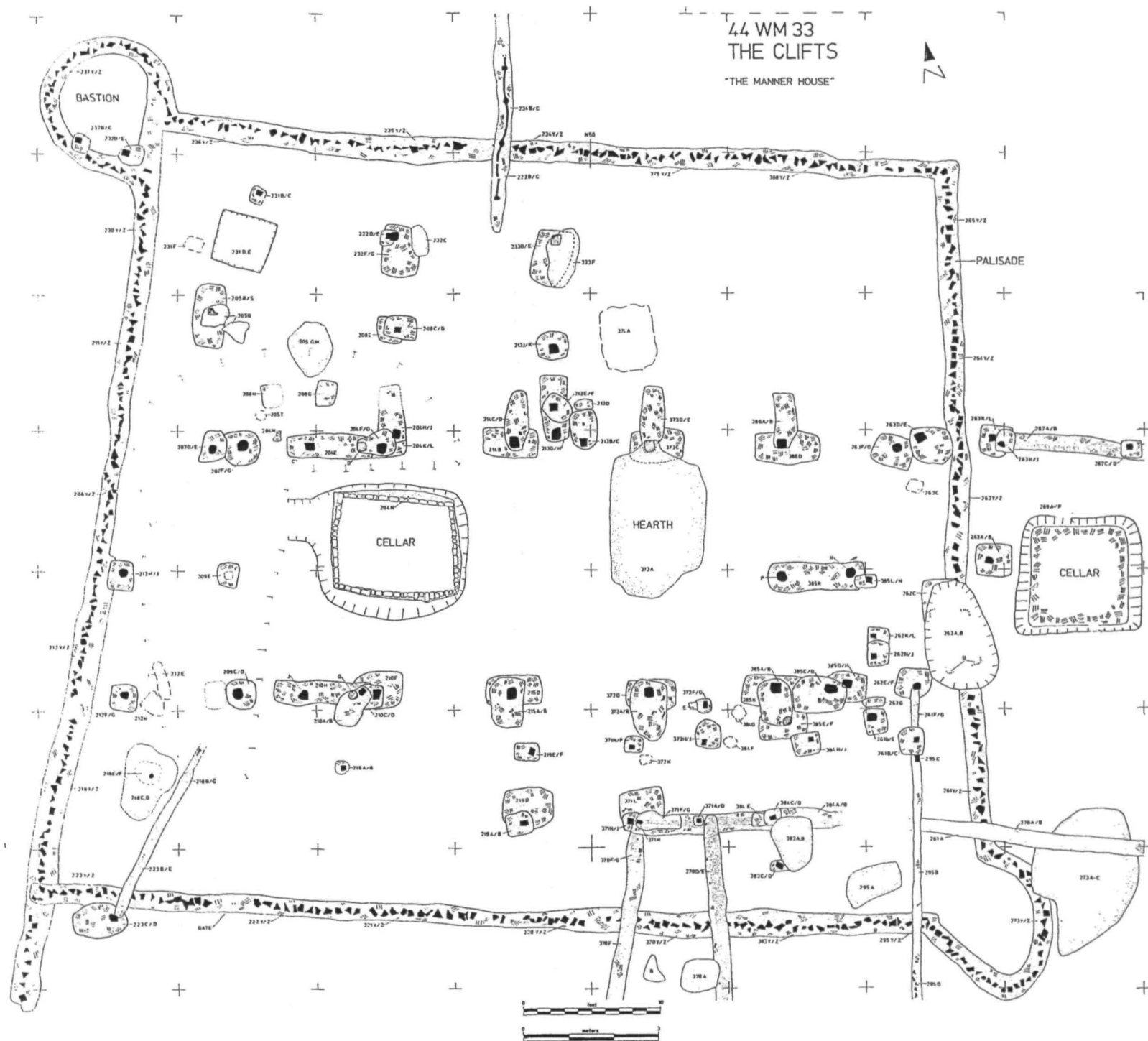


FIGURE 9. Archaeological plan of the manor house and palisade.

The three-cell core was constructed in two units: the three eastern bays, consisting of four transverse pairs of posts set on roughly 10-foot centers, and the western passage-service bay. Seven of the eight original post molds which had framed the eastern three bays had been destroyed by subsequent repairs, a fate escaped by the bottom 0.3 feet of the mold on the northwest corner (204K). Measuring parallel to the ridge of the core, from this mold to the extant mold in the center of the east gable (385P), yields an exterior dimension of 30.0 feet. Assuming the original posts were 0.8 feet square (as was 204K), a bay system of 9.0-foot modules between each pair of posts, or 10.0-foot modules running from end to center to center to end of the four pairs of posts is indicated.

The holes in which the original eight posts were set were rectangular in plan, roughly twice as long as wide with the longer dimension paralleling the ridge of the building (Table 4). The two transverse pairs of post holes on the ends of this 30.0-foot section were dug roughly a half foot deeper than the two in the middle, emphasizing the structural independence of this portion of the house and perhaps (in the builder's minds) providing additional lateral stability. The variation in bottom-hole elevations indicates that the eastern three bays of the manor house were reverse-assembled, that is the four transverse pairs of posts, each connected by a tie beam, were erected first in the open holes and the plates were later laid on the ends of the ties. The orientation of the post holes would have facilitated erection of the tie-beam pairs as they were tipped into place. The flat bottoms of the post holes allowed longitudinal adjustments necessary for fitting pre-cut plates to the ties (Fig.10).

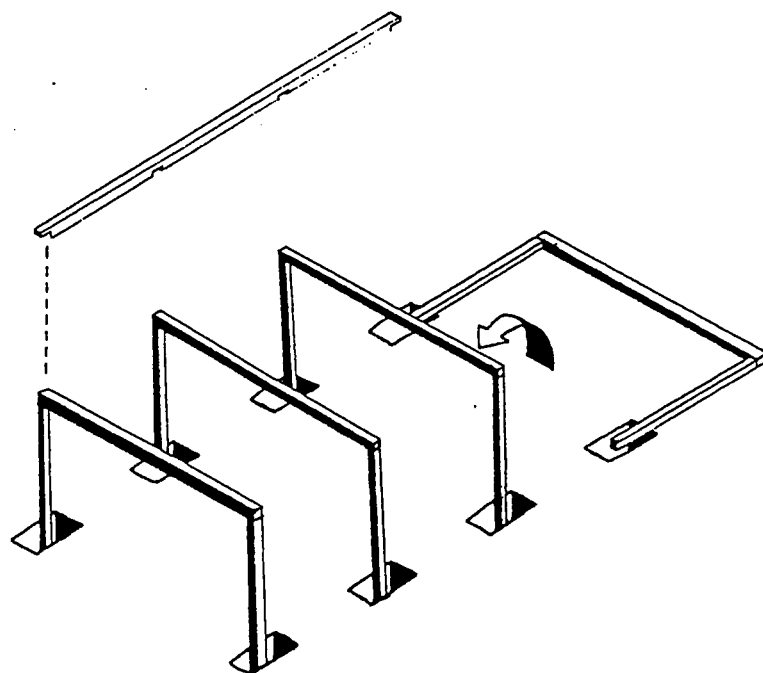
TABLE 4  
MEASUREMENTS FOR ORIGINAL POST MOLDS AND HOLES\*

The Manor House

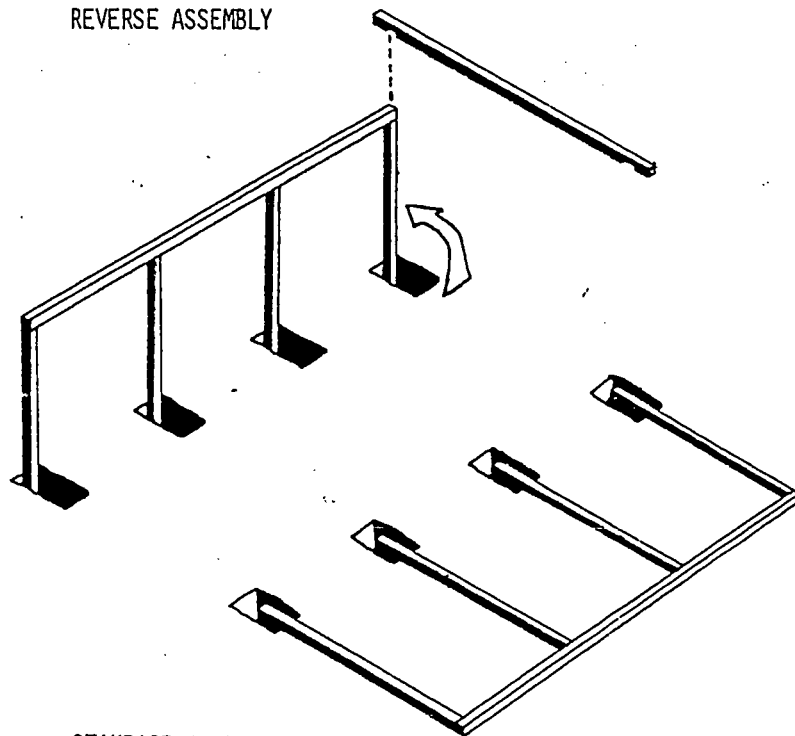
Section of House	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
Eastern three bays, north wall.	204K/L	.80x.80	? x3.1	131.7	131.7
	214B	-	2.1x4.0	-	132.2
	373C	-	2.4x3.9	-	132.3
	386D	-	2.4x4.7	-	131.6
Eastern three bays, south wall	210F	-	2.7x3.6	-	131.8
	215D	-	2.1x4.1	-	132.3
	372D	-	2.1x3.6	-	132.2
	385K	-	2.2x4.3	-	131.6
Cross-passage south trench	210G/J/H	.65x.70	1.8x7.0	132.5	132.5
		.75x.75		132.4	132.4
Cross-passage north trench	204C/D/E	.65x.75	1.8x6.2	131.9	132.1
		.70x.65		132.0	132.2
Center, west gable end	209E	-	1.9x1.6	-	132.6
Porch	219D	-	3.0x3.7	-	132.3
	371L	-	2.9x3.3	-	132.2
Chamber "closet"	385N/P/R	.80x.75	2.2x6.9	131.9	131.9
		.85x.70		132.0	132.0
	385G/H	.70x.75		132.1	132.0
Back room	204H/J	.70x.60	4.2x2.2	131.7	131.6
	213G/H	.90x.70	4.8x2.0	131.6	131.6
	208E	-	1.9x1.9	-	-
	213J/K	.70x.70	2.0x2.4	132.5	132.5
	232F/G	.70x.65	3.8x2.7	131.7	131.4
	233D/E	.80x.70	4.0x2.8	131.7	131.7
Shed	205R/S	.55x.75	4.6x2.3	132.1	132.1
Solitary hole	263F/G	.70x.75	2.3x2.9	132.3	132.3

\* All measurements given in feet. Missing measurements (-) are due to later repairs and in one case (209E) previous (1972) excavations. Surface of subsoil averages 134.2 feet ASL. Plowzone averages 0.8 feet in depth.

## ASSEMBLY PROCEDURES



REVERSE ASSEMBLY



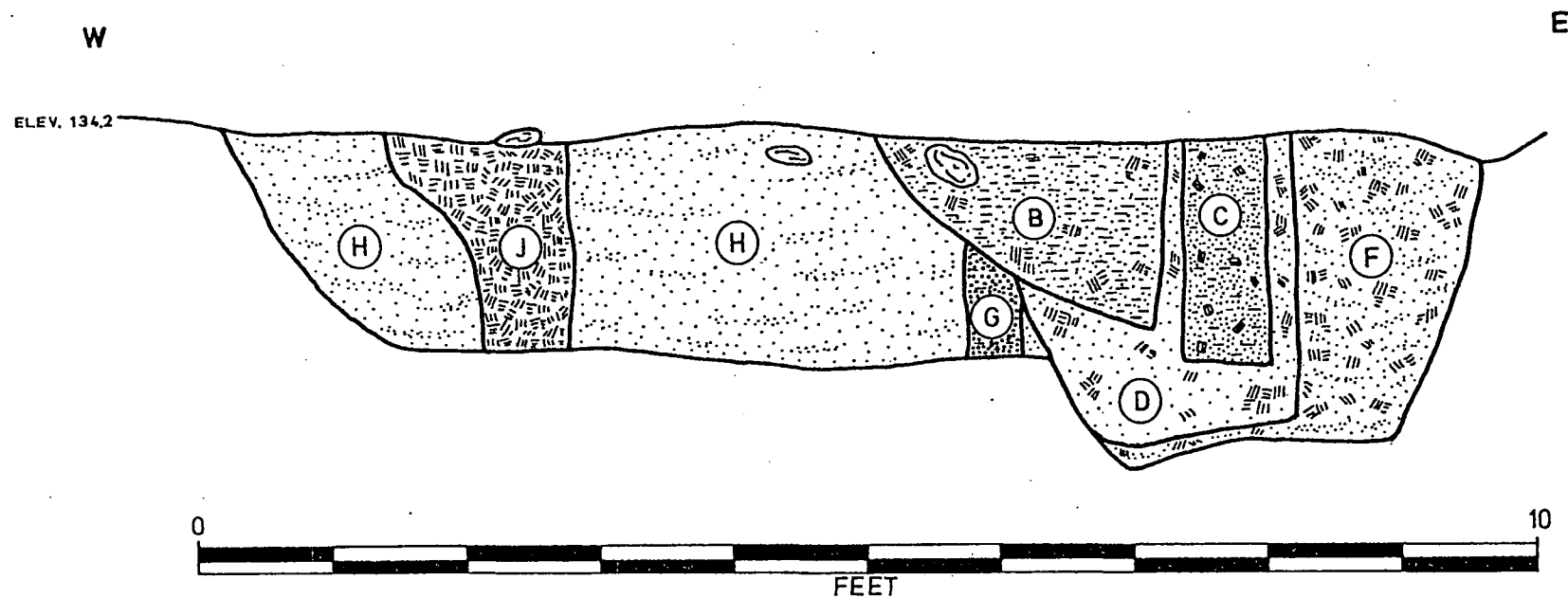
STANDARD ASSEMBLY

FIGURE 10

The passage-service bay extended 11.0 feet beyond the west end of the three-bay section discussed above. Unfortunately, later repairs and previous excavation had destroyed all trace of the two corner post holes original to the west gable end of the house. However, the original post hole at the center of the gable did survive (209E). It was roughly a half foot shallower than the center post hole (385P) on the east gable end, perhaps an indication that the service bay was less substantially framed than the rest of the house.

The remains of the cross passage consisted of two pairs of door posts (204C,D and 210G,J) set in trenches along the side walls of the house (204E,210H) (Fig.11). Roughly a foot separated the eastern door posts from the western end of the three-bay section. The interval between the western door posts and the posts supporting the west gable end of the house was probably 5.0 feet, making the service room below the passage the same width (E-W). The door posts were set 3.0 feet apart in the north trench (204E) and 2.9 feet apart in the south one (210H). Bottom-mold elevations for the two posts in each pair were roughly the same, while the elevations of the two pairs differed by approximately half a foot (Table 4). The door-post trenches had been dug through the backfilled post holes adjacent to them on the east, indicating that the eastern section of the house frame had been erected before work on the passage was begun. The partial filling of the north door-post trench before the posts were inserted (Table 4) belies an attempt to fit pre-cut door posts between the floor of the trench which was too deep and the plate above, running between the two adjacent tie-beam pairs.

# MANOR HOUSE CROSS-PASSAGE TRENCH AND POST HOLES



210 B GREY LOAM, TAN CLAY MOTTLE  
CHARCOAL

C DARK GREY LOAM, CHARCOAL

D BROWN LOAM, TAN CLAY MOTTLE

F TAN CLAY AND GREY LOAM

G LOOSE DARK GREY-BROWN LOAM

H FINE TAN LOAM, BUFF AND  
GREY MOTTLE

J TAN CLAY

FIGURE 11.

### The Back Room

With an exterior width of 12.5 feet, the back room extended 15.0 feet north of the core's exterior. It was framed around two transverse pairs of posts, as well as single posts not quite centered in each of the side walls. The southern pair of posts (204H,213G) abutted the exterior wall line of the house. They were set in long narrow post holes having subsoil ledges in their northern ends, roughly a foot above the hole floor (204J,213H). The northern pair of posts (232F,233D) were set in slightly wider holes with similar ledges in their southern ends (232G,233E). Bottom-mold elevations for the four posts were nearly identical (Table 4), and two of the holes had been slightly filled before the posts were inserted to achieve this (204J,232G). Like the core of the house, the back-room frame was erected in pre-assembled tie-beam pairs. The location of the post-hole ledges which were designed to facilitate this task and of the post molds in the ends of the holes opposite them indicate that the northern tie-beam pair was pushed up from the south and the southern tie-beam pair pushed up from the north. The latter of course was a necessity since the frame of the core was already standing when the back-room post holes were dug. Posts were inserted in the two smaller intermediate post holes (208E,213K), under the plate connecting the two tie-beam pairs. The match between the bottom hole and mold elevations for the two back-room tie-beam pairs and the two tie-beam pairs on the ends of the three-bay eastern section of the core indicates that the vertical framing members of each were cut at the same time.



### Chamber Closet

The chamber closet was 8.5 feet wide and protruded 4.9 feet beyond the east-gable end of the house. It was framed around four posts, including the southeast corner post of the core (385K). Two of the remaining three posts (385N,P) were set in a trench (385R) not quite centered on the gable. The fourth post (385G) lay in line with the south wall of the core. Again, bottom-mold elevations for the latter three holes were nearly the same (Table 4), and almost matched the mold elevations for the center tie-beam pairs in the eastern three bays of the house.

### Porch Entry

The porch extended 9.5 feet from the original south wall line of the core, with a probable original exterior width of 8.5 feet. Its southern gable end was supported by a pair of posts (destroyed by later repairs), set in roughly square holes (219D,371L). Their bottom elevations matched those of the center tie-beam pairs in the eastern three bays of the core. The original posts had apparently been placed in the southern ends of the post holes, suggesting they had been pushed into vertical position as a tie-beam pair from the north.

### Open Shed

The remains of a solitary hole-set timber (205R) were found roughly 13 feet west of the back room and 10 feet north of the core. It was seated in a hole (205S) whose dimensions and orientation were similar to the four principal post holes associated with the back room. Its bottom-mold elevation once again matched those of the middle four posts in the

eastern three bays of the core. The shape of the vertical timber in plan (205R) indicates that it was a split rail. This and the fact that it lay 8 degrees out of alignment with the western gable end of the core suggest that it supported the outside corner of an open shed, rather than another enclosed room.

There is little doubt that the back room, chamber closet, porch and shed were all parts of the original build of the manor house. The uniformities in post-hole and mold elevations which support this contention have been noted above. In addition, artifacts recovered from each set of post holes exhibited no significant variation in quantity or variety, consisting primarily of nails (associated with construction) and an occasional pipe or case-bottle fragment.

#### Solitary Hole

An additional post hole (263F/G), located 7.5 feet east of the northeast corner of the core, presents interpretive problems. Bottom elevations match those of the middle tie-beam pairs in the eastern three bays of the core (Table 4). No artifacts were recovered from the hole fill (263G), suggesting an early date. The mold (263F) had been packed with a sticky yellow clay, betraying intentional filling when the post was removed. While hole and mold size and configuration suggest this was a structural post, it lies well out of alignment with the north wall of the core (4 degrees) and the east wall of the chamber closet (19 degrees). Given the hole's location, diagonally opposite the intersection of the chamber closet and east-gable walls, it is possible that it was associated with another open shed.

However, the irregularities of alignment make this interpretation tentative.

#### Hearth

The hearth was sited between the eastern two bays of the original core. Its archaeological remains consisted of a 7.0-foot wide, rectangular feature (373A) extending 10.5 feet out from the north interior wall line. The feature extended 4.0 feet into the bay on the east, but only 3.0 feet into the bay on the west, where it had been truncated by a large tire rut associated with the road to the landing. Presumably the feature was originally 8.0 feet wide and precisely centered between the two bays. It was filled with a thin layer of grey loam, sprinkled with flecks of wood ash, burnt bits of daub and small fragments of locally occurring bog iron (ferricrete) which had been burned red. No trace of brick or mortar was present. Since this layer partially covered the remains of an adjacent wall post to the north (373D), it is evidently a product of the destruction of the fireplace and not its ongoing use (Fig.12).

Removal of the fill revealed a cluster of depressions in subsoil, ranging roughly from 1 to 2 feet in diameter and from 0.1 to 0.4 feet in depth below subsoil. Large pieces of bog iron, of similar dimensions were recovered from the brick-lined cellar (which dates to Phase IV) just west of the hearth when it was excavated in 1972 and again when it was re-excavated in 1976. These were burned red, like the small fragments in the hearth fill. The cellar also yielded a considerable quantity of daub. The specimens which were saved averaged 0.2 feet thick. They too were fire-reddened and many of them bore the impressions of twigs.

MANOR HOUSE

HEARTH (373A), POST HOLE (373C) AND REPAIR POST HOLE (373D/E)

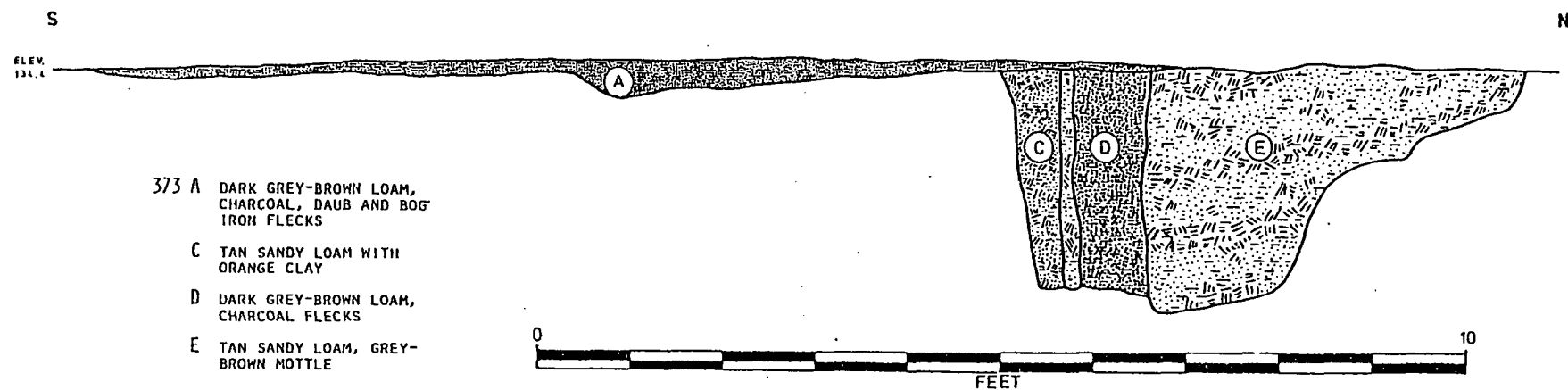


FIGURE 12.

It is inferred from this data that the hearth originally consisted of a low platform of bog-iron rubble laid in clay, a suggestion which would account for the lack of burning found in subsoil beneath the hearth fill. A wattle-and-daub canopy was hung over this raised hearth to channel smoke out of the roof. Since the hearth was centered between the two adjacent bays, it probably served both rooms on either side (hall and chamber). A wattle-and-daub curtain wall, hung from the tie beam running across the hearth, may have partitioned it into two fireplaces. The remains of the hearth were thrown in the cellar when the manor house was destroyed, circa 1730.

#### Architectural Details

Two sorts of lath-marked shell plaster, one red-brown in color, the other white and both white-washed, were recovered from a Phase-II repair post hole to the manor house (209D), suggesting that two rooms of the dwelling were plastered at that period, if not from the beginning of the occupation. Window glass from an original post hole (213H) indicates some windows were glazed when the house was built. Early artifact distributions (Fig.13) show that the service room at the west end of the house had a leaky floor, while the rest of the house was well floored. In addition to the three known doors, two associated with the cross passage and one with the porch, openings in the east wall of the chamber closet and north gable of the back room may have provided access to the house interior.

Wood fragments were preserved in only one post mold associated with the manor house (232F), on the northwest corner of the porch. The post, and by inference the entire original frame, was white oak (Rauschenberg 1979).

# THE CLIFTS PLANTATION

TOBACCO PIPES: 9/64 and 8/64 INCH BORE DIAMETER

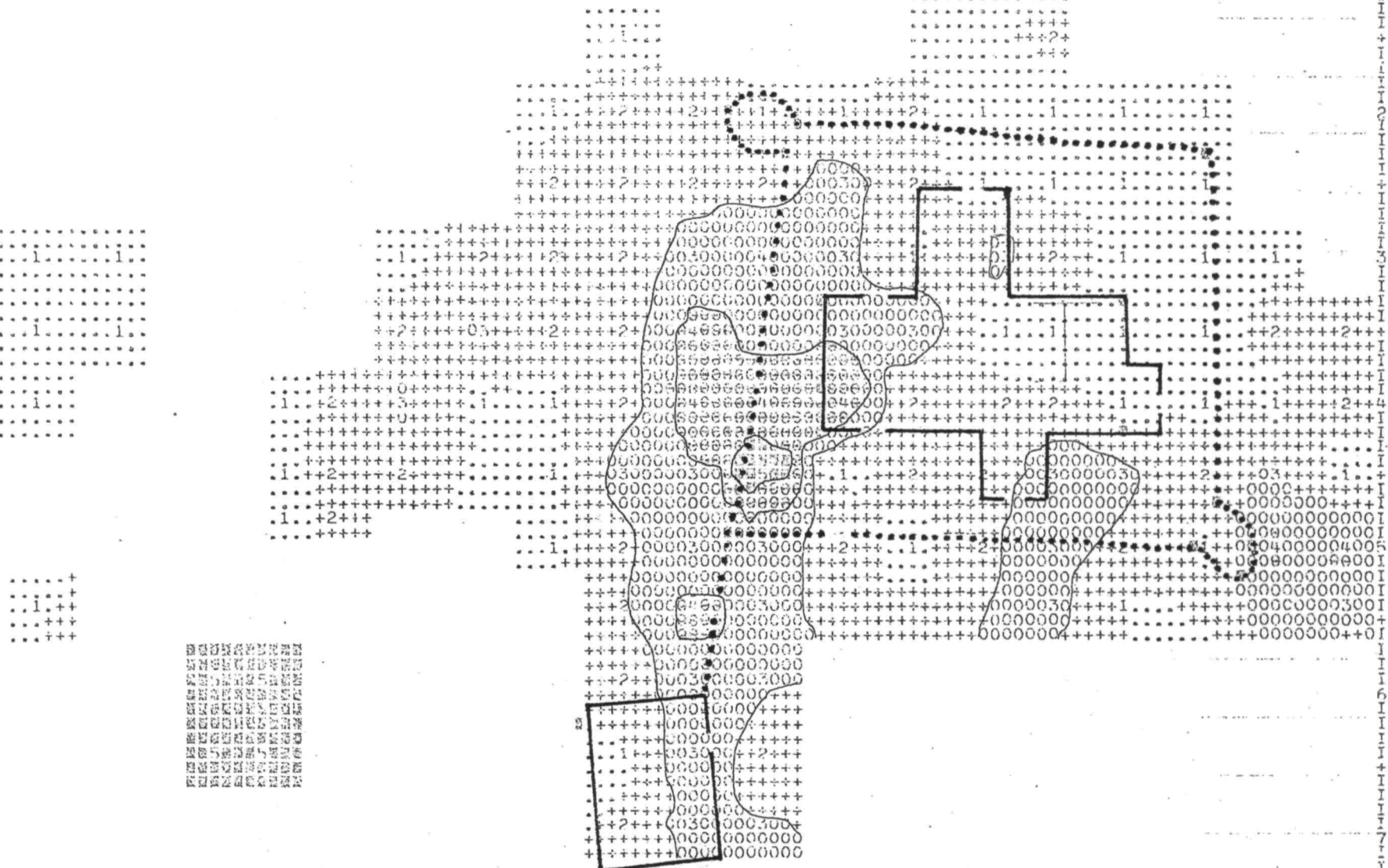


FIGURE 13. Distribution of 9 and 8/64-inch pipe stems in plowzone.

## The Manor House: Phase II Alterations and Repairs

### Chamber Closet

Replacement of the chamber closet was the first alteration to the original fabric of the house. The new appendage was oddly shaped. Its southern wall protruded 2.5 feet from the southern wall line of the core. Its exterior dimensions were 6.8 feet (E-W) by 10.5 feet (N-S). Five and possibly six post holes were associated with this alteration. The two on the south wall (385F, 261E) contained posts of larger scantling and were dug deeper than the three on the east wall (262J, 262L, 385M) (Table 5). The difference in dimensions for the two south-wall holes may be a product of plowing: the western end of 385F contains a shallow subsoil ledge which lies above the level of subsoil adjacent to 261E. Bottom-mold elevations for these two posts were nearly identical. The three posts in the east wall (262H, 262K, 385L) shared bottom elevations which were circa 0.8 feet higher. One of their post holes had been dug through another (262J, 262L) near the middle of the wall, although the earlier post was not disturbed. One of these two intermediate posts may have been a door post. A sixth feature, roughly the size of 385M, about 0.2 feet shallower and filled with displaced subsoil, lay in the east wall line (262G). No trace of a post mold could be discerned in it. Since only the bottom 0.3 feet of this feature survived plowing, it is possible that it was a post hole whose mold had been plowed away.

Very few datable artifacts were found in the six features associated with the first chamber closet repair. However the two ceramic sherds that were recovered (from a North Devon gravel-tempered butter pot and a Staffordshire combed-slip cup) are both Phase II. Presumably the enlarged closet was built early in that period. It was replaced not long after its construction,

TABLE 5  
MEASUREMENTS FOR PHASE-II POST MOLDS AND HOLES

The Manor House

Section of House	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
Chamber closet, first repair	385E/F	.70x.70	2.2x3.5	132.0	132.0
	261D/E	.65x.75	1.9x1.6	132.1	132.1
	262K/L	.40x.40	- x1.6	132.8	132.8
	262H/J	.40x.40	1.9x1.6	138.8	132.8
	385L/M	.50x.45	1.0x1.6	132.9	132.9
Chamber addition	263K/L	.55x.55	2.3x2.3	133.1	133.1
	263A/B	.50x.60	2.3x2.6	133.1	133.0
	262E/F	.60x.65	2.2x2.5	131.0	131.0
	263D/E	.70x.80	2.6x3.0	131.3	131.3
North wall	386A/B	.70x.75	4.1x1.7	132.1	131.6
	373D/E	.80x.75	4.9x1.8	132.2	132.2
	214C/D	.80x.75	4.3x1.8	132.3	132.3
	204F/G	.80x.70	2.0x2.8	132.0	132.0
	207F/G	.85x.85	2.6x3.0	131.3	131.3
South wall	385A/B	.80x.80	3.5x2.4	131.6	131.6
	372A/B	.75x.75	4.4x2.7	132.1	132.1
	215A/B	.85x.75	3.7x2.6	131.9	131.9
	210C/D	.80x.70	1.8x -	132.3	131.9
	209C/D	.85x.80	2.1x2.2	132.1	132.1
	210A/B	.60x.50	3.4x1.9	132.6	132.6
Porch	219E/F	.50x.45	1.3x1.8	133.8	133.8
	371N/P	.40x.45	1.3x1.3	133.8	133.5
	219A/B	.50x.60	1.7x2.0	132.5	132.5
	371H/J	.50x.50	1.3x1.3	132.4	132.2
Back room	213E/F	.60x.70	2.2x1.8	132.6	132.6



perhaps in part because it was poorly built.

#### Chamber Addition

The chamber closet repair was succeeded by the addition of a 10-foot bay and a new closet on the east end of the chamber. The new east gable of the house was framed on two posts (263D/E, 262E/F) which, despite the 0.3-foot difference in their bottom elevations, were probably erected as a tie-beam pair. Both post holes had ledges in their eastern ends roughly 2 feet off the hole floor. The new exterior wall line of the gable lay 10.0 feet from the original one. One of the post holes (263E) cut through the edge of the earlier solitary hole off the northeast corner of the original chamber (263G). Removal of the latter's post (263F) may date to this time.

The new closet extended 5.0 feet east of the new exterior wall line. It was 9.3 feet wide. The two posts which supported its exterior corners (263K/L, 263A/B) shared bottom elevations roughly 2 feet shallower than those of the gable-end posts. Installation of a small exterior cellar or root pit just outside the east gable of the house probably dates to the period of these additions (discussed below) (Fig. 4). It is likely that a door in the east wall of the chamber closet provided access to it.

All the ceramics recovered from the four post holes belonged to vessels whose earliest stratification in large trash deposits occurred in Phase-II pits. Addition of the 10-foot bay and the new closet probably occurred at the same time.

### North Wall

The five principal posts in the north wall of the core were repaired during the period the chamber was enlarged. Uniformities of hole shape and size indicated that three of them, in the bays on either side of the chimney (386A/B, 373D/E, 214C/D), were made at the same time. The bottom of each hole sloped downward from the top of subsoil at the north end to the level of the original post-mold bottom on the south (Fig. 12). Since the original hole on the east (386D) was deeper than the other two, its repair hole was correspondingly deeper. However, the repair hole was partially backfilled before the new post was inserted. Hence bottom-mold elevations for the three repairs matched (Table 5). Since the large quantity of plaster which could be expected in the holes if the repair posts had gone up as a side-wall unit connected by a plate was absent, it is likely that the posts were set one-by-one. It is possible that only the bottoms of the original posts were replaced, and the repair posts were scarfed to them just above ground level.

The two principal posts further west were also repaired. The repair (204F/G) for the post at the end of the eastern three-bay section of the core was not dug to the depth of the original hole (204L). Its bottom sloped in from the west. Bottom-mold elevation roughly matched those of the other repairs to the east. At least one and probably both of the door posts for the cross passage were removed when this repair was made. The repair on the northwest corner of the core (207F/G) was dug 0.7 feet deeper, with the post seated on the bottom of a flat-bottomed hole. The new gable end of the house which this post helped support lay roughly a foot to the east of the original. Repositioning of the gable and a sherd of North-Devon sgraffito from a Phase-II vessel, found in a thin lens (205Q) covering the hole-set split rail (205R), point to the demise of the shed.

### South Wall

The repairs in the north wall were mirrored by ones on the south. Three of the latter (385A/B, 372A/B, 215A/B), like the three repairs opposite them in the north wall, were of similar size and shape, with bottoms sloping down from their south ends to the levels of the original post holes they replaced. Bottom-mold elevations for two of the three posts matched. However, the eastern post (385A) was set roughly a half foot deeper, at the level of the original post. Otherwise the characteristics which these three repairs share with the three opposite them suggest both sets were made in a similar fashion, and perhaps at the same time.

Bottom-mold elevations for the two principal-post repairs further west (210C/D, 209C/D) approximated those for the two immediately to the east, but hole shape differed. One of the holes (210D) had been dug roughly to the depth of the original (210F), but partially backfilled before the post was set (Fig. 11). Like the repair opposite it in the north wall (204F/G), the bottom of the hole sloped in from the west, truncating one of the cross-passage door posts (210G) and signalling the demise of this feature of the house plan. The repair on the southwest corner of the core (209C/D) was comprised of a post set on the floor of a flat-bottomed hole 0.8 feet higher than the repair on the north-west corner (207F/G). Hence it is unlikely that the two posts were erected as a tie-beam pair. Because the new gable end which they supported lay a foot west of the original, and because the hole orientations of the two repairs to the east indicate their posts were pushed up from the west (210C, 204F), it is likely that the entire service-passage bay was demolished before the repairs were made. The clay fill with which one of the cross-passage post molds (210J) had been packed once the post was removed probably came from one of the repair post holes.

Not long after the western bay of the core was rebuilt, a small post was inserted in the south wall (210A). It was set in a hole whose bottom sloped in from the south (210B), perhaps to support a sagging plate above (Fig. 11).

### Porch

The original posts supporting the southern gable of the porch entry were replaced by posts (219A, 371H) set in flat-bottomed holes (219B, 371J) dug to the bottoms of the originals. Bottom-mold elevations matched and one of the repair posts (371H) had been placed 0.2 feet off the bottom of its hole to achieve this. Two posts were added to the side walls of the porch about the same time (219E/F, 371N/P), 4.9 feet from the corner repairs. The two intermediate posts were set at precisely the same level, averaging 1.35 feet shallower than the corner posts. The bottom of one (371N) rested on a flat piece of bog iron.

### Back Room

Finally, an additional post (213E) was placed in the west wall of the back room. It was set in a hole whose bottom sloped in from the south-east, sharing with 210A/B a bottom-mold elevation and an orientation diagonal to the core of the house. It too may have been intended as a prop for a sagging plate.

Dating evidence from the post holes associated with repairs to the north and south walls, porch and back room suggests they were roughly contemporary with the chamber addition. Every ceramic sherd from these holes which could be cross-mended proved to belong to a vessel whose earliest stratification occurred in Phase-I or Phase-II contexts.

No Phase-III marker wares were recovered. Early Phase-III fence ditches (370F/G, 371B/C) cut through one of the porch repairs. The small cellar (262A,B) just east of the east gable, which was filled early in Phase III, was dug through a corner of the southeast chamber-addition corner post hole (262F). Hence all indications point to a Phase-II date for these alterations to the original fabric of the dwelling.

### The Manor House: Phase-III and IV Alterations and Repairs

#### The Back Room

A repair (208C/D) to the intermediate post in the west wall of the back room lacks solid dating evidence, although a sherd from a Colono bowl was recovered from the hole, other fragments of which turned up in Phase III contexts. There are some indications that the back room did not survive until the end of the occupation. It was standing when one end of a Phase-IV post-and-rail fence was attached to its north-west corner. However, a small pit (233F) dating to Phase IV had been dug through the post hole on the northeast corner (233D). Its grey ash-flecked fill partially sealed the post mold (233D), indicating that the back room was dismantled before (probably only slightly before) the site was abandoned.

#### North Wall

A post (213B) was inserted in the north wall of the core, just west of the hearth. It had been placed 0.3 feet off the bottom of a hole (213C) whose bottom sloped down from the north and under the wall line, a pattern met with before (eg. 214C/D, 373D/E, 386A/B) which was apparently designed to aid in the placement of posts in a standing wall.

TABLE 6

MEASUREMENTS FOR PHASE-III AND IV POST MOLDS AND HOLES

## The Manor House

Section of House	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevation (ASL)	
		Mold	Hole	Mold	Hole
Back room	208C/D	.45x.50	1.7x2.4	132.8	132.8
North wall	213B/C	.65x.60	2.9x2.0	132.6	132.3
South wall	385C/D	.65x1.0	2.7x3.9	132.9	132.9
Chamber Shed	372H/J	.50x.40	2.1x1.9	133.1	133.1
	384H/J	.40x.40	1.6x2.0	133.0	133.0
	261B/C	.45x.40	2.1x1.9	133.0	132.8
	372F/G	.60x.35	1.0x1.1	133.7	133.7
West gable	207D/F	.70x.60	1.8x2.2	132.7	132.7
Hall closet	212H/J	.60x.70	2.0x2.0	132.8	132.8
	212F/G	.70x.70	2.1x1.8	132.8	132.8
Hall entry (north wall)	208H	-	1.7x -	-	133.4
	208G	-	1.9x1.6	-	132.9

Once again placement of the post off the floor of the hole indicates use of a pre-cut timber. The location near the hearth may indicate insertion of the post was occasioned by fire damage to the carcass frame of the house.

#### South Wall and Chamber Shed

An additional post was inserted in the south wall of the chamber (385C). Orientation and size of the hole (385D) indicate that it was dug after that portion of the wall had been dismantled. A brick recovered from the hole fill suggested this insertion dated to Phase IV, after construction of the cellar beneath the hall (see below). The size of the mold may not accurately represent the dimensions of the post which sat in it, since the mold fill was not the usual dark-grey loam, but rather similar to the fill in the surrounding hole. Bottom-mold elevation matched those for three posts associated with the chamber shed addition. This and the presumed manner in which the post was installed indicate that it was contemporary with them (Table 6).

Stratigraphic and dating evidence firmly place the addition of a 3.5 by 15.8-foot shed to the south wall of the chamber in Phase IV. One of the holes which supported it cut a late Phase-III fence ditch (261F/G). A second hole (384J) contained sherds from several vessels initially stratitified in Phase-IV pits. The south wall of the shed was carried by three posts (372H, 384H, 261B) set in holes of similar dimensions. Bottom-mold elevations matched, raising the possibility that the three posts were erected as a side-wall unit, tied at the top by a plate (Table 6). A fourth post was placed in a shallower hole (372F/G) at the intersection of the west wall of the shed addition with the wall

of the core. The 3.0-foot interval between the post inserted in the south chamber wall (385C) and the adjacent principal wall post (385A) may mark the location of a door leading from the chamber to storage space in the shed addition.

### Cellar

The brick-lined cellar was installed beneath the hall of the manor house in Phase IV. A sherd from a delft plate, other fragments of which were initially stratified in Phase IV pits (280A, 345C, 283C), was recovered from the builder's trench (204N). The plate was part of a matched set of plates and basins which occurred exclusively in Phase-IV contexts.

The cellar lining was the only example of brick masonry found at The Clifts. Laid in shell mortar and haphazard bond, it was a half brick thick. From one to six courses survived on the side walls of the cellar (Fig. 14). Interior dimensions of the cellar, at the bottom of its outward sloping walls, were 6.0 by 7.8 feet. The dirt floor lay 4.4 feet below subsoil. Traces of a bulkhead-type entrance, presumably entered by a trap door in the floor of the hall, were found in the subsoil contours which survived the 1972 excavation of this feature. The floor of the entrance lay roughly 2 feet off the floor of the cellar. The entrance was probably 3-feet square in plan, prior to 1972.

Neither section drawings nor soil and stratigraphic-unit descriptions are available for the original fill of the cellar. As outlined above, the fill included burnt ferricrete rubble and daub from the hearth. In addition there was brick and mortar, a product of the robbing of the upper courses of the lining. Extant samples indicate that there were at least two varieties of lath-marked plaster present, similar to those found in Phase-II repair post hole 209D. A snapshot taken during



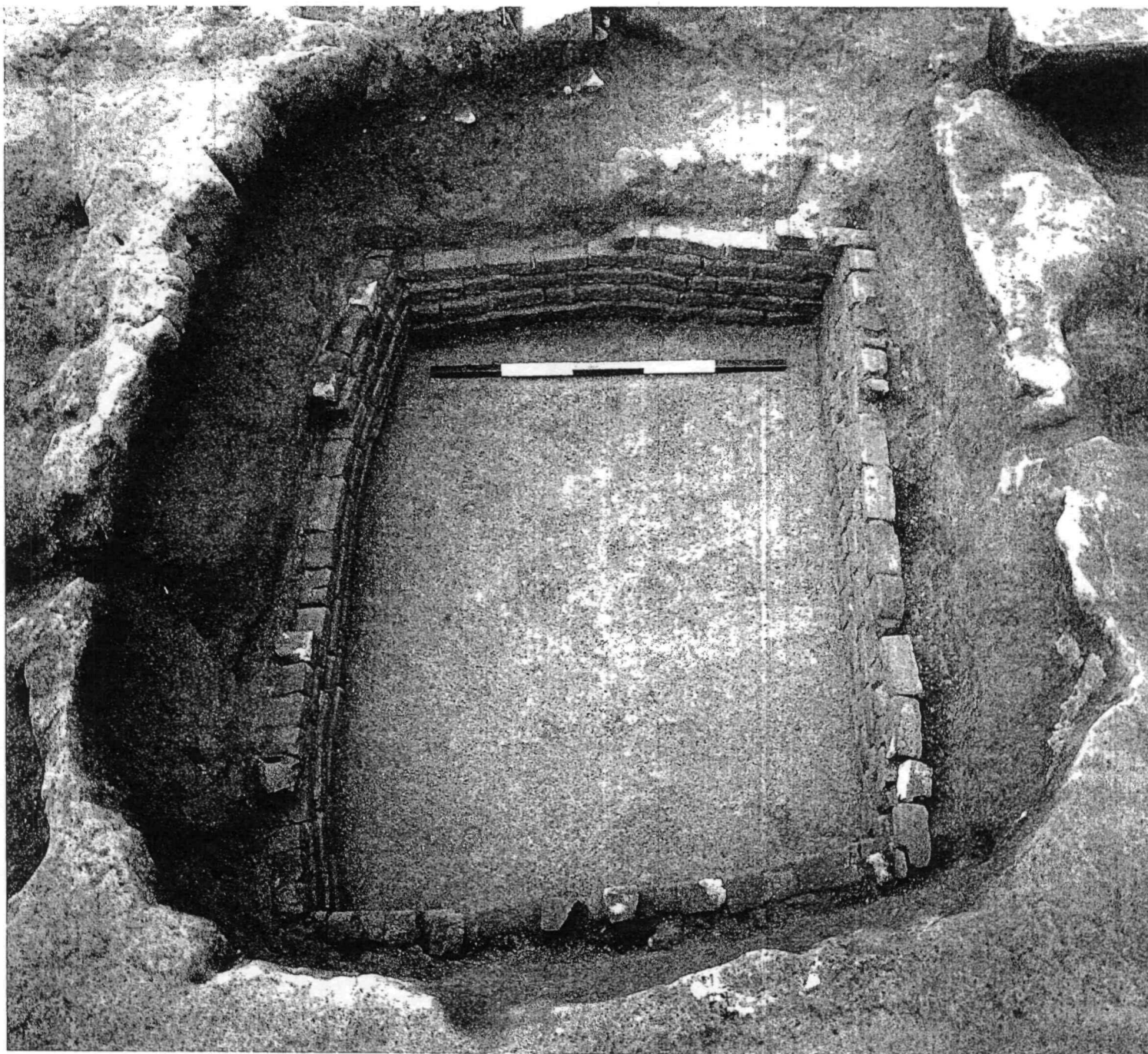


FIGURE 14. Manor house cellar, after excavation (facing west).

the excavation of the cellar appears to show the cellar floor covered by a layer or two of wash, on top of which the debris from the destruction of the house had been thrown.

