SEVENTEENTH CENTURY LITHIC TECHNOLOGIES OF THE PIEDMONT SIOUANS

by

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(Under the direction of Vincas P. Steponaitis)

ABSTRACT

The impact of European contact and the introduction of metal tools and weapons on native stone-tool technology can be seen in three distinct stages in the North Carolina Piedmont. Indirect contact and small-scale trade in furs and hides resulted in slight increases in the frequency of stone tools associated with hunting, warfare, and craft activities. During the first decades of direct contact and intense participation in the fur trade stone tool technologies were adapted to meet the increased demand for furs and hides and to the increasingly hostile social environment. In the final decades of the seventeenth century, the use and production of stone tools was curtailed due to the widespread incorporation of metal implements and European weapons into Siouan technological systems.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

The seventeenth century was a time of marked change in the lifeways of Native Americans in eastern North America. The establishment of permanent European settlements and trading posts along the east coast led to episodes of exploration, intercultural contact, warfare, trade, and disease. These interactions shaped the future of both native and European populations. In the North Carolina Piedmont, Siouan tribes became involved in the Virginia-Carolina fur and deerskin trade during the second half of the seventeenth century. This study focuses on the impact of contact-era trade and the introduction of metal tools and European weapons on native technologies. Ethnohistoric and archaeological data are examined in an effort to identify and interpret technological change in the context of seventeenth-century Native American-European interaction in the North Carolina Piedmont.

OBJECTIVES

The goal of Chapter II was to construct a chronological sequence of the Indian-European interaction and intertribal relations during the seventeenth century. Emphasis was placed on illuminating the challenges and opportunities that confronted Siouan peoples as they

became involved in the Virginia-Carolina fur and deerskin trade. Following Ray and Freeman (1978) Indian-European interaction was regarded as a series of trade zones. The types of interaction across each zone put different demands on native socio-political systems and technology. Interpretation of the changes in stone-tool technologies was grounded in this ethnohistorical model.

The stone-tool assemblages described in Chapter III were recovered during archaeological investigations conducted between 1983 and 1989 by the Research Laboratories of Anthropology, University of North Carolina-Chapel Hill. These field investigations centered on the Haw, Eno, and Dan river drainages of the North Carolina Piedmont. Intensive excavations were conducted at 16 sites in the research area. These excavations were part of the Siouan Project, whose goal was to study culture change among historic native populations of the North Carolina and southern Virginia Piedmont (Dickens et al. 1987:1). After the first two field seasons, a preliminary study of changes in stone-tool assemblages from five sites was made by Tippitt and Daniel (1987). The purpose of the present study is to expand on their research using data from 11 additional sites excavated during the 1987-1989 field seasons (see Figure 1.1). Stone artifacts from the Wall site (Orll) were analyzed by Tippit and Daniel, but were excluded from the present study due to the lack of artifacts from pit features at the site.

The research questions addressed in this study concern changes in the production and use of stone tools by Siouan groups in Piedmont North Carolina during the seventeenth century. First, did changes occur in

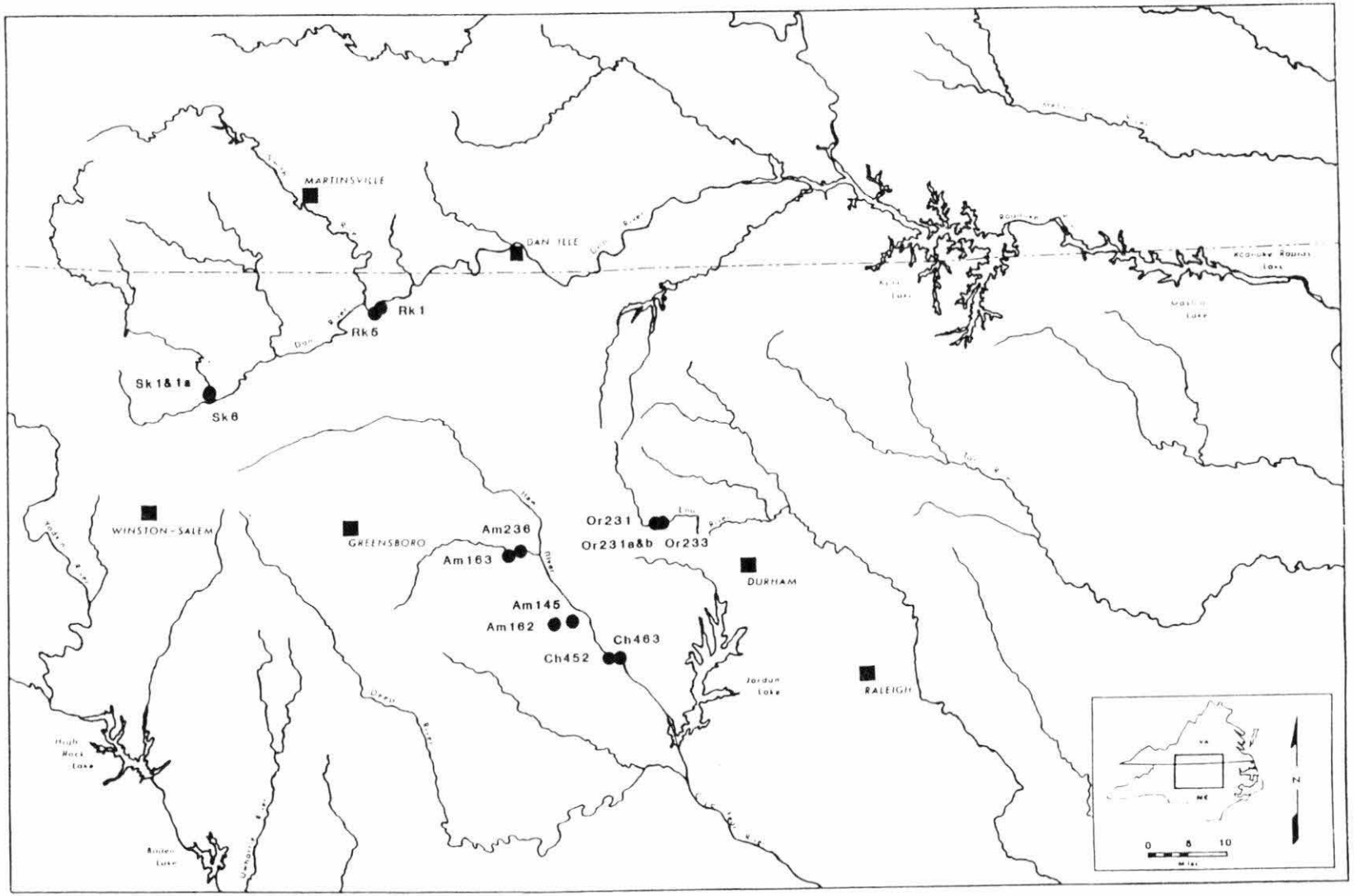

Figure 1.1. Archaeological sites in the Siouan Project area.

the types or quantities of stone tools produced and used from the Late Prehistoric to Late Contact periods? If so, can these changes be linked to the development of the Virginia-Carolina fur and deerskin trade or to the introduction of metal tools and European weapons? Secondly, did changes occur in the manufacturing methods or morphology of small triangular projectile points from the Late Prehistoric to Late Contact periods, and, if so, are these changes temporally diagnostic?

GEOGRAPHICAL AND CHRONOLOGICAL FRAMEWORK

The Siouan Project focused on three major river drainages in the North Carolina and southern Virginia Piedmont: the Haw, Eno, and upper Dan rivers. Following Davis and Ward (1988), I treat the Haw and Eno drainages as a single geographical unit because the areas are topographically similar and are closely related archaeologically. Ethnohistoric evidence indicates that the Haw and Eno drainages were occupied by the Sissipahaw, Eno, Shocoree, Adshusheer, and Occaneechi; the Sara occupied the upper Dan drainage in North Carolina (Simpkins and Petherick 1986:15). Sites from the Haw and Eno drainages will be compared to those from the Dan in an effort to identify regional differences.

This study is framed by a chronological scheme developed by Davis and Ward (1988) for the North Carolina Piedmont and the following description borrows heavily from their discussion. Figure 1.2 presents a summary of the chronological framework and lists the archaeological

Period	Date	Haw and Eno Rivers Phases	Haw and Eno Rivers Components	Dan River Phases	Dan River Components
	AD 1710				
Late Contact		Fredricks	Or231		
				Late Saratown	Sk6
	AD 1680				
Middle Contact		Jenrette			Sk1a
			Or231a		
	AD 1660				
			Ch452		
Early Contact		Mitchum		Middle Saratown	Rk1
	AD 1600				
Protohistoric		Hillsboro	Am162	Early Saratown	Sk1
			Am236		Rk5
	AD 1400				
			Ch463		Rk1
			Am145		Sk6
Late Prehistoric		Haw River	Ch452	Dan River	
			Or231a		
			Or231b		
			Am163		Rk5
			Or233		
	AD 1000				

Figure 1.2. Archaeological sequences for the Haw, Eno, and Dan Drainages.

components included in this study.

Late Prehistoric Period (AD 1000-1400)

Components of this period predate European contact. In the Haw and Eno drainages, late prehistoric occupations are represented by the Haw River phase (AD 1000-1400). Most of these settlements consist of scattered households located on floodplains or terraces overlooking floodplains (Simpkins and Petherick 1986:16-17). Population density appears to have been low in the area at the time. I examined Haw River phase components from four sites located along the Haw River and its tributaries (Am145, Am163, Ch452, and Ch463) and three components located along the Eno River (Or231a, Or231b, and Or233).

Population density appears to have been greater in the Dan drainage during the Late Prehistoric period, with evidence of large fortified communities during the Dan River phase (AD 1000-1450). Davis and Ward (1988) have suggested that these community plans may represent defensive responses to Iroquois raiding or possibly increased intertribal competition for productive agricultural land. Three Dan River phase components were included in this study (Rk1, Rk5, and Sk6).

Protohistoric Period (AD 1400-1600)

The Protohistoric period covers the era of initial contact and exploration of North America by Europeans; however, there is no archaeological evidence of such interaction in the study area. In the Haw and Eno drainages, protohistoric occupations are represented by the

Hillsboro phase (AD 1400-1600). Hillsboro phase components included in this study (Am162 and Am236) represent small hamlets, though some Hillsboro phase settlements in the study area were compact, nucleated villages.

In the Dan drainage, the Early Saratown phase (AD 1450-1620) was based on the Early Upper Saratown site (Sk1). The village was occupied during the latter part of the Early Saratown phase and sustained a large resident population, perhaps larger than any previous Dan River phase settlement. Davis and Ward (1988) suggested that given the lack of comparable sites in the upper Dan drainage, a sizable proportion of the region's population may have resided at this site. A second protohistoric component (Rk5) was included in this analysis and represents a more dispersed settlement than Early Upper Saratown.

Early Contact Period (AD 1600-1660)

During the Early Contact period Jamestown was settled and indirect trade for animal pelts was established between Virginia colonists and piedmont Siouans. Goods were moved between the Tidewater and the Piedmont through native exchange networks. European glass beads and beads fashioned from imported brass or copper appear for the first time at archaeological sites in the Piedmont during this period. No European weapons or metal tools have been recovered from Early Contact village sites. Therefore, Early Contact period sites should yield evidence for the initial impact of the fur and deerskin trade, without any extraneous

effects from the introduction of European technology.

The Mitchum phase (AD 1600-1670) represents the Early Contact occupation in the Haw drainage. The Mitchum site (Ch452) was a compact, palisaded village, probably occupied by members of the Sissipahaw tribe around AD 1650. Davis and Ward (1989) suggested that Sissipahaw populations may have been seriously reduced by disease by this time; however, they noted that the density of burials at the site was low.

In the Dan drainage, the Early Contact period site included in this study is Lower Saratown (Rk1). This component defines the Middle Saratown phase (1620-1670) and appears to have had a village plan similar to those of the earlier Dan River phase.

Middle Contact Period (AD 1660-1680)

The decades between 1660 and 1680 represented a transitional era in the relations between the Piedmont Siouans and the Virginia colonists. The Occaneechi, situated on an island in the Roanoke River, asserted themselves as powerful middlemen in the trade and deterred any direct contact between piedmont Siouans and the Virginia colonists during the first decade of the Early Contact period. In the latter half of the period, European interests in developing the trade reached their full potential and the first expeditions into the Piedmont were sponsored. These explorations led to the establishment of direct trade between Virginia traders and Siouans in the Piedmont and brought about a persistent European presence in the area.

Middle Contact sites should yield evidence of increased interaction

and trade. European weapons and metal tools are present in small numbers at Middle Contact sites in the Piedmont and may have functioned more as status markers than as technological implements. As in the Early Contact period, European metal tools may not have affected native stone technologies to any significant degree during the early Middle Contact period.

Along the Eno River, one Middle Contact component (Or231a) has been excavated and the definition of the Jenrette phase (AD 1650-1670) is based on the site. This palisaded village is thought to have been occupied ca. AD 1670 and may represent the village of Shakor visited by John Lederer during his expedition through the Piedmont (Cumming 1958). Lead shot was recovered from eight pit features at the site, but no gun parts or metal tools were found.

One Middle Contact site on the Dan River, Upper Saratown (Sk1a), has been investigated. The site has been partially excavated and stone tools from 11 pit features were included in this study. This village represented a more extended occupation than the Jenrette site. The large numbers of burials at the site may represent the effects of a European-introduced epidemic (Ward and Davis 1989). Simpkins and Petherick (1986:18) noted that Upper Saratown's location would have allowed easy overland access to the Haw and Yadkin drainages, as well as to the headwaters of the Ohio River. The quantity of trade goods at this site indicates that the Sara were heavily involved in the fur and deerskin trade at this time. Though the majority of European trade goods from the site are ornamental objects, musket locks, gunflints,

lead shot, and a few metal tools also have been recovered.

Late Contact Period (AD 1680-1710)

The Late Contact period was one of great cultural disruption for the piedmont Siouans. Depopulation brought about the need for village consolidation, participation in the fur and deerskin trade increased, and the use of European weapons and metal tools became widespread. Signs of cultural disruption and effects of technological change associated with intense intercultural interaction should be apparent in archaeological assemblages from this period.

The Fredricks phase (AD 1680-1710) represents Late Contact occupation in the Eno drainage. This phase is defined by the Fredricks site (Or231), a village near present-day Hillsboro that was situated along the Great Trading Path in 1701. The Occaneechi settled at this location after 1676 when they abandoned Occaneechi Island in the Roanoke River.

The Late Saratown phase (AD 1680-1710) represents the final Sara occupation in the Dan River area. One Late Saratown component from the Kluttz site (Sk6) was analyzed. Limited excavations at the site revealed that an ethnically diverse population may have occupied households dispersed across the floodplain. The large number of infant and child burials at the site indicates that epidemic diseases continued to ravage the Dan drainage in the Late Contact period.

CHAPTER II

THE SEVENTEENTH CENTURY PIEDMONT

The objective of this chapter is to formulate a model of the fur trade era in the North Carolina Piedmont. The fur and deerskin trade was built upon the exchange systems of native Siouan populations and the English commercial system. I have attempted to discuss some relevant factors that influenced Siouan and European systems as they interacted to form the Virginia-Carolina fur and deerskin trade of the seventeenth and early eighteenth centuries.

NATIVE AMERICAN EXCHANGE SYSTEMS

At the opening of the seventeenth century, Native American communities in the North Carolina and Virginia Piedmont were part of a well-established trade network that extended from the Atlantic coast to interior regions as distant as the Great Lakes. Objects would pass from community to community through a network of overland trails and water routes. Prior to European contact some tribes, such as the Susquehannocks and the Ottawa, may have specialized as intermediaries in the intertribal trade of eastern North America (Bradley 1987:103; Hodge 1910:167). Within this network, shells moved from the coast inland and minerals (such as copper, salt, and pigments) moved from their sources in the opposite direction. In addition to these raw materials, Indian

communities also exchanged craft items and food.

Hickerson (1973:19) has proposed that precontact trade functioned not only to alleviate shortages, but also to stabilize and reinforce social and territorial relations between communities. Furthermore, Ray and Freeman (1978:22, 231) have stressed that trade in the Hudson's Bay area was "embedded" in native socio-political systems and occurred only between groups that were formally at peace. Trade functioned to reaffirm intercommunity ties by incorporating into the exchange process ceremonies and traditions that were designed to give proper recognition to group leaders. Often, these ceremonies carried with them implications for other economic, social, and political aspects of life. For example, fictive kin relationships often were established between trading partners so that the ground rules of the trading relationship would be mutually understood. Merrell (1989a:198) proposed that intercommunity alliances in the Piedmont may have been cemented by the exchange of people between villages in the form of "hostages", adoptees, or marriage partners.

