THE HAMILTON SITE: A LATE HISTORIC NEUTRAL TOWN

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By

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ABSTRACT

This thesis presents the description, analysis and interpretation of the Hamilton Site (AiHa-5), a large 6-acre Neutral Iroquois town occupied circa 1638 to 1650 A.D. Analysis of the settlement patterns and the material culture clearly indicates historic Neutral occupancy, but a significantly high (64 percent) incidence of shell tempered pottery also occurs. This presence of foreign pottery raised interpretational hypotheses to account for it, and an influx of foreign female potters is seen as the best explanation. Use of ethnohistoric documentation offers several alternatives for the identification of the foreign population. Finally, the possibility that Hamilton represents a Jesuit "mission" site is raised.

ACKNOWLEDGEMENTS

I would like to extend my sincere thanks and appreciation to the following individuals and institutions without whose assistance this thesis could not have been realized.

McMaster University provided the necessary field facilities throughout the fall excavations of 1970, 1972 and 1976, and opened archaeological laboratories in late 1971. For use of these facilities I remain grateful.

My thesis committee, composed of Dr. William C. Noble (thesis supervisor), Dr. Peter G. Ramsden and Professor Charles E. Stortroen, are sincerely thanked for their helpful criticisms and guidance throughout the final stages of this work. Dr. Noble, in particular, has been the instrumental person in seeing the Hamilton site excavated, analysed and prepared in written form. It was he who initiated and directed the fall digs at Hamilton in 1970 and 1972, and who arranged for the author to continue excavation during the fall of 1976. He has played a large role in the undergraduate and graduate training of the author, and has generously turned over the Hamilton site to me for a research thesis topic. Dr. Noble has also provided full access to his written notes, maps and papers concerning the Hamilton site, as well as made available his personal experience with regard to Iroquoian studies at large. He guided the author through

the analysis, suggested alternate interpretations, and has edited with care the rough drafts of this thesis. For these and many other services I am deeply indebted. Many of the following acknowledgements are appreciatively made on behalf of both of us.

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Remembered, too, are the many diligent McMaster Anthropology students who took part in the fall digs. Because of their efforts, often under adverse conditions of pouring rain, sleet and snow, the Hamilton artifact assemblage represents the best extant collection from a single Neutral site.

Professor Helen Devereux of Laurentian University is also warmly thanked. She and her university arranged for a memorable visit of twenty-one Laurentian students to the Hamilton site for the weekend of October 21-22, 1972. They provided a helpful addition to the field crew, and contributed several subsequent useful artifact analyses.

Mr. George Gee who initially brought the Hamilton site to our attention has provided innumerable contributions.

His extensive surface collection from Hamilton has been generously donated to McMaster University and it is incorporated in the following analysis. George's conscientious participation, both in the field and in the lab, is greatly appreciated.

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Both Stewart Leslie and Douglas Mannen are appreciatively remembered for their industrious contributions during the early 1970 and 1972 excavations, and William Fitzgerald and Gary Warrick were ready companions in 1976.

The tedious task of analysing the copious Hamilton faunal remains was most capably handled by Mrs. Deborah Pihl of the University of Toronto. Funded by the Ontario Heritage Foundation, she completed this study as well as an identification of the Hamilton worked bone. These studies constitute a most significant contribution to the thesis.

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INTRODUCTION

Historical Background

The Neutral confederacy was so named by the famous French explorer Samuel de Champlain because of the neutrality these people maintained during the longstanding historic hostilities between their neighbours, the Huron and the Iroquois. It was primarily because of this delicate position that the Neutral refrained from direct French trade during the early 17th century and were content with receiving highly valued European goods through Huron middlemen. Consequently, the extent of direct Neutral-European contact was extremely limited as are our first-hand accounts of the Neutral prior to their dispersion and extinction as a cultural entity in the mid-17th century.

The interpreter Etienne Brulé is believed to be the first white to have contacted the Neutral. This probably occurred in 1615-16 when he accompanied a party of Huron journeying to seek military aid from the Andastes in Pennsylvania against the Onondaga (Champlain 1928:Vol.III,58; Wright 1963:21). Brulé was definitely in Neutralia during 1625-26, and though we are left with no written details of his stay, his glowing oral account of the Neutral and their lands prompted Recollect Joseph de la Roche Daillon to set

out on October 18th, 1626, to establish a mission amongst the Neutral (Sagard 1866:Vol.3,799).

Daillon was initially welcomed at the six Neutral villages he visited and was given permission to remain among the Neutral to teach them of the white God. On behalf of the French he invited the Neutral to come to trade (Sagard 1866:Vol.3,801-802).

Hearing of Daillon's invitation to lead the Neutral to trade, the Huron, with hopes of maintaining their profitable role as middlemen, spread malicious rumours of Daillon and the French. As a result, the Recollect's life was threatened and after only three months in Neutralia he was forced to return to the Huron country early in 1627.

Subsequent visits to the Neutral by French traders are noted to have occurred (JR 21:203) for the purposes of direct trade, but such visits are not documented in detail. It was not until 1640, fourteen years after Daillon's visit, that additional first-hand information with regard to the Neutrals was recorded. Jesuit Fathers Jean de Brébeuf and Joseph Marie Chaumonot, with two French domestics, dwelt four months among the Neutral in the winter of 1640-41. Father Jerome Lalement, their superior in Huronia, provides us with the details of this mission as it was orally transmitted to him by the Fathers on their return (JR 21:187-237).

Brébeuf and Chaumonot were not well accepted by the Neutral. Though they too came with the pretext of trade,

Huron warnings of Brébeuf's demonic powers over life and death and the well being of the country preceded them and "had caused the doors of the cabins everywhere to be closed" (JR 21:207). During their visit, however, the Fathers passed through eighteen villages and made a special stay at ten where they gave instruction as often as they would be heard (JR 21: 223).

In the Neutral village of Teotongniaton, called St. Guillaume, the priests were snowbound and for twenty-five days were the well-treated guests of a woman, in whose cabin they stayed. During this period, Brébeuf and Chaumonot were able to record much of the language and some narrations as they were taught and dictated by the woman (JR 21:225-229). Such an invaluable document, however, has not as yet surfaced in any archive.

After the early spring of 1641, when Brébeuf and Chaumonot returned to Huronia and until the Neutral dispersion of 1651, no European expedition to the Neutral is recorded. The collapse of the Neutral nation is thus obscure.

As early as the 1630's the westward expansion of the Seneca is apparent. While several reasons for such an expansion have been suggested, the most likely explanation seems to relate to a quest for new beaver territory (Trelease 1960:130; White 1961:40; 1971:32). The routing of the Wenro from their homeland in western New York by 1638, the displacement of the Erie in a southwestward direction in

the late 1640's (White 1961:49), and the destruction of the Aondironnon tribe of the Neutral Nation in 1647 (JR 33:81-3) indicate the extent of the Seneca expansion.

In the autumn and spring of 1650 and 1651, following the dispersion of the Huron, the Iroquois turned once more toward the Neutral nation and captured two of its villages (JR 36:177-9). The dispersal which followed is described by Father Paul Ragueneau:

> This loss was very great, and entailed the complete ruin and desolation of the Neutral nation; the inhabitants of their other villages, which are more distant from the enemy, took flight; abandoned their houses, their property, and their country; and condemned themselves to voluntary exile, to escape still further from the fury and cruelty of the conquerors (JR 36:177-179).

Though several later references note remnant groups of the Neutral in captivity in Iroquois villages (JR 41:103; 54:81), and scattered in various parts of New York, Ontario, and Michigan (JR 37:97; 38:181; Wright 1963:56-57), the Neutral ceased to exist as a cultural or tribal entity following the dispersal of 1651.

Archaeological Background

Attention was not again directed toward the Neutral until the late 1800's and the present century (details in Wright 1963:59-82). The work of Frank W. Waugh, David Boyle, William J. Wintemberg, and Frank Ridley have greatly added to our understanding of Neutral site locations and material culture. While Ridley (1961) summarized the archaeological contributions of many of the earlier amateurs, Gordon K.

Wright (1963) synthesized most of the pertinent ethnohistoric sources into his classic ethnography. Marian White (1961), using reliable private collections and historical sources, concentrated her efforts on site chronology and the ethnic identification of archaeological sites in the Niagara Frontier Region of New York State. The ultimate ancestry for the Neutrals arising out of the 1350-1400 A.D. Middleport horizon has been demonstrated in James V. Wright's monograph (1966) entitled "The Ontario Iroquois Tradition".

In the last decade historic Neutral archaeology has advanced considerably, primarily through the efforts of Ian T. Kenyon, William C. Noble and Marian White. While site survey has continued in the face of the urban bulldozer (Lennox 1976; White 1969), a search for temporal and spatial patterns has also been a prime concern (Fox 1972; Kenyon 1972; Noble 1970; 1972b; White 1961). It is, however, McMaster University's large-scale excavations at the historic Neutral sites of Christianson, Cleveland, Walker and Hamilton, under Dr. Noble's field supervision (1969-74), that has produced artifact and settlement pattern samples, of both quality and quantity, to allow detailed analyses. The first detailed Neutral site reports, including this study, are only now emerging.

The Neutral. From archaeological and historical evidence it is possible to draw a brief sketch of the Neutral as they are now known.

Neutral origins can be traced back to the 1350 A.D. Middleport horizon, a common cultural base of both the Neutral-Erie branch and the Huron-Petun branch of the Ontario Iroquois tradition (Wright 1960; 1966).

Late prehistoric Neutral sites (1400-1550 A.D.) have been reported over a broad area of Southwestern Ontario approximately bounded by the Niagara River on the east and the city of Chatham to the west. A concentration of historic Neutral sites (1620-1650) within a 20-mile radius of the west end of Lake Ontario (Noble 1977:4) and the virtual absence of such sites west of the Grand River (Lee 1952), have suggested a protohistoric (1550-1620) eastward migration and concentration of the Neutral population in the Hamilton area. Here site density increases through time (Kenyon 1972:6,8). Outside of this core area historic Neutral sites also occur, but more sparsely, in the Niagara Peninsula and in the Niagara Frontier region of New York State (Lennox 1976; Noble 1977; White 1961; 1969).

Composed of five to nine Iroquoian-speaking tribes, the Neutral nation inhabited approximately forty contemporaneous towns, villages and hamlets of up to ten acres in size (Noble 1977:6,17). The villages consisted of a number of longhouses up to 120 feet in length as well as 20-foot long cabins (Noble 1970; Wright 1977), and were often encircled by a defensive palisade. Each house, presumably covered with elm bark, was inhabited by a number of matrilineally

related extended families (Noble 1977:7).

While early population estimates for the Neutral vary considerably between 12,000 and 35,000 (Wright 1963:7-8), the variability may relate to the devastating effects of the smallpox epidemics and famine of the late 1630's (JR 20:47, 49; 21:191-235). The lower population estimates all tend to post date 1640.

Neutral subsistence was based on the cultivation of corn, beans, squash and sunflower, heavily supplemented by hunting, fishing and gathering activities. Tobacco, valued as a ritual and trade commodity, was also cultivated (Sagard 1939:158).

An important aspect in historic Neutral life, as attested by the large quantity of European trade materials recovered from their villages, was their involvement in the fur trade. Trade goods arrived in Neutral hands through Huron "middlemen" and free trading "courier de bois" (JR 21: 203). While obviously an important factor in historic Neutral life, the many ramifications of the trade and its effect on Neutral lifestyle are poorly understood.

In addition to the Neutral's involvement in the fur trade, they also participated primarily during the Historic period in a trade network to the south. As Noble (1977:13) suggests, the Neutral themselves were "middlemen" standing between a northern trade route (the French and Hurons) and a southern one, which saw exchanges through the Andaste and

Eries to the Ohio-Mississippi regions. He believes that maintaining this "middleman" trading position best explains the Neutral's neutrality. Kenyon (1972:10) also believes that the marine shells and marine shell ornaments, as well as rare southern-derived ceramic ideas, entered Neutral territory by way of southwestern New York and the Ohio-Mississippi drainage basin. As we shall see, many such southern-derived elements occur at the Hamilton site.

History of the Hamilton Site (AiHa-5)

The Hamilton site in West Flamborough township came to the attention of Dr. W.C. Noble at McMaster University in 1969, through the conscientious interest of Mr. George Gee of Dundas. Long an amateur archaeologist and keen-sighted collector, Mr. Gee had surface-hunted Hamilton since 1960. It is of interest that this large town was unknown to scholars and collectors of the turn of the century and, thus, it has been little disturbed except for agricultural plowing.

The site is named after Mr. George Hamilton who, with his two sons, LeVern and Harold, have worked the farm for the past fifty years.

In the autumns of 1970 and 1972, Dr. Noble mapped and excavated the Hamilton site with the help of his anthropology students. Laurentian University students under Professor Helen Devereux also participated in 1972, and 8,550 square feet were excavated in Areas A, B, C and D by these parties. In 1976, the author returned to Hamilton to exca-

vate an additional two houses in Areas E and F (Figure 1). To date, 14,390 square feet of the estimated six-acre Hamilton site have been excavated.

Hamilton represents the latest-dating historic Neutral town yet investigated within the core area of historic Neutralia. As such, it offers a rare glimpse of Neutral lifestyle during the seventeenth century, and particularly of that time when the confederacy crumbled. It is the description, analysis and interpretation of the remains recovered at Hamilton that are the main concerns of this monograph. However, several major interpretive problems arise that will give Iroquoian scholars elsewhere tantalizing food for thought.

Most noteworthy, the Hamilton ceramics suggest a strong non-Neutral influence. The nature, origin and identification of this ceramic influence is of prime concern. The greatest setback toward such an endeavour, however, lies in the lack of adequate comparative data. The large 1625-45 A.D. Walker town (Wright 1977) in the midst of Neutralia is the only other totally analyzed Neutral site to date. Also, it is regrettable to say that quality site reports for comparative purposes are lacking from adjacent New York, Pennsylvania and Ohio where links to Hamilton obviously exist.

In the following, Chapter 2 presents the Hamilton settlement patterns, followed by an analysis of the artifacts in Chapter 3. Here artifacts not only from the three field-

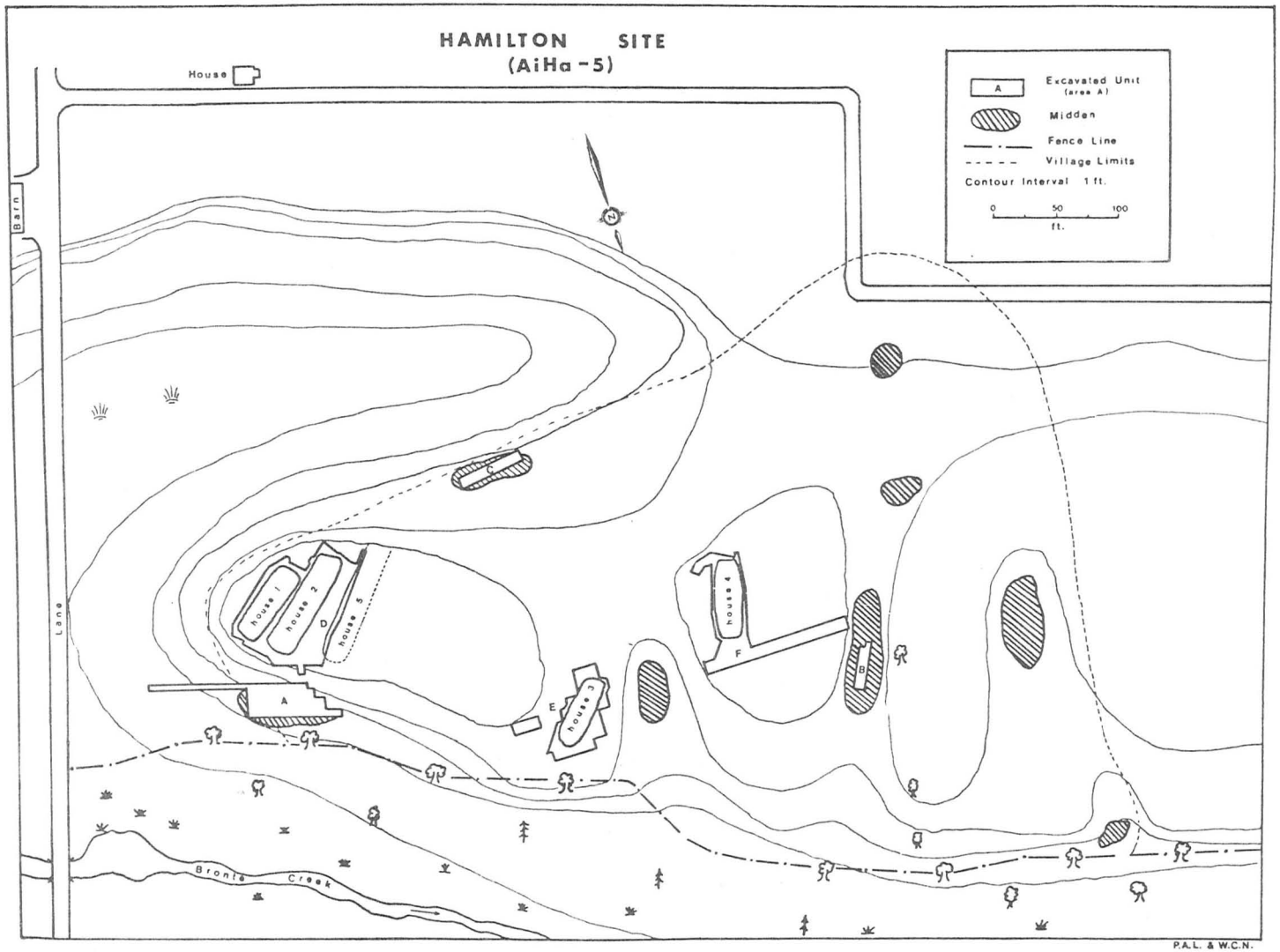


FIG. 1. The Hamilton site.

work seasons but also those generously donated to McMaster University by Mr. George Gee are utilized. Chapters 4 and 5 summarize the floral and faunal remains from the site and, finally, Chapter 6 provides an analytic discussion and interpretation of the Hamilton site.

2

SETTLEMENT PATTERN

Village Location

The Hamilton site is located approximately nine miles north of the city of Hamilton, Ontario (Figure 2), on the south half of Lot 5, Concession VIII, in the Township of West Flamborough, Regional Municipality of Hamilton-Wentworth (formerly Wentworth County). It is situated on a low rise of sandy loam bordering the north bank of a small tributary to Bronte Creek. This tributary continuously flows year-round, and helps drain the large Beverly Swamp less than one mile west of the site.

The location of the Hamilton town was apparently chosen for its natural resources rather than its defenses. The well-drained sandy (Burford) loam soils of the immediate area are today noted for their yields of corn and other grain crops. Too, the nearby Beverly Swamp is presently known to local hunters as a productive yarding area for deer, and migratory water fowl and fish commonly occur in the creek. The low relief of the site and the immediate area (Figure 1) provided little in the way of natural defenses. This is in contrast to other Neutral sites such as Cleveland, Sealey and Walker (Noble 1972a; Ridley 1961; Wright 1977), where advantage was taken of natural, high, erosional river banks as

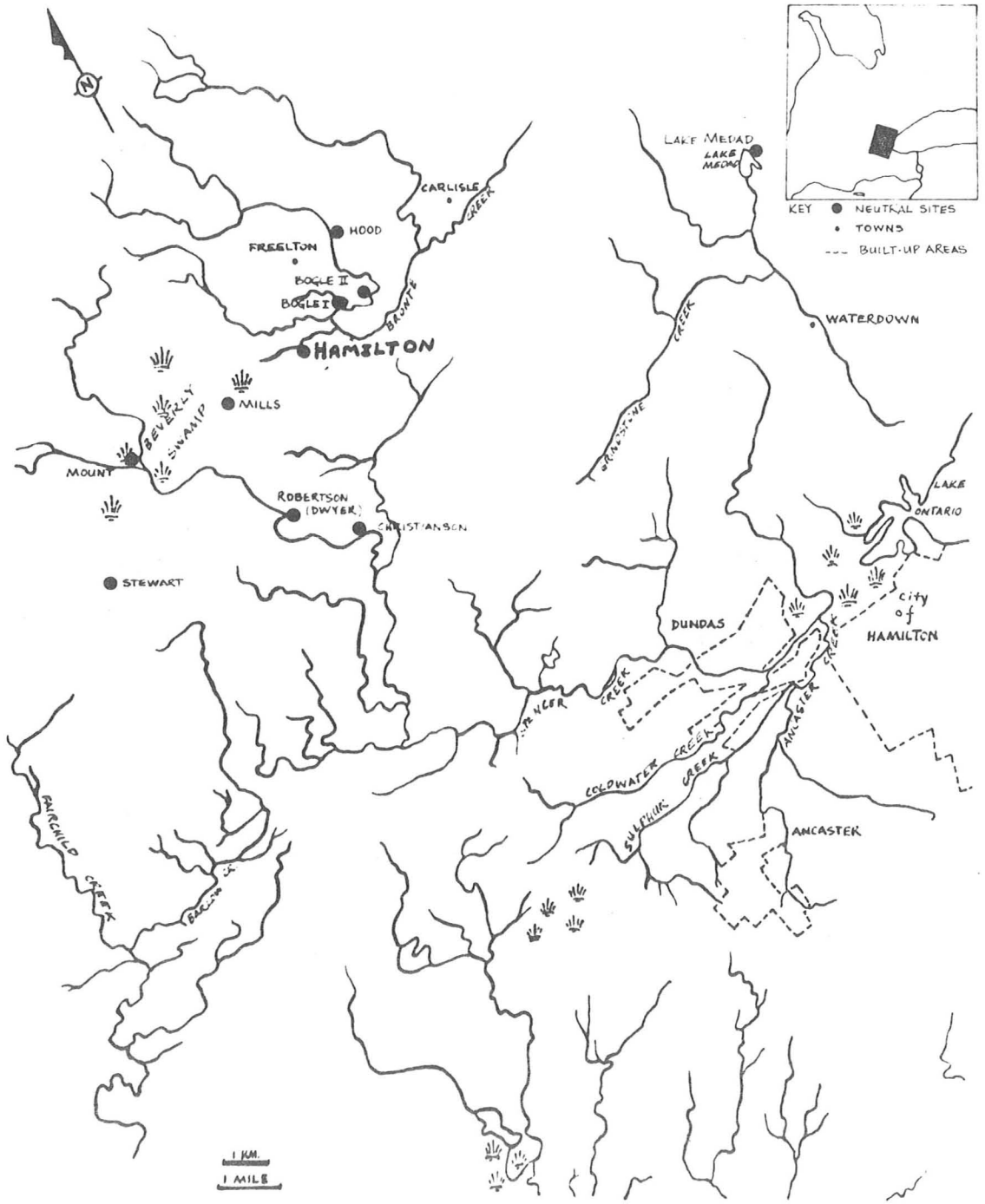


FIG. 2. Historic northern Neutral sites.

part of a defensive system. Apparently such considerations were not of top priority for the Hamilton town planners. Offsetting the lack of natural defenses at Hamilton are the man-made measures to ensure protection.

Palisades

Evidence of a double palisade around the town is evident through the bottom of midden A (Figure 3). Here an exterior line of posts, averaging 4 inches in diameter, is spaced from 15 inches to 2 feet from an interior line of posts, averaging 3 inches in diameter. The smaller interior line is more closely spaced with 1 to 1.5 feet between posts, while the average interval between posts of the exterior line is 2 feet. This double palisade runs through either end of midden Area A.

Judging from the refuse distribution and testing on the site, the palisading encompassed a town of approximately six acres in size. Its roughly triangular configuration is broadly defined by local geography: a low damp gulley to the west and northwest; the creek and associated wet area to the south; and a rising sandy plateau to the east.

Interior Cordons. As a further measure towards town security, it is noted that various short lines of cordoning walls link houses together, thereby effectively creating "alley-way cul-de-sacs". Such is graphically illustrated between the north end of house 2 and the west wall of house 5 (see Figure 3 where the long end of the north-south indicator

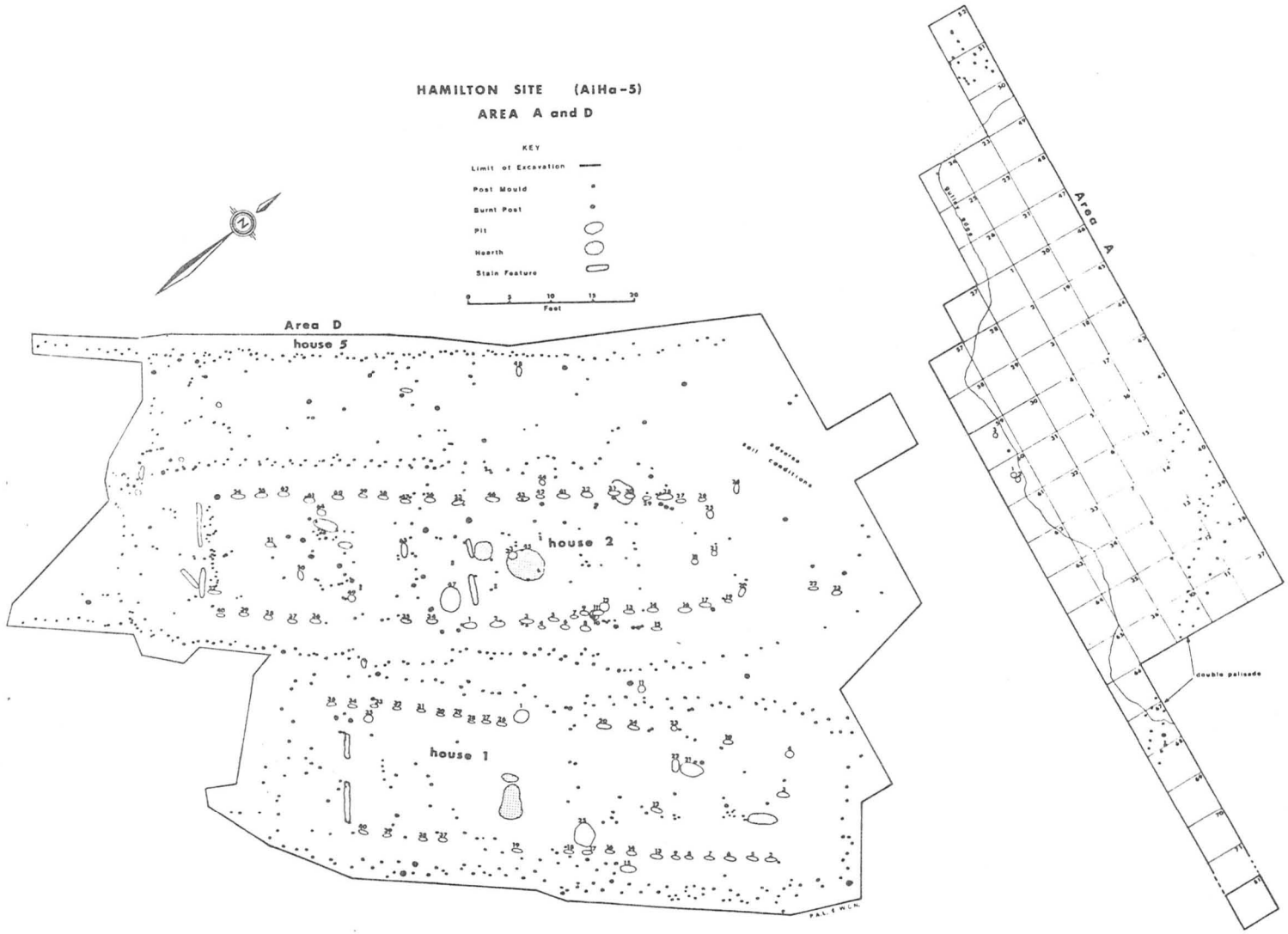


FIG. 3. Hamilton site, Areas A and D.

points north). Here, thirteen feet of small 2 to 3-inch diameter posts close the interstice. Also, between house 1 and house 2, thoroughfare has effectively been blocked by large posts 8 to 9 inches in diameter.

Middens

Though most of the Hamilton site area is covered with fragments of bone, pottery, chert flakes and other refuse, concentrations of such materials in darker soils were noted and mapped. As seen in Figure 1, the middens are located in shallow depressions or gulleys within the village limits, with houses located nearby on slightly higher ground.

Excavation of Areas A, B and C revealed that middens on the periphery of the village, particularly A, are deeper than the middens within the village (e.g., B).

Area A. (Figure 3). This midden, excavated in 1970 and 1972, was the most investigated at the site. Excavated in 5-foot squares, an area of 2,025 square feet revealed that refuse had been dumped from Area D into a relatively sharp gulley up to 2½ feet deep.

As Figures 4 and 32 show, differential dumping into this midden has left a stratified sequence of ash and soils. Sterile sands overlaying the midden deposit probably represent materials deposited by the wind shortly after abandonment of the town. Subsequent revegetation and the consequent soil development, together with down-slope movement of soil after modern clearing and plowing accounts for the 10-15

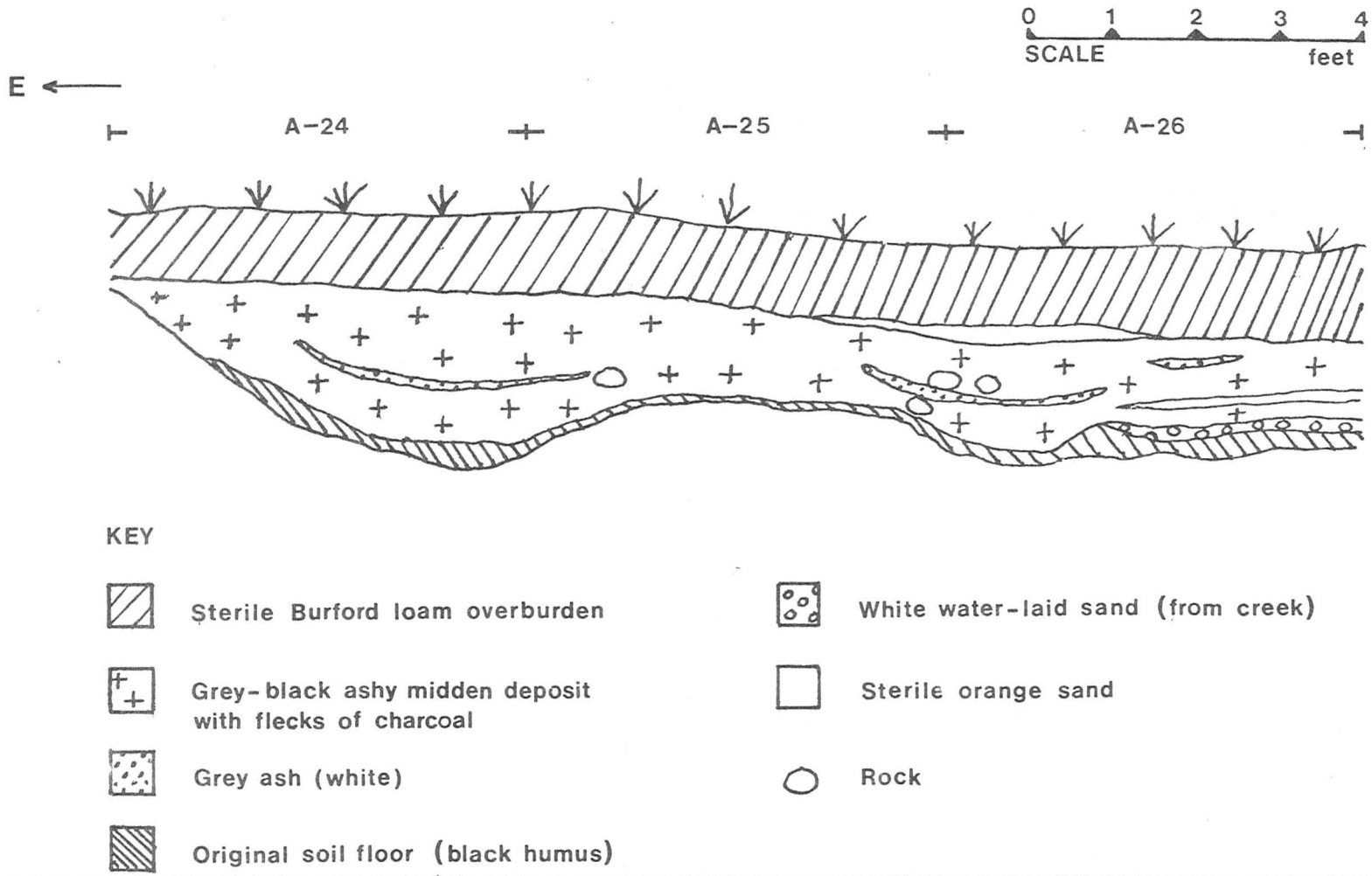


FIG. 4. Midden A profile, squares 24, 25, 26, south wall.

inches of sandy loam overburden.

The deeper squares in midden A (1-26, 37-49) are definitely waterlogged in their lowest levels, and they have provided interesting cases of preservation. A large amount of uncarbonized original forest litter covers the midden bottom, and a cloth fragment from square A-25 and portions of a birch bark vessel from squares A-23 and A-28 illustrate this phenomenon. Excavation under such conditions was often trying.

Area B. Area B midden represents an on-site dump located towards the eastern side of the town. Fifteen 5-foot squares (375 sq. ft.) indicate that it is a shallow deposit 15 inches deep, disturbed by the plow and yielding few artifacts.

Area C. This midden lies on the northern periphery of the site where twenty-two 5-foot squares (550 sq. ft.) were excavated. The cultural deposit under the 10-15 inches of plow-zone ranged up to 12 inches thick. Like Area B, Area C was not particularly rich in artifacts.

House Patterns

At Hamilton, house patterns were located by trenching and then excavated and recorded using cross tape triangulation within 20-foot square units. Considerable uniformity is a feature of the four house structures excavated. All are oriented northeast to southwest into prevailing winds, and they stretch from 62 to 105 feet long by 23 to 24 feet wide.

20 to 32 m 7m to 7.3 m

Characteristically, the walls taper slightly in width toward either end and the ends are usually squared. Side walls are constructed with 2 to 4-inch diameter posts placed vertically into the ground in a staggered linear pattern, while the ends of the houses usually have a single line of posts of similar size.

Unusually clean and orderly interiors include such refinements as central hearths, storage areas, partitions and "slash pits". Large structural support posts appear to be randomly distributed amongst smaller posts within house interiors. Small posts distributed in and around hearth areas aided in cooking and drying activities within the houses.

"Slash pits", so named by W.C. Noble in 1970, are unique to Neutral houses. They consist of a lineal succession of small oval pits forming a row parallel to the interior house walls. Spaced approximately 3 to 4 feet from the walls, "slash pits" range from 8-24 inches long, 4-16 inches wide, and from 2-16 inches deep. Mean length, width and depth of these pits at Hamilton are 14.3, 6.3 and 5.2 inches respectively. The pit fill is characterized by yellow-beige sand often with dark brown mottles and carbon flecks, and artifactual material is rarely present. When it is, it usually consists of a small fragment of chert, bone, pottery or brass, unintentionally included in the fill.

In addition to the classic representation at Hamilton,

Noble has recorded "slash pits" at the protohistoric Neutral Cleveland site (Noble 1972a) and at the historic Neutral Walker site (Wright 1977). The "slash pit" pattern of Neutral houses corresponds closely to the interior bunk line post patterns of contemporaneous Huron houses, where personal sleeping and storage areas are separated towards the house walls away from the communal activity areas in the centre of houses. It is reasonable to believe that the Neutral "slash pits" are probably associated with individual sleeping sectors in a given house.

Another feature of Neutral houses, first recorded at Hamilton, are the preserved linear "stain features" near interior house ends. Composed of disintegrated organic material, such stains have also been recorded at the Cleveland and Walker sites where the stains have been discerned as being the result of shallowly buried bark insulation flaps (Wright 1977). They occur within the Hamilton houses at positions most readily explained as being room partitions.

House 1. Excavated in 1970, house 1 in Area D (Figure 3) measures 70 feet long by 23 feet wide. Both ends of the house taper slightly in width before rounding abruptly to square ends. One 4-foot segment of the western wall, opposite "slash pit 18", had been repaired, as evidenced from former wall posts that were burned. Doorways are not centered, but appear to lie at the southeastern and northeastern corners. They open into areas interpreted as vestibules or

storage areas which measure approximately 8 feet from either end of the house. Two yellow-beige linear "stain features", 1-2 inches in depth, divide the northern storage area from the house's central living area. The two "stain features", interpreted as remnants of bark partitions, have a central doorway. Similar features are not evident in the southern end of the house.

Two large central hearths are preserved in house 1, and they measure 4 feet long. Judging from the interior distribution of posts and features, there may have been two additional central hearths, but if so these generally shallow features have been destroyed by the plow.

Besides the thirty generally sterile "slash pits", few other pits were recorded within house 1. These were devoid of artifacts with the exception of pit number 1. It contained a large portion of a single pot and some remains of a medium-sized mammal.

House 2. (Figure 3). Immediately adjacent to house 1, 2-4 feet to the east, lies house 2 excavated in 1972. It measures approximately 90 feet long by 23 feet wide, and has a poorly defined southern end due to clay subsoils. It does apparently taper in width, however, at both ends, and the northern end is relatively squared. One and perhaps two doors enter the 11-foot storage area on this end of the house. The door, or doors are again located more to the corners than the centre of the house end.

Several indications within house 2 suggest that the house was originally shorter at approximately 53 feet. The southern portion of this original house 2 is delineated on its northern end by an arc of posts which cross through its centre just south of pit 63. Where this arc meets the western wall of house 2, a 2-foot bulge in the width of house 2 can be noted. Also, six feet from the arc of posts, toward the southern end of the original house are two linear "stain features" which form a partition for the storage area in the northern end of the original house. A further indication that house 2 has expanded lies in the presence of a double row of "slash pits" along the southwestern wall. This is unusual and suggests not only an extension to house 2, but some internal realignments.

A second expansion to house 2 is also indicated by the single rows of sidewall posts extending beyond the northern end for an additional 15 feet. Inclement weather precluded completion of excavation for this extension, but clearly household growth has occurred among the inhabitants of house 2, such that a structure in excess of 105 feet was necessary to house them.

Within house 2, 3 central hearths and 2 side hearths remain intact. Unlike the other, rather shallow hearths on the site, the large pit hearth 45 had a depth of 16½ inches and contained much refuse. Broken deer bone, 2 projectile points, a glass bead and fragments of pottery lay amongst the

alternate layers of sterile fill, fire-broken rock, ash, charcoal and fire-reddened sand within the pit. It is suggested that this unusual hearth served primarily as a roasting pit.

Of 64 pits within house 2, 47 "slash pits" again predominate along the interior sides of the house. Most of the remaining pits simply contained mixed ash and charcoal, or black organic material devoid of artifacts. Other than pit hearth 45, the only other pit in house 2 that contained a quantity of refuse was pit 47. Here pottery and bone fragments strewn amongst ash, charcoal, fire-cracked rock and fire-reddened soil are representative of materials cleaned out of a hearth.

House 3. (Figure 5). Excavated in 1976, house 3 in Area E measures 63 feet in length and approximately 23 feet in width. Despite several re-excavations, the southern end and eastern side of the house remain poorly defined.

A probable door on the northern end, again closer to the eastern side of the house than to the centre, opens into an exceptionally large storage area comprising 15 to 20 feet of the house end. The size of this storage area may be attributed to the lack of a similar area in the southern end of the house where the "slash pit" pattern, typical of the living areas of the other houses, continues to the southern end of house 3. Shallow linear "stain features" 4 and 22, interpreted as partitions, are evident only on the west side

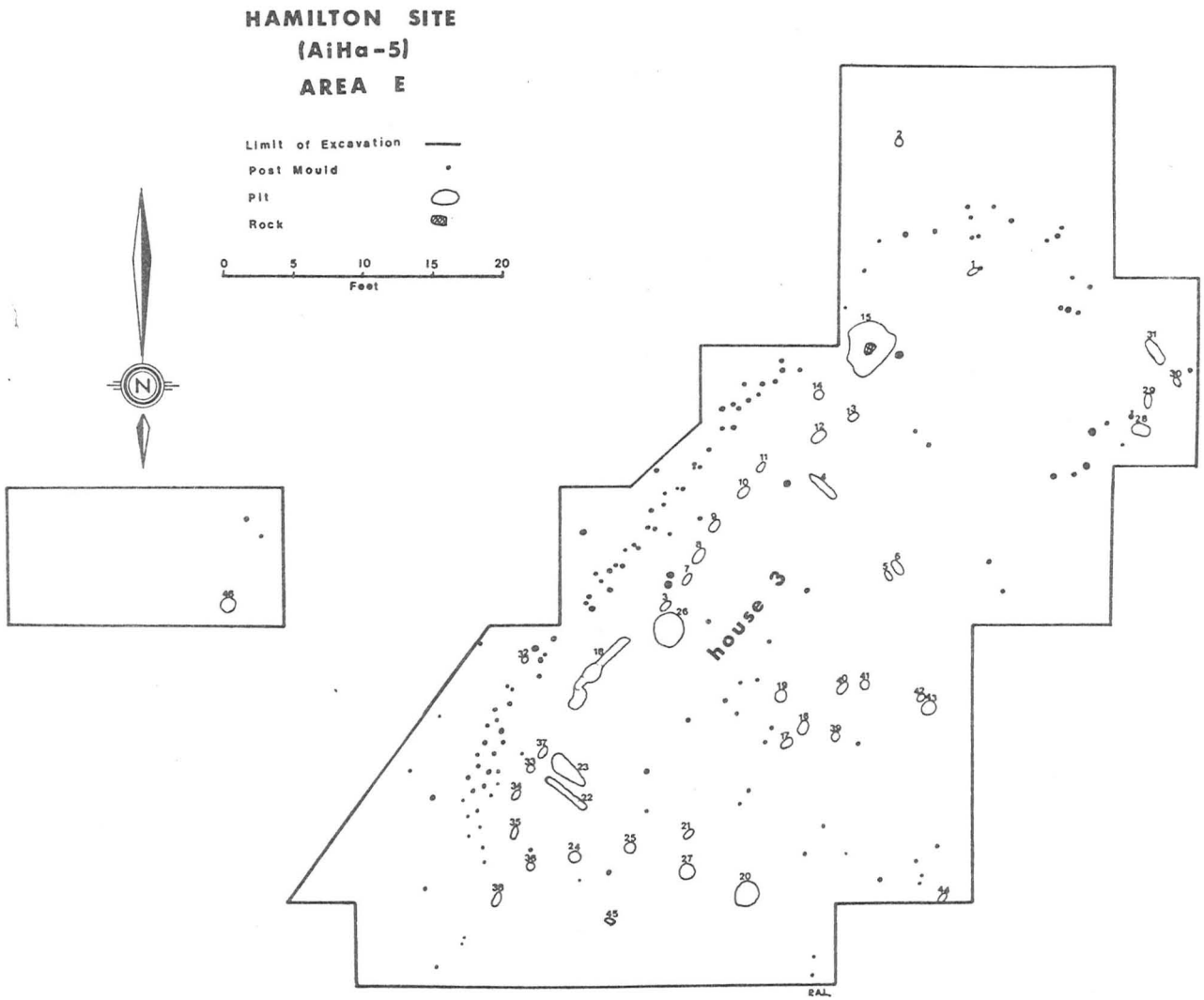


FIG. 5. Hamilton site, Area E.

of the house toward either end. Feature 18 proved to represent five distinct slash pits joined together in the upper inches of the profile.