#### West Gable and Hall Closet

The third and final alteration to the west gable and construction of a hall closet or porch leading off it probably were contemporary with installation of the cellar. In fact, it is likely that the cellar was dug while the alteration to the gable was taking place. Two corner posts carried the new gable 2.0 feet west of the previous exterior wall line. One of them had been totally obliterated during the 1972 excavations. The other, on the northwest corner (207D), was set in a shallow hole filled with brick bats but no mortar, presumably construction debris associated with the cellar. Brick bats were also found in the holes (212G, 212J) for the new hall closet. The hall closet was carried on two posts (212F, 212H) and extended 6.0 feet beyond the new gable. Like the Phase-II chamber closet, it was 9.3 feet wide, nearly half the width of the core (18.5 feet). Bottom-mold elevations for the new gable corner post (207D/E) and the two hall-closet posts matched (Table 6), again indicating the use of timbers cut at the same time. Artifacts from the three post holes included sherds from several vessels whose earliest stratification was in Phase-IV pits.

#### Hall Entry (North Wall)

Two post holes (208H, 208G) lying 4 feet apart (center-to-center) and 4 feet from the north wall of the hall had been partially destroyed by the 1972 excavations. Both dated to Phase IV, and one contained an unmortared

brick bat, probably from cellar construction. A small, thin patch of seemingly original fill (204M) lying just outside the north wall line may have marked the location of a third post hole whose mate to the east was totally destroyed in 1972. Too little fill remained in the shallower of the two best-preserved holes (208H) for the mold to have possibly survived. No mold could be discerned in the surviving 0.3 feet of fill in the hole to the west (208G), leaving the possibility that both posts had been set level with the bottom of the shallower hole (Table 6). It is hypothesized that the missing posts carried a shed or porch, 4 feet square in plan, covering a door newly opened in the north wall of the hall to provide access to a (recently dug?) privy in the back yard (231D,E).

#### Adjacent Features

##### Privy Pit

A straight-sided pit, slightly less than 4 feet square and roughly a foot deep (below subsoil), had been just north of the hall (231D,E). It was oriented diagonal to the dwelling and parallel with a Phase-IV post-and-rail fence line which passed 2 feet to the north (232D/E, 231B/C, 237D/E, 237B/C, etc.). The fence ran between the northwest corner of the back room and the northeast corner of an outbuilding constructed during Phase III and used as a dairy. It is unclear whether the square pit was originally dug in line with the post-and-rail fence or a worm fence in the same location which may have preceded it (in Phase III). It is certain, however, that installation of the pit post-dated construction of the dairy. It may have been contemporary with the entry in the north wall of the hall. A sherd of plain white saltglaze stoneware demonstrates the pit was filled at the end of the occupation.

Although the sides of the pit were partially eroded, there was no wash layer at the bottom. It was filled with a rather uniform grey-brown fill, the upper portion of which contained a great deal more animal bone (231D) than the lower (231E). However, no clear separation of the two levels could be discerned in profile (Fig.15). The foregoing suggests that the pit was cleaned of wash when still open and in use. Although it is possible that the pit served as an exterior root cellar, a more likely interpretation is that it was a privy. By Phase IV there were already far larger, more elaborate and probably adequate storage facilities at the site.

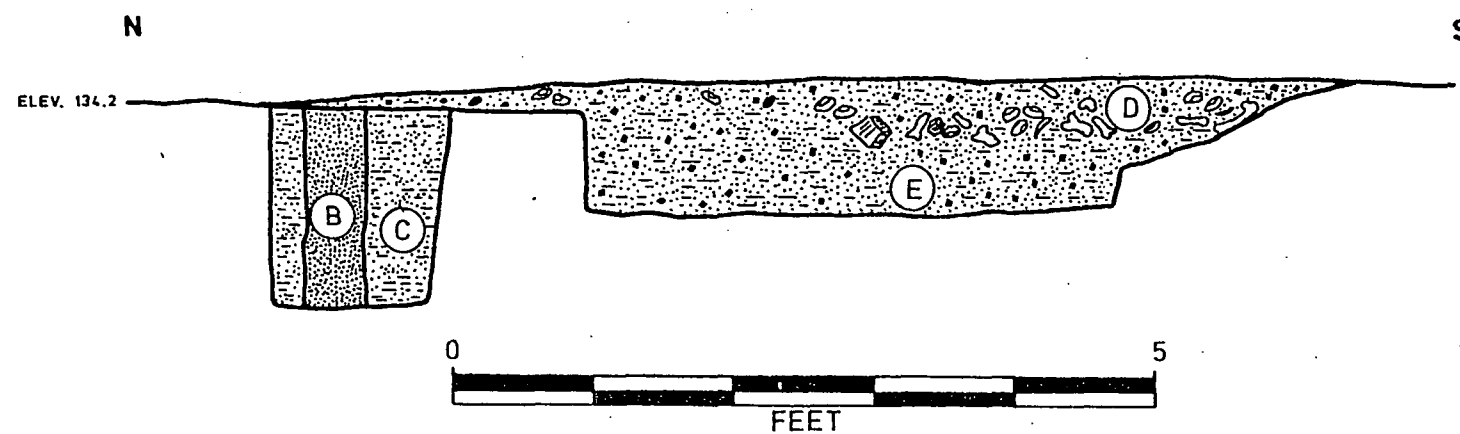
#### Solitary Post Holes

A single small post hole (216A/B), without apparent relationship to other features, lay roughly 5 feet south of the southern wall of the hall. The only remotely datable artifact in this 0.6-foot deep feature was a 5/64-inch bore-diameter pipestem found in the mold (216A). A second solitary post hole located nearby (218E/F) was more enigmatic. The 1.2-foot deep hole was sealed by two thin layers of grey ashy loam in a 0.4-foot deep, dish-shaped pit (218C,D). The lower layer was fire-scorched. The ash-filled post mold (218E), with pointed bottom, protruded through the top of the pit. Noteworthy artifacts in the pit fill included 9 pieces of flint debitage, a sherd from a Phase-II North Devon sgraffito chamber pot and two burnt sherds of delft which could not be assigned to other vessels at the site. In addition, there were pipe stems with the following bore diameters:

5/64 inch - 1  
6/64 inch - 2  
7/64 inch - 2  
8/64 inch - 4

Although tenuous, this evidence points to an early date for the pit.

PHASE IV  
PRIVY PIT (231D,E) AND FENCE LINE POST HOLE (231B/C)



231 B GREY-BROWN LOAM  
C TAN LOAM, GREY MOTTLE

D GREY-BROWN LOAM, CHARCOAL  
AND BRICK FLECKS  
E GREY-BROWN LOAM, CHARCOAL

FIGURE 15.

The pit and post (a gambolling pole?) represent an outdoor activity locus.

#### Exterior Cellars

Two cellars were located just east of the east gable of the manor house. The remains of the earlier and smaller of the two consisted of an oval-shaped pit, 5.0 by 8.0 feet in plan and 1.8 feet deep (below subsoil), containing two layers of fill (262A,B). The bottom layer was a grey loam heavily mottled with displaced subsoil, containing several lenses of wash (262B). Over this lay an ash-flecked grey loam which contained most of the artifacts found in the pit (262A). Removal of the fill revealed four dimple-like depressions (262D) arranged at the corners of a 4.0 by 2.5-foot rectangle where the sloping sides of the pit met its relatively flat floor. These appear to have been dug to accomodate the corners of a wooden box inserted in the pit as a lining. If this interpretation is correct, the bottom layer in the pit would represent fill from the builder's trench around the box, which washed onto the pit floor when the box was removed.

The pit had been dug through and hence predated several earlier features, including the palisade ditch and a Phase-II repair post hole (262F) on the southeast corner of the manor house. It also cut through a 0.6-foot deep feature filled with grey loam (262C) which itself cut the palisade ditch. The ceramic seriation indicates that the pit was filled early in Phase III (Table 3). Hence installation during Phase II appears reasonable.

The larger cellar, presumably dug to replace the smaller one, measured 8.1 by 8.8 feet in plan and was 2.0 feet deep (below subsoil),

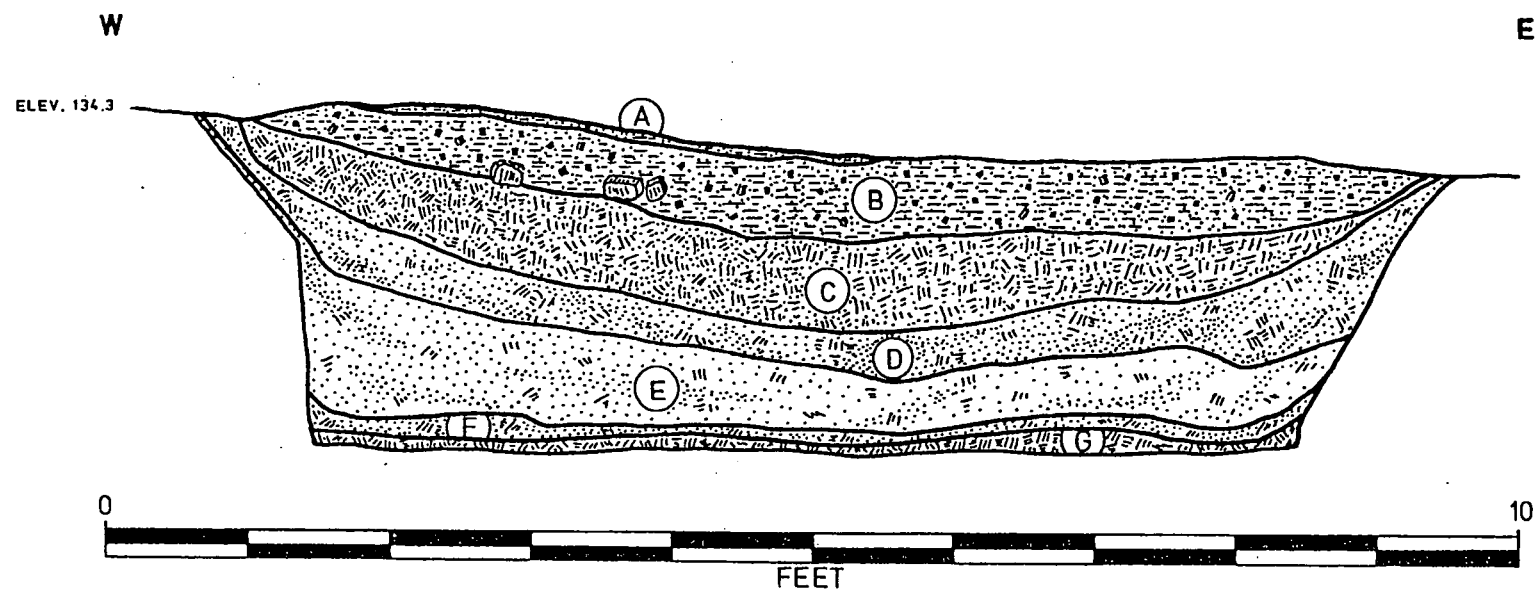
Removal of the cellar's six layers of fill (269A-F) revealed a packed-clay floor roughly 0.1 feet thick (269G) lying on subsoil. There was no evidence for a wooden lining. At the bottom, the pit was 7.0-feet square.

Just above the clay floor lay a thin layer of grey, clayey loam containing almost no artifacts (269F) (Fig.16). The layer probably washed into the pit while it was in use. Above this lay another, much thicker layer of wash (269E) which apparently accumulated after the cellar's cover had been removed. The remainder of the pit's fill was comprised of layers of dark-grey brown loam flecked with ash and brick, which contained many more artifacts than the bottom two wash layers. These upper layers represent intentional filling of the cellar with artifact laden topsoil (midden) from the surrounding area. The presence of brick bats and daub flecks in the upper two layers (269A,B) argues that destruction debris from the manor house was included.

The ceramic seriation (Table 3) places filling of the larger cellar at the end of the occupation. However the fill contained more than its share of ceramic sherds which belonged to vessels which belonged to pre-Phase-IV assemblages, compared with other end-of-occupation contexts (eg. the second quarter cellar). This may be because the surface midden surrounding it, with which the cellar was filled, was predominantly associated with earlier deposition. In other words, trash from the manor house was more often dumped in the area (out a door in the chamber closet?) during earlier periods in the occupation.

A similar cellar, is to be found at the Hallows site. Measuring roughly 10 by 13 feet in plan, it was located 16 feet off the gable end of the dwelling there, in what appears to have been a fenced garden (Buchanan and Heite 1971).

EXTERIOR CELLAR



- 269 A DARK GREY-BROWN LOAM, DAUB  
FLECKS, CHARCOAL
- B DARK GREY-BROWN LOAM, DAUB  
FLECKS, CHARCOAL, BRICK
- C CLAYEY DARK BROWN LOAM
- D DARK-BROWN LOAM, TAN CLAY  
MOTTLE

- E LIGHT-BROWN SANDY LOAM,  
TAN CLAY MOTTLE
- F TAN CLAYEY LOAM
- G TAN CLAY

FIGURE 16.



### Palisade

The palisade ditch surrounding the manor house ranged from 1 to 2 feet in width and 1.0 to 1.8 feet in depth (below subsoil) (220Y/Z, 221Y/Z, 223Y/Z, 218Y/Z, 212Y/Z, 206Y/Z, 211Y/Z, 230Y/Z, 237Y/Z, 236Y/Z, 235Y/Z, 234Y/Z, 375Y/Z, 388Y/Z, 265Y/Z, 264Y/Z, 263Y/Z, 261Y/Z, 273Y/Z, 295Y/Z, 383Y/Z, 370Y/Z). Two circular bastions, roughly 8 feet in diameter were located on the northwest and southeast corners (Fig.17). The palisade was comprised of split rails, set close together and upright on the flat bottom of the ditch. A 3.0-foot gap in the split rails, situated on the south wall just opposite the cross passage in the dwelling, betrayed the location of a gate leading into the main enclosure. The ditch extended roughly 8 feet south of the southwest corner of the main enclosure where it stopped, began again and ran to the northeast corner of the early servant's quarter. Split rails were set in this section of the ditch as well (281Y/Z, 282Y/Z). The 4.2-foot gap between the end rails in the two ditch sections marks the location of a second gate, leading into an area south of the manor house and east of the quarter which was apparently enclosed by a fence which left no trace in the archaeological record.

In the main enclosure, the ditch for the south palisade wall cut through that for the west wall, suggesting that when the palisade was constructed ditch digging began at the southwest end of the palisade and proceeded north. In the first (southern) 33 feet of the ditch on the west, there was a subsoil ledge roughly 0.5 feet off the ditch floor, a feature not found in the rest of the palisade ditch. The ditch ran full circle around the northwest bastion, presumably the one dug first, but not around the bastion on the opposite corner, perhaps an indication that the fortification was not well planned before it was thrown up.

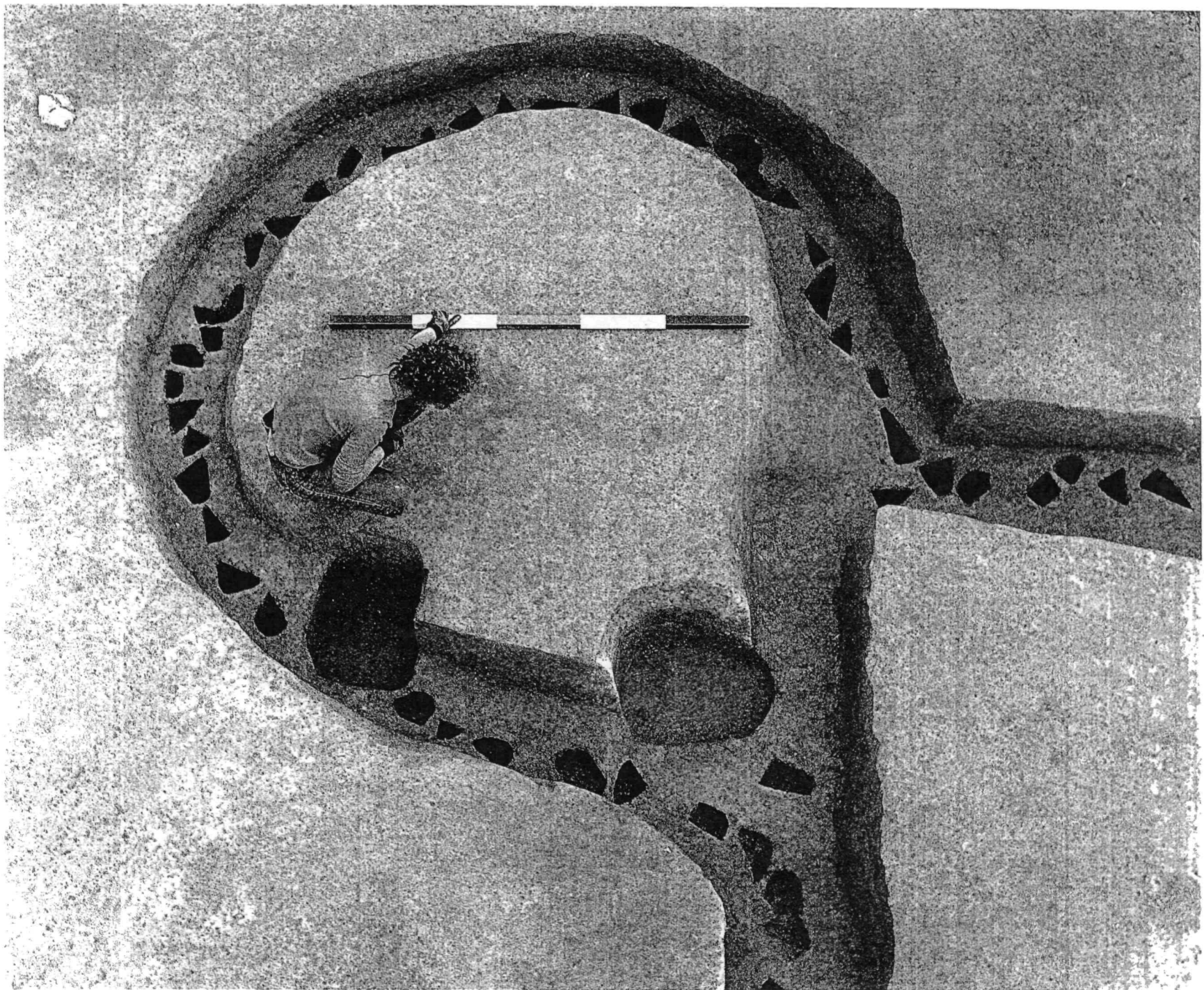


FIGURE 17. Northwest bastion, during excavation (facing north).

The molds left by the split rails could only be distinguished from the surrounding ditch fill near the bottom of the ditch. Hence most of the artifacts recovered from the palisade were assigned to the molds (Y). The few ceramics which could be associated with the ditch fill (Z) belonged to the Phase-I assemblage. Phase-II ceramics, sherds of fine-combed Staffordshire cups, were recovered from the molds, indicating that part of the palisade survived above ground into that period of the occupation. However, the distribution of 8 and 9/64-inch bore-diameter pipe stems in plowzone demonstrates that the west wall of the palisade was not intact long enough to have effected the location of the Phase-I surface midden. The midden extends right across it (Fig.13). Apparently at least this portion of the palisade, lying between the dwelling and the spring, was torn down soon after it was built. It obstructed daily work routes.

A domestic fortification similar in scale to the palisade at The Clifts has been found at only one other seventeenth-century Chesapeake site: the Hallowes Site, located roughly 4 miles down the Potomac from The Clifts on Currioman Bay. Here two four-sided bastions were located on opposite corners of the dwelling. The bastions, which were not recognized as such by the excavators, were fashioned of ditch-set uprights of unknown character (Buchanan and Heite 1971). Artifacts from Hallowes, especially made pipes, have many parallels in the Phase-I Clifts assemblage. The Binford formula yielded a pipe-stem date of 1648 for Hallowes and 1654 for the palisade at The Clifts (N=41), betraying the inaccuracy of the formula but indicating the contemporaneity of the two samples.

A comparable fortification is mentioned in a deposition given in the Westmoreland County court in 1676 concerning a rape which occurred on Denis White's plantation in Cople Parish. Abraham Butler told the

assembled justices:

... about 4 or 5 of the clock in the afternoon the aforesaid George being at work in the field with this deponent pretended that the overseer had ordered him to fetch Peter Duncan's mare, and so went into the house; and about half an hour after he was gone there came forth a boy named Joseph Browne running and crying out: for Christ's sake for the Lord's sake bless you night and day, came away and came back again; whereupon this deponent, suspecting something amiss in the house, hastened after him and coming to the fort door found it fastened and heard the said Bidgett crying out: good George let me alone, and the said George replied you bitch you whore lie still or else I'll kill you; whereupon this deponent broke open the said door and ran into the house...(Westmoreland III:308).

The domestic fortifications at The Clifts, Hallowes and Denis White's plantations were apparently erected in the fall of 1675, in response to the Indian scare which helped precipitate Bacon's Rebellion. During the previous decade many Virginians had begun chafe under Governor Berkeley's policy of restricting white settlement to maintain peace with the Indians. They wondered why the local Indians were guaranteed land, while they were without it. In this restive atmosphere it was not long before violence broke out. In 1675 a group of Doeg Indians from Maryland, disturbed by the refusal of Northumberland County merchant Thomas Mathew to pay them for trade goods, attempted to run off with a few of Mathew's hogs. The series of bloody reprisals which followed culminated when two Westmoreland justices, John Washington and Isaac Allerton, led a band of militiamen from the surrounding counties into Maryland where, with the help of a group of Marylanders, they surrounded a Susquehannock encampment. The Susquehannocks had not been previously involved in the troubles, but when five of the tribe's chief emerged to enquire what the English wanted, they were murdered. The tribe retaliated in a series of quick raids along the fall line, between the Potomac and Rappahannock, in which thirty-six whites were killed. Rumors of a conspiracy between local and "foriegn"

Indians and bloody tales of the serious Indian offensive then underway in New England swept the colony. At this juncture, colonists under the leadership of Nathaniel Bacon began slaughtering Indians living along the upper reaches of the James. Bacon's Rebellion was underway (Washburn 1972).

Years later Thomas Mathew, the merchant (and Bacon partisan) whose hogs had helped start it all, recalled:

In these frightful times, the most exposed small families withdrew into our houses of better numbers which we fortified with palisadoes and redoubts; ... no man stirred out of door unarmed; Indians were ever and anon espied, three, 4, 5, 6 in a party lurking through the whole land, yet (what was remarkable) I never heard of any houses burnt, tho' abundance was foresaken, nor ever of any corn or tobacco cut up, or any other injury done, besides murders /by the Susquehannocks at the falls/, except the killing of a very few cattle and swine (Andrews 1959:20).

The value of the palisade at The Clifts, for the rather short time it remained in defensible condition, was apparently more psychological than real.

### First Quarter

The early servants' quarter at The Clifts was 25.2 feet in length. Its width (18.4 feet) nearly matched that of the manor house to the north. The quarter was originally framed around eight posts (Figs.18,19). The northwest corner post was destroyed when the cellar beneath the second quarter was dug in Phase II. The posts in the west wall were spaced on even modules of 7.5 feet between the four posts. However, the east wall was laid out in uneven modules of 7.5, 9.0 and 6.0 feet between posts. The irregularly spaced post was probably intended as a door post (283AN). Both the early pipestem distribution (Fig.13) and the quarter's orientation and relationship to the palisade and dwelling indicate the presence of a door in this



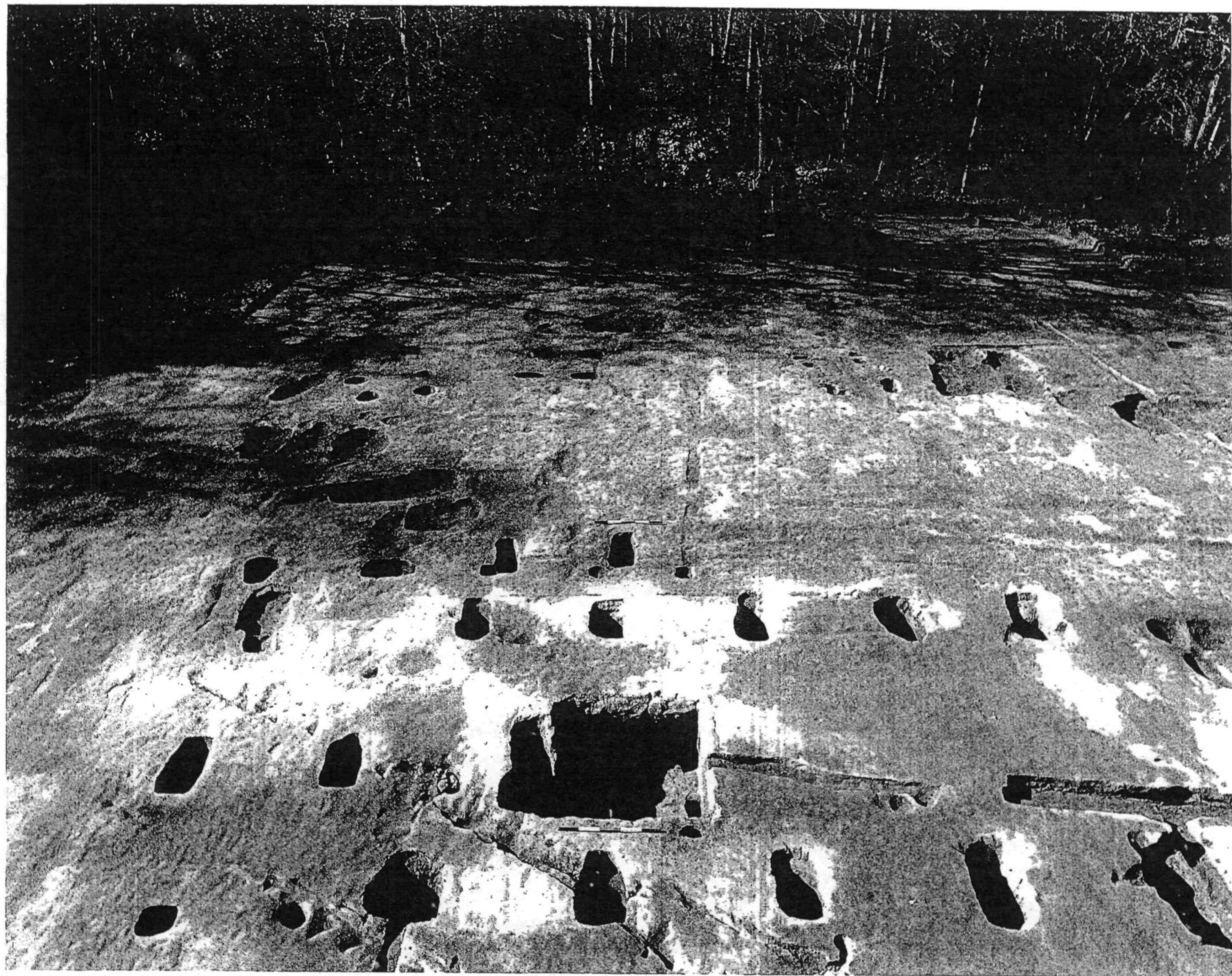


FIGURE 18. The first and second quarters after excavation (facing west).

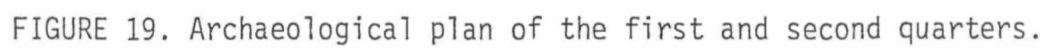


TABLE 7

MEASUREMENTS FOR POST MOLDS AND HOLES\*

## First Quarter

Section of House	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
West wall	390C/D	.80x.60	1.8x4.1	132.2	132.2
	390E/F	.70x.60	1.7x4.3	132.0	132.3
	390G/H	.70x.75	3.7x2.3	132.2	132.4
	390J/K	.60x.65	2.3x2.9	131.9	132.3
East wall	-	-	-	-	-
	283AN/AP	.70x.70	2.1x -	132.6	132.7
	293C/D	.75x.70	1.8x3.1	132.4	132.6
	390A/B	.55x.70	2.0x3.7	132.3	132.4

\* Surface of subsoil averages 133.9 along west wall, 134.6 along east wall.

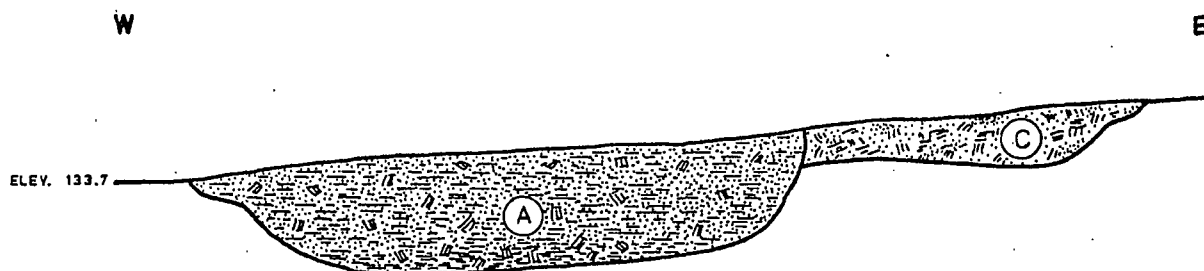


wall. A similar arrangement is found at the John Washington Site, roughly 5 miles upriver from The Clifts. In the 40-foot long principal dwelling, erected circa 1660, the posts in one wall were set roughly on 10-foot centers, while in the other they were set on 12, 8, 12 and 8-foot centers, presumably to accomodate doors opening into both interior rooms (Blades 1977).

The irregularly spaced wall post rules out the use of reverse-assembled tie-beam pairs in the erection of the early quarter. The orientation of the post holes which, with one exception (390H), were dug with their longer sides perpendicular to the axis of the ridge might indicate the frame was standard assembled in side-wall units. However, post molds were roughly centered in their flat-bottomed holes which lacked subsoil ledges (Fig.20), attributes not found in the second quarter which was definitely assembled in this manner. In addition, there was more variation in bottom-mold and hole elevations for the side walls of the quarter (Table 7) than for the various pre-assembled frames used in the manor house. Finally six of the seven extant posts in the quarter had sharpened ends which were driven into subsoil at the bottoms of the holes (Fig.20, Table 7). The exception was the north-west corner post (390C). These characteristics appear more likely to have been the result of erecting the wall posts singly, and not in pre-assembled units. The sharpened ends may have been intended to help keep the posts in position while the plates were joined to their tops. Adjustments to post heights could be made as necessary before the plates were set in place. On the other hand, standard assembly cannot be absolutely ruled out.

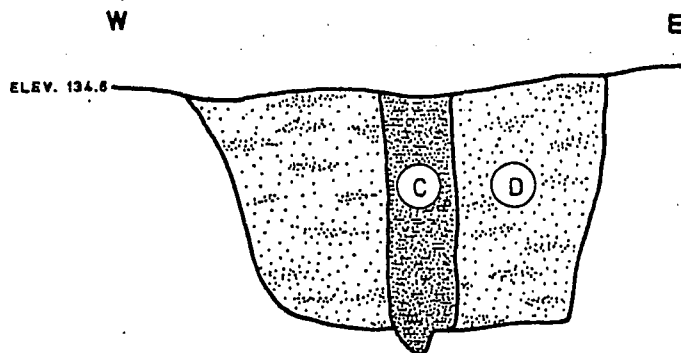
ORIGINAL QUARTER

FIRE PIT (391A) AND POST HOLE (293C/D)



391 A FINE GREY-BROWN LOAM, ASH,  
CHARCOAL, BURNT SUBSOIL FLECKS

C FINE TAN LOAM, LIGHT GREY  
MOTTLE



293 C DARK GREY LOAM

D BUFF AND TAN LOAM



A cluster of three overlapping pits, dish-shaped in profile, were located against the south gable of the quarter (391A,B,C). The two earlier pits (391C,B) were filled with displaced subsoil, mottled with grey-brown loam. The earliest (391C) was 0.5 feet deep, the second (391B) 0.7 feet deep (below subsoil). The third pit (391A) was dug through both the first and second to a depth of 1.0 feet (Fig. 20). It was filled with a grey-brown loam, mottled with displaced subsoil and containing charcoal and burnt-subsoil flecks which were especially profuse at the bottom. The pit bottom showed slight traces of fire-reddening. Indications are that the latest pit marks the location of a crude hearth or firepit for the early quarter. The lack of evidence for prolonged, intense burning may be an indication that it was infrequently used. Similarly, the absence of twig or lath-impressed daub suggests there was no firehood or chimney.

It is unclear whether the early quarter was partitioned. The structure's length lies within a fuzzy boundary between the largest one-cell and smallest two-cell (English) vernacular buildings. A partition may have separated the southern (heated) bay from the two bays north of it. In this case the door would have been roughly centered along the east wall of the north room.

Construction of the first quarter probably dates to the beginning of occupation at the site. Artifacts from the seven extant post holes were similar in number (small) and variety (limited) to those recovered from the original manor house holes. The quarter was certainly standing by the time the palisade was constructed. It was a short-lived building. Ceramics from the first quarter post molds and hearth (391A), and the second quarter post holes, indicate the latter building replaced the former during Phase II.

A curious feature located just west of the early quarter may have been related to it (390L/M,N). This was a roughly 6 by 4-foot oval pit, dish-shaped in section, which contained a post mold in one end (390L). The 0.8-foot deep pit contained a layer of displaced subsoil flecked with charcoal (390M), with a black lens of charcoal running through it near the bottom (390N). The post mold, which extended to the bottom of the pit, lay 4.2 feet from the west wall of the quarter. Its bottom elevation (133.0 feet ASL) was roughly a foot higher than the posts' in the west wall. Dating evidence is scant. Few artifacts were recovered, the most datable of which was a 8/64-inch bore-diameter pipe stem. The scarcity of artifacts points to an early date. The size and shape of the pit suggest that it was dug for a purpose other than placement of the post. Precisely what purpose the post served is problematic. Support for an open shed leaning against the quarter wall, the other corner of which was carried by a post set on the ground surface, is a possibility.

#### Second Quarter

Exterior dimensions of the rectangular core of the second quarter were 19.0 by 36.0 feet. It was framed round five posts in each wall line placed on even modules of 9.0 feet, measured from from the outside edges of the corner posts to the centers of the intermediate wall posts. A shed 14.0 feet long and averaging 6.0 feet wide had been appended to the west wall of the core. This was carried on three posts, with the south post placed in line with the gable of the core and the center of the intermediate post placed 8.0 feet north of their outside edge. Although dating evidence from the shed post holes is sparse, the shed was probably part of the original build. It was certainly standing by Phase III, when a fence ditch (298F/G)

TABLE 8

MEASUREMENTS FOR POST HOLES AND MOLDS\*

## Second Quarter

Section of House	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
East wall	223C/D	.65x.70	2.5x3.9	131.7	131.7
	284A/B	.80x.75	2.6x4.3	131.9	131.9
	285A/B	.80x.70	2.5x3.4	132.0	132.0
	286A/B	.85x.75	2.3x3.6	131.9	131.9
	294C/D	.50x.70	2.1x3.3	132.0	132.0
West wall	252D/E	.65x.80	2.9x4.4	131.8	131.8
	299B/C	.55x.80	3.2x4.3	131.8	131.8
	298B/C	.80x.80	2.2x4.7	131.8	131.8
	297A/B	.70x.60	2.6x3.9	132.0	132.0
	297C/D	.65x.80	2.2x4.3	131.9	131.9
Cellar	283P/X	.50x.60	0.9x1.1	129.1	128.9
	AA/AB	.65x.50	1.0x1.0	129.3	129.3
	AC/AD	.50x.55	0.9x1.0	129.2	129.1
	AJ/AK	.60x.65	1.0x0.9	129.2	129.2
	S/T	.60x.50	1.0x0.8	129.1	129.1
	Q/R	.50x.50	0.9x1.4	129.3	129.3
	V/W	.45x.50	2.0x1.4	129.5	129.5
Shed	298D/E	.60x.65	1.1x1.3	133.3	133.3
	297E/F	.50x.60	1.2x0.9	133.4	133.4
	297G/H	.60x.65	1.3x1.3	133.0	133.0

\*Subsoil surface averages 134.5 along east and west walls, 133.9 along shed wall.

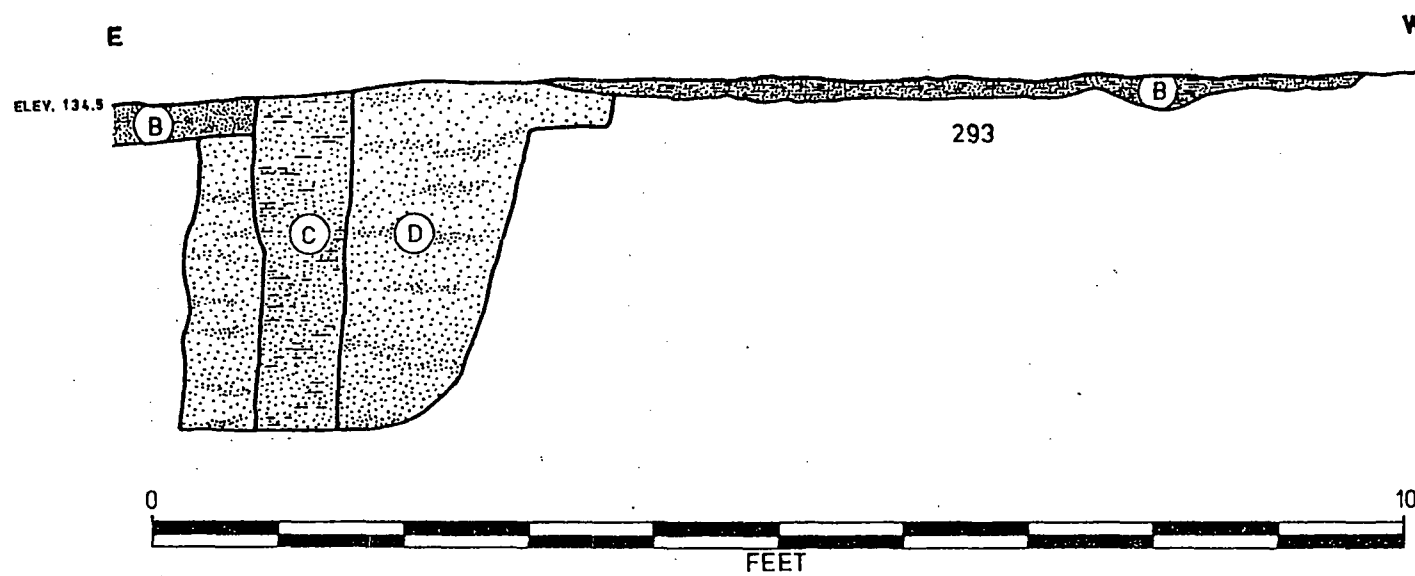
was dug through one of the post holes associated with it (298E).

All ten wall posts for the core were set on the bottoms and near the eastern ends of their post holes. Bottom mold-elevations matched within 0.3 feet in the east wall and 0.2 feet in the west wall (Table 8). The east side of each post hole was nearly vertical. Eight of the post holes had subsoil ledges in their western ends, ranging from 1.5 to 2.0 feet above the hole floor (Fig.21). The two exceptions (299C,297B) had bottoms which sloped down from the west. The longer dimension of each hole was oriented perpendicular to the axis of the ridge. These characteristics indicate that the frame of the core was raised in pre-assembled side-wall units, comprised of the five wall posts tied together by a plate. Both side-wall frames were pushed up from the west. Part of the north-west corner post (252D) survived. It (and presumably the entire frame) was white oak. The three posts which supported the shed were set in small, square holes. Bottom-mold elevations varied 0.4 feet and averaged roughly a foot and a half shallower than the principal wall posts (Table 8). Since this variation occurs between adjacent posts, it is likely that the three posts were erected singly and their tops then sawn level to receive a plate. Similarity between hole and mold dimensions for the shed and for the quarter cellar lining (see below) may indicate their contemporaneity.

#### Hearth

The hearth for the second quarter, located on its southern gable end, was similar to that in the manor house. Its remains consisted of a shallow depression (maximum depth: 0.3 feet), filled with an ashy grey loam containing charcoal flecks and a few bog-iron cobbles (293B). This feature was 6.7 feet wide (E-W) and extended 2.5 feet south of the exterior gable wall line.

SECOND QUARTER HEARTH (293B) AND POST HOLE (294C/D)  
 PHASE III FENCE DITCH (294B)



294 B DARK GREY LOAM, TAN CLAY  
 MOTTLE  
 C GREY LOAM, CHARCOAL FLECKS  
 D TAN COARSE LOAM, LIGHT  
 GREY MOTTLE

293 B GREY-BROWN LOAM, CHARCOAL  
 FLECKS, BOG IRON FRAGMENTS

FIGURE 21.

Like the manor house hearth, the subsoil beneath it showed only scant evidence of burning. (Fig.21).

Fragments of bog iron were recovered from the cellar just north of the hearth. Up to 2 feet in diameter, many of them showed signs of burning. When stacked together, their volume was roughly 32 cubic feet. Most of the bog iron occurred in a clay layer in the cellar (283K) (Fig.22). which on close inspection proved to be comprised of fragments of clay daub. Again, many of these were burnt; some of them were soot-blackened on one side and bore lath impressions averaging 0.18 feet in width on the other. Thickness of lath-impressed daub fragments averaged 0.06 feet. The daub was tempered with vegetable fiber. The evidence points to a hearth comprised of a bog-iron base (roughly a foot in height?). From it rose an exterior wood-framed chimney, lathed and plastered with straw-tempered mud. Both were thrown in the cellar when the quarter was dismantled.