The socio-political systems in which exchanges were embedded had considerable impact on how trade was conducted and on the manner in which trade goods were distributed. Important cultural differences separated piedmont societies from their Algonquian neighbors in the tidewater region near Jamestown. Potter (1989:152) proposed that during the Protohistoric period Virginia Algonquian society consisted of ranked, kin-oriented groups characterized by varying degrees of social and political centralization, tribute systems, and trade monopolies.

During the last quarter of the sixteenth century and the early years of the seventeenth century Powhatan, an Algonquian werowance, gained control of most of the petty chiefdoms between the falls of the James and the York rivers, and those of the Chesapeake Bay. In contrast, Merrell (1989b:14) argued that piedmont communities tended to be small and homogenous. There is no evidence that any form of political hierarchy existed in the Protohistoric period. Merrell (1989b:15) indicated that Siouan society was dominated by a "powerful political, economic, and ethnic localism." This localism helped shield the Siouans from the advances of the more centralized societies to their north and south and may also may have delayed or diminished the impact of European contact in the Piedmont.

POSTCONTACT ERA

My discussion of the postcontact era is framed in a geographical model introduced by Ray and Freeman (1978:48). Certain features of the model have been altered to better reflect Siouan-European interaction in the Piedmont. In this scheme, contact relations are conceptualized as occurring within a series of trade zones. The local trade zone encompasses the area settled or claimed by European immigrants where direct trade occurs. Within this zone most trade is conducted at English forts or settlements. The peripheral region regularly visited by European traders constitutes the direct trade zone. Within this area regular contact is maintained and most trade is conducted at native

villages. A third zone, the indirect trade zone, includes the more remote areas in which information and European manufactures are received indirectly from natives who occupy the direct trade zone. In this manner European goods reach interior regions, via Indian middlemen, ahead of European traders.

The spatial configuration of these trade zones changed rapidly during the seventeenth century. In the last half of the century the piedmont Siouans may have engaged in all three types of trade. Following is a discussion of when, why, and how Siouan-Euroamerican trade relations changed during the seventeenth century.

Virginia is Settled: The Early Contact Period

English interests in the New World were driven by the interrelated forces of mercantilism and rivalry with other European nations for commercial and colonial supremacy (Stine 1986:2; Crane 1981:4). Mercantilist ideals led England to strive to export more finished goods than it imported. Colonies were established to provide agricultural products and raw materials to fuel English enterprises and also to provide new markets for English manufactures.

The colony of Jamestown was established in Tidewater Virginia with hopes of producing quick profits for the English investors. These hopes were not fulfilled. The colonists were unprepared for life in the New World and required much more support from London than had been anticipated. No profits were realized until an experimental crop of tobacco was shipped to England in 1613 (Robert 1969:98). During the

first third of the seventeenth century while its price remained high in London, tobacco was the mainstay of the colony.

The extent of trade between the colonists and Tidewater natives during this period is uncertain. Phillips (1961:163) reported that a few Dutch and English merchant ships acquired cargoes of peltries from Jamestown, but the first official commission for trading rights was not issued until 1627. William Clairbourne received this commission and conducted trade in the Chesapeake Bay area from his Kent Island fort. A letter written by Leonard Calvert to Sir Richard Lechford in May of 1634 (reprinted in Morrison 1921:224) indicated that Clairbourne had already traded for 3,000 beaver pelts with the Chesapeake Indians that year. Calvert was a member of the Baltimore party and intended to take over the Chesapeake trade. His letter pointedly stated that with the founding of Maryland, Virginia traders like Clairbourne "shall come no more here." Despite such determination, the Chesapeake trade remained a viable commercial interest of William Clairbourne's for many years.

Trade continued sporadically in the Tidewater and Chesapeake areas until the Opechancunough massacre initiated the Second Pamunkey War in 1644. After the massacre, forts were erected along the southern frontier at the falls of the Pamunkey, James, Chickahominy, and Appomattox rivers (Hening 1823:293, 323). These forts were established to protect the colony from southerly attack and were to be outposts from which military expeditions might be led. In October of 1646, the first act of congress was a peace treaty marking the end of hostilities. Following the defeat of the Opechancunough there was less need for

military outposts. Necotowance, who succeeded Powhatan as leader of the Opechancunough, agreed in the treaty to "leave free that tract of land betweene Yorke river and James river, from the falls of both the rivers to Kequotan, to the English to inhabitt on" (Hening 1823:324). Likewise, the English were to keep "to the north side of Yorke river" (Hening 1823:324). The treaty further stipulated that communication and trade between the parties should be handled through Fort Royal at Pamunkey or Fort Henry on the Appomattox (Hening 1823:325). That the colony intended these southern forts to be centers for native-colonial interaction is evidenced by the placement of John Flood, the colony's Indian interpreter, next to Fort Henry.

The second act of the 1646 congress turned the proprietorship of Fort Henry over to its commander, Captain Abraham Wood (Hening 1823:326). Free to pursue commercial enterprise, Wood and his agents at Fort Henry played a very important role in exploring and establishing direct trade in the North Carolina Piedmont during the following decades. Thus, by the end of the Second Pamunkey War, the focus of interaction and trade between the colonists and local Indians had shifted from the Chesapeake to the southern limits of the Tidewater region.

During the first half of the seventeenth century, the Jamestown settlers did not venture far into the wilderness beyond their settlement. By mid-century the local trade zone had moved south and west and was clearly marked by the line of forts surrounding the Tidewater region. Direct trade was carried out in the Chesapeake region

and up the Potomac River, but probably not beyond. The indirect trade zone extended to the northern Piedmont of North Carolina, however, very few European manufactures have been recovered from aboriginal sites dating to this period. Merrell (1989:28) suggests that the Pamunkey may have been instrumental in keeping the Virginians out of the Piedmont during the first 50 years of colonization.

Indirect Trade in the Piedmont

Beginning around 1635, increased immigration and farming led to an oversupply of tobacco in the colony, and, by 1650, oversupply had become a serious problem for Jamestown (Billings 1975:178). The Navigation Act of 1660 effectively crippled the weakened tobacco industry and caused a sharp reduction in the price of tobacco in English markets (Hening 1823:536). With Virginia's economic interest diverted from tobacco, attention was turned more toward the fur and deerskin trade. Competition with more northern colonies in Maryland, Delaware, and Pennsylvania encouraged Virginia to look southward for new trading partners (Wilson 1983:74).

During the 1650s three grants were drafted which offered rights to all "benefitts, profitts, and trades" arising from explorations of the southern wilderness to Colonel William Claibourne, Captain Henry Fleet, Major Abraham Wood, and "diverse gentlemen" who so desired to make such discoveries (Hening 1823:376, 381, 548). The first recorded exploration out of Fort Henry was made by Wood and an English merchant named Edward Bland. In August, 1650, they journeyed southwest from the fort to an

Indian trail and continued on to the falls of the Roanoke River. Learning that the Tuscaroras ahead were preparing for war, the party returned to Fort Henry (Alvord and Bidgood 1912:105-130).

Though this journey did not contribute to the expansion of trade into the Tuscarora territory, it did open the region between Fort Henry and the Roanoke River. There is no record of further explorations until 1669, but it is likely that before that time, Virginia traders were becoming familiar with the peoples and lands located beyond the ring of forts. Phillips (1961:169) suggested that before 1670 Virginia traders probably stayed within the territory of the present state east of the Appalachians.

The archaeological record indicates that during the latter part of the Early Contact period trade for European manufactures increased in the Piedmont, but was still not extensive. The zone of direct trade had advanced southward to the Roanoke River and westward to the mountains. The indirect trade zone spread south and west and by the end of the Early contact period the piedmont region of North Carolina had clearly been incorporated within the indirect trade zone.

Transition to Direct Trade: The Middle Contact Period

The Virginia frontiersmen were not alone in trying to control and profit from the burgeoning fur and deerskin trade. Native groups with geographic locations close to sources of European goods often asserted themselves as trade middlemen. Until 1676, the Occaneechi lived on an island in the Roanoke River at the strategic spot where the southern

trading path crossed the river (see Figure 2.1). This native trail, like many others, was adapted for use in the fur and deerskin trade. It would soon be known as the Occaneechi Trail or the Great Trading Path leading from Fort Henry to the Catawba and southwest into the present state of Georgia. The ford across the Roanoke River was particularly dangerous above and below Occaneechi Island and travelers were required to cross over the island. From this location the Occaneechi were able to effectively control traffic between Virginia and the North Carolina Piedmont. With such a strategic geographic location they were able to establish themselves as formidable middlemen in the fur and deerskin trade. Ward (1987:89) has suggested that the Susquehannocks may have fostered their rise to dominance by initially establishing the Occaneechi as their trading agents.

Virginia's interest in exploring the southwestern wilderness peaked around 1670. Several authors have suggested reasons for the timing of this renewed effort, one of which was the continued depression of the tobacco market. Morrison (1921:234) proposed that the success of the newly founded Hudson's Bay Company also may have given "new impulse" to the Virginia Indian trade. Alvord and Bidgood (1912:56) indicated that the impetus came from English Proprietors who sought to seize the trade west of the Appalachians from the French. Within Virginia, the arrival around 1669 of William Byrd, an enterprising seventeen-year-old, also may have helped spur the westward discoveries. He was sent to help manage his uncle's estate on the James River. This impassioned youth began exploring as early as 1671 and soon became one of the great

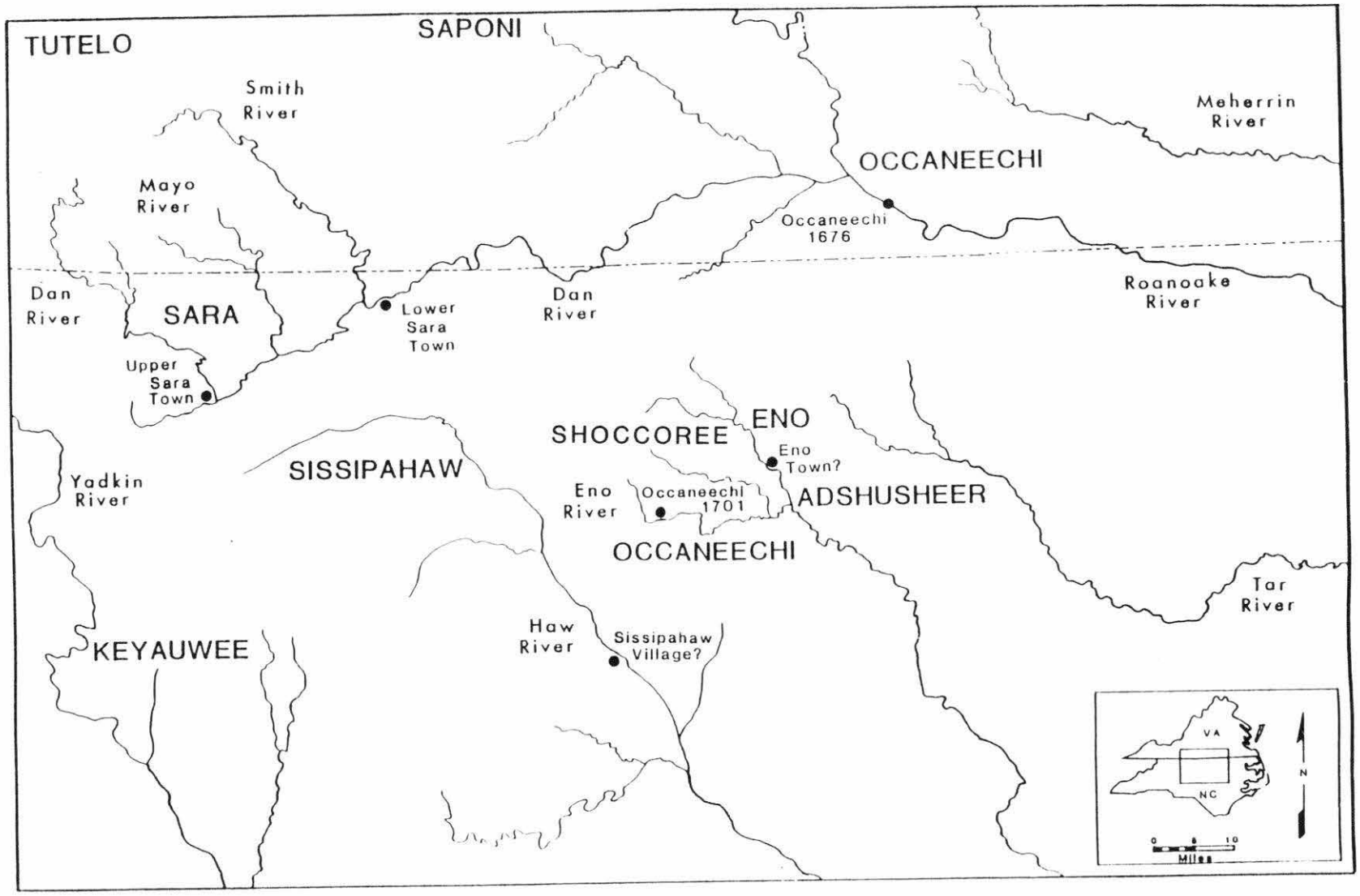

Figure 2.1. Recorded locations of Siouan groups and historic village sites.

merchant-traders of his generation (Maramaud 1973:132). An additional catalyst may have come from the establishment of the Charles Town colony in 1670. Henry Woodward, a Carolina agent, aggressively pursued a deerskin trade out of the southern colony. As early as 1673 Carolina commissioners attempted to negotiate a trade monopoly with the Catawba, an important trading interest of Virginia (Crane 1981:13). Perhaps all of these factors and others contributed to the desire to open the Piedmont to Virginia traders. Regardless of the inspiration, the activities of the 1670s had grave consequences for piedmont Siouans.

The first European known to have entered the Piedmont was John Lederer, a German physician who had recently arrived in Jamestown. Governor Berkley sent Lederer on three explorations between 1669 and 1670. His second journey took him through the heart of the Piedmont in search of a path over the Appalachians. His journey began at the falls of the James River in the spring of 1670. After seven days journey he arrived at the island stronghold of the Occaneechi. He continued his journey into the heart of the Piedmont, stopping at a Sara village and then continuing further south to the Catawba (see Figure 2.1).

His travel journal, though fraught with inconsistencies, offers some very important information about intertribal relationships during this period. His visit with the Occaneechi was cut short because six Cherokees were treacherously murdered in the island fort (Cumming 1958). Upon reaching the interior, he was surprised at the profits that could be made from trade with the "remote Indians" of the Piedmont (Cumming 1958:41). This suggests that the Occaneechi had also been able to reap

such profits from the piedmont tribes. It is possible that the Cherokee were aware of their disadvantage and were traveling north to deal directly with the Virginians when they were attacked by the Occaneechi.

A letter written by Colonel Abraham Wood to John Richards indicates that the conflict between the Occaneechi and the interior tribes did not abate in the years following Lederer's journey (Alvord and Bidgood 1912:210-225). The letter describes a journey made in 1673 by one of Wood's agents, James Needham. Needham was murdered by his Occaneechi guide on his journey to Cherokee country. His companion was nearly ambushed outside the Sara village. In the aftermath of the violence, the Sara refused to risk the Occaneechi's wrath by carrying the explorers' packs back to Fort Henry. Wood further reveals that the following year a group of Cherokees avoided a confrontation with the Occaneechi by travelling to the headwaters of the James River and canoeing east to Fort Henry. They were forced to completely bypass the Piedmont to establish trade relations with Wood's organization.

Native middlemen situated in the direct trade zone held a monopoly on the trade in the indirect trade zone and were able to effectively extort their more remote clients. In addition, middlemen could also control the types of goods that passed into the interior. Ray (1974:78) reported that native middlemen in the Hudson's Bay trade kept the supply of trade goods low in the interior by only buying enough European goods to supply their own needs and sold only used merchandise to their clients.

The degree to which this type of activity occurred in the North

Carolina Piedmont is uncertain, but the archaeological record indicates that there was a discrepancy between the quantity and variety of European goods from sites in the direct trade zone and those in the indirect trade zone. For example, Potter (1989:166-167) described a group burial that probably dates to about 1650-1666 from the vicinity of the Potomac Creek site in Stafford County, Virginia. The burial contained a silver English dram cup, a brass spur rowel, copper chain, six copper buttons, 40 brass bells, and many glass beads in addition to native shell and bone objects. The Strickler site in Lancaster County, Pennsylvania dates between 1650 and 1675. Futer (1959) reported a wide variety of European trade goods including brass kettles, iron tools, gun parts, and glass bottles and beads. Early Contact sites (1600-1660) in the piedmont region of North Carolina contain few European trade goods and no metal tools (see Carnes 1987). The unequal distribution of trade goods and intensified competition over hunting territories probably undermined relationships between piedmont groups as the fur and deerskin trade developed. These pressures also brought about changes in native political ties (Merrell 1984:551; Kupperman 1989).