No hearths are preserved in house 3, a situation attributed to disruptive plowing activities. Hearths, particularly central ones, are, however, an expected feature, and we may surmise that house 3 had at least two.

Of 44 numbered pits within house 3, 18 are "slash pits", 25 are primarily filled with a mixture of topsoil, subsoil, ash and charcoal, and 1 is refuse filled.

Only pit 15 produced a quantity of refuse, and in this it was extremely productive. Large quantities of deer bone as well as fish and bird bone occurred, interspersed with large quantities of other refuse and numerous complete decorative ornaments and tools including: a deer radius bone tube and the waste ends of the radius from which it was made; an elk radius bone tube; a perforated antler piece (or shaft straightener); 36 chert flakes; 13 chert cores; 2 projectile points and 2 preforms; a scraper; 2 abraiders; 1 brass projectile; a broken brass needle; 4 pieces of brass scrap; 10 shell beads; and nearly 100 pottery fragments representing 4 vessels. The large number of undamaged tools and usable raw materials in this pit, together with its location within the end storage area of the house, suggest that pit 15 was a reusable storage pit. A large limestone slab sat directly over the pit's centre at the base of the plow-zone marking the

location of the pit.

House 4. (Figure 6). Also excavated in 1976, house 4 in Area F is clearly defined, measuring 62 feet long by 24 feet wide. Toward either end, the side walls taper to approximately 20 feet in width and the ends are square. Various gaps through either end may represent multiple doorways, but again such entrances are not centrally located. A rather narrow 5-foot deep storage cubicle at the house's northern end is centrally divided and demarcated by two "stain features" (29 and 32), interpreted as disintegrated bark partitions. Three feet south of this partition, a line of posts possibly cross the end of the house and they may also have been an interior partition.

Only the remains of one central hearth, measuring 15 inches by 11 inches, occurs in house 4. Given its length and internal complexities, 3 or 4 hearths may once have been extant.

Of 31 pits within house 4, 15 are of the "slash pit" variety, while 16 are primarily filled with a mixture of topsoil, subsoil, ash and charcoal. Pit 6, which contained fire-cracked rocks, a layer of charred wood, and some fragments of pottery and chert to a depth of 12 inches, may represent a specialized cooking or baking feature An iron axe without the eye shows use as a wedge and was apparently stored in pit 41. This pit was just large enough to contain the specimen.

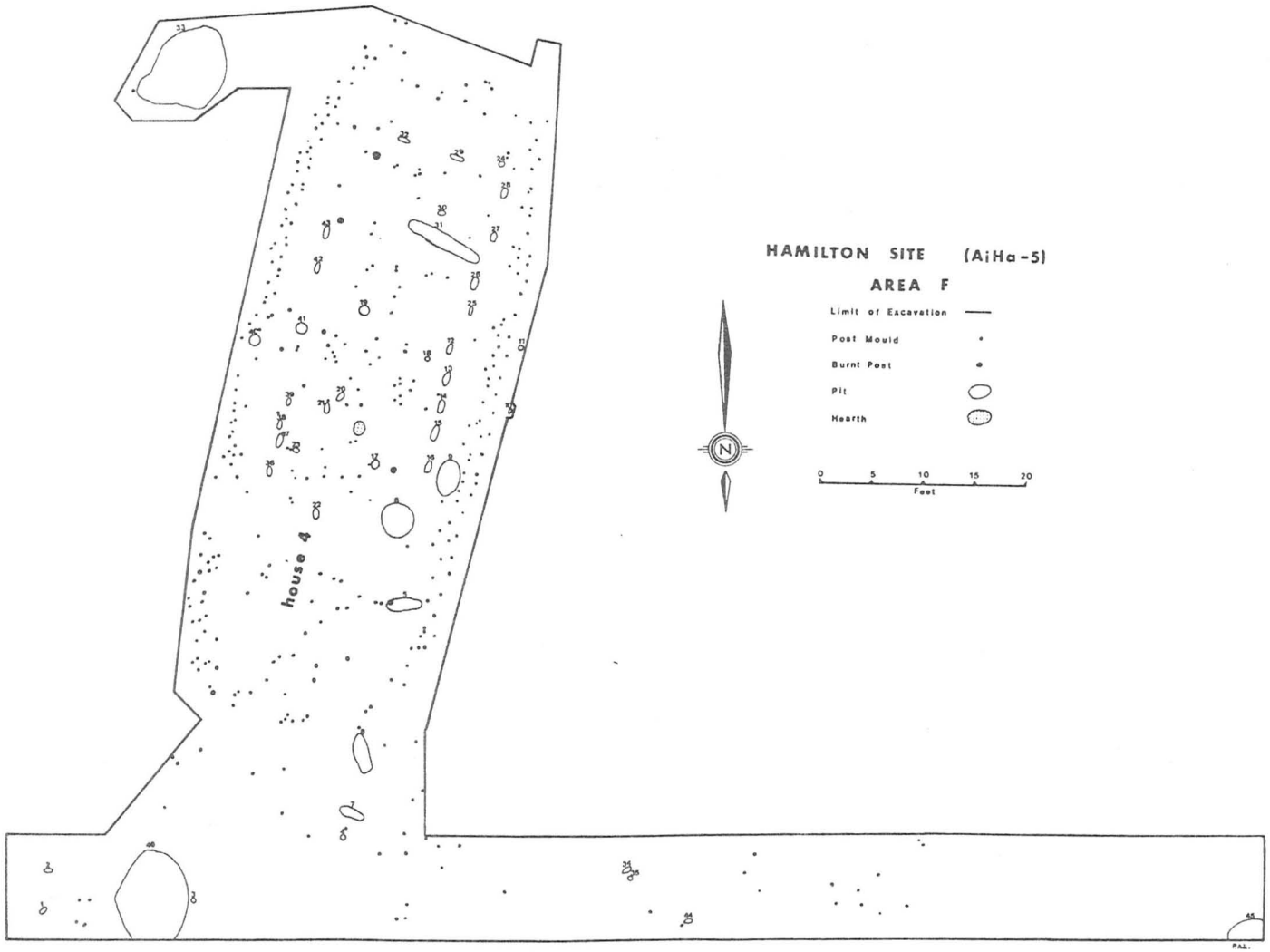


FIG. 6. Hamilton site, Area F.

House 5. (Figure 3). Incompletely excavated in 1972, the western side of this house is represented by a single line of posts stretching at least 86 feet long. It lies parallel to house 2 in Area D and is spaced 12 to 13 feet from that extended house. A series of cordon posts link house 5 to house 2 at the northern end of the excavation.

Circular Structures. (Figure 3). In Area D, between houses 2 and 5, there are scattered posts and a few sterile pits. The number of large posts throughout this area suggests that the area may have been covered by a roof. Two circular post mould patterns, measuring 4 and 6 feet in diameter, are located adjacent to the northeastern end of house 2 in this area. The smaller circle is heavily constructed with posts 6 to 8 inches in diameter, interspersed with smaller posts 3 to 4 inches in diameter, while the larger circle is constructed only of 3 to 4-inch diameter posts. It is suggested that these features may represent animal cages. It is known that the Huron caged young bears (Sagard 1939:220), and at Hamilton this possibility also exists.

External Features of Area F. Outside house 4, Area F, a number of posts with no apparent patterning and several small sterile features were excavated. Feature 33 is a large refuse pit containing charcoal, bone, stone and pottery. Pit 45 also produced deer bone, pottery and charcoal fragments mixed with brown to black soil to a depth of 19 inches. It

is interpreted as a refuse deposit associated with outside cooking activities.

Burials

Unlike the situation at most historic Neutral sites, Hamilton has produced no evidence of a burial ground despite many years of plowing and collecting. Test pits excavated during the 1970 and 1972 seasons on sandy knolls adjacent to the town produced only negative results. Perhaps this unusual situation reflects the late historic dispersal calamities that beset the Neutrals after 1650 A.D. At any rate, no definitive statements can be made regarding the burial aspects of the Hamilton settlement pattern.

Summary

In all, the Hamilton settlement pattern embodies many of the general features seen in Ontario Iroquois, but it also has its own distinctive features. First, Hamilton as one of the late historic northern tier Neutral towns displays a general lack of defensive concern vis-a-vis local geographic conditions. While double palisaded, the lay of the land around Hamilton is decidedly flat and possesses no major natural defenses. Second, the standardized houses at Hamilton have specific refinements. "Stain features" from disintegrated bark often mark or delineate interior divisions. "Slash pits" regularly, and thus predictably, run down the interior side-wall sleeping areas. House interiors are normally quite clean, being relatively devoid of artifacts

and subfloor features. Also, the houses which taper in width toward the ends have squared ends with off-centre doorways. Third, at Hamilton, in contrast to other historic Neutral towns and villages, no burial ground appears to be associated with the town.

3

ARTIFACT ANALYSIS AND TECHNOLOGY

Numerically speaking, the Hamilton artifact sample is one of the best examples of historic Neutral material culture excavated to date (Table 2). As such, it provides some basic insights which are often lacking in more specialized studies and studies which have suffered from inadequate sample sizes. Several symbols used throughout the analysis, in tables and in figures, are defined in the following table.

TABLE 1. Hamilton artifact analysis symbols.

Symbol	Explanation
N	Frequency occurrence
R	Range
$\bar{X}$	Mean
S	Standard deviation
%	Percent
mm	Millimeters
gm	Grams

LITHICS

As has been noted at other Neutral sites (Noble 1975), lithics comprise a large portion of the overall Hamilton assemblage. Although detritus certainly skews the sample, the

worked categories are well represented (Table 3). The sheer quantity of lithics at Hamilton can be considered typical of historic Neutral sites.

TABLE 2. Hamilton artifact classes.

Item	N	%
Lithics	6,859	47.2
Ceramics	5,833	40.2
Historic trade goods	976	6.7
Worked shell	469	3.2
Worked bone	311	2.1
Modified antler	76	.5
Modified bark fragment	1	.0
TOTAL	14,525	99.9

Raw Materials

Lithic materials utilized by the Hamilton people include chert, sandstone, siltstone, quartzite, gabbro, slate, steatite and limestone. Of these materials, chert is by far the most predominant and includes three Ontario types, as well as a rare occurrence of Ohio opaque chert.

The three types of Ontario chert which occur at Hamilton, as well as at many other Neutral villages (Fox 1972:3), comprise: the Goat Island (Ancaster) chert; Delaware (Onondaga or Bois Blanc) chert; and the Port Franks

TABLE 3. Hamilton lithics.

Item	N	%
Flakes	4967	72.4
Projectiles and portions	707	10.3
Scrapers	511	7.5
Projectile preforms	413	6.0
Cores	54	.8
Whetstones and abraiders	37	.5
Anvils	33	.5
Serrated flakes	32	.5
Serrates	27	.4
Drills and portions	15	.2
Lithic beads	13	.2
Spokeshaves	12	.2
Net sinkers	11	.2
Worked slate	9	.1
Hammerstones	8	.1
Adzes (celts)	6	.1
Mortars	1	-
Pestles	1	-
Lithic hoe	1	-
Incised siltstone	1	-
TOTALS	6859	100.0

(Kettle Point) chert. While it is recognized that spectroscopic analysis is the only certain geological way to discern differences between these cherts, the Hamilton specimens have been compared with known chert quarry samples in order to provide insights into the origins, selection and utilization of the various types of chert at Hamilton. In the following, 4,967 chert flakes and 54 chert cores have been analysed according to the chert type, presence or absence of cortex, type of cortex and weight. The chert types have been distinguished by the following characteristics.

Chert Types at Hamilton. Goat Island chert, also referred to in the literature as Ancaster chert, is distinguished by its coarse texture and light grey to white colour. It is known as a poor quality chert (Fox 1972:3) for knapping as its coarse granular structure often makes controlled flake removal difficult. Goat Island chert is available directly from its primary source in the Niagara Escarpment, and also in nodular form in soils adjacent to the Niagara Escarpment (Fox 1972:3).

Unlike Goat Island chert, the Delaware and Port Franks cherts have a finer crystal structure and, thus, flake removal is more easily controlled. They are considered to be of a better quality for knapping.

The mottled grey Delaware chert, also commonly referred to as Bois Blanc or Onondaga chert, has its primary source in Devonian outcrops along the north shore of Lake

Erie. Weathered nodules of this material are also common along the Lake Erie shore.

Port Franks chert, also referred to as Kettle Point chert, is distinguished by its blue-grey colour, lustrousness and slight translucency. It is found in boulder and in cobble form along the southeast shore of Lake Huron in the Kettle Point Region. Jury (1949:5,12) reports a primary source of this material in the same area.

All three of the above chert types were utilized at the Hamilton site. In addition to these, 13 flakes of chert (less than .01% of the sample by weight) appear to be a type foreign to Ontario sources. These have not been considered in the following discussion. Table 4 shows the chert type, weight and percentage distribution of the chert detritus sample including both flakes and cores from Hamilton.

TABLE 4. Chert types at Hamilton.

Type	Weight (gm)	%
Delaware	7431	87.8
Goat Island	772	9.1
Port Franks	259	3.1
TOTALS	8462	100.0

The occurrence of various chert types at Hamilton probably reflects factors of availability and quality of a

given chert. Although Goat Island chert is the most easily obtained chert in terms of the distance from the source to the Hamilton site, Delaware chert is by far the preferred type, and superior flaking qualities of this have already been noted. The good quality Port Franks chert has a minor occurrence at Hamilton, probably due to the distance (100 miles) from its source to the site. Fox (1972:4) suggests that the Neutrals may have obtained Port Franks chert via the Petun.

Primary Versus Secondary Chert Sources. As previously noted, all three chert types utilized at the Hamilton site are available from both their primary sources in bedrock outcrops and from secondary deposits of chert nodules in the locality of the outcrops. Although the primary and secondary sources contain the same chert, the nodules have the advantage of being easily gathered from stream beds and shorelines, yet they lack the natural striking platform surfaces of the angular blocky material which must be pried from the outcrop face. The nodules are easily identified by their weathered and rounded cortex while the blocky material derived from primary sources has a distinctive tabular cortex that is weathered, but to a lesser degree, by ground water percolating through cracks in the chert. Tabular or blocky chert does not have the rounded shape or battered appearance of the rolled nodular material due to its "in situ" weathering (Figure 7). To distinguish between the two sources of cortex,

I have called one nodular cortex and the other tabular cortex.

Analysis of the 54 cores and 4,967 pieces of chipping detritus from the Hamilton site indicates that both nodular and tabular material regardless of chert type were brought to the site in raw form. Indeed, fully 1,492 chert fragments (57.7% of the sample by weight) still retained portions of their cortexual surface.

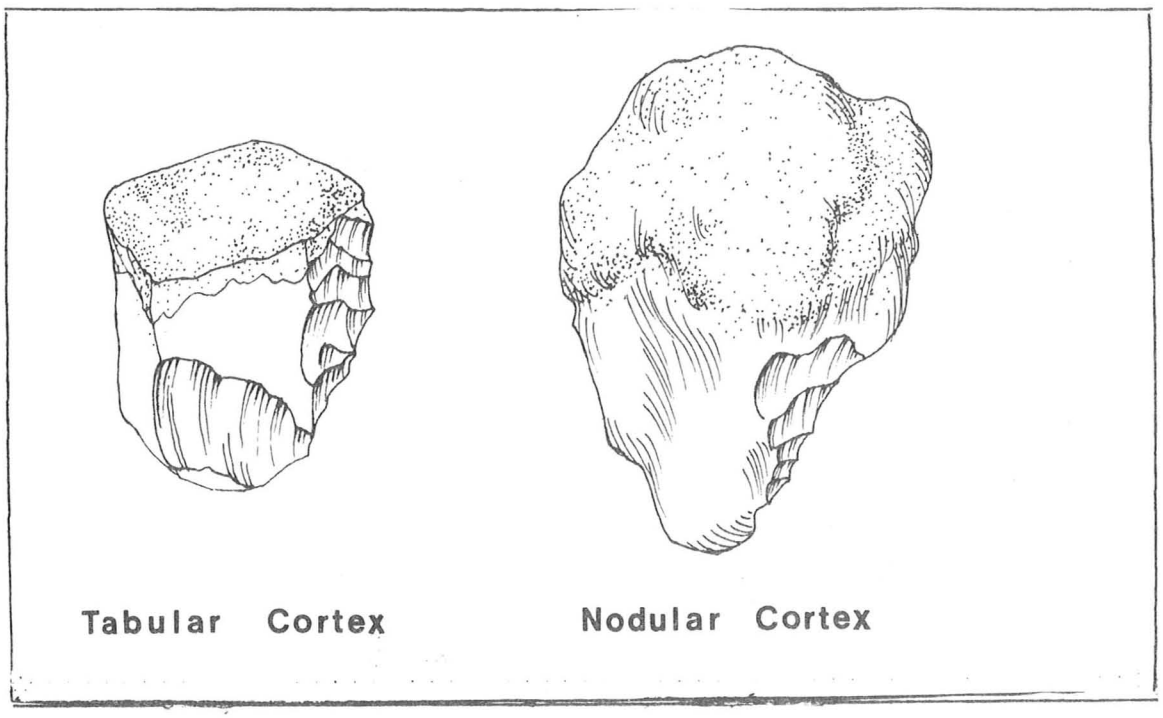


FIG. 7. Hamilton tabular and nodular chert cortex.

The breakdown of decortication flakes into nodular and tabular forms by weight (Table 5) indicates a preference for quarrying Delaware chert, but a decided reliance upon nodular sources for both Goat Island and Port Franks chert.

TABLE 5. Hamilton cortical detritus

Chert Type	Nodular		Tabular		Total	
	gm	%	gm	%	gm	%
Delaware	1772	41.0	2555	59.0	4327	100.0
Goat Island	269	64.2	150	35.8	419	100.0
Port Franks	102	75.6	33	24.4	135	100.0
TOTAL SAMPLE	2143	43.9	2738	56.1	4881	100.0

Material Use. The flakes and cores from the Hamilton site as a measure of material conservation have been further divided into weight categories (Table 6). According to Kenyon's work (1975), the degree to which a raw material such as chert is utilized is a function of the material's availability. For example, the chert detritus on a site located close to a chert source should contain a high percentage of sizable unmodified material. On the contrary, a site located some distance from such a source will produce detritus that has been reduced more fully. The chert detritus will consist of fragments that have been reduced to an unusable size while large unmodified pieces will be relatively scarce. Here the bipolar core technique is often used as a means of obtaining several more flakes from an exhausted core.

The detritus from the Hamilton site, the majority of which consists of small flakes with the presence of bipolar cores, would suggest that the Hamilton people were conserva-

tive with their chert resources. Furthermore, because the Hamilton site is located on the northern periphery of the late historic Neutral domain and is thus farthest from the preferred Onondaga chert sources located to the south, one would expect that it is an extreme example of chert conservatism among the historic Neutral.

TABLE 6. Hamilton lithic detritus weight categories.

Weight Category (gm)	Weight (gm)	%
0-5	5337	63.1
5-10	918	10.8
10-30	1368	16.2
30+	839	9.9
TOTALS	8462	100.0

Comparison of the chert detritus samples from the Hamilton and Walker sites shows that the knappers at the Walker site, located in the southcentral part of Neutralia, were considerably less conservative with their materials. The complete lack of bipolar cores (Milton Wright: personal communication, 1976) further suggests a disregard for chert conservation at Walker.

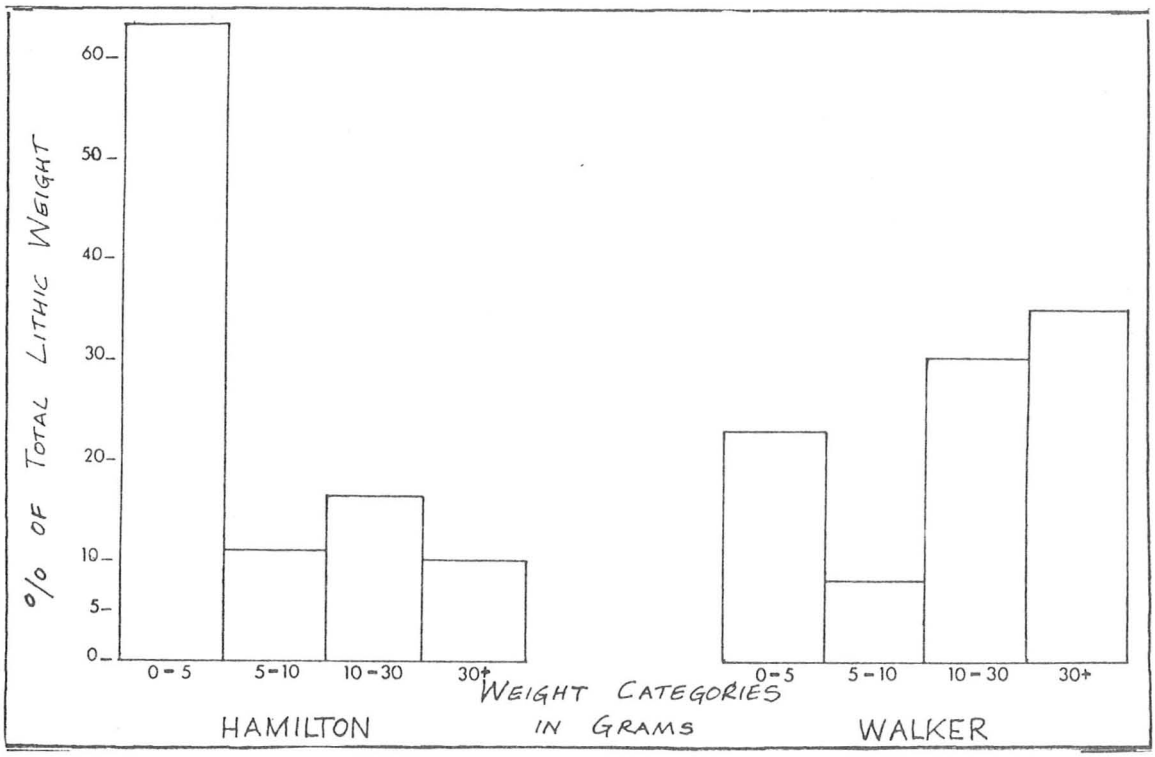


FIG. 8. Lithic detritus weight categories from the Hamilton and Walker sites.

Flakes. A total of 4,967 chert flakes from the Hamilton site were analysed according to place of detachment, shape and weight.

Table 7 indicates the frequency and total weights of six flake categories. Expanding, parallel, contracting and irregular describe the shape of a flake's lateral edges with reference to the striking platform and the bulb of percussion (White, Binford, and Papworth, 1963:8). To what extent these shapes were intended by the knapper is difficult to determine.

Block pieces of chert are not considered to be true flakes. Lacking the diagnostic attributes of a flake, they

are considered a biproduct of the industry and a result of uncontrolled breakage of the raw material. They are, however, thought to result from primary flaking.

TABLE 7. Hamilton lithic flakes.

Shape	Primary N	Primary gm	Secondary N	Secondary gm	Total Sample N	Total Sample gm
Expanding	1120	1760	954	667	2074	2427
Parallel	565	900	477	311	1042	1211
Contracting	383	626	232	163	615	789
Irregular	127	217	101	95	228	312
Block	206	1522			206	1522
Broken					802	924
TOTALS	2607	5025	1764	1263	4967	7185

Broken flakes are fragments of formalized flakes which lack the bulb of percussion, striking platform or lateral edges, and cannot otherwise be classified.

Primary flakes are defined as percussion flakes removed from cores. They usually exhibit a large and often cortical striking platform which forms an angle of near 90 degrees with the ventral surface. The bulb of percussion and waves of percussion on the ventral surface are usually pronounced while the dorsal surface is characterized by the presence of some cortex or large flake scar remnants. The

percentage of primary flake material (52.5% by frequency, 69.9% by weight) in the Hamilton site sample further attests that raw materials were brought to the site in an unmodified form and were there subjected to primary flaking by a percussion method.

Secondary flakes are characterized by their generally smaller size, diffuse bulbs of percussion and distinctive striking platforms. The platform is usually small and often faceted with flake scars; or sometimes it simply exhibits a crushed flake margin. When present, the striking platform forms an angle greater than 90 degrees with the ventral surface and less than 90 degrees with the dorsal surface. The dorsal surface rarely bears any cortex (6.2% at Hamilton), and is usually marked by small flake scars. Secondary flakes provide evidence of shaping and thinning bifaces by percussion or pressure flaking techniques. At Hamilton secondary flakes account for 47.5 percent of the sample by frequency and 30.1 percent of the sample by weight.

Cores. A total of 54 cores, or pieces of chert with at least two sizable flakes removed, were recovered from the Hamilton site. These have been divided into two types--random cores and bipolar cores.

Random cores, having been rotated during flake removal, have multiple striking platform remnants and flake scars which show no directional patterning. Thirty-eight random cores were recovered from Hamilton.

Bipolar cores were produced by smashing a piece of chert between two stones, one acting as a hammer and the other as an anvil. The result is a wedge-like or columnar form which is battered on opposing ends (Hurley and Kenyon 1970:97). Sixteen bipolar cores are present in the Hamilton sample.

As earlier noted, the bipolar technique is a method of further reducing an otherwise exhausted core and its presence at Hamilton indicates a concern for chert conservation. In this respect it is interesting to note (Table 8) that both the good quality but scarce Port Franks chert cores have been reduced by the bipolar method.

TABLE 8. Core types and chert types at Hamilton.

	Random	Bipolar
Delaware	31	10
Goat Island	7	4
Port Franks	0	2
TOTALS	38	16

Scrapers

One of the most common lithic tools prevalent at the Hamilton site is scrapers. The sample consists of 373 snub-nose scrapers, 23 thumbnail scrapers, 34 bifacially flaked end scrapers, and 81 random flake scrapers.

Snubnose Scrapers. Snubnose scrapers are characterized by a steep working face applied to the end of a heavy linear flake. Most of the snubnose scrapers at Hamilton show further ventral modifications suggesting such varieties of the snubnose scraper as: unifacial snubnose scrapers; unifacial snubnose scrapers with ventral retouch of the working edge; bifacial snubnose scrapers; and bifacial snubnose scrapers with ventral retouch of the working edge (Figure 9). Table 9 indicates these variations, their frequencies and relative percentages.

TABLE 9. Hamilton snubnose scraper varieties.

Scraper Variety	N	%
Unifacial	41	11.0
Unifacial with ventral retouch of working edge	13	3.5
Bifacial	123	33.0
Bifacial with ventral retouch of working edge	196	52.5
TOTALS	373	100.0

It was thought during analysis that the variants of the snubnose scraper noted herein would perhaps show further divergence in metrics, working edge angles and weights, suggesting functional differences. They were thus analysed separately and compared (Table 10). Regardless of variations

in ventral flaking and ventral retouch of the working edge, the lengths, widths, thicknesses, weights and bit angles for the four categories of snubnose scrapers are remarkably similar. This may suggest that the intention of the knappers was not to create different scraper types for different functions, but to create similar scrapers from variously shaped flakes. Ventral retouch is likely an indication of resharpening as snubnose scrapers with this attribute are slightly shorter and lighter than those without such modification.

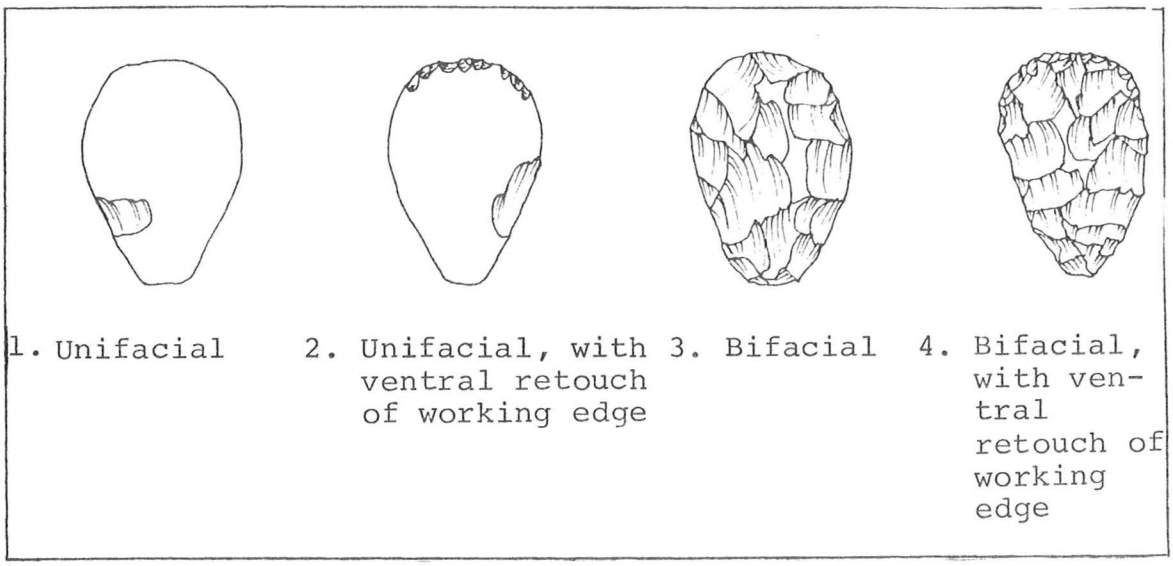


FIG. 9. Hamilton snubnose scraper varieties (ventral surfaces only).

The width of the snubnose scrapers from the Hamilton site was, in most cases (86%), tapered from distal to proximal ends. Eleven of these specimens possess shallow side notches to aid in hafting.

TABLE 10. Hamilton snubnose scraper varieties and metrics.

	Unifacial (41)	Unifacial With Ventral Retouch of Working Edge (13)	Bifacial (123)	Bifacial With Ventral Retouch of Working Edge (196)	Total Sample (373)
Length (mm)					
R	24-56	26-54	24-70	23-69	23-70
$\bar{X}$	37.0	37.1	38.1	35.7	36.7
S	7.2	8.0	6.5	6.7	6.8
Width* (mm)					
R	14-34	18-27	14-34	12-39	12-39
$\bar{X}$	21.3	21.6	22.3	21.7	21.8
S	4.6	2.5	3.9	3.9	3.9
Thickness (mm)					
R	7-20	6-16	6-19	6-21	6-21
$\bar{X}$	11.3	11.5	11.5	11.0	11.2
S	3.1	3.6	2.6	3.8	3.4
Weight (gm)					
R	4-39	4-27	4-37	3-62	3-62
$\bar{X}$	12.2	10.6	11.6	9.7	10.6
S	8.2	6.7	5.5	5.4	5.9
Bit Angle (^{o})					
R	45-95	55-90	45-90	50-105	45-105
$\bar{X}$	72.7	73.1	76.0	78.6	76.9
S	11.8	9.5	9.9	10.2	10.4

*Width of working face

In longitudinal section, 51 percent of the scrapers decreased in thickness toward the basal edge while another 24 percent tapered to a thin, wedge-like base. The remainder of the specimens show little variation in thickness from the height of the working face to the proximal end.

The types of chert utilized in the manufacture of

snubnose scrapers, as indicated in Table 11, suggest that Delaware and Port Franks chert were preferred over the Goat Island chert for scraper manufacture. This becomes particularly obvious when the percentage distributions are compared with those of the occurrence of chert detritus on the site (Table 4). The avoidance of Goat Island chert for scraper manufacture is probably related to its physical characteristics. The coarse crystal structure of the Goat Island chert which renders it less desirable for knapping would also lend itself to a higher rate of abrasion on a scraping or cutting edge.

TABLE 11. Hamilton snubnose scraper, chert types.

Type	% by Weight
Delaware	79.1
Port Franks	13.1
Goat Island	6.5
Other	1.3

Thumbnail Scrapers. Twenty-three scrapers from the Hamilton site are small end scrapers termed thumbnail scrapers. They are smaller in all dimensions than the previously described snubnose scrapers, and slightly longer than they are wide (Table 12). The working face is convex while the straight to convex lateral edges taper toward the base.

Seven of the specimens are unifacial while the remaining sixteen have been bifacially flaked. Of the bifacial specimens, nine have been ventrally retouched along the working edge.

Although thumbnail scrapers are smaller than the snubnose variety, it should be noted that the width of the working edge is comparable and the bit angles are essentially the same, inferring that they may have been used for similar functions.

TABLE 12. Hamilton thumbnail scraper metrics.

	R	$\bar{X}$	S
Length (mm)	21-28	24.9	1.0
Width (mm)	14-23	19.3	2.5
Thickness (mm)	4-10	7.1	1.4
Bit angle (°)	55-100	76.5	11.1
Weight (gm)	3-7	4.5	1.0

Eighteen thumbnail scrapers were manufactured from Delaware chert, 3 from Port Franks chert, and 2 from Goat Island chert.

Bifacial End Scrapers. The 34 bifacially flaked end scrapers from the Hamilton site vary greatly in form but usually taper proximally from a straight or convex, bifacially flaked, plano-convex or less frequently a bi convex working edge. Though a scraping function is inferred by the plano-

convex working edge and frequently by polish restricted to the working end of the tool, the bit angle is significantly less than that of other scraper categories in the sample (Table 13). If Wilmsen's (1968:156-157) correlations are correct, bifacial end scrapers may have served a skinning and heavy duty cutting function.

TABLE 13. Hamilton bifacial end scraper metrics.

	R	$\overline{X}$	S
Length (mm)	22-62	33.9	7.8
Width (mm)	15-32	20.8	4.4
Thickness (mm)	4-14	9.35	2.68
Weight (gm)	3-21	7.4	3.7
Bit angle (^{o})	45-75	56.3	7.4

Flake Scrapers. These consist primarily of flakes with one or more unifacially retouched edges. Forty-nine such scrapers possess retouch on the lateral edge of a long, generally rectangular flake. Eight of these are retouched on two edges. The retouched edges range in length from 9-53 mm, with a mean length of 26.6 mm.

Thirty-two additional flake scrapers possess retouch on one or more ends of a rectangular flake or the wide end of a triangular flake. The lengths of thes retouched edges range from 8 to 35 mm, with a mean length of 20.3 mm. Three

of these specimens are retouched on both ends.

Spokeshaves. The twelve spokeshaves from the Hamilton site are represented by random flakes into which one or more unifacial concavities have been chipped. Nine specimens possess only one concavity, 2 have two concavities and 1 specimen has three concavities. The maximum diameters of the concavities range from 3-24 mm with a mean of 11.1 mm.

Projectile Points

A total of 216 complete projectile points, 202 tips, and 289 bases were recovered from the Hamilton site. The complete points made from Delaware, Goat Island and Port Franks cherts show little variation in metrical attributes with regard to material type. The various attributes measured are given in Table 14.

As Fox (1972:5) indicates, there is a tendency for historic Neutral points to be shorter than points made during the protohistoric period. Comparisons of the Hamilton site projectiles with those of the slightly earlier (ca. 1640) Walker site projectiles suggests that projectile points are becoming shorter and also narrower during the historic period (Table 15). The thickness of the projectiles does not, however, show a similar trend.

The modal edge configuration of the Hamilton site projectiles (Table 16), is straight to convex lateral edges with straight to concave basal edges. Thirty-two points not represented in Table 11 possess lateral edges which were

TABLE 14. Hamilton projectile points, chert type and metrics.

	Delaware	Goat Island	Port Franks	Total Sample
N	172	31	13	216
%	79.6	14.4	6.0	100
Length (mm)				
R	15-43	18-35	20-39	15-43
$\bar{X}$	24.8	25.5	23.2	24.8
S	4.56	4.37	3.24	4.47
Width (mm)				
R	10-27	12-25	13-19	10-27
$\bar{X}$	16.7	16.6	16.3	16.6
S	2.58	2.89	2.21	2.6
Thickness (mm)				
R	2-8	3-9	3-5	2-9
$\bar{X}$	4.4	4.7	3.8	4.4
S	1.11	1.35	.69	1.14
Weight (gm)				
R				.5-5.6
$\bar{X}$				1.75
S				.76

TABLE 15. Hamilton and Walker site projectiles.

Mean	Hamilton	Walker
Length (mm)	24.8	28.3
Width (mm)	16.6	17.3
Thickness (mm)	4.4	3.9

asymmetrical. Side notches were not present on any of the Hamilton projectile points and, although serrated edges were not present on any of the complete points, three fragments of projectile points with serrated edges were found.

TABLE 16. Hamilton projectile point form.

Base Configuration	Blade Edge Configuration			Total	
	Concave	Straight	Convex	N	%
Concave	16	29	44	89	48.4
Straight	6	30	34	70	38.0
Convex	3	6	16	25	13.6
N	25	65	94	184	
%	13.6	35.3	51.1		100.0

Thirty-two points were asymmetrical.

Unifacial Projectile Points. Twenty-six projectiles or 12 percent of the Hamilton site sample are unifacial points. One face of these projectiles is well finished while the other face is unmodified or has only a few small flakes removed from the edges. The dimensions given in Table 17 indicate that unifacial points are, on the whole, smaller than the overall sample.

Projectile Point Preforms. Four hundred and thirteen bifacially flaked and roughly triangular pieces of chert were regarded as unfinished projectile points or projectile point preforms. They are, for the most part, larger than finished

TABLE 17. Hamilton unifacial point metrics.

	R	$\bar{X}$	S
Length (mm)	15-28	21.8	3.4
Width (mm)	10-20	15.4	2.4
Thickness (mm)	2-5	3.4	1.0

TABLE 18. Hamilton projectile point preforms, chert types and metrics.

	Delaware	Goat Island	Port Franks	Total Sample
N	160	62	8	230
%	69.6	26.9	3.5	100.0
Length (mm)				
R	18-47	20-39	22-32	18-47
$\bar{X}$	30.31	31.77	27.25	30.6
S	5.35	5.91	3.65	5.51
Width (mm)				
R	14-33	13-32	14-26	13-33
$\bar{X}$	20.45	21.47	19.5	20.69
S	3.75	4.19	4.14	3.90
Thickness (mm)				
R	5-18	6-21	7-10	5-21
$\bar{X}$	9.21	10.43	8.38	9.51
S	2.635	2.88	1.06	2.72

projectiles yet their most distinctive characteristic is the large, marginal flake scars that produce a sinuous edge on the specimens.

Many of the preforms appear to have been rejected because of thick irregularities occurring on the face or edge of the preform. Others have been rejected because of impurities in the chert or due to the uncontrolled removal of a large flake, changing the shape of the preform beyond recovery. One hundred and eighty-three preforms were rejected due to breakage.

Table 18 (p. 53) shows those attributes recorded for the 230 complete projectile point preforms. Of particular interest is the large size and number of Goat Island preforms in the sample. The larger size of the Goat Island preforms, a trait also evident but to a lesser degree in the finished projectiles (Table 14), supports the earlier notation that this material is a poorer quality material for knapping.

The considerably larger percentage of preforms (26.9%, Table 18) than finished projectiles (14.4%, Table 14) made from Goat Island chert further indicates the poor quality of the material. The data show that only about half of the projectile point preforms made from Goat Island chert ever reach the state of completion.

Drills

A total of 15 drills and drill fragments were recovered from the Hamilton site. Six are flake drills, 6 are

triangular drills or modified projectile points, 1 is simply a drill shaft with a convex bifacially flaked basal edge, and the other 2 are shaft fragments only. Table 19 gives the metrics for the shafts of the 15 drills from the Hamilton site.

TABLE 19. Hamilton drill shaft measurements.

	R	$\bar{X}$	S
Length (mm)	8-24	16.9	5.87
Width (mm)	5-12	8.0	1.89
Thickness (mm)	3-6	4.2	1.01

Serrated Flakes

Thirty-two serrated chert flakes were found at the Hamilton site. These consist of random flakes, less than 3 cm in length, possessing one or more serrated edges. On all but 5 of these specimens the serrations have been formed by unifacial retouch. Although their function has not as yet been precisely determined, their use in processing vegetable matter and in the production of marine shell ornaments has been suggested (Fox 1972:5).