### Cellar

The second-quarter cellar was 7.4 by 7.8 feet in plan, with a 3-foot square extension in the direction of the hearth, and 4.0 feet deep (below subsoil). The floor of the extension was continuous with the cellar floor. Its location near the hearth suggests it was intended as a place to store root crops, to keep them from freezing in winter. Three post holes were located against both the north (283P/X,Q/R,S/T) and south (283AA/AB,AC/AD,AJ/AK) walls of the cellar. In addition, there was a seventh post hole dug into the middle of the cellar floor (283V/W). Bottom-mold elevations for the posts on the side walls varied 0.2 feet, and one post (283P/X) had been set off the bottom of its hole to achieve this (Table 8). The post in the middle of the floor was set deeper. The side-wall posts



apparently served both to keep boards wedged behind them in place, for a lining, and to help support a cover for the cellar. Plowzone-artifact distributions indicate that the floor of the quarter was not tight (Fig.22) and hence probably not set on joists. Lacking joists to span the cellar, independent support for its cover would have been necessary. The middle post (283V/W) may have been inserted later for additional support. Unlike the other six straight-sided post holes, one of its sides sloped down at roughly a 45 degree angle, perhaps to facilitate the post's placement under the cellar cover. The rotted remains of boards were found on the cellar floor. With one exception, the wood grain ran parallel to the walls, indicating that along with a wooden lining the cellar also had a wooden floor. The exception may have been part of the cover. A small rectangular feature, 1.3 by 1.0 feet in plan and 0.6 feet deep (below the cellar floor), was located near the northwest corner of the cellar (283AE). It appears to have been a sump, providing drainage beneath the cellar's wood floor (Fig.23)

The only stratigraphic units associated with the cellar's construction were the six post holes along the side walls. Their fill yielded no datable artifacts, and hence no evidence that the cellar was not original to the quarter.

When the quarter was destroyed, the cellar appears to have been filled fairly rapidly (Fig.24). There were only two wash layers (283E,H), both of them overlying the remains of the chimney and hearth base (283K). The remainder of the fill in the cellar was predominantly comprised of layers of grey-brown loam with varying hues and inclusions. These appear to have been scrapings from the surrounding trash-littered living surface, dumped into the cellar to get rid of an inconvenient hole. A few fragments of plaster were recovered from the upper layers (283C,D,E,F,G). However, the



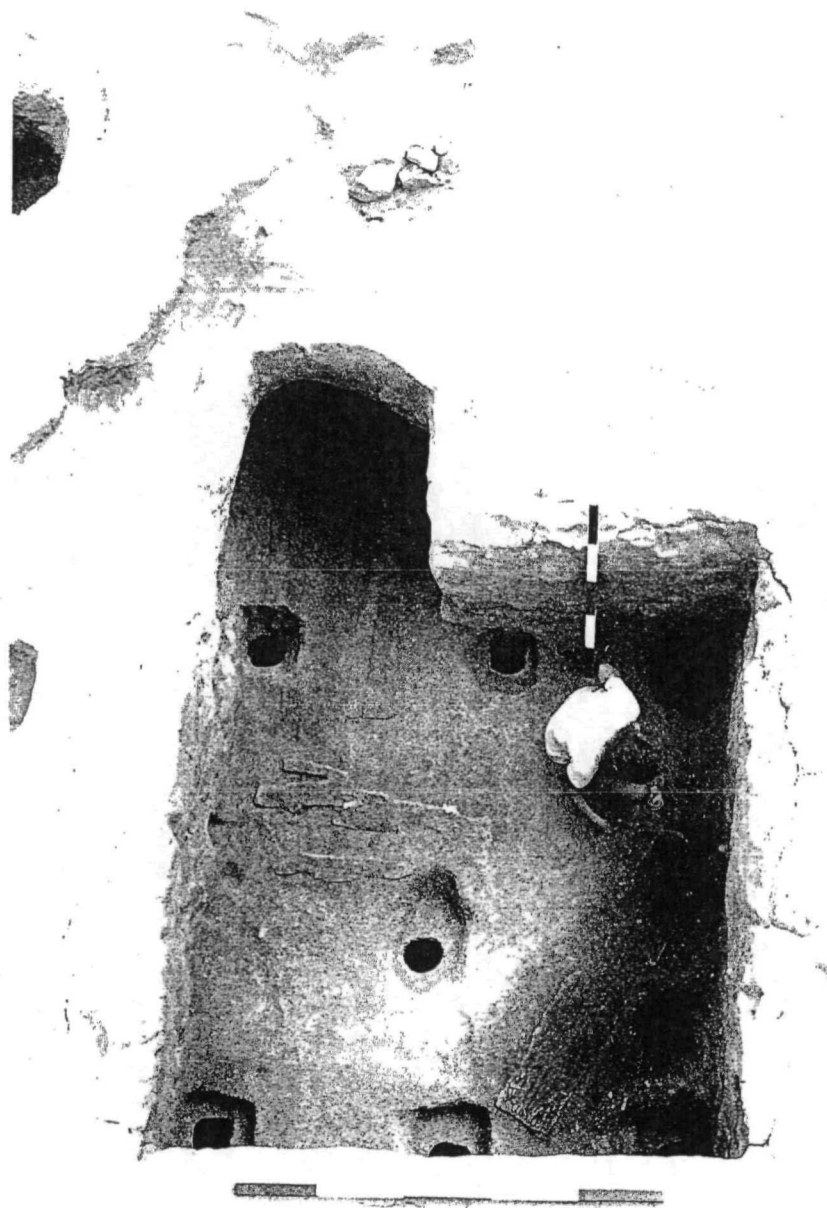
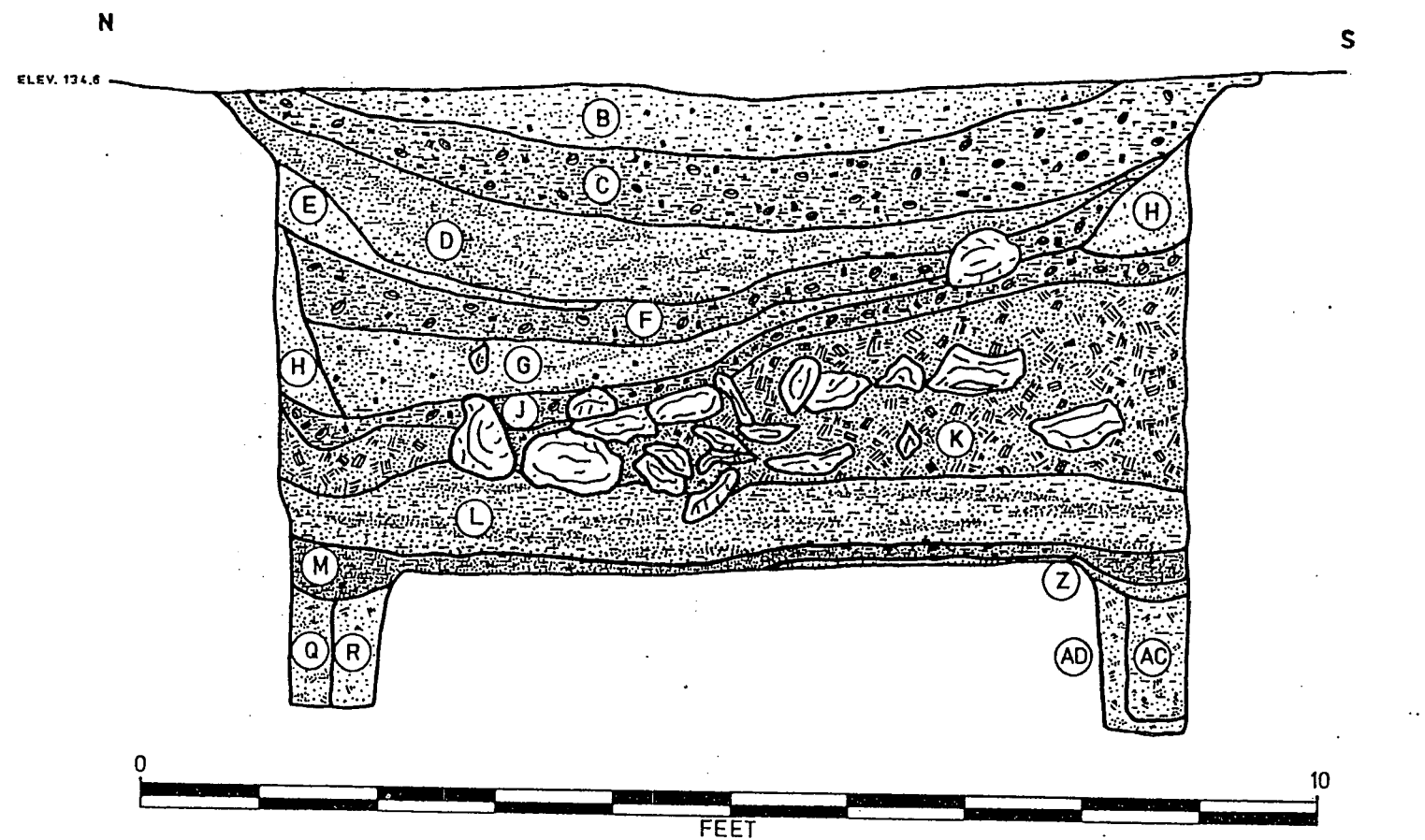


FIGURE 23. Second quarter cellar, after excavation (facing south).

# SECOND QUARTER CELLAR



283 B GREY-BROWN LOAM, CHARCOAL  
BRICK FRAGMENTS

C DARK GREY-BROWN LOAM, WITH  
CHARCOAL, BOG IRON, BRICK  
FRAGMENTS, OYSTER SHELL

D GREY SANDY LOAM, WITH LENSES  
OF ASH

E LIGHT-BROWN SANDY LOAM

F SIMILAR TO C

G GREY-BROWN SANDY LOAM, ASH  
LENSES, CHARCOAL, BRICK,  
BOG IRON FRAGMENTS

H BUFF SANDY LOAM

J SIMILAR TO C

K DAUB FRAGMENTS, BURNED CLAY,  
BOG IRON RUBBLE

L GREY-BROWN LOAM, CHARCOAL  
FLECKS

M DENSE DARK-GRAY LOAM, LARGE  
CHARCOAL FLECKS

Q GREY-BROWN LOAM

R TAN GRAVELLY SAND

Z LOOSE GREY-BROWN LOAM

AC LIGHT-BROWN COARSE LOAM WITH  
GREY MOTTLE

AD SIMILAR TO R

FIGURE 24.

quantity was far too small to even hint that the interior of the quarter had been finished with this material. Brick bats occurred with low frequency in all the major cellar layers save the one which resulted from the chimney's destruction (283K). Here they were totally absent. Where measurable, brick dimensions matched those for the bricks comprising the manor house cellar lining, and this was presumably their source.

The ceramic seriation (Table 3) demonstrates the second quarter cellar was filled at the end of the occupation. Application of the Binford formula to the pipe-stem sample from the cellar yielded a date of 1731 ( $N=1,322$ ). Since the error of estimate for this region of the regression line is relatively small and the sample size is large, this result probably offers accuracy not often found in such calculations (Noel Hume 1972:300). The coarseware plowzone distribution (Fig.37) indicates the quarter was also a kitchen.

### Fence Lines

#### Phases I and II

One early fence at The Clifts has already been discussed: the palisade. As was noted in that discussion, the gate in the portion of the palisade ditch running between the main enclosure and the southeast corner of the early quarter points to the existence of a fenced enclosure to the east of the quarter. In all probability, this was a worm fence, comprised of split rails stacked on one another zig-zag fashion. Because they are simply laid on top of the ground, such fences leave no direct trace in the archaeological record. Since the earliest archaeological remains of fence lines at The Clifts date to Phase III, worm fences appear to have been used at The Clifts to the exclusion of other varieties for the first half of the occupation. They were no doubt employed after that as well, as the other-

wise puzzling gaps in the Phase-III fence ditch system attest (see below). The minimum worm-fenced enclosure during Phases I and II would have been a fenced garden on the east side of the manor house. The gate in the palisade indicates that the south side of the manor house and the east side of the quarter fell within this fenced area. If the early fence line followed the route taken by the Phase III and IV fences for which better evidence is available, the worm ran off the southeast corner of the quarter. There is some evidence for the partitioning of this fenced area, running north-south along a line intersecting the southeast corner of the manor house porch, into a garden on the east and a forecourt or yard on the west. Two post holes (380C/D, 380E/F), whose molds lay 4.3 feet apart, were located roughly 13 and 14.5 feet south of the porch gable. They were similar in shape, size and depth (1.3 feet below subsoil). The dearth of artifacts in both holes and molds argues they are early, especially since the area in which they are located was the site of an early surface midden emanating from the door in the porch. Their diagonal orientation to the other features at the site raises the possibility that they were gate posts for an opening in a worm fence with 7-foot panels running off the corner of the porch.

### Phase III

Ditch-set fences were the characteristic yard and garden enclosures at The Clifts during Phase III and during the initial few years of Phase IV. The ditch-set fence system was not a static phenomenon. Some segments of it lasted the entire period the system was in existence, while others were quickly replaced. The changes in the system can be divided into four sub-phases (IIIa, b, c and d). These periods are based on stratigraphic and

and horizontal-spatial relationships between the various ditch segments. A more fine-grained periodization is possible. However, four sub-phases account for temporal variation in terms of more or less complete enclosures. The solution is not unique since worm fences continued to be employed at the site.

Two types of uprights could be distinguished in the ditch fill in various places. In one segment the ditch held the remains of a wattle fence, characterized by vertical posts set 2 feet or more apart, with saplings woven in between (234B/C, 233B/C) (Fig. 9). Other ditch sections were filled with closely set split rails and/or posts, similar to but smaller than those found in the palisade (392A/B, 398A/B, 295D, 258A/B). These uprights may have been wattled in places as well. Unfortunately, the character of the uprights could be determined in a very limited number of ditch segments. Even where individual molds did appear, it is highly likely that they did not represent all the uprights originally present when the fence was standing. This situation may have been the result of the manner in which the fences were dismantled when they fell into disrepair. The vertical (and horizontal) members were seldom left in the ground to rot. The consequence of course is that gate locations, unless they were marked by additional post holes, remain unknown (with one exception).

During the first two sub-phases, there was a three-fold functional division of ditch-fenced space at the site: a service yard to the west of the manor house and quarter, a front yard and a garden (and possibly an orchard) enclosing the east end of the manor house. The garden-orchard area was the largest. By the time the ditch-set fences were abandoned in favor of post-and-rail fences in Phase IV, only the garden was enclosed by them (Figs. 25, 26, 27, 28, 29).

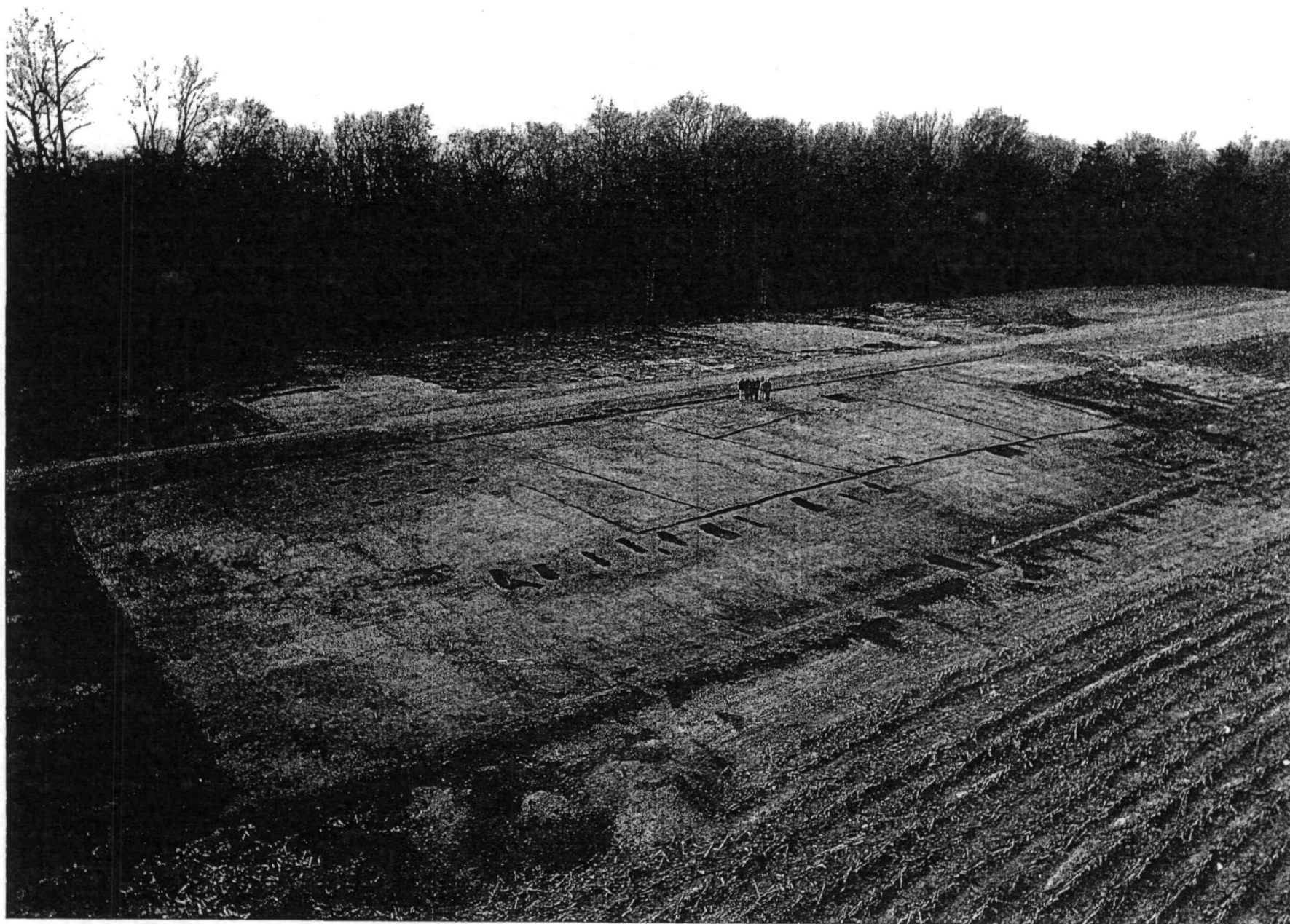


FIGURE 25. Garden area, after excavation (facing northwest).



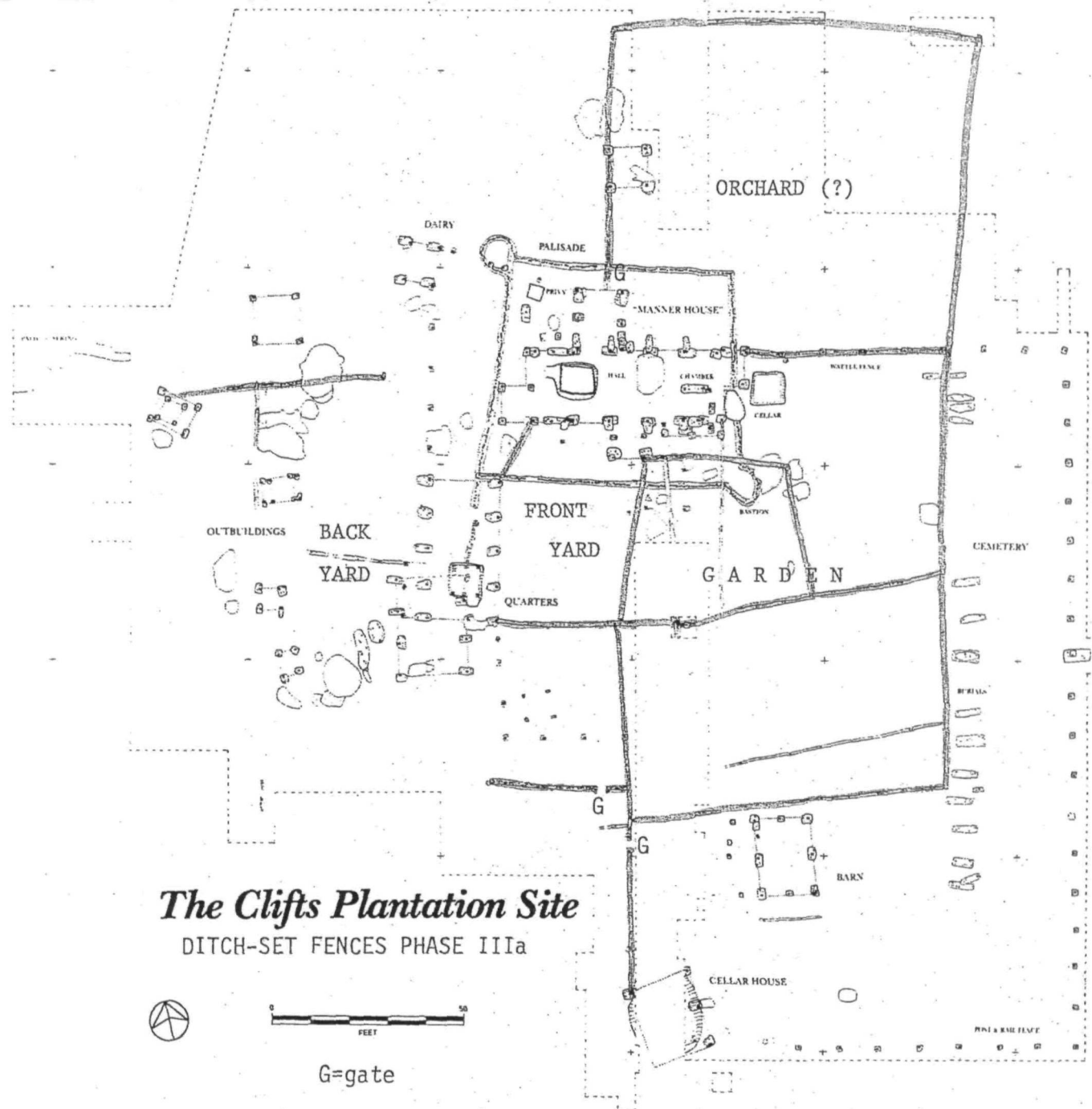


FIGURE 26.

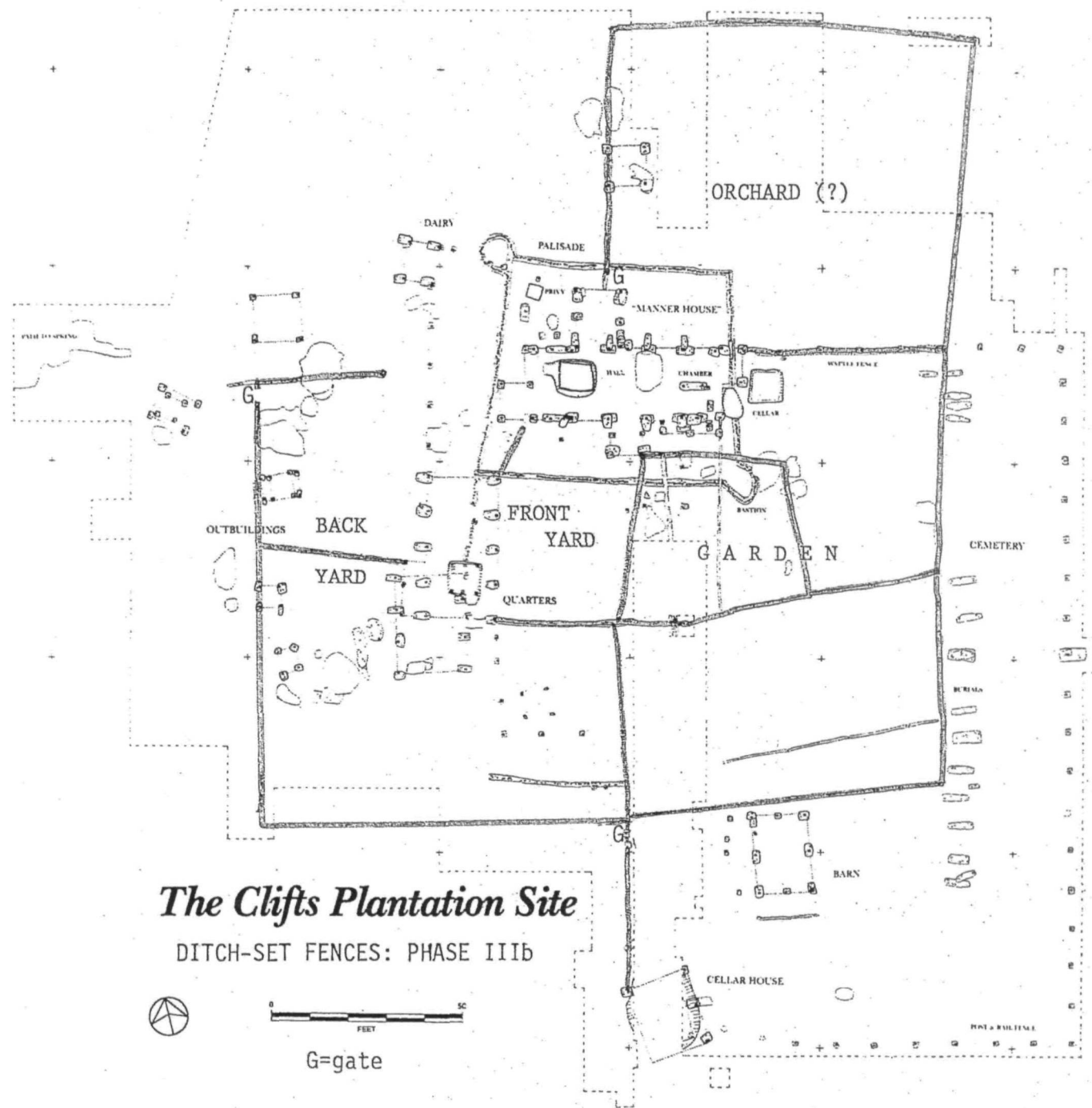


FIGURE 27.

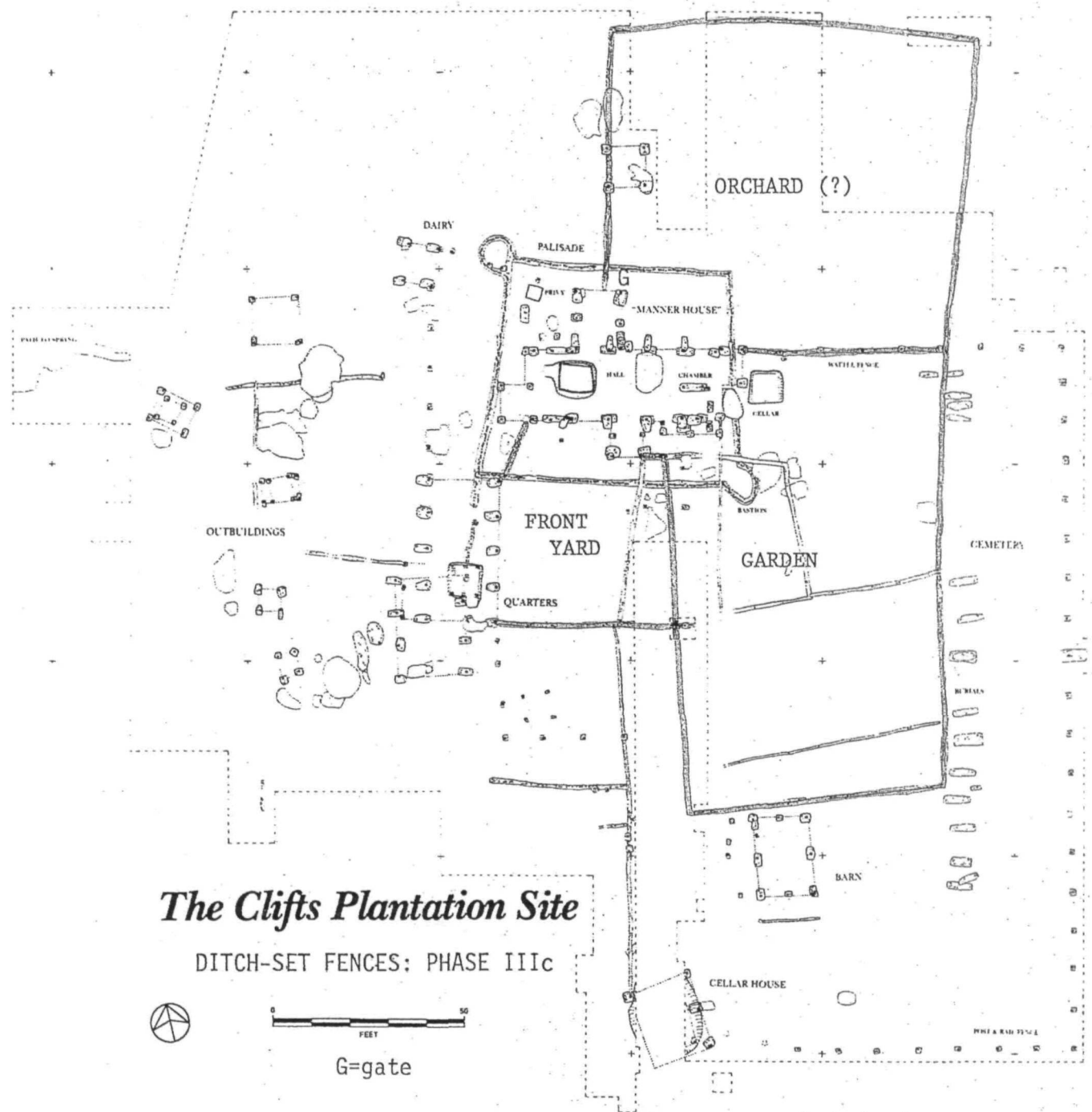


FIGURE 28.

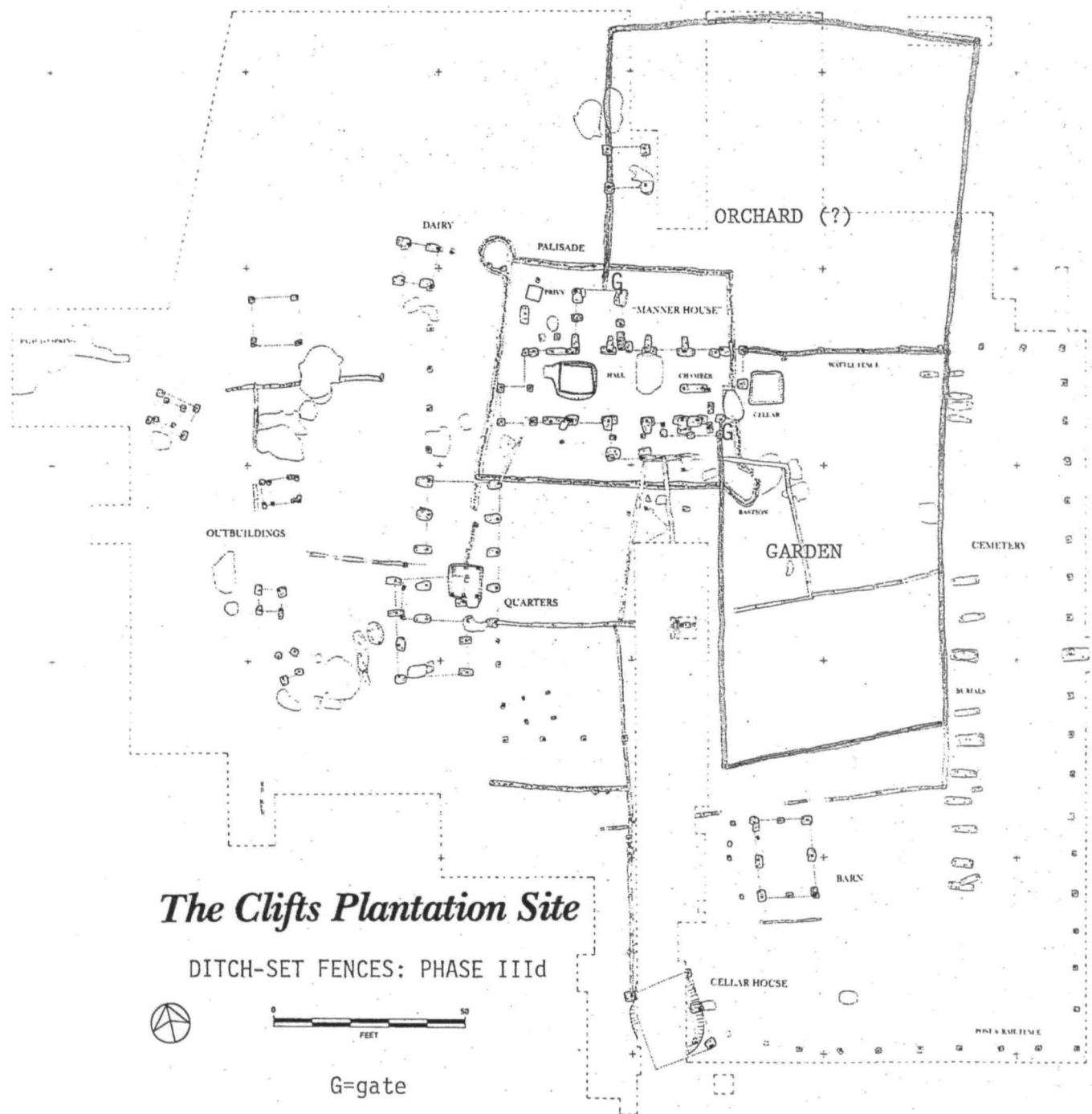


FIGURE 29.

In Phase IIIa, fence ditches enclosed an orchard-garden area on the east side of the manor house (233B/C,234B/C,377A/B,277D/E,308A/B,313A,310A/B,316A,317A,399A/B,396A/B,394A/B,392A/B,380B,370F/G). This rectangular area was roughly 200 feet long (N-S) and 90 feet wide. It was partitioned into four smaller units. The largest, on the north, was separated from the others by a ditch-set fence running off the north-east corner of the chamber closet (267A/B,307A). The second unit, trapezoidal in plan and slightly more than 40 feet on a side, was bounded by a ditch which ran off the southeast corner of the second quarter (294A/B,393A/B,395E/F,314A), crossing the west boundary of the garden (392A/B), turned north (276A/B) and then ran west to the southeast corner of the manor house porch (270A/B,261A,384A/B,371B/C). The final two garden plots were separated from one another by a fence ditch running off the southeast corner of the trapezoid to the east side of the garden (314A).

Although others were certainly present, the only gate which could be identified in this garden enclosure was located at the intersection of the west garden boundary fence (233B/C,234B/C) with the back room of the manor house. The ditches were U-shaped in profile, with slightly flattened bottoms (Fig.36). Their depth varied considerably, partially a result of differential erosion and plowing, from 1.4 to 0.2 feet (below subsoil). In some places (i.e along the southern edge of the garden:317A), they had been totally plowed away.

The front yard was bounded by the ditches running south off the manor house porch and east off the southeast corner of the quarter (370F/G,380B,392A/B; 294A/B,393A/B). It was separated from the back yard by a ditch-set fence between the northeast corner of the quarter and the southwest corner of the manor house (223B/E,218B/G).

The yard fronted on the south side of the manor house and the east side of the quarter.

Only two ditch segments were associated with the Phase IIIa back-yard enclosure. The first of these ran west, from an abrupt beginning 25 feet south of the dairy (discussed later), for a distance of 41 feet (247A/B, 258A/B). Erosion and plowing appear to have been responsible for its western terminus. The ditch had been cut by a late Phase-III trash pit (255A-E). At the western end of the ditch, a single large post was distinguished from the surrounding stain. This post may have received the rails from a worm fence (with 8-foot panels) running off the southwest corner of the dairy.

The second back-yard ditch segment (398A/B) began at the west edge of the garden (399A/B, 396A/B) and ran 36 feet to the west where it stopped. In the west end of the ditch were two split-rail molds, apparently designed to receive the rails of a worm fence wedged between them. Two post holes (398C/D, 398E/F) cut through the eastern portion of the ditch, marking the location of a 3-foot wide gate in the fence. Given the orientation and location of the two back-yard ditch segments, it is apparent that worm fences completed the west and south boundaries of the yard enclosure.

Finally, a ditch-set fence ran between the southwest corner of the garden enclosure and the northwest corner of the cellar house on the southern extremity of the site (401A/B). Since this ditch cut through the west-boundary garden ditch (399A/B), it post-dates installation of the fence ditches discussed above. However, the time interval was slight, since a Phase-IIlb fence ditch (402A) had been dug through it. Two post holes (400A/B, 400C/D) also intruded through this ditch. Since a stain was present in the portion of the ditch between them, the 3-foot

gate which they represent was added to the fence after it was built.

Changes in the fence-ditch system which define Phase IIIb occurred in the back yard. The west and south boundaries of that enclosure, which had been worm fences, became ditch-set fences. Only short segments of them survived plowing. The north end of the west-boundary ditch (260A/B) cut through two Phase-III trash pits (288C-R, 288S-AD) as well as the north-boundary ditch (258A/B). A post (260C) set in a hole dug 0.5 feet below the ditch floor was located roughly 6 feet from the ditch intersection. Both post and ditch were filled at the same time. The gate which the former marks offered access from the yard to the spring in the ravine to the west. Ditch segments further south (366A/B, 405A/B) demonstrate that the west-boundary ditch continued at least 110 feet in that direction until it met the south-boundary ditch. All that remained of the southern ditched fence was an 8-foot segment running to the west from the southwest corner of the garden (402A). The new back yard enclosure was partitioned into north and south areas by a fence ditch running west off the northwest corner of the second quarter shed (298F/G).

Phase IIIc witnessed the demise of the ditch-set fences in the back yard (and their replacement by worm fences?). The west-boundary ditch for the garden was moved from 5 to 16 feet east of its original location (370D/E, 382A/B, 395C/D), enlarging the front yard at the expense of the garden. The ditch-set fence (401A) running out to the cellar house may have been dismantled at this time.

In Phase IIId, the west boundary of the garden was again moved further east. The new ditch-set fence (261F/G, 295B/D, 315A) ran south off the corner of the manor house chamber for a distance of 49 feet, where it disappeared due to plowing. It is probable that this fence continued another 40 feet

to intersect a new south-boundary ditch for the garden (318A/B). Both ditches were in general narrower than the others at the site. The new west-boundary garden ditch was cut by one of the post holes (261B/C) associated with the chamber shed addition to the manor house. A rectangular post, driven 0.1 feet below the trench floor, (295C) just south of the intrusive post hole may have carried a gate. The south-boundary fence for the front yard probably was dismantled at this time. (294A/B, 393A/B, 395A/B). A sherd of Buckley earthenware from the stain left by the uprights in it indicates an early Phase-IV date for its destruction.

#### Phase IV

During Phase IV the remains of the ditch-set fence system were dismantled and replaced by a post-and-rail fence with a new configuration (Fig. 6). The new garden enclosure, which was not sub-divided as had been the Phase-III garden, measured roughly 180 (N-S) by 100 feet. The fence posts were set roughly on 10-foot centers in holes which ranged from 1.6 to 0.4 feet in depth, again a function of differential erosion and plowing. The posts ranged from 0.4 to 0.6 feet on a side. The north boundary of the new garden began at the northeast corner of the manor house (chamber closet) and ran 83 feet to the east (263H/J, 267C/D, 306G/H-N/P). Six of the posts in this portion of the fence had been dug through one of the fence-ditch partitions from the previous enclosure (267A/B, 307A). A post hole (271A/B) situated roughly 2 feet south of the fence line may have been associated with a gate. The fence line then ran south for 180 feet (306N/P-BE/BF), where it returned to the west for a distance of 72 feet (306BE/BF-BX/BY). A tree which happened to be growing in the east-boundary fence line was apparently incorporated into it (306AR). Two trees (306BZ, 306CA)



which lay in the 22-foot gap between the western post in the south-boundary fence line (306BX/BY) and the corner of the cellar house (366E/F) were probably taken advantage of in a similar fashion. Finally, the west-boundary garden fence ran between the north gable of the cellar house and a post 10 feet east of the east corner of the manor house porch (395A/B, 382C/D, 383C/D, 384C/D). There it turned west to meet the porch corner. Two post holes (384C/D, 383C/D) whose molds were set 3.0 feet apart marked the location of a gate at this point. A third post hole (371A/D) located between them and the porch corner may represent a second gate, perhaps a replacement for the first.

The post-and-rail fence also enclosed adjacent areas to the west and south of the manor house. Post-mold and hole dimensions for this portion of fencing were within the range of variation for the garden fence. The north-boundary fence for these areas ran between the northwest corner of the manor house back room and the northeast corner of the dairy (232D/E, 231B/C, 237D/E, 237B/C, 238D/E, 238F/G). A pair of posts set 3-feet apart in the middle of this fence section (237B/C, 237D/E) marked a gate. The closely set pair of post holes at the corner of the dairy (238D/E, 238F/G) were apparently an adjustment necessitated by the odd (14-foot) distance between the gate and the dairy corner.

The fence then ran south from the southeast corner of the dairy to the northwest corner of the quarter (240B/C, 241B/C, 246B/C, 248B/C, 250B/C, 252B/C), where a 6-foot interval between posts may betray a gate. The fence began again with a 4-foot gate at the southeast corner of the quarter (294E/F, 381A/B), ran south in line with the east wall of the quarter for a distance of 30 feet (381C/D, 397J/K, 397G/H) and then turned to the east to intersect the west-boundary garden fence (297E/F, 397C/D, 397C/D).

The most eastern post hole uncovered in this section of the fence line (397A/B) lay 15 feet from the presumed intersection with the garden fence, suggesting a gate in that location. Extant fence-post fragments were white oak.

A Phase-IV date for construction of the post-and-rail fence system is indicated by the presence of white saltglaze stoneware sherds (slip-dipped) in two of the post hole associated with it (306BT,294F). In addition, a sherd of the same ware was recovered from a grave shaft (338A,B) which had been cut by one of the garden-fence post holes (306V/W). The post-and-rail fence remained standing until the end of the occupation.