It is evident that the maintenance of trade zone boundaries was a very heated matter during the Middle Contact period. Apparently a group's location in relation to the various trade zone boundaries was very important. Along with many other types of trade goods, Native Americans within Virginia's direct trading zone had been "supplied with all the arms and ammunition they [could] buy" since mid-century (Hening 1823:525). English and Dutch firearms had been available from colonial

sources as well as Susquehannock middlemen. Lederer noted the disparity between trade goods appropriate for "neighbor-Indians" and those for "remoter Indians." Guns, ammunition, and edged tools were commodities for the local trade, while glass beads, looking glasses, scissors, and knives were more appropriate for trade in the remote areas (Cumming 1958:42). Lederer also reports that in 1670 some groups in the "remote parts" were ignorant of the use of guns (Cumming 1958:41).

Much debate has occurred over the efficiency of seventeenth century firearms in relation to the native bow and arrow (see Townsend 1983). I suggest that, all matters of efficiency aside, the musket was a very effective weapon. Flintlock muskets were always one of the most popular trade items and where regular supplies were available, native groups commonly used firearms for hunting and warfare (see Ray and Freeman 1978; White 1983). In 1701, John Lawson reported that the use of firearms was widespread in the North Carolina Piedmont (Lefler 1967). The Westos were reportedly able to terrorize the Indians of Guale and Carolina with muskets supplied by the Virginia colony (Crane 1981:12). Ray and Freeman (1978:43) indicate that with a steady supply of arms, the Assiniboin and Cree were able to prevent more distant groups from visiting the Hudson's Bay trading forts. The fact that groups within the zone of direct trade had greater and more regular access to guns and other European manufactures may have put the piedmont Siouans who lacked such access at a further disadvantage in terms of trade and hostilities with northern groups.

The reign of the Occaneechi as middlemen was crushed in 1676 by

Nathaniel Bacon and his troop of renegades at the onset of Bacon's Rebellion. In June of 1676, Phillip Ludwell reported Bacon's troops killed as many as 50 of the tribe's men and took a few women and children prisoner. He also mentioned that Bacon's men returned with "Plunder", but does not describe what was stolen (Ludwell 1893:182) Soon, the remainder of the Occaneechi tribe left the Roanoke River island and settled near present-day Hillsborough. The subsequent advance of the direct trade zone into the Piedmont is marked by intertribal conflict and culminated in more bloodshed as Seneca raiding parties focused their harassment on the Piedmont following the defeat of the Susquehannocks in 1675.

Direct Trade Intensifies: The Late Contact Period

With the Occaneechi and Susquehannocks routed, no barrier lay between Virginia and the Piedmont. Alvord and Bidgood (1912:90) suggested that during the final quarter of the seventeenth century a distinct "frontiersman class" developed in Virginia. This class consisted of leaders such as Abraham Wood and William Byrd, their agents and servants, and self-employed free traders. Soon, pack trains of up to 100 horses in length, with each horse carrying 150 to 200 pounds of trade goods, traversed the interior south of Virginia (Bassett 1970:235). Direct trade brought a vast array of ornamental objects, metal implements, and weapons into the Piedmont.

In 1685, William Byrd I complained to his London agents that Virginia traders had flooded the native market with trade goods and that

"one [trader was] indeavoring to eat out another" (Tinling 1977:58). By the end of the century Charleston traders brought even more competition into the area (Merrell 1989:51). Piedmont Siouans were now in a position to choose among the traders' merchandise and to refuse beads that were too large, blankets that were too light a shade of blue, and guns that did not function properly (Tinling 1977:29,64). The advance of the direct trade zone brought an array of new consumption opportunities for the piedmont Siouans.

A less welcome consequence of the frontier expansion was the transmission of European diseases to piedmont populations. The archaeological record indicates that epidemics occurred in the northern Piedmont during the Middle Contact period (Ward and Davis 1989). European introduced diseases were not only physically devastating, but also, in Kupperman's (1980:6) words, "culturally catastrophic." In part, the profound cultural repercussions were due to the large numbers of deaths that occurred in short spans of time. Eventually, most villages could not maintain the manpower necessary to remain independent and had to consolidate with neighboring villages, while others were completely depopulated. It is also significant that, in addition to the very young and old, the most robust adults between the ages of fifteen and forty were disproportionately affected during epidemics (Kupperman 1989). These age groups included political and social leaders as well as those who contributed most to village subsistence.

Intertribal hostilities also were a contributing factor to the Siouans' decline. Byrd indicated that trading was dull during the 1690

season as "the Indians [are] at warr with each other, & troubles on all handss" (Tinling 1977:118). The Sara were driven from the Dan river drainage during the first decade of the eighteenth century because "the frequent inroads of the Senecas annoyed them incessently" (Bassett 1970). Davis and Ward (1988) reported that by 1710, very few Siouans remained in the main river valleys of the North Carolina Piedmont. The Occaneechi and other tribes from the Haw, Eno, and Flat drainages resettled at Fort Christanna in Virginia, while the Sara moved south from the Dan River to join the Catawba.

Thus, the first decades of the Late Contact period represent the heyday of the Virginia-based fur and deerskin trade with long caravans transporting European wares into the Piedmont and furs and hides back to Virginia. Sustained contact between these traders and the Siouan populations brought about serious population declines and new challenges for native political systems. These challenges were met with creative grouping of previously autonomous tribes. Eventually, however, even that tactic could not sustain the piedmont populations and abandonment of the region was necessary.

CHAPTER III

STONE ARTIFACTS FROM CONTACT PERIOD SIOUAN SITES

This study includes stone tools previously analyzed by Tippitt and Daniel, excluding the Wall site assemblage, and additional data from 11 sites excavated during the University of North Carolina's Siouan Project 1987-1989 field work. With this expanded data set, the present results indicate that aboriginal stone-tool assemblages were indeed affected by the development of the Virginia-Carolina fur and deerskin trade and by the introduction of European weapons and metal tools. Furthermore, analysis indicates that projectile point size decreased from the Late Prehistoric through the Middle Contact period (ca. AD 1680), then increased during the Late Contact period.

ASSEMBLAGE CHARACTERISTICS

In order to gain tight temporal control, my analysis was limited to artifacts recovered from pit features that could be confidently assigned to a defined archaeological phase (see Appendix 1). These chronological assignments were made by R. P. Stephen Davis, Jr. (personal communication 1989) on the basis of potsherd and historic artifact content. Tables 3.1 and 3.2 present the distribution of stone tools by chronological period for each study area. Tool categories (as shown in

Table 3.1. Distribution of Stone Artifacts from the Haw and Eno Drainages.

CATEGORY	Late Prehistoric		Proto-Historic		Early Contact		Middle Contact		Late Contact	
	no.	%	no.	%	no.	%	no.	%	no.	%
DEBITAGE										
Decortication Flake	213	11.2	49	2.7	48	24.7	116	8.8	162	11.7
Int./Bif.Thin.Flake	1407	73.9	1402	78.0	97	50.0	681	51.6	948	68.5
Shatter Fragment	13	0.7	11	0.6	2	1.0	4	0.3	85	6.1
Flake (Archaic)	11	0.6	0	0.0	0	0.0	13	1.0	0	0.0
Other Flakes	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Core	29	1.5	29	1.6	5	2.6	35	2.6	10	0.7
Raw Material	3	0.2	0	0.0	0	0.0	2	0.2	0	0.0
CHIPPED STONE TOOLS										
Proj. Point (Archaic)	3	0.2	1	0.1	0	0.0	4	0.3	2	0.1
Proj. Pt. (Woodland)	4	0.2	0	0.0	1	0.5	12	0.9	1	0.1
Sm. Triangular Pt.	31	1.6	64	3.6	8	4.1	214	16.2	42	3.0
Proj. Pt. (Indet.)	7	0.4	15	0.8	2	1.0	1	0.1	15	1.1
Preform	4	0.2	3	0.2	0	0.0	0	0.0	3	0.2
Biface	6	0.3	27	1.5	0	0.0	1	0.1	12	0.9
Chipped Hoe	1	0.1	2	0.1	1	0.5	2	0.2	0	0.0
Chipped Chisel	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Chipped Axe	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Chipped Disk	0	0.0	0	0.0	1	0.5	0	0.0	7	0.5
End Scraper	5	0.3	1	0.1	1	0.5	1	0.1	0	0.0
Side Scraper	2	0.1	1	0.1	1	0.5	0	0.0	1	0.1
Denticulate	0	0.0	0	0.0	1	0.5	0	0.0	0	0.0
Wedge	3	0.2	3	0.2	1	0.5	17	1.3	0	0.0
Graver	3	0.2	2	0.1	0	0.0	2	0.2	0	0.0
Perforator	4	0.2	1	0.1	0	0.0	4	0.3	3	0.2
Drill	2	0.1	2	0.1	1	0.5	11	0.8	0	0.0
Utl. & Ret. Flakes	125	6.6	172	9.6	17	8.8	178	13.5	20	1.4
LARGE COBBLE TOOLS										
Cobble Chopper	13	0.7	3	0.2	0	0.0	0	0.0	13	0.9
Hammerstone	2	0.1	0	0.0	0	0.0	0	0.0	12	0.9
Worked Slab	1	0.1	0	0.0	0	0.0	2	0.2	0	0.0
Mano	0	0.0	0	0.0	0	0.0	0	0.0	4	0.3
Hammerstone/Mano	4	0.2	2	0.1	4	2.1	6	0.5	0	0.0
Anvil/Milling Stone	1	0.1	0	0.0	3	1.5	10	0.8	4	0.3
Pitted Cobble	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
Utilized Cobble	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Polished Cobble	0	0.0	0	0.0	0	0.0	0	0.0	4	0.3
Abrader	0	0.0	2	0.1	0	0.0	0	0.0	0	0.0
GROUND STONE TOOLS										
Grnd. Stone Disk	0	0.0	0	0.0	0	0.0	0	0.0	11	0.8
Chunkey Stone	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1
Ground Celt	3	0.2	0	0.0	0	0.0	1	0.1	0	0.0
Stone Pipe	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Engraved Stone	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Grnd. Stone (Indet.)	2	0.1	5	0.3	0	0.0	3	0.2	18	1.3
TOTAL	1904	100	1798	100	194	100	1321	100	1383	100

Table 3.2. Distribution of Stone Artifacts from the Dan Drainage.

CATEGORY	Late Prehistoric no.	%	Proto-Historic no.	%	Early Contact no.	%	Middle Contact no.	%	Late Contact no.	%
DEBITAGE										
Decortication Flake	214	12.0	75	8.8	154	11.5	45	6.6	208	10.1
Int./Bif.Thin.Flake	1421	79.7	644	75.5	961	71.7	483	70.4	1562	76.1
Shatter Fragment	28	1.6	32	3.8	16	1.2	37	5.4	70	3.4
Flake (Archaic)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Flakes	3	0.2	1	0.1	0	0.0	0	0.0	11	0.5
Core	8	0.4	8	0.9	25	1.9	0	0.0	28	1.4
Raw Material	2	0.1	2	0.2	1	0.1	0	0.0	2	0.1
CHIPPED STONE TOOLS										
Proj. Point (Archaic)	4	0.2	2	0.2	5	0.4	1	0.1	2	0.1
Proj. Pt. (Woodland)	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Sm. Triangular Pt.	59	3.3	49	5.7	101	7.5	67	9.8	87	4.2
Proj. Pt. (Indet.)	10	0.6	2	0.2	2	0.1	10	1.5	4	0.2
Preform	2	0.1	3	0.4	0	0.0	3	0.4	0	0.0
Biface	10	0.6	11	1.3	3	0.2	3	0.4	6	0.3
Chipped Hoe	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
Chipped Chisel	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chipped Axe	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chipped Disk	0	0.0	0	0.0	2	0.1	0	0.0	4	0.2
End Scraper	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Side Scraper	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
Denticulate	0	0.0	1	0.1	0	0.0	3	0.4	2	0.1
Wedge	1	0.1	1	0.1	0	0.0	0	0.0	0	0.0
Graver	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Perforator	0	0.0	2	0.2	1	0.1	1	0.1	5	0.2
Drill	1	0.1	0	0.0	6	0.4	6	0.9	3	0.1
Spokeshave	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0
Utl. & Ret. Flakes	15	0.8	13	1.5	37	2.8	14	2.0	32	1.6
LARGE COBBLE TOOLS										
Cobble Chopper	0	0.0	1	0.1	2	0.1	0	0.0	0	0.0
Hammerstone	0	0.0	4	0.5	0	0.0	8	1.2	0	0.0
Worked Slab	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mano	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Hammerstone/Mano	0	0.0	1	0.1	15	1.1	0	0.0	15	0.7
Hammerstone/Anvil	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Anvil/Hammerstone/Mano	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Anvil/Milling Stone	0	0.0	0	0.0	2	0.1	0	0.0	2	0.1
Pitted Cobble	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Utilized Cobble	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Polished Cobble	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Abrader	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
GROUND STONE TOOLS										
Grnd. Stone Disk	0	0.0	0	0.0	1	0.1	2	0.3	2	0.1
Chunkey Stone	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ground Celt	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Stone Pipe	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Stone Bead	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Engraved Stone	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Grnd. Stone (Indet.)	0	0.0	1	0.1	4	0.3	0	0.0	4	0.2
TOTAL	1784	100	853	100	1341	100	686	100	2053	100

Tables 3.1 and 3.2) were determined on the basis of unique combinations of implement blank and working-edge form. For detailed descriptions of individual tool categories see McManus (1985).

Artifact Density

To determine whether the development of the fur and deerskin trade and the introduction of European weapons and metal tools led to any major changes in the production of stone tools at piedmont sites, the density of stone artifacts per cubic foot of excavated feature fill was examined. Ward (1980:220) has suggested that most feature fill from the Upper Saratown site represents secondary disposal of refuse originally discarded within and around houses. Contents of pit features at other seventeenth-century sites indicate that refuse disposal practices were similar across the Piedmont (see Petherick 1987). Therefore, the production and use of stone tools at these villages should be reflected in the density of stone artifacts from pit fill contexts.

Feature volume was estimated from scale drawings of excavated pit features. As these pits do not conform to simple geometric shapes, calculations were based on the closest geometric approximation of the recorded pit shape. Tables 3.3 and 3.4 present the density of stone artifacts from the Haw-Eno and Dan drainages respectively.

Ward (1980:22) found that the density of artifacts from features corresponded to the density of plowzone artifacts at Upper Saratown. Thus, the density of artifacts in pit features also may be affected by

Table 3.3. Density of Stone Artifacts per Cubic Foot of Feature Fill from Sites in the Haw and Eno River Drainages.

Period	Est. Feature Volume	Artifact Frequency	Density
Late Contact	398	1383	3.55
Middle Contact	195	1321	6.77
Early Contact	99	194	1.96
Protohistoric	78	1798	23.05
Late Prehistoric	234	1904	8.14

Table 3.4. Density of Stone Artifacts per Cubic Foot of Feature Fill from Sites in the Dan Drainage.

Period	Est. Feature Volume	Artifact Frequency	Density
Late Contact	527	2053	3.89
Middle Contact	126	686	5.44
Early Contact	175	1341	7.66
Protohistoric	121	853	7.04
Late Prehistoric	300	1784	5.94

the overall intensity of the site's occupation. Some sites may contain dense deposits of artifacts while others contain deposits with relatively few artifacts. To account for this inter-site variability the density of a second artifact class was considered. Potsherds are the most ubiquitous artifacts on late prehistoric and historic aboriginal sites in the Piedmont and are felt to be an adequate representation of the relative density of artifacts at any given site. The density of sherds in each assemblage was calculated to provide the pattern of expected variation in artifact density due to inter-site differences in occupation intensity.

In Figures 3.1 and 3.2 the density of stone artifacts is plotted against the density of sherds. A comparison of the plots reveals that from the Late Prehistoric through the Middle Contact period each change in the density of stone artifacts follows the general pattern of variation in sherd density. One notable exception is the Early Contact assemblage from Lower Saratown in the Dan drainage. The Early Contact village of Lower Saratown was built on an earlier Dan River phase midden deposit. A major proportion of the potsherds found in features associated with the Early Contact period occupation are of the coarse net-impressed variety. Davis (personal communication 1990) reported that these potsherds were probably associated with the Dan River phase midden. Therefore, the high density of potsherds in the Early Contact features may represent a contamination from the earlier midden deposit and probably does not accurately reflect the intensity of the Lower Saratown occupation.