Serrates

Twenty-seven specimens referred to by other writers as serrated scrapers (e.g., Fox 1972) were found on the Hamilton site. Though these pieces, in general form, resemble the previously mentioned scraper varieties, the serrated

working edge is a distinguishing characteristic which would suggest a non-scraper function. A question of terminological classification is thus raised.

The term scraper has been used in an archaeological context to refer to a particular type of tool thought to have been used in modifying animal or vegetable matter. The term scraper is usually accompanied by an adjective describing the shape of the tool or the position of the working edge; for example, end scraper, side scraper, random flake scraper, snubnose scraper. Thus, the term scraper seems not to refer to the tool's overall shape, but to the characteristic steeply retouched working edge--the scraper edge.

It is here proposed that, because the so-called serrated scraper does not in fact possess the characteristic scraper edge, it should not be classified as a scraper. In place of the term serrated scraper, and until such a time that a functional classification is proposed for these specimens, the term serrates may be applied.

With a mean length of 31.7 mm, mean width of 19.3 mm, mean thickness of 9.6 mm, mean weight of 7.9 gm and mean bit angle of 63.8 degrees, the Hamilton serrates are smaller in all respects and sharper than the Hamilton snubnose scrapers. Too, 38 percent of the serrates are longitudinally asymmetrical having the working edge off to one side, whereas scrapers are rarely so.

The serrates found on the Hamilton site are in all

probability larger and heavier forms of the serrated flakes, and were used in a saw-like manner for cutting heavier materials such as bone and wood.

Whetstones and Abraiders

Fourteen fine grained, flat, oval stones bear shallow grooves or scratches on one or both flat faces as if they were used for abraiding pointed implements such as iron or bone awls. The metrics for the 6 complete specimens are given in Table 20.

TABLE 20. Flat stone abraider metrics.

	Length (mm)	Width (mm)	Thickness (mm)
R	65-110	42-50	11-15
$\overline{X}$	84.3	47.2	12.8
S	15.7	3.4	1.5

Seven irregular nodules of coarse-grained sandstone with from 1 to 4 rounded grooves worn into them appear to have been used to shape arrow shafts, bone tubes, bone awls or other rounded objects. The grooves range between 3 and 13 mm in width with a mean width of 5.2 mm.

Twelve similar nodules of sandstone possess one or more smooth surfaces which may have been produced from abraiding flat surfaces on wood or bone. These abraiders range from 40 to 80 mm in maximum dimension.

Four rectangular slabs of fine-grained silica each possess one very smooth face. Their resemblance to modern whetstones used for sharpening knives is suggestive of their function. Mean length, width and thickness for these specimens are 102, 51 and 21 mm respectively.

Anvil Stones

Thirty-three anvil stones recovered vary from rectanguloid to circular in shape. The pecked depression characteristic of these specimens is always located near the centre of a flat face. Fifteen anvil stones are unipitted and 18 are bipitted, possessing a depression on opposing faces. In addition, 23 of the specimens have hammering facets on their edges indicating that they have also been used as hammerstones.

Hammerstones

Seven rounded and flattened cobbles possessing heavily pecked edges have been used as hammerstones. One additional fragmented specimen which is oblong and rounded in cross section may also have been used as a pestle.

Mortars

The single example of a mortar recovered from the surface of the Hamilton site consists of a rounded metamorphic rock, 130 mm in diameter, with a shallow dish-shaped depression, approximately 65 mm in diameter, on either face.

Pestles

The one pestle recovered from the Hamilton site

measures 181 mm in length and 38 mm in diameter. The naturally shaped specimen shows slight use-wear on either end.

Net Sinkers

Eleven net sinkers recovered from the Hamilton site were manufactured by chipping notches into the longer sides of flat oval pebbles. The mean length, width and thickness of these specimens is 49.4 mm, 36.2 mm and 11 mm respectively.

Lithic Hoe

A rounded piece of shale, measuring approximately 120 mm in diameter and 12 mm in maximum thickness, has been flaked in a scalloped fashion along its edges.

If this specimen does represent a hoe, the slight prominence from the thickest part of the tool's edge is where attachment to a handle occurred, while the edge opposite this hafting element, the edge which would have been the main working edge of a hoe, shows the most wear. The scalloped pattern of the hoe blade in this area is almost obliterated.

Faceted Slate Pieces

Nine fragments of dark grey to black slate show signs of being ground. The facets produced by grinding usually occur along the edges but sometimes are also found on either face of the flat stones. Whether the ground surfaces are an attempt to shape the slate pieces or were caused when the pieces were used to grind another material is not certain; however, the irregularity of both the shape of the slate pieces and the location of the ground facets would suggest

the latter alternative.

Incised Quartzite Pebble

A waterworn pebble of quartzite, measuring 39 mm in length, 24 mm in width, and 10 mm in thickness, has been incised on either of its flat faces. Three concentric circles are on one face, while a geometric design of triangles has been incised on the other (Figure 10).

Ground and Incised Siltstone

A long flat piece of pink siltstone, measuring 102 mm in length, 42 mm in maximum width, and 18 mm in maximum thickness, has been roughly ground on its four edges. Both sides have been crudely incised.

Stone Beads

Seven unmodified waterworn pebbles bearing natural perforations may have been gathered by the inhabitants of the Hamilton site to be used as beads or pendants.

Four stone beads manufactured from a dark red to maroon coloured slate were also found on the Hamilton site. One is circular in shape, measuring 17 mm in diameter and 7 mm in thickness. The three others are square in cross section and rectanguloid longitudinally. The single complete specimen measures 48 mm in length and 9 mm in thickness.

Two additional beads were manufactured from a reddish-brown coloured stone with lighter flecks, commonly referred to as catlinite. The long, narrow, multi-faceted beads measure 18 mm and 11 mm in length and are both 4 mm in

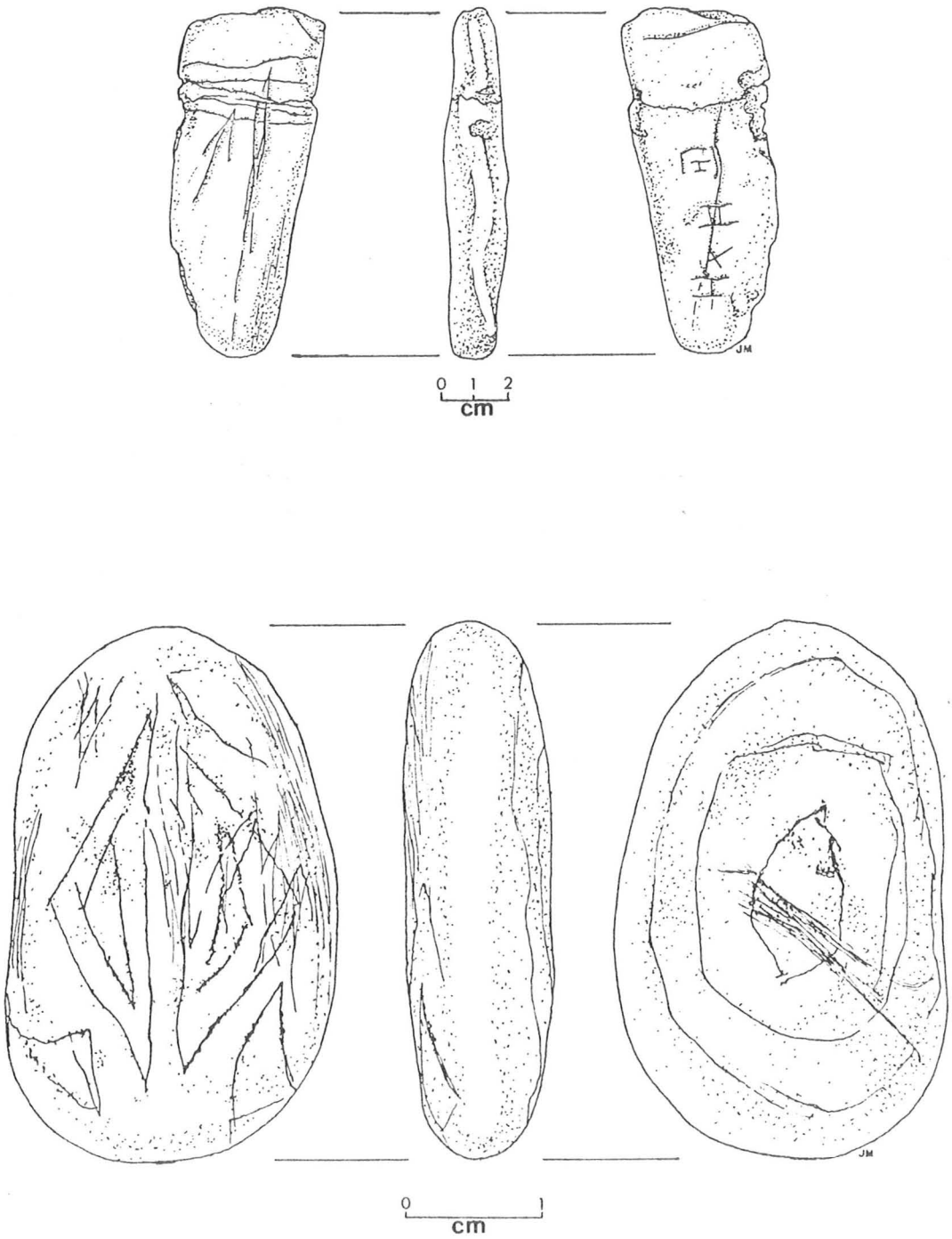


FIG. 10. Incised siltstone slab (top) and quartzite pebble.

diameter.

Celts

Four intact celts and 2 fragments were found at Hamilton. Of the complete specimens, 3 are roughly plano-convex while the other is biconvex. All the celts taper slightly in width from the blade toward the butt end and none is grooved to facilitate hafting. Descriptions of the 4 complete specimens are given in Table 21.

TABLE 21. Hamilton lithic celt metrics.

Cross Section	Length (mm)	Width of Blade (mm)	Thickness (mm)
Plano-convex	189	52	31
Plano-convex	106	60	23
Plano-convex	83	48	22
Biconvex	113	58	16

Pre-Neutral Projectile Points and Bifaces

Previous occupations at Hamilton are reflected by 9 complete and 27 fragmentary projectile points and 37 biface fragments. It is noteworthy that all of these specimens are surface finds and many are localized finds from the Area A vicinity. While this is an apparent concentration, it is noted that similar finds are not uncommon over the entire area of the site.

The projectile points, according to Ritchie's typology

(1961), include 1 Lamoka point, 4 Brewerton corner notched points, 4 Brewerton side notched points, 5 basal portions of Meadowood points, 2 untyped bifurcated base points and 20 untypable projectile fragments.

CERAMICS

The ceramics from the Hamilton site constitute a major part of the assemblage. Of particular interest is the high frequency of shell tempering which has a higher occurrence in pottery at the Hamilton site than is found elsewhere among the Ontario Iroquois.

Pottery

As Table 22 indicates, pottery accounts for most of the Hamilton ceramics (92.6%); this is consistent with other Ontario Iroquois assemblages (Noble 1968; Wright 1977). In the following, pottery is analysed according to attributes, and no attempt is made to establish or utilize the numerous pottery types described for the Huron-Petun. The attribute analysis seeks both to describe the sample and to highlight differences in attribute frequencies in relation to tempering materials.

Bodysherds

The 3,451 bodysherds from Hamilton are analysed for temper, texture, colour, vessel form, surface treatment, thickness and decoration. Split sherds and sherds that were either too small or too weathered have been disregarded.

TABLE 22. Hamilton ceramics.

Item	N	%
Pottery		
Body sherds	3451	59.2
Neck sherds	834	14.3
Rims	560	9.6
Shoulders	412	7.1
Appliqué strips	82	1.4
Castellations	25	.4
Juvenile vessels	15	.3
Feet	11	.2
Handles	10	.1
Ceramic pipes and fragments	422	7.2
Ceramic waste	10	.2
Ceramic effigy	1	-
TOTALS	5833	100.0

Paste and Temper. One of the most striking characteristics of the pottery from Hamilton is the high frequency of shell tempering. Sixty-one percent of the analysable body sherds are shell tempered, while the remaining 39 percent are tempered with grit.

The shell tempered sherds have particles normally less than 4 mm, however, fragments of shell up to 15 mm wide

were noted. Usually the shell fragments lie in a plane parallel to the vessel wall, and they form an estimated 5 to 50 percent of the paste. In a few instances, shell particles have leached out of the matrix leaving flat angular pits in the clay.

The grit temper is generally less than 3 mm in size. Though observable, laminations paralleling the vessel walls are not as obvious as those seen in the shell tempered bodies. Such laminations, together with an absence of coil breaks, indicate that the Hamilton pottery was manufactured by the paddle and anvil technique (MacNeish 1952:32).

Texture. Both shell and grit tempered bodies at Hamilton range in texture from crumbly to very well knit, with most cases tending toward the latter. The shell tempered sherds are somewhat more crumbly for they exfoliate along the laminations; the grit tempered wares tend to break perpendicular to the sherd's surface or crumble away at the edges.

Colour. The colour of the Hamilton body sherds varies widely from white, buff, brown, orange, grey to black. Buffs and browns are most frequent, and generally the interiors are darker than the exteriors, probably due to cooking activities.

Vessel Form. With three exceptions, the pottery vessels from the Hamilton site appear to have had globular bodies, rounding at the shoulders to a constricting neck which flares again toward the rim. Three angular body sherds indicate the presence of flat-bottomed vessels.

Surface Treatment. Four surface finishes or treatments were noted on the body sherds from the Hamilton site. The most common treatment, comprising 70 percent of the sample, is cord-wrapped-paddle. The parallel individual cord impressions are, with few exceptions, vertical or nearly so, where orientation of the sherd is possible.

Cord-wrapped-paddle or corded body sherds may be subdivided into those which have been left "cord roughened" and those which have been corded and then smoothed over. The latter subcategory of the cord-wrapped-paddle surface treatment referred to here as "smoothed-over-cord" may prove to be invaluable in more detailed inter or intra site comparisons, provided its definition is strictly controlled.

Probably all corded vessels have some smoothening which occurs unintentionally when the pot is handled or set down while the clay is still in its plastic state. A fairly even flattening or unidirectional smearing of the high points of the clay between the cord impressions, however, is in my own opinion more likely to be an intentional modification on the part of the potter. Such a definition of "smoothed-over-cord", if utilized, tends to remove some of the subjectivity from the analysis, especially when the analyst comes to decide how much smoothening does the commonly used term "smoothed-over-cord" imply, or in which category to place a body sherd that is partially smoothed and partially cord roughened or what to do with a corded sherd that has been

weathered or formed in clay that was a little on the wet side so that the impression is indistinct.

The smoothed-over-cord body sherds from the Hamilton site comprise 64 percent of the cord-wrapped-paddle sherds from the site or 45 percent of the total body sherd sample. As defined, the sherds range from being slightly flattened or smeared to an almost total obliteration of the cord impressions.

The next most popular surface treatment represented is plain. The 736 sherds in this category represent 21 percent of the total sample.

The surface treatment of the remaining 9 percent of the sample has been accomplished by the use of a ribbed paddle.

Surface Treatment and Temper. As seen in Table 23, there is a strong association between various surface treatments and tempering materials. The corded body sherds, whether smoothed or left roughened, have a greater tendency to be shell tempered while the plain body sherds have a greater tendency to be grit tempered. The ribbed paddle body sherds are almost as likely to be tempered by either material.

Thickness. The thickness of each body sherd from the Hamilton site was measured to the nearest millimeter. The total sample ranges from 2 to 15 mm with a mean of 6 mm.

When the thickness data for the body sherd sample are broken down into categories of surface treatment and

TABLE 23. Body sherd surface treatment and temper.

Surface Treatment	Temper				Total Sample	
	Shell		Grit			
	N	%	N	%	N	%
Smoothed-over-cord	1119	53.5	428	31.5	1547	44.8
Cord roughened	611	29.2	242	17.8	853	24.7
Plain	195	9.3	541	39.8	736	21.3
Ribbed paddle	168	8.0	147	10.8	315	9.1
TOTALS	2093	100.0	1358	99.9	3451	99.9

TABLE 24. Body sherd thickness.

Surface Treatment	Temper	N	Thickness (mm) R	$\bar{X}$
Smoothed-over-cord	Shell	1119	2-11	5.6
	Grit	428	3-12	6.5
Cord roughened	Shell	611	2-10	5.3
	Grit	242	3-11	5.9
Plain	Shell	195	4-13	6.3
	Grit	541	3-15	7.0
Ribbed paddle	Shell	168	3-11	5.4
	Grit	147	3-11	6.3

tempering material as in Table 24, it may be observed that within each category of surface treatment the mean thickness of the shell tempered sherds is always less than that of the grit tempered sherds. The mean thickness for the total sample of shell tempered body sherds is 6.6 mm.

Decoration. Only five body sherds (less than .2%), all of which are grit tempered, have been decorated. Three of these sherds are the angular sherds from flat-bottomed vessels, decorated with trailed designs of indeterminate motif. The other two are very finely incised, but again the motif cannot be determined.

Red Ocher on Body Sherds. The occurrence of red ocher was noted on 68 body sherds from the Hamilton site. The red pigment, which is in powder form on the sherds, appears to have been applied to the clay after firing. Sixty-six of the sherds have ocher on their interior only. One specimen has ocher on both surfaces, and one specimen has ocher on the exterior only.

The occurrence of ocher on the interior of the body sherds suggests that the pigment was not used as a decorative technique. It is my own contention that the body sherds themselves, as opposed to the complete vessels, were used as paint dishes or palettes. This argument is substantiated by the presence of ocher on some of the broken edges of the body sherds in question.

The association of ocher with particular surface

treatments and tempering material shows no abnormal patterning. Ocher appears on all variations of surface treatment and temper in approximately the same proportions as the variations occur on the site.

The single example of ocher on the exterior only of a body sherd may represent a decorative element.

Shoulder Sherds

A total of 412 shoulder sherds from the Hamilton site were analysed for form, decoration, temper and surface treatment.

Form. All but 10 of the shoulder sherds from the Hamilton site are of the rounded (Emerson 1966:155) form. The few sherds that approach the carinated (Emerson 1966:155) form are the result of the corded body of the vessel meeting a smoothed neck. The smoothing on the neck has created an angular end to the cord marking at the shoulder of the vessel which may be interpreted as the carinated form.

Decoration. Although 167 or 41 percent of the shoulder sherds from the Hamilton site are undecorated or plain, the shoulder is distinctive in that it often forms the boundary between the predominantly surface treated bodies of the vessels and the predominantly smoothed neck areas.

The 245 decorated shoulder sherds were divided into three basic categories of trailed, impressed and dentate stamped. In all cases, the decoration formed a simple band encircling the pot on its shoulder.

Horizontal trailed lines on the shoulder of the vessels are not common, being represented by only 13 specimens. Seven of these appear in conjunction with impressed motifs.

Impressions, whether circular or punctate, oval or notched, triangular or linear in form, dominate the decorated sherd sample. One hundred and ninety-five or 57 percent of the shoulder sherds have an impressed design. On all but four sherds where multiple rows of such impressions occurred, the impressions form a simple horizontal band on the shoulder of the vessel. On seven sherds impressions occurred in conjunction with (i.e., above or below) a horizontal trailed line.

The last category of shoulder decoration, dentate stamping, is also a form of impression. However, because of the distinctive tool used and its uncommon occurrence in Iroquoian ceramics, it has been given special attention. The dentate stamping, which occurs on 37 or 9 percent of the shoulder sherds from the Hamilton site, appears as an oblique and sometimes vertical linear impression on the shoulder.

Table 25 shows the frequency and percentage distribution of shoulder decoration in conjunction with the various surface treatments.

Table 25 suggests a strong relationship between corded vessels, whether smoothed or roughened, and plain, impressed and dentate stamped shoulder decorations. Trailed

decorations occur only on the shoulders of plain and ribbed paddle vessels, while a combination of trailing and impression only occur on plain vessels. The lack of horizontal trailed lines on corded vessels may be explained by the already existing horizontal distinction created on the shoulder by smoothing the neck area of the vessels.

TABLE 25. Hamilton shoulder sherd decoration and surface treatment.

Decoration	Surface Treatment									
	Smoothed-over-cord		Cord roughened		Plain		Paddle-ribbed		Total	
	N	%	N	%	N	%	N	%	N	%
1. Plain	58	14.1	69	16.7	35	8.5	5	1.2	167	40.5
2. Impressed	106	25.7	55	13.3	22	5.3	12	2.9	195	47.3
3. Trailed					5	1.2	1	.2	6	1.5
4. 2 and 3 combined					7	1.7			7	1.7
5. Dentate stamp	22	5.3	12	2.9			3	.73	37	9.0
TOTALS									412	100.0

When the third variable, temper, is introduced to the data on Table 25, to produce Tables 26 and 27, it becomes apparent that the various types of shoulder decoration are used in similar proportions on both shell and grit tempered wares. In the same tables it is still apparent that certain shoulder decorative elements are more commonly associated

TABLE 26. Shell tempered shoulder sherds, decoration and surface treatment.

Decoration	Surface Treatment: Smoothed-over-cord N	%	Cord Roughened N	%	Plain N	%	Ribbed Paddle N	%	Totals N	%
1. Plain	49	16.3	59	19.6	7	2.3	4	1.3	119	39.5
2. Impressed	89	29.6	49	16.3	0	.0	11	3.7	149	49.6
3. Trailed	0	.0	0	.0	0	.0	1	.3	1	.3
4. 2 and 3 combined	0	.0	0	.0	1	.3	0	.0	1	.3
5. Dentate stamp	18	5.9	11	3.7	0	.0	2	.7	31	10.3
TOTALS	156	51.8	119	39.6	8	2.6	18	6.0	301	100.0

TABLE 27. Grit tempered shoulder sherds, decoration and surface treatment.

Decoration	Surface Treatment: Smoothed-over-cord N	%	Cord Roughened N	%	Plain N	%	Ribbed Paddle N	%	Totals N	%
1. Plain	9	8.1	10	9.0	28	25.2	1	.9	48	43.2
2. Impressed	17	15.3	6	5.4	22	19.8	1	.9	46	41.4
3. Trailed	0	.0	0	.0	5	4.5	0	.0	5	4.5
4. 2 and 3 combined	0	.0	0	.0	6	5.4	0	.0	6	5.4
5. Dentate stamp	4	3.6	1	.9	0	.0	1	.0	6	5.4
TOTALS	30	27.0	17	15.3	61	54.9	3	2.7	111	99.9

with or exclusively associated with particular varieties of surface treatment as previously discussed. It is apparent in both the analysis of body sherds and shoulder sherds that the types of temper and surface treatment are closely associated. It has also been observed in the analysis of shoulder sherds that surface treatment and decoration are strongly linked, while temper and decoration are not. It is suspected that the association between temper and surface treatment is technological, while that between decoration and surface treatment is aesthetic. The lack of a strong relationship between temper and decoration suggests that when the shoulder of a pot was decorated, temper was not a major consideration.

Neck Sherds

Eight hundred and thirty-four neck sherds from the Hamilton site were analysed for surface treatment, decoration and temper. The sample includes both those neck sherds associated with rims and those which are fragments of neck areas only.

Surface Treatment. Most (95.0%) of the neck sherds here referred to as plain are devoid of any indication of surface treatment. The other varieties of surface treatments make up the remaining 5 percent of the sample, as shown in Table 28.

The large percentage of plain neck sherds shows, as did the shoulder sherds, that most vessels regardless of temper or body surface treatment have plain necks. The

obliteration of the surface treatment begins at the shoulder of the vessel and usually continues to the lip of the vessel.

TABLE 28. Hamilton neck sherd surface treatment and temper.

Surface Treatment	Temper					
	Shell		Grit		Total	
	N	%	N	%	N	%
Plain	518	94.5	276	96.5	794	95.2
Smoothed-over-cord	19	3.5	5	1.8	24	2.9
Cord roughened	10	1.8	3	1.0	13	1.6
Ribbed paddle	1	.2	2	.7	3	.4
TOTALS	548	100.0	286	100.0	834	100.1

Decoration. Eighty-nine neck sherds or 10.7 percent of the sample have been decorated. Six of these neck sherds have been decorated by trailing, one by circular impression or punctate and 82 by the addition of an appliqué strip to the neck of the vessel.

The trailed motifs include: 1 cross-hatched; 1 right to left oblique linear; 1 opposed triangular; 2 indeterminate; and 1 curvilinear motif, the pattern of which cannot be determined. All but the curvilinear design occur on shell tempered neck sherds.

The motif of the impressed decoration on one shell tempered neck sherd cannot be determined.

Appliqué strips, as do other forms of neck decoration,

show a strong association with the shell tempered wares. Seventy-six of the 82 appliqué specimens (93%) are shell tempered.

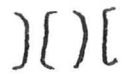
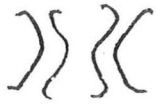
Figure 11 shows the orientation and arrangement of the appliqué strips on the neck sherds and the decoration that has been applied to the appliqués. The sample includes neck sherds which have the appliqués still in situ, neck sherds with scars where appliqués were once attached but have since fallen off, and loose appliqués which have broken away from neck sherds. This accounts for the questionable categories of orientation and decoration in the table.

The so-called "appliqué scars" are easily observable from the rough edges left where the appliqué was once joined to the neck of the vessel or by the variation in the colour of the pottery beneath where the appliqué once laid. The colour variation of the scar is the result of differential firing conditions created by the presence of the appliqué.

Rim Sherds

A total of 1,315 rim fragments was recovered from the Hamilton site. Of these, 560 are considered analysable in that they possessed all the attributes studied, and are large enough to permit identification of the motif.

This definition of analysable rims does not significantly select against particular tempering materials (Table 29), but it does, however, as will later be discussed, select against high collar rims and the large format of their deco-

Orientation and Arrangement	Plain	Decoration						?	Totals
		2		1		1		4	8
	3		2	7*		1	1	10**	24
				2					2
	1*			1	1				3
	1			2					3
				1					1
				1					1
?	8	2*	3	6	1		2	2 16*	40
TOTALS	13	4	5	21	2	2	3	2 30	82

*indicates presence of a grit tempered example within the category.

FIG. 11. Hamilton appliqué strips.

ration.

TABLE 29. Hamilton rim sherd temper.

	Analysable N	%	Unanalysable N	%
Shell	384	68.6	502	66.5
Grit	176	31.4	253	33.5
TOTALS	560	100.0	755	100.0

Prior to the analysis, an exhaustive attempt was made to mend and match rim sherds from the same vessels. Mended rims and rims from the same vessel were only enumerated as one specimen. The number of rims then in any particular analytical category may also be considered as a vessel count.

The attributes studied are those thought to be most sensitive as spatial and chronological indicators. These include: exterior, lip and interior decorative motif and technique; rim profile; collar height; surface treatment; temper and appendages. Twenty-five rims with castellations are dealt with separately from other rims.

Exterior Rim Decorations. Exterior Rim Decorative Techniques. The following are the definitions used in determining the decorative techniques used on the Hamilton site ceramics. In addition to these, the various surface treatments described in the section on body sherds, when

evident on the rim of a vessel, are here considered decorative techniques.

Trailing. Trailing is thought to have been executed by the drawing of a stylus across the surface of the clay. The trailed line is usually shallow, wider than 1.5 mm, striated, and bordered by small lumps of clay pushed aside in the process.

Incising. Incising or incision was likely accomplished by drawing a sharp edged stylus through the surface of the clay. Unlike trailing, this technique forms a narrow, deep V-shaped and sharply defined line in the clay.

Impression. Impressions were made by pushing a stylus or other instrument directly into the clay and pulling it out again with no secondary movement. Minute irregularities of the tool have been reproduced with each application and are diagnostic of the technique. Fingernail impressed, corded stick (impressed), linear impressed, dentate stamp (impressed) and punctation are all forms of impression, describing at the same time the nature of the tool used.

As seen in Table 30, undecorated or plain rims are most common at Hamilton and these show a stronger association with the grit tempered pottery. Trailed rims are almost as common as plain. The two techniques together form the majority of the sample. Of the other techniques represented, smoothed-over-cord and dentate stamped designs show stronger association with the shell tempered pottery, while linear

impression shows a stronger association with grit tempered pottery.

TABLE 30. Exterior rim decorative techniques and temper.

Technique	Shell		Grit		Total Sample	
	N	%	N	%	N	%
Plain	101	27.7	60	35.3	161	30.1
Trailed	97	26.6	43	25.3	140	26.2
Smoothed-over-cord	61	16.7	16	9.4	77	14.4
Linear impressed	45	12.3	29	17.1	74	13.8
Cord roughened	24	6.6	7	4.1	31	5.8
Dentate stamp	20	5.4	1	.6	21	3.9
Incised	13	3.6	5	2.9	18	3.4
Punctate	1	.3	5	2.9	6	1.2
Fingernail impressed	2	.6	1	.6	3	.6
Ribbed paddle	1	.3	1	.6	2	.4
Corded stick	0	.0	2	1.2	2	.4
TOTALS	365	100.1	170	100.0	535	100.2

Exterior Rim Motifs. Nineteen distinct decorative motifs, or trial motifs, were noted in the Hamilton sample. In the analysis they will be referred to according to the alphabetic scheme used in Figure 12. The following is a description of each motif as it appears in Figure 12.

A. Plain. Plain rims lack any form of decoration.

B. Smoothed-over-cord. Surface treatments such as

smoothed-over-cord, cord roughened and ribbed paddle appearing on rims have already been included under techniques. They also form, however, at the same time, a motif. The cord markings, whether smoothed over or rough, tend toward a vertical orientation.

C. Cord Roughened. See B.

D. Ribbed Paddle. The ribbed paddle markings on two rim sherds from the Hamilton site are horizontally orientated. See B.

E. Vertical Linear. This motif consists of vertically orientated parallel lines.

F. Right to Left Oblique Linear. This motif consists of parallel oblique lines inclined to the right.

G. Left to Right Oblique Linear. This motif consists of parallel oblique lines inclined to the left.

H. Opposed Oblique Linear. This motif consists of motifs F and G which incline toward the centre to meet each other.

I. Horizontal Chevron. This motif is characterized by a double row of parallel oblique lines, one over the other. Each line of the upper row joins to one on the lower row forming the apex of an acute angle. The motif is similar to

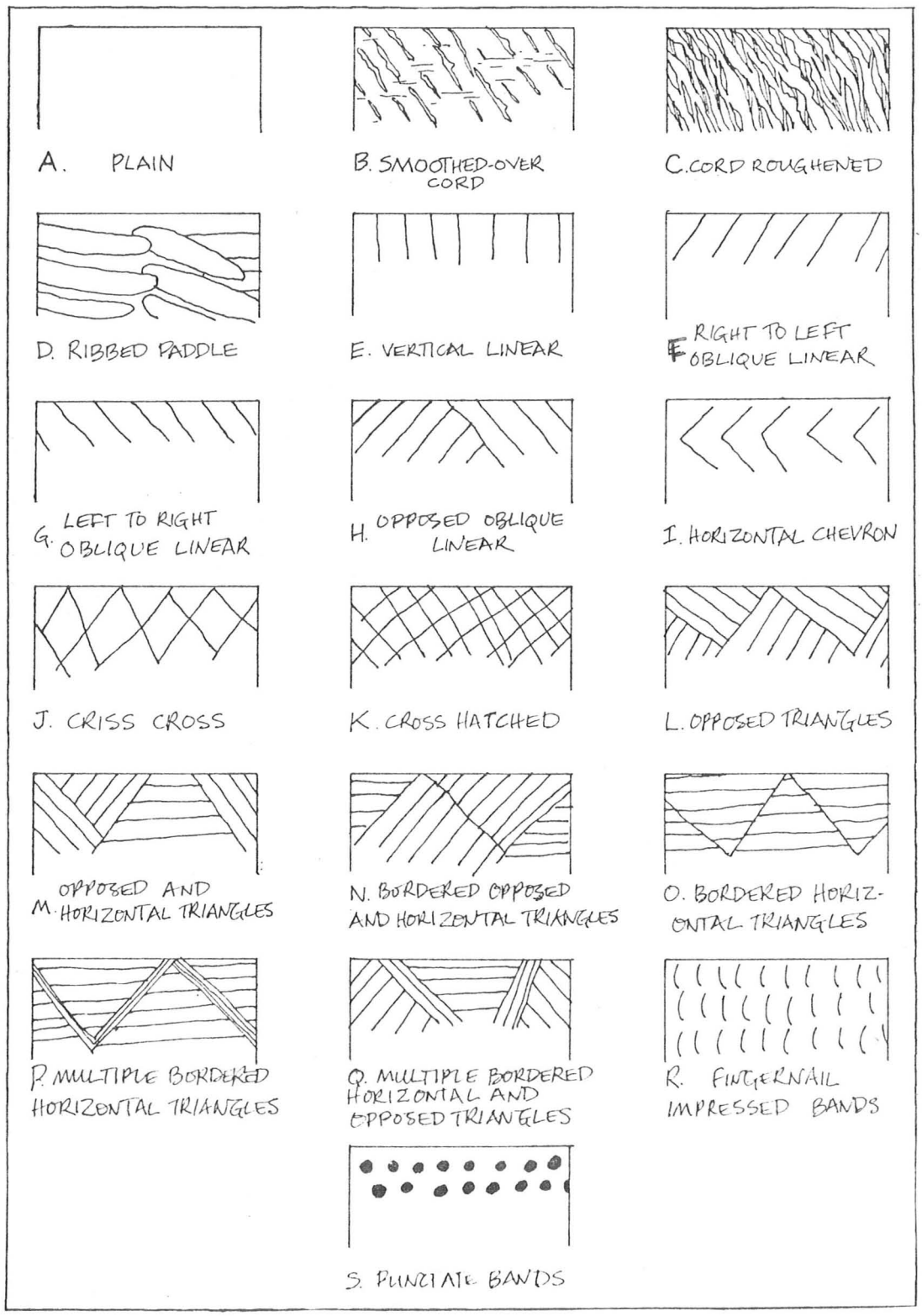


FIG. 12. Hamilton exterior rim decorative motifs.

Ridley's "Neutral Floral Punctate" (1961:40) but lacks the fabric impressed treatment diagnostic of his ceramic type.

J. Criss Cross. This motif is a combination of motifs F and G, one superimposed on top of the other. Any one oblique element of this motif crosses only one element inclined in the opposite direction and joins with two others at either of its ends, forming an apex of a rectangle.

K. Cross Hatched. This motif is similar to J. The more closely spaced parallel obliques, however, cross from 2 to 4 obliques inclined in the opposite direction.

L. Opposed Triangles. This motif is composed of triangular plats of parallel oblique lines.

M. Opposed and Horizontal Triangles. This motif is composed of triangular plats of parallel oblique and parallel horizontal lines.

N. Bordered Opposed and Horizontal Triangles. This motif is composed of triangular plats of parallel oblique and parallel horizontal lines. The plats are bordered on two sides by single oblique lines.

O. Bordered Horizontal Triangles. This motif is composed of triangular plats of parallel horizontal lines. The plats are bordered on two sides by oblique lines.

P. Multiple Bordered Horizontal Triangles. This motif is composed of triangular plats of horizontal lines. The triangular plats are bordered on two sides with 3 to 4 parallel obliques.

Q. Multiple Bordered Horizontal and Opposed Triangles. This motif is composed of triangular plats of horizontal and oblique parallel lines. The triangular plats are bordered on two sides with from 3 to 4 parallel obliques.

R. Fingernail Impressed Bands. This motif is composed of 2 to 4 horizontal bands of vertical fingernail impressions.

S. Punctate Bands. This motif is composed of 1 or 2 horizontal rows of punctates.

As seen in Table 31, plain rims dominate the sample. These are more commonly associated with the grit tempered pottery. The most common motif F, represented by 21 percent of the sample, is more commonly associated with shell tempering. Other motifs appear as minor portions of the sample. Of these, B is more commonly associated with shell tempering, and E and S are more commonly associated with grit tempering. Triangular plat motifs L-Q have a tendency to be shell tempered.

Secondary Motifs of the Exterior Rim. During analysis it was thought that certain parts of the exterior rim motif could be separated in order to ease the complexity and

TABLE 31. Exterior rim decorative motif and temper.

Motif	Shell		Grit		Total Sample	
	N	%	N	%	N	%
A	101	27.7	60	35.3	161	30.1
B	61	16.7	16	9.4	77	14.4
C	24	6.6	7	4.1	31	5.8
D	1	.3	1	.6	2	.4
E	10	2.7	16	9.4	26	4.9
F	88	24.1	23	13.5	111	20.8
G	30	8.2	20	11.8	50	9.4
H	15	4.1	8	4.7	23	4.3
I	4	1.1	1	.6	5	.9
J	2	.6	3	1.8	5	.9
K	1	.3	1	.6	2	.4
L	11	3.0	4	2.4	15	2.8
M	1	.3	0	0	1	.2
N	5	1.4	0	0	5	.9
0	4	1.1	0	0	4	.8
P	1	.3	1	.6	2	.4
Q	3	.8	0	0	3	.6
R	2	.6	1	.6	3	.6
S	1	.3	7	4.1	8	1.5
Misc.	0	0	1	.6	1	.2
TOTALS	365	100.2	170	100.1	535	100.3

reduce the overall number of principal or primary motifs A to S. This line of thought was followed and the motifs are here referred to as secondary motifs. They are as follows:

a. Row of shallow oval impressions or notches below primary motif.

b. Row of shallow oval impressions or notches above primary motif.

c. Row of shallow oval impressions or notches above and below primary motif.

d. Single horizontal trailed line below primary motif.

e. Single horizontal trailed line above primary motif.

f. Single horizontal trailed line above and below primary motif.

g. Band of vertical incisions below primary motif.

h. Primary motif is applied on top of corded surface treatment.

As seen in Table 32, secondary motifs were observed on 42 rims, 7.9 percent of the total rim sherd sample. Secondary motif "a" occurs primarily on plain (A) or corded rims (B, C) bordering the lower edge of the otherwise non-distinctive collar. Secondary motif "h" reflects the unconcern with smoothing the rim area of the corded surface treatment before applying what have been termed primary motifs.

TABLE 32. Association of primary with secondary motifs and temper on the Hamilton rims.

Primary Motif	Secondary Motif a		b		c		d		e		f		g		h		Total	
	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G
A	5		1														6	0
B	5	1											2				7	1
C	3				1												4	0
E							1		1								1	1
F															6		6	0
G		1													3	2	3	3
H		1													1		1	1
L											1						1	0
N															1		1	0
0															1		1	0
P		1													1		1	1
Q															1		1	0
S																2	0	2
TOTALS	13	4	1	0	1	0	1	0	0	1	1	0	2	0	14	4	33	9

Where S=shell tempered, G=grit tempered, values represent frequencies.

When the relative sample sizes of shell and grit tempered rims are considered, no strong association of secondary motifs with particular tempering materials is observed.

Lip Decoration. Forty-nine percent of the vessel

lips from Hamilton are decorated using 11 different motifs. The motifs will be referred to by letter, as shown in Figure 13.

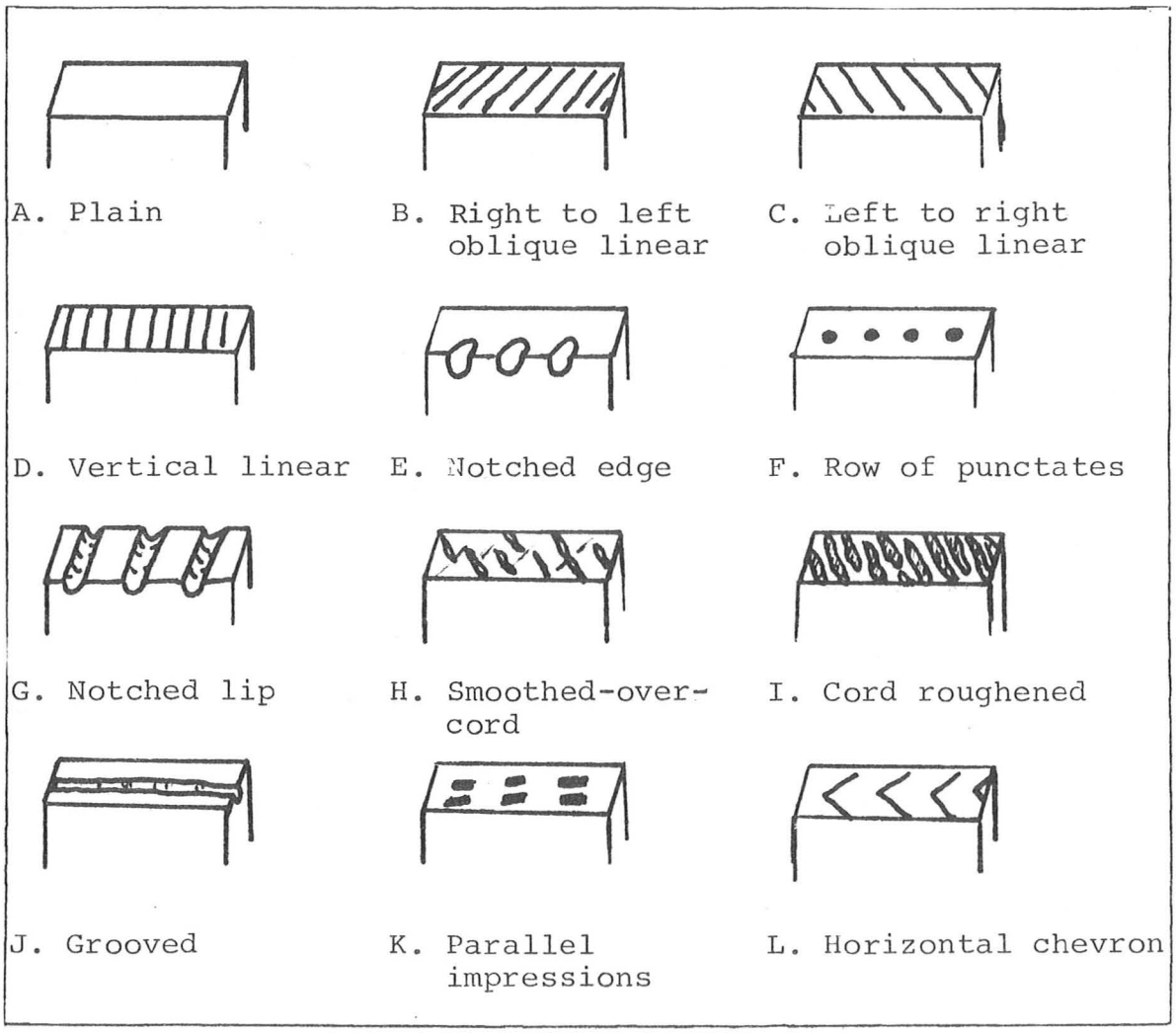


FIG. 13. Lip decorative motifs.