### Larger Outbuildings

#### Barn

Just south of the Phase-III garden enclosure lay a 20 by 15.1-foot outbuilding, apparently a barn (Fig. 30). The building was framed around transverse pairs of posts, set on even modules of 10.0 feet measured from end to center to end. In general, the posts were centered in flat-bottomed holes whose longer dimension was oriented parallel to the ridge of the building. The posts on the northwest and southeast had been replaced (340H/J,340V/W). Bottom-mold elevations differed at most by 0.3 feet between adjacent posts in the same side wall, while the posts in the east side wall were set from 0.4 to 0.7 feet deeper than the posts opposite them in the west wall (Table 9). The posts centered in the north and south gables (340D/E,340P/Q) both had bottom-mold elevations 0.6 feet higher than the posts adjacent to them in the west wall. These characteristics indicate that the frame of the barn was reverse-assembled in tie-beam pairs with the posts on the eastern end of each pair cut roughly a half foot longer than those on the west to accomodate the slope on which the

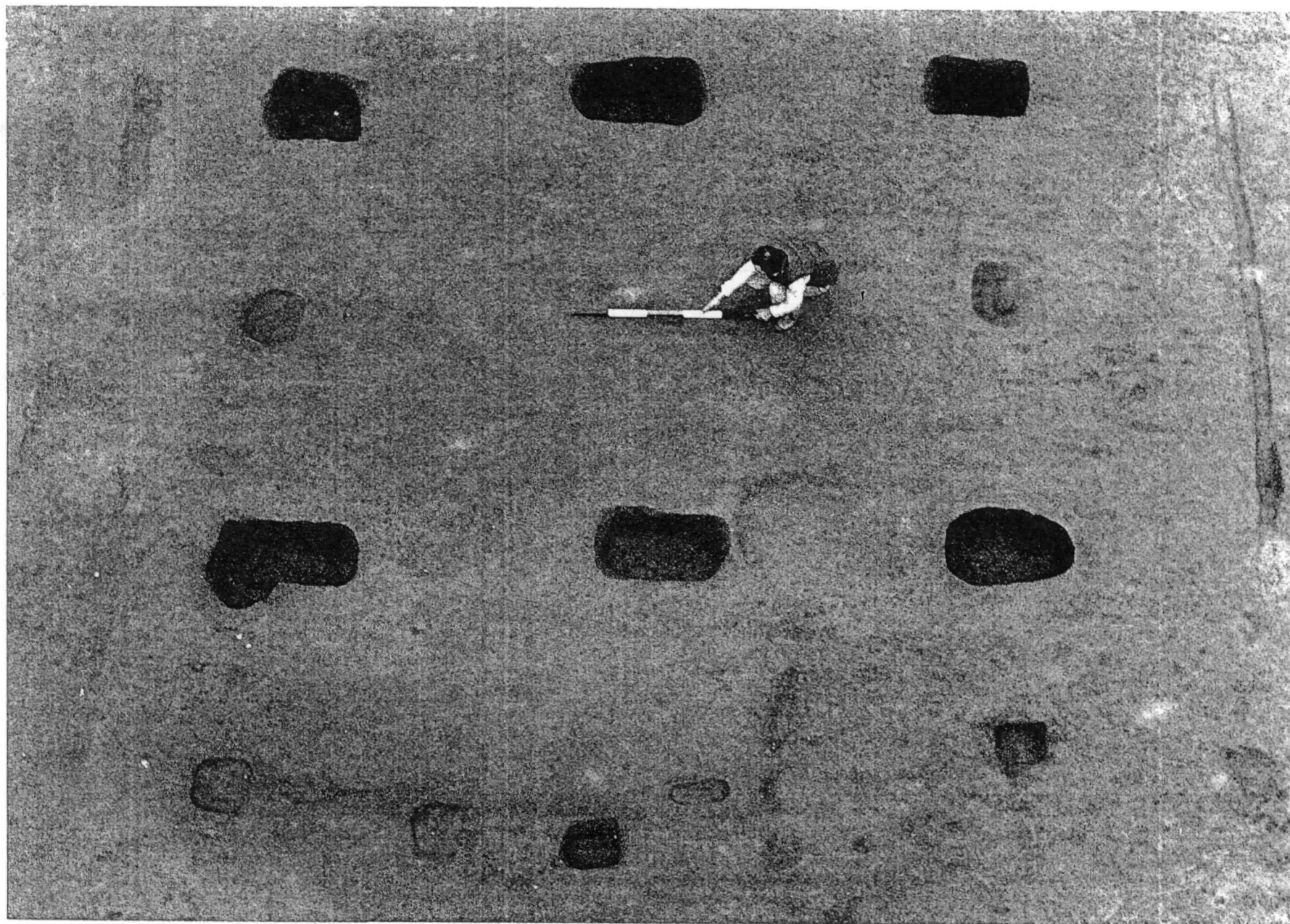


FIGURE 30. The barn, after excavation (facing east).

the building was sited. The location and orientation of a small repair post hole (340AG/AH) along the west wall indicate that it was made from inside the building, suggesting the barn lacked a wood floor.

Four post holes had been dug to the west of the structure's core, probably to frame open work sheds attached to its side. A mold could not be discerned in one post hole (340AD), probably because of erosion and plowing. Bottom-hole elevations pointed to the association of the of the northern and southern pairs (340AB/AC and 340AD, 340AE/AG and 340F/G), despite the fact that the latter two posts were not aligned with the core. A 16.0-foot long trench, roughly 0.6 feet in width and 0.5 feet in depth (below subsoil), was located 6.0 feet from the south gable of the core (342A). Although no mold could be discerned in its fill, the flat-bottomed trench was probably dug for a sill carrying the wall of third appendage to the core.

Unfortunately, dating evidence for the barn leaves much to be desired. Two 5/64-inch bore-diameter pipe stems were recovered from one of the shed post holes (340G), suggesting that it was dug after Phase I, and probably after Phase II as well. However, no datable artifacts were associated with construction of the core. The building's relationship with the south-boundary garden fence ditch (317A) indicates that both were standing at the same time, but the question of which came first is more problematic. Their proximity hints that the barn predated the fence line. Digging the fence ditch 2.5 feet from the barn would have been considerably less awkward than constructing the building that close to the fence. Hence construction of the barn may date as early as Phase II. It was certainly standing during Phase III. The two repairs to the core suggest the barn was fairly long-lived. It may have stood until the end of the occupation.

TABLE 9  
DIMENSIONS FOR POST HOLES AND MOLDS\*

Barn

Section of Building	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
West wall	340K	-	- x1.6	-	131.9
	L/M	.65x.60	3.4x2.0	131.6	131.6
	R/S	.60x.60	3.3x2.1	131.3	131.3
East wall	340A/B	.65x.65	2.4x3.2	131.0	131.0
	Y/Z	.70x.70	3.6x2.2	130.9	130.6
	X	-	2.8x1.9	-	130.6
Center gable	340P/Q	.45x.45	1.5x2.0	131.9	131.9
	D/E	.45x.50	1.5x1.7	132.3	132.3
Core repairs	340H/J	.65x.60	2.0x2.4	131.7	131.7
	V/W	.70x.70	1.7x1.7	130.9	130.9
	AG/AH	.45x.40	1.0x0.6	132.7	132.7
Sheds	340AB/AC	.50x.55	1.5x1.4	133.2	133.2
	AD	-	1.6x1.4	-	133.2
	AE/AF	.60x.50	1.5x1.7	132.7	132.7
	F/G	.45x.40	1.3x1.1	132.4	132.4

\* Subsoil surface averages 132.9 along west wall, 132.4 along east wall.

TABLE 10  
DIMENSIONS FOR POST HOLES AND MOLDS\*

Cellar House

Section of Building	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
East wall	366A/B	.70x.60	2.2x -	131.8	131.8
	C/D	1.0x.85	2.6x3.4	131.6	131.6
	E/F	.80x1.0	2.5x2.9	131.6	131.6
West wall	366G/H	.70x.70	2.7x3.0	132.0	132.0

\* Subsoil surface averages 134.1 along west wall, 133.1 along east wall.

Wood fragments recovered from an original post mold (340L) and a repair post mold (340V) in the core of the barn proved to be white oak (Rauschenberg 1979).

#### Cellar House

A frame structure with a large cellar beneath it, termed here the cellar house, was located at the southern extremity of the site (Fig.31). The exterior dimensions were 16.6 by 20.3 feet. The building was framed around six posts, three in each side wall, two of which (in the west wall) were not uncovered because they lay beneath the road traversing the site. Post placement in the east wall approximated even modules of 10.0 feet, measured from end to center to end as in the barn to the northeast. The three post holes which were completely uncovered (366C/D, 366E/F, 366G/H) were oriented perpendicular to the ridge of the building and had flat bottoms which sloped in from the west. Three of the four excavated posts (366G, 366A, 366C) were situated on the opposite (east) sides of the holes. Bottom-mold elevations matched within 0.2 feet in the east wall, while the single excavated west-wall post (366G) sat 0.4 feet higher than the east-wall median (Table 10). These uniformities indicate that the frame of the cellar house was standard-assembled in side-wall units pushed up from the west.

Only the southeast corner of the cellar was excavated, again because of the road across the site. If the cellar was centered beneath the building, its exterior dimensions were 16.0 (N-S) by 9.5 feet. It was 4.5 feet deep (below subsoil). A post hole (365J/K) was located on the cellar floor, in the southeast corner. Although only 0.4 feet deep, it presumably served to keep a wooden lining in place against the side walls.

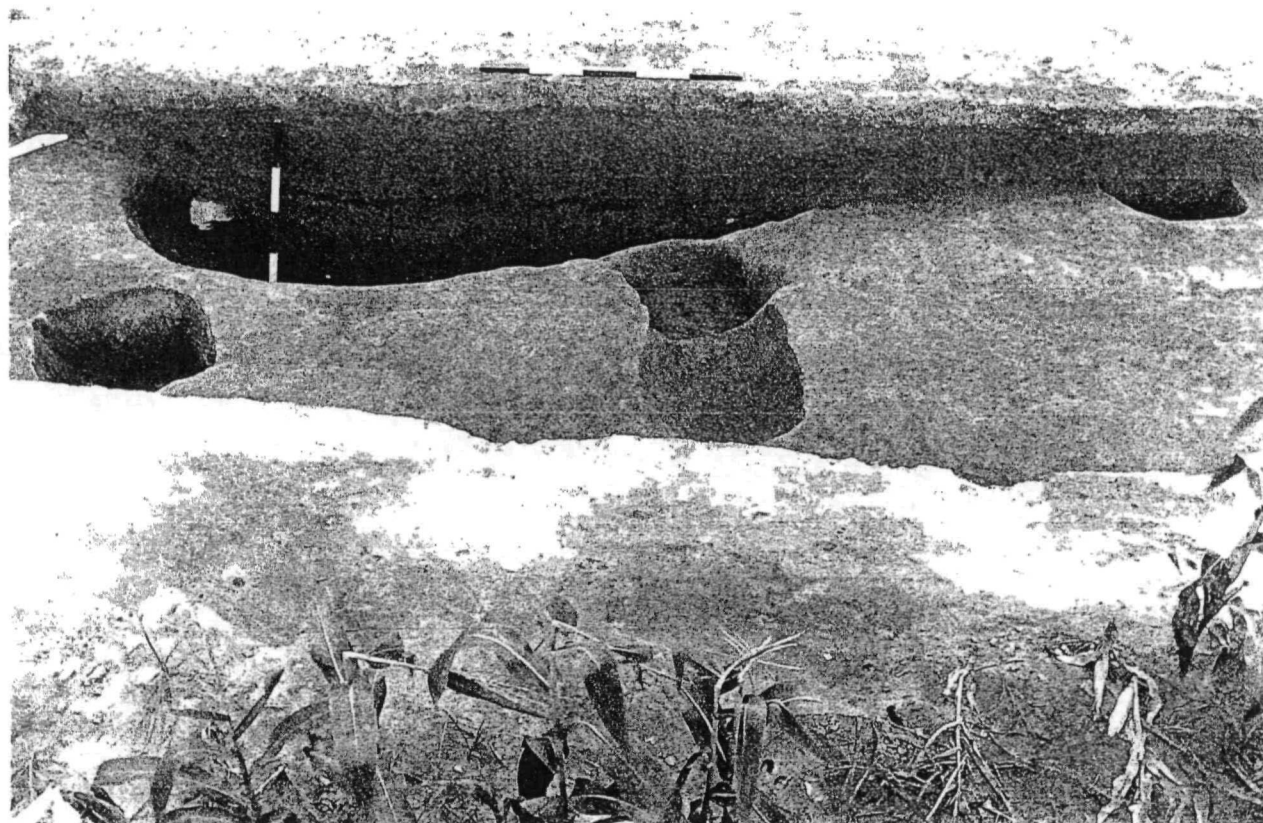


FIGURE 31. The cellar house, after excavation (facing west)

When the cellar house was dismantled, the cellar beneath it was gradually filled by natural processes. The upper walls of the cellar were badly eroded, and the fill in it was predominantly wash (365A,C,D, F,G,H) (Fig.32). A layer of light grey-brown loam, filled with charcoal of unknown origin (365B), lay beneath the upper wash layer. Thus the cellar fill was not characterized by midden deposits, as was the fill of the second quarter cellar and the larger exterior cellar adjacent to the manor house (269A-F). The great majority of artifacts recovered from the cellar-house cellar came from the bottom half of the bottom layer (365H) and hence for the most part were probably associated with the ongoing use of the building. Pipe sherds and lead shot far outnumbered any other artifact class. Although the plowzone around the cellar house was not screened, there is some evidence from the fence-line post holes to the east that a surface midden was associated with the building. The number of artifacts recovered from the fence-line holes and molds increased as the fence approached the building (Table 11).

TABLE 11

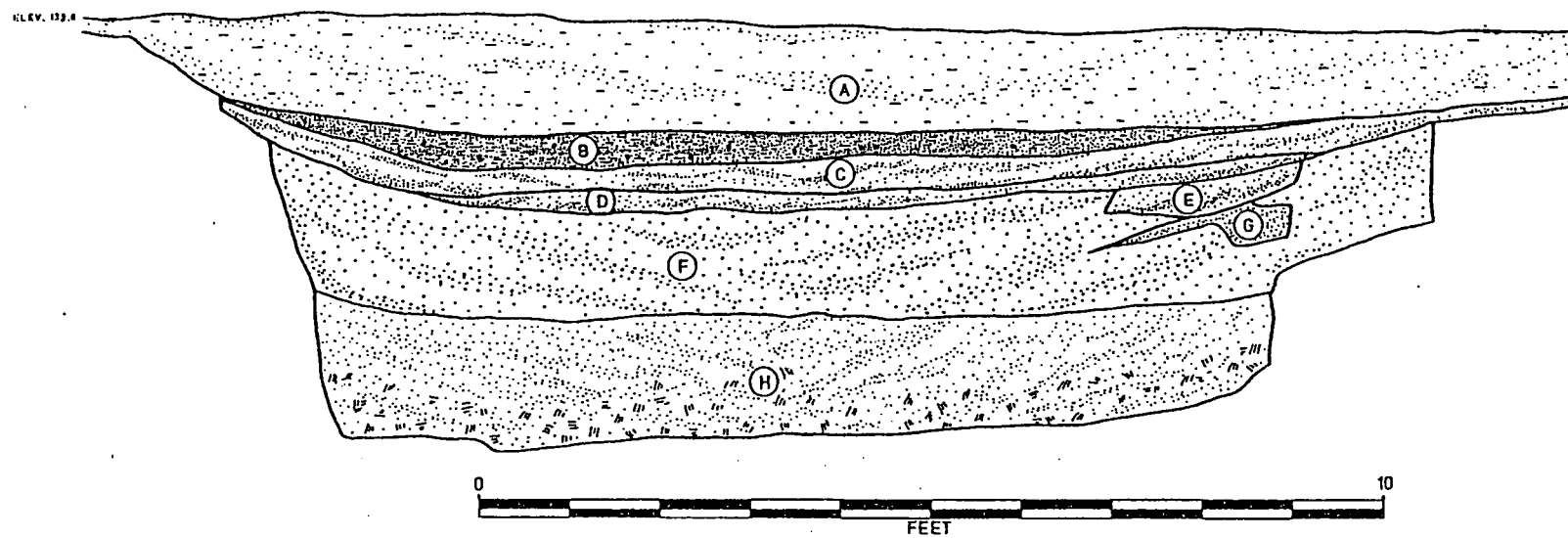
NUMBER OF ARTIFACTS IN FENCE-LINE POST MOLDS/HOLES

<u>Provenience Number</u>	<u>Distance from Cellar House</u>	<u>Number of Artifacts</u>
340BN/BP	65 feet	0
BQ/BR	55	14
BS/BT	44	50
BV/BW	34	15
BX/BY	23	30

The surface midden and the large number of pipe stems recovered suggest that the cellar house was an activity center of some sort, a work house perhaps. In addition, of course, it was a storage facility



CELLAR HOUSE CELLAR



- 365 A LIGHT-BROWN SANDY LOAM,  
CHARCOAL FLECKS  
B GREY-BROWN LOAM, MUCH  
CHARCOAL  
C LIGHT-BROWN SANDY LOAM  
D SIMILAR TO C

- E GREY LOAM  
F COARSE LIGHT-BROWN SAND  
G BROWN LOAM  
H GREY SANDY LOAM, TAN CLAY  
MOTTLE

FIGURE 32.

for agricultural as well as manufactured items. Its use in the latter capacity was probably responsible for the large quantity of shot found at the bottom of the cellar.

Dating evidence for construction of the cellar house is little better than that for the barn. The building clearly predates the fence ditch (401A) which cut its northwest corner post hole. It is possible that the fence, running between the southwest corner of the Phase-IIIa garden enclosure (which it also cut) and the cellar house, was dug immediately after the building was constructed. No datable artifacts, save sherds of Morgan Jones coarse earthenware, were forthcoming from the four excavated post holes associated with the building, or from a puzzling feature (366J) filled with grey loam, dish-shaped in profile and 0.7 feet in depth which was cut by one of the cellar house post holes (366C/D). The evidence thus indicates that the building was standing at least from early Phase III. Sherds of slip-dipped white saltglaze and Buckley from the cellar fill demonstrate that it was destroyed during Phase IV, very likely at the end of the occupation, since it was an integral part of the post-and-rail garden enclosure.

#### Smaller Outbuildings

##### Smoke Houses

Six smaller outbuildings were located on the western side of the site. Ranging from 5 to 10 feet on a side, they were each framed around four hole-set posts. They shared several other important characteristics as well. The post molds associated with them were filled with ashy loam containing much charcoal. The mold fill also included flecks and often large pieces of soil which had been burnt red. These shared attributes lead

to the identification of the six outbuildings as smoke houses. Dating evidence suggests that they were built in succession during the course of the occupation. As one burned down, another was built to replace it (Table 11, Fig. 33, Outbuildings 1 through 6).

The earliest smoke house at the site (Outbuilding 1) was located 30 feet from the early quarter, in line with its north-gable end. The northern pair of posts (319F/G, 319G/H) were set roughly a foot deeper than the southern pair (319A/B, 319C/D), suggesting the structure had a shed roof which sloped down from the north. The building was roughly square in plan, measuring from 5.7 to 5.9 feet on a side. The dearth of artifacts in the hole fill argues that construction dates to the beginning of the occupation, and hence that this was the first smoke house at the site.

Outbuilding 2 was probably its replacement. A variety of artifacts was recovered from its four post holes (N=15), including sherds of Morgan Jones, North Devon Gravel-tempered and Northern Holland, all from Phase-I vessels. The building measured 6.0 to 6.3 (N-S) by 5.0 feet in plan. Posts in the west side wall were set 0.2 feet deeper than those on the east (Table 12). Artifacts from the post molds, a local-pipe stem and an English (7/64-inch) pipe stem, offered little evidence for a destruction date, save the hint it was early (Fig. 34).

Outbuilding 3 was probably the third smoke house built at The Clifts. Although no datable artifacts were recovered from its post holes, its location 34 feet west of the second quarter, in line with the north-gable end, may be an indication that it was the first smoke house erected after the second quarter was built, and therefore that it dates to Phase II as well. The third smoke house originally measured from 5.9 to 6.5 feet (N-S)

TABLE 12  
DIMENSIONS FOR POST HOLES AND MOLDS\*

Smaller Outbuildings

Outbuilding Designation	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
1 (smoke house)	319A/B	.55x.60	2.9x1.1	131.9	131.9
	C/D	.55x.75	2.7x1.7	131.6	131.5
	E/F	.65x.55	2.8x1.9	130.8	130.8
	G/H	.75x.50	2.7x2.9	130.6	130.6
2 (smoke house)	352A/B	.55x.50	2.3x1.9	132.0	131.9
	C/D	.50x.65	2.0x2.1	132.2	132.2
	E/F	.45x.40	1.8x1.8	132.0	131.9
	G/H	.50x.50	2.0x2.4	132.2	132.1
3 (smoke house)	364J/K	.40x.70	1.0x1.9	131.8	131.8
	A/B	.50x.55	1.5x1.4	131.9	131.9
	L/M	.50x.40	1.0x1.1	131.8	131.8
	H/E	.40x.50	1.2x -	131.8	131.7
	F/G(repair)	.35x.60	1.7x1.0	132.0	132.1
	C/D(repair)	.35x.65	1.6x1.2	132.0	132.0
4 (smoke house)	363J/K	.50x.50	1.0x1.1	131.6	131.3
	A/B	.55x.65	1.3x1.3	131.7	131.7
	G/H	.60x.70	1.2x1.5	131.6	131.6
	M/L	.50x.50	-	131.6	131.6
	E/F(repair)	.60x.65	0.6x1.2	132.2	132.2
	C/D(repair)	.50x.55	1.3x1.4	132.0	131.8
5 (smoke house)	344J/K	.40x.50	1.5x1.5	130.0	129.9
	L/M	.50x.45	1.3x1.1	130.2	130.2
	N/P	.45x.45	1.6x1.4	130.0	129.9
	Q/R	.35x.45	1.8x1.3	130.4	130.4
6 (smoke house)	343A/B	.50x.50	2.1x1.4	129.4	129.4
	C/D	.50x.45	2.1x2.1	129.6	129.6
	E/F	.40x.45	2.1x1.5	129.9	129.9
	G/H	.60x.50	2.6x1.6	129.9	129.9

TABLE 12  
(continued)

Outbuilding Designation	Provenience Number	Dimensions (N-S x E-W)		Bottom Elevations (ASL)	
		Mold	Hole	Mold	Hole
7 (dairy)	239C/D	.60x.65	2.2x3.9	131.5	131.5
	240D/E	.55x.65	2.3x3.2	131.6	131.6
	239G/H	.60x.50	2.2x3.2	131.7	131.7
	240H/J	.60x.65	2.2x3.9	131.7	131.7
8 (function unknown)	257C	.60x.45	2.3x1.5	-	131.2
	D/E	.60x.45	1.5x1.6	131.4	131.4
	F/G	.50x.50	1.5x1.8	131.4	131.4
	H/J	.70x.70	1.4x1.9	131.5	131.5
	A/B (repair)	.45x.50	1.3x1.6	131.3	131.2
9 (function unknown)	378A/B	.70x.80	3.0x2.6	132.7	132.7
	C/D	.50x.70	2.5x2.6	132.7	132.7
	J/M	.85x.75	2.7x3.1	132.7	132.7
	G/H	.85x.80	2.7x2.6	132.5	132.5
10 (shed)	320A/B	.30x.40	0.8x1.4	134.1	134.3
	C/D	.40x.40	1.1x0.8	134.1	134.4
	E/F	.25x.30	1.1x0.7	134.2	134.4
	G/H	.60x.50	0.6x1.4	134.3	134.4

\* Average subsoil-surface elevations: Outbuilding #1 - 132.6, #2 - 132.9, #3 and #4 - 132.5, #5 and #6 - 131.1, #7 - 133.8, #8 - 132.4, #9 - 134.5, #10 - 134.5.

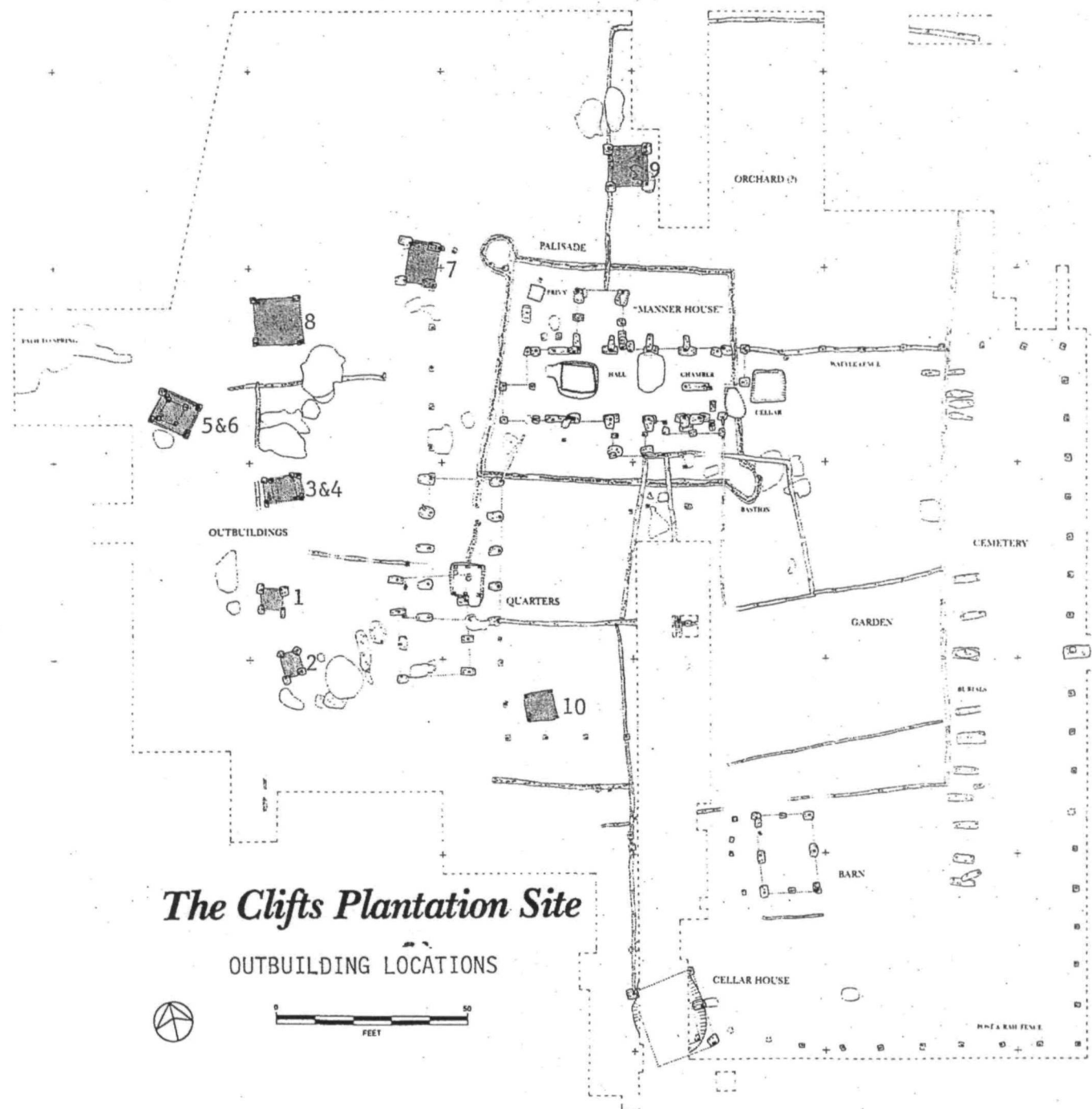


FIGURE 33.

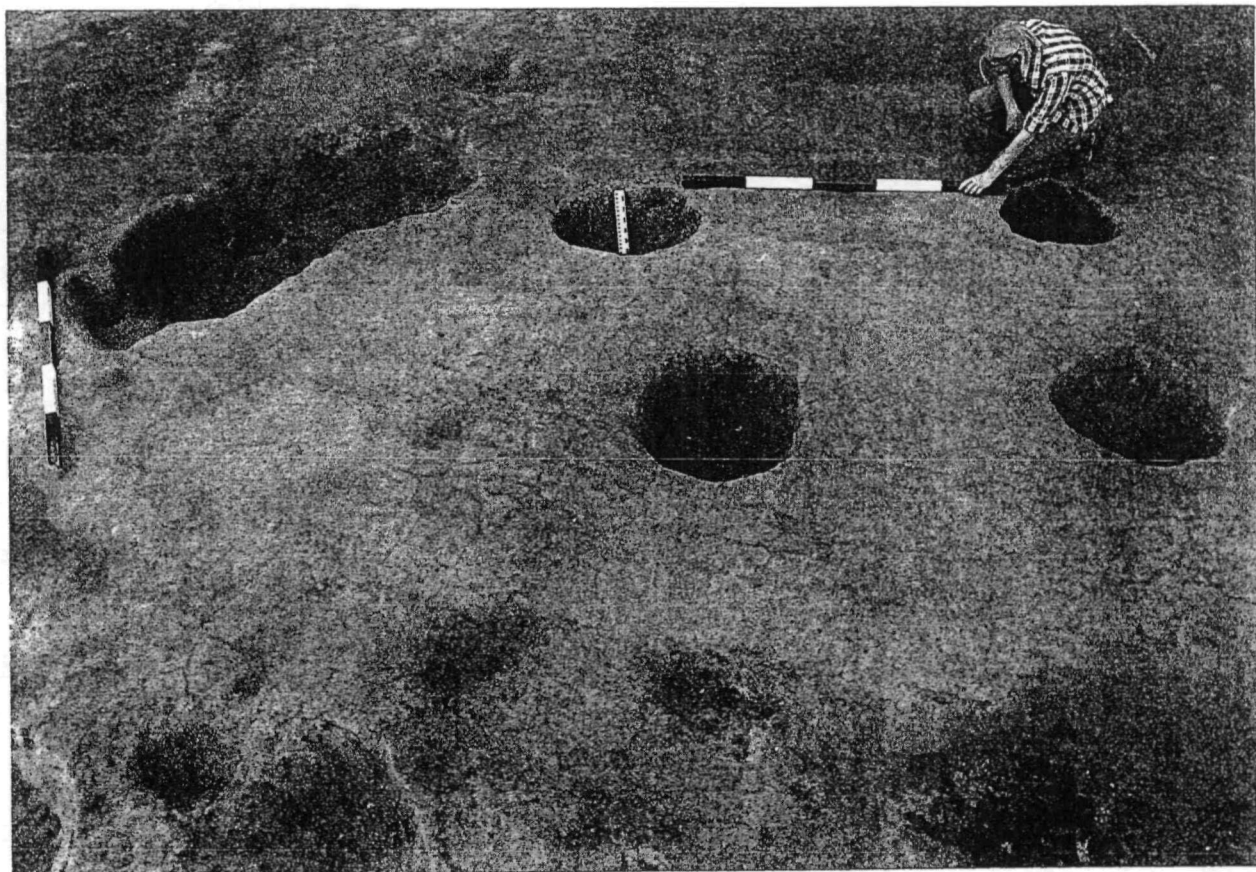


FIGURE 34. Outbuilding 2, an early smoke house, after excavation (facing west).

by 9.8 to 9.2 feet (Fig.35). Bottom-mold elevations for the four original posts matched within 0.1 feet (Table 12). The building had been repaired on the east side (364F/G,364C/D), bringing its east-end width to 6.0 feet (N-S) and its length to 10.0 to 9.8 feet. Thus the repairs resulted in a more rectangular plan. Bottom-mold elevations for the two repair posts matched precisely, indicating they were inserted at the same time.

Outbuilding 4 was probably built immediately after Outbuilding 3 was destroyed: they stood in the same location and two post holes of the former (363G/H,363M/L) intruded post holes of the latter (364F/G,364H/E). Outbuilding 4 was the smaller of the two, measuring from 6.3 to 6.6 feet (N-S) by 6.2 to 5.8 feet. Bottom-mold elevations for the four original posts matched within 0.1 feet, but differed by 0.6 feet for the two repairs on the east side (363E/F,363C/D), suggesting the latter were not made at the same time. The presence of brick fragments, a brick bat and mortar (in addition to the usual burnt soil) in one of the post molds (363J) raises the possibility that the building had a brick fire box whose in situ remains had been erased by the plow.

Once again, dating evidence for the destruction and subsequent construction of Outbuildings 3 and 4 respectively leaves something to be desired. Datable artifacts were not associated with either event. However, the proximity of a Phase-IIIB back-yard ditch segment (366A/B) just west of the buildings does suggest that one of them was standing when the ditch was dug. If the brick bats found in two adjacent early Phase-III trash pits (288C-R,288S-AD), which also predate the fence ditch, can be associated with construction of the presumed fire box, then Outbuilding 4 was constructed before the fence was installed. The inference is that Outbuilding 3 was replaced in late Phase II or early Phase III.



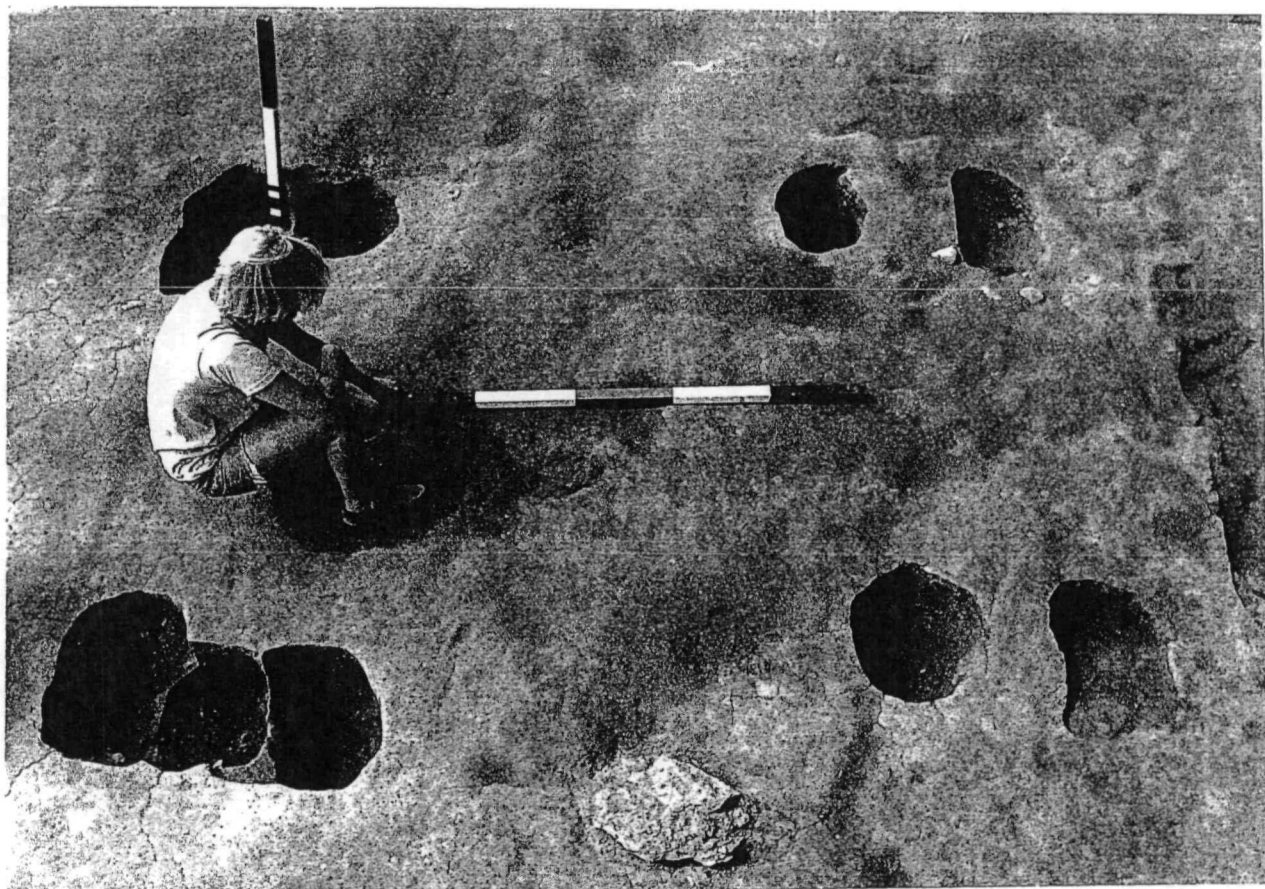


FIGURE 35. Outbuildings 3 and 4, after excavation (facing south).

Outbuilding 5, a parallelogram in plan, had exterior dimensions of 5.7 to 5.9 feet (N-S) by 5.3 to 5.1 feet (Fig. 36). Bottom-mold elevations for its two western posts were identical, while those for its eastern posts were from 0.2 to 0.4 feet higher, a reflection of the sloping topography. A wine-glass fragment from one of the post holes (344R) points to a Phase-III or later construction date. Brick from a post hole (344M) and brick and mortar from two post molds (344J, 344N) once again hint at the former presence of a brick fire box destroyed by the plow. The diagonal orientation of the building (and its successor, Outbuilding 6) parallels a line drawn between gates in either the Phase-IIIb back-yard ditched fence (260A/B, C) or the Phase-IV post-and-rail fence (252B/C, 250B/C) and the head of the path to the spring, indicating both buildings postdate the communication route and the gates responsible for it. Outbuilding 5 may well be the successor to Outbuilding 4, although nothing precludes their contemporaneity.

Outbuilding 6 was the last smoke house built at The Clifts. It was also the largest and best constructed. Erected on the site of Outbuilding 5, it measured precisely 8.5 (N-S) by 10.0 feet in plan. Bottom-mold elevations matched for the two eastern posts, while the two western posts were 0.3 and 0.5 feet deeper. Brick and mortar fragments were recovered from its post holes and molds. A sherd from a slipware cup recovered from one of the post holes (343E) belonged to a vessel whose other sherds were found only in Phase-IV contexts, pointing to a Phase-IV construction date for the building. Presumably it was torn down at the end of the occupation.

With the passage of time, the smoke houses at The Clifts were generally built further north. To some extent, this trend was a reflection of similar shift in the siting of the first and second quarters whose occupants serviced them.



FIGURE 36. Outbuildings 5 and 6, after excavation (facing south).

### Dairy

Outbuilding 7 was more carefully built than any of the six smoke houses. Although framed around four posts, it displayed the same attributes associated with the use of pre-assembled frames as the second quarter. Its post holes were all at least half again as long as wide and oriented in the same direction (E-W). Each had a subsoil ledge in its west end, roughly 1.5 feet off the hole floor. Each of the four posts was placed against the opposite side of its hole. Bottom-mold elevations for the eastern pair matched exactly, while those for the western pair were 0.1 and 0.2 feet deeper (Table 12). These uniformities indicate that the frame of the building was erected in "tie-beam pairs" (240J and 239G, 240D and 239C) pushed up from the west. The two pre-assembled wall frames measured 10.0 feet end-to-end and were positioned 7.0 feet apart, yielding exterior dimensions of 10.0 (N-S) by 8.3 feet.

Concentrations of coarse-earthenware sherds, primarily from milk pans and butter pots, found in the plowzone adjacent to the building provide the basis for the suggestion it was a dairy (Fig.37). A Phase-III construction date is indicated. The building clearly predates the Phase-IV post-and-rail fence, two of whose post holes (238F/G, 240B/C) the two eastern dairy post holes (239G/H, 240H/J). Sherds of red-bodied, black-glazed coarse earthenware, a Phase III marker-type, were recovered from one of its holes (239D). The spatial relationship between the dairy and a Phase-IIIa back-yard fence-ditch segment (247A/B) mentioned earlier hints the dairy was built early in Phase III. A small pit (239B), 3.2 by 2.2 feet in plan and 0.4 feet deep, sealed the northwest corner post mold and hole of the dairy. Sherds of Buckley and delft which belonged to Phase-IV vessels indicate the pit was filled toward the end of the occupation

## COARSE CERAMICS

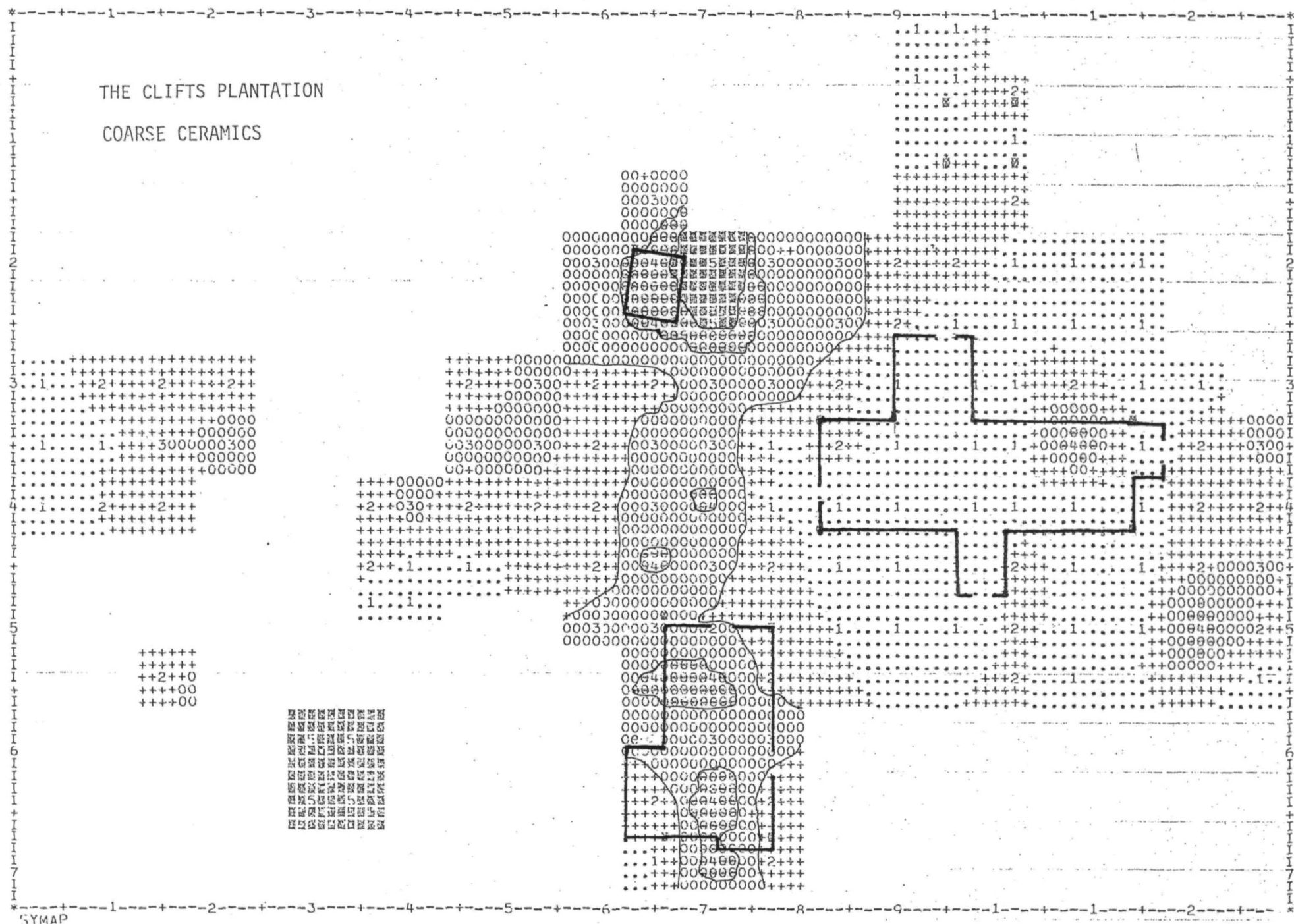


FIGURE 37. Distribution of coarse-earthen ceramics in plowzone.

### Other Outbuildings

Outbuilding 8 was erected like the dairy, although it was larger and its posts were of slighter scantling. Its two eastern post holes (257F/G, 257H/J) had subsoil ledges roughly a foot off the hole floor. The two western post holes (257D/E, 257C) lacked ledges, but were only 1.0 and 0.8 feet deep respectively. Bottom-mold elevations for the three original posts matched within 0.1 feet (Table 12). Hence the building was framed around two "tie-beam pairs," 12.0 feet wide (end-to-end), which were pushed up from the west. They were not aligned precisely parallel to one another so that exterior north and south wall dimensions were 12.4 and 12.0 feet respectively. The southwest corner post was later repaired (257A/B). A portion of the wood post survived in the ground and was identified as white oak (Rauschenberg 1979).

There is no indication of the function of this outbuilding. It was very likely erected in Phase IV. A 4/64-inch bore diameter pipe stem was recovered from one of its post holes (257E). Pipe stems of this size are found exclusively in Phase-IV contexts at The Clifts.

Outbuilding 9 was located 40 feet north of the manor house (Fig. 38). It was roughly square in plan, ranging from 10.1 to 10.5 feet on a side. Bottom-mold elevations matched within 0.2 feet (Table 12), but unlike Outbuildings 7 and 8 there were no subsoil ledges in the holes and the molds were centered. An extant portion of one post (378A) proved to be white oak (Rauschenberg 1979). The building was constructed in Phase IV. Its two western post holes (378C/D, 378G/H) intruded the west-boundary ditch (277D/E, 377A/B) for the Phase-III garden/orchard enclosure. A sherd of a delft punch bowl, other fragments of which were found only in Phase-IV contexts, was recovered from one of the building's post holes (378G).