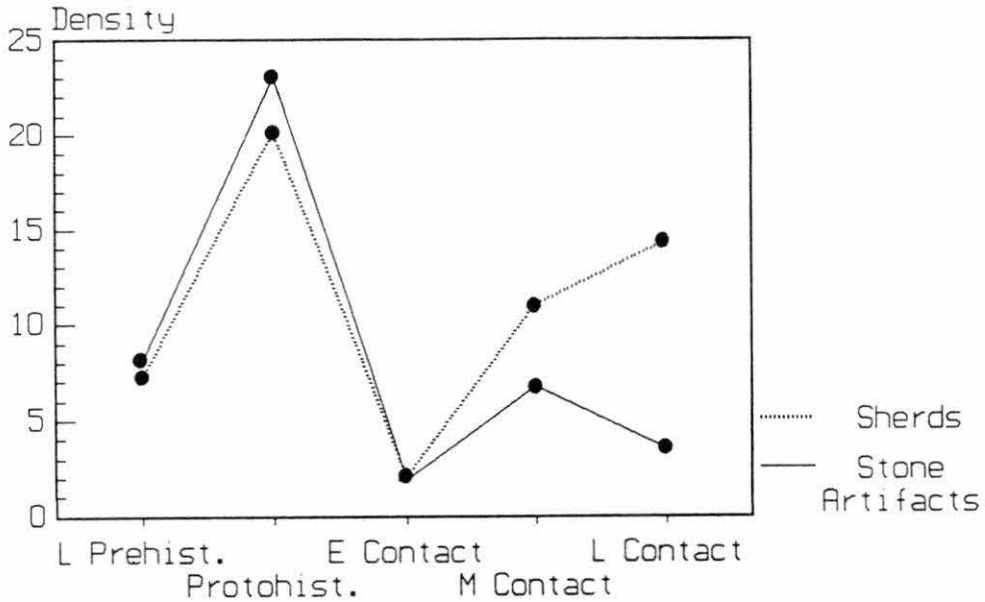

Figure 3.1. Density of stone artifacts and sherds per cubic foot of feature fill from sites in the Haw-Eno drainages.

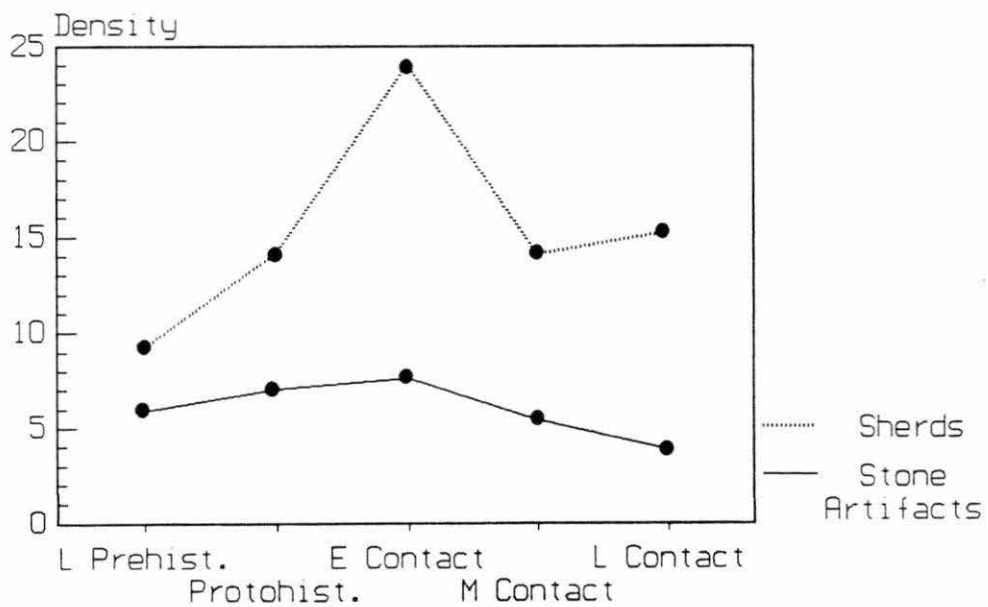

Figure 3.2. Density of stone artifacts and sherds per cubic foot of feature fill from sites in the Dan drainage.

It appears that through the Middle Contact period the fluctuations in stone artifact density probably reflect differences between the relative density of the archaeological deposits rather than any alteration in the production or use of stone tools. The graphs in Figures 3.1 and 3.2 also indicate that in each drainage the density of stone artifacts declined between the Middle and Late Contact periods while the density of sherds increased. This divergence indicates that, while Late Contact sites contain relatively rich artifact deposits, fewer stone artifacts are present in the assemblages. Based on an examination of stone artifact density, I suggest that there were no major disruptions in the production of stone tools at Siouan sites in the Piedmont through the Middle Contact period. During the Late Contact period (AD 1680-1710), the production and use of stone tools appears to have declined.

Assemblage Composition

Given that no major changes occurred in the relative frequency of stone tools on piedmont sites until late in the trade era, I was interested in determining whether the types of tools produced and used were affected by the development of the fur and deerskin trade. In an effort to identify changes in the composition of stone-tool assemblages over time, the distribution of tool types from each period was compared. Artifacts were divided into four techno-functional categories: debitage (including all flakes and shatter fragments), small triangular projectile points, other chipped-stone tools, and ground-stone and large cobble tools. The graphs in Figures 3.3 and 3.4 plot the logarithm

(base 10) of the relative frequency of each techno-functional category. Debitage constitutes more than 90% of some assemblages and graphical representations of such skewed data are often unsatisfactory. Cleveland (1985:84) reported that the resolution of such graphs can be improved by scaling the data in exponential fashion (for a full discussion of logarithmic transformations see Thomas 1986:426-429). A result of the logarithmic transformation is a reduction in the apparent variability of the debitage category. For this reason, debitage will be discussed separately.

An interesting pattern is present in the distribution of artifact categories. Note the increase in the frequency of small triangular projectile points from the Late Prehistoric through the Middle Contact period where it peaks sharply. This peak is followed by a marked decline in the frequency of projectile points during the Middle Contact period. A similar, though less dramatic pattern occurs in the distribution of chipped-stone tools. The frequency of ground-stone and large cobble tools is greater during the Early and Middle Contact periods than during earlier periods. The trade-era assemblages contain high frequencies of multi-purpose cobble tools that probably functioned as hammerstones, anvils, and manos. It is also noteworthy that ground-stone disks occur only on sites from the Early Contact period and later.

To best illustrate the distribution of debitage, all stone tools were combined into a single category and debitage was divided into utilized and unworked flake categories. Utilized flakes show evidence of

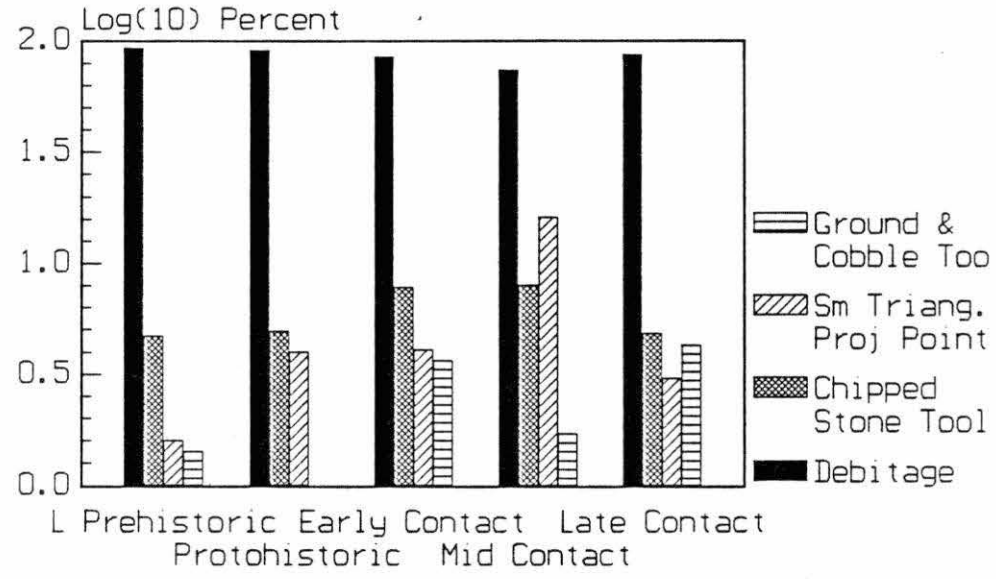

Figure 3.3. Composition of lithic assemblages from sites in the Haw-Eno drainages.

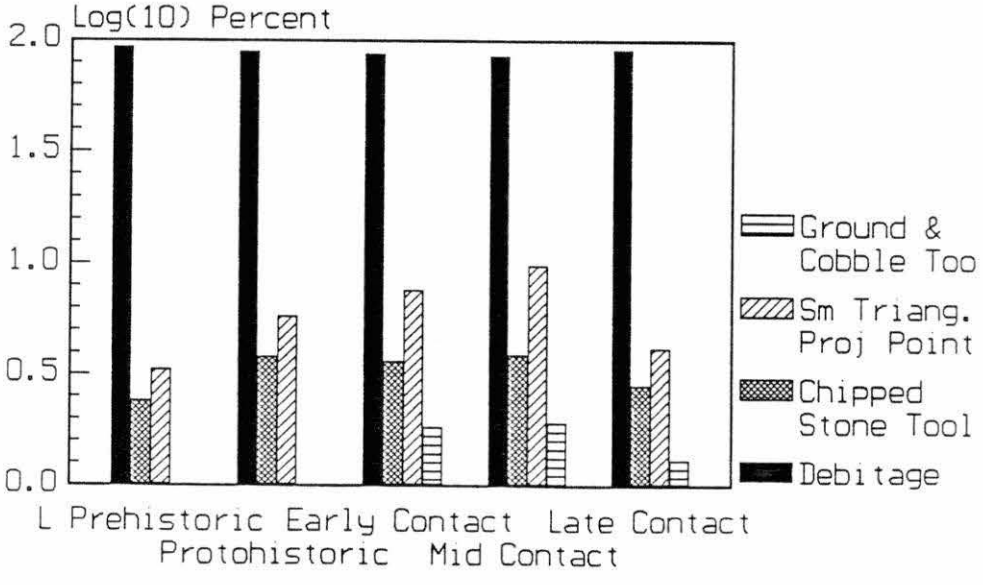

Figure 3.4. Composition of lithic assemblages from sites in the Dan drainage.

retouch or damage along the flake margins suggestive of use as an expedient tool. Unworked flakes represent the discarded waste from flint knapping. Figures 3.5 and 3.6 present bar charts of the relative frequency of each category.

The pattern of increased frequency of stone tools from the Late Prehistoric through Middle Contact periods shown in Figures 3.3 and 3.4 is duplicated here. Figure 3.5 indicates that in the Haw-Eno samples the percentage of utilized flakes also follows the same pattern of increase from the Late Prehistoric through Middle Contact period and then a marked decrease in the Late Contact period. Figure 3.6 shows that a similar, though less dramatic, pattern is present in the Dan drainage assemblages. However, in this drainage a decrease in frequency of utilized flakes occurs in the Middle Contact period and continues into the Late Contact period.

This study has suggested some general changes that may have occurred in the stone-tool technologies of piedmont Siouans from the Late Prehistoric to Late Contact period. Late Prehistoric assemblages are characterized by a relatively high density of stone artifacts and a low ratio of stone tools to debitage. The relative frequency of projectile points and chipped stone tools increased during the Protohistoric and Early Contact periods while the density of stone tools remained stable. Assemblages from Early and Middle Contact sites also contain high frequencies of large multi-purpose cobble-tools. Middle Contact period assemblages are characterized by high frequencies of projectile points and chipped-stone tools (especially drills and wedges), and a relatively

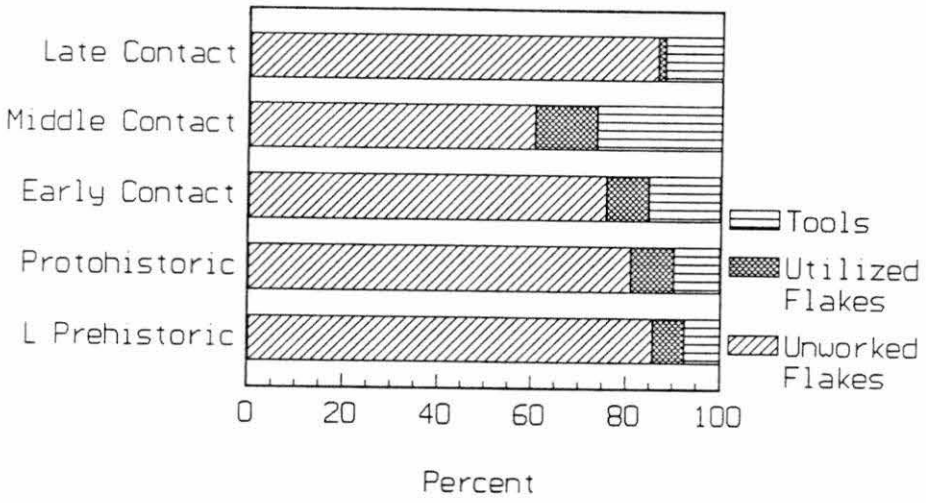

Figure 3.5. Distribution of debitage and stone tools from sites in the Haw-Eno drainages.

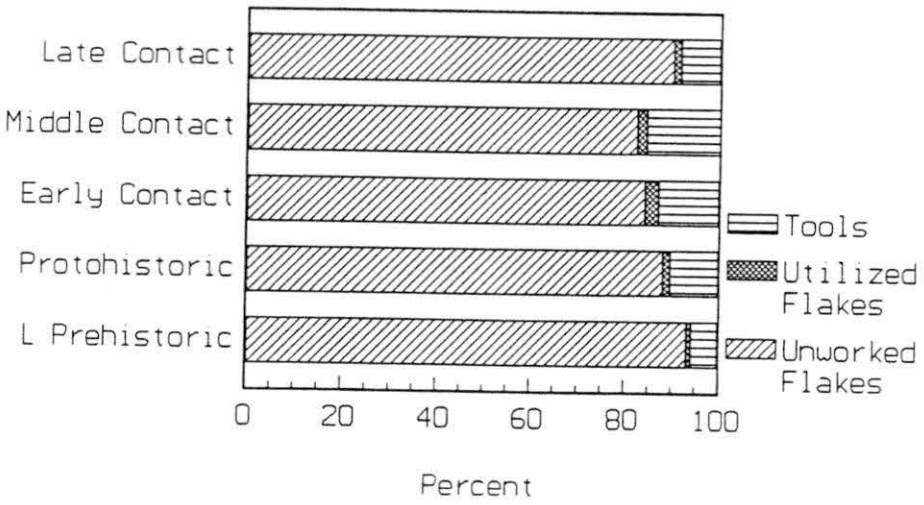

Figure 3.6. Distribution of debitage and stone tools from sites in the Dan drainage.

low incidence of unworked flakes. Late Contact assemblages are characterized by low artifact density, low frequencies of stone tools and projectile points, and a high incidence of discarded, unworked flakes.

One change in Siouan lithic technologies that is unquestionably associated with European contact was the addition of gunflints to the chipped-stone tool assemblage. Kent (1983:30-31) reported that bifacial gunflints of aboriginal manufacture occurred on Seneca sites in western New York and Susquehannock sites of south-central Pennsylvania during the second quarter of the seventeenth century. After 1675 European gunflints began to supplant these bifacial flints and by 1700 aboriginally manufactured gunflints became quite rare on Northeastern sites.

Kent (1983:28) suggested that

> native-made gunflints can be viewed as simply a modification or readaptation of the chipped-stone tool which they were so accustomed to produce--namely, the triangular arrowhead...[T]hese gunflints were made by Indians with the deeply ingrained motor habits for making triangular arrowheads; the difference being that the final product had a square or round, instead of triangular, outline.

In this manner, although bifacial gunflints represent a new type of tool, their presence does not indicate a deviation from prehistoric manufacturing techniques.