As seen in Table 33, 49 percent of the vessel lips from the Hamilton site are decorated; 51 percent are plain. The most common motifs B, C and D, are parallel oblique or vertical lines crossing the lip. The distinction between the

TABLE 33. Lip decorative motifs and techniques.

Technique	Motif												Total	
	A	B	C	D	E	F	G	H	I	J	K	L	N	%
Plain	271	0	0	0	0	0	0	0	0	0	0	0	271	50.7
Linear impressed	0	61	27	33	0	0	0	0	0	0	1	2	124	23.2
Notch impressed	0	0	0	0	30	0	20	0	0	0	0	0	50	9.4
Punctate	0	0	0	0	0	19	0	0	0	0	0	0	19	3.6
Smoothed-over-cord	0	0	0	0	0	0	0	18	0	0	0	0	18	3.4
Dentate stamp	0	10	5	1	0	0	0	0	0	0	0	0	16	3.0
Trailed	0	2	3	0	0	0	0	0	0	5	1	0	11	2.1
Incised	0	12	0	1	0	0	0	0	0	0	0	0	13	2.4
Cord roughened	0	0	0	0	0	0	0	0	6	0	0	0	6	1.1
Corded stick	0	0	3	2	1	1	0	0	0	0	0	0	7	1.3
TOTAL	271	85	38	37	31	20	20	18	6	5	2	2	535	100.2

orientation of these motifs may be negligible since several larger rim fragments showed a gradation from one to the other. These motifs are primarily produced by the most common decorative technique used on the lips--linear impression.

Common motifs E and G were, with one exception, produced by the same technique, notch impression, the second most common technique used. They vary primarily in the angle at which the tool was applied.

Lip Motif and Temper. As seen in Figure 14, decoration of the lip is more common on shell tempered vessels (53%) than on grit tempered vessels (41%). This was also the case with rim exteriors (Table 31).

Motif B, right to left oblique linear, the most common lip decoration as well as motifs C and H, are more strongly associated with shell tempered pottery. Motif E is more commonly associated with grit temper. The other motifs noted on the vessels' lips do not show strong associations with particular tempering materials.

Interior Rim Decorations. The interior portion of vessel rims from Hamilton is for the most part (85%) plain (Figure 15). Decorations occur on 17 percent of the shell tempered pottery and on only 6 percent of the grit tempered pottery. The most common motif B, right to left parallel obliques, with a single exception, is only found on shell tempered pottery. It is applied primarily by linear impression, the most common decorative technique used for interior

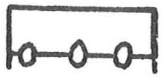
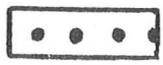
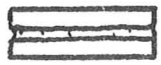
	Motif	Temper					
		Shell		Grit		Total Sample	
		N	%	N	%	N	%
A		170	46.7	101	59.4	271	50.7
B		69	18.9	16	9.4	85	16.0
C		29	8.0	9	5.3	38	7.1
D		27	7.4	10	5.9	37	6.9
E		17	4.7	14	8.2	31	5.8
F		11	3.0	9	5.3	20	3.7
G		13	3.6	7	4.1	20	3.7
H		17	4.7	1	.6	18	3.4
I		5	1.4	1	.6	6	1.1
J		4	1.1	1	.6	5	.9
K		2	.6	0	.0	2	.4
L		1	.3	1	.6	2	.4
TOTAL		365	100.4	170	100.0	535	100.1

FIG. 14. Lip motif and temper.

Technique	Motif A Plain		B		C		D		E		F		Total Sample	
	S	G	S	G	S	G	S	G	S	G	S	G	N	%
Plain	302	159											461	86.2
Linear impressed			31	1	2	3	2	3	0	0	0	0	42	7.9
Notch impressed			0	0	0	0	0	0	17	4	0	0	21	3.9
Trailed			6	0	1	0	1	0	0	0	1	0	9	1.7
Incised			1	0	0	0	0	0	0	0	0	0	1	.2
Dentate stamp			1	0	0	0	0	0	0	0	0	0	1	.2
TOTALS N	302	159	39	1	3	3	3	3	17	4	1	0	535	100.1
TOTAL % SHELL	82.7		10.7		.8		.8		4.7		.3			100.0
TOTAL % GRIT		93.5		.6		1.8		1.8		2.4		0		100.1

FIG. 15. Interior rim decorative motifs techniques and temper.

rim decorations.

The next most common motif and technique is E, notching of the interior lip edge formed by notch impression. Other motifs and techniques of interior decoration are represented by only minor frequencies (Figure 15).

Rim Form. Figure 16 presents 15 basic rim profiles which occur on 535 specimens from Hamilton. The profiles, as depicted in the figure, are to be considered modal forms. The actual specimens vary from these particularly in overall size, lip angle and collar height.

Fifty-two percent of the vessels from the Hamilton site did not have collars. Collarless vessels are more commonly grit tempered while collared forms, and especially high collared vessels, are more commonly shell tempered (Table 34).

TABLE 34. Summary of rim form and temper.

Rim Form	Temper					
	Shell		Grit		Total	
	N	%	N	%	N	%
Low collar	126	34.5	57	33.5	183	34.2
High collar	59	16.2	15	8.8	74	13.8
Collarless	180	49.3	98	57.7	278	52.0
TOTALS	365	100.0	170	100.0	535	100.0

As seen in Table 35, rim forms 2 and 8 are more often associated with shell tempered vessels, while forms 10 and

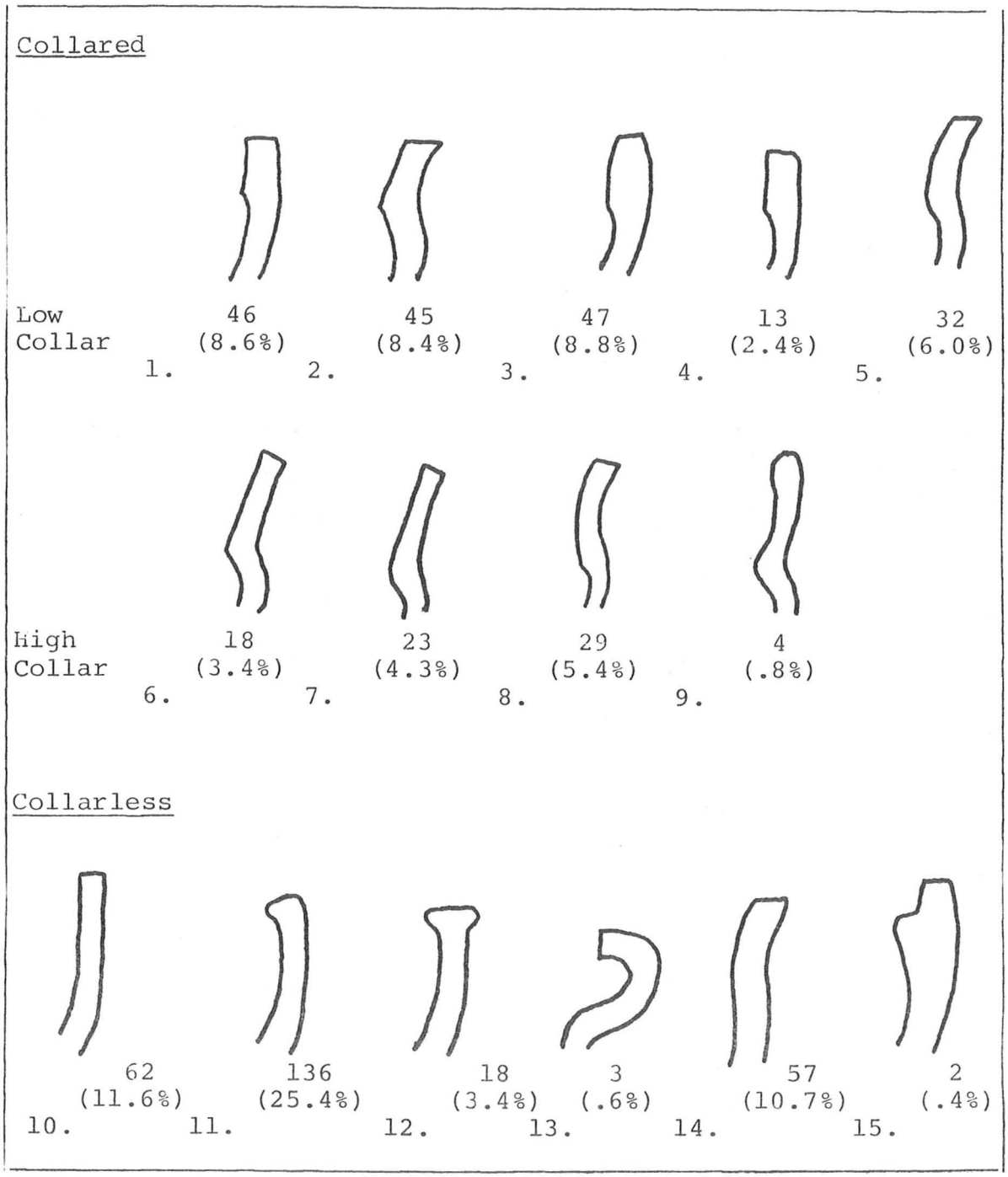


FIG. 16. Rim forms.

14 are more commonly associated with grit tempered vessels. Other rim forms do not show strong relationships with particular tempering materials.

TABLE 35. Rim form and temper.

Rim Form	Temper				Total Sample	
	Shell		Grit			
	N	%	N	%	N	%
1	29	8.0	17	10.0	46	8.6
2	37	10.1	8	4.7	45	8.4
3	29	8.0	18	10.6	47	8.8
4	8	2.2	5	2.9	13	2.4
5	23	6.3	9	5.3	32	6.0
6	10	2.7	8	4.7	18	3.4
7	19	5.2	4	2.4	23	4.3
8	26	7.1	3	1.8	29	5.4
9	4	1.1	0	0	4	.8
10	34	9.3	28	16.5	62	11.6
11	96	26.3	40	23.5	136	25.4
12	15	4.1	3	1.8	18	3.4
13	2	.6	1	.6	3	.6
14	33	9.0	24	14.1	57	10.7
15	0	0	2	1.2	2	.4
TOTALS	365	100.0	170	100.1	535	100.2

Table 36, though complex, is the basis for which most

TABLE 36. Exterior rim motif, form and temper.

Rim Form	Motif A		B		C		D		E		F		G		H		I		J	
	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G
1	-	-	1	1	1	-	-	-	1	3	17	8	6	2	1	1	-	-	-	-
2	4	1	4	-	2	-	-	-	2	1	18	1	1	5	5	-	-	-	-	-
3	2	-	-	-	-	-	-	-	3	4	8	3	9	8	1	2	2	-	1	1
4	-	-	-	-	1	-	-	-	2	2	2	2	2	-	-	-	-	-	1	-
5	1	-	3	2	2	2	-	-	-	2	9	1	1	-	2	-	-	-	-	-
6	-	1	4	-	1	-	-	-	-	-	1	1	2	1	-	-	-	-	-	-
7	2	-	4	2	4	-	-	-	-	1	6	-	-	-	-	1	-	-	-	-
8	1	-	8	1	2	-	1	-	-	-	-	-	-	-	3	1	-	-	-	-
9	-	-	1	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	-
10	12	16	8	3	5	2	-	-	-	1	5	2	4	1	-	-	-	-	-	-
11	54	22	11	4	2	1	-	-	1	1	18	4	4	3	2	3	2	1	-	-
12	10	3	3	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-
13	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Continued

TABLE 36 continued.

Rim Form	Motif A		B		C		D		E		F		G		H		I		J	
	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G
14	13	16	14	3	4	2	-	1	-	1	1	1	1	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
TOTAL SHELL	101		61		24		1		10		88		30		15		4		2	
TOTAL GRIT		60		16		7		1		16		23		20		8		1		3

Continued

TABLE 36 continued.

Rim Form	Motif K S	K G	L S	L G	M S	M G	N S	N G	O S	O G	P S	P G	Q S	Q G	R S	R G	S S	S G	Misc. G	Total S	Total G
1	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	2	-	29	17
2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	8
3	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	18
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	8	5
5	-	-	1	2	-	-	1	-	1	-	-	-	-	-	2	-	-	-	-	23	9
6	-	1	-	2	-	-	2	-	-	-	-	1	-	-	-	-	-	-	1	10	9
7	-	-	1	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	19	4
8	-	-	4	-	-	-	2	-	2	-	1	-	2	-	-	1	-	-	-	26	3
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	34	28
11	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	96	40
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	3
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1

Continued

TABLE 36 continued.

Rim Form	K		L		M		N		O		P		Q		R		S		Misc.	Total	
	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	S	G	G	S	G
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	24
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2
TOTAL shell	1		11		1		5		4		1		3		2		1			265	
TOTAL GRIT		1		4		0		0		0		1		0		1		7	1		170

researchers devise ceramic types. Several general observances are outstanding. Plain collarless vessels (motif A, rim forms 10-15) form a large portion (28%) of the sample, whereas plain collared rims (motif A, rim forms 1-9) are relatively rare. Corded motifs, B and C, show strong associations with high collar and collarless rims. Simple linear motifs, E, G, and H, appear most often on low collars (1-5). This latter gross category represented by 135 rims forms 25 percent of the overall sample. Thirty rims with triangular plat motifs (L-Q) with only one exception, appear on collared rims (1-9). Two-thirds of these are associated with high collar forms (6-9).

The latter gross rim category is of particular interest. High collar rims, because of their large size and the large scale of their motifs, often of the triangular plat variety, are likely selected against by the definition of a "complete rim" used for this analysis. An examination of the 755 rim fragments deemed unanalysable by definition revealed that, indeed, 119 (15.8%) of these fragments likely came from high collared vessels with triangular plat motifs. By comparison, high collared rims with triangular plat motifs account for only 3.7 percent of the analysable rim sherd sample.

Of further consideration is that the above mentioned 119 rims show a strong association with shell tempering. Ninety-five rims are shell tempered, representing 18.9 percent of the unanalysable shell tempered rims. Twenty-four rims are

grit tempered, representing 9.5 percent of the unanalysable grit tempered rims.

Secondary motif h of the exterior rims, the application of the primary motif over a corded surface, is remarkably common among the 119 fragmented high collar rims with triangular plat motifs. This secondary motif occurs on 48 shell tempered specimens and 2 grit tempered specimens, thus showing a strong association with the former.

Appendages

Besides the previously discussed appliqué strips applied to the necks of vessels, and in several cases forming castellations on the rim, several additional appendages are noted from Hamilton.

Castellations. Twenty-five castellations from Hamilton indicate that only about one in twenty vessels had castellations. The most common castellation is the incipient pointed type comprising approximately 50 percent of the sample. Other types include notched, pointed, turret and multiple notched forms (Figure 17).

All but 4 of the castellations are molded from rim clay. The 4 exceptions, all shell tempered, have been produced by the addition of a vertical appliqué onto the front of and over the lip of the rim. These appliqué castellations, unlike the appliqués applied to the necks of vessels, are well molded onto the exterior rim and lip of the vessel. The ridge produced by the appliqué thickens the rim profile, and

where the appliqué extends over the lip of the vessel it produced the castellation.

Type	Shell N	Grit N	Total Sample
 Incipient Pointed	10	2	12
 Pointed	4	0	4
 Turret	3	1	4
 Notched	2	2	4
 Multiple Notched	0	1	1
TOTALS	19	6	25

FIG. 17. Hamilton castellations.

Motifs on the exterior of castellations are generally more complex than elsewhere on the rim. Although plain castellations are most common, triangular plat, chevron, parallel

horizontal and parallel oblique, and punctate designs are also present. In addition, below one castellation is a single vertical appliqué scar.

Handles. Of the 10 handles, all of the strap variety, found at Hamilton, only 3 are still attached to vessel fragments. Their poorly executed appliqué attachment suggests that they were decorative rather than functional. The handles in association with rim fragments are attached either on the middle or lower rim area and span the neck of the vessel to attach on their lower end to the vessel's shoulder.

The sample consists of 7 shell tempered and 3 grit tempered handles. One handle of each temper type is decorated while the remainder are plain. The decorations on the shell tempered example consist of a vertical row of short horizontal impressions or notches. The grit tempered specimen is decorated with three vertical bands of parallel oblique incisions. In addition to the handle fragments, 3 shoulder fragments bear scars left where handles were once attached.

Feet. Feet are extremely rare occurrences on Iroquoian vessels. Besides those reported here, the only others that, to my knowledge, exist in Ontario include a single example reported by Orr (1915:92) and two examples from the Walker site (M. Wright: personal communication, 1976).

The 11 examples from the Hamilton site are of three

varieties here termed pedestal, flaring and peg.

The pedestal type foot is characterized by a constricted central or leg portion which flares toward a large discoidal base. The bases or foot of the 4 examples from Hamilton range between 40 and 74 mm in diameter with a mean of 60 mm. The constricted leg portions of the appendages are approximately half the diameter of the base. The pedestal feet from Hamilton are all shell tempered.

This type of foot likely occurred individually on vessel bases. A complete vessel with such a base was found at the Madisonville component of the Fort Ancient Aspect and is pictured in Griffin (1943:Plate LXVI).

The flaring type foot is similar to the pedestal variety but lacks the discoidal base. It simply widens or flares from the constricted leg portion to its base. The single grit tempered example from the Hamilton site flares from a minimum leg diameter of 26 mm to a maximum diameter of 31 mm at the base. Its surface has faint cord impressions.

The peg type foot is characterized by its simplicity. From top to bottom it is either straight, slightly constricting or slightly flaring. Of the two examples from the Hamilton site, both are grit tempered. One is straight from its top to its base, while the other flares slightly. Their diameters at the base are 19 mm and 28 mm respectively.

The 4 additional specimens are only the upper portions of feet and are, thus, not able to be classified. They are

all grit tempered. One specimen has a vertical black line 6 mm wide that may have been painted on the clay. Another is attached to a vessel fragment bearing a ribbed paddle surface treatment.

Ceramic Waste

Ten lumps of fired clay represent the waste materials from the manufacture of ceramics. These pieces that became unintentionally fired often show finger impressions where they were pinched or pulled from larger pieces of clay.

Effigy

A small effigy resembling the head of a lizard was at first thought to be an effigy from a pipe. The broken surface of the neck portion of the effigy shows, however, that it has been appliquéd onto a rather flat surface, such as the rim of a vessel.

Pipes

Of the 438 fragments of smoking pipes from Hamilton, the 422 clay specimens (96.4%) clearly predominate over the 16 lithic examples (3.6%). Both will be considered in this section.

The Hamilton ceramic pipes have been molded from a single lump of clay containing for the most part very fine grit temper. Coarse tempered fragments are crudely formed as a rule, and are probably the work of children. Shell tempering occurs in 15 pipe fragments, or 4 percent of the ceramic pipe sample.

TABLE 37. Hamilton pipe fragments.

Item	Ceramic N	Lithic N	Total
Mouthpieces	73	9	82
Stems	164	0	164
Bowls	185	7	192
TOTALS	422	16	438

The Hamilton ceramic pipe stems were molded around a length of cord, a reed or a twig, so that when fired these materials would burn out and leave a hole or bore through the length of the stem. Thirty percent of the observable bore interiors have obvious twisted cord impressions, while the majority are smooth bores attributable to the reed or twig technique. Stone pipes have been carved from soft limestone (15) or steatite (1).

In the following, the pipe fragments are analysed according to mouthpiece, stem and bowl forms and decoration. Pipe bowl provenience and metrical data are also presented.

Mouthpieces (Figure 42, 1-9)

Of the 82 mouthpiece portions from Hamilton, 73 are ceramic and 9 are lithic. Mouthpieces are circular to slightly oval in cross section and with one exception are plain. The single, decorated ceramic specimen exhibits decoration with a double row of punctates encircling the

mouthpiece. Mouthpieces range from 8 to 18 mm in diameter with a mean of 12 mm. Bore diameters measured at the mouthpiece end range from 3 to 7 mm with a mean of 4.4 mm.

Figure 18 shows the various mouthpiece forms and their frequency at Hamilton. In three ceramic instances, where the mouthpiece has broken away from the stem, a new mouthpiece of type A has been improvised by grinding the broken edge smooth.

Type	Ceramic N	Ceramic %	Lithic N	Lithic %
A. 	24	32.9	3	33.3
B. 	14	19.2		
C. 	11	15.0		
D. 	8	11.0		
E. 			6	66.7
F. 	5	6.9		
G. 	5	6.9		
H. 	3	4.1		
I. 	3	4.1		
TOTAL	73	100.1	9	100.0

FIG. 18. Hamilton pipe mouthpiece varieties.

Notably, lithic pipe mouthpieces are of two varieties.

Of nine specimens, 6 exhibit a tapering stem with a slight bulge near but not on their ends. This form is exclusively a lithic variation. The other three examples are ground off squarely as in style A.

Pipe Stems (Figure 42, 10-15)

Of a total of 164 ceramic stems, it is clear that plain circular forms predominate, as evidenced in Figure 19. Indeed, only 33 specimens (20%) are decorated. Though no lithic pipe stem fragments were found at Hamilton, the 9 stem-mouthpiece portions indicate that lithic pipe stems were also plain.

Significantly, stem motifs B and C are usually associated with effigy pipes, with the motif on the stem representing an animal's tail. Motif D is also an effigy correlate, namely, that of a snake coiled around the stem. Motif E consists of 2 trailed lines coiling up to the stem, while F and G represent trailed linear motifs restricted to flat pipe stems that are elongated diamonds in cross section. The category "other" includes an effigy stem fragment from Area C depicting the hind end of a clawed animal. The back legs with clawed feet lie along either side of the stem, and the long tail curls back toward the mouthpiece (Figure 20). The two additional specimens referred to as "other" are actually stem-elbow fragments, each having three narrow, raised and closely spaced bands encircling the stem.

From mouthpiece to elbow, 6 complete pipe stems from

Decoration (top view)	Stem Cross Sections 1	2	3	4	5	Total
A. Plain	131					131
B. 		7		3		10
C. 	1		1			2
D. 	3					3
E. 	2					2
F. 					1	1
G. 					1	1
H. Indeterminate punctate design	6					6
I. Indeterminate incised design	4				1	5
J. Other	3					3
TOTALS	150	7	1	3	3	164

FIG. 19. Hamilton pipe stems, shapes and decoration.

Hamilton range from 45 to 90 mm long, with a mean length of 58 mm.

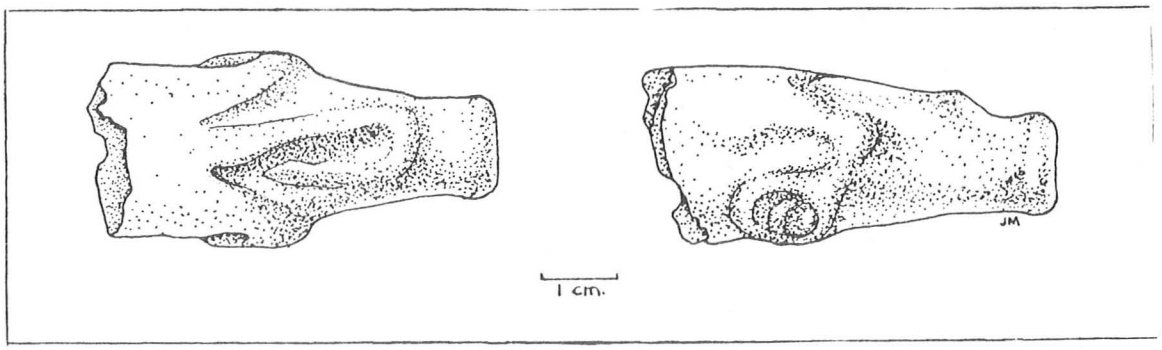


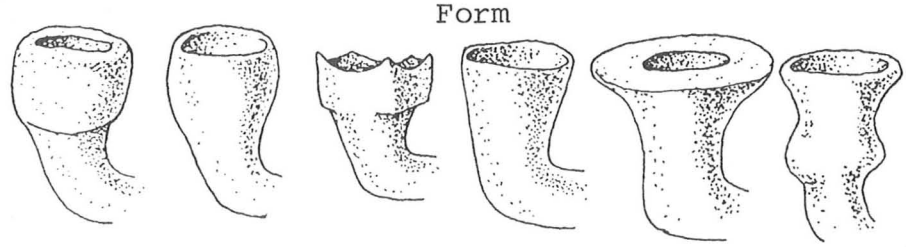
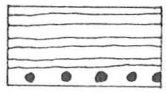
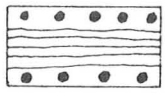
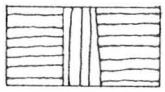
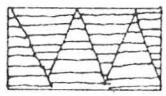
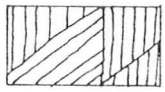
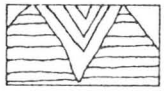
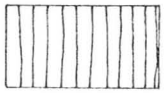
FIG. 20. Clawed animal effigy pipe stem.

Pipe Bowls (Figure 42)

A total of 192 pipe bowls and pipe bowl fragments were recovered from Hamilton. One hundred and fifty (78%) are non-effigy forms, 35 fragments (18%) are clay effigy forms, and 7 remaining specimens (4%) are lithic forms. Two specimens of the latter category also represent effigies. Notably, only 10 pipes are plain.

Of the non-effigy forms, 117 are analysable; the others are simply too fragmentary to determine form or motif. As seen in Figure 21, the collared variety is the most common form at Hamilton, comprising 42 percent of the sample. Collars, ranging between 11 and 23 mm in height, are generally well defined and usually decorated.

The flared pipe form is also popular at Hamilton, representing 37 percent of the sample. It is similar in bowl

Decoration \ Form	 Collared	Flared	Coronet	Conical	Trumpet	Vasiform	Total
	3*	24	11	3			41
	5	7					12
	12	7					19
	5						5
		1					1
	19	4					23
	1						1
	2						2
				2+			2
Plain	2		1L	3LL	2	2L	10
Other				1L			1
TOTALS	49	43	12	9	2	2	117

* indicates a shell tempered specimen
L indicates a lithic specimen

FIG. 21. Hamilton non-effigy pipes, form and decoration.

form to the collared variety, but lacks the distinctive collar. Ridley (1961) has included both the flared and the collared forms of this analysis into his acorn cup variety.

Other pipe bowls at Hamilton include the coronet (10%), conical (8%), trumpet (2%) and the vasiform pipe (2%). The trumpet form at Hamilton varies slightly from the usual form in that lips are flat and unusually thick. Viewed from the exterior, the pipes are typically plain trumpet pipes; however, the interior bowls are no larger than other pipe forms at Hamilton.

The 5 non-effigy lithic pipe fragments include 4 of limestone and 1 steatite. The limestone examples consist of 2 fragments apparently from conical pipes, and 1 vasiform with a drilled stem hole. The remaining limestone example may be described as roughly conical in form; however, the rim is square in shape and collared. It apparently had a lithic stem which broke off and was replaced with a drilled stem hole for insertion of a secondary wooden or reed stem. The steatite specimen is complete and conical in form. Its short (24 mm) stem has a large bore (10 mm) to be used with a wooden or reed stem. Decorated around the bowl with crudely incised chevron motifs, this pipe is also notched around the lip.

Effigy Pipes

Twenty-eight effigy pipes from Hamilton are analysable and identifiable. This sample includes 26 ceramic and 2 lithic specimens. As indicated in Table 39, birds and humans

TABLE 38. Hamilton non-effigy pipe forms and metrical data.

	Collared	Flared	Coronet	Conical	Trumpet	Vasiform
Bowl diameter						
N	9	5		2		1
R	25-40	25-35		22-24		21
$\bar{X}$	33.3	31.6		23		21
Lip thickness						
N	49	42	11	9	2	2
R	4-8	3-9	4-10	3-5	10-13	4-8
$\bar{X}$	5.7	5.8	6.4	4.7	11.5	6
Collar height						
N	49		11			
R	14-24		11-23			
$\bar{X}$	18.9		15.6			

TABLE 39. Hamilton effigy pipes.

Type	Ceramic N	Lithic N	Total N	Total %
Bird	12		12	42.9
Human blow-face	8		8	28.6
Bear	2	1	3	10.7
Human	2	1	3	10.7
Lizard	1		1	3.6
Snake	1		1	3.6
TOTALS	26	2	28	100.1

obviously dominate the effigy series.

The bird effigies consist of 6 heads (Figure 43:1-2), one of which is a shell tempered owl effigy (Figure 43:3), and 7 portions of bowl. The bowls are identified by the horizontal or oblique lines representing wings on the side of the bowl and by short tails projecting from the rear of the pipes (Figure 43:4). The 4 examples that can be oriented indicate that the effigy faced the smoker.

Human blow-face (pinched-facé) pipes are common on Huron sites (Noble 1968), but less so on Neutral villages. While stylistically similar in form, blow-faces vary considerably in detail. One or both arms usually approach the effigy face which on various specimens looks human-like or animal-like or a combination of the two. One complete head, 1 head fragment, and 5 bowl fragments (Figure 43:6) from the Hamilton sample may be classified as typical examples of the human blow-face pipe. The complete human-like head shows little facial detail, but does have a distinct beret-like cap covering the head (Figure 43:5). Another specimen classed as a blow-face is atypical. The face on this example is part of the bowl rather than a projection from the lip of the bowl. The full cheeks and lines radiating from the mouth are features which this pipe holds in common with many of the typical blow-face variety (Figure 43:7). Blow-face pipes may be depictions of shamen sucking or blowing ritual activities.

Three bear effigies are represented by the heads

only. One lithic and one clay specimen are with little doubt bears, (Figure 43:8,9), while a third specimen of clay has a short rounded nose which may in fact represent a beaver or ground hog (Figure 43:10).

Three other human effigies include a well-carved limestone example which protruded from the lip of its pipe bowl. Details on this effigy include a beret-like head piece similar in form to that found on the head of one of the blow-face pipes, as well as finely incised zig-zag designs on the neck and chest. These may represent tatoos (Figure 43:11).

Another human effigy, also protruding from the pipe bowl, is very simply molded and, from the large eye depressions, may represent an other-than-human, perhaps owl form (Figure 43:12). The remaining human effigy formed part of a pipe bowl and, while facial details are clear and well representative of a human face, they are not remarkable (Figure 43:13).

A single lizard effigy positioned vertically against the pipe bowl has a diamond shaped head just touching the lip of the round bowl. The front legs extend part way around the bowl. Its back and legs are spotted with small punctates. The hind end is missing, but presumably the tail extended down onto the pipe stem. This fragment is shell tempered (Figure 43:14).

The snake effigy is similar to several fragments of pipe stem found on the site. Undecorated, the snake is

coiled around the pipe bowl with its head laying against the side of the bowl near its top and facing the smoker (Figure 43:15).

TABLE 40. Hamilton pipe provenience.

Form	Midden	N	Surface N	Total N
Collared	A	13	36	49
Flared	A	4	37	43
	C	2		
Coronet	A	4	7	12
	C	1		
Conical	A	2	7	9
Trumpet	A	1	1	2
Vasiform			2	2
Bird effigy	A	6	5	12
	C	1		
Human blow-face	A	1	7	8
Bear	A	3		3
Human			3	3
Lizard			1	1
Snake			1	1
TOTALS		38	107	145

A direct relationship between Ontario Iroquois effigy pipes and lineage eponyms has been suggested by Noble (1968: 296, 1969:24). If such is indeed the case, at least five

lineages are distinguishable at Hamilton.

Unfortunately, no pipes were found in the Hamilton houses so it is difficult to seek associations of effigy pipe forms with particular houses. Worth noting, however, is an apparent clustering of bird and bear effigies in midden A, which was likely deposited by the inhabitants of houses 1, 2 and 5. Six of the 12 bird effigy pipes and all 3 of the bear effigy pipes were found in this midden. If Noble's hypothesis is correct, lineages with bird and bear eponyms inhabited houses 1, 2 or 5. Of further interest in this regard is the possibility that the two circular structures attached to the outside of house 2, as described in chapter 2, are bear cages as suggested. Perhaps the bear served as an eponym for a lineage residing in house 2. As such it may have been used in pipe design and bears were captured and caged for fattening, magical or purely aesthetic reasons.

WORKED SHELL

The Neutral commonly used shell for items of personal adornment, as Table 41 indicates, and this is similar to the historic Huron case where beads and pendants of shell were worn on the neck and wrists as well as from the ears and hair (JR 15:155).

Shell Beads

Shell beads are the most common shell object found on historic Neutral sites, and 445 were recovered from middens, houses, and the surface at Hamilton. They are described in

the following according to shape and size and, where possible, the type of shell used. Obviously, the marine shells are indicators of an exchange (trade) system.

At Hamilton, 348 cylindrical-shaped shell beads with drilled holes have been divided into discoidal or tubular categories according to a length-diameter ratio. A discoidal form is defined as having a diameter greater than its thickness, while a tubular form is as long or longer than its diameter.

TABLE 41. Hamilton worked shell.

Item	N	%
Beads	445	94.9
Pendants	4	.9
Ornaments	4	.9
Scraper	1	.2
Waste	15	3.2
TOTALS	469	100.1

Discoidal Beads. (Figure 44:1). Manufactured from marine shell, 319 beads are discoidal. The 306 complete specimens range from 3 to 15 mm in diameter (7.9 mm mean), and from 1 to 7 mm in thickness (2.6 mm mean) Figures 22 and 23 show the diameters and thicknesses of these specimens.

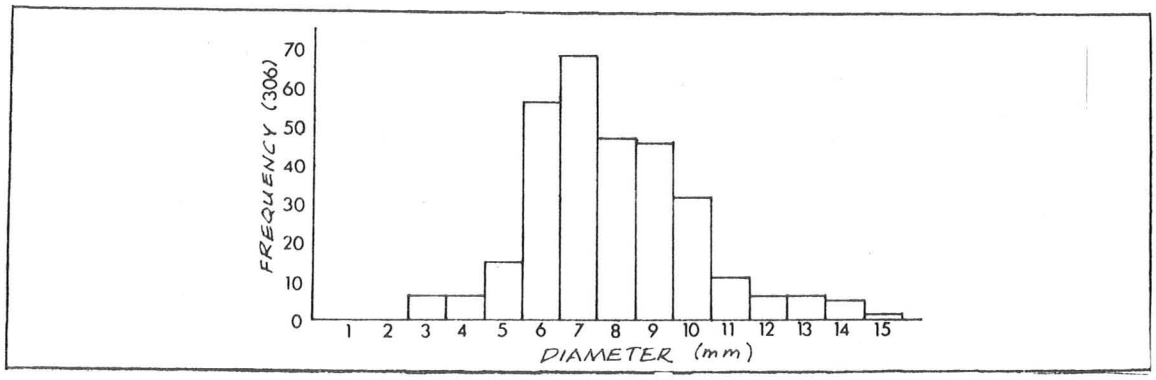


FIG. 22. Hamilton discoidal shell bead diameters.

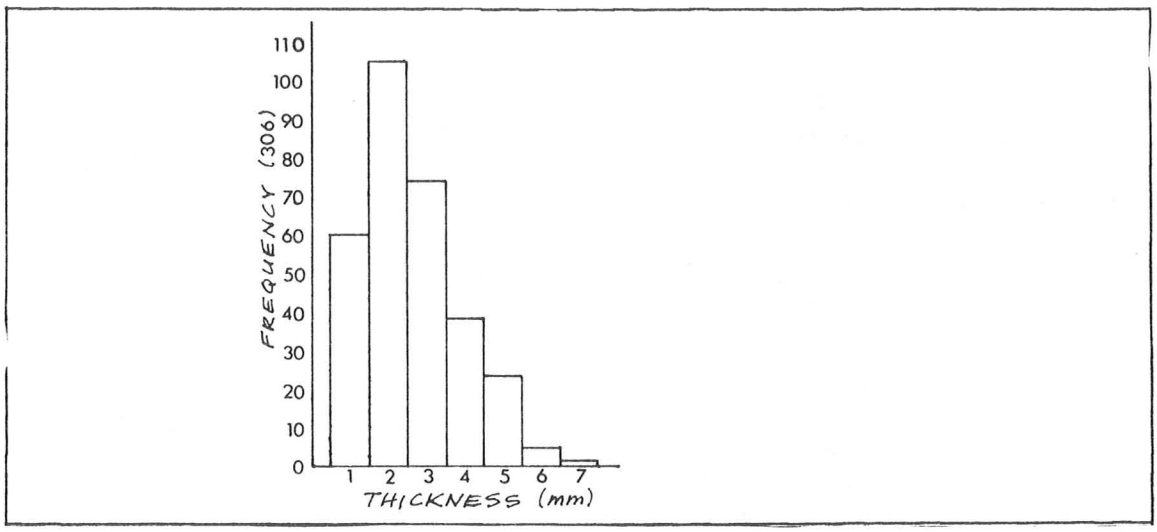


FIG. 23. Hamilton discoidal shell bead thicknesses.

Tubular Beads. (Figure 44:2). Tubular marine shell beads at Hamilton come in two shapes--round and squared. The 32 round tubular beads range from 3 to 8 mm in diameter (mean 4.8 mm) and from 3 to 35 mm in length (mean 7.4 mm). Ten square tubular beads range from 4 to 7 mm in engths (mean 5.4 mm) and from 3 to 4 mm in width (mean 3.8 mm). They are all

drilled through their long axis. Figures 24 and 25 show the lengths and diameters of these beads.

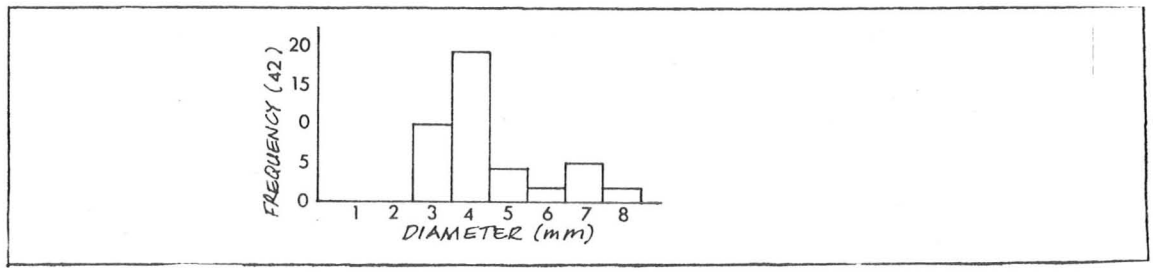


FIG. 24. Hamilton tubular shell bead diameters.

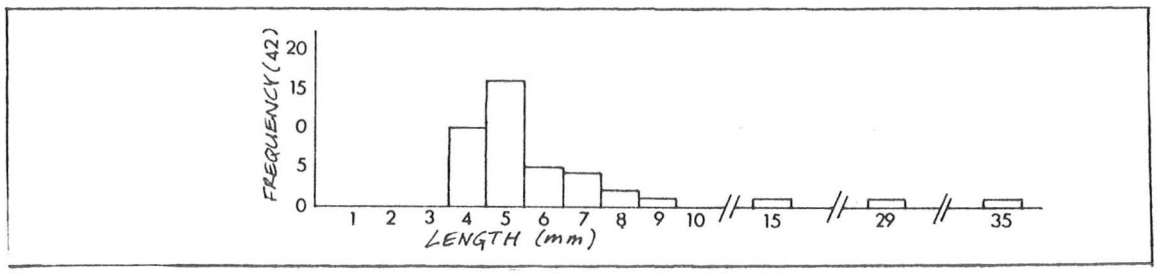


FIG. 25. Hamilton tubular shell bead lengths.

Columella Beads. (Figure 44:4). Four complete and 5 fragments of beads are manufactured from the spiral shaped columellas of the large marine whelk. The lengths of the complete beads range from 16 to 46 mm (mean 32.5 mm), while diameters range from 9 to 12 mm (mean 11.7 mm). All are drilled longitudinally. In addition to the longitudinal hole, 2 specimens have holes drilled from one side of the bead into its centre. An unfinished example, 22 mm long and 18 mm in diameter, has the hole started but it was not completed.

Runtee Beads. (Figure 44:3). Two heavy flat beads, pierced edgeways, are known as "runtee" beads (Wintemberg 1907:82). Both specimens are roughly rectangular in shape with rounded corners and edges. One specimen measures 22 mm in length, 20 mm in width and 7 mm in thickness. The other incomplete specimen measures over 29 mm long, 15 mm wide and 11 mm thick.