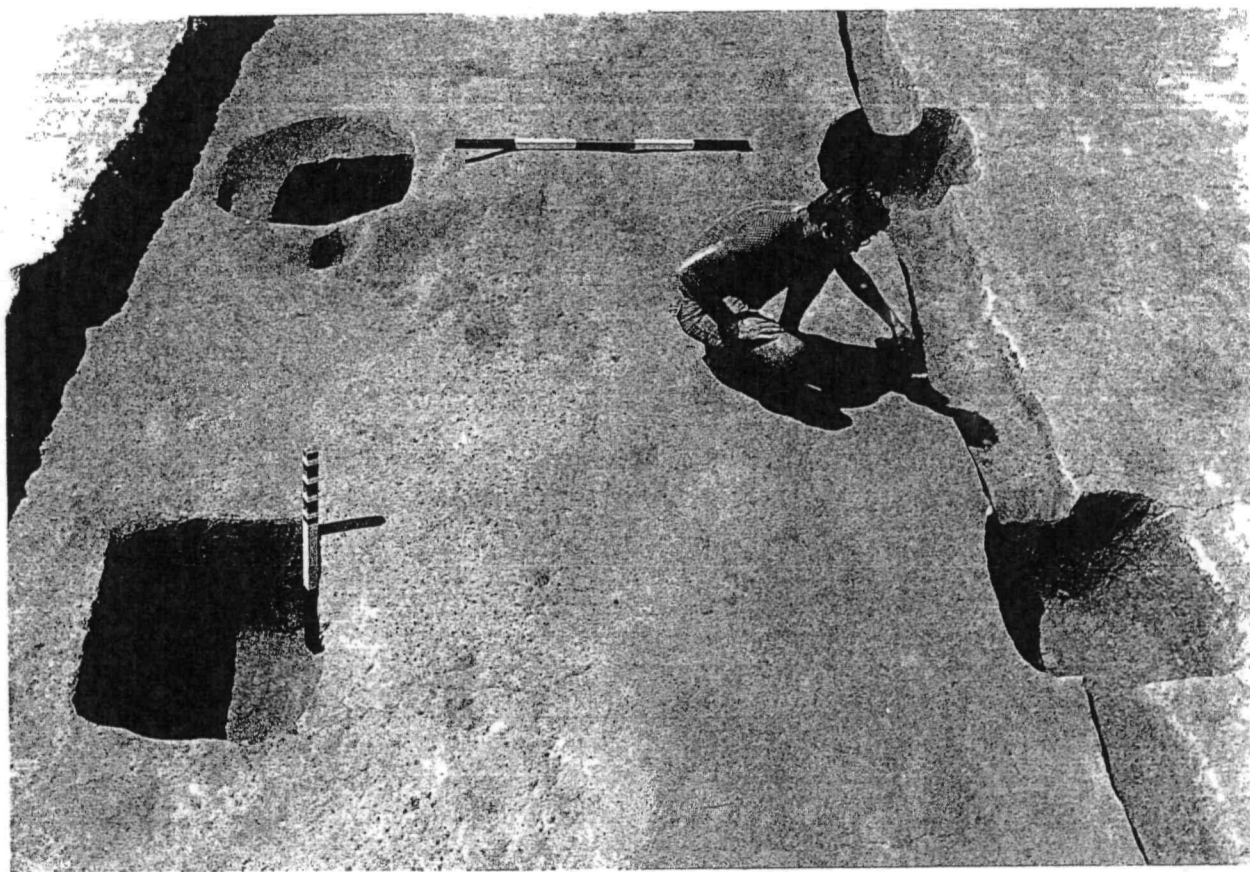


FIGURE 38. Outbuilding 9, after excavation (facing south).

The southeast corner post hole (378M) was cut by an irregularly shaped pit (378E,F,K) which extended to a depth of 0.7 feet below subsoil. Two washlayers filled the bottom of the pit (378F,K); the lower one was more or less coextensive with the edges of the post hole. The upper layer (378E), roughly 0.2 feet thick, was a grey ashy loam, containing charcoal flecks, brick bats, mortar fragments and bog-iron and quartzite cobbles. Although the pit cut through the post-hole fill, the post mold (378J) extended up through all three of the pit's layers. The sequence of events which produced this puzzling stratigraphic situation remains a matter of speculation. The pit, of course, was filled in Phase IV.

Outbuilding 10 was located 70 feet south of the manor house. It was framed around four posts of very slight scantling (Table 12) and ranged from 6.2 to 7.8 feet on a side. The post holes were the shallowest at the site, ranging from 0.1 to 0.3 feet below subsoil. The posts seated in them had pointed bottoms and had been driven slightly into the hole floors. Given the apparent flimsiness of this structure, it is likely that it was more of an open shed than a full-fledged building with four walls. A sherd of slip-dipped white saltglaze recovered from one of its post molds (320G) indicating a Phase-IV demise. The quality of construction hints that it was not built much earlier. Its location, just inside the southwest corner of the Phase-IV post-and-rail front yard enclosure, suggests it was erected when the fence was standing.

A diachronic consideration of the ten small outbuildings at The Cliffs reveals several trends. Most obviously as time went by, outbuildings got larger and there were more of them. In addition, the later outbuildings tended to be located north of the manor house, while the earlier ones were



more to the west. Interestingly enough a complementary shift took place in the location of the garden enclosures for Phases III and IV. While the Phase-III garden/orchard was centered on the west side of the manor house, the Phase-IV enclosure was situated south of it. Although by Phase IV the vestiges of the basic division of space into a service yard on the west and a garden on the east, which had characterized the earlier periods, was still evident, a new north-south opposition along similar lines had emerged to the extent that continuity with existing structures allowed.

#### The Cemetery

The Clifts' cemetery was situated along the east boundary of the Phase-III garden enclosure (Figs.5,39). Plantation burial was the norm in the early Chesapeake. In 1724 Hugh Jones observed that:

... parishes being of great extent (some sixty miles long and upwards) many dead corpses cannot be conveyed to the church to be buried: so it is customary to bury in gardens and orchards, where whole families are interred together ... (Jones 1956:97).

Throughout the occupation, the parish church nearest The Clifts was located about nine miles up-river, at the head of Mattox Creek. However, since plantation cemeteries were burial sites for individuals across the social continuum, from slaves to members of the Colonial aristocracy, and since such cemeteries are known less than a mile from the local church (eg. at the Drummond Site, adjacent to Jamestown), Jones' practical explanation for the pervasive tradition looks suspect. On the other hand, his observation concerning the association of gardens and orchards with cemeteries is probably accurate, as is suggested for Westmoreland by The Clifts and by a 1676 estate division in the county records which refers to "that part of the garden from the burying place to the house"(Westmoreland IV:278).



FIGURE 39. Garden area and cemetery, after excavation (facing southwest).

The cemetery contained eighteen distinct grave shafts situated in two spatially segregated groups. Five closely spaced graves comprised the north group, with the closest member of the other group located roughly 40 feet to the south. The location of the two groups precisely parallels the siting of the manor house and quarter respectively. Not surprisingly then, the five individuals in the north group were white (321-325), while the remaining individuals, in the south group, were black with one exception (328) (Table 13; Appendix III). Hence the spatial segregation which characterizes The Clifts cemetery offers a reflection in a mortuary context of the social segregation in life of the planter-family and laborer populations from which the buried individuals were drawn.

Of the eighteen separate grave shafts, sixteen contained skeletal and coffin remains (Table 14). The diminutive size of one of the empty shafts, 1.2 by 2.9 feet in plan (332A), raises the possibility that it was the grave of a (black) infant whose soft bones had totally decayed and who, as less than a full-fledged social person, was not accorded the ritual accoutrements of coffin or shroud. Such an explanation seems less likely for the second empty shaft (336A) which was also located in the laborer section of the cemetery. It was larger, 1.6 by 5.5 feet in plan, and partially intruded the fill of an earlier burial (337A,B). The empty shaft had been dug to the level of the top of the coffin in the earlier grave. It is likely that when the earlier burial was encountered, the grave diggers filled the new shaft without its intended occupant who was buried elsewhere. The rather ill-formed sides (S-curved) of the empty shaft, unique among the graves and an indication that the shaft was not completed, provide some support for this interpretation. Such a sequence of events definitely occurred in

TABLE 13  
BURIAL DEMOGRAPHIC DATA\*

Provenience Number	Race	Sex	Age at Death
NORTH GROUP:			
321	W	M	5
322	W	F	4
323	W	M	31
324	W	F	37
325	W	M	32
SOUTH GROUP:			
326	B	M	22
327	B	M	43
328	W	M	31
329	B	F	18(-)
330	B	M	39
331	B	M	33
332	(presumed infant)		
333	B	M	27
334	B	M	22
335	B	M	10(-)
337	B	F	26
338	B	F	58

\* See Appendix III.

TABLE 14  
GRAVE SHAFT AND COFFIN DATA

Prov. Number	Shaft Depth	Coffin Dimensions	Number Coffin Nails	Shroud Pin/ Stain Location	Clothing Accoutrements
321A/B	2.6	1.2x4.1	17	skull (3)	-
322A/B	2.3	1.1x3.7	26	skull (1)	-
323A/B	3.0	1.5x6.3	38	-	-
324A/B	3.6	1.7x5.7	21	skull (3) R. ulna (1) R. scapula (1) T. vertebrae (1)	-
325A/B	3.5	1.5x6.1	35	-	-
326A/B	3.2	1.8x6.4	53	-	-
327A/B	2.6	1.9x6.5	43	-	-
328B/C	3.2	1.9x6.0	39	skull (2)	-
329A/B	2.7	1.4x6.4	56	-	-
330A/B	3.2	1.7x6.2	38	skull (2) L. clavicle	6 hollow-cast brass buttons (pelvis)
331A/B	2.5	1.3x5.9	58	skull (1)	1 pewter button, brass button (pelvis); 1 pewter button, brass button loop (knee)
332A	2.1	-	-	-	-
333A/B	2.7	1.4x6.2	50	skull (3) L. ulna (1)	-
334A/B	2.5	1.4x6.2	36	skull (2)	2 button loops (C. vertebrae)
335A/B	2.5	0.9x4.7	21	skull (3)	-
336A	2.3	-	-	-	-
337A/B	3.4	1.4x6.2	51	skull(1) R.rib(1) R.humerus(1)R.ulna(1)	-
338A/B	2.8	2.1x5.8	17	L.rib(1) T.verti- brae(1) R.ulna(1)	-

connection with another burial at the site (328B,C). Here the beginnings of a new shaft, 2.2 by 6.2 feet in plan (328A), cut into the middle of the earlier grave. Again the new shaft went to coffin level (2.2 feet below subsoil) where it was abandoned and its intended occupant (very likely 338) was interred in another location. These two false starts, both in the southern section of the cemetery, provide an indication that the graves there were marked either in a very impermanent fashion or perhaps not at all. In contrast, none of the five graves in the north section had been mistakenly dug into, even though they were much more closely spaced.

#### Burial Dating

In spite of the cemetery's evident spatial relationship to the east boundary of the Phase-III garden enclosure, the burials do not all date to that period. In fact it is probable that the cemetery was the repository of most, if not all, the individuals who died on the plantation during the course of its occupation. Several kinds of evidence, stratigraphy, horizontal spatial relationships and artifact associations, combine to provide estimates of varying precision for just when during that sixty-year period each of the burials took place.

Two burials (321A,B;322A,B) appear to predate Phase-III on the basis their stratigraphic or spatial relationships to the ditch-set fence line (310A/B). The fence ditch cut through the west end of one of these interments (322A,B), while the other (321A,B) lay within the garden enclosure. Given likely sib connections between the children in the two graves (Appendix III), they are probably roughly contemporary and hence both belong to Phases I or II. The grave fill of 321A,B yielded a sherd of a beige Rhenish jug (Höhr-type) of late seventeenth-century manufacture. Other sherds from this vessel were present in Phase-III contexts elsewhere at

the site, suggesting a Phase-II date for this interment is more likely.

Stratigraphic evidence is available for the dates of two other burials. The grave shaft of one (323A,B) was dug through the eastern edge of the Phase-III fence ditch (310A/B). Although it did not intrude the stain left by the rotted fence uprights, the grave's proximity to them makes it unlikely that it was dug when the fence was still standing. Hence a Phase-IV date is indicated. A Phase-IV garden-fence post hole (306V/W) cut through the shaft of a second burial (338A,B), indicating a pre-post-and-rail-fence interment. However the grave fill yielded a sherd of slip-dipped white saltglaze, thus bracketing the burial in early Phase IV, between the introduction of white saltglaze to the site and construction of the Phase-IV garden fence.

The placement of this burial, roughly 30 feet east of the other graves in the south group and directly east of one of the intrusive, empty shafts (328A), is not coincidental. Apparently, the individual eventually buried in 338A,B was the intended occupant of the aborted shaft (328A). An assortment of Phase-III ceramics from the intrusive shaft supports such an argument.

Ceramics alone provide reliable dating evidence for four other interments. A sherd of a Bellarmine bottle, first broken and discarded in Phase IV, was recovered from the grave shaft of 326A,B and places its filling near the end of the occupation. A fragment from an English brown-stoneware mug, other sherds of which were found in Phase-III contexts, indicates a second burial (327A,B) is no earlier than circa 1705. The fill of a third grave (330A,B) yielded a sherd of a North-Devon gravel-tempered pipkin, the remainder of which was found in Phase-III contexts, pointing to a Phase-III or later date for this interment as well. Finally, the

base of an English white-saltglaze mug (slip-dipped) from a fourth grave shaft (325A) places the burial in Phase IV.

Determination of dates for the remaining eight interments which contained skeletal remains is slightly more problematic. While the pipe-stem samples from the graves are extremely small, they can be of some help. In Phase-II trashpits at The Cliffs, 5/64-inch bore-diameter pipe stems comprise from 10 to 15% of the samples. By Phase-III their proportions had increased considerably in similar contexts, ranging from 35 to 80 % of the samples. Thus with the advent of Phase III, there appears to have been for the first time a rather high likelihood that a pipe stem of this size might get into a burial shaft while it was being filled. In fact, two of the eight burials already dated on other grounds contained 5/64-inch pipe stems (330A,B:N=3 and 338A,B:N=3), and both are Phase-III or IV, as shown above. Pipe stems with 5/64-inch bore diameters were present in four of the eight problematic graves (331A,B:N=3, 333A,B:N=1, 334A,B:N=2, 337A,B:N=2), indicating Phase-III or IV dates for these graves.

A fifth grave (324A,B) is arguably earlier on the basis of the absolute dearth of artifacts in it. Its neighbors on either side (323A,B;325A,B) contained 5 and 13 artifacts in their shaft fill respectively. Given skeletal resemblance between the probable sib pair 321 and 322 on the one hand and 324 on the other (their mother?), 324 was probably interred during the first half of the occupation. (Appendix III).

This leaves three shafts containing skeletal remains unaccounted for (328B,C;329A,B;335A,B), all in the laborer section of the cemetery. The latter two belong to a sub-group comprised of the southern-most seven coffin burials, defined by remarkably even spacing (averaging 7.2 feet center-to-center, with a range from 6 to 8 feet). In contrast the northern



member of this sub-group (329A,B) lies roughly 14 feet south of the next grave in the southern group (328B,C). It is tempting to suggest that the southern seven coffin burials were filled in succession from north to south (beginning with 329A,B). Such an interpretation would account for the regular spacing of these burials. If the graves were unmarked, regular spacing would have been facilitated most of the time by the extant traces of the most recent interment to the north. If this interpretation is accepted, then all the graves south of 330A,B, which has already been assigned to Phase III, date to Phase III or later as well. The interment immediately north of it (329A,B) predates 330A,B, but probably not by much. Following the scenario to its conclusion, after the empty shaft (336A) was mistakenly sunk into the southern-most burial (337A,B), grave-digging operations were moved to the north where 327A,B, 326A,B and 328A and 338A,B were thereafter dug. It is worth noting that the latter two burials (and the empty shaft) have already been assigned to Phase IV, and the former to Phase III or IV. Once again the two burials (326A,B;327A,B) and the intrusive, empty grave shaft (328A) are very evenly spaced. The final inference is that 328B/C predates the entire sequence.

The results of the foregoing discussion are summarized below:

Phase I or II: 321,324,328

Phase II: 322

Phase III or IV: 329,330,331,(332),333,334,335,337

Phase IV: 326,327,338.

It is apparent that the shift from a labor force predominantly comprised white indentured servants to one made up of black slaves took place at The Cliffs circa 1705. None of the black graves predates Phase III. On the other hand, the single white (328) in the south section of the cemetery was probably interred prior to that period. His location so far south of

the early family group (321,322,324) marks him as an indentured servant, a position consonant with his non-English origins (Appendix III, Carr and Menard 1979). The fact that only one indentured servant was buried at The Clifts, while ten black slaves (or eleven counting the presumed infant 322) were later interred during a roughly comparable period of time, is not an indication of size differences for the labor force during the first and second half of the occupation. Rather, it is a function of the differing tenures of the two groups. Indentured servants left the plantation after their terms of service were up to die and be buried elsewhere. Blacks, on the other hand, were tied to the plantation for life. They remained there in death as well.

#### Burial Program

Several features of mortuary practice at The Clifts have already been noted. The southern section of the cemetery was probably without grave markers, while the north section was not. The presumed infant (332) was buried without coffin or shroud. Withholding burial rites to uninitiated infants is a common practice in a variety of cultures, and is in accord with traditional English and in some cases African custom (cf. Addy 1895: 120). In addition, evidence has been reviewed for an apparent unwillingness to inter two individuals in the same spot or, more generally, to disturb earlier graves. This is a characteristic which seems to be at odds with accepted practice in medieval-English parish churchyards where space was sometimes limited and where archaeology has revealed little attention was paid to previous burials when new graves were dug. Henry Fielding's Tom Jones reminds us that human bones, disinterred in the process of digging new graves, were a common sight in eighteenth-century English parish cemeteries.

Hence the reticence displayed in such matters at The Clifts may have been of African origin. However, further research is necessary before this interpretation is affirmed.

With one exception, all the individuals in the cemetery were buried facing east (head to west, feet to east), again in accordance with traditional practice both in England and in some parts of Africa. The exception was 330, a black male in his late thirties, who faced west. This anomaly remains to be fully explained. However it is worth noting that English custom reserved such special treatment for offenders against community mores, especially suicides. In Westmoreland in 1661, John Washington as head of a coroner's jury buried a indentured servant who had killed himself "at the next cross path as the law requires with a stake driven through the middle of him in his grave" (Westmoreland II :52). More distant in time, but closer with regard to the social situation, is the following relation by an ex-slave born in 1837 in Wilcox County, Alabama:

My massa never did have any real 'corrigible niggers, but I heard of them plenty on other places. When they was real 'corrigible, the white folks said they was like mad dogs and didn't mind to kill them so much as killing sheep. They'd take 'em to the grave yard and shoot 'em down and bury them face down, with their shoes on. I never seen it done, but they made some of the niggers go for a lesson to them that they could get the same (quoted in Botkin 1945:85).

There is no evidence that the slave at The Clifts was murdered, but the pattern of anomalous burial (face-down) described above is not far removed from facing in the wrong (horizontal) direction.

All individuals represented by skeletal remains were buried in coffins constructed with iron nails. These were, with one exception (338B), hexagonal in plan, with the widest part located along the humerus (Table 14). Coffin dimensions and proportion were somewhat variable, with size correlated with the size of the individual interred (Fig.40). Coffin-nail distributions

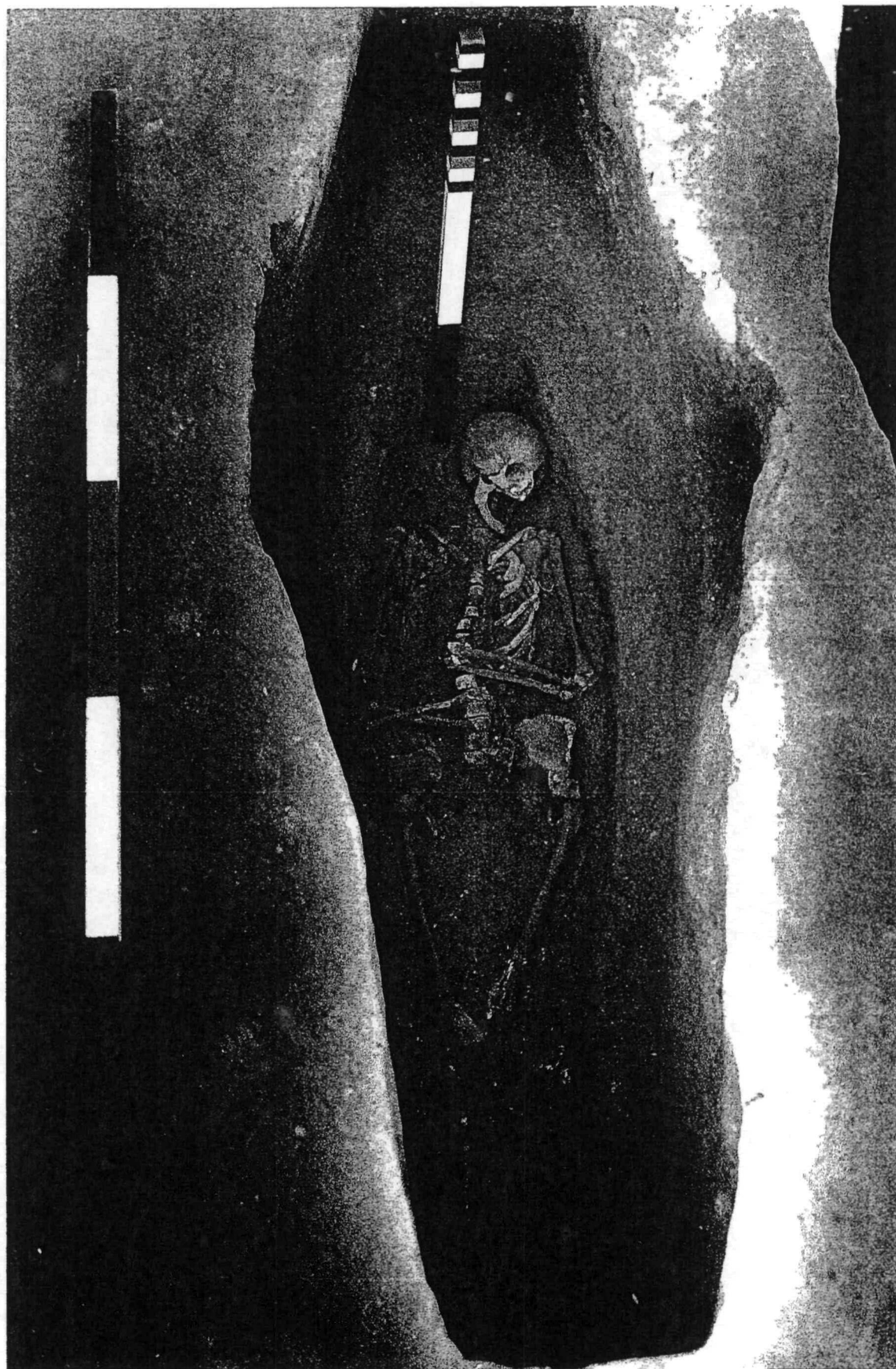


FIGURE 40. Coffin burial (324A,B), north cemetery group (facing west).

indicated that the sides of the hexagonal coffins were butted against the edges of the bottoms and against the edges of one another, and that these were nailed together from the outside. Horizontal nails were most numerous at the head and foot of each coffin, as should be expected given this method of construction. Additional horizontal nails were present along the sides, usually more heavily concentrated between the head and shoulder of the coffin, the part which bore the most weight. Given this pattern of nail location, if the coffins had handles, they were probably located at the ends. An oval-shaped soil discoloration at the foot of one coffin (330B) betrayed the presence of a rope handle. Rows of nails running perpendicular to the long axis of the coffin, presumably for battens holding together coffin tops and/or bottoms constructed from more than one piece of wood, were noted in three burials (324,325,329). A single row of nails, running parallel to the long coffin axis and centered on it, was noted in two burials (327,333), apparently representing a different form of two-piece top construction. Two poorly defined nail clusters occurred along the center line of another coffin (334B), again suggesting a multi-piece top, although its configuration remains unclear. The single non-hexagonal coffin (338B) was rectangular. Nails were used more sparingly in its construction, but their distribution again indicates the coffin sides and bottoms were simply butted together. Wood fragments from the coffin top, the only coffin wood in the cemetery well enough preserved for identification, proved to be yellow pine (Rauschenberg 1979). As outlined above, variability in coffin construction does not exhibit any convincing correlations with race, sex or time.

Shroud pins or shroud-pin stains on bone were present in all but five of the burials (323,325,326,327,329). Where present, they were located in the upper-trunk or head region (Table 14). Bones in one burial without pins or stains

noted (329) were poorly preserved, leaving the possibility that any pins once present had totally decayed, along with the bones which they might have stained. The other four individuals, two whites and two blacks, lacking pins or pin stains were late interments, possibly an indication that pinned shrouds (but not necessarily shrouds in general) were passing out of use at the site. Estate accounts from the Westmoreland records for the late seventeenth and early eighteenth century show that shroud (and coffin) burial was de rigeur during the period throughout the county (at least for whites).

Three individuals, all of them black males (330,331,334), wore some sort of every-day clothing to the grave, as attested by buttons and/or button loops recovered from the coffins (Table 14), in addition to the standard shroud. Full explanation for this situation is still wanting. However, it is worth noting that a similar association between black-male burials and clothing has been noted at an early nineteenth-century slave cemetery at College Landing, near Williamsburg, Virginia (Hudgins 1977). Again, African customs may be involved.

#### Skeletal Remains

Detailed skeletal data is provided in Appendix III. Several findings will be mentioned here. Mean age of death for both black and white adults in the cemetery was roughly 32 years. This figure is low compared to other excavated colonial samples (Angel 1976) and even lower compared to life expectancies (at age 20) calculated by historical demographers for the Chesapeake (Smith 1978). Astonishingly high mortality in the early Chesapeake has been laid to malaria (Rutman and Rutman 1976) and to typhoid and dysentery (Earle 1979). The layout of The Clifts may have encouraged enteric diseases

since the surface middens (every-day repositories for garbage and human excrement) were located just west of the manor house, on a slope draining into the plantation's water source. Although comparisons between excavated and historically documented populations are risky in the extreme, the gap between life-expectancy at The Clifts and estimates derived for other areas in the Chesapeake from historical sources may point to the biases introduced into such estimates when incomplete historical data are used.

Since low life expectancies for adults in pre-industrial populations go hand in hand with extremely high infant mortality rates, the infant: child : adult death ratio of 1 : 1 : 9 for blacks looks surprisingly good. However, it is all but certain that the appearance of high survival rates for infants and children is simply an artifact of there having been few infants and children at risk in the population in the first place. This can be attributed to unbalanced sex ratios and/or life stress which discouraged slaves from having children. The demographic data from The Clifts cemetery raise more questions than they answer. Excavation and analysis of plantation cemeteries elsewhere are required before their full potential is realized.

Lead content of skeletal tissue from multiple sampling sites for each of the sixteen individuals in the cemetery was determined by flameless atomic absorption spectrometry (Aufderheide et. al. in press). Mean skeletal lead content for the fivewhites in the north (planter-family) cemetery group was more than five times greater than that for the south group. While mean-lead levels for the south group generally correlated with age, suggesting long-term ingestion of small quantities of lead, levels for the north group did not (Fig.41). In fact lead levels for the north group approached amounts documented to have caused death

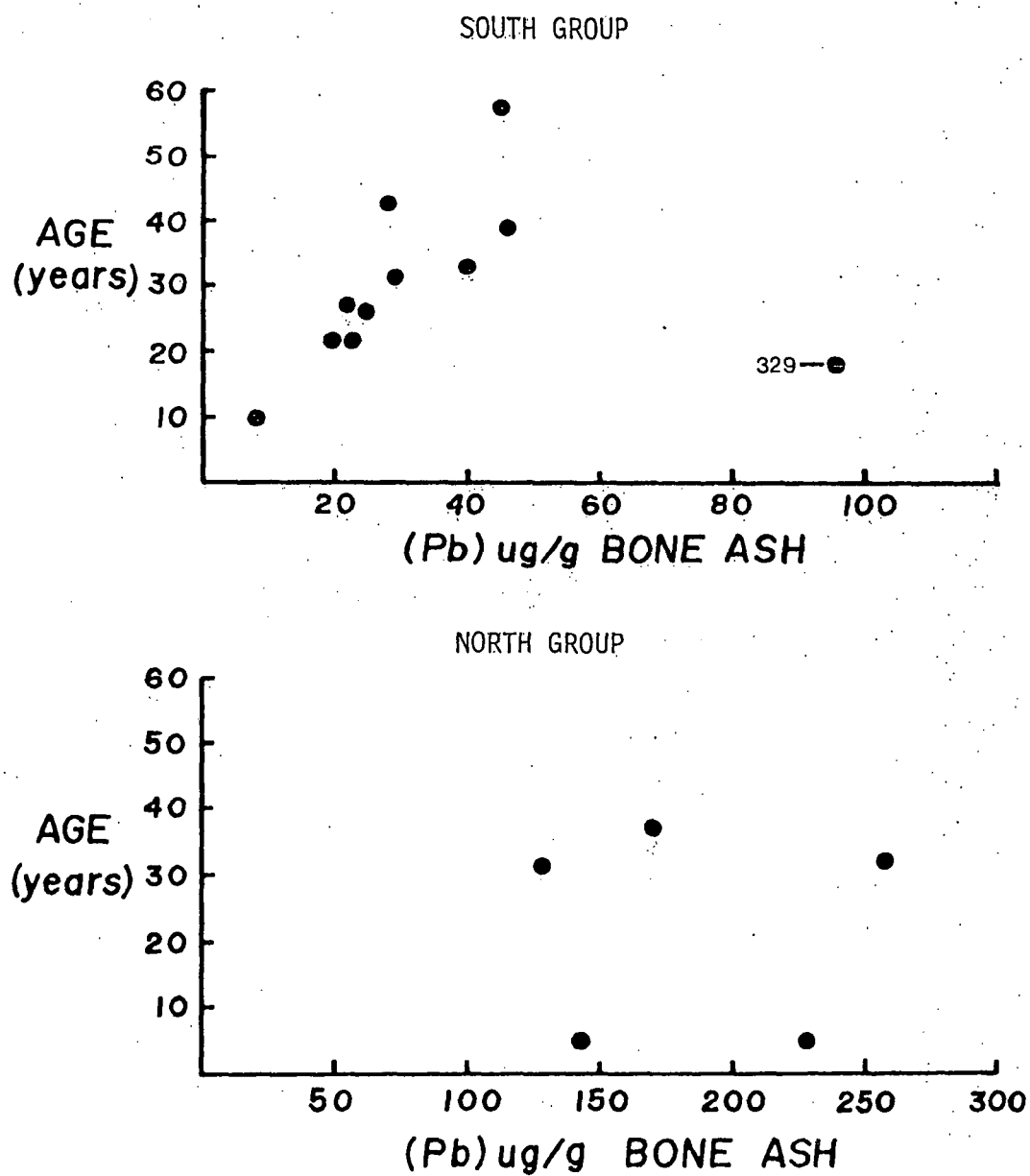


FIGURE 41. Mean skeletal-lead content (micrograms of lead/gram bone ash) plotted against estimated age.



in children (ibid.). These differences accurately reflect the very different conditions under which planter-family members and their laborers lived. Family members received massive doses of lead from an early age through constant use of pewter and lead-glazed ceramic table wares. Laborers on the other hand, living and eating in a separate quarter, were for the most part denied access to such items. The one black whose mean skeletal-lead level approached those of individuals in the north cemetery group was a young female (329). Her higher rate of lead ingestion may reflect higher exposure to lead hazards in the family's household, such as a house slave might receive.

#### Trash Pits

The term "trash pit," although nearly universal in archaeological parlance, is something of a misnomer for the features about to be described. While the phrase adequately characterizes what the archaeologist finds in them, it has nothing to do with the purpose for which they were dug. Artifact distributions in plowzone demonstrate that the ordinary repository for refuse of all sorts at The Clifts, and other early Chesapeake sites, was the surface of the ground adjacent to the buildings in which the refuse was generated. Given the universal acceptance of the resulting messy situation, there was little need to dig holes in the ground to ameliorate it. Rather, as their abundance on sites without brick masonry and especially brick chimneys attests, trash pits were dug to obtain clay for architectural purposes, and only later filled with soil and artifacts. Judging from the fact that wash layers generally comprise only a small proportion of

their strata, filling was quite rapid in most cases, to be reckoned in weeks.

Where then did the remainder of the strata come from? In addition to wash, two sorts of fill seem to predominate the pits' contents. Most important in terms of volume were the surface middens which lay adjacent to domestic structures. When no pits were open, these middens appear to have been periodically dispersed around the site, perhaps in the garden area as compost. But when faced with an inconvenient open hole, the occupants of The Clifts apparently filled it with what was available (and at times objectionable) close at hand. The second sort of pit fill appears to have come straight from the house, not by way of the middens, usually in the form of ash from fireplace sweepings. Pits were filled, not so much out of a concern for sanitation, but to get rid of open holes. It is worthwhile noting in this regard that the largest trash pits at The Clifts were all located on the periphery of the western service yard, close enough to domestic structures so that carrying clay from them to its intended place of use would not be overly onerous, but far enough away so that while open they would not obstruct daily work routes. In fact, as time passed and the outbuildings on the western side of the site, marking the edge of the yard's most used space, were built successively further north, the pits followed them. The Phase-II trash pits (250D,E;273A-C;274A,B;274E-G) are the exception which proves the rule. They were located within roughly 25 feet of the manor house, but they were neither deep nor large in surface extent.

### Phase-I Trash Pits

290A-D This small pit, located just behind Outbuilding 1, the earliest smoke house at the site, measured 3.5 by 3.0 feet in plan . Its dish-shaped bottom extended to a depth of 0.6 feet below subsoil. The pit was filled with four layers, The bottom two (C,D) were 0.1-foot thick wash layers, contiguous to one another and probably representing a single rain. They were covered by two ashy layers, the lower (B) containing abundant fish remains (drum), and the upper flecked with charcoal.

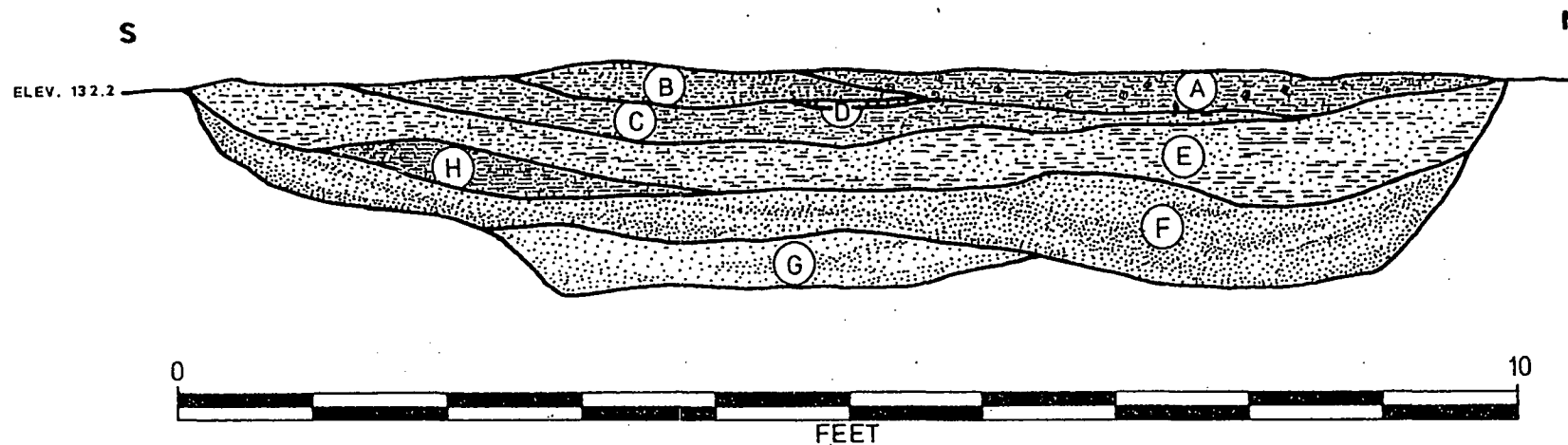
289A-H Situated adjacent to 290A-D, this pit was 10.5 by 5.5 feet in plan and extended to a depth of 1.7 feet (Fig.42). There were two wash layers, one at the bottom of the pit (G). The second contained pockets of fireplace ash (E). The remainder of the pit was filled with ash layers (B,D,H) and topsoil midden (A,C,F).

362A-C Dug south of Outbuilding 2, the pit measured 3.3 by 2.0 feet and was only 0.3 feet deep. All three layers appeared to be washed from the surrounding topsoil, with varying amounts of subsoil mottle. They contained one wrought nail.

346A-D This 3.3 by 6.0 by 0.9- foot pit cut 362A-C. It was filled by subsoil (D) and topsoil (C,B) wash layers, capped by a dark grey-brown loam (A) of uncertain origin (Fig.43).

305A-G Dug through the northern portion of 346A-D, this pit measured 10.7 by 9.7 feet in plan and extended 1.8 feet below subsoil (Fig.43). Grey loams containing charcoal and burnt subsoil flecks (daub) (A,C,F), and just charcoal flecks (B,D) predominated, the former from the midden area adjacent to the house, the latter perhaps from topsoil where refuse was less concentrated. There were in addition two wash layers, one at the

# PHASE I TRASH PIT

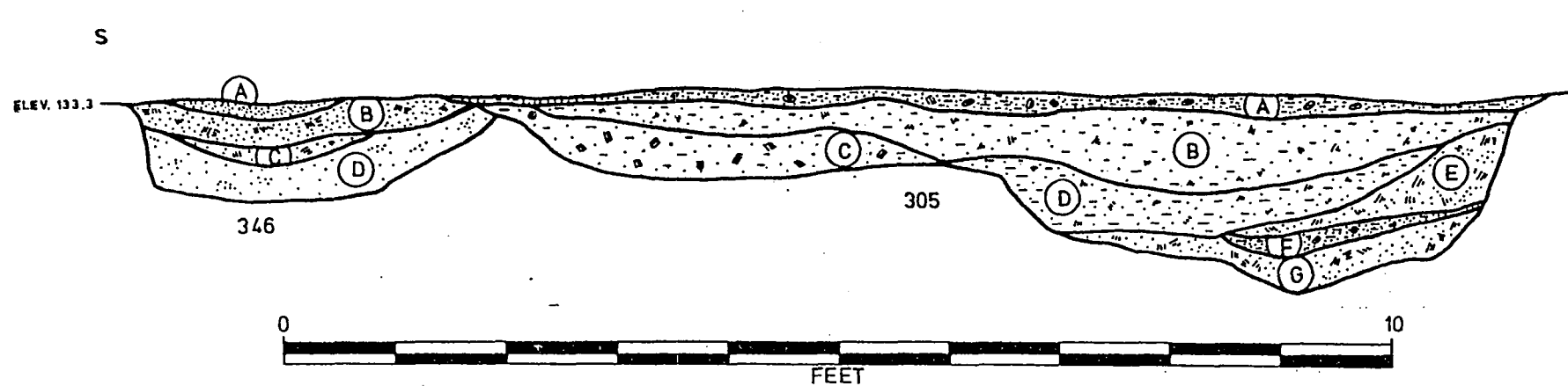


- 289 A DARK GREY-BROWN ASHY LOAM,  
CHARCOAL AND DAUB FLECKS
- B ASHY BROWN LOAM, POCKETS  
OF GREY ASH, CHARCOAL
- C BROWN SANDY LOAM, CHARCOAL  
FLECKS
- D PURPLE-GREY ASH, CHARCOAL  
FLECKS

- E GREY ASH, BUFF LOAM,  
CHARCOAL FLECKS
- F DARK BROWN SANDY LOAM
- G BUFF SANDY LOAM
- H GREY ASH, CHARCOAL FLECKS

FIGURE 42.

# PHASE I TRASH PITS



- 346 A DARK GREY-BROWN LOAM  
 B GREY-BROWN LOAM WITH CLAY MOTTLE  
 C SIMILAR TO B  
 D BUFF LOAM

- 305 A DARK GREY LOAM, CHARCOAL, DAUB  
 B FINE GREY LOAM, CHARCOAL  
 C LIGHT GREY SANDY LOAM, CHARCOAL, DAUB  
 D FINE GREY LOAM, CHARCOAL  
 E TAN CLAY  
 F DARK GREY LOAM, CHARCOAL, DAUB  
 G BUFF SANDY LOAM WITH TAN CLAY

FIGURE 43.

at the bottom of the pit (G), and the other (E) overlying the lowest midden layer (F). The ceramic seriation (Table 3) indicates that this was one of the latest Phase-I pits filled on the site.

351B-H This early, oblong pit, adjacent to 305A-G, measured 10.2 by 3.0 feet in plan. Its relatively flat bottom lay 1.3 feet below subsoil. The majority of the fill was comprised of light-grey loam mixed with displaced subsoil (B,C,D,E,F) in varying proportions, decidedly not midden deposit. A wash layer covered the bottom of the pit (H) and was overlain by a layer of fireplace ash (G). Despite its size, relatively few artifacts were recovered from this pit, reflecting the non-midden character of the fill. Most of the finds were from the fireplace ash layer (G). These included three sherds of Morgan Jones, one of them burnt, and fire-scorched bone fragments.

356A-C A small pit, 3.7 by 1.5 by 0.3 feet, was located just south of 351B-H. A wash layer in the bottom (C) was overlain by two thin charcoal-flecked topsoil lenses (A,B). The presence of only two artifacts (1 bone and 1 bottle-glass fragment) suggested an early date. 351B-H and 356A-C were both overlain by a small circular depression (351A), roughly 0.8 feet in diameter, of unknown origin.

304A-C Located just south of Outbuilding 2, this pit measured 3.5 by 6.3 feet in plan, with a depth of 1.1 feet below subsoil. There was a thin wash layer at the bottom (C), overlain by an ash layer, black with charcoal fragments, which filled most of the pit. This layer may have come from the adjacent Outbuilding 2, a smokehouse. The pit was topped by a layer of grey-brown loam. Five sherds from the rim of a Morgan Jones milk pan were found in the ash layer, along with four nails, a flint, bone fragments and an 8/64-inch pipestem.

360A This was a circular depression, 0.3 feet deep and roughly 2 feet in diameter, filled with a single layer of subsoil-mottled grey topsoil. Bone fragments, but no datable artifacts, were recovered. The pit's location adjacent to the other Phase-I pits and the lack of artifacts indicate an early date.

#### Phase-II Trash Pits

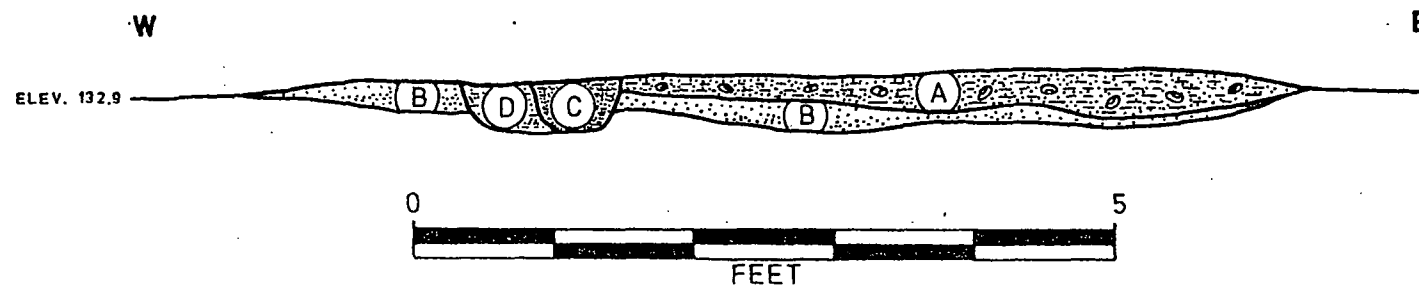
250D,E This pit was situated roughly 25 feet west of the manor house west gable. It measured 7.5 by 6.4 feet in plan, with a depth of 0.7 feet below subsoil. The bottom of the pit was covered with a 0.1-foot thick loam wash, while the remainder of it was filled with a charcoal-flecked midden deposit. The pit was cut a Phase-IV post-and-rail fence post hole (250B/C).