Aboriginal gunflints from Piedmont North Carolina sites occur not only in the bifacially-manufactured form described above, but also as flakes with only lightly retouched edges (see Figure 3.7). Flakes used as gunflints can be distinguished from other utilized flakes by the presence of crushed edges and tiny step-fractures commonly found on the edges of gunflints. The use of appropriately shaped flakes of locally

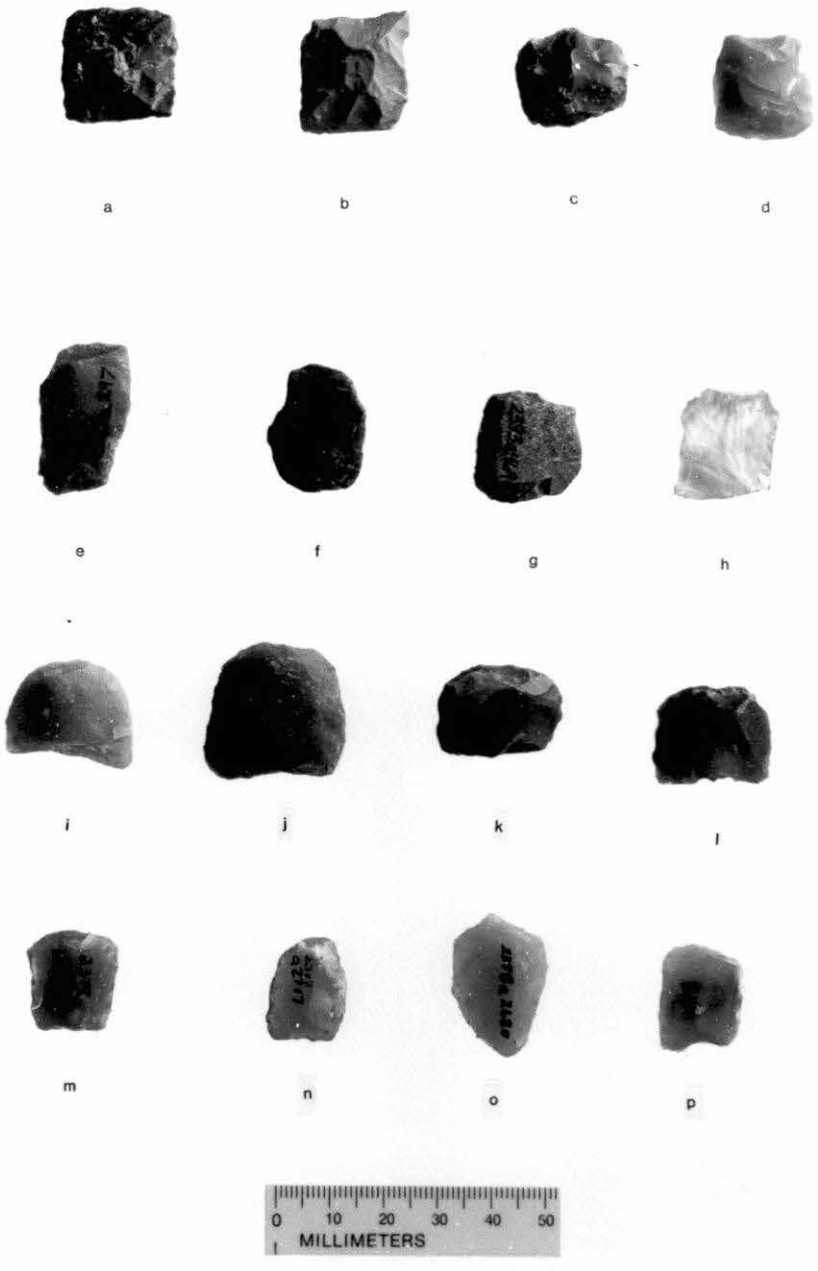

Figure 3.7 Gunflints from piedmont Siouan sites: (a-d) aboriginally-manufactured bifacial gunflints; (e-h) aboriginally-manufactured gunflints from flakes; (i-l) European wedge-shaped gunspalls; and (m-p) French blade gunflints.

available stone for gunflints is not discussed in the literature on eastern Indian sites, but given the widespread use of expedient flake tools, I doubt that the practice was rare.

Tables 3.5 and 3.6 show the percentages of gunflint types from all excavated contexts (including plowzone) from sites included in this study. The bifacial and flake types of gunflints were aboriginally manufactured, while wedge-shaped spalls and blade gunflints were manufactured in Europe. The distribution of gunflint types in the Piedmont follows the general pattern reported for the Northeast, with European gunflints increasing in frequency during the Late Contact period.

The large number of gunflints at the Late Contact site in the Haw-Eno drainage is due in part to the large-scale excavations at the Fredricks site. The large number of European trade goods at the site is also reflective of the continued active participation of the Occaneechi in the fur and deerskin trade after they moved to the Hillsborough area late in the seventeenth century (see Carnes 1987).

PROJECTILE POINT MORPHOLOGY

A second line of inquiry addressed in this study concerned changes in the morphology and manufacture of triangular projectile points. The projectile point typology defined by Coe (1964) for the North Carolina Piedmont indicates a trend toward decreased size in triangular points point size over time. The issue is re-examined here using the expanded

Table 3.5. Percentages of Gunflint Types from Sites in the Haw-Eno Drainages.

Period	Bifacial	Flake	Wedge-Shaped	French Blade	European Indet.	Frequency
Late Contact	15.2	12.0	55.3	13.4	4.1	217
Middle Contact	28.6	71.4	-	-	-	7
Early Contact	14.3	57.1	28.6	-	-	7

Table 3.6. Percentages of Gunflint Types from Sites in the Dan Drainage.

Period	Bifacial	Flake	Wedge-Shaped	French Blade	European Indet.	Frequency
Late Contact	14.3	28.6	28.6	28.6	-	7
Middle Contact	37.5	25.0	12.5	-	25.0	16
Early Contact	50.0	37.5	-	12.5		8
Protohistoric	33.3	66.7	-	-	-	3

data set produced by the Siouan Project research.

Projectile Point Size

The box plots in Figures 3.8 and 3.9 present summaries of length and width for triangular projectile points from the Haw-Eno and Dan drainages. The plots indicate that the size of triangular points does change in a regular, patterned fashion in each study area. The general trend is toward smaller points from the Late Prehistoric through the Middle Contact period. The trend then reverses with larger points occurring at Late Contact sites.

The boxplots are notched to present confidence intervals around the medians of each sample. If the notched intervals of two groups do not overlap, the groups can be said to be significantly different at roughly 95% level of confidence (Velleman and Hoaglin 1981:74). The plots indicate that in the Haw-Eno drainage Late Prehistoric and Late Contact triangular projectile points are significantly larger than points from other periods. However, in the Dan drainage there is no significant difference in the length of triangular projectile points from the Late Prehistoric through Late Contact periods. However, points from Late Prehistoric sites in the Dan drainage are significantly wider than later points. Figures 3.10 and 3.11 illustrate the range of variation in projectile point length.

Some additional patterns are notable in the box plots. Previously, it was established that small triangular points occur in greater numbers on Middle Contact period sites than on sites from other periods. The

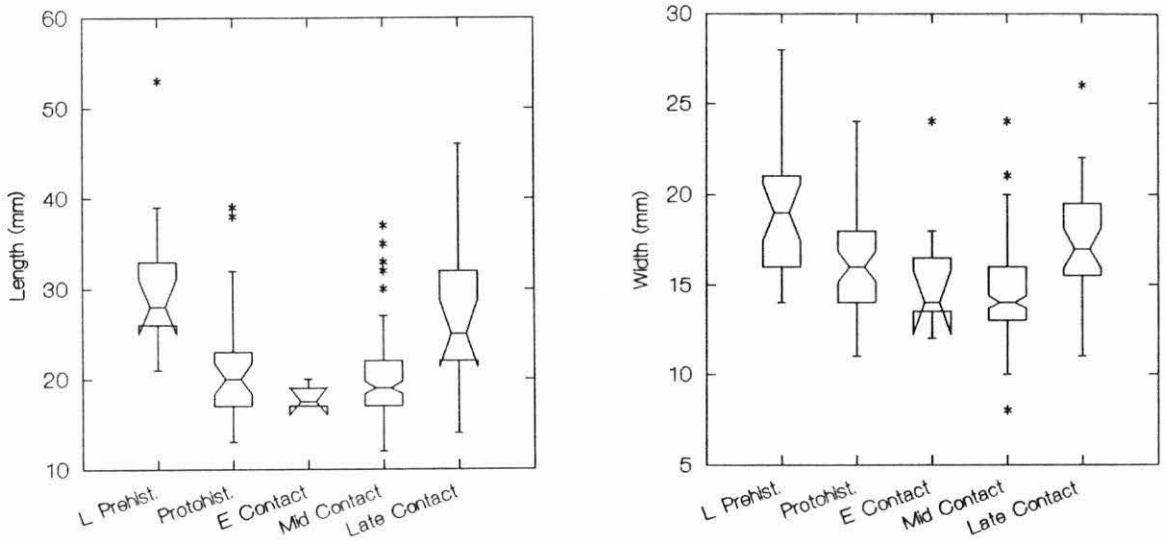

Figure 3.8. Box plots of triangular projectile point length and width. Haw-Eno drainage assemblages.

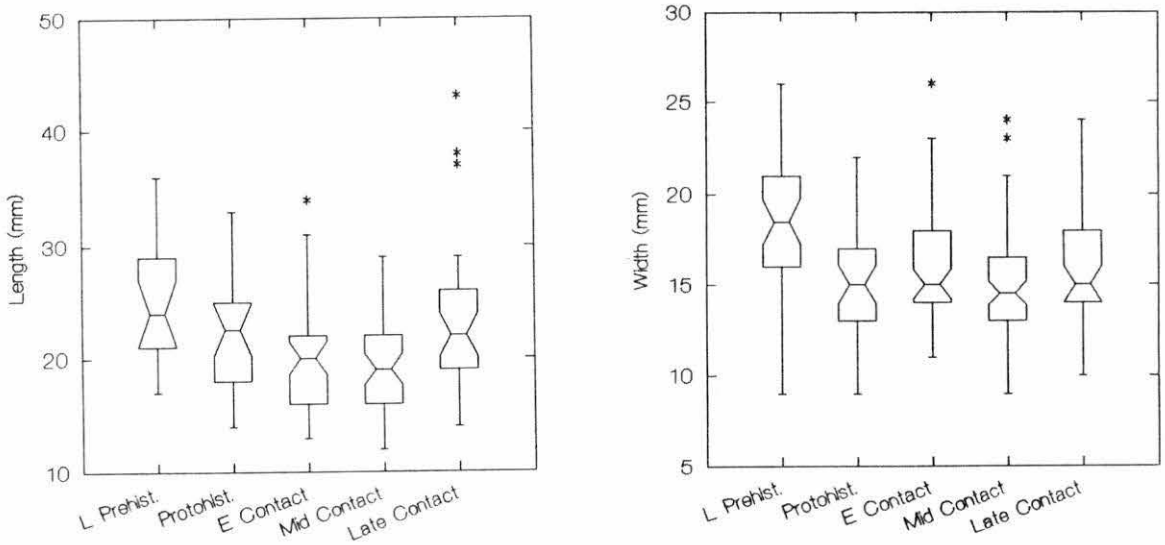

Figure 3.9. Box plots of triangular projectile point length and width. Dan drainage assemblages.

present exercise indicates that there is also less variability in the length and width of Middle Contact points. This trait is represented by the "shorter" boxes in plots for these points. Middle Contact assemblages also tend to contain more outliers, that is, points of atypical size (represented by an '*' in the figures). It also appears that the distributions of Middle Contact point sizes are consistently symmetrical, while other distributions are often skewed.

Projectile Point Manufacture

Tippitt and Daniel (1987:232) indicated that many of the projectile points in their data set were made from flakes rather than bifacial preforms. These points represent small flakes that have been shaped to form a triangle by unifacial or bifacial retouch along the margins (see Figures 3.10 and 3.11). Tables 3.7 and 3.8 present the distribution of bifacial and "retouched flake" projectile points. The tables indicate that in the Dan drainage there was a patterned change in manufacture from bifacial reduction to flake retouching through time. Most Late Prehistoric and Protohistoric projectile points were bifaces, while most later points were retouched flakes. In the Haw-Eno drainages the same pattern of change occurs from the Late Prehistoric through Middle Contact periods. However, 67.4% of points from the Late Contact period were bifacially manufactured.

One additional observation can be made concerning projectile point morphology and construction. Tables 3.7 and 3.8 reveal that most projectile points from the Middle Contact period are of the "retouched

Table 3.7. Distribution of Triangular Projectile Point Types from Sites in the Haw-Eno Drainages.

PERIOD	BIFACE		RETOUCHED FLAKE	
	no.	%	no.	%
Late Contact	29	67.4	14	32.6
Middle Contact	80	37.7	132	62.3
Early Contact	2	25.0	6	75.0
Protohistoric	52	75.4	17	24.6
Late Prehistoric	28	84.9	5	15.1

Table 3.8. Distribution of Triangular Projectile Point Types from Sites in the Dan Dainage.

PERIOD	BIFACE		RETOUCHED FLAKE	
	no.	%	no.	%
Late Contact	27	31.0	60	69.0
Middle Contact	29	44.6	36	55.4
Early Contact	38	38.0	62	60.0
Protohistoric	24	52.2	22	47.8
Late Prehistoric	34	57.6	25	42.4

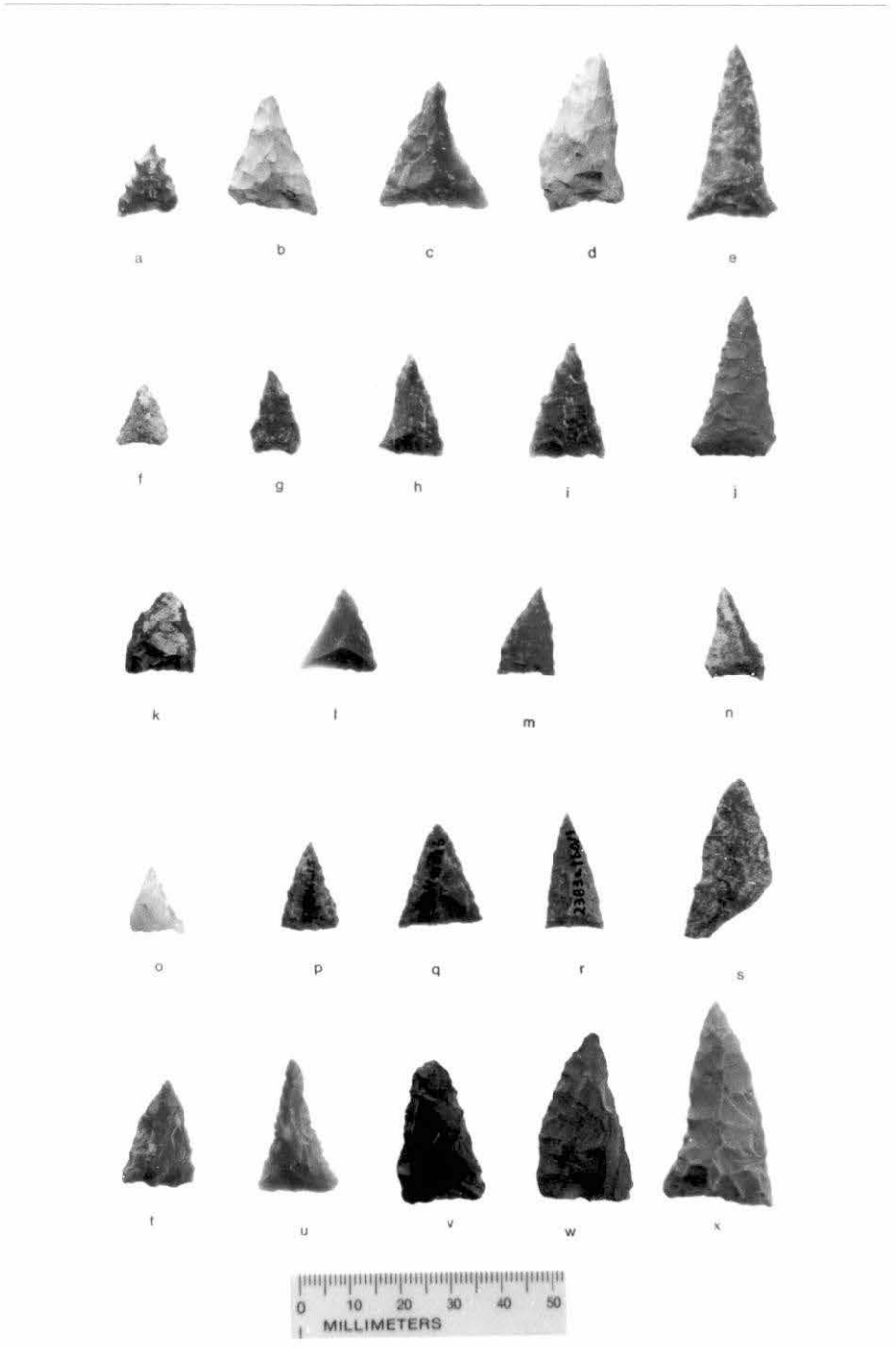

Figure 3.10. Projectile points from sites in the Haw-Eno drainages: (a-e) Late Contact points; (f-j) Middle Contact points; (k-n) Early Contact points; (o-s) Protohistoric points; and (t-x) Late Prehistoric points.