Marginella Beads. (Figure 44:5). Forty-four beads were made by grinding the apex of the marine species of shell known as Marginella conoidalis. On all the specimens one side of the apex has been ground until a hole was produced. The shells are otherwise unmodified.

Pleurocera and Goniobasis Lives Beads. Twenty-two freshwater Pleurocera (Figure 44:6) and 5 similar but smaller Goniobasis Lives (Figure 44:7) shells have simply been pierced close to their lips for suspension. Of interest is the fact that the Pleurocera shells are often found in a non-cultural context with natural perforations. The perforations resemble and occur in the same location on the shells in both cultural and non-cultural contexts (Wintemberg 1907:66; L. Kallas 1977: personal communication).

Melantho Decisa Bead. One shell of a Melantho decisa, a fluvial species, was recovered. It has been pierced near its lip for suspension.

Shell Pendants

Three worked pieces of shell have perforations located

near their edges. These are considered to be pendants. One is an undecorated circular disc 26 mm in diameter and 3 mm thick. The drilled hole is 2 mm in diameter (Figure 44:8). A rectangular pendant, measuring 18 mm by 10 mm by 2 mm, is decorated on one face by a border of incised triangles filled with parallel incisions. A carved rather than drilled hole for suspension measures 3 mm by 2 mm (Figure 44:9). The remaining drilled pendant is triangular with a hole 1 mm in diameter through one corner. It measures 19 mm by 17 mm by 2 mm (Figure 44:10).

A long narrow piece, probably cut from a marine whelk shell, measures 59 mm by 8 mm by 4 mm. Both ends taper abruptly to dull points while a scored groove near either end aided in its suspension (Figure 44:11).

Other Shell Ornaments

Several other pieces of shell have been worked into various forms. Their probable use can only be suggested.

Three specimens are geometrically shaped shell pieces, possibly unfinished beads or pendants, or perhaps once used as decorative inlays in wood. Two are ground rectangular pieces measuring 21 by 15 by 2 mm and 15 by 7 by 2 mm. Another is oval in shape measuring 15 by 13 by 1 mm (Figure 44:12).

A sculptured piece of shell vaguely resembling a bird is well polished but is otherwise unmodified. The specimen which measures 25 mm by 9 mm by 4 mm in its maximum

dimensions may have been a charm or amulet (Figure 44:13).

Scraper (Figure 44:14)

Though many utilitarian uses of shell have been noted (Wintemberg 1907:40-45), only one shell from Hamilton, a freshwater bivalve fragment, has been used as a scraper. This specimen shows some use-wear along its edge, and measures 44 mm by 24 mm. It is perforated by a linear hole 12 mm long and 2 mm wide. Cut and polished bivalve scrapers are also known from the Cleveland and Walker Neutral sites (Noble: personal communication).

Unfinished Objects and Waste Materials

Fifteen pieces of shell show various forms of unfinished modification. Three triangular pieces of whelk shell, measuring 61 mm by 20 mm by 4 mm, 60 mm by 19 mm by 5 mm, and 24 mm by 22 mm by 5 mm have been cut and ground into shape possibly to be drilled and used as pendants (Figure 44: 15,16).

Two roughly rectangular pieces may also represent pendant preforms. One piece, well shaped and ground on its edges, measures 35 mm by 33 mm by 4 mm (Figure 44:17). The other is only partially ground with some edges still rough. This large piece of whelk shell measures 72 mm by 52 mm by 5 mm.

Three rectangular pieces from large whelk shells show three steps in the manufacture of shell artifacts by the score and break technique. The first piece, measuring 81 mm

by 40 mm by 9 mm, has two deeply ground grooves opposite each other on either face. The segments so produced are ready to be snapped apart along the grooves (Figure 44:19). The second piece has been snapped off a larger fragment prepared like the one described above. The fracture followed the prepared groove on one face of the shell but missed the groove on the opposite face (Figure 44:18). This specimen measures 60 mm by 18 mm by 11 mm. The third specimen is simply a tabular piece of shell with its edges ground. It is ready to be drilled for use as a bead or pendant. It measures 41 mm by 20 mm by 10 mm.

Two specimens represent fragments of larger ornaments that have broken and were being reworked into smaller ornaments. One is rectangular, ground on three edges, broken on the fourth, and highly polished on either face. Six incised lines crossing one face appear to have been part of a larger motif on the original ornament. This specimen measures 41 mm by 7 mm by 3 mm. The other specimen is trapezoidal in form, measuring 37 mm by 34 mm by 6 mm in its maximum dimensions. The highly polished faces have grooves ground partially through the shell in preparation for its division into smaller portions (Figure 44:20).

Five other irregularly shaped specimens are fragments of conch shells showing some cutting or grinding. They are regarded as waste material.

WORKED BONE

All identifiable worked bone from Hamilton has been grouped according to species and element by faunal analyst Mrs. D. Pihl. As Table 42 indicates, ten different categories of specimens were fashioned from bone elements and tubes are clearly the dominant items.

TABLE 42. Hamilton worked bone.

Item	N	%
Tubes and waste	252	81.0
Modified deer phalanges	17	5.5
Needles	14	4.5
Awls and punches	6	1.9
Pendants	4	1.3
Comb fragments	3	1.0
Beamer fragments	2	.6
Ground bear canine	1	.3
Bone disc	1	.3
Flute fragment	1	.3
Miscellaneous	10	3.2
TOTALS	311	99.9

Bone Tubes (Figure 45:1-16)

Bone tubes are the most common bone artifact recovered from the Hamilton site. Consisting of 200 specimens (85 com-

plete, 115 fragments), the tubes were manufactured primarily from bird and mammal long bones which were scored and then snapped. Rough edges on the tubes were removed by grinding. Waste material from the manufacture of bone tubes includes 48 proximal and distal ends of long bones which may have served as handles for such tools as scrapers or as small containers. Decorations applied to 49 tubes (25%) normally consist of short parallel incisions cut across a high edge of the tube. More complex geometric designs exist but are rare (6 specimens, 3% of sample). An additional 3 incomplete specimens represent bone tubes in various stages of manufacture.

Table 43 lists the Hamilton bone tubes and waste materials according to the species and element from which they were made. The lengths of the bone tubes and a description of their decoration is also available in the table. Tube diameters have been excluded from Table 43 as they are predetermined by the diameters of the derivative faunal element.

The abundance, availability and preference for certain animals as food sources is reflected in the elements that were used. Longbone elements, and particularly radii, were preferred, however, over smaller bones for the manufacture of tubes.

The Hamilton bone tubes vary greatly in size. Diameters range from 5 to 47 mm (mean 11 mm), while lengths range from 10 to 156 mm (mean 66 mm). The large range in tube size and the bimodal distribution in tube length (Figure 26)

TABLE 43. Hamilton bone tubes and waste materials.

Animal	Element	N	Length (mm) R	$\bar{X}$	Description
Deer	Radius	44	62-121	99.7	-13 complete, 31 fragmentary -12 decorated with short parallel incisions along lateral edges. -5 decorated with parallel incisions across posterior surface. -3 decorated with incised triangular patterns, filled with parallel or cross hatched incisions. -1 decorated with incised rectangular areas filled with opposed parallel lines and cross hatched patterns. -23 plain.
		35			-waste material.
	Tibia	2			-fragments, not decorated.
		2			-waste material.
	Humerus	1	63		-complete, plain.
Elk	Radius	1	137		-complete, plain.
Bear	Metacarpal	1			-modified for bead manufacture but unfinished.
Wolf	Radius	1	156		-complete, not decorated.
Dog	Radius	1	106		-complete, parallel incisions on 3 sides.
	Tibia	3	86-119	99.3	-complete. -1 with no decoration -1 with chevron motif on end, incised lines and scored notches on 2 edges. -1 with scored parallel lines.

Continued

Table 43 continued.

Animal	Element	N	Length (mm) R	Length (mm) X	Description
Grey fox	Radius	1	61		-complete, not decorated.
Lynx	Radius	1			-fragment decorated with short parallel incisions on 2 edges.
	Tibia	3	36-102	69	-2 complete, 1 fragment, not decorated.
Racoon	Tibia	3	73-77	75	-complete, 1 with notched edge, 2 plain.
		2			-waste material.
	Femur	4	60-72	65	-3 complete, plain. -1 fragment unfinished, scored longitudinally.
Large mammal	?	8			-fragments, not decorated.
Large to medium-large mammal	?	15	43-51	47	-13 fragments, 1 smeared with red ochre. -2 complete and decorated with parallel incisions.
Medium mammal	?	6	18-60	41	-4 complete, not decorated. -2 fragments, 1 with notched edge.
Turkey	Humerus	3	45-58	50.5	-2 complete -1 fragment -1 has short parallel incisions on 2 edges
		2			-waste material.
	Tibio-tarsus	7	81-149	101.5	-4 complete -3 fragments -1 decorated with short parallel incisions on one edge.
		1			-waste material
	Radius	3	60-95	77.5	-2 complete -1 fragment no decorations.

Continued

Table 43 continued.

Animal	Element	N	Length (mm) R	$\bar{X}$	Description
	Femur	1			-waste material.
Goose	Humerus	1	63		-complete, not decorated
		1			-waste material.
	Radius	1			-scored for bead manufacture but not completed.
	Tibio-tarsus	1			-waste material
Swan	Humerus	3	41-191	72	-complete -1 decorated with notches on one end. -2 not decorated.
		1			-waste material.
Large bird	Femur	1			-waste material.
Medium-large bird	Tibio-tarsus	3	69-92	80.5	-2 complete, 1 fragment not decorated.
	Tarso-metarsus	1	45		-complete, not decorated.
	Radius	1	109		-complete, decorated with parallel incisions on one side.
		1			-waste material.
	?	55	10-78	45	-27 complete -28 fragments -4 decorated, 2 with parallel incisions, 1 with parallel oblique incisions, 1 has been scored longitudinally. -1 has a hole pierced through two opposing sides. 50 are undecorated.
Medium-small bird	?	3	43		-1 complete -2 fragments not decorated.

Continued

Table 43 continued.

Animal	Element	N	Length (mm) N	$\bar{X}$	Description
Unclassified	?	27	30-79	53	-6 complete -21 fragments -2 decorated, one with triangles filled with parallel obliques and 2 edges decorated with short parallel incisions on one edge.

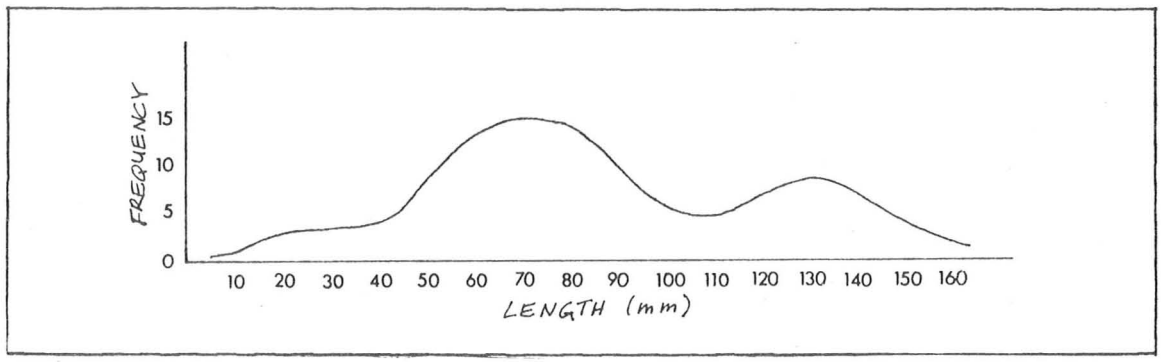


FIG. 26. Hamilton bone tube lengths.

suggest a functional dichotomy. The shorter (less than 100 mm) and usually undecorated specimens (89% undecorated) likely represent ornamental bone beads, while the longer specimens and particularly the more ornately decorated ones (50% are decorated) may have functioned as shaman's sucking tubes (Figure 45:2,3,4,8).

Modified Deer Phalanges

One medial and 16 proximal deer phalanges from the Hamilton site have been modified.

The most common form of modification occurring on 16 phalanges consists of incising. The most common form of incised decoration consists of a series of short parallel incisions, 2 to 5 mm in length. They occur down the length of, at right angles to, and on the upper surface of the shaft of the phalanx (Figure 45:18,19). Such incisions are found on 12 of the phalanges. The number of incised lines varies between 6 and 20, with no apparent patterning. Five of these phalanges have additional modifications. Three have a similar series of short incisions; one has them occurring on both sides of the shaft of the phalanx, one has them only on one side, and the other has two parallel rows of the short incisions on its lower surface. Another phalanx has a cross-hatched pattern incised on one side and the fifth phalanx has been heavily ground on its proximal, distal and lower surfaces.

Of the 5 remaining phalanges, one has been incised in a rather random fashion on either side of the shaft. Another

has been scored at either end of the shaft on the upper surface, presumably in preparation for the manufacture of a bead. One has a single incision on the upper surface and down one side of the shaft near its distal end. One has an incised, opposing triangular motif on the upper and both lateral surfaces of the shaft (Figure 45:17). The remaining specimen has been heavily ground on its lower and proximal surfaces. Grinding on the upper surface near the proximal end of this specimen has created an oblong hole.

The uses of the modified deer phalanges are unknown, though they may have functioned as gaming pieces. No phalanges of the cup and pin variety or of the toggle type were recovered.

Needles and Bodkins

Two complete and 4 fragmented eyed needles are included in the sample. The longest specimen, measuring 115 mm in length, 8 mm in width, and 2 mm thick, has a hole 2 mm in diameter in its centre portion (Figure 45:21). The other complete specimen measures 79 mm in length, 5 mm in width and 1.5 mm thick. Its oblong perforation, 2 mm by 1 mm, is located 22 mm from one end of the needle (Figure 45:20).

Two additional and identical specimens appear to be complete and are thought to be a different type of needle. These specimens, made from a dog or racoon fibula, measure 61 mm in length and 4 mm in width. The specimens are widest at the flattened base and taper gradually to a round and sharp

point. The needles do not have a hole in the sense of an eye, but, rather, are hollow. The point is ground so that a small hole is created. The base is cut off square. The needles would have been threaded through the length of the hollow bone and the thread would have protruded through the tip of the needle. The advantages of such an unconventional needle form would conceivably be in their strength (Figure 45:22).

Six long, thin and narrow pieces of bone are finely ground on all surfaces. Their very fine and extremely sharp points suggest that they may have been used as tatooing needles. Tatooing was a common practice among the Neutrals (JR 21:197; JR 38:251).

The longest specimen was made from a wolf fibula and measures 148 mm in length, 4 mm in width and 2 mm in thickness. The other complete specimens measure 103, 88, 70 and 65 mm in length, 4, 3, 4 and 5 mm in width, and 2, 1, 1 and 2 mm in thickness, respectively (Figure 45:23).

Awls and Punches

Awls are defined as perforating tools used in a twisting, rotational movement which leaves encircling use-wear striations on the perforating end of the tool. Punches are differentiated from awls by use-wear striations running parallel to the long axis of the tool. Such striations indicate a push-pull or jabbing motor habit.

Following these definitions, 5 bone punches manufac-

tured from a racoon baculum (2) (Figure 45:25), racoon fibula (1), dog ulna (1) and a porcupine ulna (1), were recovered from Hamilton. In addition, use-wear striations on a bear baculum indicate use as both an awl and a punch (Figure 45: 24).

The specimens range from 78 to 136 mm long, with a mean length of 95.5 mm. No modification beyond the sharpening of one end is noted.

Pendants

Several faunal elements from Hamilton have been drilled for use as pendants. Two are complete canine teeth of either dog or wolf measuring 31 and 21 mm in length, with holes 2 mm and 1 mm in diameter, respectively (Figure 45:26). Another single elk canine has a suspension hole 1 mm in diameter drilled near its base (Figure 45:27). The remaining specimen is a large fish vertebra, 16 mm in diameter, that has been drilled through its centre for suspension.

Comb Fragments

Three fragmented bone comb portions occur at Hamilton. One piece, broken on all sides, measures 3 mm thick and has several notches where comb teeth were once attached (Figure 45:28). Two other pieces appear to be comb teeth. One, found in the same pit (house 3, pit 15) as the above-mentioned comb fragment, measures 23 mm in length, 3 mm in width and 1 mm in thickness. The other comb tooth measures 38 mm in length, 2 mm in width and 1 mm in thickness.

Beamer Fragments

Two fragments of deer fibia measuring 164 and 138 mm in length each have one long edge worn smooth. They may represent fragments of bone beamers.

Ground Bear Canine

A complete bear canine from Hamilton has been heavily ground on the anterior surface and tip of the enamel. The chisel-like edge thus created may have been used as a fine woodworking tool.

Bone Disc

A bone disc, 19 mm in diameter and 10 mm thick, has been carved from a portion of a deer femur head (Figure 45:29). Parker (1907:545) reports a similar antler object from the Ripley site which he says resembles the game balls called deer horn buttons used now by the Iroquois.

Flute Fragment

Fashioned from a medium-large bird bone measuring 62 mm long by 6 mm wide, this flute exhibits one complete and two incomplete oval holes. The complete hole measures 7 mm in length by 3 mm in width, while the distance between the complete hole and either of the 2 incomplete holes is consistently 15 mm (Figure 45:30). The flute fragment was recovered from square 8 in midden A.

Miscellaneous Worked Bone

Ten items of miscellaneous worked bone include three split deer bones identified as a tibia, a humerus and a femur;

each has one end which appears intentionally flaked. Small chips of bone removed from both the inside and outside edges of each bone has created a sharpened end which could have served as a gouge. The examples measure 58 mm, 60 mm and 152 mm long (Figure 45:31).

Five sections of deer rib have also been variously modified. All have their ends scored, snapped and ground and in addition, one has a crudely incised criss-cross pattern on one side and two have small notches cut into their edges. The purpose of the modified sections of deer rib is unknown. They have not been hollowed out for use as beads. The specimens range from 55 to 102 mm in length (mean 81), 13 to 24 mm in width (mean 15) and from 3 to 8 mm in thickness (mean 5).

Additional pieces of worked bone include a fragment of turtle carapace which has one edge ground smooth and a lateral end of a deer scapula which has been scored and broken from the rest of the element.

MODIFIED ANTLER

At Hamilton, antler, probably because of its durability, was used primarily for the manufacture of tools and weapons while ornamental pieces are comparatively rare (Table 44). Deer and elk antler are both utilized, but deer is far more common (98.6%).

The most common use of antler of the 76 modified antler pieces from Hamilton is for the production of drifts

or flakers used for working the most abundant material on the site, chert.

TABLE 44. Hamilton modified antler.

Item	N	%
Flakers or drifts	25	32.9
Perforated antlers	10	13.2
Harpoons	6	7.9
Conical projectile point	1	1.3
Pottery marker	1	1.3
Pendant	1	1.3
Human effigy pin	1	1.3
Miscellaneous	31	40.8
TOTALS	76	100.0

Antler Tine Flakers or Drifts

Fifteen complete and 9 fragmentary antler tine flakers or drifts were recovered from the Hamilton site. Of the complete specimens, 13 are cylindrical, having roughly parallel sides and rounded ends (Figure 46:1-5), while the remaining 2 flare slightly at one end (Figure 46:6,7). The drifts range in length between 30 to 59 mm with a mean length of 44 mm. Their diameters range from 9 to 14 mm, with a mean of 10.8 mm.

An additional antler tine flaker of a different form

from those described above measures 138 mm in length. The diameter of the specimen tapers abruptly in the mid-section from 15 mm throughout the handle end to 12 mm throughout the distal end (Figure 46:8).

Perforated Antlers (Figure 46:9-11)

Five complete and 5 fragmentary perforated antler pieces, sometimes referred to as "shaft-straighteners", were found on the Hamilton site.

Four of the complete specimens consist of beams which branch into two tines. The perforations, occurring at the juncture of the tines and the beam, expand downwards toward the beam on the antler's concave side. One specimen, recovered from pit 15, house 3, has been bevelled with cutting on the beam's proximal end and on the distal end of one of the tines. Another specimen from the surface of the site has been cut off square on its proximal end. Nine v-shaped notches, 2 mm deep, are cut into one edge of the beam. As these notches approach the first tine they get smaller and more closely spaced. The first tine has its end crudely removed by cutting while the end of the other tine appears polished through use. Two other specimens are both from square 28 in midden A. With the exception of the perforations, the remainder of the beam and the tines are unmodified.

The fifth complete specimen, from square 29 of midden A, consists of a large tine probably cut from an elk antler. The perforation through the mid-section of this specimen

expands toward the proximal end of the tine on its concave side and toward the distal end on the tine's convex side. The distal end of the tine has been sharpened slightly by cutting.

The diameters of the perforations through the complete specimens range from 10 to 12 mm with a mean diameter of 11 mm.

Five fragmentary perforated antlers include 3 pieces of beam and 2 tines. All have been broken at the perforation. The three beams show signs of cutting on their proximal ends while both of the tines have been cut and ground on their distal end.

The function of such perforated antler pieces is often suggested as being "shaft-straighteners"; this is far from conclusive. The most important modification of the antler appears to be the perforation. In all the Hamilton specimens, the perforations expand from a round hole through the middle of the antler to a larger oval on either end of the hole. On the concave curvature of the antlers, the oval openings are biased toward the proximal end of the antler and bear fine polish on the proximal edge of the hole. The openings of the perforations on the convex curvature of the antlers are biased toward the distal ends where polishing is also evident.

A secondary modification occurs on 6 of 8 tine specimens from Hamilton. While 1 has been bevelled on one side

to a flat squarish end, 3 are bevelled from all sides to a dull pointed end. Two other tines have the distal ends cut off and the scar slightly ground. This modification of the ends of the antler tines suggests that either they played a role in the overall function of the tool, or the modification of the ends was simply a finishing procedure. It is also possible that the distal ends of the tines were used for separate tasks.

The proximal ends of the perforated antler pieces vary from being unmodified to having been severed in various ways from the burr end of the antler. The variation in this segment of the tool, the unconcern with finishing score and break scars, and the lack of use-modification indicates that the proximal end of the perforated antler pieces served no role in the functioning of the tool.

An additional observation with regard to the perforated antler tools concerns their provenience. One fragmentary specimen and 3 of the 5 complete specimens were recovered from three adjacent squares in midden A (squares A-2, A-28 and A-29). This may indicate that perforated antlers were used in sets of two or more or that they were parts of composite tools. Another consideration is that the two antler tine flakers or drifts with slightly flaring ends, recovered from squares A-29 and A-30, happen to fit very nicely into the perforations in the perforated antler pieces from squares A-28 and A-29. If these pieces are in fact drifts, it is

possible that the perforated antler pieces are drift holders serving the function of protecting the flint knapper's hands from the blows of a hammerstone. If, however, the so-called drifts are not in fact drifts, they would serve nicely as a pin or plug for wedging a piece of hide or a thong into the perforation in the antler. The apparent relationship between the pieces may, however, be entirely coincidental.

The polishing and evident diagonal wear patterns on the above specimens suggests that they may not be shaft straighteners at all. Rather, such wear patterns are more probably interpreted as the result of thong strapping preparation, or conceivably, as holders for antler drifts.

Harpoons

Portions of 6 harpoons were recovered from midden A at Hamilton. One complete and 3 fragmentary pieces are of the long unilaterally barbed variety. The one complete specimen measures 220 mm in length, 22 mm in maximum width and 14 mm in maximum thickness. It has only one barb (Figure 46: 12). Small regular incisions cut perpendicular to its length and located primarily between the barb and point of the harpoon appear to have been produced by an iron file used to shape the harpoon tip. Traces of some red pigment, probably ocher, still adheres to the distal area of this specimen.

Of the fragmentary specimens, 1 is almost identical in size and shape to the complete harpoon described above. It lacks, however, its distal end including the barb. The

remaining 2 pieces are distal portions; 1 is broken proximal to the single barb, while the other includes more of the shaft. It has two barbs positioned unilaterally and a shallow groove cut approximately mid-face along the long axis on one side (Figure 46:13).

Two additional antler harpoons are of the toggle type. One specimen, bevelled and hollowed out at the base, has a single line hole and another line hole which was never completed. The distal end of this specimen has been sharpened by an iron file. It measures 118 mm in length by 19 mm in maximum diameter (Figure 46:14).

The other toggle type harpoon has been broken close to the base. The distal end has been bevelled, creating two flat sides which meet at a blade-like edge and a third side which is unmodified. A notch has been cut into the bevelled edge in a barb-like fashion. This specimen measures 88 mm in length and 18 mm in maximum diameter.

Conical Antler Projectile Point

Recovered from square A-19, this antler projectile measures 53 mm long by 9 mm in diameter. The bevelled base is notched five times on either side to facilitate hafting (Figure 46:15).

Pottery Marker

One piece of antler, 65 mm long and 7 mm in diameter, has been sharpened to a dull and polished point measuring 2 mm wide. It is believed to have been used as a tool for

decorating ceramics.

Antler Pendant

Cut and ground into a rough diamond shape, this antler slab has a hole cut through its centre for suspension. It is scored and broken on its shortest bottom edge (Figure 46:16).

Human Effigy (Figure 27)

Two opposing human faces have been carved on the proximal end of an antler awl or ornamental pin. Facial features are indistinct and no hairdos are clearly depicted. Traces of red ocher cover the lower portions of both faces.

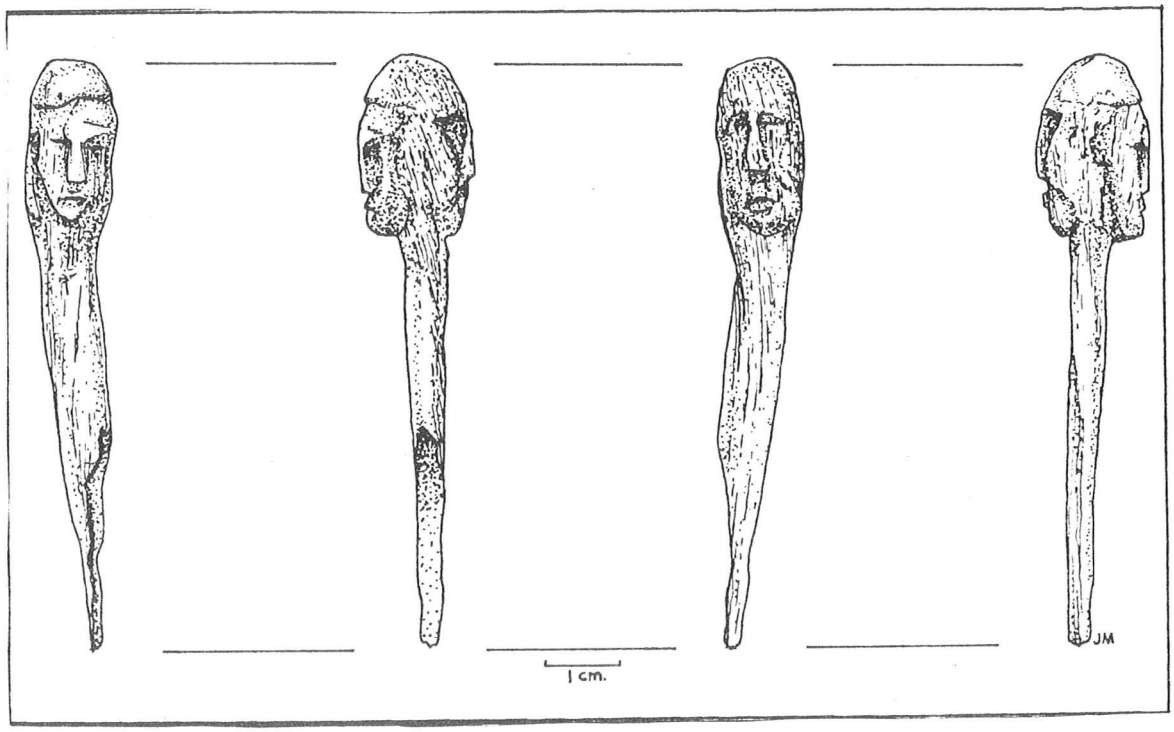


FIG. 27. Human effigy carved in antler.

Miscellaneous Antler

Thirty-one fragments of antler show evidence of modification in the form of cutting and grinding. Some represent unidentifiable fragments of finished artifacts, while others are waste materials from manufacturing processes. One piece worthy of particular mention possesses an apparent geometric design applied in red ocher.

MODIFIED BARK FRAGMENT

From the waterlogged bottom of square 23 in midden A, several uncarbonized fragments of birch bark were recovered. One piece has a straight row of regularly spaced (4 mm) slits 2 mm long through one edge of the bark, suggesting that the fragment once formed a part of a stitched bark vessel.

HISTORIC TRADE GOODS

A substantial portion of the Hamilton assemblage (6.7%) is composed of European trade material. These specimens are in some cases altered by native hands, while others have remained as they were when traded. Tools which have been utilized to exhaustion and raw materials salvaged from worn out implements indicate that both the utensils and the materials from which they were made were highly valued by the Neutral. Too, the number of ornamental pieces obtained through trade or manufactured from trade materials indicates that Neutral personal adornment was substantially subsidized by European materials.

In this regard, it may be noted (Table 45) that brass

TABLE 45. Hamilton historic trade goods.

Item	N	%
Brass		
Scrap	442	45.3
Kettle patches	35	3.6
Bead blanks	28	2.9
Bail fasteners	27	2.8
Beads	23	2.4
Kettle rims	19	2.0
Knives and blades	17	1.7
Projectile points	14	1.4
Bracelet blanks	7	.7
Needles	7	.7
Awls	5	.5
Tinkling cones	5	.5
Pendants	5	.5
Serrated pieces	3	.3
Finger rings	3	.3
Earrings	2	.2
Bracelets	2	.2
Hawk bells	2	.2
Clothing fasteners	2	.2
Container	1	.1
Fish hook	1	.1

Continued

Table 45 continued.

Item	N	%
Smoking pipe	1	.1
Picture frame	1	.1
Miscellaneous	7	.7
	659	67.5
Iron		
Axes	20	2.0
Knives	18	1.8
Awls	3	.3
Dagger	1	.1
Miscellaneous	4	.4
Glass beads	270	27.6
Cloth fragment	1	.1
TOTAL	976	99.8

items include many items of personal adornment, while iron was reserved for strictly functional purposes.

Brass Artifacts

The majority of the brass artifacts recovered from Hamilton were made by the inhabitants from sheet brass cut from broken kettles. The kettles, which range from only 1/10 mm to slightly greater than 1 mm thick, often wore out, and while as such they were useless for cooking, they were cut into pieces for both ornamental and utilitarian objects.

The brass appears to have been cut into various shapes using several different methods. The very straight edges which occur on most of the cut brass could only have been accomplished through the use of scissors or shears, although no direct evidence of such tools comes from the site. Other brass cutting was accomplished by using a cold chisel or the score-and-break technique as used for working bone. Rarely do the brass fragment edges exhibit crude hacking as might have been accomplished with an iron axe or stone blade.

Kettle Fragments

Forty-six items are clearly identifiable as brass kettle portions. They include 27 bail fasteners and 19 rim sections. The Hamilton bail fasteners are of typical French construction, having riveted plates for an above-rim punched bail hole. As scrap items, they seem to have been of little use to the natives for they were simply cut from the remainder of the kettles and discarded. This may have been due to the

difficulty in removing the brass rivets which secured the fasteners to the vessel.

Five types of bail fasteners are distinguishable from their method of manufacture and also show distinctive size differences (Figure 28). It is reasonable to believe that the size of bail fasteners is correlated with pail, kettle or cauldron sizes, but as yet no accurate studies have been undertaken for the historic Neutral period. The five fastener types, whose lengths and widths are given in Figure 28, have been defined as follows:

Type A: Large, Folded Leaf Fastener with Snipped Corners. (Figure 47:1). This type of lug was made from two or three rectangular pieces (leaves) of brass with the corners cut off. The pieces were folded in half over the lip of the kettle, and pierced twice for insertion of the rivets and once for the handle. The upper corners of the lug were then snipped off. Five examples of type A lugs were recovered from Hamilton.

Type B: Medium, Loose Leaf Fastener with Snipped Corners. (Figure 47:2). This type of lug consists of 4 nearly square leaves with snipped off, usually rounded corners. Two leaves are placed on either side of the kettle lip and pierced for the rivets and handle as in type A. Two complete and 10 leaves of type B lugs were recovered from Hamilton.

Type C: Small, Loose Leaf Eared Fastener. (Figure

47:3). This type of lug is similar to type B except that rather than having the upper corners snipped off, they are bent over like a dog ear. The term "eared" has been applied by Quimby (1966:69). The bottom corners of the 2 examples from the Hamilton site are square.

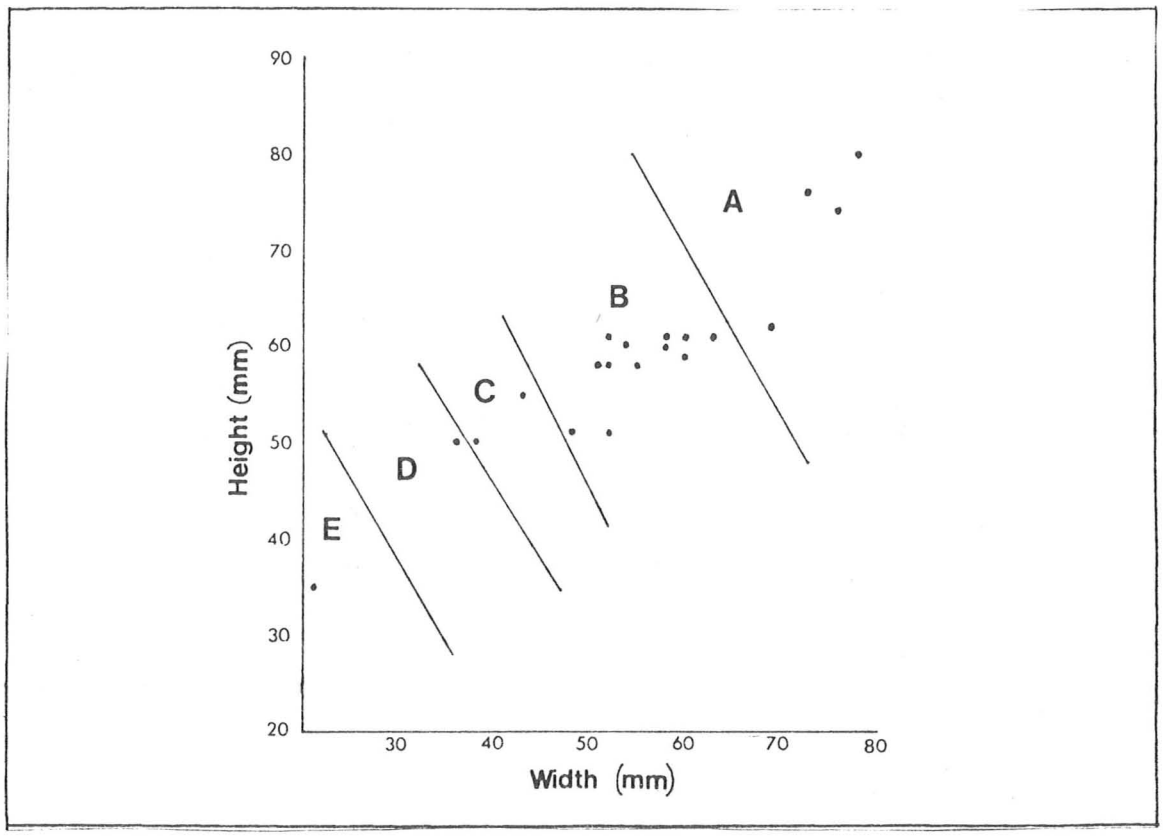


FIG. 28. Bail fastener types and sizes at Hamilton.

Type D: Small, Folded Leaf, Eared Fastener. (Figure 47:4). Type D lug is a trial type as only a single example was recovered from the Hamilton site. It is made from a rectangular piece of brass folded over the kettle lip and pierced for the insertion of the rivets and handle. The

upper corners are eared and the lower corners are square as in type C.

Type E: Small, Folded Leaf Fastener with Snipped Corners. (Figure 47:5). Type E is also a trial type. It is folded but is fastened to the kettle with only one rivet. Both the upper and lower corners are snipped.

In addition to the above mentioned bail fasteners from Hamilton, 6 fragments are untypable.

Kettle Rims. Nineteen pieces of brass with one edge rolled are identifiable as fragments from kettle lips. Unfortunately, they are of little value for determining kettle diameters because of their mutilated condition.

Two rim fragments are of particular interest for they are decorated. One fragment is impressed with narrow notches, less than .5 mm wide and 1 mm deep on the upper surface of the lip. The other rim fragment has a series of right to left parallel obliques impressed just below the lip of the vessel (Figure 47:6). Both of these motifs are forms commonly used to decorate Neutral ceramic vessels.

Kettle Patches. Rectangular pieces of sheet brass with from 4 to 20 holes punched around their periphery are interpreted as kettle patches. Twelve of the specimens still retain rivets while only two have staples. The complete specimens range from 29 to 108 mm in length with a mean of 49.4 mm, and from 32 to 68 mm in width with a mean of 36.1 mm. They were attached to the kettle either by rivets or

with brass wire. In the latter case, two ends of wire were put through two adjacent holes in the patch edge and through two corresponding holes in the kettle. The ends were then bent in the same fashion as a modern staple.

The largest patch recovered from Hamilton, measuring 108 by 68 mm, is of the staple variety (Figure 47:7). The staples, still in place, retain small pieces of the kettle. Between the pieces of the kettle and the patch, and all around the border of the patch, is a black crust of an unidentifiable substance used to seal the patch.

In addition to the patches, 24 pieces of sheet brass, irregular in shape, have pierced holes between 2 and 5 mm in diameter. They probably represent fragments of kettles pierced to receive patches.

Twenty-six fragments and 9 complete patches were recovered from Hamilton.

Brass Scrap

The majority (79%) of the 442 sheet brass scrap pieces recovered from the Hamilton site have been modified by cutting. Of these, 117 have been cut on 3 or 4 edges to produce a rectangular shape; 228 are cut on at least one edge but are irregular in shape; 94 fragments exhibit only broken edges; and one small piece has been melted.

Brass Container (Figure 47:8)

A badly crushed, cylindrical container with a slightly rounded bottom is the only specimen of its kind recovered

from the Hamilton site. The original dimensions of the container approached 70 mm in diameter by 100 mm deep. It would have held approximately 1½ cups. Three holes, 4 mm in diameter, located just below the straight plain lip of the vessel and equally spaced around its periphery, may have once helped secure a lid to the container.

Bracelets and Armbands

Nine strips of brass from Hamilton are probably bracelets or armbands. One 5 mm wide strip of brass is formed into an oval shape measuring 83 by 51 mm (Figure 47: 9), while 7 long flat pieces of brass probably represent bracelet blanks. They range from 104 to 155 mm in length with a mean length of 133 mm, and from 7 to 46 mm in width with a mean width of 17 mm.

Another bracelet fragment from midden A is formed from rolled brass. The complete bracelet would have been 42 mm wide by approximately 60 mm long and 5 mm thick. This specimen appears to be of European manufacture (Figure 47:10).

Rolled Beads (Figure 47:11)

Twenty-three strips of brass, rolled into a tubular shape, are thought to represent beads. None is large enough to be a finger ring. The specimens range from 3 to 12 mm in diameter with a mean of 7.4 mm, and from 5 to 120 mm in length with a mean of 32.6 mm.

Bead Blanks

Twenty-eight strips of brass recovered from Hamilton

are probable blanks for making rolled brass beads. They range from 37 to 104 mm in length with a mean of 61.9 mm, and from 3 to 18 mm wide with a mean of 9 mm.

One rectangular piece of brass, scored 11 times, would have produced 12 rectangular bead blanks measuring 61 mm by 6 mm.

Tinkling Cones (Figure 47:12)

Five tinkling cones are made from sheet brass rolled into conical form and range from 27 to 66 mm in length (mean 44.8 mm) and 8 to 9 mm in diameter (mean 8.6 mm). Three are from midden A, one is from midden C, and the remaining specimen is a surface find.

Pendants

Five geometrically shaped pieces of sheet brass with suspension holes come from Hamilton. One fragmentary and two complete specimens are circular discs of brass, with 2, 6 and 1 holes respectively (Figure 47:13). The complete discs measure 27 and 18 mm in diameter respectively.

Another semi-circular pendant, measuring 34 by 21 mm, has a single hole punched through its centre (Figure 47:13).

The remaining specimen appears to be part of a large triangular or quadrangular pendant. A single hole is punched through its approximate centre and a zig-zag pattern is scored along one edge. The roughly rectangular fragment measures 73 by 65 mm, while the hole measures 3 mm in diameter.

Finger Rings (Figure 48:1,2)

Three pieces of brass, tightly rolled and bent into circular form, represent finger rings. They measure 21, 21 and 16 mm in diameter by 4, 2 and 2 mm wide respectively.

Earrings (Figure 48:34)

Two small oval rings of brass are thought to be earrings. One is a coil of brass wire, 1 mm in diameter. The other is a ring of sheet brass, 2 mm wide and 0.5 mm thick. The oval rings measure 11 by 9 mm and 13 by 8 mm respectively.

Clothing Fasteners (Figure 48:5)

Two objects made from 0.5 and 1 mm wire are bent into symmetrical meanders and loops. These pieces are identical to the eyes of European hook-and-eye clothing fasteners reported from Ste. Marie I (Jury and Jury 1954:44 and Plate XIII). Both specimens are surface finds.