273A-C A shallow pit, 0.7 feet deep and roughly 10 by 8 feet in plan, was located about 15 feet southeast of the east manor house gable. It was filled by three layers of variably-shaded grey loam (A,B,C). The bottom layer (C), in contrast to those above it contained no charcoal flecks and hence may have been a topsoil wash. The pit was particularly rich in iron artifacts and bone. It cut the southeast bastion of the palisade (273Y/Z) and was cut by a Phase-IIIA garden fence ditch (270A/B).

274A,B At the bottom of this 6.9 by 4.3 by 0.4-foot pit was a thin wash layer (B). This was overlain by a dark midden layer containing oyster shells and charcoal flecks (A). The pit was cut by the same garden-fence ditch which cut 273A-C. (Fig.44).

274E-G This small pit, located between 273A-C and 274A,B, measured 4.3 by 3.3 feet in plan. Two thin, buff wash layers lay on the bottom (F,G). On top of them was a midden layer, quite similar to 274B. During the 1972 amateur excavations at the site, roughly half of an iron frying pan

PHASE II TRASH PIT (274A,B) AND PHASE III FENCE DITCH (274C/D)



274 A DARK GREY-BROWN LOAM,  
CHARCOAL FLECKS, OYSTER  
SHELL

B BUFF SANDY LOAM

C DARK GREY-BROWN LOAM,  
CHARCOAL FLECKS

D BROWN LOAM, TAN CLAY  
MOTTLE

FIGURE 44.



was excavated in this vicinity (Allard 1978). It was almost certainly taken from a pot hole, roughly 1.5 feet in diameter, which was noted at the north edge of the deposit. The pit, like the two previously discussed, was cut by the garden fence ditch (270A).

295A This small pit measured 2.3 by 4.1 in plan. It was 1.0 feet deep and filled with a clean grey loam. Its meager content was comprised of 2 nails, a North-Devon gravel-tempered pipe fragment, two nails and a stirrup. The paucity of artifacts, none of them particularly datable, indicates an early filling, perhaps in Phase II, given the pit's proximity to the three discussed above.

#### Phase-III Trash Pits

205G,M Located just north of the manor house, this small pit measured 4.0 by 3.1 by 0.6 feet. It was filled with a wash layer at the bottom (M), overlain by a grey loam with charcoal flecks which showed traces of lensing (G), perhaps washed into the pit from the surrounding topsoil. Although the pit fill lacked Phase-III ceramic markers, the proposed date is suggested by a circa 1690-1700 baluster wine glass stem, and three circa 1700 wine bottle bases. However, a Phase-II date remains a possibility.

240F,G This small pit was located just south of the dairy (Outbuilding 7). It was 4.5 by 3.1 feet in plan, 0.6 feet deep and filled with a bottom layer of subsoil wash mottled with grey loam at the bottom, overlain by a dark grey-brown midden layer containing oyster shells and charcoal. The center of the pit was cut by a dead furrow due to modern plowing. In addition to sherds of Phase-III marker-type Nottingham stoneware, the pit yielded a Silesian-type wine glass stem.

259A-D Situated roughly 55 feet west of the west manor house gable, this circular pit measured 5.5 by 4.5 feet and was 0.7 feet deep. The

bottom of the pit was covered by a thin subsoil wash, mottled with grey topsoil (D). This was overlain by three layers of very ashy grey loam flecked with charcoal, representing as many fireplace cleanings. Daub fragments were present.

288C-R Dug adjacent to 259A-D, this pit measured 8.5 by 12 by 1.3 feet. Most of its original fill had been removed during the 1972 amateur excavations at the site, at which time the feature was designated "RP-1." Artifacts recovered at that time, which possess the reputed "RP-1" proveniences, include white-saltglaze stoneware and other Phase-IV marker types. Since the pit's stratigraphic relationship to an adjacent Phase-IIIb fence-ditch segment (260A/B) and the few artifacts which remained in it securely place its filling in Phase III, it is apparent that provenience attributions from the 1972 excavations cannot be trusted. The irregular hole dug into the pit in 1972 went to a depth of 1.0 feet below subsoil. The remaining original pit fill was comprised for the most part of numerous wash lenses, two of which (C,D) contained brick bats and large charcoal flecks, probably from an adjacent Phase-III smoke house. There were in addition two small, thin layers of ashy grey loam (Q,H) which may represent fireplace dumpings. Presumably the upper portion of the pit fill excavated in 1972 was midden deposit.

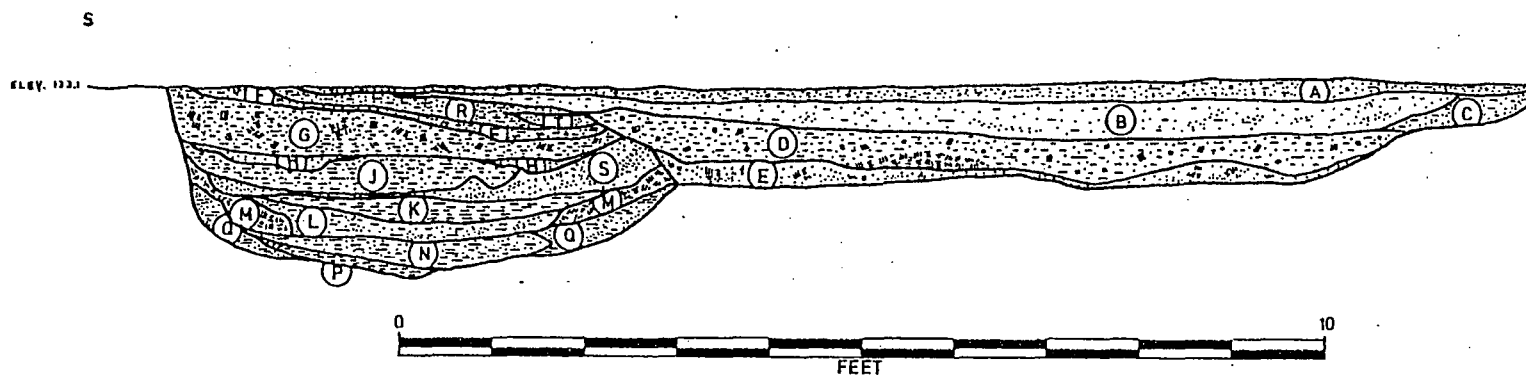
288S-AD This pit was cut by 288C-R and hence predated it. A small portion of the earlier pit had been removed in 1972 when the hole into 288C-R was dug. Most of its original contents remained however. The pit measured 4.4 by 13.5 feet in plan and extended to a depth of 1.2 feet below subsoil. The greater portion of the fill was a single midden layer containing charcoal flecks, a few brick bats and oyster shells (S) which extended to a depth of 0.7 feet. Sealed within it were three light-sandy

wash layers (AA,AB,AC). Beneath the midden layer lay a thin layer of fireplace ash (T). The bottom of the pit was filled with five lenses of subsoil wash (W,X,Y,Z,AD) containing brick bats. Two of them (X,AD) also contained charcoal flecks. Again, the brick and charcoal may have come from the adjacent Phase-III smoke house.

255F-Y A circular pit roughly 5.5 feet in diameter and 2.0 feet deep, this feature was situated just north of 259A-D. Compared with the other trash pits at the site, it had relatively steep sides and a relatively flat bottom (Fig.45). The pit fill was comprised entirely of interdigitated layers of fireplace ash (G,J,K,N,P,R,W,Y) and wash (F,H,L,M,Q,S,T,V,X). Many of the former contained burnt daub flecks. Since it lacked midden deposits, the pit was unique among the larger trash pits at the site. The fact that it was filled so gradually, along with its regular configuration, may indicate that before it became a repository for fireplace sweepings it was an exterior storage pit (for root crops?). The ceramic seriation (Table 3) points to an early Phase-III filling. Hence the pit was probably dug just inside the Phase-IIIA and IIIB north-boundary fence for the back yard (247A/B, 258A/B).

255A-E, Z-AH This large pit, measuring 13.5 by 10.5 feet in plan and 1.1 feet in depth, cut through the northern portion of 255F-Y and hence postdated it. The bottom of the pit was covered by a subsoil wash layer (E). On the south edge of the pit a series of small ashy-loam lenses (Z-AH) had washed out of the open side of 255F-Y. These wash layers were overlain by three large midden deposits (A,B,D) comprised of grey ashy loams with charcoal and burnt daub flecks. Between the B and D midden layers lay a wash layer (C) on the north side of the pit (Fig.45). The pit contained seven measurable brick bats, averaging .2 by .4 feet on a side, which may

PHASE III TRASH PITS



255 F BUFF SANDY LOAM, TAN CLAY  
MOTTLE

G GREY ASHY LOAM, CLAY, BURNT  
DAUB, CHARCOAL

H BUFF SANDY LOAM, CHARCOAL  
FLECKS

J GREY ASHY LOAM, CHARCOAL

K GREY ASH, CHARCOAL

L SIMILAR TO J

M SIMILAR TO H

N SIMILAR TO K

P SIMILAR TO J

Q BUFF SANDY LOAM, POCKETS  
OF ASH

R GREY ASHY LOAM, CHARCOAL

S SIMILAR TO F

T BUFF SANDY LOAM, CHARCOAL  
FLECKS

255 A DARK GREY-BROWN LOAMY  
CHARCOAL, BURNT DAUB FLECKS

B GREY LOAM, CHARCOAL

C LIGHT GREY SANDY LOAM,  
CHARCOAL

D GREY ASHY LOAM, DAUB AND  
CHARCOAL FLECKS

E BUFF LOAM, CLAY MOTTLE

FIGURE 45.

again have come from nearby smoke-house fireboxes. The pit had been dug through the Phase-IIIA and IIIB north-boundary back-yard fence ditch (247A/B, 258A/B). This and its position in the ceramic seriation (Table 3) argue a late Phase-III filling.

309A This small pit was located along the east boundary of the Phase-III garden enclosure. Measuring 5.5 by 5.0 feet in plan and 0.6 feet deep, it was filled with a single topsoil layer which yielded nearly all the fragments to a circa 1720 wine bottle. The pit cut the edge of the adjacent fence ditch and hence may have been dug when the fence was still standing. A late Phase-III or perhaps early Phase-IV date is indicated.

#### Phase-IV Trash Pits

226B This small pit was situated just west of the manor house, in the area of the surface midden. Measurements were 4.0 by 3.0 by 0.3 feet. The pit was filled, not surprisingly given its location, with a single midden layer containing charcoal flecks and oyster shell. A sherd of brown-slipped Staffordshire earthenware, a type not appearing at The Clifts until Phase IV, provided the best dating evidence.

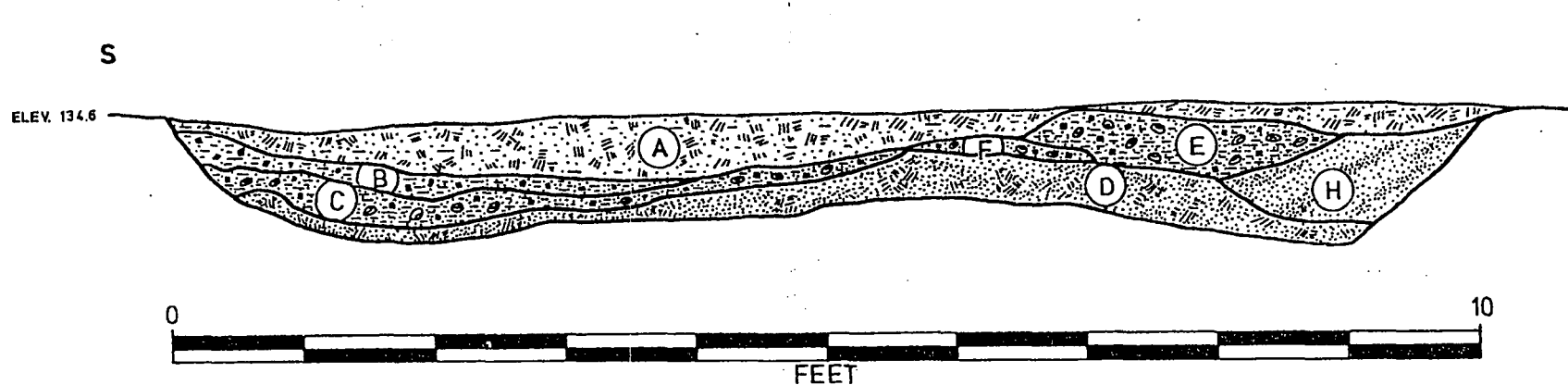
277A-C While large in horizontal extent (11.5 by 4.7 feet), this feature was only 0.5 feet deep. On the bottom lay a layer of light-grey loam with slight tan-clay mottle, apparently a mixture of topsoil and subsoil wash (B). Over this were two grey-loam midden layers flecked with charcoal (A,C). The pit overlay a section of the west-boundary fence ditch for the Phase-III garden/orchard enclosure north of the manor house. This and sherds of slip-dipped white saltglaze indicated the pit was dug and filled in Phase IV.

280A-H Dug adjacent to 270A-C, perhaps at the same time, the pit measured 10.0 by 7.4 feet in plan and was 1.1 feet deep. Two wash layers covered the bottom of the pit, one with considerably more subsoil content (D) than the other (H). The remainder was filled with various grey-to-brown loams, with variable daub, charcoal, bog-iron and oyster-shell content (A,B,C,E,F,G), apparently deposits from slightly different midden locations. Sherds of slip-dipped white saltglaze mugs, some of which cross-mended into 277A, placed filling of this pit in Phase IV as well (Fig.46).

345A-D This small pit was located adjacent to Outbuilding 6, the last and largest in the series of smoke houses at the site. Its dimensions were 4.4 by 5.4 by 1.1 feet. There was a single light wash layer (D) covering the pit bottom. The remainder of the feature was filled with three layers (A-C), together 0.8 feet thick, of very ashy loam, almost black with charcoal, which contained brick bats and mortar, for which the adjacent smoke house seems a likely origin. Slip-dipped white saltglaze dated the pit to Phase IV.

383A-D Located just 10 feet south of the manor house porch, this feature lay across a gate in the Phase-IV post-and-rail fence, cutting two of the associated post holes (384C/D, 383C/D) but not the molds. It measured 3.9 by 3.0 by 0.5 feet. A thin wash layer lay on the pit bottom (B), while most of the fill was comprised of a very ashy grey loam containing charcoal and burnt daub flecks, along with small bits of bog iron, presumably representing fireplace sweepings. Although the pit contained neither Phase-IV ceramic-marker type (white saltglaze or Buckley), the stratigraphic relationships mentioned above, along with sherds of delft tea bowls and saucers, attest to a Phase-IV date.

# PHASE IV TRASH PIT



- 280 A FINE GREY-BROWN LOAM,  
BOG IRON FRAGMENTS
- B GREY ASHY LOAM, CHARCOAL,  
DAUB FLECKS
- C GREY ASHY LOAM, CHARCOAL,  
DAUB FLECKS, OYSTER SHELL
- D LIGHT BROWN CLAY AND LOAM

- E GREY ASHY LOAM, CHARCOAL,  
DAUB FLECKS, OYSTER SHELL
- F BROWN LOAM, TAN MOTTLE,  
DAUB FLECKS, BOR IRON,  
OYSTER SHELL
- H GREY LOAM

FIGURE 46.

### Other Pits and Pit-like Features

380A Located 13 feet south of the manor house porch, this feature was triangular-shaped in plan (7.3 by 5.9 feet) and quite shallow, with a maximum depth of 0.25 feet. It was filled with a very ashy grey loam, flecked with charcoal which was especially heavy at the pit bottom. Artifacts were few; two case-bottle fragments, one 7/64-inch pipe stem and 28 nails, suggesting an early date.

370A,B These two small patches of ashy loam (2.4 by 2.8 and 1.9 by 1.5 feet respectively) were situated next to one another and adjacent to 380A. Maximum depth was 0.35 feet. One of them (A) overlay a Phase-IIIc fence-ditch segment (370D/E) and hence postdated the fence. Artifacts recovered were seven nails and two pipe-stem fragments.

311A Measuring 4.0 by 1.9 in plan and 0.7 feet deep, this small feature lay within the Phase-III garden enclosure. It was filled with a single layer of light-grey loam with subsoil mottle. A sherd of Morgan Jones, four bone fragments and an oyster shell were recovered.

341A This very shallow feature (0.1 feet deep) was located in the Phase-IV garden enclosure, roughly 25 feet south of the barn. It measured 5.0 by 3.5 feet and yielded a single sherd of yellow-trailed Staffordshire slipware, indicating a Phase-III or later date.

241D A thin (0.1-foot deep) lense of grey loam flecked with charcoal was lay just south of the dairy (Outbuilding 7). Dimensions were 3.2 by 4.0 feet. No artifacts were recovered.

404A This feature was cut by the fence ditch running between the Phase-IIla garden enclosure and the cellar house. It was 1.8 feet wide and extended past the limits of excavation imposed by the modern road across the site. It was filled with a grey sandy loam with subsoil mottle which yielded no artifacts.



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APPENDIX I

CONTENTS OF MAJOR TRASH PITS BY ARTIFACT CLASS

The following tables provide summaries of the artifacts found in each of the major trash pits excavated at The Clifts. The tables are arranged by phase, from Phase I to Phase IV. Provenience numbers run across the top of the page, artifact classes down the side. Row and column totals are included.

PHASE I

	304A-C	351B-H	346A-D	290A-C	289A-H	305A-G	TOTAL
<u>CERAMICS</u>							
Morgan Jones	6	4	4	9	87	35	145
Delft	0	2	1	0	5	12	20
North Devon Gravel	0	0	0	1	2	6	9
Rhenish Brown Stone	0	0	0	0	0	2	2
North Devon Sgraffito	0	0	0	0	0	1	1
Northern Holland Slip	0	0	0	0	18	9	27
Colono-Indian	0	0	0	0	0	6	6
Merida	0	0	0	0	0	7	7
Coarseware, green-brown glaze	0	0	0	0	0	1	1
<u>GLASS</u>							
Case bottle	0	0	0	1	121	22	144
Wine bottle	0	0	0	0	0	1	1
<u>KITCHENWARE</u>							
Pewter spoon	0	0	0	0	3	0	3
Pewter screw top	0	0	0	0	1	0	1
Iron table knife	0	0	1	1	0	1	3
Iron pot	0	0	0	1	0	0	1
Iron cap	0	0	0	1	0	0	1
Copper pot	0	0	0	0	0	1	1
Brass wire	0	0	0	0	1	0	1
Whet stone	0	0	0	0	0	1	1
Iron pot hook (auger)	0	0	0	0	1	0	1
<u>CLAY PIPES</u>							
Local	0	0	0	8	22	4	34
English, 9/64" bore	0	0	0	0	6	1	7
English, 8/64" bore	0	0	0	6	22	15	43
English, 7/64" bore	0	0	6	2	100	20	128
English, 6/64" bore	0	0	0	1	12	5	18
English, 5/64" bore	0	0	0	0	2	0	2
English, fragments	4	1	3	11	73	29	121
<u>FURNITURE</u>							
Iron hasp	0	0	1	0	0	0	1

PHASE I (continued)

	304A-C	351B-H	346A-D	290A-C	289A-H	305A-G	TOTAL
Iron handle	0	0	0	1	0	0	1
Brass tack	0	0	1	0	1	1	3
Brass book clasp	0	0	0	1	1	0	2
<u>ARCHITECTURE</u>							
Nails	4	13	10	13	242	107	389
Lock ward	0	0	0	0	0	1	1
<u>TOOLS</u>							
Broad hoe	0	0	0	0	1	1	2
Narrow hoe	0	0	0	0	0	1	1
Iron spade cover	0	0	0	0	0	1	1
Cross-cut saw	0	0	1	0	0	0	1
Hand saw	0	0	0	0	2	0	2
Chisel	0	0	0	0	1	0	1
<u>CLOTHING</u>							
Pins	0	2	0	3	20	9	34
Brass pin case	0	0	0	0	1	0	1
Iron hook and eye	0	0	0	0	1	0	1
Silver circlet	0	0	0	0	1	0	1
Black glass button	0	0	0	0	0	3	3
<u>HORSE</u>							
Iron buckle	0	0	0	0	0	1	1
Brass leather decoration	0	0	0	0	0	1	1
<u>ARMS</u>							
Lead shot, .5-.25 caliber	0	0	1	0	0	0	1
Gun spall	0	0	0	0	1	0	1
<u>MISCELLANEOUS</u>							
Flint	1	0	1	2	8	13	25
Quartz/Quartzite	1	0	2	0	10	5	18
Projectile points	0	0	0	0	0	1	1
Fossils	0	0	0	0	2	0	2
Jasper	0	0	0	0	0	2	2
Bone comb	0	0	0	0	3	1	4



PHASE I (continued)

	304A-C	351B-H	346A-D	290A-C	289A-H	305A-G	<u>TOTAL</u>
Unidentified Iron	0	0	0	1	0	5	<u>6</u>
<u>PHASE I TOTALS</u>	16	22	32	63	771	332	1236

PHASE II

	273A-C	250D-E	274A-B	274E-G	TOTAL
<u>CERAMICS</u>					
Morgan Jones	2	14	0	0	16
Delft	3	9	0	1	13
North Devon Gravel	12	3	3	0	18
Rhenish Brown Stone	3	0	1	0	4
North Devon Sgraffito	8	5	0	1	14
Staffordshire Slip	7	5	1	2	15
Coarseware, green glaze	15	0	0	0	15
Majolica	1	0	1	0	2
<u>GLASS</u>					
Case bottle	10	0	0	0	10
Wine bottle	5	7	0	2	14
Table glass	0	4	0	0	4
Pharmaceutical	0	1	0	0	1
<u>KITCHENWARE</u>					
Pewter spoon	1	0	0	0	1
Iron table knife	2	0	0	0	2
Iron bucket bail	1	0	0	0	1
Iron frying pan	0	0	0	1	1
Iron pot handle	1	0	0	0	1
<u>CLAY PIPES</u>					
Local	1	3	0	0	4
English, 9/64" bore	0	1	0	1	2
English, 8/64" bore	5	5	2	1	13
English, 7/64" bore	9	9	2	4	24
English, 6/64" bore	2	6	2	2	12
English, 5/64" bore	0	2	1	0	3
English, fragments	9	32	1	2	44
<u>FURNITURE</u>					
Hasp lock	1	0	0	0	1
Brass curtain ring	0	0	0	1	1
Brass tack	0	1	0	0	1

PHASE II (Continued)

	273A-C	250D-E	274A-B	274E-G	TOTAL
Brass tack (tinkling cone)	0	1	0	0	1
<u>ARCHITECTURE</u>					
Nails	68	157	21	16	262
Pane glass	0	5	0	1	6
Lead caming	0	2	0	0	2
H/H-L Hinge	1	0	0	0	1
<u>TOOLS</u>					
Narrow hoe	2	0	0	0	2
Hoe collar	0	0	0	1	1
Morticing axe	1	0	0	0	1
Iron dividers	1	0	0	0	1
<u>CLOTHING</u>					
Pins	0	0	1	0	1
Tinkling cone	0	1	0	0	1
<u>HORSE</u>					
Stirrup	1	0	0	0	1
<u>ARMS</u>					
Trigger guard	1	0	0	0	1
Pistol lock	1	0	0	0	1
Lead shot, less than .25 caliber	0	1	0	0	1
Sword guard	1	0	0	0	1
<u>MISCELLANEOUS</u>					
Flint	0	3	0	0	3
Quartz/Quartzite	0	4	0	0	4
Fossil	1	0	1	0	2
Iron chain links	2	0	0	0	2
Iron barrel band	2	0	0	0	2
Unidentified Iron	11	0	1	0	12
Bone comb	0	0	0	1	1
<u>PHASE II TOTALS</u>	191	281	38	37	547

PHASE III

262A-C 240F-G 255A-E, 259-A-D 226B 205G,M 288C-R 288S-AD 309A 255F-Y TOTAL  
Z-AF.

CERAMICS

Morgan Jones	1	2	13	0	0	1	0	2	0	2	21
Delft	1	13	53	4	1	2	0	6	2	15	97
North Devon Gravel	2	6	57	1	0	3	0	4	0	4	77
Rhenish Brown Stone	1	0	4	0	0	0	1	3	1	0	10
North Devon Sgraffito	2	1	15	0	1	5	0	0	0	2	26
Northern Holland Slip	0	0	0	0	0	0	0	0	1	0	1
Colono-Indian	2	0	0	1	0	0	0	0	0	0	3
Staffordshire Slip	0	2	9	0	2	0	0	4	0	1	18
Coarseware, green glaze	1	0	0	0	0	0	0	0	0	0	1
Majolica	0	0	0	0	0	0	0	1	0	0	1
Coarseware, mottled glaze	0	0	0	0	0	0	0	1	0	0	1
North Italian Red Marbelized	1	0	0	0	0	0	0	0	0	0	1
Burslem Brown Stone	4	0	1	1	0	0	0	1	0	1	8
Nottingham Brown Stone	0	0	7	0	2	0	0	2	0	0	11
Staffordshire Brown Stone	0	0	1	0	2	0	0	2	0	0	5
Rhenish Blue-Gray Stone	0	0	3	1	0	0	0	2	0	0	6
Coarseware, red body, black glaze	0	0	3	1	0	0	0	1	1	0	6
Iberian	0	0	0	0	0	0	0	1	0	0	1

GLASS

Case bottle	1	0	2	1	0	1	0	1	0	1	7
Wine bottle	14	7	79	0	3	10	1	20	22	13	169
Table glass	13	2	104	1	0	1	1	4	0	3	129
Pharmaceutical	1	0	3	0	0	0	0	0	0	0	4
Opaque white	0	0	9	0	0	0	0	0	0	0	9

KITCHENWARE

Pewter spoon	0	0	4	0	0	0	0	3	0	1	8
Iron table knife	0	0	0	0	0	0	0	1	0	0	1
Latten spoon	0	0	1	0	0	0	0	0	0	0	1
Iron flask	0	0	0	0	1	0	0	0	0	0	1
Copper pot	0	0	0	0	0	0	0	1	0	0	1
Copper wire	0	0	0	0	0	0	0	1	0	0	1
Iron fireplace tool	0	0	1	0	0	0	0	0	0	0	1
Whet stone	0	0	0	0	0	0	0	0	0	1	1

PHASE III (Continued)

	262A-C	240F-G	255A-E, Z-AF	259A-D	226B	205G,M	288C-R	288S-AD	309A	255F-Y	<u>TOTAL</u>
<u>CLAY PIPES</u>											
Local	0	0	1	0	0	0	0	0	0	11	12
English, 8/64" bore	2	0	4	0	0	0	0	3	0	1	10
English, 7/64" bore	6	0	5	3	2	0	0	13	1	3	33
English, 6/64" bore	10	2	114	2	3	0	0	25	2	34	192
English, 5/64" bore	13	6	552	10	6	3	0	22	0	38	650
English, 4/64" bore	0	0	2	0	1	0	0	0	0	1	4
	11	3	810	35	6	2	2	72	5	98	1044
<u>FURNITURE</u>											
Brass curtain ring	0	0	1	0	0	0	0	0	0	0	1
<u>ARCHITECTURE</u>											
Nails	58	16	302	58	0	20	7	128	19	128	736
Pane glass	7	2	35	0	0	0	0	0	0	0	44
Lead coming	0	0	5	0	1	0	0	1	0	0	7
H/H-L Hinge	0	0	1	0	0	0	0	0	0	0	1
Stock lock	1	0	0	0	0	0	0	0	0	0	1
<u>TOOLS</u>											
Hoe collar	0	0	3	0	0	0	0	0	0	0	3
Sickle	0	0	1	0	0	0	0	0	0	1	2
Cross-cut saw	0	0	1	0	0	0	0	0	0	0	1
<u>CLOTHING</u>											
Pins	0	0	15	0	0	0	0	0	0	4	19
Iron scissors	0	0	0	0	0	0	0	0	0	1	1
Brass buckle	0	0	2	0	1	0	0	0	0	0	3
Iron buckle	0	0	1	0	0	0	0	0	0	0	1
Brass button	0	0	2	0	0	0	0	0	0	1	3
Black glass bead	0	0	2	0	0	1	0	0	0	0	3
Red oblong glass bead	1	0	0	0	0	0	0	0	0	0	1
<u>HORSE</u>											
Curb bit	0	0	4	0	0	0	0	0	0	0	4
Stirrup	0	0	3	0	0	0	0	0	0	0	3
Working bit	0	0	0	0	0	0	0	0	0	1	1

PHASE III (Continued)

	262A-C	240F-G	255A-E, Z-AF	259A-D	226B	205G,M	288C-R	288S-AD	309A	255F-Y	<u>TOTAL</u>
Brass boss	0	0	2	0	0	0	0	0	0	0	2
<u>ARMS</u>											
Lead shot, greater than .50 caliber	0	0	1	0	0	0	0	0	0	0	1
Lead shot, .50-.25 caliber	1	0	0	0	0	0	0	0	0	0	1
<u>MISCELLANEOUS</u>											
Flint	1	0	2	0	0	1	0	1	0	28	33
Quartz/Quartzite	2	0	5	0	0	0	0	3	0	0	10
Fossils	0	0	5	0	0	0	0	3	0	0	8
Bale seal	1	0	0	0	0	0	0	0	0	0	1
Bone comb	0	0	0	0	0	0	0	1	0	0	1
Barrel band	0	0	2	0	0	0	0	0	0	0	2
Unidentified Iron	21	32	79	0	0	0	0	0	0	4	136
Unidentified Copper	0	0	0	0	0	0	0	0	0	1	1
Unidentified Pewter	0	0	4	0	0	0	0	0	0	0	4
<u>PHASE III TOTALS</u>	179	94	2335	119	32	50	12	333	54	399	3607

PHASE IV

	277A-C	345A-C	280A-H	365A-H	231D-E	269A-F	378E-F, K	383A-B	283B-N, Y,Z,AF- AH,AL	TOTAL
<u>CERAMICS</u>										
Morgan Jones	0	0	3	3	2	1	0	0	10	19
Delft	12	14	79	6	28	66	3	19	422	649
North Devon Gravel	2	10	18	2	18	10	10	1	118	189
Rhenish Brown Stone	0	1	6	1	1	12	1	2	56	80
North Devon Sgraffito	0	0	0	0	6	11	0	1	62	80
Northern Holland Slip	0	0	0	0	0	0	1	0	0	1
Colono-Indian	1	0	0	0	0	5	0	0	1	7
Coarseware, green-brown glaze	0	0	0	0	0	0	0	0	1	1
Staffordshire Slip	0	0	19	4	7	14	2	2	86	134
Coarseware, green glaze	0	0	0	0	0	1	0	0	0	1
Majolica	0	0	0	0	0	1	0	0	2	3
Burslem Brown Stone	0	0	1	0	0	1	0	1	19	22
Nottingham Brown Stone	0	1	2	1	0	1	0	2	31	38
Staffordshire Brown Stone	12	1	7	0	2	2	0	3	43	70
Rhenish Blue-Gray Stone	1	1	26	2	1	12	2	4	83	132
Coarseware, red body, black glaze	0	0	6	0	0	6	0	0	14	26
Iberian	0	0	0	0	0	0	0	0	1	1
White Saltglaze, slipped	4	1	20	2	4	1	0	0	65	97
Buckley	0	0	4	1	0	2	0	0	23	30
White Saltglaze, plain	0	0	0	0	1	6	0	0	2	9
New England Slipped	0	0	0	0	0	10	0	0	38	48
William Rogers	0	0	1	0	0	0	0	0	3	4
Coarseware, sandy body	0	0	2	0	0	0	0	0	1	3
<u>GLASS</u>										
Case bottle	4	0	0	0	5	5	0	7	0	21
Wine bottle	20	9	146	35	105	219	27	8	886	1455
Table glass	0	10	21	16	2	52	0	11	238	350
Pharmaceutical	0	0	2	0	2	3	0	0	135	140
Opaque white	0	0	0	0	0	0	0	0	2	2
Snuff bottle	0	0	0	0	0	0	0	0	2	2
<u>KITCHENWARE</u>										
Pewter spoon	0	0	0	0	0	0	0	0	6	6

PHASE IV (Continued)

	277A-C	345A-C	280A-H	365A-H	231D-E	269A-F	378E-F, K	383A-B	283B-N, Y,Z,AF- AH,AL	TOTAL
Pewter porringer handle	0	0	0	0	0	0	0	0	2	2
Pewter mug/jug lid	0	0	0	0	0	0	0	0	1	1
Iron table knife	0	0	2	0	0	5	0	0	11	18
Iron utilitarian knife	0	0	0	0	0	1	0	0	2	3
Silver band for knife	0	0	1	0	0	0	0	0	0	1
Brass knife handle	0	0	0	0	0	0	0	0	4	4
Latten spoon	0	0	0	0	0	0	0	0	1	1
Iron fork	0	0	0	0	0	0	0	0	4	4
Iron pot	4	0	3	0	0	0	0	0	5	12
Iron pan handle	0	0	0	0	1	0	0	0	0	1
Copper strainer	0	0	0	0	0	0	0	0	1	1
Copper watering can	0	0	0	0	0	0	0	0	1	1
Copper wire	0	1	4	0	0	0	0	0	16	21
Whet stone	0	0	0	0	0	0	0	0	3	3
<u>CLAY PIPES</u>										
Local	0	0	1	0	0	0	0	0	3	4
English, 9/64" bore	0	0	0	0	0	1	0	0	0	1
English, 8/64" bore	0	0	0	1	2	3	0	0	11	17
English, 7/64" bore	0	0	4	0	1	18	0	1	31	55
English, 6/64" bore	8	7	40	53	9	37	3	13	298	468
English, 5/64" bore	19	7	90	195	21	60	2	18	927	1339
English, 4/64" bore	0	1	0	1	1	2	0	2	55	62
English, fragments	9	6	34	112	13	43	5	26	1502	1750
<u>FURNITURE</u>										
Hasp loop	0	0	0	0	0	1	0	0	0	1
Hasp	0	0	0	0	0	0	0	0	1	1
Brass tack	0	0	0	0	0	0	0	0	2	2
Brass curtain ring	0	0	0	0	0	0	0	0	3	3
Brass keyhole escutcheon	0	0	0	0	0	0	0	0	1	1
Brass book clasp	0	0	0	0	0	1	0	0	0	1
<u>ARCHITECTURE</u>										
Nails	35	47	238	136	66	419	65	47	2215	3268



PHASE IV (Continued)

	277A-C	345A-C	280A-H	365A-H	231D-E	269A-F	378E-F, K	383A-B	283B-N, Y,Z,AF- AH,AL	TOTAL
Pane glass	12	0	6	11	8	173	5	11	1684	1910
Lead caming	0	0	0	0	0	0	0	0	45	45
Hasp	0	0	0	0	0	0	0	0	1	1
Pintle	0	0	0	0	0	0	0	0	1	1
H/H-L Hinge	0	0	0	0	0	0	0	0	2	2
Strap hinge	0	0	0	0	0	0	0	0	1	1
Stock lock	0	0	0	0	0	1	0	0	4	5
Lock bolt	0	0	0	0	0	0	0	0	1	1
Window/door latch	0	0	0	0	0	0	0	0	1	1
Butterfly hinge	0	0	0	0	0	0	0	0	2	2
Iron key	0	0	0	0	0	0	0	0	2	2
Iron spike	0	0	1	0	0	0	0	0	4	5
Iron staple	0	0	0	0	0	0	0	0	1	1
<u>TOOLS</u>										
Narrow hoe	0	0	0	0	0	0	0	0	1	1
Hoe collar	0	0	0	0	0	0	0	0	1	1
Sickle	1	0	0	0	0	1	0	0	0	2
Axe collar	0	0	0	0	0	0	0	0	1	1
Screw driver (sword)	0	0	0	0	0	0	0	0	1	1
Lathing hammer	0	0	0	0	0	0	0	0	1	1
Claw hammer	0	0	0	0	0	0	0	0	1	1
Folding knife	0	0	0	0	0	0	0	0	2	2
<u>CLOTHING</u>										
Pins	0	0	1	0	0	0	0	0	324	325
Brass scissors	0	0	0	0	0	0	0	0	1	1
Iron scissors	0	0	0	0	0	0	0	0	4	4
Thimble	0	0	0	0	0	0	0	0	1	1
Brass buckle	0	0	0	0	0	0	0	0	6	6
Pewter buckle	0	0	0	0	0	0	0	0	2	2
Brass button	0	0	0	0	0	0	0	1	5	6
Pewter button	0	0	0	0	0	0	0	0	1	1
Brass cuff link	0	0	0	0	0	0	0	0	1	1
Iron needle	0	0	0	0	0	0	0	0	2	2
Chataleine	0	0	0	0	0	0	0	0	1	1
Paste jewels	0	0	0	0	0	0	0	0	3	3
Black glass button	0	0	0	0	0	0	0	0	1	1
Black glass bead	0	0	0	0	0	0	0	0	1	1
Clear glass bead	0	0	0	0	0	0	0	0	1	1
Clear "raspberry" bead	0	0	0	0	0	0	0	0	1	1
Blue oblong glass bead	0	0	0	0	0	0	0	0	1	1

PHASE IV (Continued)

	277A-C	345A-C	280A-H	365A-H	231D-E	269A-F	378E-F, K	383A-B	283B-N, Y,Z,AF- AH,AL	TOTAL
<u>HORSE</u>										
Curb bit	1	0	0	0	0	0	0	0	4	5
Snaffle bit	0	0	0	0	0	0	0	1	3	4
Stirrup	0	0	0	0	0	0	0	0	2	2
Horse shoe	0	0	0	0	0	0	0	0	1	1
Iron spur	0	0	0	0	0	0	1	0	2	3
Brass spur	0	0	0	0	0	1	0	0	0	1
Brass spur buckle	0	0	0	0	0	0	0	0	2	2
Curb hook	0	0	0	0	0	0	0	0	1	1
Brass boss	0	0	0	0	0	0	0	0	3	3
Brass leather decoration	0	0	0	0	1	0	0	0	9	10
Iron buckle	0	0	1	0	1	1	0	0	4	7
<u>ARMS</u>										
Lead shot, greater than .50 caliber	0	0	0	1	0	0	0	0	2	3
Lead shot, .50-.25 caliber	2	0	0	27	1	0	0	0	13	43
Lead shot, less than .25 caliber	0	0	0	224	0	0	0	0	1	225
Gun spall	0	0	0	0	0	0	0	0	1	1
Musket cock	0	0	0	0	0	0	0	0	1	1
Musket trigger guard	0	0	0	0	0	0	0	0	1	1
Pistol barrel	0	0	1	0	0	0	0	0	0	1
Lock spring	0	0	0	0	0	0	0	0	1	1
<u>MISCELLANEOUS</u>										
Flint	0	0	0	1	0	3	0	0	92	96
Quartz/Quartzite	1	0	5	0	0	6	0	1	19	32
Projectile point	0	0	0	0	0	0	1	0	5	6
Fossil	0	0	0	0	0	4	0	0	18	22
Bone comb	0	0	0	0	0	0	0	0	3	3
Bone fan rib	0	0	0	0	0	0	0	0	1	1
Iron wire	0	0	0	6	0	0	0	0	7	13

PHASE IV (Continued)

	277A-C	345A-C	280A-H	365A-H	231D-E	269A-F	378E-F, K	383A-B	283B-N, Y,Z,AF-AH,AL	<u>TOTAL</u>
Iron fish hook	0	0	0	0	0	0	0	0	2	2
Iron chain links	0	0	0	0	0	0	0	0	3	3
Iron barrel band	0	0	4	0	0	2	0	0	10	16
Iron unidentified	6	0	6	8	0	23	8	0	109	160
Spanish silver coin	0	0	0	0	0	0	0	0	1	1
Bale seal	0	0	0	0	0	0	0	0	8	8
Lead discs	0	0	0	0	0	0	0	0	8	8
Lead scrap	0	0	0	1	0	0	0	2	2	5
Brass weight	0	0	0	0	0	0	0	0	1	1
Brass token, IOHN FOXALL	0	0	0	0	0	0	0	0	1	1
Copper unidentified	0	0	0	0	0	1	0	0	10	11
Pewter unidentified	0	0	0	0	0	0	0	0	14	14
<u>PHASE IV TOTALS</u>	154	117	805	850	309	1248	136	184	9928	13731

APPENDIX II

Analysis of the Faunal Remains from Clifts Plantation

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### Acknowledgments

I want to thank Fraser Neiman and the Robert E. Lee Memorial Association, Incorporated, for giving me the opportunity to analyze the faunal remains excavated from the Clifts Plantation site, and Janet Long and Donna Vargo for their much appreciated assistance and enthusiastic interest. Also, I wish to thank the American Indian Archaeological Institute, Washington, Connecticut, for the use of their facilities and the Peabody Museum of Yale University for permitting me the use of their Comparative Collection.

## Introduction

The faunal remains excavated from the Clifts Plantation site were submitted for identification and analysis during the fall of 1977. Using my own comparative collection, supplemented by the amphibian, reptile, bird, mammal, and fish collections of the Peabody Museum of Yale University, bones excavated from the site were identified. The identification of all birds, mammals, reptiles, and fish was completed, except for a small number of rodents and frogs which could not be identified with the comparative collections.

The procedures followed from the initial identifications and recording process on through to the final quantifications all affect the accuracy of the final results and ultimately any interpretive analysis. If the procedures used in the analysis of the faunal remains are flexible and aimed at the specific problems of the site being studied, the results can be far more productive than if a standard procedure is used for all sites. The text that follows will evaluate the procedures followed in the identification and analysis as they have been adapted to the faunal remains excavated from the Clifts Plantation site. Descriptions will include the initial sorting, identification, fragment counts, determination of the minimum number of individuals, minimum weight figures, and ages of animals at the time of their death. It is hoped that these descriptions will demonstrate that, when the methods are adapted to problems specific to the site, the results will be more accurate and provide clearer interpretations. This analysis will explore overall patterns, stressing how the data can contribute towards the study of early Virginia lifeways.

### Procedure

Animal bones are the most frequent subsistence patterns found on archaeological information on the environment and its economic history, and foodways. As with archaeological sites, bones are seldom in good state. They are, rather, the end products involving animals. They have been part of such activities as animal husbandry, consumption, disposal, and differential wear and their imprint on the bones. Besides field and laboratory processing, also affect the bones. Some bones are too fragile and never survive during excavation, and others receive special care when handled in the laboratory.

Thus, faunal data do not provide a complete picture of subsistence patterns and cannot be a true representation of the proportions of the fauna. Because of a highly fragmented nature and requirement for identification before establishment of anything, the data are often incomplete. Identified species found on the site.

The methods used to study archaeology are aimed at minimizing and clarifying these biases. Those biases built into the methods are partially alleviated by a carefully planned procedure. It should not work indiscriminately from site to site, but should record information, and then pack the

treated in this manner, one loses in several important ways. Bags usually do not represent an archaeological unit, but more often the sum total of a days work in the field. All the bones from any one feature or level could be in one, or any number of bags. This fact has an important effect on the entire procedure. Bones which have been broken by excavators, lab workers, or in storage cannot be matched. Unfused long bones and their epiphyses, which fall apart once the cartilage that held them together has decayed, become separated and cannot be matched. But more importantly, the determination of the MNI for each species becomes severely distorted because it is virtually impossible to accurately match proximal, medial, and distal parts of the bone from notes to determine the minimum number of complete bones and then match right and left elements. Notes can give only a rough indication of fragmentation, size and age differences. When the bones are studied in this manner, temporally and culturally significant data can be lost.

With the Clifts Plantation bones an attempt was made to reduce some of the biases inherent in faunal data in a way that would more clearly define socio-cultural and temporal units. From archaeological evidence, culturally and temporally significant units were defined, based on features and significant phases in the occupation of the site. An integral step in archaeological analysis, the definition of phases is also crucial with both the identification and analysis of faunal remains. All the bones from one unit can be combined, fresh breaks mended, and unfused epiphyses returned to the long bone and counted as one. The results will be a more accurate reflection of the bones as they went into the ground, rather than the state they were in when they arrived at the osteological laboratory.