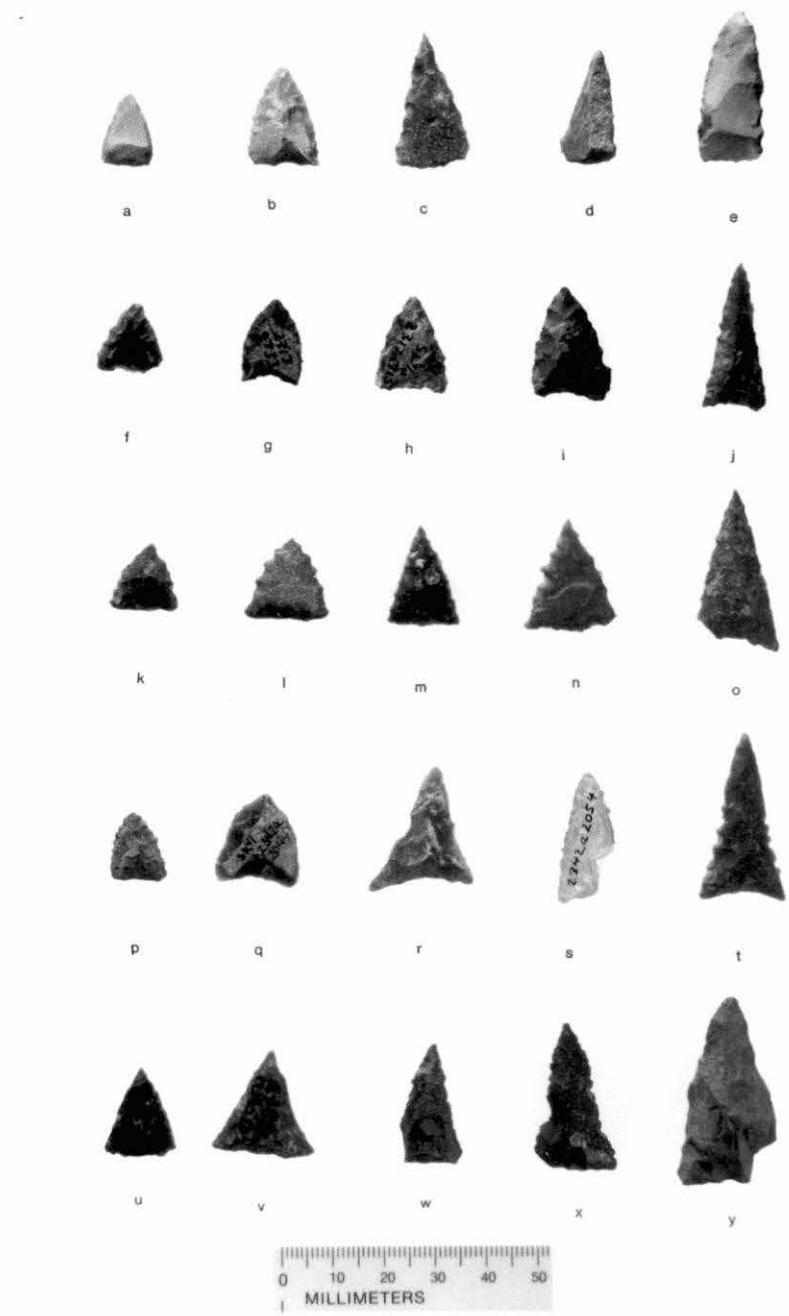

Figure 3.11. Projectile points from sites in the Dan drainage: (a-e) Late Contact points; (f-j) Middle Contact points; (k-o) Early Contact points; (p-t) Protohistoric points; and (v-y) Late Prehistoric points.

flake" type. As previously noted, the range of variation in the size of these points tends to be less than in points from other periods. A comparison of the length and width of bifacial and retouched-flake points indicate that the box plot hinge spread of the latter is less than for bifacial points (Table 3.9). Tippitt and Daniel (1987:232) suggested that one of the major factors controlling the size of retouched-flake points was the size and thickness of the bulb of percussion of the original flake. There are weak positive correlations between the thickness of the bulb of percussion and length (Pearson's r=0.47) and between thickness and width (Pearson's r=0.37) for retouched-flake points in this study. The strongest association is between the width and length (Pearson's r=0.60) of those points. Thus the low variability in projectile point size during the Middle Contact period can be linked to a selection for small flakes with a bulb of percussion between 3 and 4 mm thick and between 12 and 16 mm wide. Analysis revealed that 73.7% of retouched-flake points from Middle Contact sites were made from flakes of that size.

Table 3.9. Size Variation in Triangular Points from Middle Contact Sites.

Subregion:	Length		Width		Thickness	
Point Type	Median	H-Spread	Median	H-Spread	Median	H-Spread
Haw-Eno Sites						
Bifacial	20	8	14	3	4	1
Ret. Flake	19	4	14	3	4	1
Dan Sites						
Bifacial	20	7	17	5	4	0
Ret. Flake	17	5	14	3	3	0

This study has shown that there is a general trend in reduction of triangular projectile point size from Late Prehistoric through Middle Contact periods and then an increase in point size in the Late Contact period. Throughout the study period, triangular projectile points were manufactured by two techniques: bifacial reduction and simple edge-shaping of appropriately sized flakes. A pattern of change from bifacial reduction to flake-retouching was noted for Dan River projectile point assemblages. A similar pattern was present in the Haw-Eno assemblages from the Late Prehistoric through Middle Contact period. However, most Late Contact points from the Haw-Eno drainage were bifacial points. Middle Contact assemblages contain high frequencies of projectile points that are predominantly of the retouched-flake type. The size of these points varies less than the size of points from other time periods and it appears that flakes of a particular size were being selected for projectile point manufacture during the Middle Contact period.

CHAPTER IV

INTERPRETATIONS

In the preceding chapter, several changes were identified in the stone tool technology of piedmont Siouans from the Late Prehistoric to Late Contact periods. In this section, I will attempt to associate these changes to the effects of the Virginia-Carolina fur and deerskin trade and the introduction of metal tools and European weapons. In the course of this discussion, I will refer back to the model formulated in Chapter II, as well as other case studies.

THE IMPACT OF EUROPEAN CONTACT AND THE INTRODUCTION OF METAL TOOLS AND WEAPONS

After the middle of the seventeenth century, the zone of indirect interaction with the Virginia colony advanced southwestward to include Piedmont North Carolina. The advance of the indirect trade zone was not marked by any major deviations from prehistoric lifeways. Around 1670 the direct trade zone was pushed into the Piedmont. Siouan groups in the Piedmont were presented with the opportunity to trade directly with Virginia merchants offering European manufactures for furs and hides. Native technologies were altered to confront the challenges of

increased warfare and hunting associated with the developing fur and deerskin trade. During the last two decades of the seventeenth century, metal tools and European firearms began to be traded in greater numbers in the Piedmont. I suggest that their introduction into Siouan technological systems brought about major changes in the production and use of stone tools.

The Indirect Trade Zone

European explorations during the sixteenth century probably had no direct or indirect impact on Siouans in the Piedmont. After Jamestown was settled in 1607, the Piedmont became included in the incipient interaction sphere. From 1620 to 1650, Virginia's interests in purchasing furs were focused on the Chesapeake Bay where suitable quality beaver pelts could be found. Virginia traders did not venture beyond the Tidewater and Chesapeake regions. There is some evidence that Siouans traded indirectly for European goods during the Protohistoric period (Table 4.1). Protohistoric assemblages contain greater numbers of triangular projectile points, other chipped-stone tools, and utilized flakes than Late Prehistoric assemblages. Projectile points, affixed to cane or wooden shafts, would have functioned as arrows for use in hunting or warfare. Small chipped-stone tools and utilized flakes could have been employed in a variety of craft and subsistence activities such as butchering animals, hideworking, and shaping soft stone, animal bone, shell, or wood. The relative frequency of these tool types may indicate the frequency with which the associated

activities occurred. It is possible that hunting and craft activities were intensified to take advantage of the broadening trade opportunities. The intercultural trade that occurred during the first fifty years of English settlement in Virginia was infrequent and probably had little impact on the daily activities of Siouans living in the North Carolina Piedmont.

Beginning around 1650, colonial interests turned toward developing trade in the unexplored region south and west of Jamestown, and piedmont Siouans began to trade with native middlemen for European manufactures with greater intensity. As shown in Tables 4.1 and 4.2, Early Contact period sites contain a greater variety of trade goods than Protohistoric sites, but European trade items are still not very abundant. In addition to glass beads, which are also present on Protohistoric sites, aboriginally manufactured ornaments from European sheet brass are frequently found on Early Contact sites. Brass kettles were common trade items and probably served as sources of sheet brass during this period (see Bradley 1987:131 for a full discussion of recycling trade kettles). It is uncertain whether the brass ornaments and brass wire fish hook were manufactured at the piedmont sites, but, as there is no evidence of brass scrap or diagnostic kettle parts at either Early Contact site, it is likely that the ornaments were traded from partners outside the indirect trade zone.

The flake of green bottle glass found at the Early Upper Saratown in the Dan drainage indicates that some alteration and experimentation with European materials did occur in the Piedmont at this time. This

Table 4.1. European Trade Goods from Haw and Eno River Sites.

Artifact	Proto-Historic	Early Contact	Middle Contact	Late Contact
Glass Bead		+	+	+
Green Bottle Glass				
Fragment	+	+	+	+
Flake		+	+	
Bottle				+
Flat Glass (mirror)				+
Kaolin Pipe		+	+	+
Sheet or Wire Brass				
Rolled Bead		+	+	
Pendant			+	
Bracelet				+
Coil				+
Fish Hook				+
Bell		+		+
Kettle				+
Thimble				+
Iron				
Fragment	+		+	+
Wrought Nail			+	+
Knife				+
Scissors				+
Hoe				+
Axe				+
Ember Tong				+
Jew's Harp				+
Firearm				
Gunflint		+	+	+
Lead Shot			+	+
Gun Parts				+
Musket				+
Other Metal				
Pewter Pipe				+
Pewter Porringer				+
Latten Spoon				+
Cast Brass Button				+
Lead Scrap				+

Note: (+) indicates present in assemblage. Some data taken from Carnes 1987 and 1988.

Table 4.2. European Trade Goods from Dan River Sites.

Artifact	Proto-Historic	Early Contact	Middle Contact	Late Contact
Glass Bead	+	+	+	+
Green Bottle Glass				
Fragment		+	+	+
Flake			+	+
Projectile Point			+	
Kaolin Pipe	+		+	+
Sheet or Wire Brass				
Rolled Bead		+	+	
Pendant		+	+	+
Gorget			+	
Bracelet				+
Ring			+	
Coil			+	
Projectile Point			+	
Fish Hook			+	
Bell			+	
Iron				
Fragment		+	+	+
Wrought Nail			+	+
Knife		+	+	+
Scissors			+	
Hoe			+	
Axe			+	
Jew's Harp			+	
Wire Bracelet			+	
Firearm				
Gunflint			+	+
Lead Shot			+	+
Gun Part			+	+
Pistol				+
Other Metal				
Jesuit Ring			+	
Cast Brass Button				+
Brass Belt Buckle				+
Lead Pendant				+
Latten Spoon			+	

Note: (+) indicates present in assemblage. Some data taken from Wilson 1983.

limited experimentation with glass as a raw material does not appear to have had any detrimental affects on the use of stone at Early Contact sites. Generally, the low frequency of trade goods from sites of this period indicates that the piedmont Siouans were still not heavily involved in the fur and deerskin trade.

The Early Contact stone tool assemblage from the Haw-Eno drainage exhibits a slight increase in the frequency of chipped-stone tools. The Early Contact assemblage from the Dan drainage shows an increase in the frequency of small triangular projectile points and utilized flakes. Hammerstones and anvils (implements involved in lithic reduction) also increased during the Early Contact period. It appears that the pattern of increased emphasis on warfare, hunting, and craft activities noted during the Protohistoric period continued into the Early Contact period.

The Advance of the Direct Trade Zone

The decade between 1670 and 1680 marks the turning point in European-Siouan interaction in the Piedmont. Lederer's journey, in the spring of 1670, ushered in an era of intense interaction that focused on the burgeoning Virginia fur and deerskin trade. This interaction brought about two challenges for Siouan technological systems: 1) supplying the ever-increasing demand for furs and hides; and, 2) defense against attack from more northern groups who were potentially armed with European firearms.

The variety of European trade goods is much greater on Middle Contact sites compared to earlier sites. This is indicated particularly

at Upper Saratown where trade goods were recovered from most excavated contexts. The experimentation with European materials noted in the Early Contact period also increased drastically during this period. Glass flakes are present at the Middle Contact sites in both drainages. Triangular projectile points were manufactured from bottle glass and sheet brass at the Upper Saratown site on the Dan River. In addition to a large quantity of aboriginally-manufactured brass ornaments, a few iron implements were also recovered from two burials at Upper Saratown. The archaeological evidence indicates that the Sara were deeply involved in the fur and deerskin trade during the Middle Contact period.

Increased participation in the fur and deerskin trade would have resulted in greater emphasis on hunting and hide-processing. This emphasis is reflected in the increased frequency of projectile points in Middle Contact stone-tool assemblages. Middle Contact assemblages are characterized by a high frequency of small chipped-stone tools as well. The types of small chipped-stone tools that occur most frequently at Middle Contact sites are utilized-retouched flakes. These expedient tools could have been used to butcher animals and prepare hides and skins. Of the more formalized tools, drills and wedges are the most numerous at Middle Contact sites. These tools are commonly associated with hide-processing, bone working, and various other craft activities. Their abundance may reflect an intensification of craft production at Middle Contact sites.

As small triangular projectile points have been found embedded in human bone as well as animal bone at Middle Contact sites, the high

frequency of projectile points may reflect not only an adaptation to intensified hunting but also to increased intertribal hostilities. During the Middle Contact period, piedmont Siouans found themselves increasingly confronted by adversaries armed with European firearms. In the first half of the 1670s the Occaneechi were struggling to halt the southern advance of the direct trade zone and resorted to acts of violence to keep the piedmont Siouans from pursuing direct trade. During the second half of the decade hostile bands of Seneca warriors began to harass Siouan communities in the Piedmont. Without regular access to firearms, the Siouans may have needed large supplies of arrows to defend against attack from groups with firearms.

The Direct Trade Zone

With the establishment of direct trading after 1670, regular supplies of metal tools and European weapons were available to Siouan groups in the Piedmont. The widespread adoption of European implements and weapons brought about changes in the production and use of stone tools. Accordingly, the density of stone artifacts on Late Contact sites is less than on earlier sites. It appears that the introduction of metal implements can be linked to a general decline in the production and use of stone tools during the Late contact period.

The composition of stone tool assemblages was also affected by the incorporation of other trade items. The presence of firearms at Late Contact sites is accompanied by a marked decrease in the frequency of projectile points. Hogue (1988:163) reports that the two instances of

violent trauma at the Middle Contact Fredricks site resulted from European weapons. In 1701, John Lawson (Lefler 1967:33) remarked that the Carolina natives were proficient at hunting with muskets. The incorporation of edged metal tools is associated with a similar decline in the frequencies of other chipped-stone tools and utilized flakes.

The present study indicates that the incorporation of edged metal tools and European weapons did not lead to the abandonment of traditional stone industries during the Late Contact period. However, changes in the composition of lithic assemblages point to a general decline in the production and use of stone tools, especially those involved in cutting and scraping activities, and a decline in the use of the bow and arrow after 1680.

PROJECTILE POINT MORPHOLOGY AND MANUFACTURE

The study of triangular projectile points revealed that there was a general trend for reduction in point size from the Late Prehistoric to Middle Contact periods and then an increase in size in the Late Contact period. Late Prehistoric and Late Contact assemblages contain significantly larger points than other assemblages. Late Prehistoric assemblages contain mostly bifacial points, while Late Contact assemblages contain a mix of bifacial and retouched-flake points. The distributions of Late Prehistoric and Late Contact point sizes tend to be skewed. These characteristics should differentiate Late Prehistoric projectile point assemblages from Protohistoric, Early

Contact, and Middle Contact assemblages.

Several features may be helpful in differentiating between Protohistoric, Early Contact, and Middle Contact assemblages. Protohistoric assemblages are characterized by bifacial points, while protohistoric and Middle Contact assemblages contain mostly retouched-flake points. The distribution of point sizes in Protohistoric assemblages also tends to be symmetrical or skewed-to-the-left. Early Contact and Middle Contact assemblages are very similar. One feature that may aid in differentiating between the two is that Early Contact assemblages tend to be skewed, while Middle Contact distributions tend to be symmetrical.

Middle Contact sites produce large quantities of triangular projectile points that are very similar in size. The majority of these points represent small, thin flakes with little edge modification. Previously, it was suggested that large quantities of points may have been required during the Middle Contact period for intensive hunting or defense against armed attack. The consistency in size of Middle Contact projectile points may have resulted from a "gearing-up" strategy where many points were produced at a given time.