Wire Objects (Figure 48:6)

Two objects of brass wire have no known use. One is a loose spiral of 1 mm thick wire, 28 mm long. Another is a length of 1 mm thick brass wire bent into a series of curved or semi-circular loops.

Projectile Points (Figure 48:7-13)

Fourteen triangular brass projectile points were recovered from Hamilton. While 10 are simple triangles cut from sheet brass, 4 have had their edges bevelled by grinding. In addition, 2 of the bevelled specimens and 1 from the former category have had holes punched through them.

The specimens range in length from 24 to 58 mm, with a mean of 33.2 mm, and from 13 to 29 mm in width, with a mean of 17.4 mm. By way of comparison, brass projectile points are slightly longer but about the same width as their lithic counterparts.

Brass Knives and Blades

Two roughly triangular brass pieces, both measuring 75 mm in length and 21 mm in width, are parts of formalized knives. Both knives have one straight dull edge and one sharp curved edge. In addition, one has minute serrations on the blade edge, proximal to the tip (Figure 48:14).

Fifteen pieces of brass scrap have been made into cutting tools by grinding one edge to a sharp blade. Seven of the blades are fashioned from irregularly shaped pieces of brass, while 8 others are roughly rectangular. One rectangular piece is of particular interest. It measures 75 mm by 21 mm. Both long sides of this specimen have been bent over slightly to dull the edge at one end of the brass strip, while one edge of the other end of the strip has been left dull and the opposite edge has been sharpened (Figure 48:16).

Serrated Brass Pieces (Figure 48:17)

Three rectangular pieces of brass with serrated edges may be related in concept to the serrated flakes of the lithic assemblage. Two specimens, measuring 25 mm long by 16 mm wide, and 51 mm long by 18 mm wide, have their long edges deeply serrated. In addition, the latter specimen has

one short edge ground to a sharp blade. The third specimen, measuring 25 mm long by 16 mm wide, has one short edge finely serrated.

Awls (Figure 48:18,19)

Four long narrow strips of cut sheet brass and one triangular piece have narrow pointed ends for use as awls. The pointed ends on three of the pieces are tightly twisted, either through use or to strengthen the point. The specimens range from 59 to 101 mm in length (mean 75.6 mm) and from 3 to 20 mm wide (mean 10.8 mm).

Needles (Figure 48:20)

Fragments of 7 brass needles recovered from Hamilton are identical in form, but longer than the bone needles recovered from the site. Five specimens, broken at the eye, measure 96, 70, 63, 59 and 53 mm in length. Another specimen, measuring 116 mm in length, is nearly complete and has two eyes. The remaining fragment, 42 mm in length, has no eye remnant. Two of the needles have narrow slits scored through the metal to produce an eye, while the two-eyed specimen has round perforations that have been punched through the brass. All needles range from 5 to 7 mm in width, with a mean of 6 mm.

Fish Hook (Figure 48:21)

A piece of brass from midden A, 45 mm long, 4 mm wide and 1 mm thick, is twisted to a point on one end and bent to a 45 degree angle near its middle. The suspension eye for the hook has been broken off.

Rolled Brass Smoking Pipe (Figure 48:22)

Certainly unusual is a conical rolled brass tube, 140 mm long. This bent smoking pipe tapers from 13 mm in diameter at its widest (bowl) end, to 5 mm at its narrow (stem) end. A similar but better made specimen, recovered from the historic Neutral Daniels site, is housed in the McMaster University collections.

Hawk Bells (Figure 48:23)

Two fragments of identical brass bells were recovered from the surface of the Hamilton site. The fragments represent upper portions of the spherical bells and each has a small brass loop, 7 mm in diameter by 4 mm wide, which has been soldered on. The spherical portion of the bells, measuring 18 mm in diameter, has been made in two half sphere sections, and was apparently soldered together.

Brass Frame or Border (Figure 48:24)

A piece of sheet brass, 60 mm long and 8 mm wide, appears to be the corner and most of one side of a religious picture frame or decorative border of a box. The outside edge is straight with a square corner, while the inside edge is formed by a series of well cut curves. The fragment was a surface find.

Miscellaneous Worked Sheet Brass

Five worked pieces of sheet brass of unknown function are as follows. Two semi-circular pieces measure 69 mm long and 21 mm wide, and 69 mm long by 32 mm wide. The latter

specimen, which is slightly concave, also has small fragments of preserved wood adhering to its surface (Figure 48:25).

A sextagonal sheet brass piece has bevelled edges and rounded corners. It measures 27 mm in maximum dimension.

Two slightly concave, circular pieces of sheet brass, each measuring 29 mm in diameter, have a 2 mm diameter hole in their centres. One (Figure 48:26) has additional holes less than 1 mm in diameter punched along its edge.

Iron Artifacts

Iron Axes

According to Mr. Hamilton, iron axes were once abundant on the site. He states that he used to throw them off the field with rocks and other debris into the fence row and the low bush area along the creek.

The axes and fragments of axes recovered from the site include: 7 complete axes, 1 with the eye missing; 8 eye or butt end fragments; and 4 blade fragments. The axe fragment with the eye missing is of particular interest (Figure 49:1). Its butt end of the blade is burred showing that it has been used as a wedge. Also, an attempt to cut the blade into two smaller wedges has resulted in a groove 4 mm wide and 2 mm deep across one face. One type "A" stamp remains on either side of the axe.

The 7 complete axes are described in Table 45, and two types of hallmark stamps occur, as shown in Figure 29. These stamps appear to be French products.

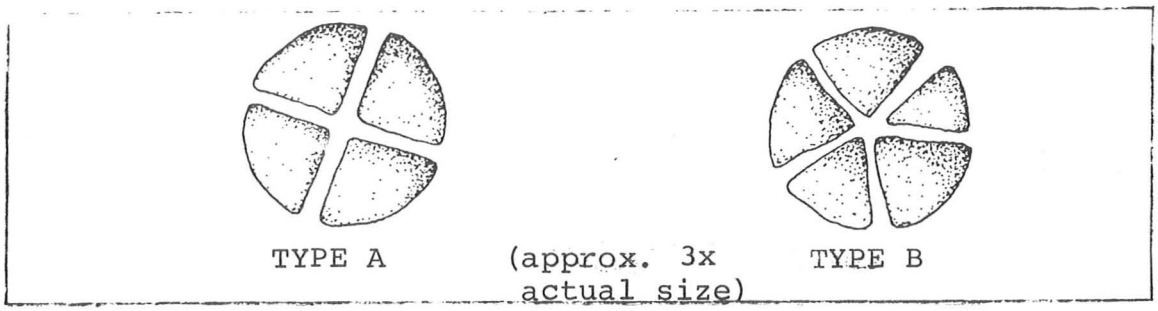


FIG. 29. Stamps occurring on iron axes at Hamilton.

TABLE 46. Hamilton iron axes.

Length (mm)	Blade Width (mm)	Butt Width (mm)	Shape of Top Edge	Weight (gm)	Stamp Type	Stamp Number Per Side
206	-	60	straight	971+	1	3
200	86	61	curved	1398	1	3
192	81	62	curved	1210	1	3
165	95	58	slightly curved	973	1	2
157	76	45	slightly curved	647	2	1
143	70	46	slightly curved	557	1	1
139	71	44	straight	589	1	1

As evidenced in Table 46, there would appear to be a correlation between the overall size and weight of a given axe and the number of stamps it bears. Lighter axes have fewer stamps.

The only stylistic variation observed in the Hamilton axes is the shape of the top edge from butt to blade: curved,

slightly curved, and straight.

Unlike other Neutral sites (Wright 1977), axes at Hamilton rarely occurred within houses. Five complete axes and 10 fragments were surface finds, 2 complete axes and 2 fragments were from midden A, and only 1 axe portion, that which had been used as a wedge, was recovered from house 4, pit number 41.

Iron Celt and Wedge

Two pieces of iron, probably derived from iron axes, have been fashioned into other tools.

One rectangular piece, measuring 123 mm long, 40 mm wide and 6 mm thick, has one end which has been bevelled on one side to a convex shaped blade. With its proximal end burred, this piece from the surface of the site most resembles a celt (Figure 49:4).

The wedge, from midden A, measures 125 mm in length, has a blade measuring 46 mm long and a burred butt measuring 31 mm in width and 18 mm in thickness (Figure 49:5).

Iron Knives

Six relatively complete iron knives and 12 fragments occur at Hamilton.

Four of the complete specimens are blades from the common clasp-knife (Garrad 1969:7). The largest measures 137 mm long and 24 mm wide. Badly eroded, it lacks a horizontal transverse flange. The second largest specimen, complete with a 16 mm long rivet, measures 113 mm in length and 18 mm

in width. The 2 remaining clasp-knife blades lack rivets and measure somewhat smaller at 90 and 73 mm in length by 15 and 18 mm in width respectively. The latter specimen is lacking a small portion of the butt end, including the horizontal transverse flange, and would have been several millimeters longer if it were complete. This blade is the only one that has a trace of a maker's stamp, but it is indiscernible (Figure 49:67).

Two other specimens from Hamilton may be classed as collared rat tail knives (Garrad 1969). The better preserved example (Figure 49:8), measuring 114 mm long and 14 mm in width, has a collar encircling the tanged "tail" at the junction with the blade. The other collared rat tail knife is missing portions from either end. As such, it measures 66 mm long and 16 mm in width. Unlike other specimens of this variety, the collar has been made separately and added onto the butt end of the blade portion of the knife.

Iron knife fragments include 9 tip fragments, 2 blade fragments and a handle fragment with a rivet hole. One of the blade fragments, probably from a clasp-knife, is of particular interest. Parts of the cutting edge of the blade near one end of the specimen has been hammered, apparently to create a rolled dull edge to act as a handle. This piece measures 80 mm long by 21 mm wide (Figure 49:9). Only 4 knives and fragments were recovered during the excavations of midden A. The rest were found on the surface.

Awls

Three iron awls recovered from Hamilton are all of different forms. One (Figure 49:10) is of the bayonette type, made from a rectangular piece of iron. Measuring 116 mm long and 4 mm in thickness, it tapers to a point at either end. This specimen was a surface find. Another awl, from midden A, measuring 107 mm long, 6 mm wide and 3 mm thick, tapers to a point on one end, while the other has been hammered to a circular cross section and terminates bluntly. The widest part of the awl is nearest the blunt end (Figure 49:11). The remaining awl, a surface find, appears to be fashioned from the bail handle of a kettle. It is round in cross section and bipointed, measuring 122 mm in length by 7 mm in diameter (Figure 49:12).

Dagger or Lance Head

This unusual specimen, measuring 189 mm in length, 12 mm in width and 6 mm in thickness, is double bladed, tapers to a point at one end, and is abruptly bevelled to a squared off base at the other end. Short flutes, 30 mm long by 4 mm wide and 1 mm deep, occur on the medial faces of the basal end (Figure 49:13). It comes from the surface of the site.

Miscellaneous Iron

Two round and slightly curved pieces of iron are probably portions of kettle bail handles. They are 78 and 56 mm long with diameters of 4 and 5 mm respectively.

A large rectangular piece of iron, measuring 163 mm long, 40 mm wide and 3 mm thick, has a small, roughly rectangular piece of sheet brass or copper, measuring 21 mm by 17 mm by 1 mm, securely riveted to one side.

A curved piece of iron, 79 mm long, 28 mm wide and 3 mm thick, has one rounded and one broken end. Eleven tapered holes pass through the specimen. Their diameters decrease from 8 mm on one side to 4 mm on the other side. Its purpose is unknown.

Glass Trade Beads

Glass trade beads, as at other historic Iroquoian sites, are not uncommon at Hamilton. A sample of 171 complete and 99 fragmentary specimens are available for analysis.

In the following, if enough of a particular bead was present to determine its original dimensions and construction, it was considered "complete". A fragmentary specimen had to be sizable enough to permit accurate identification. With one exception, a wire wound "corn bead", the glass beads from Hamilton were manufactured by the tube method (Kidd 1970).

Table 47 presents the 35 distinguishable bead types from Hamilton, their frequency, their size, and also makes reference to Kidd's (1970) well known classification system for glass beads. It should be noted, however, that the colour coding system suggested by Kidd was not available

TABLE 47. Hamilton glass trade beads.

Description	Kidd's Classification	Frequency Complete	Frequency Fragments	Length R	Length $\bar{X}$	Diameter R	Diameter $\bar{X}$
1. *Op.red tubular	Ia1	20	47	6-40	18.0	3-6	4.2
2. Op.red tubular, flat marvered							
1 side	Ic-	2	0	10-13	11.5	3-4	3.5
3 sides triangular	Ic-	1	2	9	9	4	4
4 sides, square	Ic1	0	2	-	-	-	-
5-7 sides.	Ic3	1	6	9	9	3	3
3. Op.red tubular, flat marvered, twisted.							
4 sides, square.	Ic'1	0	2	-	-	-	-
4. Op.red with black banding,round, tubular,often							
ground	Ia-	2	1	18-22	20	6-7	6.5
5. Op.red with black banding, ground, faceted,tubular							
3 sided, triangular	Ic-	2	2	10-26	18	4-5	4.5
4 sided,square	Ic-	0	1	-	-	-	-
5-7 sided.	Ic-	5	3	15-42	24.4	3-5	3.8
6. Op.red,round tubular,twisted, with 4 raised							
red stripes.	Ic'1	0	1	-	-	-	-
7. Op.red,round tubular, Op.black							
stripes.	Ib1	0	1	-	-	-	-
8. Op.red, Op.white stripes,flat marvered,tubular, twisted.							
4 sided,square	Id'1	0	1	-	-	-	-

Continued

Table 47 continued.

Description	Kidd's Classification	Frequency Complete	Frequency Fragments	Length R	Length $\bar{X}$	Diameter R	Diameter $\bar{X}$
9. Op.red/"dark" cores,round tubular.	IIIa1	5	13	4-18	8.6	3-5	3.6
10. Op.red with black banding/ "dark core", tubular,ground 5-7 sided.	IIIa-	1	0	20	20	6	6
11. Op.red/"dark" core,round tubular,twisted 4 raised red stripes.	IIIc'1	0	4	-	-	-	-
12. Op.red/Op.white/ Cl.core,round tubular,inner 2 layers are corrugated marvered.	IIIk1	1	0	6	6	4	4
13. Op.white,round tubular.	Ia5	3	0	4-14	10.3	4	4
14. Tr.turquoise, round tubular.	Ia12	2	5	4-20	12	2-5	3.5
15. Tr.turguoise, flat marvered or ground? 3 sided triangular		1	0	6	6	4	4
16. Tr.turquoise/ Op.white/tr. turquoise core. Flat marvered tubular, 4 sided square	IIIc1	5	2	15-30	21.4	6-8	6.4
17. Tr.blue-green/ Op.white/Op.red/							

Continued

Table 47 continued.

Description	Kidd's Classification	Frequency Complete	Frequency Fragments	Length R	Length $\bar{X}$	Diameter R	Diameter $\bar{X}$
dark core,flat marvered tubular 4 sided,square, twisted.	IIIc'3	4	1	-	-	-	-
18. Cl.dark purple with Op.white stripes,probably round tubular?	Ib-	0	1	-	-	-	-
19. Cl.blue/Op.white/ Op.red/Op.white/ Cl.core,round tubular,faceted "star" bead, all but blue layer are corrugated marvered.	IIIk3	3	0	4-7	5	5-6	5.6
20. Cl.blue/Op.white/ Op.red/Op.white/ Cl.core,round tubular,faceted "star" bead,all but blue layer are corrugated marvered.	IIIm-	4	3	10-33	20.7	11-25	16.3
21. Op.red/Op.white/ Cl./Op.white/Cl. core,round tubular "star" bead,not faceted,ground.	IIIk-	2	0	26-32	29	13-15	14
22. Cl.blue/Op.white/ Cl.blue core,tubular "star" bead,ground,3 sided,triangular	IIIk-	1	0	28	28	6	6
23. Op.red,round.	IIa1	4	0			4-7	6

Continued

Table 47 continued.

Description	Kidd's Classification	Frequency Complete	Frequency Fragments	Length R	Length $\bar{X}$	Diameter R	Diameter $\bar{X}$
24. Op.red/Op.black/ Op.red,round.	IVa-	4	0			6-7	6.8
25. Op.red/Cl. light green core,round.	IVa5	29	0			3-7	4.9
26. Op.red/Op.black core,round.	IVa1	6	0			7	7
27. Op.red/Op.black core,3 "flush eyes" are 3 white concentric rings on navy blue dot.	IVg-	1	0			8	8
28. Tr.turquoise, round	IIa31	54	0			2-9	4.9
29. Tr.turquoise, round,with 3 white stripes.	IIb56	1	0			7	7
30. Tr.turquoise/ clear core, round.	IVa-	1	0			2	2
31. Tr.blue/clear blue core, 2 "flush eyes" are red star design on navy blue dot.	IVg-	1	0			6	6
32. Op.white/clear core,round.	IVa-	1	0			2	2
33. Op.mauve,round.	IIa46	2				4-5	4.5
34. Cl.blue/Op.white/ Op.red/Op.white/ Cl.core,round,							

Continued

Table 47 continued.

Description	Kidd's Classification	Frequency Complete	Frequency Fragments	Length R	Length $\bar{X}$	Diameter R	Diameter $\bar{X}$
"star" bead. All but blue layer are corrugated marvered.	IVk	2				8	8
35. Tr.light gold	IIa1	0	1	9	9	?	-

*Key to abbreviations: Tr. - Translucent
Op. - Opaque
Cl. - Clear
/ - Over

during the analysis. The complete classification according to Kidd's scheme was achieved where possible by comparing particular specimens with Kidd's colour plates and corresponding descriptions. I have also included a generalized colour description for each bead type.

Of particular note are bead types 4, 5 and 10. The black woodgrain-like banding in these opaque red beads makes them almost indistinguishable from the red slate beads described in the lithic section. All three varieties are often ground on the exterior surface to produce long facets similar to those on the lithic counterparts.

Bead type 21 has also been ground. Two examples of this type originally had an exterior clear blue layer and an opaque white layer over the remaining layering sequence given in the description. The total sequence of layers is the same as seen on other large "star" bead types, such as type 20. Beads of type 21, however, have had the outer two layers ground off to expose the red layer. Red apparently was an important or preferred colour among the Neutrals, as is also suggested by Kenyon (1963:36).

Dating the Hamilton Site Using Glass Beads

Unfortunately, the best spatial and temporal study of Neutral glass trade beads remains unpublished. This study, undertaken by Mr. I.T. Kenyon (1969) incorporates a sample of more than 6,500 beads from 13 Neutral sites and numerous other Iroquoian sites in the Northeast. In his study, four sequen-

tial periods are discerned for Ontario based upon changing bead frequencies and types. They are referred to, from early to late, as periods 1, 2, 3 and 4 (Kenyon 1969), and dating of the periods was accomplished by using bead samples from documented sites and events in both Ontario and New York (Kenyon 1969:28-34). Kenyon's dates have been incorporated into Figure 30.

Figure 30 presents the frequency seriation of 5 common bead types as they occur on 11 Neutral sites in Ontario. The data for the production of this chart have come from chart 2 and the text of Kenyon's (1969) study of glass beads. The only original information I have is that concerning the Hamilton site.

In order to seriate my data with Kenyon's, it was necessary to group several of my types. The red tubular bead referred to in Kenyon's study includes types numbered 1, 2, 4, 5, 9 and 10 in my own analysis. The red round bead of Kenyon's study is represented by types 23, 24, 25 and 26 in my analysis, and the star bead in Kenyon's analysis refers to types 12, 19, 20, 21, 22 and 34 in my analysis. The white tubular and turquoise round beads of Kenyon's analysis are the same as types 13 and 28, respectively, of my analysis (Table 47).

Figure 30 shows that the glass beads from the Hamilton site seriate as the latest dating sample in the series of 11 Neutral sites. The Hamilton site's late posi-

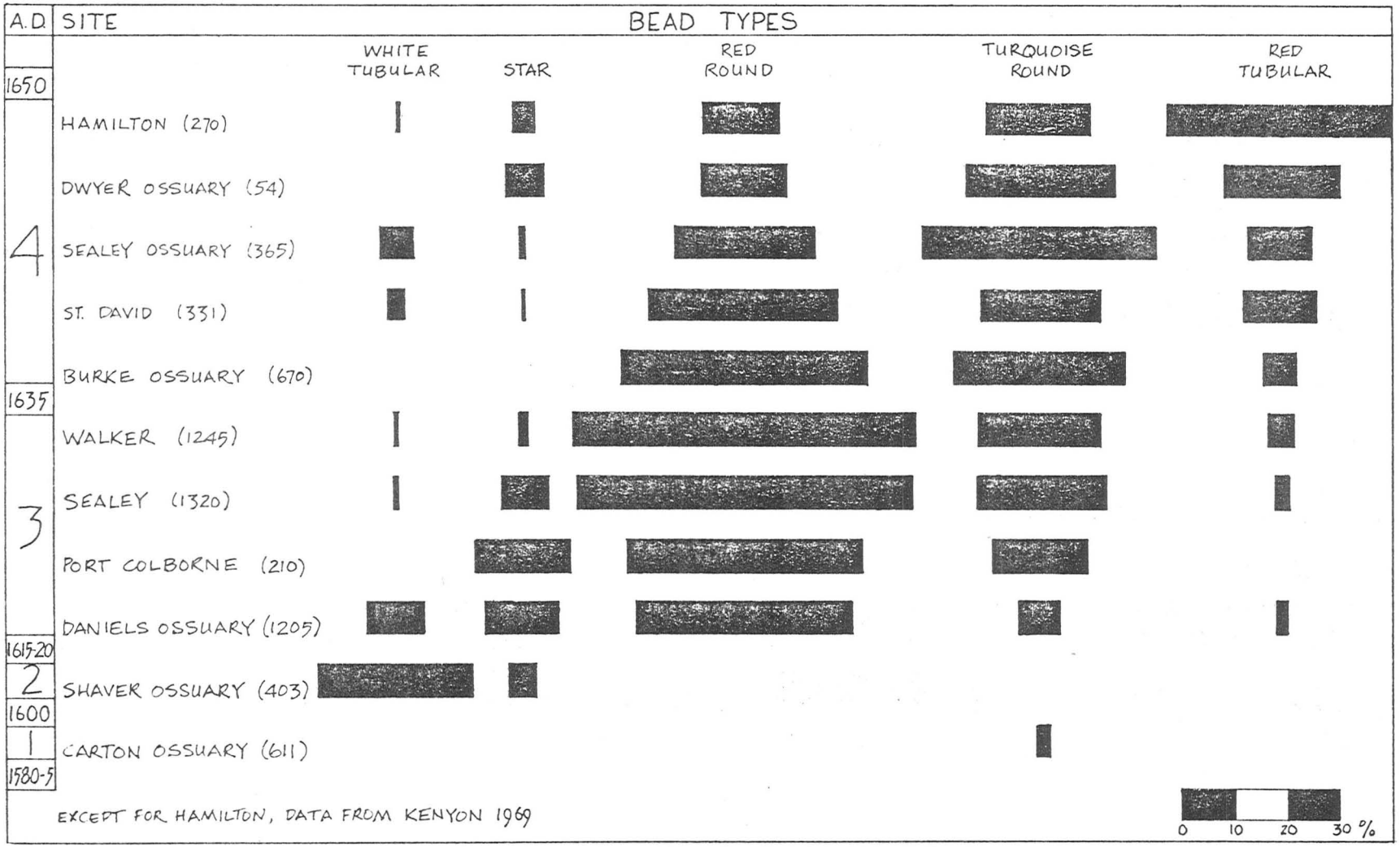


FIG. 30. Frequency seriation of 11 historic Neutral sites by glass bead styles.

tion in period 4 suggests that the site was occupied until the dispersion of the Neutral by the New York Iroquois in 1650-51.

Cloth Fragment

Adhering to the inside surface of a body sherd, from the waterlogged bottom of square 25 of midden A, is an uncarbonized grey cloth fragment 12 mm long and 6 mm wide. The fragment was kindly examined by Mr. J.E. Vollmer of the textile department of the Royal Ontario Museum. He reports that the weave is tabby, extended (Louisine or Cannellé). The weft (?) is cotton (?), Z, used double with an estimated count of 20 ends per cm. The warp (?) is linen (?), Z, with an estimated count of 14 picks per cm.

> Microscopic analysis (80x) reveals a slight S twist of individual fibres of doubled threads, a characteristic of cotton, in contrast to the smooth fibres of the single threads which indicate linen. Z spinning is typical of European textiles and the piece is definitely not Indian. It may be "dimity", a textile with doubled threads (usually warp), which is included in some 17th and early 18th century trade inventories. From its weight, the fabric was probably shirting. (Personal communication: J.E. Vollmer, 1977)

4

FLORAL REMAINS

A small sample of carbonized plant remains, chosen to indicate the variety of such materials recovered from the Hamilton site, were submitted to the geobotany laboratory of the Royal Ontario Museum for identification.

> Charred seed of four cultigens were identified; zea (corn), cucurbita (squash), helianthus (sunflower) and phaseolus (bean)....The remaining charred seeds are wild species; carya (hickory) nut shell fragments, juglans (butternut) nut shell fragments, and prunus nigra (Canada or wild plum)....It is interesting to note that there are four of the five cultivars present. Nicotiana (tobacco) the other cultigen is not present. (Personal communication: Fecteau and McAndrews 1977:1).

In addition zea cobs of the 8-row variety were also identified (personal communication: Fecteau and McAndrews 1977:3).

The single example of the helianthus seed is of particular interest due to its unusual size. The Hamilton specimen measures 8.5 mm by 3 mm, whereas a large helianthus annuus L. reference specimen measures 6.3 mm by 2.4 mm (personal communication: Fecteau and McAndrews 1977:1).

5

FAUNAL REMAINS

The Hamilton site yielded an excellent faunal sample consisting of 20,481 specimens. The sample was examined by faunal analyst Mrs. Deborah Pihl (1977a) of the University of Toronto, and she was able to identify 94.2 percent of the material as to class and 60.3 percent as to species. In the following I have excerpted and condensed various portions of Mrs. Pihl's preliminary report.

Table 48 presents an overall tabulation of the vertebrate and invertebrate classes represented in the Hamilton faunal sample. Domestic pig and cow remains have been excluded as they are obviously intrusive.

Typical of other historic Neutral and Iroquoian sites in Ontario and New York, the Hamilton sample is primarily (60%) composed of mammal remains. Too, mammals (primarily deer) provided the greatest proportion (95.7%) of usable meat at the site. Fish and bird bone are well represented in the sample (17.8% and 10.2% of the total fragments respectively), but as a source of meat these classes comprise only 4 percent of the village intake.

Mammals

Mammalian remains clearly predominate in the faunal sample from Hamilton. While racoon was the most common

species taken (71 individuals), white tailed deer provided the greatest quantities of meat for the town (Table 49). It has been estimated that the deer represented in the Hamilton faunal sample (59 individuals) would have provided over four tons of usable meat. The importance of late fall communal deer drives, and the taking of deer by the drive-trap method, has been noted historically (LeClercq 1881:I,269-70), and is further attested by the analysis of deer remains recovered archaeologically from Neutralia (Pihl 1977; Rick 1976). The Beverly Swamp near the Hamilton site is presently known as a yarding area for deer, and would have provided an excellent place to hold the late autumn drives.

TABLE 48. Faunal classes represented at Hamilton.

Class	No. of Specimens N	%	Min. No. of Individuals N	%	Usable Meat kg	%
Mammal	12,317	60.1	229	37.4	3,388.1	95.7
Osteichthys	3,655	17.8	64	10.4	48.3	1.4
Aves	2,094	10.2	109	17.9	95.4	2.7
Pelecypods	1,012	4.9	188	30.7	1.4	-
Amphibia	80	.4	14	2.3	9.0	.3
Crustaceans	1	-	8	1.3	-	-
Unknown	1,184	5.8				
TOTALS	20,481	99.9	613	100.2	3,542.2	100.1

TABLE 49. Mammalian species at Hamilton.

Species	No. of Specimens N	%	Max. No. of Individuals N	%	Species' Contribution Usable Meat kg	%
Racoon	1474	16.9	71	31.0	404.7	11.9
White tailed deer	5354	61.4	59	25.8	2218.4	65.5
Eastern chipmunk	158	1.8	23	10.0	1.6	.1
Grey/black squirrel	153	1.8	9	3.9	3.3	.1
Domestic dog	180	2.1	8	3.5	7.2	.2
Canis Spc.	184	2.1	-	-	-	-
Muskrat	93	1.0	7	3.1	5.3	.2
Red squirrel	35	.4	6	2.6	.8	-
Woodchuck	61	.7	5	2.2	11.1	.3
Beaver	274	3.1	5	2.2	70.0	2.1
Deer mouse	23	.3	5	2.2	.1	-
Snowshoe hare	23	.3	4	1.8	4.0	.1
Meadow vole	10	.1	4	1.8	.1	-
Black bear	215	2.5	4	1.8	424.0	12.5
Wolf	34	.4	3	1.3	60.0	1.8
Grey fox	21	.2	3	1.3	6.0	.2
Fox Spc.	22	.3	-	-	-	-
Mink	8	.1	2	.9	2.1	.1
Striped skunk	8	.1	2	.9	2.1	.1
Eastern cottontail	7	.1	1	.4	.8	-
Porcupine	7	.1	1	.4	13.4	.4
Red fox	4	.1	1	.4	2.4	.1
Long tailed weasel	1	-	1	.4	1.2	-
River otter	30	.3	1	.4	5.2	.2
Lynx	4	.1	1	.4	4.8	.1
Lynx Spc.	6	.1	1	.4	4.5	.1
Elk	73	.8	1	.4	135.0	4.0
Lepoidae Spc.	15	.1	1	.4	-	-
Carnivore Spc.	153	1.7	-	-	-	-
Cervid Spc.	97	1.1	-	-	-	-
TOTALS	8726	100.1	229	99.9	3388.1	100.1

Other common constituents of the 26 mammalian species identified (Table 49) include such small fur bearers as chipmunk, squirrel, muskrat, woodchuck, beaver and rabbit. Bear were also common and could have supplied both fur and an appreciable amount of meat to the Neutrals' diet. The domestic dog, as is suggested by the butchered and charred remains found in middens and refuse pits, was also regarded as a food source (Table 49).

Fish

Twelve species of fish were identified from the Hamilton sample (Table 50). Together they provided 1.4 percent of the usable meat consumed by the villagers (Table 48).

TABLE 50. Fish species at Hamilton.

Species	No. of Specimens N	%	Min. No. of Individuals N	%	Species' Contribution Usable Meat kg	%
Brown bullhead	435	50.9	21	32.1	5.7	11.8
Drum	31	3.6	12	18.8	23.5	48.7
Walleye	228	26.7	12	18.8	8.7	18.0
Sucker	71	8.3	5	7.8	1.8	3.7
Large mouth bass	44	5.2	5	7.9	4.5	9.3
Longnose gar	15	1.8	1	1.6	.7	1.5
Northern pike	11	1.3	2	3.1	1.3	2.7
Bowfin	9	1.1	1	1.6	.4	.8
Channel catfish	5	.6	1	1.6	1.1	2.3
Rock bass	3	.4	2	3.1	.4	.8
Yellow perch	2	.2	1	1.6	.2	.4
Salmonidae	1	.1	1	1.6	-	-
TOTALS	855	100.2	64	99.5	48.3	100.0

Most species, excepting drum, were available in local streams and ponds. Drum, which more commonly inhabit larger and colder bodies of water than are locally available, were perhaps obtained from Lake Ontario or the Grand River.

Birds

The large number of bird species (36) identified from the Hamilton sample (Table 51) suggests an unconcern in obtaining any one particular species. Excepting the one small passeriformes individual, the faunal sample indicates a consistent disregard of all small species and the preference for all available large species. Passenger pigeon, represented by 42 individuals, was most common in the sample, perhaps due to its relative abundance in the country prior to their late nineteenth century extinction. Because of their abundance, they may be considered as an important food source.

Wild turkeys, also common in the sample (8 individuals), constitute the most important source of avian meat. The ages of the individuals suggest they were taken in the late summer or fall, conceivably at the same time as the fall deer drives. Also important in terms of quantity and utilizable meat are the many species of ducks and geese identified from the sample. Ducks were commonly observed in Bronte creek beside the site while geese often fed on remnants of the harvested corn crop in the immediate site area during fall excavations.

Scavenger species such as the eagle, raven and crow

TABLE 51. Bird species at Hamilton.

Species	No. of Specimens N	%	Min. No. of Individuals N	%	Species' Contribution Usable Meat kg	%
Large						
Wild turkey	113	7.7	8	7.3	31,080	32.6
Canada goose	53	3.6	5	4.6	15,030	12.1
Trumpeter swan	13	.9	2	1.8	11.628	12.1
Bald eagle	17	1.2	2	1.8	5,990	6.3
Sandhill crane	4	.3	1	.9	2,987	3.1
Medium-large						
Common merganser	10	.7	2	1.8	1,914	2.0
Snow goose	2	.1	1	.9	1,518	1.6
White winged scoter	3	.2	1	.9	917	1.0
Medium						
Oldsquaw	247	16.7	12	11.0	5,592	5.9
Raven	10	.7	2	1.8	1,462	1.5
Ruffed grouse	9	.6	2	1.8	794	.8
Greater scaup	2	.1	1	.9	722	.8
Rough legged hawk	1	.1	1	.9	716	.8
Common scoter		.1	1	.9	713	.8
Red shouldered hawk	1	.1	1	.9	641	.7
Ring-necked duck	1	.1	1	.9	566	.6
Red necked grebe	1	.1	1	.9	568	.6
Wood duck	1	.1	1	.9	460	.5
Hooded merganser	1	.1	1	.9	435	.5
Common crow	4	.3	1	.9	346	.4
Medium-small						
Passenger pigeon	937	63.5	42	38.5	9,996	10.5
Bufflehead duck	9	.6	1	.9	270	.3
Pileated woodpecker	1	.1	1	.9	209	.2

Continued

Table 51 continued.

Species	No. of Specimens N	%	Min. No. of Individuals N	%	Species' Contribution Usable Meat kg	%
Blue jay	2	.1	2	1.8	136	.1
Robin	7	.5	2	1.8	116	.1
Yellow shafted flicker	1	.1	1	.9	89	.1
Red-headed woodpecker	8	.5	2	1.8	88	.1
Sparrow hawk	1	.1	1	.9	76	.1
Grackle	2	.1	1	.9	73	.1
Eastern meadowlark	3	.2	2	1.8	68	.1
Hairy woodpecker	2	.1	1	.9	56	.1
Brown thrasher	1	.1	1	.9	50	.1
Rusty blackbird	1	.1	1	.9	44	.1
Redwing blackbird	1	.1	1	.9	40	-
Brown headed cowbird	1	.1	1	.9	32	
Catbird	1	.1	1	.9	28	
Small Passeriformes	4	.3	1	.9		
TOTALS	1476	100.5	109	99.2	95,450	100.4

also appear in the Hamilton sample. Such species likely frequented the town dumps and were captured there by the inhabitants.

Mussels

Mussel shell fragments are common on the Hamilton site (Table 48) and crushed shell was an important ceramic constituent. As a meat source, mussels provided only a small quantity (.04%), but perhaps additional variety to the diet of the Neutral. Of the 2 species identified, Elliptio dilatatus was by far the most common (Table 52). Both species could have been obtained in the creek adjacent to the village or from Lake Ontario. As discerned by Mrs. Pihl (1977:4), a pattern of valve breakage consisting of a notch approximately 1 cm deep, located on the anterior end perpendicular to the edge of the shell, suggests that the freshwater bivalves were pried open using a narrow instrument while the animal was still alive and uncooked.

Turtles

The seven species of turtle identified with the exception of the eastern spiny softshell turtle, a lake dweller, could have been obtained from the nearby Beverly Swamp. The few individuals represented (14), and the low usable meat yield (Table 53), indicate that turtles were not a major food source for the Hamilton villagers. The Blanding's turtle shell fragment is the only such piece showing modification. The ground edge suggests its use as a bowl or dish.

TABLE 52. Mussel species at Hamilton.

Species	No. of Specimens N	%	Min. No. of Individuals N	%	Species' Contribution Usable Meat kg	%
Elliptio dilatatus	359	97.6	179	95.2	1.1	78.5
Lampsilis ventricosa	7	1.9	7	3.7	.3	21.4
Lampsilis spc.	1	.3	1	.5	-	-
Unionidae	1	.3	1	.5	-	-
TOTALS	368	100.1	188	99.9	1.4	99.9

TABLE 53. Turtle species identified at Hamilton.

Species	No. of Specimens N	%	Min. No. of Individuals N	%	Species' Contribution Usable Meat kg	%
Midland painted	33	32.7	7	50.0	.8	8.9
Snapping	49	48.5	2	14.3	6.8	75.6
Eastern spring softshell	5	5.0	1	7.1	.7	7.8
Blanding's	6	5.9	1	7.1	.5	5.6
Wood	1	1.0	1	7.1	.1	1.1
Spotted	6	5.9	1	7.1	.1	1.1
Musk	1	1.0	1	7.1	-	
TOTALS	101	100.0	14	99.8	9.0	100.1

Amphibians and Crustaceans

Portions of 8 frogs or toads (80 bone fragments) and 1 crayfish claw from Hamilton were identified. Both are said to have been eaten by the Iroquois (Waugh 1916:135,138), though undoubtedly as a flavoring rather than a staple.

6

DISCUSSION

With completion of the detailed analysis of the Hamilton site, it is now possible to formulate synthesis statements regarding the site and the historic Neutral in general. The latter particularly is augmented by both the ethnohistoric and the archaeological record.

Settlement Patterns

The Hamilton site's location, on the northern periphery of historic Neutralia, sees it within a cluster of late historic Neutral sites which includes: Lake Medad, Hood, Mills, Robertson (Dwyer), MacDonald, Stewart, Bogle I and Bogle II (Kenyon 1972:22; Noble 1974:5). With further research this northern cluster of Neutral sites may be identified as one of at least nine (Noble 1977:17) tribes of the Neutral Confederacy.

In 1626, Daillon noted both size and functional differences in Neutral towns. The nation, he stated, was

> composed of twenty-eight towns, cities, and villages, ...and also of several little hamlets of seven or eight cabins, built in various parts convenient for fishing, hunting, or agriculture (G.K. Wright 1963: 23).

Hamilton's large size (6-8 acres) and central location within the northern tier of Neutral villages indicate that it was a major town and probably the capital of the

northern site cluster. The other historic sites in the area, such as Mills, Bogle I and Bogle II, are much smaller and appear to represent satellite communities of Hamilton, perhaps occupied seasonally for specialized subsistence tasks.

Hamilton's location is not well suited for defense. Not accessible by navigable water, the site lies in low relief and lacks the high erosional river banks and ravines that often border or form a part of other Neutral village defensive systems. Hamilton is not, however, unique in this respect (e.g., Hood site), and a range of physical settings for Neutral villages can be expected.

Expected on historic Neutral villages (Noble 1972:2), Hamilton has a double palisade surrounding the town. While such protective measures are considered typical, the large 10-acre Walker town, despite extensive testing, has not produced evidence of a palisade (Wright 1977).

Within Hamilton, longhouses and refuse dumps have a generally systematic position. The longhouses are situated with preference for the slightly higher sandy ground, while midden deposits consistently occur in the lower areas within the village and around the village periphery. Houses are all oriented in a northeast-southwest position into prevailing winds, a pattern also apparent in other Neutral and Huron villages.

The Hamilton house structures are typical Iroquoian longhouses, yet possess features distinctively Neutral. They

range from 62 to over 90 feet long, and household growth has happened, as illustrated by the case of house 2 where several extensions to the length of the original structure were made. The houses are consistently 23 to 24 feet wide and taper slightly in width toward the squared ends. Doorways enter not through the centre of the end walls but near the house end corners.

The Hamilton houses are internally refined with orderly placement of central hearths, linear "slash pits" along the side walls, and partitions demarcating end storage vestibules. First recorded at the Hamilton site, linear "stain features" and "slash pits" are also evident at the Cleveland (Noble 1972) and Walker (Wright 1977) Neutral sites, and now appear to be definitive features of historic Neutral longhouses. These internal refinements and relative lack of subfloor refuse pits are all part of an apparent development in Ontario Iroquois house architecture.

Burials, though sought at Hamilton, were not discovered. If absence of the typical Neutral ossuary burial is thus assumed, it may be the result of an urgent post 1650 dispersal.

Artifact Observations

The Hamilton artifact sample is the largest sample from a historic Neutral site analyzed to date. While few remains were recovered from within the Hamilton houses, the midden excavations and surface collection provide an excel-

lent sample for analysis.

Copious quantities of lithic tools and detritus, primarily of chert, that are found at Hamilton as at other Neutral villages (Noble 1977:8, Wright 1977) are diagnostic of Neutral material culture. In marked contrast, contemporaneous Huron lithics are comparatively rare.

Analysis of the Hamilton lithics has indicated several aspects of lithic technology used on the site, and perhaps by the Neutral as a whole. Chert in its raw form was gathered from both primary and secondary sources in Ontario and transported to the site in nearly raw form. Preferred quality of the various chert types and their availability with regard to the distance from the source to the Hamilton site is illustrated by the detritus sample.

On the site, unwanted cortexual surfaces of the raw chert were removed and large flakes detached from random cores by percussion flaking. This primary reduction of raw materials into utilizable flakes accounts for the majority of detritus from the site (69.9% by weight).