The critical importance of analytical units in faunal identification comes with the determination of the minimum number of individuals. The more accurate determination of MNI requires a visual comparison where all the bones of one species can be compared with one another so that relative size, age, and fragmentation all receive due consideration. It is crucial that these units be defined before this process begins. Any subsequent changes would require either an enormous amount of time and effort or the less than desirable use of notes taken during the identification process.

Four phases of the Clifts Plantation occupation were defined, the first dating from 1670 to 1685, the second from 1685 to 1705, the third from 1705-1720, and the fourth from 1720 to 1730. Bags were sorted according to both phase and provenience. As bone fragments were identified, the provenience and information were recorded. If there was only one bag from a given provenience, all information was recorded for each bone from that bag. But, if there was more than one bag, we combined all the bones from that provenience and treated the entire lot as one bag. For one feature there were well over a dozen bags and benefits became immediately evident. A surprising number of freshly broken bones were glued and unfused epiphyses, which had been separated from their long bones, were matched. A significant amount of time was saved. As bones were sorted into species and bone element, bones did not have to be individually recorded. Instead, the entire group of one bone element could be identified and recorded at once. Both time and energy needed to compare and record each fragment were therefore minimized.

This identification procedure also provided an advantage in the determination of the minimum number of individuals. By laying out the bone from a given phase, it was possible to determine the MNI visually and not have to rely on notes taken during identification. Proximal, medial, and

distal fragments could be much more accurately correlated as could their relative sizes and ages. Also by having matched loose epiphyses with long bones, it was possible to include these in the MNI figures. Strong support for this identification procedure came with the comparison of the percentages of fragments to the percentages of MNI, which were not radically different from one another.

The relative importance of identified animals from the Clifts Plantation was determined by using three analytical methods; first, relative frequencies of identified fragments, second, minimum estimates of individuals, and third, minimum estimates of usable meat. The basis of faunal analysis rests on the simple numerical count of identified fragments from which the relative frequencies of identified species is figured. The bones are the end product of a series of human activities, however, and the survivors of any number of differential preservation factors. Consequently, quantitative data derived from a simple numerical count of identified fragments cannot be a true reflection of the relative importance of different animals. Instead, it presents confused, undifferentiated natural and cultural variables. By only relying on these figures to determine the relative frequency of animals, there is no way to determine how many animals are actually present. One identified species may be represented by a large number of fragments, while another by only a few.

A method used to help resolve the dilemma in the misrepresentation of animals is to determine the minimum number of animals from the identified fragments. All fragments are first identified as to species, bone element, side, size, age if possible, and then compared with each other to determine the number of individuals present in the sample. When used in conjunction

with percents of identified fragments, the comparison of the two figures can be quite useful in determining which species have a relatively small number of fragments for the individuals and those which have a large number of fragments.

The third method used to determine a more accurate assessment of animal use is to assess the minimum number of pounds of usable meat represented by the bones present on the site. Developed by T. White in 1953, the minimum weight represented in the excavated bones is determined by multiplying the pounds of meat obtainable from an averaged sized animal by the minimum number of individuals represented in the refuse. The underlying assumption is that the counts of bones cannot reflect the amount of flesh--therefore percentages of species based on their bones has little to do with their size and edible flesh. If used as a way to compare food remains, the method should have the advantage of balancing the bias which arises as a result of different bone frequencies and body weights.

I will not go into a critique of the various methods. Suffice it to say that each has its problems as well as its merits. Fragment counts rely on similar patterns of fragmentation for different animals and similar preservation factors. Minimum numbers of individuals depend on consistent patterns for different animals, although that has been shown to be a false assumption (Yellen 1974). And finally, the minimum estimate of usable meat depends on the accuracy of the MNI figures, the ability to accurately estimate the sizes of domestic animals which have been subjected to intensive breeding, and the determination of what was considered usable meat. Despite these thorny problems in analytical techniques, they are all that we have. Moreover, if they are used in conjunction with each other, each can supply useful information. Together, they can provide useful information on subsistence.

Another analytical method used to study patterns of animal use is the determination of the ages of animals at the time of their death. By noting the degree of fusion of the epiphysis to the long bone, tooth eruption and the degree of tooth wear in mandibles, it is possible to determine the distribution of relative ages for animals on the site. The use of the epiphyseal fusion of long bones to age animals is based on the premise that there are three growth areas; the shaft and an epiphysis on either end. During the growth of an animal, the shaft of a long bone is separated from the epiphysis to the shaft. The rate at which these epiphyses fuse varies, on either end of the same bone, or among different bones. By noting which epiphyses are fused and which are not in animals of known age, the sequence of bone fusion can be determined. This sequence appears to be consistent for a species, but the exact age at which the epiphyses fuse varies in ways not fully understood. In females and castrated males, the fusion process appears to be delayed. It also varies according to different breeds of the same species, diet, and environmental factors. Thus, many factors interact to vary the ages at which epiphyses fuse. To determine ages of much earlier animals, one must take into account all the variables that influence the maturation process of these animals. To control these factors, one should ideally use fusion rates established from early breeds. This is impossible, unfortunately, for almost all fusion rates have been determined using modern animals.

To get around this dilemma, it was assumed for the Clifts Plantation bones that although the ages at which bones fuse may vary, the sequence of fusion has remained relatively unchanged. Following Chaplin, as he has outlined in The Study of Animal Bones from Archaeological Sites, the fused or unfused condition of the epiphysis of the limb bones were recorded in order to determine the age at death for pig and cow bones. Figures for the age of fusion were drawn from Silver's data, which were derived from

modern stock and an age structure was produced. Age categories based on ages of epiphysis fusion produced a distribution of percentages killed within a given age range. But, because the ages at which epiphyses fuse vary, the age distributions given in months should be taken only in relative terms.

The second method was to note the eruption of teeth and judge the amount of wear on the teeth in pig mandibles. As with long bone epiphyses, the age at which teeth erupt is known for domestic animals. The tooth-eruption and wear criteria used for aging the Clifts Plantation bones were adapted by Henry Miller of the St. Mary's City Commission in St. Mary's City, Maryland. Many of the variables which apply for the development of long bones also apply for dental eruption, so one must use the information as a relative age, not the actual age. In addition, the degree of tooth wear depends on the animal's diet. A gritty, sandy diet will produce more wear than a softer, more even textured diet. The advantage of using tooth eruption data, however, is that they give yet another source of information on ages, especially when there are not enough long bones to work with. They can also provide useful comparisons between the two sets of data.

### Faunal Analysis

A close look at the faunal data reveals the basic continuity of the relative importance of animals during the four phases of occupation of Clifts Plantation. First and most importantly a heavy reliance on domestic animals over wildlife is overwhelmingly evident and secondly a continued reliance on both pork and beef, but with a marked increase on the reliance on beef from the second phase.

Because of the basic similarity in faunal patterns, the analysis of the remains will focus on the continuity within the four phases, but point out change within the continuity. While there are some variations in the occurrence of wildlife during the four phases of occupation, Phase II has almost no wildlife, and not all species are present in all phases, but the same species reoccur frequently in the different phases and with very few single occurrences.

### Fish

In 1705, Robert Beverly wrote, "As for fish, both of fresh and salt-water, of shellfish! and other, no country can boast of more variety, greater plenty, or better in their several kinds." (Wharton 1957:38). He goes on to describe the crab, rock, perches, sheepshead, drums, and gars, as well as many others not identified from the faunal remains at Clifts Plantation. Wharton has used this reference, along with countless others to develop the theme of the bounty of the Chesapeake and the colonist's eager exploitation of that resource from the earliest years of the settlement. This theme finds at least some of its roots in the long standing belief in America's unbounding natural resources and the colonist's intent on exploiting them. For as long as this intent has

been believed to be a fact, references to support this notion have been sought after. They now perpetuate and reinforce the belief. For instance, references such as the following do, indeed, tend to confirm notions of the unending supply:

"In the spring of the year, herrings come up in such abundance into their brooks and fords to spawn that it is impossible to ride through them without treading on them..." (Robert Beverly, 1705 in Wharton 1957:38).

Resources were, no doubt, plentiful, especially when compared to England's resources. Travelers such as Beverly were probably astounded at the differences between their own country and Virginia--differences which were great enough to call forth such statements.

Fish have never been a mainstay in the English diet, a role assumed by beef and pork. In North America, where Englishmen were confronted with a seemingly endless resource, archaeological indications point to the conclusion that fish continued to be an important, but supplementary part of their diet. In the Clifts Plantation, identified fish from all four phases made up not more than 7% of the total amount of usable meat represented by the identified fragments.

The interpretation of the fish remains presents one of the knottiest problems in faunal analysis; that of whether or not the identified fragments are a true reflection of the relative importance of animals. When quantified, fish fragments appear proportionately more important than they really are. The determination of the MNI does not help, either, because the amount of available food from one fish is considerably less than almost any of the domestic mammals. The determination of the minimum meat estimates, however, can help to reveal a more accurate estimate of the relative importance of fish in the diet. The identified bones from

Phase I provides an excellent example. The fragment count shows fish to make up 56% of the total number of identified bones and 45% of the total MNI. The estimates of useable meat, however, show a much reduced 7%.

Another problem currently with no solution is the problem of differential preservation. Fish bones, in particular, tend to be fragile and far less resistant to decay than denser bones. Some zooarchaeologists have even claimed that fish may be as much as 30% under represented in the total sample. There seems no way to measure such negative evidence. Nevertheless, the problem of under representation of fish remains is very real. The one thing that we are sure of is that the histories of English foodways consistently point out the supplementary nature of fish in the diet.

The majority of the fish identified from the faunal remains are ones that are most commonly caught in the spring and summer. Of these, the sheepshead were the most important and appeared in all phases except Phase II, and most abundantly in Phase I. Plentiful and considered good eating, Thomas Glover wrote of them in 1690:

"In the rivers are great plenty and variety of delicate fish. One kind whereof is by the English called a sheepshead from the resemblance the eye of it bears with the eye of a sheep... It is a wholesome and pleasant fish and of easy digestion. A planter does often times take a dozen or fourteen in an hour's time with hook and line."  
(Wharton 1957:31).

Caught when plentiful in the spring and summer, they could be salted down for later use. A pit from Phase I shows that this was probably done at Clifts Plantation. In it was a concentration of spine and cranial fragments, both of which would have been disposed of when the fish was filleted for pickling.

Another fish commonly present on the site but not in the same quantity was the black drum. Thomas Glover also wrote approvingly about the black drum, "This is likewise a good fish, and there is plenty of them." (Wharton



1957:31-32). A shoreline fish that is commonly caught during the spring runs, it is today usually taken with live bait. Undoubtedly drum were used for food. They could also have been used for medicinal purposes, as Thomas Glover states about them, "In the head of this fish there is a jelly, which being taken and dried in the sun, then beaten to powder and given in broth, procures speedy delivery to women in labour." (Wharton 1957:31-32).

Two anadromous fish identified from the faunal remains that are also easiest to catch during the spring and fall migrations are the white perch and striped bass (Rock). Both can be in saltwater, but are also found in fresh and brackish waters, especially estuarine areas. Like the sheepshead and black drum, these are considered excellent for eating.

The two freshwater fish identified from the site are the yellow perch and the gar. The yellow perch prefers waters somewhat different from the other identified fish--it prefers cool, clean water with a sandy or rocky bottom such as a lake. The gar, on the other hand, thrives in brackish waters and frequents quiet warm waters in lakes and larger streams. According to Robert Beverly in 1705, the gars were not eaten, although their remains are commonly found on prehistoric sites, and Henry Miller has identified burned gar remains from several colonial sites in the Chesapeake. Surely, these too could have been eaten.

#### Amphibians/Reptiles

There were relatively few amphibian or reptile bone fragments excavated from the site. Only two carapace fragments from the box turtle (Terrepenne carolina) were identified; one in Phase I and the other in Phase IV. Although the box turtle fragments did not show any specific signs of butchering or cooking, turtles could well have been eaten. Henry Miller has

identified several burned carapace fragments, a sign that gives a somewhat better indication of their having been prepared for food.

There were a number of frog-like bones in Phase IV, but the comparative collections were entirely inadequate to identify them even to their family. They should be compared at some time with a more complete osteological collection.

### Birds

As with the fish, birds were not a substantial part of the diet. In all four phases they made up no more than 1% of the total minimum estimate of useable pounds of meat. Of all the birds identified from the site, chicken was the most common, although the goose was the only bird present in all the phases.

For many of the geese bones, it was impossible to distinguish the domestic, for the comparative collection did not include adequate specimens. Some bones compared closely with the canada goose (Branta canadensis), but they should be compared again when there is an adequate collection. Nevertheless, the canada goose is a favorite game bird, considered to be fine eating by contemporary hunters. These birds are present in the Chesapeake from early October to late March. After the breeding season they gather in large flocks and graze in open fields within commuting distance of water (Reilley 1968:58-59; Robbins, Bruun, and Zim 1966:40). Geese could have easily been obtained in tidewater Virginia.

Ducks are notoriously difficult to identify. There are a large number of species in the family and their bones are distressingly similar. However, one of the fragments was from one of the smallest ducks, possibly the green-winged teal (Anas carolinensis). The others were larger ducks and could be either wild or domestic.

There were a number of bobwhite bone fragments identified from Phase IV. A number of these bones, identified only as cf. bobwhite, were young immature individuals (MNI-2). Also commonly known as quail, these birds are considered a good game bird and are most commonly found in grasslands or pastures. They were probably readily available in 17th and 18th century tidewater Virginia.

The passenger pigeon (Ectopistes migratorius), represented in Phase IV, is well known historically as food. John Watson wrote in 1793 that "Flocks flew daily over Philadelphia and were shot from numerous high houses. The markets were crammed with them..." (Schorger 1955:13). Some thought the older birds to be tough and dry; squabs and fat birds were thought superior. In the spring some adults could be taken when they were fattest, though many were also fed in captivity to make them more tender. So common were they as to be considered a pest by some, the bird was apparently consumed by both rich and poor:

"The pigeon was a boon to the poor. Its importance as food during periods of migration may be gleaned from the fact that Burnaby (L&60, Middle Settlements) found it the only food available at the inns where he stopped and the common people were living almost entirely on its flesh. More wrote from Pennsylvania in 1686 'We have had so great abundance of Pigeons this summer, that we fed all our servants with them.'" (Schorger 1955:129-130).

#### Mammals

The reason for the small number of wild animals is relatively unclear at present. While the evidence is not entirely convincing, it may be suggested that the opossum, squirrel, and raccoon identified from the site were eaten and not killed for their skins. Of those identified, it is interesting to note that all are known to have been eaten and that many animals more often taken for their pelts are conspicuously absent. (For

example, beaver, the river otter, mink, and red fox).

The opossum, squirrel and raccoon are all animals that will live close to man when others will not, taking advantage of subsistence opportunities offered by human manipulation of the environment. On the other hand, while beavers, otters, foxes and minks prefer less developed environments, they can be found in agricultural areas with mixed open field and woodland. Deer, which thrive in such surroundings, are found in all the phases. It therefore seems likely that the absence of fur animals at Clifts is a result of their lack of availability in the area during the late seventeenth and early eighteenth centuries. The fur trade, actively pursued in the area since the second quarter of the seventeenth century, may have been responsible for the scarcity of these animals. On other sites with which I have worked, where fur-animal trapping is known to have taken place, bones from the animals have been present. Hence it is very likely that such animals were not taken by the occupants of Clifts Plantation.

A number of rodent bone fragments were present among the Phase IV bones, but they could not be identified from the collections. However, they are the size of rats and field mice and should be compared with an adequate collection at some time.

In comparing the relative proportions of domestic animals from the four phases at Clifts Plantation, a basic continuity emerges. From the initial occupation through 1730, a reliance on beef and pork with deer as an important supplementary part of their diet is overwhelmingly apparent. Within this continuity, however, there were two important changes. The first is that over time, beef became increasingly important and pork less important. During Phase I, pork made up 31% and beef 42% of the minimum estimates of usable meat, but by Phase IV pig made up only 24% and beef 63%

Agricultural histories indicate that initially pigs were important to the colonists because they were easy to care for, matured rapidly, and were prolific. Cattle, on the other hand, were more difficult to raise and multiplied more slowly (Gray 1958:207-209). Evidence from the faunal remains seems to confirm this, and we see that from 1670 to 1730 cattle became increasingly important in the lives of the colonists.

The second major change came with the introduction of sheep. Sheep were scarce in the early years of settlement; being notoriously difficult to raise in forested, undeveloped areas and easy prey for the wolves. Moreover, many claimed a distaste for mutton, and others claimed it difficult to preserve the meat. As the settlements developed, however, their numbers increased (Gray 1958:207). The faunal remains at Clifts Plantation seem to confirm these statements, for they do not appear until Phase III, and then not in large numbers.

Besides giving an indication of the relative importance of animals, faunal analysis can provide some interesting information on animal husbandry. By determining the ages at which animals are killed, one can get some interesting ideas about how they were cared for and what were their general uses. For example, if animals were raised primarily as a food source, one would not expect them to be kept much longer than needed for them to mature. the age of the bones should reflect this type of husbandry.

The ages at which the animals were killed were figured for the Clifts Plantation bones. But, while the ages at which long bones fuse is known for the sheep, pig, cow, and horse, the distribution of ages was determined for only the pig and cow because of sample size. The determination of the state of fusion requires at least a portion of the epiphysis or, where it is not fused, a portion of the unfused surface. Without either of these two, it is impossible to be certain of the state of fusion. Among the Clifts

Plantation bones, unfortunately, were a relatively large number of long bones with the epiphyses obliterated to the point that it was impossible to determine the fusion. Consequently, the determination of ages could not be figured for the sheep/goats in any of the phases. As well, Phase I had an inadequate number to determine any age distributions and Phase II had enough for only the cow. Phase III and IV had enough for the pig and cow. But, even these figures seem somewhat doubtful. It is hoped, however, that the basic pattern is, generally speaking, correct and that given the excavation of more bones from similar sites, information from them will help to either confirm or refine our findings.

One method that can at least partially circumvent this problem is to determine the age distributions of mandibles. Young, soft bones, where the spongy epiphyseal surfaces are exposed, are more likely to be destroyed than adult bones with the epiphyses intact. Thus, one might suspect the age distributions based on the long bone epiphyses to be somewhat biased. Teeth, on the other hand, preserve better than any other bone. And with a sufficient number of mandibles, it should be possible to see more young animals than with the long bone method.

The only animal we had sufficient data for is the pig, where there were a large number of relatively complete mandibles. In comparing the distributions based on mandibles and long bones, differences are quite evident, but they do not appear to be that significant. In both Phase III and IV, the only consistent pattern is that virtually all the pigs were over one year when they were killed. The occurrence of any young individuals was brought out only in Phase IV, and in that case it was only two mandibles, 10% of the total. But, beyond the absence of young individuals, the agreement between the two sets of data becomes far less apparent.

This comparison provides a very muddled picture with no clear agreement. In Phase III, almost 30% of the mandibles are individuals less than 26 months old, while there are no individuals in that age group from the long bone figures. This may be because of (1) differential preservation problems, (2) inadequate sample size, or (3) lack of understanding of diet and its influence on tooth-wear patterns. Similar problems arise for the pig data in Phase IV; there is an increase in the younger animals in the mandibles. There are a substantial number of animals 42 months or older in the long bones, yet there are none in the mandibles. The reasons for these differences are unclear, but they do provide some provocative questions on the technique and what it tells us.

Despite the discrepancies in the data, the general pattern of a high percentage of older animals seems clear; a pattern that one might expect of animals left to fend for themselves in the woodlands. If there had been a more controlled form of husbandry where the pigs had been retained in pens, one would expect a very different type of age distribution. If penned, they would have had to have been provided food and at the age at which they stopped growing would have been butchered. Many have written on the optimum age as 1 1/2 years of age. This type of husbandry has been demonstrated in one set of faunal remains from an 18th century farm in Rhode Island, where there is ample documentation to show that pigs were not allowed to roam free. In the Mott Farm site, 90% of the long bones were less than 27 months old.

In the case of pigs being allowed to roam free, however, there would be no need to slaughter the animals at such a young age. One might suspect a

more varied distribution of ages at Clifts Plantation. But that expectation rests on the belief that the hunter would shoot any pig that flashed before him. Good hunters don't do this; they can tell the ages of the animal and they can be selective if they want to be. Thus, it should not be surprising to see so few very young animals and so many older animals.

The age distributions were completed for cattle in Phases II, III, and IV. While there is some variation among the three phases, there seems to be more of an agreement than for the pig. In all three phases, consistently there is a small percentage of young animals and a more even distribution within the older age groups. It is difficult to find an explanation for this distribution. If the primary use of the animal was for dairy or draught, or a combination of the two, then one would expect the highest percentage to be older. This has been demonstrated in at least three colonial sites--two in tidewater Virginia and Maryland and one in New England.

But the Clifts Plantation differs from this pattern--enough that another explanation needs to be generated. One may be that cattle husbandry may have varied somewhat and cattle were used for several purposes. If the cattle were primarily used for meat and only incidentally for dairy purposes, one might expect a distribution of ages more like the Clifts Plantation. With the main purpose being for meat, either for plantation consumption or for sale, there would not have been the same incentive to allow cattle to reach advanced age. Alternative explanations seem to have less merit than the one proposed.



## Conclusions

The study of faunal remains can provide useful information on foodways in the early Chesapeake. We have seen in the Clifts faunal assemblage a pattern of continuity-- reliance on domestic animals over wild. However, change did take place, most notably in the decreasing importance of wild species. If horse, cat and dog, all foods of last resort for Englishmen, are excluded from the estimates of usable meat, we find that wild meat represents 14% of the total in Phase I, but only 3% in Phase IV. Fish display a similar change, falling from 8% of the Phase I total to a scant 0.3% in Phase IV. The importance of wild animals at Clifts in the 1670's was not as great as has been indicated for sites along the James River and across the Potomac in Maryland in the 1630's. This reflects increased supplies of livestock and suggests that Westmoreland was less of a frontier 20 years after its initial settlement than either the area around Jamestown 20 years after it was established, or St. Mary's City during its first decade of occupation. Animal husbandry, requiring greater initial investments of labor and capital than hunting, but also offering greater and more reliable yields, increased in importance as the economy matured.

Another significant trend is the increase in the importance of beef through time at the expense of pig. Beef represented 48% of the meat in Phase I and 68% in Phase IV (again excluding horse, cat and dog from the calculations). Pigs are well suited to labor-short frontier situations. In the Chesapeake they were left to fend to themselves in the woods and from all indications thrived. In addition, they are far more prolific than cattle, a real boon to planters just starting out who needed to build up their herds quickly. Probate inventories reveal that capital investment

requisite for the establishment of a large herd of pigs was considerably less than that required by cattle.

We have also found indications of departures from English animal-husbandry and dietary traditions. The most obvious of these is the early Chesapeake practice noted above of letting domestic animals forage for themselves, a practice which lessened labor expenditures for their care, feeding and fencing. The age structure for cattle at Clifts also contrasts with what might be expected in England where cattle were the major food animal, but those slaughtered tended to be older dairy and draft animals. Thus dairy products may have been of less dietary importance to early Chesapeake planters than to their English (or New-English) contemporaries. Certainly the usefulness of draft cattle in the early Chesapeake was limited by the stump-infested fields which resulted from the dominant swidden-agricultural regime. While sheep were important both for their wool and for their meat in England, they were hardly present at Clifts. The tobacco economy made pasture land much scarcer on this side of the Atlantic. The infrastructure for wool processing was nonexistent in early Virginia. Manufacturing and market centers lay on the other side of the Atlantic.

Thus the pattern of foodways at Clifts Plantation reflects both the adaptation of traditional English strategies to the Chesapeake environment and adaptive shifts in newly developed Chesapeake practices to meet changing conditions on this side of the Atlantic.

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## Appendix A

### Butchering

As with the relative proportions of animals at Clifts Plantation for the four phases of occupation, the butchering patterns remained unchanged. For the pig, the cranial bones were all in small pieces except for one right half of a skull from an old adult. This skull was intact and cut along the axis. The mandibles were either butchered through the minus ramus, or were complete except for the ascending ramus. The scapula were generally butchered through the neck, but a number were complete. The long bones, including the humerus, radius, ulna, femur, and tibia were generally butchered through either end of the shaft. Often shafts were butchered on one end, but the other was worn off so that it was impossible to see if it had been butchered. The pelvic bones were butchered on either side of the acetabulum and the cuts went through either the ischium or ilium. The metapodials and phalanges, on the other hand, were mostly complete except for some that were broken. In all cases an axe-like tool was used; no saw marks were observed.

The cattle bone fragments, like the pig, showed similar butchering patterns for all four phases. The cranial bones were in small pieces, the mandible either through the ascending ramus, minus ramus, symphysis, or the mandibular condyle was butchered from the ascending ramus. The scapula was treated in the same manner as the pig, except that often the blade was broken into several pieces. The long bones and pelvic bones, too, were butchered in a manner similar to the pig except that the shaft was more often in small pieces, as if broken for the marrow. The metapodials, unlike the pig, were butchered through the shaft. The phalanges, however, were left intact.

The deer and sheep/goat bones were butchered in much the same manner and they, too, were axed. No saw marks were observed on any of the bone

fragments for the whole site. In summary, the butchering of all the large mammals was consistent, no change seems to have occurred, and any differences were a concession to the size of the cow. Here, the bones--especially the long bones--tended to be butchered into relatively smaller sizes.

Appendix B

## Identified Faunal Remains from Clifts Plantation - All Phases

## I Class: Crustacea

## II Class: Osteichthyes

Family Lepisosteidae: Gar  
Lepisosteus spp.

Family Percichthyidae: Temperate Bass  
Morone saxatilis (Striped Bass)  
Morone americana (White Perch)

Family Percidae: Perch  
cf. Perca flavescens (Yellow Perch)

Family Sparidae: Porgy  
cf. Archosargus probatocephalus (Sheepshead)  
Archosargus probatocephalus

Family Sciaenidae: Drum  
cf. Pogonias cromis (Black Drum)  
Pogonias cromis

## III Class: Reptilia

Family Emydidae: Box and Water Turtles  
Terrepenne carolina (Eastern Box Turtle)

## IV Class: Amphibia

## V Class: Aves

Family Anatidae: Swans, Geese and Ducks  
Goose spp.  
Duck spp.

Family Meleagrididae: Turkeys  
Meleagris gallopavo (Turkey)

Family Phasianidae: Quails, Partridges, Pheasants  
cf. Colinus virginianus (Bobwhite)  
Colinus virginianus  
Gallus gallus (Domestic Chicken)

Family Columbidae: Pigeons and Doves  
Ectopistes migratorius (Passenger Pigeon)

Family Corvidae: Jays, Magpies and Crows  
Corvidae

## Identified Faunal Remains from Clifts Plantation - All Phases

## V Class: Aves (cont'd.)

Family Icteridae: Blackbirds and Orioles  
Quiscalus quiscula (Common Grackle)

## VI Class: Mammalia

Family Didelphiidae  
Didelphis marsupialis (Opposum)

Order Rodentia: Rodents

Family Sciuridae: Squirrels  
Sciurus carolinensis (Eastern Gray Squirrel)  
cf. Sciurus niger (Eastern Fox Squirrel)

Order Carnivora: Carnivores

Family Canidae: Dogs, Wolves and Foxes  
Canis familiaris (Dog)

Family Procyonidae: Raccoons  
Procyon lotor (Raccoon)

Family Felidae: Cats  
Felis domesticus (Domestic Cat)

Family Equidae: Horses  
Equus spp. (Horse, Ass)

Order Artiodactyla

Family Suidae: Swine  
cf. Sus scrofa (Domestic Pig)  
Sus scrofa

Family Cervidae: Deer  
cf. Odocoileus virginianus (White-tailed Deer)  
Odocoileus virginianus

Family Bovidae: Cattle, Sheep, Goats  
cf. Bos taurus (Domestic Cow)  
Bos taurus  
cf. Ovis aries (Domestic Sheep)  
Ovis aries



# Appendix C

## RELATIVE FREQUENCIES OF IDENTIFIED FAUNAL REMAINS - CLIFTS PLANTATION

PHASE I							
	Number Fragments	%	MNI	%	Useable Pounds Meat/Individual	Total Use- able Meat	%
<u>Crustaceans</u>							
Crab	3	.7	1	3	.2	.2	.009
	<u>3</u>	<u>.7%</u>	<u>1</u>	<u>3%</u>		<u>.2</u>	<u>.009%</u>
<u>Fish</u>							
White Perch	1	.2	1	3	1.0	1.0	.05
cf. Sheephead	1	.2	-	-	-	-	-
Sheephead	229	53.9	13	39	9.6	124.8	6.1
Black Drum	6	1.4	1	3	9.6	9.6	.5
	<u>237</u>	<u>55.7</u>	<u>15</u>	<u>45</u>		<u>135.4</u>	<u>6.65%</u>
<u>Amphibians/Reptiles</u>							
Eastern Box Turtle	1	.2	1	3	.4	.4	.02
	<u>1</u>	<u>.2</u>	<u>1</u>	<u>3%</u>		<u>.4</u>	<u>.02%</u>
<u>Birds</u>							
Goose spp.	1	.2	1	3	6.4	6.4	.3
Turkey	1	.2	1	3	9.6	9.6	.5
cf. Chicken	1	.2	-	-	-	-	-
Chicken	5	1.2	2	6	2.24	4.48	.2
Common Grackle	1	.2	1	3	.64	.64	.03
	<u>9</u>	<u>2.0</u>	<u>5</u>	<u>15%</u>		<u>21.12</u>	<u>1.03%</u>
<u>Mammals</u>							
Raccoon	1	.2	1	3	14	14	.7
Horse	1	.2	1	3	400	400	19.5
Artiodactyla	1	.2	-	-	-	-	-
cf. Pig	1	.2	-	-	-	-	-
Pig	124	29.1	6	18	100	600	29.3
cf. Deer	1	.2	-	-	-	-	-
Deer	3	.7	1	3	75	75	3.7
Cow	43	10	2	6	400	800	39.1
	<u>175</u>	<u>40.8%</u>	<u>11</u>	<u>33%</u>		<u>1,889</u>	<u>92.3%</u>

RELATIVE FREQUENCIES OF IDENTIFIED FAUNAL REMAINS - CLIFT'S PLANTATION

PHASE I

	<u>Number Fragments</u>	<u>%</u>	<u>MNI</u>	<u>%</u>	<u>Useable Pounds Meat/Individual</u>	<u>Total Use- able Meat</u>	<u>%</u>
GRAND TOTALS	425	99.4%	33	99%		2,046.12	100

		<u>% Total</u>
Total Fragments Identified	425	9%
Total Fragments Unidentified	4,361	91%
	<u>4,786</u>	<u>100%</u>

# RELATIVE FREQUENCIES OF IDENTIFIED FAUNAL REMAINS - CLIFT'S PLANTATION

## PHASE II

	<u>Number Fragments</u>	<u>%</u>	<u>MNI</u>	<u>%</u>	<u>Useable Pounds Meat/Individual</u>	<u>Total Use- able Meat</u>	<u>%</u>
<u>Crustaceans</u>	-	-	-	-	-	-	-
<u>Fish</u>	-	-	-	-	-	-	-
<u>Amphibians/Reptiles</u>	-	-	-	-	-	-	-
<u>Birds</u>							
Goose spp.	1	.5	1	8.3	6.4	6.4	.4
Turkey	1	.5	1	8.3	9.6	9.6	.5
	<u>2</u>	<u>1.0%</u>	<u>2</u>	<u>16.6%</u>		<u>16.0</u>	<u>.9%</u>
<u>Mammals</u>							
Dog	5	2.5	1	8.3	25	25	1.4
Deer	7	3.5	2	16.7	75	150	8.4
Pig	76	38.0	4	33.3	100	400	22.3
cf. Cow	3	1.5	-	-	-	-	-
Cow	107	53.5	3	25	400	1,200	67
	<u>198</u>	<u>99</u>	<u>10</u>	<u>83.3</u>		<u>1,775</u>	<u>99.1%</u>
GRAND TOTAL	200	100%	12	99.9%		1,791	100%

### Total Fragments

### % Total

Identified  
Unidentified

200  
2,473  
2,673

7.5  
92.5  
100%

RELATIVE FREQUENCIES OF IDENTIFIED FAUNAL REMAINS - CLIFT'S PLANTATION

PHASE III							
	<u>Number Fragments</u>	<u>%</u>	<u>MNI</u>	<u>%</u>	<u>Useable Pounds Meat/Individual</u>	<u>Total Use- able Meat</u>	<u>%</u>
<u>Crustaceans</u>	-	-	-	-	-	-	-
<u>Fish</u>							
Gar	11	1.8	1	2.7	1.6	1.6	.03
cf. Sheephead	1	.2	1	2.7	9.6	9.6	.2
cf. Black Drum	1	.2	-	-	-	-	-
Black Drum	1	.2	1	2.7	9.6	9.6	.2
	14	2.4%	3	8.1%		20.8	.43%
<u>Amphibians/Reptiles</u>	-	-	-	-	-	-	-
<u>Birds</u>							
Goose spp.	2	.3	1	2.7	6.4	6.4	.14
Chicken	11	1.8	3	8.4	2.24	6.72	.14
	13	2.1	4	11.1%		13.12	.28%
<u>Mammals</u>							
Carnivora	1	.2	-	-	-	-	-
Raccoon	1	.2	1	2.7	14	14	.3
Cat	24	4.0	2	5.5	6.3	12.6	.26
cf. Horse	2	.4	-	-	-	-	-
Horse	3	.5	2	5.5	400	800	17
Artiodactyla	16	2.7	-	-	-	-	-
cf. Pig	4	.7	-	-	-	-	-
Pig	225	37.5	10	27.8	100	1,000	21.3
cf. Deer	9	1.5	-	-	-	-	-
Deer	54	9.0	4	11.1	75	300	6.4
cf. Cow	5	.8	-	-	-	-	-
Cow	211	35.2	6	16.7	400	2,400	51
Sheep/Goat	16	2.6	4	11.1	35	140	2.9
cf. Sheep	1	.2	-	-	-	-	-
	572	95.7%	29	80.4		4,666.6	99.2%
GRAND TOTAL	599	100.2%	36	99.6%		4,700.52	99.9%

<u>Total Fragments</u>		<u>% Total</u>
Identified	599	11
Unidentified	4,906	89
	5,505	100%

RELATIVE FREQUENCIES OF IDENTIFIED FAUNAL REMAINS - CLIFTS PLANTATION

PHASE IV

	Number Fragments	%	MNI	%	Useable Pounds Meat/Individual	Total Use- able Meat	%
<u>Crustaceans- Crab</u>	34	2.2	7	8.3	.2	1.4	.01
	34	2.2%	7	8.3%		1.4	.01%
<u>Fish</u>							
Percichthyidae	6	.4	-	-	-	-	-
Striped Bass	2	.13	1	1.2	1.0	1.0	.01
White Perch	13	.8	2	2.4	1.0	2.0	.02
cf. Yellow Perch	1	.06	1	1.2	.24	.24	.002
Sheepshead	13	.8	2	2.4	9.6	19.2	.2
Sciaenidae	1	.06	1	1.2	9.6	9.6	.1
	36	2.25%	7	8.4%		33.44	.33%
<u>Amphibians/Reptiles</u>							
Box Turtle	1	.06	1	1.2	.4	.4	.004
Amphibia/Reptilia	10	.6	-	-	-	-	-
	11	.66%	1	1.2%		.4	.004%
<u>Birds</u>							
Goose spp.	2	.13	2	2.4	6.4	12.8	.13
Duck spp.	6	.4	2	2.4	2.0	4.0	.04
Turkey	8	.5	3	3.6	9.6	28.8	.3
cf. Bobwhite	10	.6	-	-	-	-	-
Bobwhite	5	.3	5	5.9	.8	4.0	.04
cf. Chicken	1	.06	-	-	-	-	-
Chicken	24	1.5	3	3.6	2.24	6.72	.07
Passenger Pigeon	1	.06	1	1.2	.8	.8	.008
cf. Corvidae	1	.06	1	1.2	.8	.8	.008
	58	3.6%	17	20.3%		57.92	.6%
<u>Mammals</u>							
Opossum	2	.13	1	1.2	7	7.0	.07
Rodentia	63	.4	-	-	-	-	-
Gray Squirrel	7	.4	2	2.4	.7	1.4	.01
cf. Fox Squirrel	1	.06	1	1.2	1.0	1.0	.01
Raccoon	3	.2	2	2.4	14	28	.3
cf. Horse	1	.06	-	-	-	-	-
Horse	6	.4	2	2.4	400	800	8.4
Artiodactyla	23	1.5	-	-	-	-	-
cf. Pig	7	.4	-	-	-	-	-
Pig	549	35.4	23	27.4	100	2,300	24.1

RELATIVE FREQUENCIES OF IDENTIFIED FAUNAL REMAINS - CLIFTS PLANTATION

PHASE IV (cont'd.)

	<u>Number Fragments</u>	<u>%</u>	<u>MNI</u>	<u>%</u>	<u>Useable Pounds Meat/Individual</u>	<u>Total Use- able Meat</u>	<u>%</u>
<u>Mammals (cont'd.)</u>							
cf. Deer	4	.2	-	-	-	-	-
Deer	44	2.8	3	3.6	75	225	2.4
cf. Cow	4	.2	-	-	-	-	-
Cow	679	43.7	15	17.8	400	6,000	62.8
cf. Sheep/Goat	1	.06	-	-	-	-	-
Sheep/Goat	17	1.1	3	3.6	35	105	1.1
cf. Sheep	2	.13	-	-	-	-	-
Sheep	1	.06	-	-	-	-	-
	<u>1,413</u>	<u>90.8%</u>	<u>52</u>	<u>62%</u>		<u>9,453.4</u>	<u>99.2%</u>
GRAND TOTAL	1,552	99.5%	84	100.2%		9,545.51	100.1%

<u>Total Fragments</u>	<u>% Total</u>
Identified	1,552
Unidentified	<u>10,233</u>
	11,785
	100%

Appendix D

## AGE GROUPS - PHASE II

Bos taurusAge of Fusion - 7 to 18 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Scapula	4	0
Humerus - distal	3	1
Radius - proximal	4	0
First and Second Phalange - proximal	<u>15</u>	<u>0</u>
	26	1
Percent of Age Range	96.3%	3.7%

Age of Fusion - 24 to 42 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Metacarpal - distal	1	0
Tibia - distal	4	1
Calcaneum	<u>0</u>	<u>2</u>
	5	3
Percent of Age Range	62.5%	37.5%

Age of Fusion - 42 to 48 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Femur - proximal and distal	1	3
Tibia - proximal	<u>1</u>	<u>0</u>
	2	3
Percent of Age Range	40%	60%

Source of Fusion Ages: Silver 1969:285-286: Chaplin 1970:128-133

## AGE GROUPS - PHASE III

Bos taurusAge of Fusion - 7 to 18 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Scapula	1	0
Humerus - distal	6	0
Radius - proximal	2	0
First Phalange - proximal	13	0
Second Phalange - proximal	16	0
	38	0
Percent of Age Range	100%	0%

Age of Fusion - 24 to 42 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Metacarpal - distal	1	0
Tibia - distal	5	1
Metatarsal - distal	1	0
Calcaneus	1	2
	8	3
Percent of Age Range	72.7%	27.3%

Age of Fusion - 42 to 48 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Radius - distal	1	1
Ulna - proximal and distal	1	0
Femur - distal	0	2
Tibia - proximal	2	2
	4	5
Percent of Age Range	44.4%	55.6%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.



## AGE GROUPS - PHASE IV

Bos taurusAge of Fusion - 7 to 18 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Scapula	8	0
Humerus - distal	4	1
Radius - proximal	4	0
First Phalange - proximal	92	8
	108	9
Percent of Age Range	92.3%	7.7%

Age of Fusion - 24 to 42 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Metacarpal - distal	15	6
Tibia - distal	9	7
Metatarsal - distal	14	15
Calcaneus	1	19
	39	47
Percent of Age Range	45.3%	54.7%

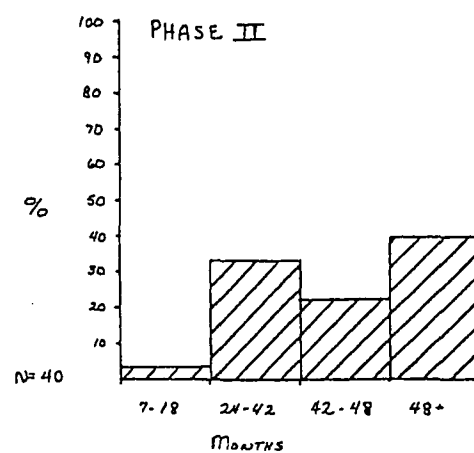
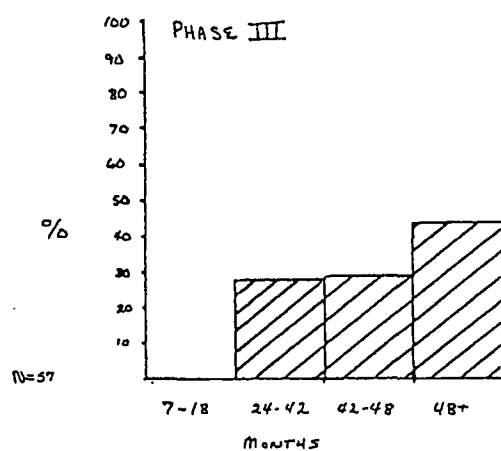
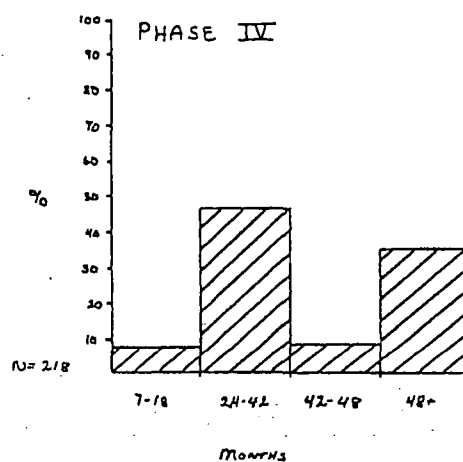
Age of Fusion - 42 to 48 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Radius - distal	4	3
Ulna - proximal and distal	1	2
Femur - proximal and distal	2	5
Tibia - proximal	0	2
	7	12
Percent of Age Range	36.8%	63.2%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

Bos Taurus

Percentage Killed in Given Age Range



## AGE GROUPS - PHASE III

Sus scrofaAge of Fusion - 0 to 12 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Radius - proximal	7	0
Humerus - distal	1	0
Second Phalange - proximal	3	0
Scapula	6	0
	<u>17</u>	<u>0</u>
Percent of Age Range	100%	0%

Age of Fusion - 12 to 30 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Metacarpal - distal	1	0
First Phalange - proximal	3	0
Tibia - distal	3	0
Metatarsal - distal	2	0
Metapodial - distal	1	0
	<u>10</u>	<u>0</u>
Percent of Age Range	100%	0%

Age of Fusion - 36 to 42 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Ulna - proximal and distal	0	1
Humerus - proximal	0	1
Tibia - proximal	1	1
	<u>1</u>	<u>3</u>
Percent of Age Range	25%	75%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970:128-133.