Triangular projectile points produced during the Late Contact period tend to be larger than Middle Contact points and there also tends to be greater variation in size than points from the earlier period. Bradley (1987:125) notes a similar pattern at Historic period Onondaga sites. He notes that by 1650 the occurrence of triangular points drops to "vestigial proportions" and the assemblages reflect a similar

"eclectic diversity in both shape and material." The systematized production of projectile points during the Middle Contact period does not continue into the Late Contact period. The Middle Contact period appears to represent a time of general disruption and decline in the lithic industries of piedmont Siouans.

CONCLUSIONS

During the seventeenth century, the impact of European settlement at Jamestown and the development of the Virginia-based fur and deerskin trade on native Siouan populations in the Piedmont was profound. European-Siouan contact occurred within a series of interaction frontiers. Each frontier brought new challenges and opportunities into the Piedmont. This study suggests that native stone technologies were modified and re-modified to meet the challenges of each new frontier. The incorporation of European metal tools and weapons can be seen as another modification in technology, rather than as an abandonment of stone for metal.

Appendix 1. Distribution of stone artifacts from the Haw-Eno drainages by feature.

CATEGORY	Or231a - Haw River phase				Or231b - Haw River phase							
	Fea 72	Fea 82	Fea 89	Fea 94	Fea 100	Fea 101	Fea 102	Fea 103	Fea 104	Fea 105	Fea 106	Fea 107
DEBITAGE												
Decortication Flake	-	-	-	1	20	-	2	2	2	1	-	-
Int./Bif.Thin.Flake	5	13	-	3	78	2	11	13	-	3	1	1
Shatter Fragment	-	-	-	-	-	-	-	-	-	-	-	-
Flake (Archaic)	-	-	-	-	-	-	-	-	-	-	-	-
Core	-	-	-	-	1	-	-	-	-	1	-	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS												
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	1	1	-	1	-	-	-	-	-	1	-	-
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	-	-	1	-	-	-	-	-	-	-
Preform	-	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	-	1	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	1	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk												
End Scraper	-	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	-	2	1	-	6	-	-	1	-	-	1	-
GROUND STONE TOOLS												
Ground Celt	-	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-	-
Gr. Stone (Indet)	-	-	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS												
Cobble Chopper	-	-	-	-	2	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	1	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	1	-
TOTAL	6	16	1	5	111	2	13	16	2	6	3	1

Appendix 1. Continued.

CATEGORY	Or231b Haw River phase Fea 108	Fea 109	Fea 110	Or233 - Haw River phase Fea 1	Fea 3	Fea 5	Am145 - Haw River phase Fea 1	Fea 3	Fea 5	Fea 6	Fea 8
DEBITAGE											
Decortication Flake	12	-	1	9	-	2	-	13	6	1	2
Int./Bif.Thin.Flake	91	2	6	96	2	5	13	91	23	8	13
Shatter Fragment	-	1	-	-	-	-	-	1	-	-	1
Flake (Archaic)	-	-	-	1	-	-	-	-	-	-	-
Core	4	-	-	1	-	-	1	-	-	-	1
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	1	-	-	3	-	-	-	1	1	-	-
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	1	-	-	4	-	-	-	-	-	-	1
Preform	-	-	-	1	-	-	-	1	-	-	-
Biface	1	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk											
End Scraper	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	1	1	-	7	-	-	1	2	1	-	2
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Gr. Stone (Indet)	-	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	7	-	-	2	-	-	1	-	-	-	1
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	1	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	118	4	7	124	2	7	16	110	31	9	21

Appendix 1. Continued.

CATEGORY	Am163 - Haw River phase Fea 2	Fea 3	Fea 4	Fea 5	Fea 6	Ch452 Old Humus	Ch463 Haw River phase Fea 1	Fea 2
DEBITAGE								
Decortication Flake	18	15	1	-	-	33	57	15
Int./Bif.Thin.Flake	233	351	53	1	54	36	179	20
Shatter Fragment	4	5	-	-	1	-	-	-
Flake (Archaic)	10	-	-	-	-	-	-	-
Core	8	7	3	-	-	-	2	-
Raw Material	-	1	-	-	-	2	-	-
CHIPPED STONE TOOLS								
LeCroy Pt.	-	-	-	-	-	-	-	-
Morrow Mtn II Pt.	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-
Savannah River Pt.	1	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	7	2	1	-	1	2	8	-
Randoph Pt.	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	1	1	2	-	-	-	1	1
Preform	-	-	-	-	1	1	-	-
Biface	-	3	-	-	-	-	1	-
Chipped Hoe	-	-	-	-	-	-	-	-
Chipped Axe	-	1	-	-	-	-	-	-
Chipped Chisel	-	1	-	-	-	-	-	-
Chipped Disk								
End Scraper	-	4	1	-	-	-	-	-
Side Scraper	1	-	-	-	-	-	1	-
Drill	-	1	-	-	-	-	1	-
Wedge	2	-	-	-	-	-	1	-
Denticulate	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	1	2	1	-
Graver	1	-	-	-	-	-	2	-
Utl. & Ret. Flake	32	35	7	-	5	1	19	-
GROUND STONE TOOLS								
Ground Celt	-	3	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-
Gr. Stone (Indet)	2	-	-	-	-	-	-	-
LARGE COBBLE TOOLS								
Cobble Chopper	-	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	1	-
Mano	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-
Hammerstone/Mano	3	-	-	-	-	-	-	-
Anvil/Milling Stone	1	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-
TOTAL	324	430	68	1	63	77	274	36

Appendix 1. Continued.

	Am162 - Hillsboro phase									
CATEGORY	Fea 1	Fea 3	Fea 4	Fea 5	Fea 6	Fea 7	Fea 8	Fea 9	Fea 10	Fea 11
DEBITAGE										
Decortication Flake	12	5	-	1	-	1	-	-	-	-
Int./Bif.Thin.Flake	609	96	1	8	-	103	8	5	2	3
Shatter Fragment	6	-	-	-	-	-	-	-	-	-
Flake (Archaic)	1	-	-	-	-	-	-	-	-	-
Core	11	1	1	1	-	-	-	-	-	3
Raw Material	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS										
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt.	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	26	9	-	2	-	3	2	-	2	3
Randoph Pt.	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	9	-	-	-	-	1	1	-	-	2
Preform	-	-	-	-	-	-	-	-	-	1
Biface	6	3	1	-	-	4	-	1	-	1
Chipped Hoe	-	-	-	-	-	-	-	-	-	2
Chipped Axe	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	1	-	-	-	-	-	-	-
Side Scraper	1	-	-	-	-	-	-	-	-	-
Drill	1	-	1	-	-	-	-	-	-	-
Wedge	2	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-
Perforator	1	-	-	-	-	-	-	-	-	-
Graver	-	-	2	-	-	-	-	-	-	-
Utl. & Ret. Flake	44	11	7	7	3	14	-	3	-	9
GROUND STONE TOOLS										
Ground Celt	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-
Gr. Stone (Indet)	4	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS										
Cobble Chopper	2	-	-	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	2
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	2	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-
TOTAL	735	125	14	19	3	126	11	9	4	26

Appendix 1. Continued.

CATEGORY	Am236 - Hillsboro Phase								CH452 Mitchum phase		
	Fea 1	Fea 2	Fea 3	Fea 4	Fea 5	Fea 6	Fea 7	Fea 8	Fea 15	Fea 16	Fea 17
DEBITAGE											
Decortication Flake	1	5	2	-	-	-	21	1	2	13	1
Int./Bif.Thin.Flake	61	95	91	9	29	7	245	30	12	9	7
Shatter Fragment	1	-	3	-	-	-	1	-	-	-	-
Flake (Archaic)	-	-	-	-	-	-	-	-	-	-	-
Core	-	2	2	3	1	-	3	1	-	-	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt.	-	-	-	-	-	-	1	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	1	3	2	-	1	-	9	1	1	-	-
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	2	-	-	-	-	-	-	-	-	1
Preform	-	-	-	-	1	-	1	-	-	-	-
Biface	1	-	2	-	-	2	4	2	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	1	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	1	-	-
End Scraper	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	1	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	3	10	15	-	7	-	30	9	2	5	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Gr. Stone (Indet)	-	-	-	-	-	-	1	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	1	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	68	117	117	12	40	9	317	44	19	27	9

Appendix 1. Continued.

	CH452 - Mitchum phase										
CATEGORY	Fea 20	Fea 21	Fea 22	Fea 24	Fea 25	Fea 26	Fea 27	Fea 28	Fea 32	Fea 33	Fea 35
DEBITAGE											
Decortication Flake	-	9	1	-	-	1	1	1	-	-	-
Int./Bif.Thin.Flake	-	10	3	1	4	4	-	8	-	-	3
Shatter Fragment	-	1	-	-	-	-	-	1	-	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	-	-	1	-	-	1	-	-	-	1	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	1	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	-	3	-	-	-	-	-	-	1	-	1
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	1	-	-	-	-	-	-	-	-	-	-
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	1	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	-	1	-	-	3	-	1	-	-	-	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	-	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	1	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2	24	6	1	7	6	2	11	1	1	4

Appendix 1. Continued.

	CH452 - Mitchum phase			Or231a - Jenrette Phase							
CATEGORY	Fea 36	Fea 37	Fea 38	Fea 62	Fea 63	Fea 64	Fea 65	Fea 66	Fea 67	Fea 68	Fea 69
DEBITAGE											
Decortication Flake	6	1	12	1	2	-	24	4	-	-	2
Int./Bif.Thin.Flake	13	1	22	11	17	-	119	18	-	-	4
Shatter Fragment	-	-	-	-	-	-	1	-	-	-	-
Other Flakes	-	-	-	-	-	-	5	1	-	-	-
Core	-	1	1	1	-	-	5	3	-	-	-
Raw Material	-	-	-	-	1	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	1	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	1	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	1	-	1	2	9	-	25	6	1	1	-
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	-	-	-	-	-	1	-	-	-
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	1	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	1	-	-	-	-	-	-	-	-
Drill	1	-	-	-	-	-	-	1	-	-	-
Wedge	1	-	-	-	-	-	2	-	-	-	-
Denticulate	-	-	1	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	2	-	-	-	-
Graver	-	-	-	-	-	-	1	-	-	-	-
Utl. & Ret. Flake	3	-	2	-	4	1	35	8	-	1	1
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	1	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	-	-	-	-	-	-	1	1	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	1	-	3	-	-	-	2	1	-	-	-
Anvil/Milling Stone	-	2	-	-	-	-	2	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	1	-	-	-	-
TOTAL	26	5	43	15	33	1	229	44	1	2	7

Appendix 1. Continued.

	0r231a - Jenrette Phase										
CATEGORY	Fea 70	Fea 71	Fea 75	Fea 77	Fea 78	Fea 79	Fea 84	Fea 85	Fea 87	Fea 88	Fea 90
DEBITAGE											
Decortication Flake	-	5	1	14	9	2	4	2	-	-	-
Int./Bif.Thin.Flake	1	18	38	57	25	21	13	30	-	-	4
Shatter Fragment	-	-	1	-	1	1	-	-	-	-	-
Other Flakes	-	-	1	1	-	-	-	-	-	-	-
Core	-	4	-	4	2	-	1	1	-	-	-
Raw Material	-	1	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	1	3	11	21	14	6	11	6	1	-	1
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	1	4	-	1	-	1	1	-	-	-
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	1	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	1	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	1	-	-	1	-	1	-	-	-	-
Wedge	-	1	1	5	1	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	1	-	-	-	-	-	-	-
Graver	-	-	1	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	-	7	3	22	2	5	2	7	-	1	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	1	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	2	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	2	1	-	-	1	-	-	-	1
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	3	44	63	126	56	35	34	48	1	1	6

Appendix 1. Continued.

CATEGORY	Or231a - Jenrette Phase										
	Fea 92	Fea 95	Fea 96	Fea 98	Fea 99	Fea 113	Fea 120	Fea 121	Fea 122	Fea 123	Fea 124
DEBITAGE											
Decortication Flake	2	4	11	4	12	-	2	-	2	9	-
Int./Bif.Thin.Flake	8	25	80	17	56	-	23	2	39	55	-
Shatter Fragment	-	-	-	-	-	-	-	-	-	-	-
Other Flakes	-	2	2	-	1	-	-	-	-	-	-
Core	-	2	3	1	3	-	-	-	1	4	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	1	-	-	-	-
Sm. Triangular Pt.	5	12	26	5	9	1	4	-	24	8	1
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	-	1	1	-	1	-	-	2	-
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	1	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	3	3	-	-	-	-	-	1	-
Wedge	-	1	2	-	3	-	-	-	-	-	1
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	1	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	3	7	16	2	20	-	6	1	14	9	1
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	1	-	-	-	-	-	-
Grnd. Stone (Indet)	-	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	1	-	-
Anvil/Milling Stone	-	-	2	-	-	-	1	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	1	-	-	-	-	-	-	-
TOTAL	18	53	145	34	107	1	38	3	81	89	3

Appendix 1. Continued.

CATEGORY	Or231 - Fredricks phase										
	Fea 1	Fea 8	Fea 9	Fea 10	Fea 11	Fea 12	Fea 13	Fea 15	Fea 17	Fea 18	Fea 19
DEBITAGE											
Decortication Flake	1	4	18	-	1	-	1	-	6	2	3
Int./Bif.Thin.Flake	13	10	72	11	3	3	17	5	20	1	57
Shatter Fragment	2	3	30	1	-	-	5	-	-	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	-	-	1	1	-	-	-	-	1	-	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	-	-	6	-	-	-	2	1	-	-	2
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	1	-	4	-	-	-	-	-	-	-	2
Preform	-	-	-	-	-	-	-	-	-	-	1
Biface	1	-	2	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	1	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	-	-	4	-	-	-	-	-	1	-	1
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	3
Chunkey Stone	-	-	-	-	-	-	-	-	2	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	-	-	-	-	-	-	-	-	-	-	1
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	2	1	-	1	1	-	-	-	1
Chipped-Stone Disk	-	-	-	-	-	-	-	-	2	-	1
Hammerstone	-	-	2	-	-	-	-	-	2	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	1	-	-	-	1	-	-	1	-
Polished Cobble	-	-	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	1	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	18	17	143	14	4	5	27	6	34	4	72

Appendix 1. Continued.

	0r231 - Fredricks phase										
CATEGORY	Fea 20	Fea 23	Fea 24	Fea 25	Fea 28	Fea 29	Fea 30	Fea 31	Fea 33	Fea 35	Fea 38
DEBITAGE											
Decortication Flake	2	4	-	-	22	8	24	2	2	-	-
Int./Bif.Thin.Flake	15	38	1	2	111	73	68	6	68	1	1
Shatter Fragment	-	-	-	-	6	14	6	-	9	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	-	-	-	-	-	-	-	-	-	-	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	1	1	-	-	2	1	1	2	1	-	-
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	1	-	-	3	-	1	-	-	-	-
Preform	-	-	-	-	-	1	1	-	-	-	-
Biface	-	-	-	-	-	-	-	-	1	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	-	1	-	-	1	-	1	-	2	-	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	-	-	-	-	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	5	-	-	-	1	1	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	1	-	1	-	-
Chipped-Stone Disk	-	-	-	-	-	1	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-	1	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	23	45	1	2	146	99	103	10	85	1	1

Appendix 1. Continued.

	0r231 - Fredricks phase										
CATEGORY	Fea 39	Fea 41	Fea 42	Fea 44	Fea 45	Fea 46	Fea 47	Fea 48	Fea 49	Fea 50	Fea 51
DEBITAGE											
Decortication Flake	1	1	-	2	11	1	7	7	-	-	4
Int./Bif.Thin.Flake	18	22	17	23	38	15	27	35	4	2	36
Shatter Fragment	3	2	-	-	1	-	-	2	-	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	1	-	-	-	-	-	-	1	-	-	1
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
LeCroy Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	-	2	-	-	2	1	2	3	1	-	4
Randoph Pt.	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	2	-	1	-	-	-	-	-	-	-
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	1	-	1	-	-	-	-	-	3
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	-	-	-	1
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	1	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	-	2	-	-	-	-	-	2	-	-	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	2	-	-	1	-	1	1	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	1	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	-	2	-	-	1	-	-	-	-	-	4
LARGE COBBLE TOOLS											
Cobble Chopper	-	2	-	-	-	-	2	-	-	-	-
Chipped-Stone Disk	-	2	-	-	-	-	-	-	-	-	-
Hammerstone	-	1	-	-	1	1	-	-	-	-	1
Mano	-	-	-	-	-	3	-	1	-	-	-
Anvil	-	-	-	1	-	-	-	-	-	-	-
Nutting Stone	-	-	-	-	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-	-	-	-
Polished Cobble	-	3	-	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-	-	-	-
TOTAL	23	43	18	27	56	21	40	53	5	2	54

Appendix 1. Continued.