Further reduction of usable flakes into tool forms was probably accomplished by pressure flaking techniques, as reflected in the numerous antler drifts found at Hamilton and by the amount of secondary lithic detritus (30.1% by weight).

By comparison with the Walker site chipping detritus, the Hamilton sample indicates a greater concern for chert

conservation. The smaller size of the Hamilton material and the use of the bipolar core technique contrasts remarkably with the Walker sample where large and still usable pieces of chert are predominant and bipolar cores are non-existent (Wright 1977). While an abundance of lithics may be common to all Neutral sites, differential utilization of the raw resources may be seen as a reflection of geographical and also perhaps with further inquiry, social factors.

Of the lithic tools recovered from Hamilton, projectile points and scrapers predominate. Their abundance may be ascribed to extensive hunting and processing of furs and skins as well as, in the case of projectile points, for defense or trade. Ground stone celts are rare at Hamilton, and have probably been largely replaced by European iron counterparts.

As noted by Kenyon (1972:7), two to four clusters of Neutral sites are apparent during the contact period, and possess distinguishable ceramic traditions. A higher frequency (greater than 25%) of shell tempering distinguishes the sites in the northern cluster of Neutralia from other Neutral sites where shell tempered pottery normally only occurs in frequencies of less than 5 percent.

The most significant and startling aspect of the Hamilton pottery is that shell temper dominates the sample (64%). This is abnormally high even for the northern historic Neutral settlement cluster, and is higher than at any

other Ontario Iroquois site known to date.

In order to gain a better understanding of the shell tempered ceramics at Hamilton, the frequencies of other ceramic attributes were separated and correlated with tempering materials. The analysis indicates that attributes are not randomly distributed between tempering materials as might be expected if shell tempering was suddenly adopted by the Hamilton potters, but rather that particular ceramic attributes were more often associated, and sometimes strongly associated, with a particular tempering material.

Comparison between the Walker and Hamilton pottery samples (Table 54) indicates that some major differences in the attribute frequencies between the two sites are clearly the result of the shell-temper-related attributes at Hamilton. Other minor differences probably reflect different ceramic traditions within the two regional site clusters.

From Table 54, it is notable that many exterior rims are corded (20.2%), besides the usual plain rims and those simply decorated with oblique linear lines. Indeed, the cording occurs on both shell tempered (23.3%) and grit tempered (13.5%) rims at Hamilton in stark contrast to a total absence at Walker.

Additionally, shell-temper-related attributes, not apparent in the analysis of "complete" rims from Hamilton, were discovered upon consideration of a sampling error. Large format triangular plat motifs (L-Q) were selected

TABLE 54. Hamilton and Walker: comparative ceramic attributes.

Attributes	Hamilton % Shell	Hamilton % Grit	Hamilton % Total Sample	Walker % Total Sample
Exterior rim motif				
Plain	27.7	35.3	30.1	38.6
Right to left oblique linear	24.1	13.5	20.8	19.3
Left to right oblique linear	8.2	11.8	9.4	10.4
Vertical linear	2.7	9.4	4.9	9.4
Opposed oblique linear	4.1	4.7	4.3	7.6
Corded	23.3	13.5	20.2	0
Triangular plat	6.9	3.0	5.7	3.1
Other	3.0	8.8	4.6	11.6
TOTALS (N)	100.0	100.0	100.0 (535)	100.0 (684)
Lip motif				
Plain	46.7	59.4	50.7	66.2
Right to left oblique linear	18.9	9.4	16.0	7.2
Left to right oblique linear	8.0	5.3	7.1	2.5
Vertical linear	7.4	5.9	6.9	20.4
Corded	6.1	1.2	4.5	0
Notched lip edge	4.7	8.2	5.8	1.7
Other	8.2	10.6	9.0	2.0
TOTALS (N)	100.0	100.0	100.0 (535)	100.0 (807)

Table 54 continued.

Attributes	Hamilton % Shell	Hamilton % Grit	Hamilton % Total Sample	Walker % Total Sample
Neck sherd surface treatment				
Plain	94.5	96.5	95.2	96.3
Other	5.5	3.5	4.9	3.7
TOTALS (N)	100.0	100.0	100.1 (834)	100.0 (476)
Neck sherd decoration				
Plain	85.7	97.5	89.4	96.8
Appliqué strips	13.9	2.1	9.8	0
Other	.4	.4	.8	3.2
TOTAL (N)	100.0	100.0	100.0 (834)	100.0 (476)
Shoulder sherd decorations				
Plain	39.5	43.2	40.5	69.6
Horizontal band of impressions	49.6	41.4	47.3	25.5
Other	10.9	15.3	12.2	4.9
TOTALS (N)	100.0	99.9	100.0 (412)	100.0 (220)
Body sherd surface treatment				
Smoothed-over-cord	53.5	31.5	44.8	5.5
Cord roughened	29.2	17.8	24.7	0
Plain	9.3	39.8	21.3	89.9
Ribbed paddle	8.0	10.8	9.1	3.2
TOTALS (N)	100.0	99.9	99.9 (3,451)	100.0 (2,298)

against by my definition of an analysable rim. An analysable rim consisted of a rim which was "complete" in that it possessed all rim attributes studied, (i.e., lip, exterior and interior surfaces, etc.), and was large enough to determine the details of the exterior motif. A reconsideration of those rims deemed unanalysable by this definition produced a minimum of 119 rim fragments decorated with triangular plat motifs. These rims represented 16 percent of the unanalysable rim fragments, while similar motifs were present on only 6 percent of the "complete" rim sherds. This verifies a suspected sample bias.

Of the 119 rim fragments with triangular plat motifs, 95 are shell tempered and 24 are grit tempered, indicating a stronger association with the shell tempered wares. Of further note is the fact that half of the shell tempered examples and less than 10 percent of the grit tempered examples had their triangular plat motifs applied over a corded surface (secondary motif h), again suggesting association with the shell tempering. Thus, the consideration of incomplete or unanalysable rim sherds has indicated that large format triangular plat motifs and the application of these motifs on a corded exterior rim surface are most strongly associated with the shell tempered ware at the Hamilton site. Triangular plat exterior rim motifs comprised only 3.1 percent of the sample at Walker.

At both Hamilton and Walker, pot necks are predomi-

nantly plain (95.2% and 96.3% respectively). At Hamilton, however, decorative appliqué strips have been applied to 9.8 percent of the neck sherds, while none occurs on this area of the Walker vessels. Appliqués do appear on less than 1 percent of the Walker rims (Wright 1977). When the Hamilton appliqué strips are correlated with temper type, we again see a decidedly strong association of these ceramic specialty features with shell tempering. Appliqués occur on 13.9 percent of the shell tempered neck sherds and only 2.1 percent of grit tempered sherds. Decorated vessel necks at both Hamilton and Walker are rare and usually trailed when they appear.

At Hamilton, 69.5 percent of the body sherds have been roughened with a cord wrapped paddle, while the same surface treatment is only observed on 5.5 percent of the Walker sample. Such cording at Hamilton is found on 82.7 percent of the shell tempered body sherds and on 49.3 percent of the grit tempered sherds. The Walker body sherds are primarily (89.9%) plain.

Interpretation of the Hamilton pottery is difficult, for additional detailed analyses of comparative materials from Neutralia and further afield have yet to be undertaken. While Walker has provided some comparative data, its location is outside the northern cluster of Neutral sites and, thus, it is hard to assess the significance of the similarities and differences between it and Hamilton. Temporal, spatial,

and perhaps social (tribal) differences are extant, but not fully understood at this point in Neutral research.

The frequency of shell tempered pottery at Hamilton is abnormally high, even for the northern site cluster where shell tempering appears most frequently among Neutral assemblages (Kenyon 1972:4). While detailed ceramic analysis has not yet been undertaken, the author's recent excavations at the nearby historic Hood site has produced a pottery sample with an estimated maximum of 20 percent shell tempered pottery. With an estimated date of 1640 A.D. for the Hood site, the high frequency and sudden appearance of shell tempered pottery and related attributes at Hamilton appear to represent an intrusion of foreign potters rather than a sudden change in traditional pottery making. The shell tempering, cording and appliqués are attributes which are common to many late prehistoric and protohistoric assemblages south of Lake Erie, variously referred to under such names as the Whittelesey focus, the Fort Ancient aspect and the Monongahela complex.

Neutral-like ceramics showing strong southern influences from the Monogahela complex are common in southwestern New York where they are cautiously identified as Erie (Wright 1966:84,87; Guthe 1958:67). The Erie and the Wenro, not considered by Wright, were allied with the Neutrals and were once thought by Wright (1966:84) to have developed from the same prehistoric ancestors as the

Neutral:

> The middle Ontario Iroquois sites in southwestern New York were partially isolated from their original homeland in southwestern Ontario by the Niagara River and were subjected to influence from the Monongahela complex. These partially isolated sites receiving influences from the south are thought to have evolved into historic Erie. On the other hand, the historic sites in southwestern Ontario, which lack the clear evidence of Mississippian influence out of the south, are regarded as historic Neutral.

Although the Oakfield and Kienuka sites (White 1961) are considered in Wright's discussion, he points out that those sites to the south, the Westfield, McCullough and Burning Spring sites (Guthe 1958), show strong Monongahela influence (Wright 1966:87). These southern sites and five others located between Cattaraugus Creek and the New York-Pennsylvania border in southwestern New York, are ascribed by Guthe (1958) to the Erie, and he notes that Monongahela and Neutral influences are represented.

Though noticeable similarities exist between these so-called Erie sites and the Hamilton site, precise comparisons are difficult without frequency data for ceramic attributes from the sites in southwestern New York.

Another hypothesis to account for the foreign influx of pottery at Hamilton rests with the Wenro. They were once an associate group with the Neutral confederacy (JR 16:253; JR 17:27), and they sought refuge in Neutralia as well as Huronia in 1639. Lalement (JR 21:231-233), telling of Brébeuf and Chaumonot's visit to the Neutrals in 1640-41,

relates:

> In all the eighteen villages which they visited, there was found only one, to wit, that of Khioetoa, surnamed Saint Michel, which had given them the hearing that their embassy merited. Some years ago, through fear of their enemies, there took refuge in this village a certain strange Nation, who had dwelt beyond the Erie or cat Nation, called Awenrehronon.

This quote provides two pieces of vital information. First is the fact that the Neutral village named Khioetoa offered refuge to the Wenro refugees who were mostly women and little children (JR 17:27). Wright (1963:47 note) has incorrectly identified Khioetoa as a Huron town. Unfortunately, the documents do not identify a precise location for Khioetoa in the Neutral country, nor do they indicate whether the Wenro stay in Neutralia was for a long term or simply a relief stop on their way to the Hurons.

The second item of information concerns the location of the Wenro homeland as being "beyond the Erie". Le Jeune (JR 17:27) records that this homeland was 80 leagues (ca. 240 miles) away from Huronia. White (1961:28; 1971) in her examination of the documentary and cartographic materials with regard to the Neutral, Wenro and Erie, places the Wenro "somewhere between the Niagara River and the Genessee River" (White 1961:150), in the vicinity of Batavia and Leroy, where, she states, "there is little support...in the archaeological evidence" (White 1971:27). White does not consider the possibility that "beyond the Erie" might refer to the Wenro location being southwest of the Erie, along the Lake Erie

shore. According to White's own data this would place the Wenro south of Cattaraugus Creek, thought to be the southern limit of the Erie territory prior to 1644 (White 1961:50). This location for the Wenro is compatible with the distance of over 80 leagues, and coincides with the location of Guthe's (1958) material which earlier was considered to have similarities to the foreign influences at Hamilton.

If in fact the foreign influence at the Hamilton site is Wenro, then the lack of a similar influence in Huronia has yet to be explained. Ridley's (1973) short paper, entitled "The Wenro in Huronia", primarily considers ceramic types which he feels represent evidence of the Wenro presence there. His material, however, differs from the foreign material at Hamilton and has no shell tempered pottery. According to Ridley (personal communication: April, 1977), and several other researchers presently working in Huronia, no site in that area has produced any quantity of shell tempered ware.

Thus, neither ethnohistoric nor comparative archaeological sources for the Iroquoian peoples adjacent to and allied with the Neutrals help to firmly establish the identity of the foreign female potters and their pottery at Hamilton.

Yet, another hypothesis can be advanced. It is firmly known that the Neutrals were long-standing enemies of the Algonkian-speaking Fire Nation (Mascouten) of neighbouring Michigan (JR 21:195). In the year 1640, the Neutrals are said to have taken 100 captives from the Fire Nation and in

1641, 170 more (JR 21:195). Again in 1642, a Neutral raid on these people brought back 800 captives (JR 27:10). This influx of foreign peoples and probable ceramic ideas into Neutralia could also account for the foreign influence in the Hamilton ceramic assemblage, but only if a large number of the captives were adopted by the Hamilton town. The Fire Nation is even less well known historically and archaeologically than the Wenro and, thus, more conclusive statements regarding this possibility cannot be made at present.

The fact that non-Neutral traits do not appear in other aspects of the Hamilton artifact assemblage, other than pottery, may be seen as an indication that the foreign influx is primarily one of females. They were the potters, but which population--whether refugee Wenro, Eries, or other southern Iroquoians, or captive Algonkians--cannot definitely be stipulated at this time.

Smoking pipes at Hamilton are primarily of clay, although some lithic examples exist. Most clay pipe stems are plain, but others show a wide range of decoration that is typically Ontario Iroquois. They were formed by both the burnt-out reed or cord method. Most pipe bowls are decorated and are of two major forms common to the historic Neutral: collared and flared. Coronet pipes are also common and a distinctive trumpet form with a thick flat lip appears in minor frequencies. Effigy pipes too are common and for the most part resemble Huron forms.

Hamilton worked bone and shell are primarily decorative, while antler is used mainly for the construction of tools. Bone tubes and beads are especially common on Neutral sites and far outnumber other items in the bone assemblage. Awls, punches and sewing needles are rare and are in part being replaced by iron and brass equivalents. Common at Hamilton, incised and notched deer phalange gaming pieces are absent at Walker; they may represent a late addition to the Neutral's worked bone inventory. Cup and pin phalanges are absent at Hamilton illustrating their seriational decline on Neutral sites since Middleport times (Wintemberg 1948:23, 1939:35). Five such specimens occurred at Walker (Wright 1977).

Worked shell, primarily waumpum beads, are common at Hamilton as at other historic Neutral sites, and their marine origins indicate the Neutral's involvement in an extensive trade network to the south.

As noted by Kenyon (1972:9):

> The small but persistent frequencies of such generally southern traits as shell tempering and large marine shell goods indicate continuing contact between the Neutrals and the area south of the Great Lakes.

The relationship between shell tempering and marine shell ornaments is of interest here. At Walker where shell tempering is rare (less than 5%), shell artifacts comprise 1.7 percent of the artifact assemblage (Wright 1977). At Hamilton, where shell tempering dominates (64%), shell arti-

facts are not significantly different (3.2%) than at Walker. This appears to indicate that the association between shell tempering and shell artifacts noted by Kenyon above varies considerably on late historic Neutral sites.

European trade items at Hamilton are abundant and were probably attained through Huron middlemen (Wright 1963: 10-12). That their supply was not unlimited or cheap is suggested by the exhausted condition and salvaged nature of some of the iron and brass tools from Hamilton. It is only in a few subtle instances that European tools and material appear to have affected Neutral material culture. For the most part, European tools and materials were used alongside of and in conjunction with native-made implements. The cloth fragment and brass wire clothing fasteners provide rarely preserved evidence that textiles made their way into early 17th century Neutralia.

Of particular interest too is a fragment of what appears to be a brass picture frame. Pictures are known to have been used as a method of religious instruction by the Jesuits (JR 11:89; JR 12:107,109; JR 14:97,103), and this Hamilton specimen may be a relic of Brébeuf and Chaumanot's visit in the winter of 1640-41 (JR 21:187-237).

In the small sample of floral remains submitted for analysis, four of the five cultigens known › the Neutral were represented. Corn, beans, squash and sunflower were identified while tobacco was not. The absence of tobacco

in the sample is understandable owing to the hand sorting of the material and the small size of the tobacco seeds. Tobacco is, however, expected to have been present on the site. Additional wild species were identified and attest to the gathering aspect of the Neutral subsistence pattern.

Nearly 100 animal species identified from faunal remains at Hamilton indicate a diverse utilization of available faunal resources. Deer provided the main supplies for the town (over 60% of the usable meat from all species), while racoon, likely taken for its fur, was the most common species found. Of particular note is the high frequency of freshwater clam shell fragments at Hamilton. The large sample of over 1,000 fragments is approached by no other Iroquoian site in southwestern Ontario or western New York (Pihl 1977b:3). Probably used as a food source, crushed clam shells were also a major constituent in the pottery at Hamilton.

SUMMARY

The foregoing analysis has indicated that the Hamilton site is a large double-palisaded late historic Neutral town which probably formed the capital of a northern tribal tier of historic Neutral settlements. The late date of its occupation is indicated by glass bead seriation, and the possibility exists that it was one of the eighteen settlements visited by the Jesuit missionaries, Bi béuf and Chaumonot, in the winter of 1640-41. Our best dating estimate for Hamilton falls between 1638 to 1651 when the Neutral

were dispersed from their homeland by League Iroquois.

Settlement patterns at Hamilton are typically Neutral, and four house structures illustrate their distinctive features. Such features include "slash pits", interior linear stain features, and relatively clean interior house subfloors. Doorways located near the corners of the Hamilton houses may reflect a local (tribal?) practice.

The Hamilton artifact assemblage is typically Neutral with the exception of the pottery. Here the pottery overwhelmingly suggests a sizable influx of foreign female potters accustomed to producing cord decorated and shell tempered vessels. Appliqués and podial feet also distinguish their pottery in contrast to the typical plain, collarless Neutral wares. Unfortunately, precise identification of these "foreigners" cannot be pinpointed at this time with certainty. Three hypotheses include Erie, Wenro or Fire Nation (Mascouten) refugees or captives. Certainly, the high percentage (64%) of shell tempered pottery at the otherwise typical Neutral expression at Hamilton is unique for the late historic period in southwestern Ontario.

The prolific lithics at Hamilton are a distinctive Neutral feature with projectile points and scrapers dominating the worked categories. Pipes also are typical of historic Neutral sites, including effigy and non-effigy forms made from both clay and lithic materials. Decorated non-effigy pipes of clay, however, predominate. Worked bone,

antler and shell are common, with bone and shell being used primarily for decorative items while antler was most used for the production of tools. Marine shell ornaments indicate that the Neutral were involved in an extensive aboriginal trade network to the south. European trade too is illustrated by the quantity of European goods recovered from Hamilton. Indications of intensive use and reuse of the trade goods suggest that such items were highly prized. A wide variety of floral and faunal remains has given insights into the Neutral subsistence pattern. Virginia deer obviously provided substantial meat, but cultigens as well as wild edibles also were important.

Comparison between Hamilton and the historic Neutral town of Walker (Wright 1977) point to the obvious need for more formal analyses of villages and towns throughout Neutralia. Walker is generally understood to be typical Neutral in all aspects, but differs from Hamilton in its ceramic make-up, location within Neutralia, and its slightly earlier date. Determining the full significances of these differences can only be resolved in the future.

The description and analysis of the Hamilton site provides only the second historic Neutral case study to date. With its strange pottery assemblage, it may well be unique in Neutralia.

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FIG. 31. The Hamilton site (facing east).

FIG. 32. Midden A profile.

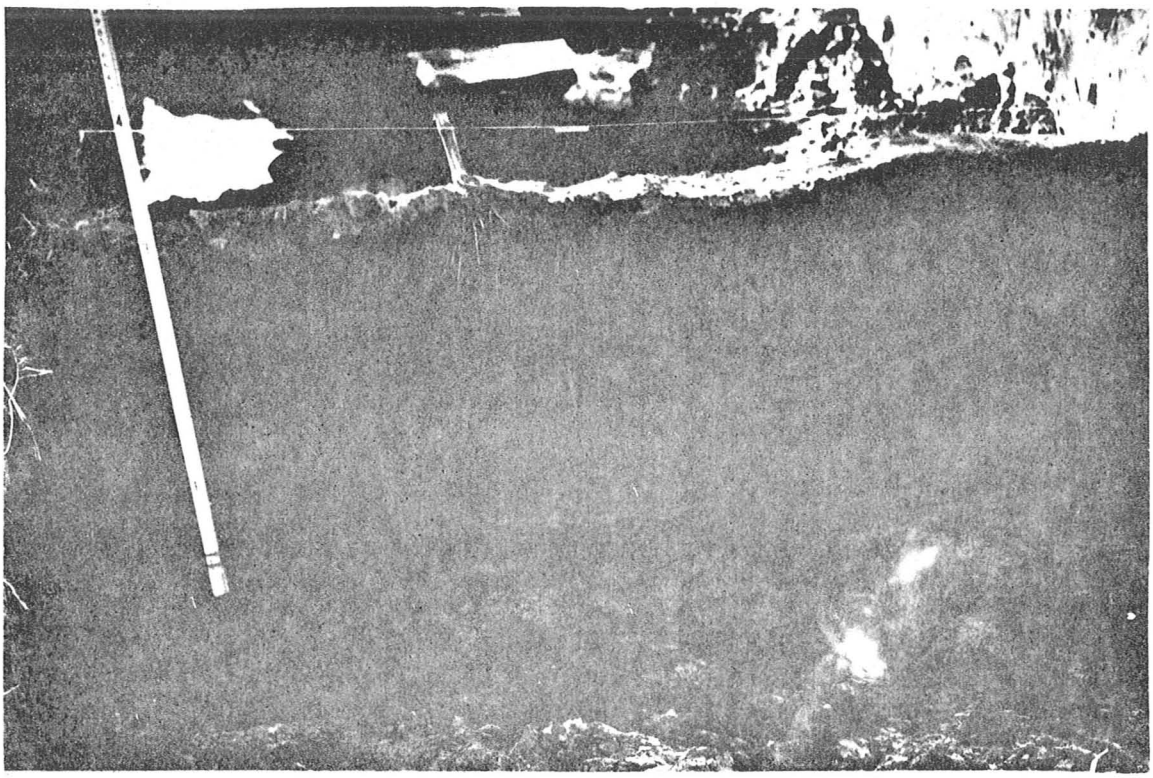

FIG. 33. Hamilton lithics.

1-9 Typical Hamilton site projectile points.

10-11 Unifacial projectile points.

12-15 Projectile point preforms.

16-20 Snubnose scrapers.

21-24 Thumbnail scrapers.

25-27 Bifacially flaked end scrapers.

28-30 Random flake scrapers.

31-32 Spokeshaves.

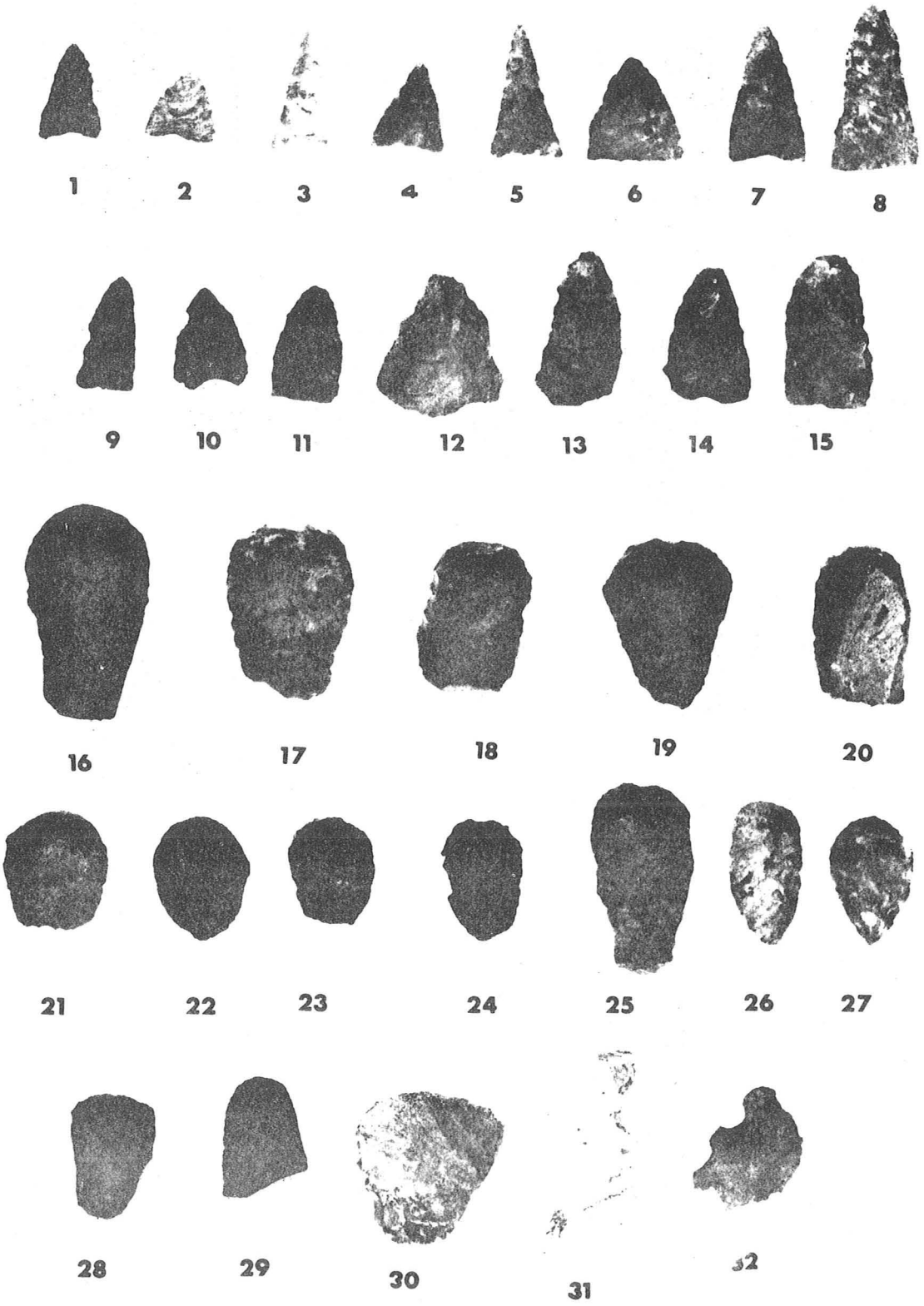
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FIG. 34. Hamilton lithics.

1-7 Serrated flakes.

8-13 Serrates.

14-18 Drills.

19-20 Pebble pendants.

21-22 Red slate beads.

23-24 Catlinite beads.

25. Course sandstone abraider.

26. Fine-grained whetstone.

27. Flat stone abraider.

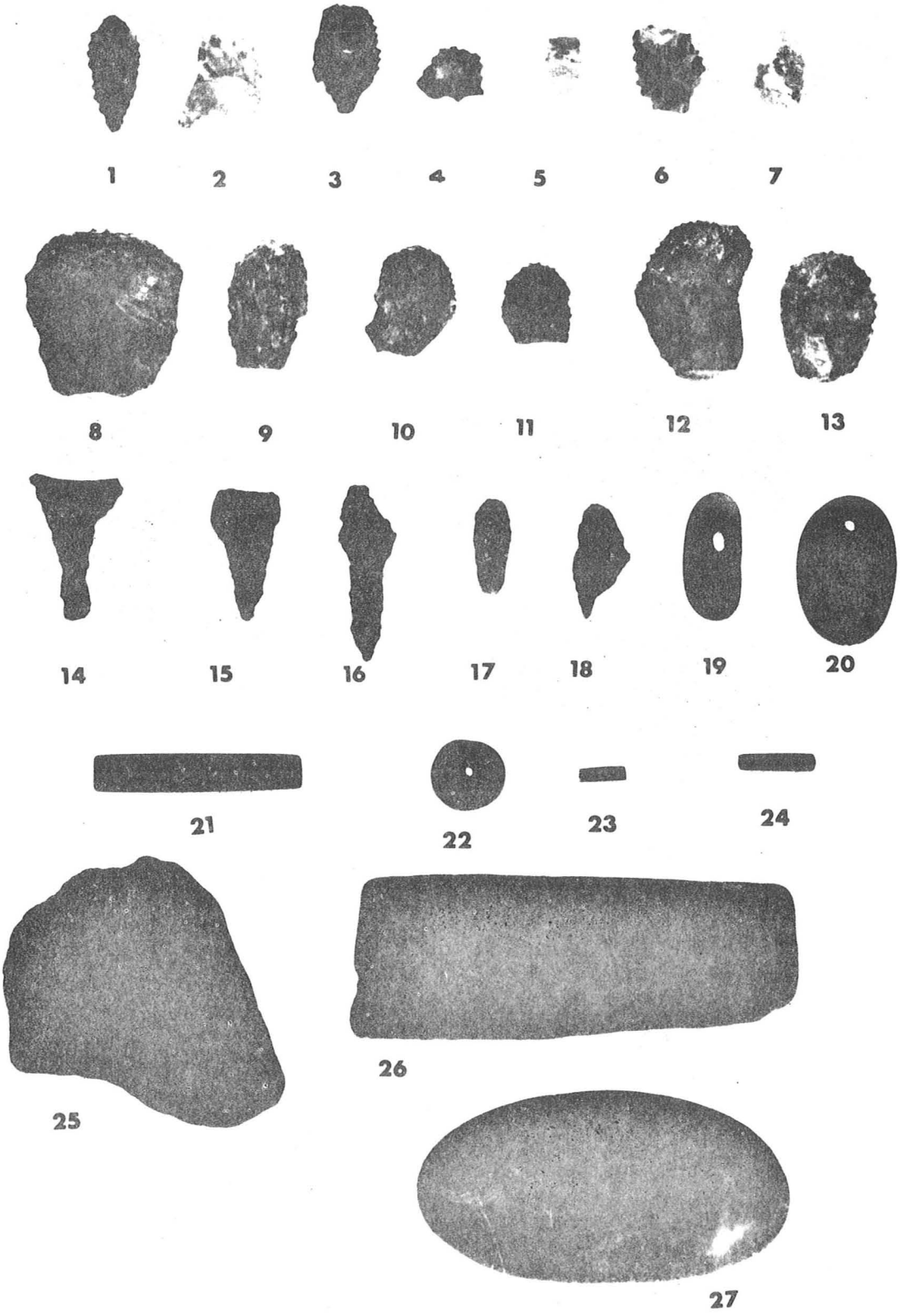
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FIG. 35. Hamilton lithics.

1-2 Random cores.

3. Random core with tabular cortex.

4-5 Bipolar cores.

6-7 Faceted slate pieces.

8-9 Netsinkers.

10. Celt.

11. Hoe.

12. Pestle.

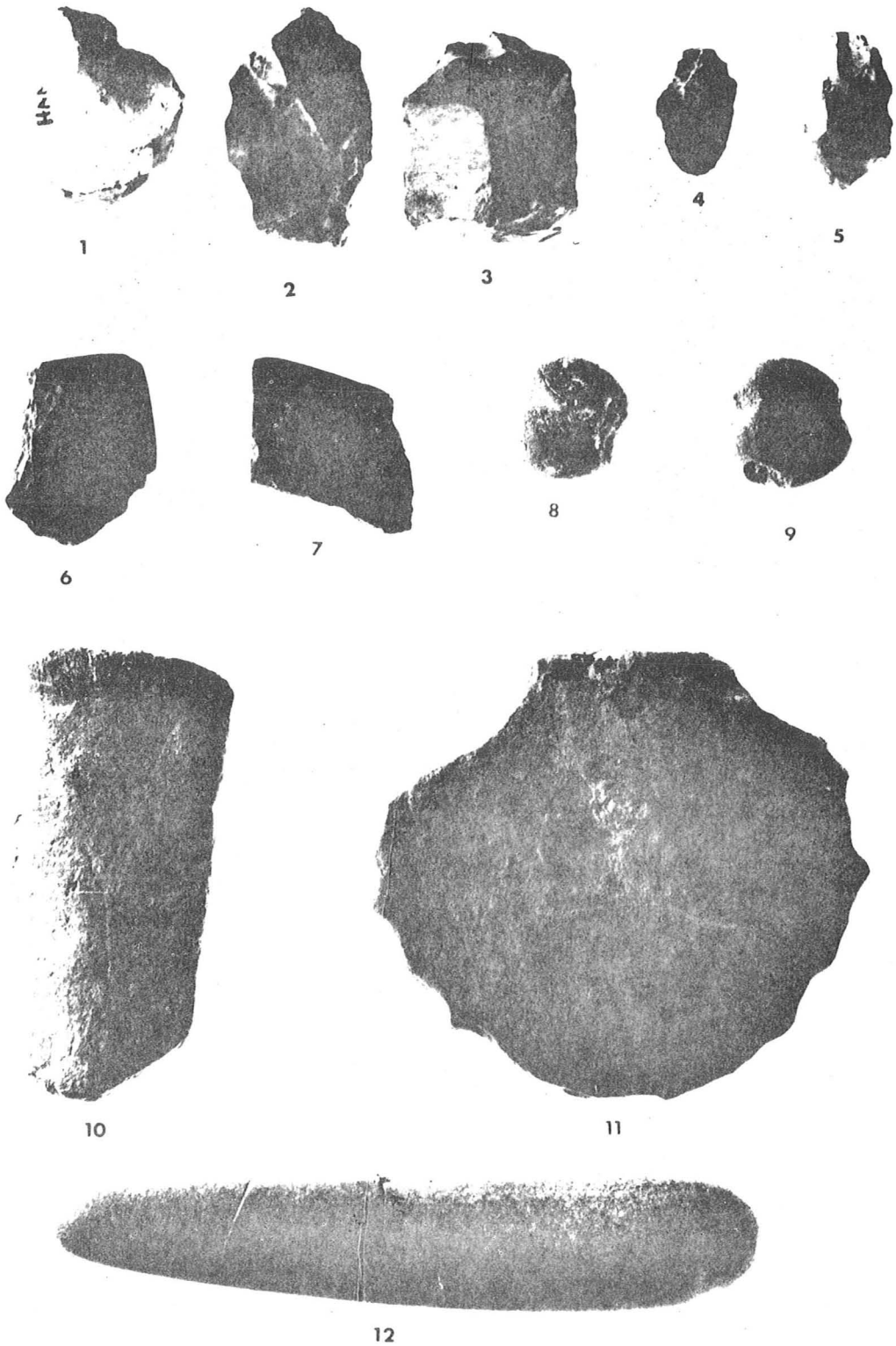
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FIG. 36. Hamilton ceramics, body sherd surface treatment and shoulder decoration.

1-2 Plain shoulder sherd, cord roughened body, plain neck, shell tempered.

3-4 Impressed shoulder decoration, cord roughened body, plain neck, shell tempered.

5. Dentate stamped shoulder decoration, smoothed-over-cord body, plain neck, shell tempered.

6. Impressed shoulder decoration, smoothed-over-cord body, plain neck, shell tempered.

7. Impressed shoulder decoration, rib paddled body, plain neck, shell tempered.

8. Trailed shoulder decoration, plain body, plain neck, grit tempered.

9. Trailed and impressed shoulder decoration, plain body and plain neck, grit tempered.

10. Impressed shoulder decoration, plain body, plain neck, grit tempered.

11. Plain shoulder sherd, smoothed-over-cord body, plain neck, grit tempered.

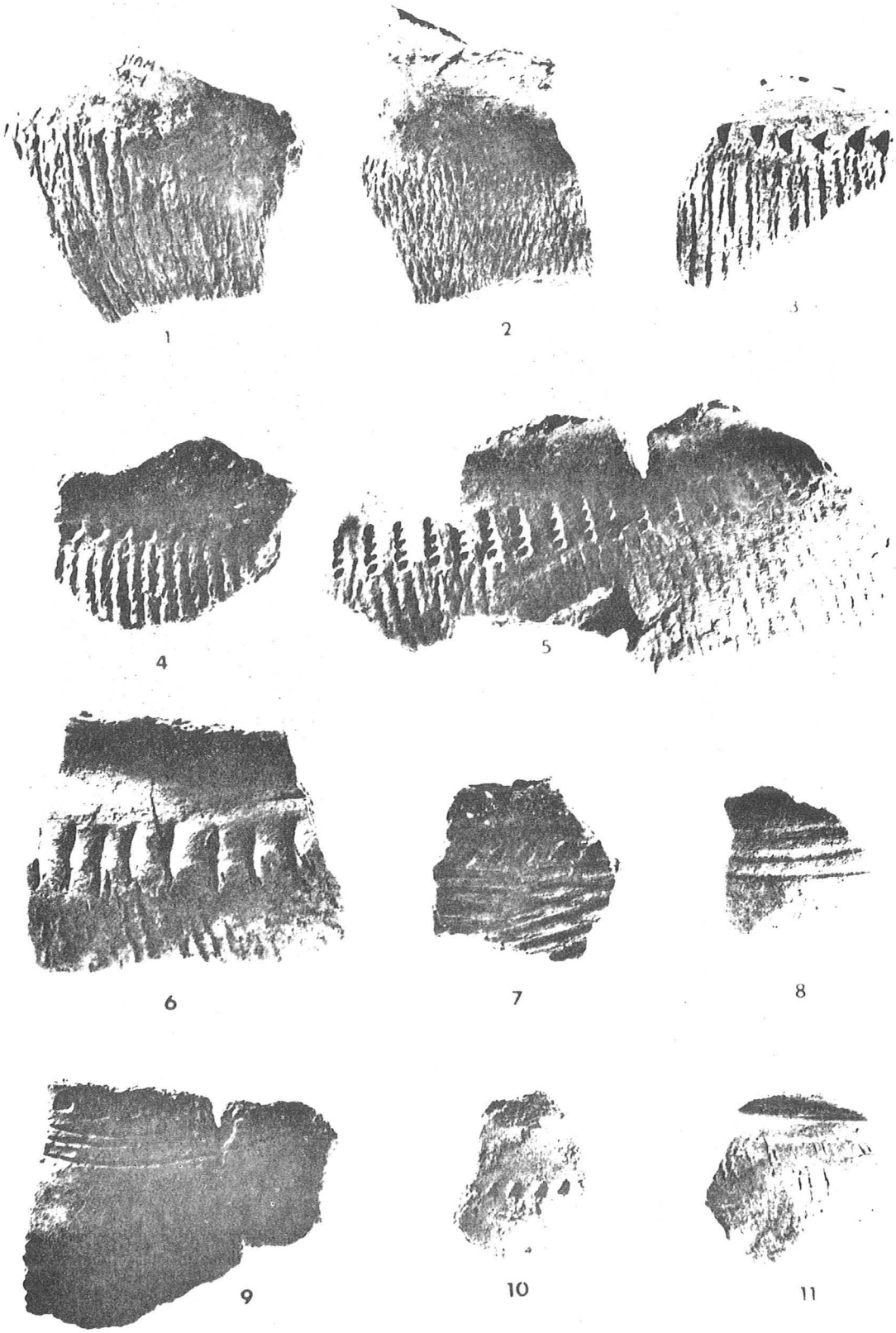
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FIG. 37. Hamilton appliqué strips.

1. Plain rims sherd, with appliqué strip on neck. Note appliqué scar, shell tempered.

2-3 Plain rim sherds with appliqué strips, shell tempered.

4. Rim sherd with right to left oblique linear motif applied in dentate stamp, appliqués on neck, shell tempered.

5-6 Plain rim sherd with appliqué strips on neck, shell tempered.

7-13 Loose appliqué strips.

14. Neck sherd showing appliqué scars resulting from differential firing conditions, shell tempered.

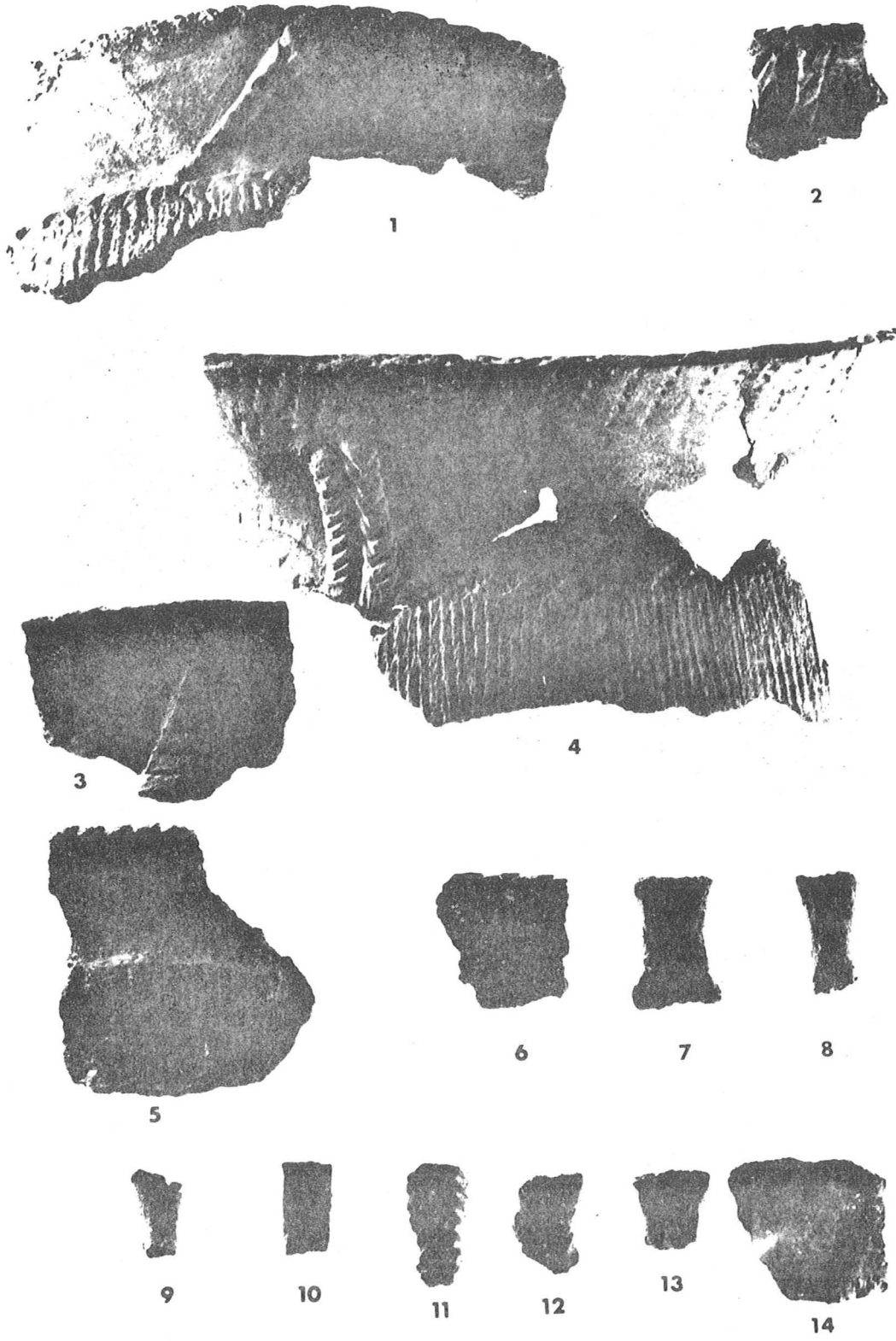
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FIG. 38. Hamilton rim sherds.