## AGE GROUPS - PHASE IV

Sus scrofaAge of Fusion 0 to 12 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Radius - proximal	3	0
Humerus - distal	2	0
Second Phalange - proximal	9	0
Scapula	4	0
	<u>18</u>	<u>0</u>
Percent of Age Range	100%	0%

Age of Fusion 12 to 30 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Metacarpal - distal	3	4
First Phalange - proximal	6	0
Tibia - distal	6	1
Metatarsal - distal	2	2
Calcaneus	0	2
Fibula - distal	0	1
Metapodial - distal	5	0
	<u>22</u>	<u>10</u>
Percent of Age Range	68.75%	31.25%

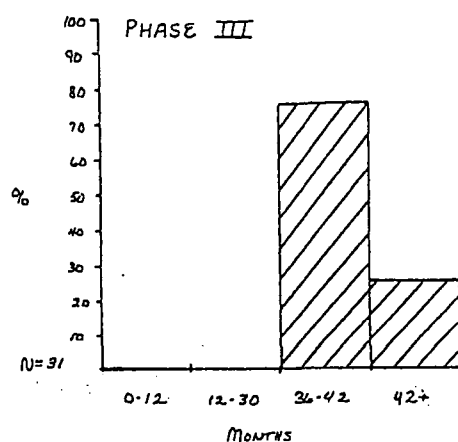
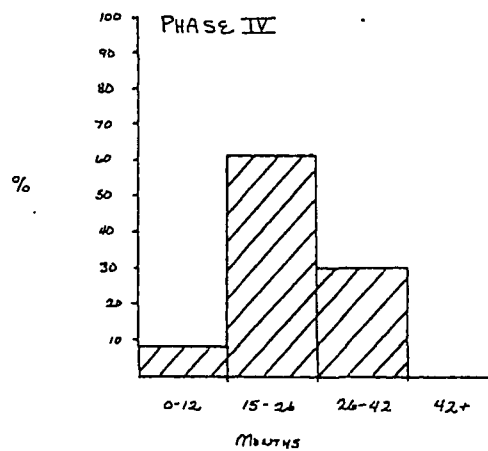
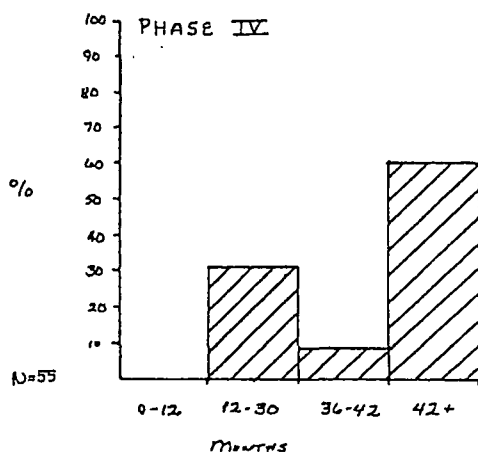
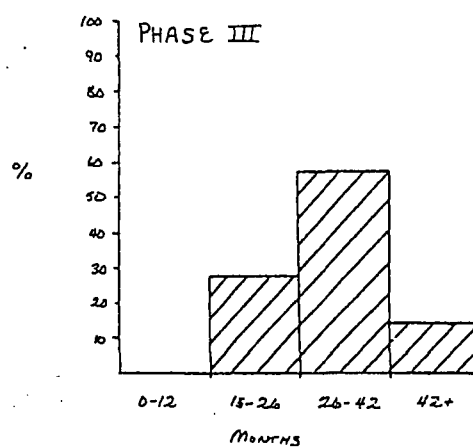
Age of Fusion 36 to 42 Months

<u>Bone and Epiphysis</u>	<u>Fused</u>	<u>Not Fused</u>
Ulna - proximal and distal	1	0
Humerus - proximal	1	0
Radius - distal	0	2
Femur - proximal and distal	<u>1</u>	<u>0</u>
	3	2
Percent of Age Range	60%	40%

Source of Fusion Ages: Silver 1969:285-286; Chaplin 1970: 128-133.

Sus Scrofa

Percentage Killed in Given Age Range

LONG BONESMANDIBLES

# Appendix E

## RELATIVE IMPORTANCE OF MAMMALS

### Cliffs Plantation

PHASE III							
	Number of Fragments	%	Minimum No. of Individuals	%	Useable Meat/ Individual	Total Useable Meat	% Total
Raccoon	1	.2	1	3.4	14	14	.3
Cat	24	4.3	2	6.9	6.3	12.6	.3
Horse	5	.9	2	6.9	400	800	17.1
Pig	229	41.3	10	34.5	100	1,000	21.4
Deer	63	11.3	4	13.8	75	300	6.4
Cow	216	38.9	6	20.7	400	2,400	51.4
Sheep/Goat	17	3	4	13.8	35	140	3
	555	99.9	29	100%		4,666.6	99.9
PHASE IV							
Opossum	2	.15	1	1.9	7	7.0	.07
Gray Squirrel	7	.5	2	3.8	.7	1.4	.01
Fox Squirrel	1	.07	1	1.9	1.0	1.0	.01
Raccoon	3	.2	2	3.8	14	14	.15
Horse	7	.5	2	3.8	400	800	8.5
Pig	556	41.9	23	44.2	100	2,300	24.3
Deer	48	3.6	3	5.8	75	225	2.4
Cow	683	51.4	15	28.8	400	6,000	63.5
Sheep/Goat	21	1.6	3	5.8	35	105	1.1
	1,328	99.92	52	99.8		9,453.4	100.04%

# RELATIVE IMPORTANCE OF MAMMALS

## Cliffs Plantation

PHASE I							
	Number of Fragments	%	Minimum No. of Individuals	%	Useable Meat/ Individual	Total Useable Meat	% Total
Raccoon	1	.6	1	9	14	14	.7
Horse	1	.6	1	9	400	400	21.2
Pig	125	71.8	6	54.5	100	600	31.7
Deer	4	2.3	1	9	75	75	3.9
Cow	43	24.7	2	18	400	800	42.3
	174	100.0	11	99.5		1,889	99.8%
PHASE II							
Dog	5	.5	1	10	25	25	1.4
Deer	7	3.5	2	20	75	150	8.4
Pig	76	38.4	4	40	100	400	22.5
Cow	110	55.5	3	30	400	1,200	67.6
	198	97.9	10	100		1,775	99.9

# PHASE III

	262A-C	240F-G	255A-E, Z-AF	259-A-D	226B	205G,M	288C-R	288S-AD	309A	255F-Y	TOTAL
<u>CERAMICS</u>											
Morgan Jones	1	2	13	0	0	1	0	2	0	2	21
Delft	1	13	53	4	1	2	0	6	2	15	97
North Devon Gravel	2	6	57	1	0	3	0	4	0	4	77
Rhenish Brown Stone	1	0	4	0	0	0	1	3	1	0	10
North Devon Sgraffito	2	1	15	0	1	5	0	0	0	2	26
Northern Holland Slip	0	0	0	0	0	0	0	0	1	0	1
Colono-Indian	2	0	0	1	0	0	0	0	0	0	3
Staffordshire Slip	0	2	9	0	2	0	0	4	0	1	18
Coarseware, green glaze	1	0	0	0	0	0	0	0	0	0	1
Majolica	0	0	0	0	0	0	0	1	0	0	1
Coarseware, mottled glaze	0	0	0	0	0	0	0	1	0	0	1
North Italian Red Marbelized	1	0	0	0	0	0	0	0	0	0	1
Burslem Brown Stone	4	0	1	1	0	0	0	1	0	1	8
Nottingham Brown Stone	0	0	7	0	2	0	0	2	0	0	11
Staffordshire Brown Stone	0	0	1	0	2	0	0	2	0	0	5
Rhenish Blue-Gray Stone	0	0	3	1	0	0	0	2	0	0	6
Coarseware, red body, black glaze	0	0	3	1	0	0	0	1	1	0	6
Iberian	0	0	0	0	0	0	0	1	0	0	1
<u>GLASS</u>											
Case bottle	1	0	2	1	0	1	0	1	0	1	7
Wine bottle	14	7	79	0	3	10	1	20	22	13	169
Table glass	13	2	104	1	0	1	1	4	0	3	129
Pharmaceutical	1	0	3	0	0	0	0	0	0	0	4
Opaque white	0	0	9	0	0	0	0	0	0	0	9
<u>KITCHENWARE</u>											
Pewter spoon	0	0	4	0	0	0	0	3	0	1	8
Iron table knife	0	0	0	0	0	0	0	1	0	0	1
Latten spoon	0	0	1	0	0	0	0	0	0	0	1
Iron flask	0	0	0	0	1	0	0	0	0	0	1
Copper pot	0	0	0	0	0	0	0	1	0	0	1
Copper wire	0	0	0	0	0	0	0	1	0	0	1
Iron fireplace tool	0	0	1	0	0	0	0	0	0	0	1
Wheel stone	0	0	0	0	0	0	0	0	0	1	1



PHASE III (Continued)

	262A-C	240F-G	255A-E, Z-AF	259A-D	226B	205G,M	288C-R	288S-AD	309A	255F-Y	<u>TOTAL</u>
<u>CLAY PIPES</u>											
Local	0	0	1	0	0	0	0	0	0	11	12
English, 8/64" bore	2	0	4	0	0	0	0	3	0	1	10
English, 7/64" bore	6	0	5	3	2	0	0	13	1	3	33
English, 6/64" bore	10	2	114	2	3	0	0	25	2	34	192
English, 5/64" bore	13	6	552	10	6	3	0	22	0	38	650
English, 4/64" bore	0	0	2	0	1	0	0	0	0	1	4
	11	3	810	35	6	2	2	72	5	98	1044
<u>FURNITURE</u>											
Brass curtain ring	0	0	1	0	0	0	0	0	0	0	1
<u>ARCHITECTURE</u>											
Nails	58	16	302	58	0	20	7	128	19	128	736
Pane glass	7	2	35	0	0	0	0	0	0	0	44
Lead caming	0	0	5	0	1	0	0	1	0	0	7
H/H-L Hinge	0	0	1	0	0	0	0	0	0	0	1
Stock lock	1	0	0	0	0	0	0	0	0	0	1
<u>TOOLS</u>											
Hoe collar	0	0	3	0	0	0	0	0	0	0	3
Sickle	0	0	1	0	0	0	0	0	0	1	2
Cross-cut saw	0	0	1	0	0	0	0	0	0	0	1
<u>CLOTHING</u>											
Pins	0	0	15	0	0	0	0	0	0	4	19
Iron scissors	0	0	0	0	0	0	0	0	0	1	1
Brass buckle	0	0	2	0	1	0	0	0	0	0	3
Iron buckle	0	0	1	0	0	0	0	0	0	0	1
Brass button	0	0	2	0	0	0	0	0	0	1	3
Black glass bead	0	0	2	0	0	1	0	0	0	0	3
Red oblong glass bead	1	0	0	0	0	0	0	0	0	0	1
<u>HORSE</u>											
Curb bit	0	0	4	0	0	0	0	0	0	0	4
Stirrup	0	0	3	0	0	0	0	0	0	0	3
Working bit	0	0	0	0	0	0	0	0	0	1	1

PHASE III (Continued)

	262A-C	240F-G	255A-E, Z-AF	259A-D	226B	205G,M	288C-R	288S-AD	309A	255F-Y	<u>TOTAL</u>
Brass boss	0	0	2	0	0	0	0	0	0	0	2
<u>ARMS</u>											
Lead shot, greater than .50 caliber	0	0	1	0	0	0	0	0	0	0	1
Lead shot, .50-.25 caliber	1	0	0	0	0	0	0	0	0	0	1
<u>MISCELLANEOUS</u>											
Flint	1	0	2	0	0	1	0	1	0	28	33
Quartz/Quartzite	2	0	5	0	0	0	0	3	0	0	10
Fossils	0	0	5	0	0	0	0	3	0	0	8
Bale seal	1	0	0	0	0	0	0	0	0	0	1
Bone comb	0	0	0	0	0	0	0	1	0	0	1
Barrel band	0	0	2	0	0	0	0	0	0	0	2
Unidentified Iron	21	32	79	0	0	0	0	0	0	4	136
Unidentified Copper	0	0	0	0	0	0	0	0	0	1	1
Unidentified Pewter	0	0	4	0	0	0	0	0	0	0	4
<u>PHASE III TOTALS</u>	179	94	2335	119	32	50	12	333	54	399	3607

PHASE IV

	277A-C	345A-C	280A-H	365A-H	231D-E	269A-F	378E-F, K	383A-B	283B-N, Y,Z,AF- AH,AL	<u>TOTAL</u>
<u>CERAMICS</u>										
Morgan Jones	0	0	3	3	2	1	0	0	10	19
Delft	12	14	79	6	28	66	3	19	422	649
North Devon Gravel	2	10	18	2	18	10	10	1	118	189
Rhenish Brown Stone	0	1	6	1	1	12	1	2	56	80
North Devon Sgraffito	0	0	0	0	6	11	0	1	62	80
Northern Holland Slip	0	0	0	0	0	0	1	0	0	1
Colono-Indian	1	0	0	0	0	5	0	0	1	7
Coarseware, green-brown glaze	0	0	0	0	0	0	0	0	1	1
Staffordshire Slip	0	0	19	4	7	14	2	2	86	134
Coarseware, green glaze	0	0	0	0	0	1	0	0	0	1
Majolica	0	0	0	0	0	1	0	0	2	3
Burslem Brown Stone	0	0	1	0	0	1	0	1	19	22
Nottingham Brown Stone	0	1	2	1	0	1	0	2	31	38
Staffordshire Brown Stone	12	1	7	0	2	2	0	3	43	70
Rhenish Blue-Gray Stone	1	1	26	2	1	12	2	4	83	132
Coarseware, red body, black glaze	0	0	6	0	0	6	0	0	14	26
Iberian	0	0	0	0	0	0	0	0	1	1
White Saltglaze, slipped	4	1	20	2	4	1	0	0	65	97
Buckley	0	0	4	1	0	2	0	0	23	30
White Saltglaze, plain	0	0	0	0	1	6	0	0	2	9
New England Slipped	0	0	0	0	0	10	0	0	38	48
William Rogers	0	0	1	0	0	0	0	0	3	4
Coarseware, sandy body	0	0	2	0	0	0	0	0	1	3
<u>GLASS</u>										
Case bottle	4	0	0	0	5	5	0	7	0	21
Wine bottle	20	9	146	35	105	219	27	8	886	1455
Table glass	0	10	21	16	2	52	0	11	238	350
Pharmaceutical	0	0	2	0	2	3	0	0	135	140
Opaque white	0	0	0	0	0	0	0	0	2	2
Snuff bottle	0	0	0	0	0	0	0	0	2	2
<u>KITCHENWARE</u>										
Pewter spoon	0	0	0	0	0	0	0	0	6	6

PHASE IV (Continued)

277A-C 345A-C 280A-H 365A-H 231D-E 269A-F 37E

Pewter porringer handle	0	0	0	0	0	0
Pewter mug/jug lid	0	0	0	0	0	0
Iron table knife	0	0	2	0	0	5
Iron utilitarian knife	0	0	0	0	0	1
Silver band for knife	0	0	1	0	0	0
Brass knife handle	0	0	0	0	0	0
Latten spoon	0	0	0	0	0	0
Iron fork	0	0	0	0	0	0
Iron pot	4	0	3	0	0	0
Iron pan handle	0	0	0	0	1	0
Copper strainer	0	0	0	0	0	0
Copper watering can	0	0	0	0	0	0
Copper wire	0	1	4	0	0	0
Whet stone	0	0	0	0	0	0

CLAY PIPES

Local	0	0	1	0	0	0
English, 9/64" bore	0	0	0	0	0	1
English, 8/64" bore	0	0	0	1	2	3
English, 7/64" bore	0	0	4	0	1	18
English, 6/64" bore	8	7	40	53	9	37
English, 5/64" bore	19	7	90	195	21	60
English, 4/64" bore	0	1	0	1	1	2
English, fragments	9	6	34	112	13	43

FURNITURE

Hasp loop	0	0	0	0	0	1
Hasp	0	0	0	0	0	0
Brass tack	0	0	0	0	0	0
Brass curtain ring	0	0	0	0	0	0
Brass keyhole escutcheon	0	0	0	0	0	0
Brass book clasp	0	0	0	0	0	1

ARCHITECTURE

Nails	35	47	238	136	66	419
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PHASE IV (Continued)

277A-C 345A-C 280A-H 365A-H 231D-E 269A-F 371

Pane glass	12	0	6	11	8	173
Lead coming	0	0	0	0	0	0
Hasp	0	0	0	0	0	0
Pintle	0	0	0	0	0	0
H/H-L Hinge	0	0	0	0	0	0
Strap hinge	0	0	0	0	0	0
Stock lock	0	0	0	0	0	1
Lock bolt	0	0	0	0	0	0
Window/door latch	0	0	0	0	0	0
Butterfly hinge	0	0	0	0	0	0
Iron key	0	0	0	0	0	0
Iron spike	0	0	1	0	0	0
Iron staple	0	0	0	0	0	0
<u>TOOLS</u>						
Narrow hoe	0	0	0	0	0	0
Hoe collar	0	0	0	0	0	0
Sickle	1	0	0	0	0	1
Axe collar	0	0	0	0	0	0
Screw driver (sword)	0	0	0	0	0	0
Lathing hammer	0	0	0	0	0	0
Claw hammer	0	0	0	0	0	0
Folding knife	0	0	0	0	0	0
<u>CLOTHING</u>						
Pins	0	0	1	0	0	0
Brass scissors	0	0	0	0	0	0
Iron scissors	0	0	0	0	0	0
Thimble	0	0	0	0	0	0
Brass buckle	0	0	0	0	0	0
Pewter buckle	0	0	0	0	0	0
Brass button	0	0	0	0	0	0
Pewter button	0	0	0	0	0	0
Brass cuff link	0	0	0	0	0	0
Iron needle	0	0	0	0	0	0
Chatalaine	0	0	0	0	0	0
Paste jewels	0	0	0	0	0	0
Black glass button	0	0	0	0	0	0
Black glass bead	0	0	0	0	0	0
Clear glass bead	0	0	0	0	0	0
Clear "raspberry" bead	0	0	0	0	0	0
Blue oblong glass bead	0	0	0	0	0	0

PHASE IV (Continued)

277A-C 345A-C 280A-H 365A-H 231D-E 269A-F 371

HORSE

Curb bit	1	0	0	0	0	0
Snaffle bit	0	0	0	0	0	0
Stirrup	0	0	0	0	0	0
Horse shoe	0	0	0	0	0	0
Iron spur	0	0	0	0	0	0
Brass spur	0	0	0	0	0	1
Brass spur buckle	0	0	0	0	0	0
Curb hook	0	0	0	0	0	0
Brass boss	0	0	0	0	0	0
Brass leather decoration	0	0	0	0	1	0
Iron buckle	0	0	1	0	1	1

ARMS

Lead shot, greater than .50 caliber	0	0	0	1	0	0
Lead shot, .50-.25 caliber	2	0	0	27	1	0
Lead shot, less than .25 caliber	0	0	0	224	0	0
Gun spall	0	0	0	0	0	0
Musket cock	0	0	0	0	0	0
Musket trigger guard	0	0	0	0	0	0
Pistol barrel	0	0	1	0	0	0
Lock spring	0	0	0	0	0	0

MISCELLANEOUS

Flint	0	0	0	1	0	3
Quartz/Quartzite	1	0	5	0	0	6
Projectile point	0	0	0	0	0	0
Fossil	0	0	0	0	0	4
Bone comb	0	0	0	0	0	0
Bone fan rib	0	0	0	0	0	0
Iron wire	0	0	0	6	0	0

PHASE IV (Continued)

277A-C 345A-C 280A-H 365A-H 231D-E 269A-F 37:

Iron fish hook	0	0	0	0	0	0
Iron chain links	0	0	0	0	0	0
Iron barrel band	0	0	4	0	0	2
Iron unidentified	6	0	6	8	0	23
Spanish silver coin	0	0	0	0	0	0
Bale seal	0	0	0	0	0	0
Lead discs	0	0	0	0	0	0
Lead scrap	0	0	0	1	0	0
Brass weight	0	0	0	0	0	0
Brass token, IOHN FOXALL	0	0	0	0	0	0
Copper unidentified	0	0	0	0	0	1
Pewter unidentified	0	0	0	0	0	0

PHASE IV TOTALS

154 117 805 850 309 1248

PHASE I

	304A-C	351B-H	346A-D	290A-C	289A-H	305A-G	TOTAL
<u>CERAMICS</u>							
Morgan Jones	6	4	4	9	87	35	145
Delft	0	2	1	0	5	12	20
North Devon Gravel	0	0	0	1	2	6	9
Rhenish Brown Stone	0	0	0	0	0	2	2
North Devon Sgraffito	0	0	0	0	0	1	1
Northern Holland Slip	0	0	0	0	18	9	27
Colono-Indian	0	0	0	0	0	6	6
Merida	0	0	0	0	0	7	7
Coarseware, green-brown glaze	0	0	0	0	0	1	1
<u>GLASS</u>							
Case bottle	0	0	0	1	121	22	144
Wine bottle	0	0	0	0	0	1	1
<u>KITCHENWARE</u>							
Pewter spoon	0	0	0	0	3	0	3
Pewter screw top	0	0	0	0	1	0	1
Iron table knife	0	0	1	1	0	1	3
Iron pot	0	0	0	1	0	0	1
Iron cap	0	0	0	1	0	0	1
Copper pot	0	0	0	0	0	1	1
Brass wire	0	0	0	0	1	0	1
Whet stone	0	0	0	0	0	1	1
Iron pot hook (auger)	0	0	0	0	1	0	1
<u>CLAY PIPES</u>							
Local	0	0	0	8	22	4	34
English, 9/64" bore	0	0	0	0	6	1	7
English, 8/64" bore	0	0	0	6	22	15	43
English, 7/64" bore	0	0	6	2	100	20	128
English, 6/64" bore	0	0	0	1	12	5	18
English, 5/64" bore	0	0	0	0	2	0	2
English, fragments	4	1	3	11	73	29	121
<u>FURNITURE</u>							
Iron hasp	0	0	1	0	0	0	1



PHASE I (continued)

	304A-C	351B-H	346A-D	290A-C	289A-H	305A-G	TOTAL
Iron handle	0	0	0	1	0	0	1
Brass tack	0	0	1	0	1	1	3
Brass book clasp	0	0	0	1	1	0	2
<u>ARCHITECTURE</u>							
Nails	4	13	10	13	242	107	389
Lock ward	0	0	0	0	0	1	1
<u>TOOLS</u>							
Broad hoe	0	0	0	0	1	1	2
Narrow hoe	0	0	0	0	0	1	1
Iron spade cover	0	0	0	0	0	1	1
Cross-cut saw	0	0	1	0	0	0	1
Hand saw	0	0	0	0	2	0	2
Chisel	0	0	0	0	1	0	1
<u>CLOTHING</u>							
Pins	0	2	0	3	20	9	34
Brass pin case	0	0	0	0	1	0	1
Iron hook and eye	0	0	0	0	1	0	1
Silver circlet	0	0	0	0	1	0	1
Black glass button	0	0	0	0	0	3	3
<u>HORSE</u>							
Iron buckle	0	0	0	0	0	1	1
Brass leather decoration	0	0	0	0	0	1	1
<u>ARMS</u>							
Lead shot, .5-.25 caliber	0	0	1	0	0	0	1
Gun spall	0	0	0	0	1	0	1
<u>MISCELLANEOUS</u>							
Flint	1	0	1	2	8	13	25
Quartz/Quartzite	1	0	2	0	10	5	18
Projectile points	0	0	0	0	0	1	1
Fossils	0	0	0	0	2	0	2
Jasper	0	0	0	0	0	2	2
Bone comb	0	0	0	0	3	1	4

PHASE I (continued)

	304A-C	351B-H	346A-D	290A-C	289A-H	305A-G	<u>TOTAL</u>
Unidentified Iron	0	0	0	1	0	5	<u>6</u>
<u>PHASE I TOTALS</u>	16	22	32	63	77	332	1236

PHASE II

	273A-C	250D-E	274A-B	274E-G	TOTAL
<u>CERAMICS</u>					
Morgan Jones	2	14	0	0	16
Delft	3	9	0	1	13
North Devon Gravel	12	3	3	0	18
Rhenish Brown Stone	3	0	1	0	4
North Devon Sgraffito	8	5	0	1	14
Staffordshire Slip	7	5	1	2	15
Coarseware, green glaze	15	0	0	0	15
Majolica	1	0	1	0	2
<u>GLASS</u>					
Case bottle	10	0	0	0	10
Wine bottle	5	7	0	2	14
Table glass	0	4	0	0	4
Pharmaceutical	0	1	0	0	1
<u>KITCHENWARE</u>					
Pewter spoon	1	0	0	0	1
Iron table knife	2	0	0	0	2
Iron bucket bail	1	0	0	0	1
Iron frying pan	0	0	0	1	1
Iron pot handle	1	0	0	0	1
<u>CLAY PIPES</u>					
Local	1	3	0	0	4
English, 9/64" bore	0	1	0	1	2
English, 8/64" bore	5	5	2	1	13
English, 7/64" bore	9	9	2	4	24
English, 6/64" bore	2	6	2	2	12
English, 5/64" bore	0	2	1	0	3
English, fragments	9	32	1	2	44
<u>FURNITURE</u>					
Hasp lock	1	0	0	0	1
Brass curtain ring	0	0	0	1	1
Brass tack	0	1	0	0	1

PHASE II (Continued)

	273A-C	250D-E	274A-B	274E-G	TOTAL
Brass tack (tinkling cone)	0	1	0	0	1
<u>ARCHITECTURE</u>					
Nails	68	157	21	16	262
Pane glass	0	5	0	1	6
Lead caming	0	2	0	0	2
H/H-L Hinge	1	0	0	0	1
<u>TOOLS</u>					
Narrow hoe	2	0	0	0	2
Hoe collar	0	0	0	1	1
Morticing axe	1	0	0	0	1
Iron dividers	1	0	0	0	1
<u>CLOTHING</u>					
Pins	0	0	1	0	1
Tinkling cone	0	1	0	0	1
<u>HORSE</u>					
Stirrup	1	0	0	0	1
<u>ARMS</u>					
Trigger guard	1	0	0	0	1
Pistol lock	1	0	0	0	1
Lead shot, less than .25 caliber	0	1	0	0	1
Sword guard	1	0	0	0	1
<u>MISCELLANEOUS</u>					
Flint	0	3	0	0	3
Quartz/Quartzite	0	4	0	0	4
Fossil	1	0	1	0	2
Iron chain links	2	0	0	0	2
Iron barrel band	2	0	0	0	2
Unidentified Iron	11	0	1	0	12
Bone comb	0	0	0	1	1
<u>PHASE II TOTALS</u>	191	281	38	37	547

APPENDIX III

Family Skeletons from Clifts Plantation

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### Introduction

For the chance to study the 16 skeletons from Clifts Plantation Site at Stratford I am most grateful to Fraser Neiman, the excavator, as well as Carter Hudgins and Bill Kelso. I am grateful further for the extremely painstaking excavating. Out of 18 burials dug, only 332 and 336 contained no bones; neither is of adult size. I number the skeletons from 1ST to 18ST to simplify the grave numbers and to avoid implying there are hundreds of skeletons. Of these 16 only one (9ST) lacks a reconstructable skull; its eroded bone surface is burnt sienna in color, apparently from clay soil, and spongiosa is completely decayed. Two other skeletons (1ST, 7ST) are badly decayed but measurable. Four skeletons (2ST, 10ST, 17ST, 18ST) have splintery, grey-to-tan long bones, with a wood-like ropey texture. The rest are more-or-less intact except that the pelvis, ribs and vertebral column are almost fully preserved in only 4ST and 11ST. Bone color is usually dun to tan. Skulls of 1ST, 2ST, 3ST, 7ST and 15ST were both broken and warped from earth pressure; in 3ST the frontal was twisted about 40 degrees to the right and shifted circa 5 cm to the left of its true position relative to the occipital. This and the other 4 skulls I corrected successfully using counter pressures after further breaking and slow-drying Butvar glue. The 10 remaining skulls were intact with minor breakage and erosion sometimes along the lower jaw rami. pH values range from 5.0 (4ST) to 5.5 (10ST); 13ST and 18ST are 5.1. Thanks to sandy soil in some cases and especially thanks to great care in preserving and handling bones, this sample gives us a great deal of information (Table 1).

## Individual Descriptions

### Males

3ST, male just over 30, is medium in size, build and muscularity, with pathology only in slight bony outgrowths of the left foot and upper lumbar facets, and poor teeth (4 lost, 8 carious of which 3 are abscessed) with tartar (calculus) on molar teeth, heavier on the right. The big and rugged skull, linear, low-vaulted and horsefaced, looks North European (though not without possibility of New-World genes, e.g. toothy face-size). Inter-tooth-crown notching, presumably from a clay pipe, extends from distal  $I_2$  to mesial  $P_1$  on the left.

5ST, male early 30's, is medium-smallish, relatively stocky and thick-boned, with pathology only in a bruise depression 13 mm above the left frontal boss. Teeth are good (1 lost, 3 carious). The big and low-headed skull with its narrow, toothy and slightly asymmetrical face, resembles low-headed 17th and 18th-century Londoners except for its extra vault breadth (Dutch or North British influence?). Tooth pipe-notches in the incisor-canine area occur on both sides.

8ST, male just over 30, sub-medium in size and fairly stocky and muscular, has old lower-shaft "lead-pipe" fractures of both radii (left one scarcely perceptible), a left frontal-boss wound and, in the head of left metatarsal I, a healed perforation or cyst open below and 10 mm deep, with big-toe end phalanx also narrowed, perhaps from the same injury. Teeth are only fair (5 lost, 4 carious and 6 abscessed of which one is the only alveolus where a tooth dropped out after death), and are tiny in size with lower post-canine diastemata and an under-and-cross bite on the right. Canines and incisors show sharp growth-arrest lines suggesting early childhood stress. Big, linear, high skull vault, ellipsoid in all views, and

narrow, rectangular small-mouthed face fit North-Central European norms (Rhine to Vistula).

6ST, male in early thirties, slender in build and medium in size, has no pathology except a left humerus 12 mm shorter than the right. Schmorl herniations occur. Teeth are perfect, with edge bite despite slight wear. Big, wide ovoid vault and long hexagonal face with flaring nasal bones and huge marginal process on malars suggest tri-hybrid origins (North-British, Black and Indian).

7ST, middle-aged male, very tall and muscular but relatively slender in build, has periostitic spindle-shaped swelling of all long bones except femora and spongy invasion of marrow cavities of upper extremities, but no osteomyelitis; the swellings have an irregularly glazed surface and the combination of osteolysis and build-up seems less likely Paget's disease than a response to treponemes. Teeth are terrible (13 lost, 5 carious and 8 abscesses of which 4 are at sites of loss post mortem) with upper canines rotated 90 degrees. Linear ellipsoid vault, narrow hexagonal face combine African with possible North-European traits. Notching of upper canines may be from a pipe stem, and lip muscle origins (zygomaticus, depressor inferior) are very marked.

10ST, male in early middle age, short-medium with average build and very muscular, rather broad hands (189 x 81? mm) has a separate os acromiale but no pathology. Teeth are terrible (14 lost, 4 carious and 5 abscessed with a cyst around root of lower  $I_2$ ) with edge bite. Very linear ellipsoid vault and narrow and prognathous, hexagonal face with wide nose having faint sills and bifid spine show Black African traits. Between left C and  $P_1$  is a pipe-notch, with the carious upper-C root-shell notched. The jaw has



"rocker" form.

11ST, male young adult, small and slender with small and extraordinarily shallow pelvis (almost rachitic), shows no growth-arrest lines at shoulder or ankle metaphyses and only a trace on incisor teeth, but has Schmorl herniation in T9 and Scheuerman's concavity in L4 and 5. Teeth are poor (2 lost, 10 carious, of which 7 are abscessed) with edge bite. Linear ellipsoid and low vault, small narrow prognathous face and wide low nose with dull sills show Black African traits. Nasalia are reduced to splints as also in 13ST.

13ST, male young adult, medium in size and build with muscular hands, shows no pathology except on an old depressed fracture with inner bulge just above the right-temporal lines on the frontal. Teeth are terrible (8 lost, 9 carious and 4 abscessed, 1 at place of post-mortem loss), with a clear-cut overbite and transverse cupped wear of 6 upper front teeth;  $I_1$ 's are rotated mesially. Very linear ellipsoid vault, deep-chinned prognathous rectangular face and low wide nose with almost no sills and tiny bifid spine show Black African traits. Splint nasalia parallel 11ST and multiple mental foramina on right parallel 14ST.

14ST, male in early 20's, low medium in size, muscular and broad-shouldered, has an old fracture and injury of left fifth metatarsal and "lead-pipe" fracture of left radius, a 7 by 13-mm sub-chondral cyst with fracture in the right ankle joint and a sharp healed wound above the right orbit. Teeth are normally poor (2 lost, 4 carious of which 2 are also abscessed) with a slight overbite and trace of shovel incisors. Huge linear ovoid vault, rectangular prognathous face and wide nose with dull sills and big subnasal grooves show most Black African traits, with possibility of others (as in 6ST). Multiple mental foramina on right parallel 13ST.

### Females

4ST, female in early middle-age, medium tall, average (not thin) in build and slenderness, shows slight erosion and extostoses along the upper edge of each hip joint. Teeth are all lost in life (not recently) and origins for lower lip depressor muscles are deep-set. Intermediate, ovoid and low vault heart-shaped face with thin straight nose and strong chin show European origins. Left jugular foramen is enlarged.

9ST, post-adolescent (sub-adult) female, probably low-medium in size, shows the expected lack of tooth lesions. She is too incomplete for certain identification of African traits, though upper front teeth (I's, C's) have lingual tubercles and molar crowns are unusually big.

17ST, young-adult female, medium-sized and average in build, shows no striking features. Teeth are fair (0 lost, 8 carious of which 3 are abscessed) with edge bite. Very linear and in all aspects ellipsoid skull vault, very prognathous and rounded face with extremely broad and flat nose with dull sils and sub-nasal grooving show Black traits. Splint nasalia resemble 11ST and 13ST.

18ST, old adult female, medium-small and slight-boned, shows little arthritic lipping. Teeth are poor (9 lost, 9 carious, 11 abscessed including 2 of the 4 lost after death and 1 not carious) with much paradontal disease. Linear and angular skull vault, almost triangular, slightly prognathous face, short nose with wide corset-shaped nasalia, show mainly Black traits.

### Children

1ST, 5-year old with  $M_1$ 's half erupting, is male according to small brim section of left ilium and molar size. Body size is below medium. Notably low, broad vault, spheroid in rear view, orthognathous, heart-shaped face with intermediate nose show mainly European features. Complete metopism is striking and of 5 Wormian bones, the left lateral one forms a section of an Inca bone as in 2ST. Teeth are unexpectedly poor, with 5 milk teeth carious, and of the two lower  $M_1$ 's, the right shows Dryopithecus (Y-5) and the left plus pattern as in 2ST. There is resemblance to 4ST.

2ST, 4-year old with  $M_1$ 's unerupted in open crypts, female (?) according to wide sciatic notch, is close to average in size. Teeth are terrible (5 milk teeth carious) yet on permanent teeth, growth arrest-lines are absent. Very linear ovoid vault with broad forehead and wide nose root is equivocal, though jaw and chin form appear European. Of 3 Wormian bones, the left-lateral forms 1/3 section of an Inca bone. The right lower  $M_1$  shows Dryopithecus pattern and the left plus pattern as in 1ST.

15ST, male almost 10 years old according to epiphyseal and iliac form and dentition (C's, P's unerupted,  $M_2$  in open crypt), is almost up to average in size. A most striking pathology is complete premature closure of both coronal and saggital sutures (genetic?), probably not long before death, since there is no apparent deformity. Teeth are terrible (10 carious, including all  $M_1$ 's, 2 abscessed of which 1 was broken post-mortem), yet milk-tooth wear is plus and edge bite was developing. Linear skull with clear prognathism, dull nasal sills and small bifid spine are Black rather than White, and body proportions agree. Very narrow nasalia parallel 11ST, 13ST, 17ST.

### Discussion

From the standpoint of demography and health, the group died remarkably young -- about 32.5 years -- four years younger than 36.5 in later Colonial times (Angel 1976). Likewise stature generally seems slightly shorter. Yet growth-arrest lines across tooth enamel occur in only 6 of 15 people, and while 11ST has a pelvic inlet index of about 70, suggesting poor childhood nutrition, 4ST's index appears close to 90. The only clear bone disease, in 7ST, is a periostitis, apparently treponemal.

With regard to occupation, poor preservation of hand bones and vertebrae restricts information. There is little arthritic lipping as would be expected in a modern group this young. Especially striking muscle-insertion ridges do occur on the hands of 10ST and 13ST, both Blacks, and the deltoid insertion is pronounced in Black males, but only average in Whites. Schmorl herniations occur in 6ST and 11ST and lumbar vertebrae free of disc hernias occur in 4ST and 7ST; vertebral bodies in most are unusable. Healed fractures occur in two people, males 8ST and 14ST, the former with lead-pipe breaks of both radii and left big-toe (I) metatarsal, the latter with lead-pipe break of left radius and break of left little finger (V) metacarpal. Depressed-bruise wounds occur in the left frontal boss of both 5ST and 8ST, while 13ST and 14ST show right lateral-frontal wounds, in 13 causing a bulge of the inner table. It is tempting to generalize that Black males did heavier arm work and lifting than Whites, but were less likely to get hurt in fights and equally likely to fall as adolescents. But the sample is too small. The excess of head wounds -- 44% of 9 instead of the 13% expected in Colonial times (Angel 1976) -- is likewise not necessarily real for the same reason.

Dental lesions at 14.5 per mouth in adult Whites, 12 per mouth in adult Blacks and 7.5 per mouth in children are astonishingly high, though the

excess above the expected 10.5 in Whites and 11.5 in Blacks of Colonial times (Angel 1976) may again not be real. A diet adequate in bulk and calories but seasonally lacking in vitamins (cf. Ackerknecht 1965) may be the cause. The huge excess of caries in the dead children suggests lack of meat and excess of carbohydrates. Inherited susceptibility to caries is a possibility because of the family nature of the cemetery. We must also remember that young people in a cemetery are by death less healthy than those who survived and not typical in comparisons except with other cemetery populations.

I have pointed out a number of family similarities, presumably genetic, and now recapitulate them. Among Whites, 2ST and 1ST are probably siblings (because of the same pattern asymmetries in both lower  $M_1$ 's and in lambdoid Wormian bones) who show extremely different head forms, not necessarily from an English-Continental parental mixture. Without very precise dating graves, I can't truly guess that 4ST and 5ST are their parents and 3ST another sibling who outlived his parents by 20-25 years.

Among Blacks, 11ST, 13ST, 17ST and probably 15ST share excessive pinching of the nasal bones and may well be siblings. Except for 6ST with his White (and Indian?) traits, the Black subgroup could all have cousin or sib connections; they are a very homogenous group. 14ST is linked to 13ST by his multiple mental foramina, but also might have White genes.

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## APPENDIX III: TABLE 1

## CLIFTS PLANTATION SITE SKELETONS

SKELETON NO.	Adult Females				Children			Adult Males								
	4	9	17	18	1	2	15	3	5	8	6	7	10	11	13	14
Age	37	18(-)	26	58	5	4	10 (-)	31	32	31	22	43	39	30	27	22
Sex/Race	F/W	F/B	F/B	F/B	M/W	F/W	M/B	M/W	M/W	M/W	M/B	M/B	M/B	M/B	M/B	M/B
Stature	163.7	(156)	158.3	156.8	105	95	128.2	170.6	167.4	168.7	172.8	180.6	167.5	165.8	173.3	169.8
Talus length	51	-	49.5	47	-	-	43	55.5	56	56.5	62.5	61.5	51	52	53	50.5
INDICES																
Brachial	(74.8)	-	-	80.5	-	-	78.0	(72.0)	(75.5)	69.3	76.4	75.1	78.2	78.4	(78.9)	80.3
Crunal	(79.6)	-	81.0	85.8	-	-	83.8	80.1	80.3	81.3	80.5	82.8	82.4	83.2	82.5	85.4
Clavi-humeral	(40.4)	-	(43.8)	42.5	-	-	(48.0)	(45.8)	(45.6)	(54.3)	(43.4)	(41.8)	73.8	-	(44.5)	(48.9)
Platymeric	79.4	-	72.4	78.6	86.4	87.5	76.7	76.5	96.7	85.9	85.5	71.2	83.6	82.0	83.8	72.5
Dilastic	106.2	-	98.1	98.1	100.0	96.4	102.9	96.6	107.0	109.3	96.4	100.0	105.6	109.0	110.7	101.7
Cnemic	67.7	-	73.3	70.0	(90)	-	83.0	62.9	72.1	62.7	76.4	-	78.8	65.6	-	68.6
Talus l./ht.	58.8	-	63.6	51.1	-	-	48.8	56.4	55.4	60.2	54.8	55.7	56.9	57.7	54.7	62.0
Femoral rob.	11.5	(12.13)	11.9	(11.9)	-	-	11.3	12.6	13.4	12.7	11.5	11.8	12.6	12.2	12.4	13.0
Deltoid crest	sl.	-	sl.	+	tr.	tr.	sl.	sl.	+	++	++	++	++	+	+	++
Tibia retro-version	-	-	7.5	10	-	-	12	8.5	6	7	6	-	3.5	5	-	13
SKULL																
Vault module	142.0	-	141.7	140	138.3	(128.3)	134.7	152.0	150.3	152.3	153.3	145.3	145.0	142.3	146.7	152.3
Base length	100	-	99	104	88	(82)	86	98	104	108	108	104	106	102	101	109
Upper facial ht.	(65)	-	56	63	55	-	60	76	73	66	74	71	72	63	71	73
Chin ht.	(27)	-	32	34	24	19	27	37+	32	33	36	31	38	34	37	38
Ext. palatal br.	(53)	-	64	(64)	53	-	60	59	60	62	65	(60)	69	60	69	68
Min. ramus br.	24	-	31	28	(24)	21	30	(32)	29	33	35	25	29	29	33	38
Mastoid ht.	29	(23)	22	27	17	15	20	29	(27)	30	28	28	25	27	30	31
Profile angle	(91)	-	71	82	88	-	78	85	88	85	85	76	76	73	77	79
Nasalia angle	73	-	92	62	-	-	-	45	(53)	51	63	64	54	75	83	56
INDICES																
Cranial	77.5	-	66.5	69.4	85.8	(68.4)	74.2	74.4	79.0	70.3	82.4	68.8	66.0	68.8	65.8	70.9
Mean auric. ht.	69.6	-	71.6	71.0	64.3	(72)	77.7	68.2	65.3	75.3	69.8	73.4	70.2	67.7	70.8	63.4
Fronto-parietal	66.7	-	76.0	77.2	62.8	(73.9)	75.0	69.0	62.7	73.0	69.5	73.1	75.0	62.2	71.3	67.4
Cranio-facial	92	-	96.8	93.7	75.9	-	87.1	94.5	86.0	90.5	88.3	89.2	96.9	90.8	96.1	95.8
Fronto-gonial	95.6	-	84.2	82.6	(81.3)	-	89.2	102.0	93.6	104.0	92.5	96.8	(99.0)	102.3	106.5	102.6
Facial	(82.7)	-	81.8	92.4	80.9	-	90.7	97.8	90.7	92.7	91.9	97.4	93.6	93.2	97.6	91.3
Upper facial	(51.2)	-	46.3	52.9	50.0	-	55.6	56.7	56.6	53.2	54.4	61.2	58.1	53.4	57.3	52.9
Nasal	42	-	63.4	53.3	52.5	-	54.8	47.2	48.1	50.0	50.9	56.9	58.3	62.2	54.9	55.8
L. Orbital	97.3	-	87.2	85.0	85.7	-	100.0	86.0	92.1	92.1	87.8	86.8	81.4	90.2	85.4	86.0
Ext. Palatal	(108.2)	-	125.5	114.3	132.5	-	130.6	111.3	113.2	121.6	127.4	(111.1)	113.1	109.1	115.0	115.2
Gnathic	(89.0)	-	105.1	97.1	88.6	-	103.5	93.9	95.2	92.6	88.8	101.9	109.4	106.7	107.9	98.2
Dental Lesions	32	0	8	21	5	7	11	12	4	10	0	22	19	12	18	6