CATEGORY	Or231 - Fredricks phase							
	Fea 53	Fea 54	Fea 55	Fea 56	Fea 57	Fea 58	Fea 59	Fea 61
DEBITAGE								
Decortication Flake	5	11	2	2	-	-	6	2
Int./Bif.Thin.Flake	12	-	6	41	4	4	38	10
Shatter Fragment	1	-	-	-	-	-	-	-
Other Flakes	-	-	-	-	-	-	-	-
Core	2	-	-	-	-	-	2	-
Raw Material	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS								
LeCroy Pt.	-	-	-	-	-	-	-	-
Morrow Mtn. II Pt.	-	-	-	-	-	-	-	-
Guilford Pt.	-	-	-	-	-	-	-	-
Savannah River Pt.	-	-	-	-	-	-	-	-
Yadkin Pt.	-	-	-	-	-	-	-	-
Pee Dee Pt.	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	2	-	-	2	-	1	2	-
Randoph Pt.	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	1	-	-	1	-	-	1	-
Preform	-	-	-	-	-	-	-	-
Biface	-	-	-	2	-	-	1	-
Chipped Hoe	-	-	-	-	-	-	-	-
Chipped Axe	-	-	-	-	-	-	-	-
Chipped Chisel	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-
End Scraper	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-
Perforator	-	-	-	1	-	-	-	-
Graver	-	-	-	-	-	-	-	-
Utl. & Ret. Flake	1	-	-	-	-	-	3	1
GROUND STONE TOOLS								
Ground Celt	-	-	-	-	-	-	-	-
Ground-Stone Disk	-	-	-	3	-	-	-	-
Chunkey Stone	-	-	-	-	-	-	-	-
Stone Pipe	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-
Grnd. Stone (Indet)	-	-	-	1	-	-	2	-
LARGE COBBLE TOOLS								
Cobble Chopper	1	-	-	-	-	-	-	-
Chipped-Stone Disk	-	-	-	-	-	-	-	1
Hammerstone	3	-	-	-	-	-	1	-
Mano	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-
Nutting Stone	1	-	-	-	-	-	-	-
Grinding Stone	-	-	-	-	-	-	-	-
Polished Cobble	-	-	-	-	-	-	-	-
Pitted Cobble	-	-	-	-	-	-	1	-
Hammerstone/Mano	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-
Utilized Cobble	-	-	-	-	-	-	-	-
Worked Slab	-	-	-	-	-	-	-	-
TOTAL	29	11	8	53	4	5	57	14

Appendix 2. Distribution of stone artifacts from the Dan drainage by feature.

	RK5 - Dan River phase										
CATEGORY	Fea 1	Fea 2	Fea 3	Fea 4	Fea 6	Fea 7	Fea 8	Fea 10	Fea 12	Fea 13	Fea 15
DEBITAGE											
Decortication Flake	25	2	13	-	-	-	-	5	10	7	2
Int./Bif.Thin.Flake	97	13	187	29	24	15	24	11	41	11	4
Shatter Fragment	2	-	3	-	-	-	-	-	1	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	-	1	2	-	1	-	-	-	2	1	-
Raw Material	1	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
Kirk Corner-Notched	-	-	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-	1
Halifax Pt.	-	-	-	-	-	-	-	-	-	-	-
Stanly Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	-	-	-	-	-	-	-	-
Sm. Stemmed Pt.	-	-	-	-	-	-	-	-	-	-	-
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Randolph Stemmed	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	2	-	16	-	1	1	-	-	2	1	-
Archaic Pt. (?)	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	1	-	-	-	-	-	-	-	-	-	-
Preform	2	-	-	-	-	-	-	-	-	-	-
Biface	4	-	1	1	-	-	1	-	-	1	-
Drill	-	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	1	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flakes	2	1	4	-	-	-	-	2	-	-	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground Disk	-	-	-	-	-	-	-	-	-	-	-
Stone Bead	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Gr.Stone (Indet)	-	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
TOTAL	136	17	227	30	26	16	25	18	56	21	7

Appendix 2. Continued.

	RK5 - Dan River phase						RK1 - Dan River phase			
CATEGORY	Fea 16	Fea 18	Fea 21	Fea 25	Fea 28	Fea 29	Fea 14	Fea 18	Fea 32	Fea 41
DEBITAGE										
Decortication Flake	1	13	-	5	-	11	1	1	-	2
Int./Bif.Thin.Flake	7	58	3	7	5	55	2	6	-	8
Shatter Fragment	-	-	-	-	-	-	-	-	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-
Core	-	-	-	-	-	-	-	-	-	-
Raw Material	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS										
Kirk Corner-Notched	-	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-
Halifax Pt.	-	-	-	-	-	-	-	-	-	-
Stanly Pt.	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	-	-	-	-	-	1	-
Sm. Stemmed Pt.	-	-	-	-	-	-	-	-	-	-
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	-	-
Randolph Stemmed	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	-	-	-	-	-	3	-	-	1	-
Archaic Pt. (?)	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	-	-	-	-	-	-	-	-
Preform	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	-	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flakes	-	1	-	-	-	-	-	-	-	-
GROUND STONE TOOLS										
Ground Celt	-	-	-	-	-	-	-	-	-	-
Ground Disk	-	-	-	-	-	-	-	-	-	-
Stone Bead	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	1	-	-	-	-
Gr.Stone (Indet)	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS										
Cobble Chopper	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-
TOTAL	8	72	3	12	5	70	3	7	2	10

Appendix 2. Continued.

	Sk6 - Dan River phase								Sk 1 Early Saratown	
CATEGORY	Fea 4	Fea 5	Fea 6	Fea 7	Fea 8	Fea 15	Fea 17	Fea 55	Fea 6	Fea 9
DEBITAGE										
Decortication Flake	38	-	23	5	10	16	20	4	3	5
Int./Bif.Thin.Flake	179	6	164	77	119	135	123	11	46	91
Shatter Fragment	-	-	8	1	3	3	7	-	1	4
Other Flakes	-	-	1	-	2	-	-	-	-	-
Core	1	-	-	-	-	-	-	-	-	1
Raw Material	-	-	1	-	-	-	-	-	-	1
CHIPPED STONE TOOLS										
Kirk Corner-Notched	-	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-
Halifax Pt.	-	-	-	-	-	-	-	-	-	-
Stanly Pt.	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	-	-	-	-	-	-	-
Sm. Stemmed Pt.	-	-	-	-	1	-	-	-	-	1
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	-	-
Randolph Stemmed	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	8	-	3	5	5	6	5	-	5	5
Archaic Pt. (?)	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	4	-	3	-	3	-	1	5
Preform	-	-	-	-	-	-	-	-	3	-
Biface	-	-	1	1	-	-	-	-	-	3
Drill	-	-	-	-	-	-	1	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	1	-	-
Wedge	-	-	1	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-
Graver	1	-	-	-	-	2	-	-	-	-
Utl. & Ret. Flakes	1	1	1	1	1	-	-	-	4	2
GROUND STONE TOOLS										
Ground Celt	-	-	-	-	-	-	-	-	-	-
Ground Disk	-	-	-	-	-	-	-	-	-	-
Stone Bead	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-
Gr.Stone (Indet)	-	-	-	-	-	-	-	-	-	-
LARGE COBBLE TOOLS										
Cobble Chopper	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	1	2
Anvil	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-
TOTAL	228	7	207	90	144	162	159	16	64	120

Appendix 2. Continued.

	Sk 1 Early Saratown		Rk5 - Early Sartown phase					RK1 Middle Saratown		
CATEGORY	Fea 16	Fea 17	Fea 5	Fea 11	Fea 14	Fea 19	Fea 27	Fea 1	Fea 3	Fea 4
DEBITAGE										
Decortication Flake	2	40	-	18	3	1	1	1	-	-
Int./Bif.Thin.Flake	78	296	4	90	6	13	11	13	1	2
Shatter Fragment	11	7	-	9	-	-	-	-	-	-
Other Flakes	-	-	-	-	-	-	-	-	-	-
Core	-	2	-	4	-	1	-	-	-	-
Raw Material	1	1	-	-	-	-	2	1	-	-
CHIPPED STONE TOOLS										
Kirk Corner-Notched	1	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-
Halifax Pt.	-	-	-	-	-	-	-	-	-	-
Stanly Pt.	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	-	-	-	-	-	-	-
Sm. Stemmed Pt.	-	-	-	-	-	-	-	-	-	-
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	-	-
Randolph Stemmed	1	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	8	9	-	4	1	1	-	2	-	-
Archaic Pt. (?)	1	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	4	7	-	-	-	-	-	-	-	-
Preform	-	1	-	-	-	-	-	-	-	-
Biface	2	4	-	2	-	-	-	-	-	-
Drill	-	-	-	-	-	-	-	-	-	-
Chipped Disk	-	-	-	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	1	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-
Denticulate	-	1	-	-	-	-	-	-	-	-
Perforator	2	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flakes	3	3	1	1	-	-	-	-	-	-
GROUND STONE TOOLS										
Ground Celt	-	-	-	-	-	-	-	-	-	-
Ground Disk	-	-	-	-	-	-	-	-	-	-
Stone Bead	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-
Gr.Stone (Indet)	-	-	-	1	-	-	-	-	-	-
LARGE COBBLE TOOLS										
Cobble Chopper	-	-	-	-	-	-	1	-	-	-
Hammerstone	1	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	1	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-
TOTAL	115	371	5	130	10	17	15	17	1	2

Appendix 2. Continued.

	RK1 - Middle Saratown										
CATEGORY	Fea 5	Fea 6	Fea 7	Fea 8	Fea 10	Fea 11	Fea 13	Fea 17	Fea 24	Fea 25	Fea 30
DEBITAGE											
Decortication Flake	-	2	1	6	15	24	2	1	0	4	36
Int./Bif.Thin.Flake	1	25	41	70	28	47	21	11	14	29	154
Shatter Fragment	-	-	-	2	-	-	1	-	-	4	3
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	-	2	-	1	2	-	-	-	1	-	3
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
Kirk Corner-Notched	-	-	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-	-
Halifax Pt.	-	-	-	-	-	-	-	-	-	-	-
Stanly Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	1	-	-	-	-	-	-	1
Sm. Stemmed Pt.	-	-	-	-	-	-	-	-	-	-	-
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Randolph Stemmed	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	-	5	5	10	3	4	1	-	1	7	12
Archaic Pt. (?)	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	-	-	-	-	-	-	-	-	2
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	1	-	-	-	-	-	-	-
Drill	-	-	-	1	1	1	-	-	1	-	-
Chipped Disk	-	-	-	1	-	-	-	-	-	-	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	1	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	1	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	-
Perforator	-	-	-	-	-	-	-	-	-	-	1
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flakes	-	1	-	7	2	1	1	-	-	2	4
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground Disk	-	-	-	-	1	-	-	-	-	-	-
Stone Bead	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Gr.Stone (Indet)	-	-	-	-	-	-	1	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	3	3	3	1	-	-	-	2	2	1
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	2
Abrader	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1	39	50	103	54	77	27	12	19	48	219

Appendix 2. Continued.

	RK1 - Middle Saratown phase								SK1a Early Late Saratown		
CATEGORY	Fea 31	Fea 33	Fea 34	Fea 35	Fea 38	Fea 39	Fea 40	Fea 46	Fea 118	Fea 119	Fea 120
DEBITAGE											
Decortication Flake	2	6	1	20	23	2	-	8	9	-	15
Int./Bif.Thin.Flake	31	56	29	161	127	9	3	88	39	4	143
Shatter Fragment	2	-	1	3	-	-	-	-	7	1	13
Other Flakes	-	-	-	-	-	-	-	-	-	-	-
Core	2	2	1	3	8	-	-	-	-	-	-
Raw Material	-	-	-	-	-	-	-	-	-	-	-
CHIPPED STONE TOOLS											
Kirk Corner-Notched	-	-	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-	-
Halifax Pt.	-	-	-	-	-	-	-	-	-	-	-
Stanly Pt.	-	1	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	-	-	-	-	-	-	-	-
Sm. Stemmed Pt.	1	-	-	1	-	-	-	-	-	-	-
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	-	-	-
Randolph Stemmed	-	-	-	-	-	-	-	-	-	-	-
Sm. Triangular Pt.	5	17	5	8	7	0	2	7	19	-	8
Archaic Pt. (?)	-	-	-	-	-	-	-	-	-	-	-
Proj. Pt. (Indet.)	-	-	-	-	-	-	-	-	8	-	-
Preform	-	-	-	-	-	-	-	-	-	-	-
Biface	-	-	-	-	1	-	-	1	1	-	1
Drill	-	-	1	-	1	-	-	-	2	-	-
Chipped Disk	-	-	-	-	-	-	-	1	-	-	-
Chipped Hoe	-	-	-	1	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	-	-	-	-	1
Perforator	-	-	-	-	-	-	-	-	-	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flakes	5	3	3	1	2	-	1	4	5	-	-
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	-	-	-
Ground Disk	-	-	-	-	-	-	-	-	-	-	-
Stone Bead	-	-	-	-	-	-	-	-	-	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Gr.Stone (Indet)	-	-	-	-	3	-	-	-	-	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	1	1	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	-	-	-	-	-	3	-	-
Anvil	-	-	-	-	-	-	-	-	1	-	-
Mano	-	-	-	-	-	-	-	-	-	1	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	-	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	-	-	-
Abrader	-	-	-	-	-	-	-	-	-	-	-
TOTAL	49	86	41	198	172	11	6	109	94	6	181

Appendix 2. Continued.

CATEGORY	Sk1a - Early Late Saratown								Sk6 - Late Saratown phase		
	Fea 121	Fea 123	Fea 124	Fea 126	Fea 130	Fea 132	Fea 133	Fea 136	Fea 10	Fea 21	Fea 54
DEBITAGE											
Decortication Flake	-	2	3	-	-	4	2	3	174	4	30
Int./Bif.Thin.Flake	17	23	21	46	1	15	20	147	1330	31	201
Shatter Fragment	10	1	-	-	-	4	1	-	56	3	11
Other Flakes	-	-	-	-	-	-	-	-	11	-	-
Core	-	-	-	-	-	-	-	-	27	1	-
Raw Material	-	-	-	-	-	-	-	-	2	-	-
CHIPPED STONE TOOLS											
Kirk Corner-Notched	-	-	-	-	-	-	-	-	-	-	-
Kirk Stemmed Pt.	-	-	-	-	-	-	-	-	-	-	-
Halifax Pt.	-	-	-	-	-	-	-	-	1	-	-
Stanly Pt.	-	-	-	-	-	-	-	-	-	-	-
Morrow Mtn II Pt	-	-	-	-	-	-	-	-	-	-	-
Sm. Stemmed Pt.	-	-	-	-	-	-	-	-	1	-	-
Eared Yadkin Pt.	-	-	-	-	-	-	-	-	1	-	-
Randolph Stemmed	-	-	-	-	-	-	-	1	-	-	-
Sm. Triangular Pt.	1	3	-	9	-	4	1	11	81	3	3
Archaic Pt. (?)	-	-	-	-	-	-	-	1	-	-	-
Proj. Pt. (Indet.)	3	1	-	-	-	-	-	8	4	-	-
Preform	-	1	-	-	-	-	-	2	-	-	-
Biface	-	-	-	-	-	-	-	1	5	-	1
Drill	-	1	-	1	-	-	2	-	3	-	-
Chipped Disk	-	-	-	-	-	-	-	-	3	1	-
Chipped Hoe	-	-	-	-	-	-	-	-	-	-	-
Side Scraper	-	-	-	-	-	-	-	-	-	-	-
Wedge	-	-	-	-	-	-	-	-	-	-	-
Spokeshave	-	-	-	-	-	-	-	-	-	-	-
Denticulate	-	-	-	-	-	-	2	-	2	-	-
Perforator	-	-	-	3	-	-	-	-	5	-	-
Graver	-	-	-	-	-	-	-	-	-	-	-
Utl. & Ret. Flakes	-	1	-	-	-	-	4	4	28	-	4
GROUND STONE TOOLS											
Ground Celt	-	-	-	-	-	-	-	-	1	-	-
Ground Disk	-	1	-	1	-	-	-	-	2	-	-
Stone Bead	-	-	-	-	-	-	-	-	1	-	-
Engraved Stone	-	-	-	-	-	-	-	-	-	-	-
Gr.Stone (Indet)	-	1	-	-	-	-	-	-	4	-	-
LARGE COBBLE TOOLS											
Cobble Chopper	-	-	-	-	-	-	-	-	-	-	-
Hammerstone	-	-	-	2	-	1	1	2	-	-	-
Anvil	-	-	-	-	-	-	-	-	-	-	-
Mano	-	-	-	-	-	-	-	-	-	-	-
Hammerstone/Mano	-	-	-	-	-	-	-	-	15	-	-
Anvil/Milling Stone	-	-	-	-	-	-	-	-	2	-	-
Abrader	-	-	-	-	-	-	-	-	1	-	-
TOTAL	31	35	24	62	1	28	33	180	1760	43	250

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