1. Plain shell tempered rim.

2. Plain grit tempered rim, plain neck, smoothed-over-cord body.

3-5 Plain shell tempered rims.

6-7 Smoothed-over-cord rim, shell tempered.

8. Smoothed-over-cord rim, grit tempered.

9. Cord roughened rim and body, plain neck, grit tempered.

10-11 Cord roughened rims, shell tempered.


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FIG. 40. Hamilton rim sherds.

1. Opposed triangular plat (trailed) motif on shell tempered rim.

2. Bordered opposed and horizontal triangular plat (trailed) motif on shell tempered rim.

3-4 Bordered horizontal triangular plat (trailed) motif on grit and shell tempered rims respectively.

5. Multiple bordered horizontal and opposed triangular plat (trailed) motif on shell tempered rim. Note secondary motif h, the application of the primary motif over a corded surface.

6. Opposed and horizontal triangular plat (trailed) motif on shell tempered rim. Note secondary motif h, the application of the primary motif over a corded surface.

7. Fingernail impressed bands on grit tempered rim.

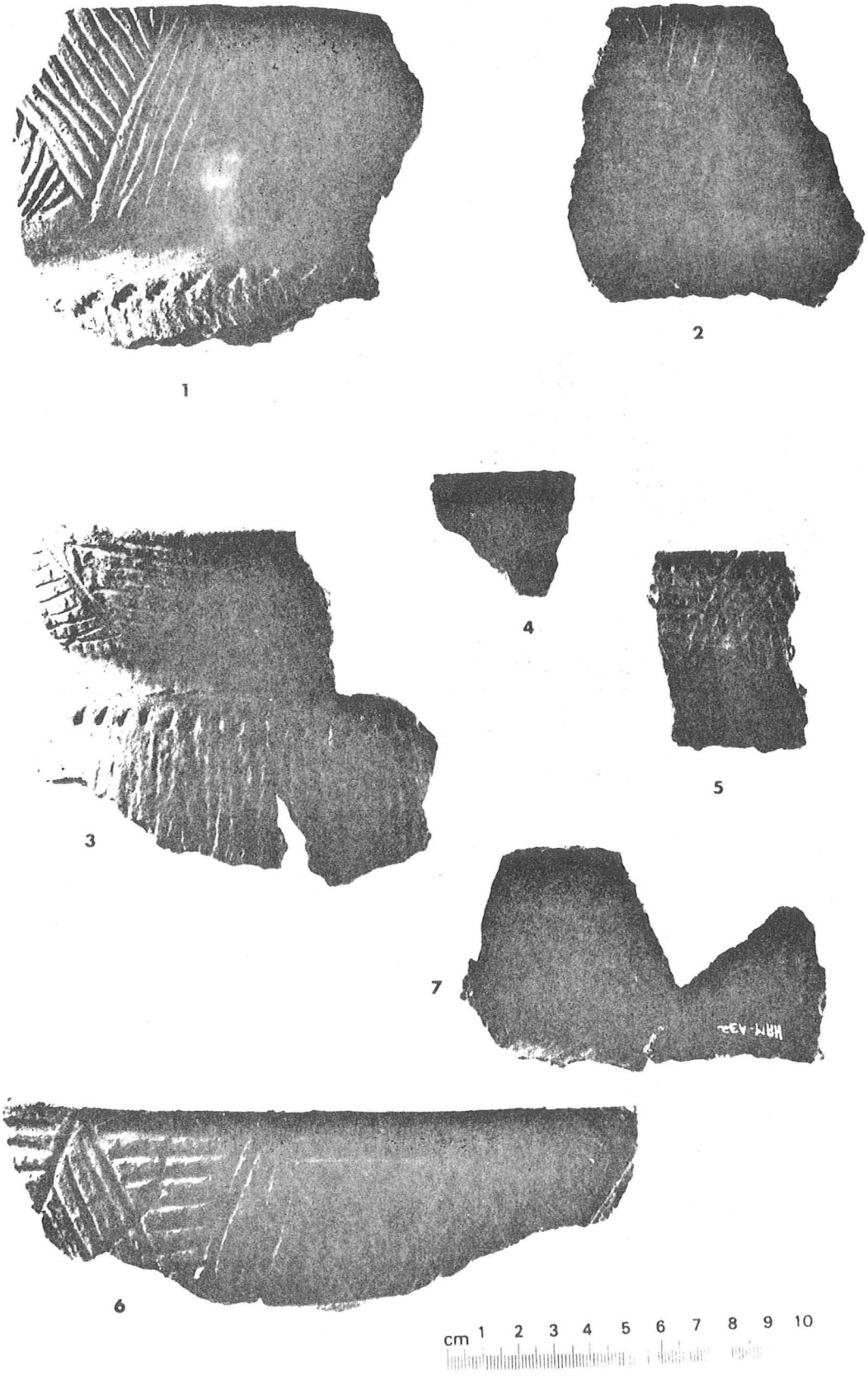
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FIG. 39. Hamilton rim sherds.

1. Vertical linear (impressed) motif on grit tempered rim.

2. Vertical linear (trailed) motif on grit tempered rim.

3. Right to left oblique linear (impressed) motif on shell tempered rim, plain neck, rib paddle body.

4. Right to left oblique linear (impressed) motif on shell tempered rim, plain neck, cord roughened body.

5. Left to right oblique linear (trailed) motif on shell tempered rim.

6. Opposed oblique linear (trailed) motif on shell tempered rim.

7. Opposed oblique linear (trailed) motif on grit tempered rim. Note secondary motif a.

8. Horizontal chevron (impressed) motif on shell tempered rim.

9. Criss cross (impressed) motif on grit tempered rim.

10. Cross hatched (impressed) motif on shell tempered rim, plain neck, impressed shoulder decoration, cord roughened body.

11-13 Opposed triangular plat motif (trailed) on shell tempered rims. Note secondary motif f on specimen 11.

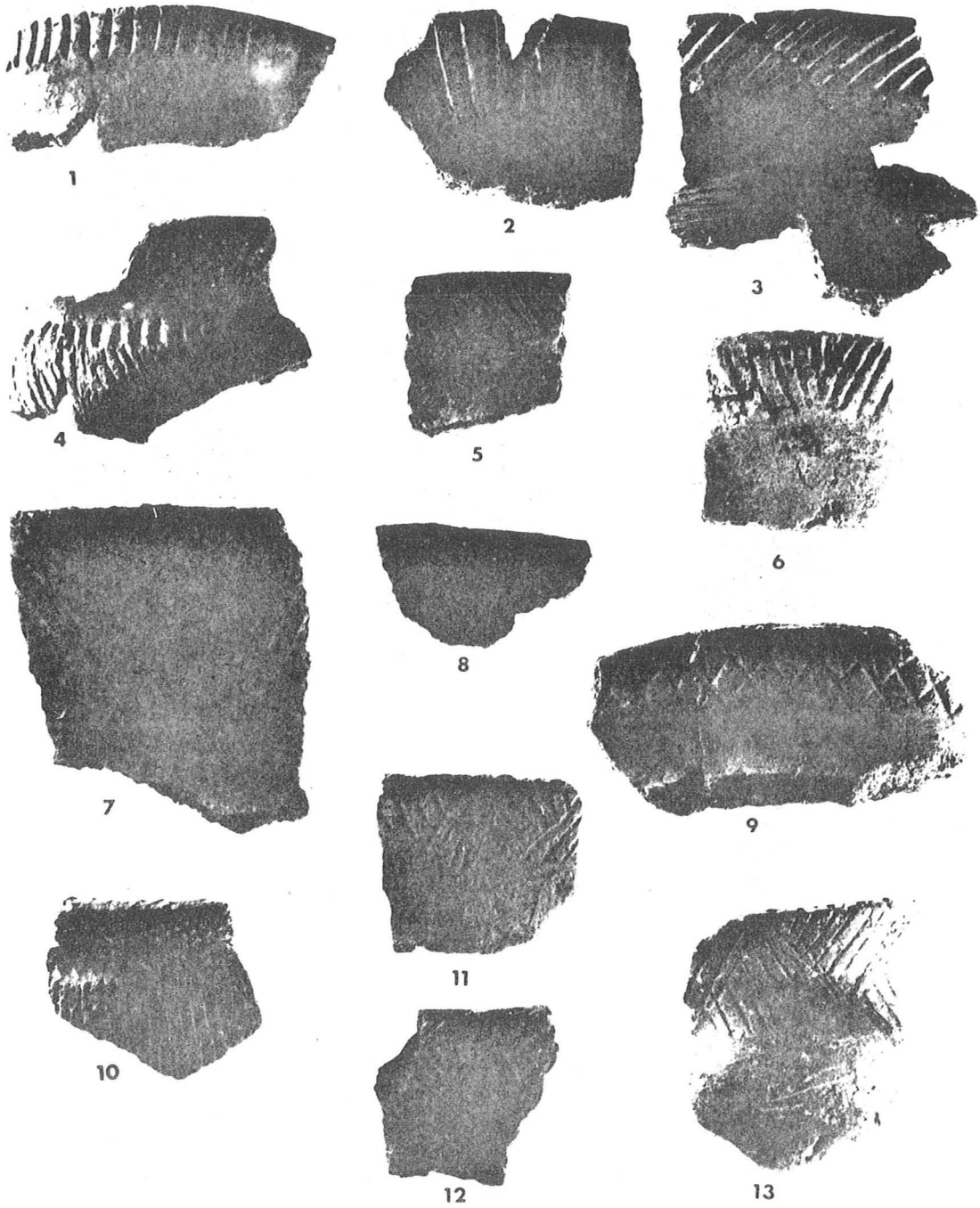
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FIG. 41. Hamilton castellations and appendages.

1-2 Incipient pointed castellation.

3. Notched castellation.

4. Pointed castellation.

5. Turret castellation.

6. Pointed castellation appliquéd to rim.

7. Multiple notched castellation.

8-9 Strap handles.

10-11 Pedestal feet.

12. Flared foot.

13. Peg foot.

14. Effigy appliqué probably from vessel lip.

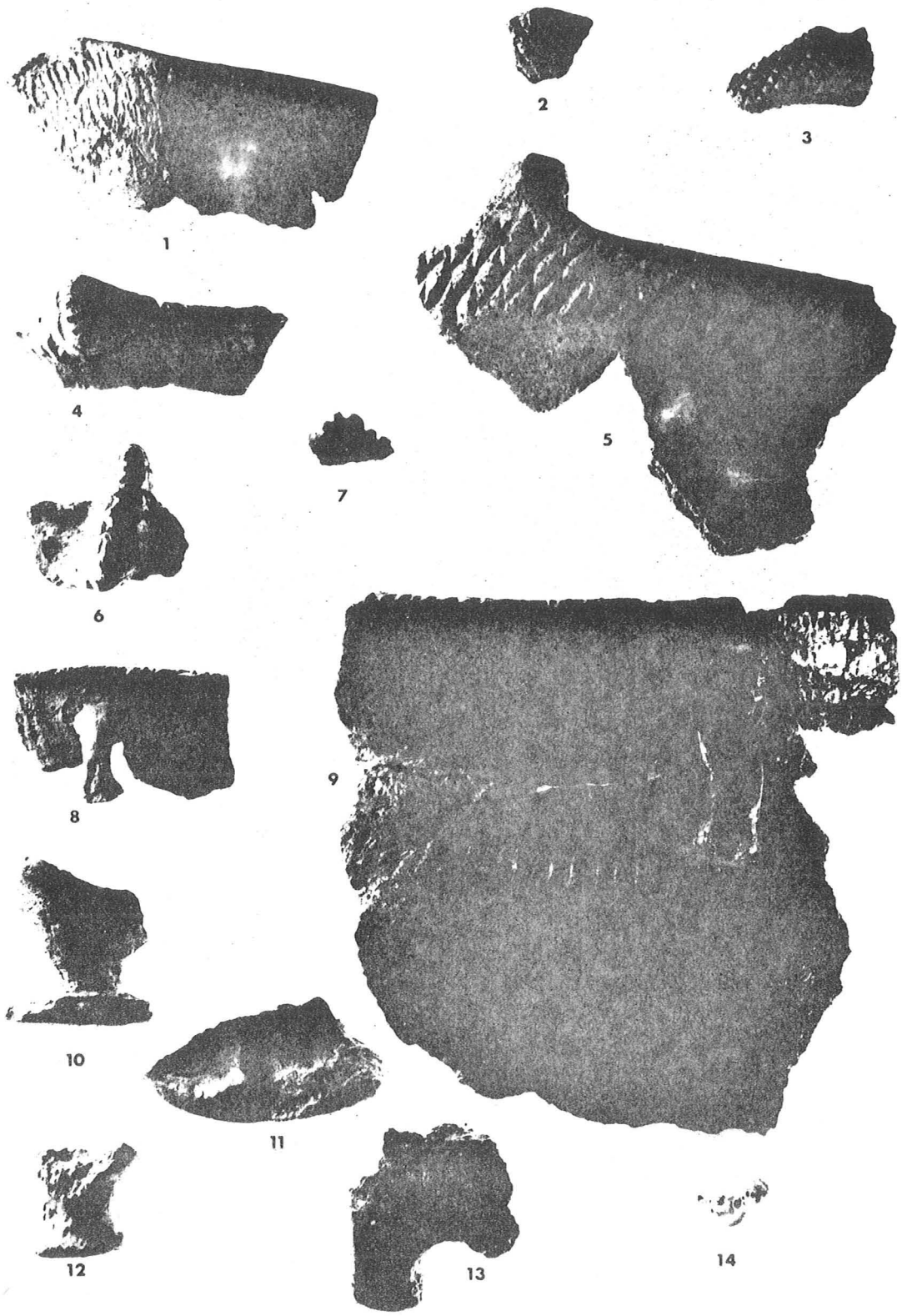
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FIG. 42. Hamilton pipe stems and pipe bowls.

1-9 Pipe stem mouthpiece forms A-I respectively, Figure 18.

10-15 Decorated pipe stems B, D, E, F, G and J respectively.

16-19 Collared pipes.

20-22 Flared pipes.

23-24 Coronet pipes.

25. Conical steatite pipe.

26. Conical pipe.

27. Trumpet pipe.

28. Vasiform pipe.

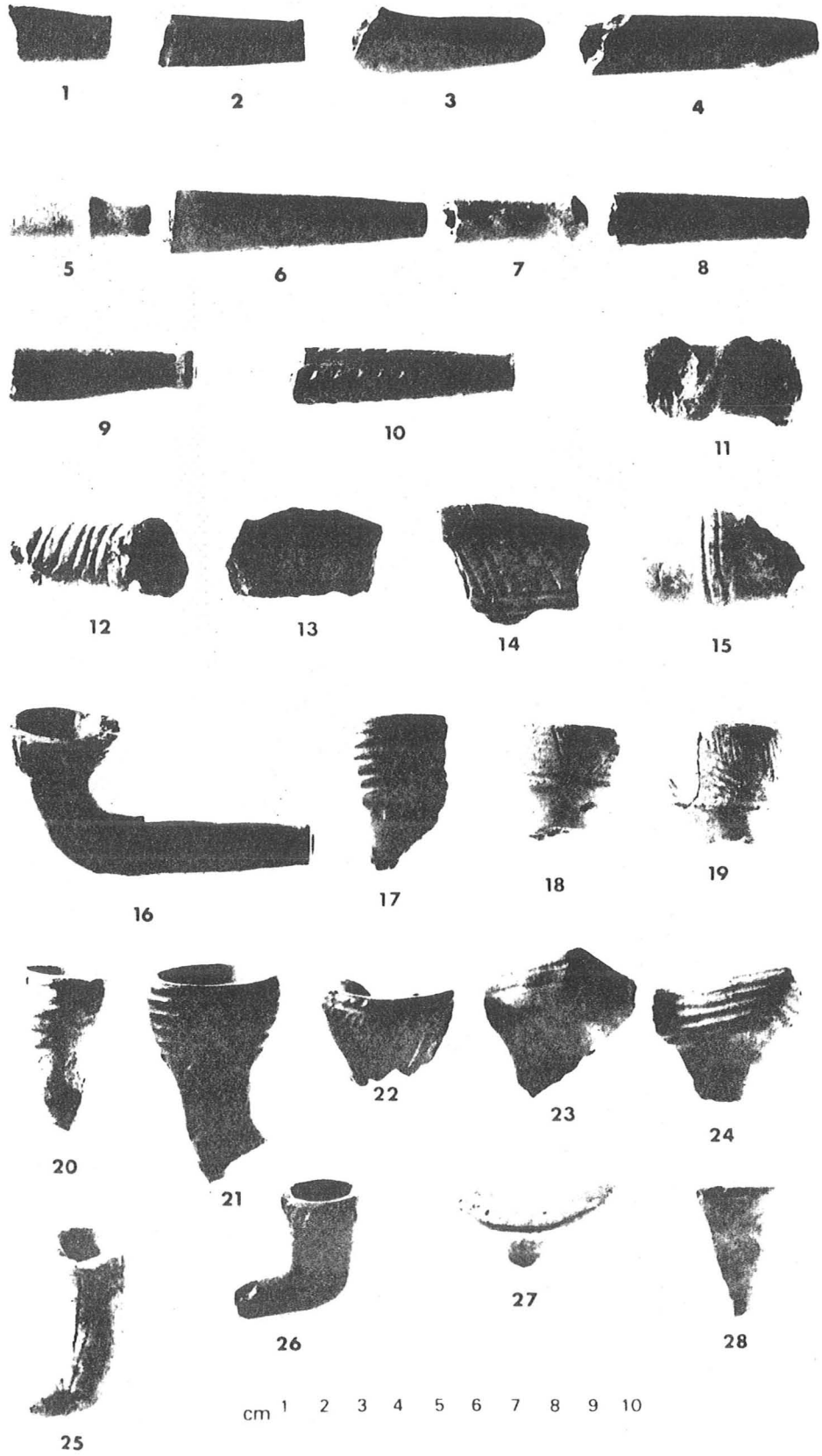
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FIG. 43. Hamilton effigy pipes.

1-2 Bird effigy heads from pipes.

3. Owl effigy, shell tempered.

4. Bird effigy pipe bowl.

5-6 Typical blow-face pipe effigy and bowl.

7. Atypical blow-face pipe.

8-9 Bear effigies, 8 is limestone.

10. Bear effigy ?

11. Lithic human effigy. Note incised lines on neck and chest representing tatoos, and cap on head.

12. Human effigy ?

13. Human effigy.

14. Lizard effigy, shell tempered.

15. Snake effigy.

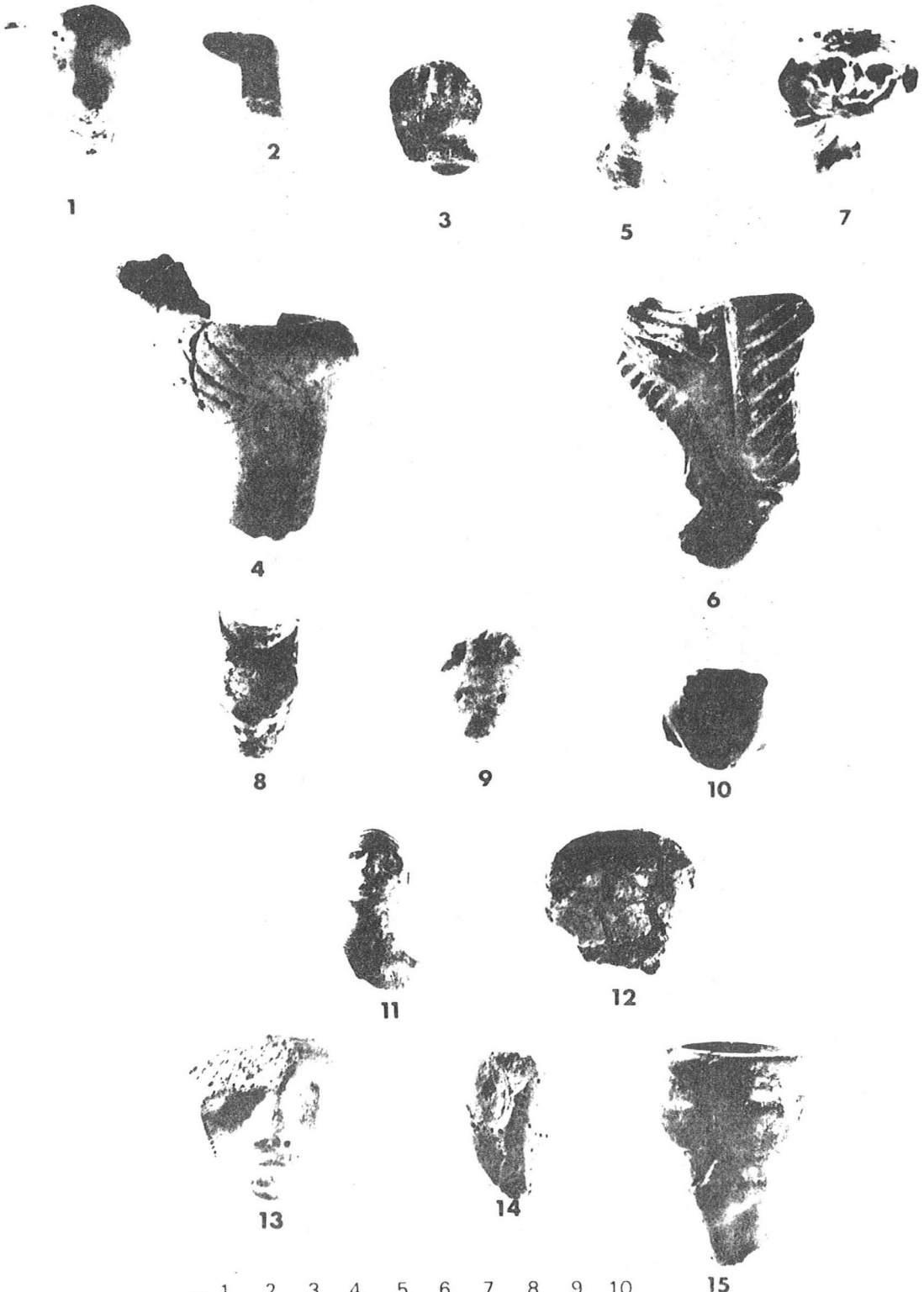
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FIG. 44. Hamilton worked shell artifacts.

1. Discoidal shell bead.
2. Tubular shell bead.
3. Runtee bead and fragment.
4. Columella beads.
5. Marginella beads.
6. Pleurocera beads.
7. Goniobasis beads.

8-11 Shell pendants.

12. Shell inlays or ornaments.
13. Shell amulet.
14. Scraper.

15-17 Cut and ground pieces of shell.

18-20 Scored pieces of shell.

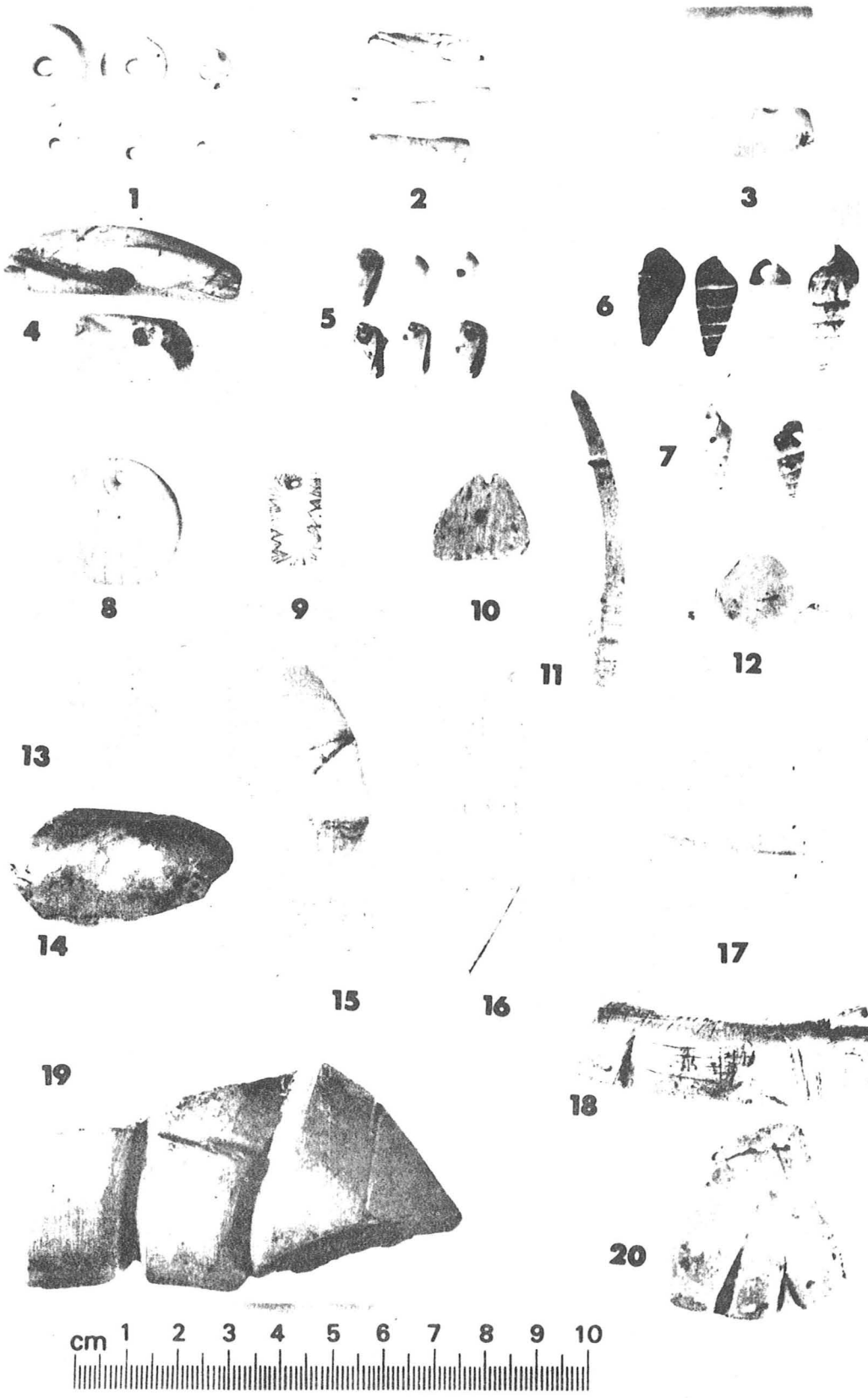
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FIG. 45. Hamilton worked bone artifacts.

1. Deer radius bone tube.

2-4 Decorated deer radii bone tubes.

5-6 Waste ends of deer radii from bone tube manufacture.

7. Elk radius bone tube.

8-9 Decorated dog tibia and radius bone tubes.

10. Racoon femur bone tube.

11. Turkey tibiotarsus bone tube.

12-16 Medium-large bird bone beads.

17-19 Incised deer phalanges, 19 is also ground.

20-21 Needles.

22. Unconventional needle.

23. Three tatooing needles.

24-25 Bear and racoon baculum punches.

26. Dog or wolf canine pendant.

27. Elk canine pendant.

28. Bone comb fragment and comb tooth from feature 15, house 3.

29. Bone disc fashioned from deer femur.

30. Flute fragment.

31. Split deer femur gouge.

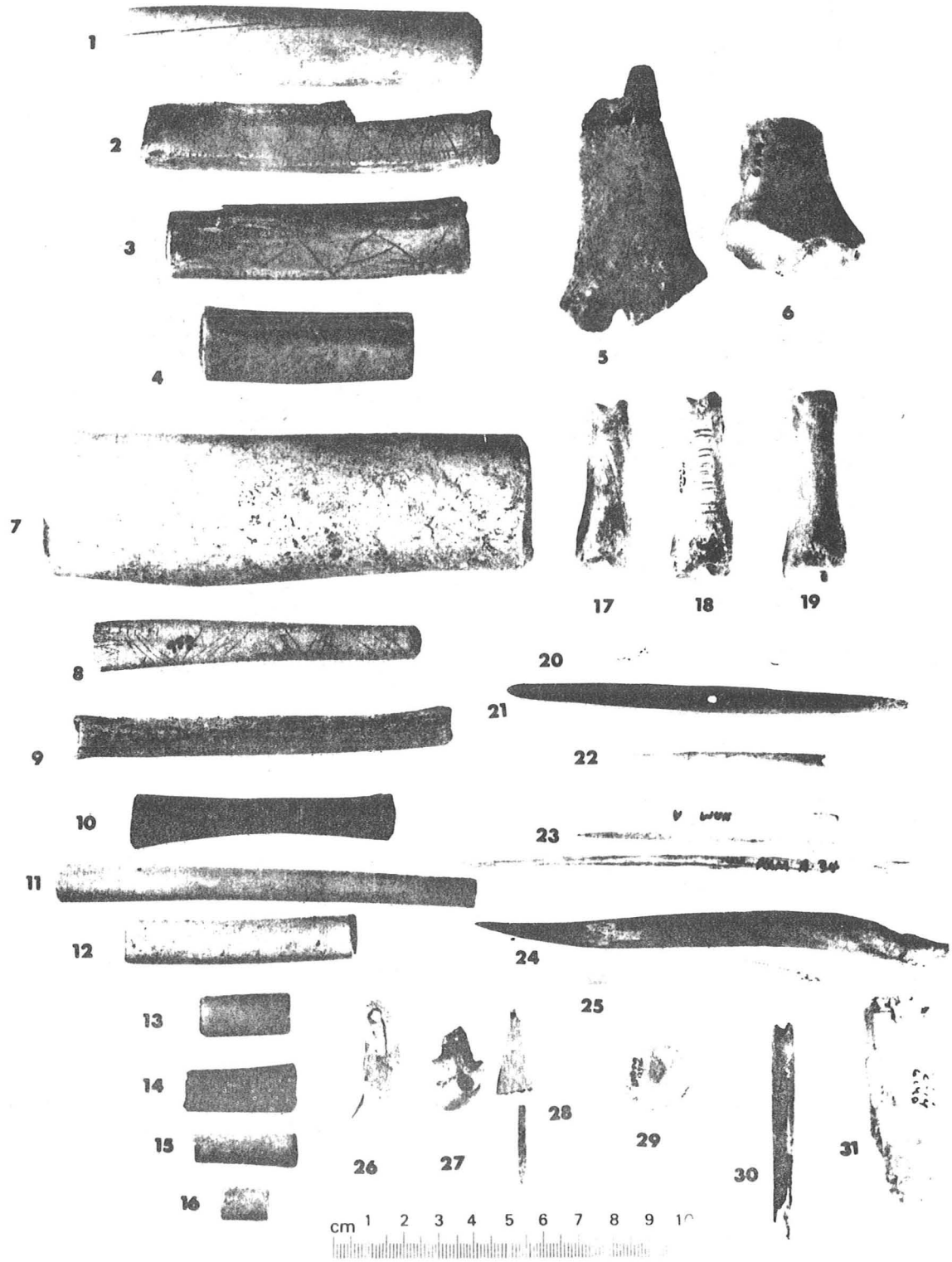
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FIG. 46. Hamilton modified antler artifacts.

1-5 Antler drifts or flakers.

6-7 Antler drifts with flared ends.

8. Antler drift with handle.

9-11 Perforated antlers

12-14 Harpoons.

15. Conical antler projectile point.

16. Pendant.

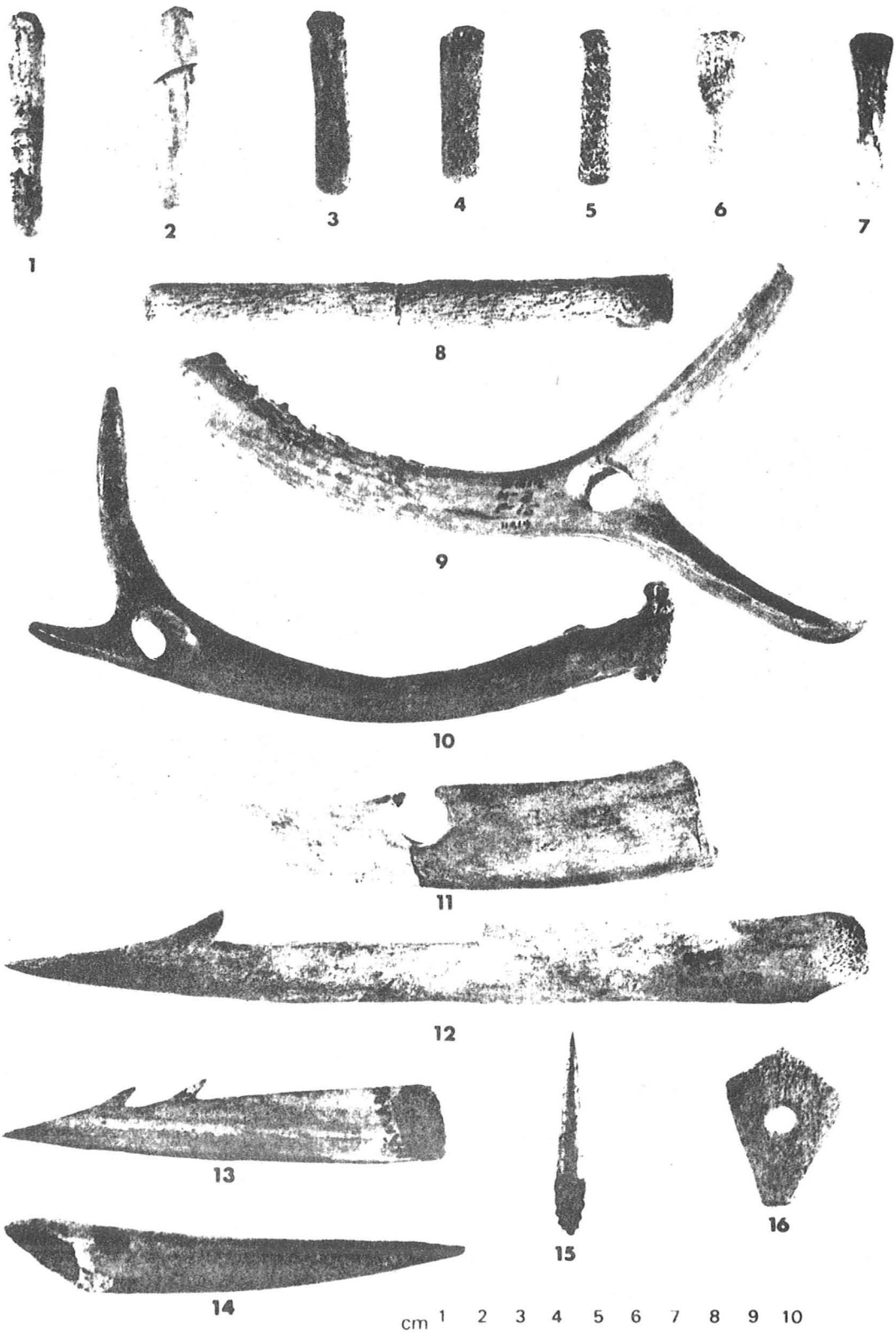
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FIG. 47. Hamilton brass artifacts.

1-5 Bail fastener types A, B, C, D, and E, respectively.

6. Decorated piece of brass kettle rim showing right to left parallel oblique motif common to pottery vessel rims.

7. Kettle patch with staple-like brass wire still adhering to kettle portion.

8. Brass container.

9. Sheet brass bracelet.

10. Rolled brass bracelet fragment.

11. Rolled brass beads.

12. Tinkling cones.

13. Pendants.

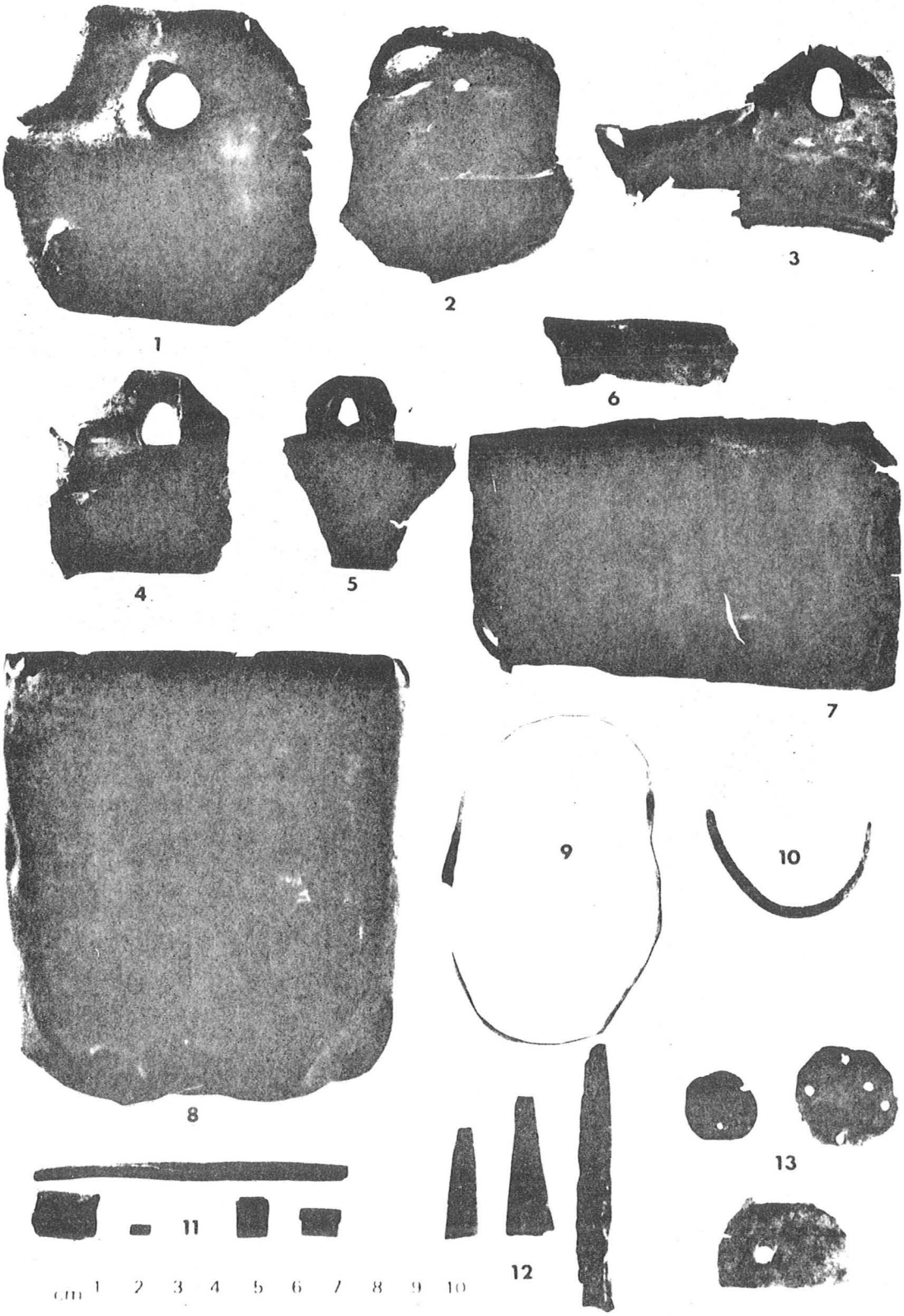
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FIG. 48. Hamilton brass artifacts.

1-2 Brass finger rings.

3-4 Earrings.

5. Clothing fasteners.

6. Wire object of unknown use.

7-13 Projectile points of sheet brass.

14. Brass knife blade fragment with small edge serrations.

15. Blade edge ground on end of rectangular piece of sheet brass.

16. Knife fashioned from sheet brass. Note rolled edge for handle.

17. Serrated brass piece with end bevelled to a sharp edge.

18. Brass awl made from scrap brass. Note rolled pointed end.

19. Brass awl.

20. Brass needles.

21. Brass fish hook fragment.

22. Rolled brass smoking pipe.

23. Hawk bell fragments.

24. Brass picture frame fragment ?

25. Slightly concave, semicircular piece of brass, use unknown.

26. Circular piece of brass with punched holes, use unknown.

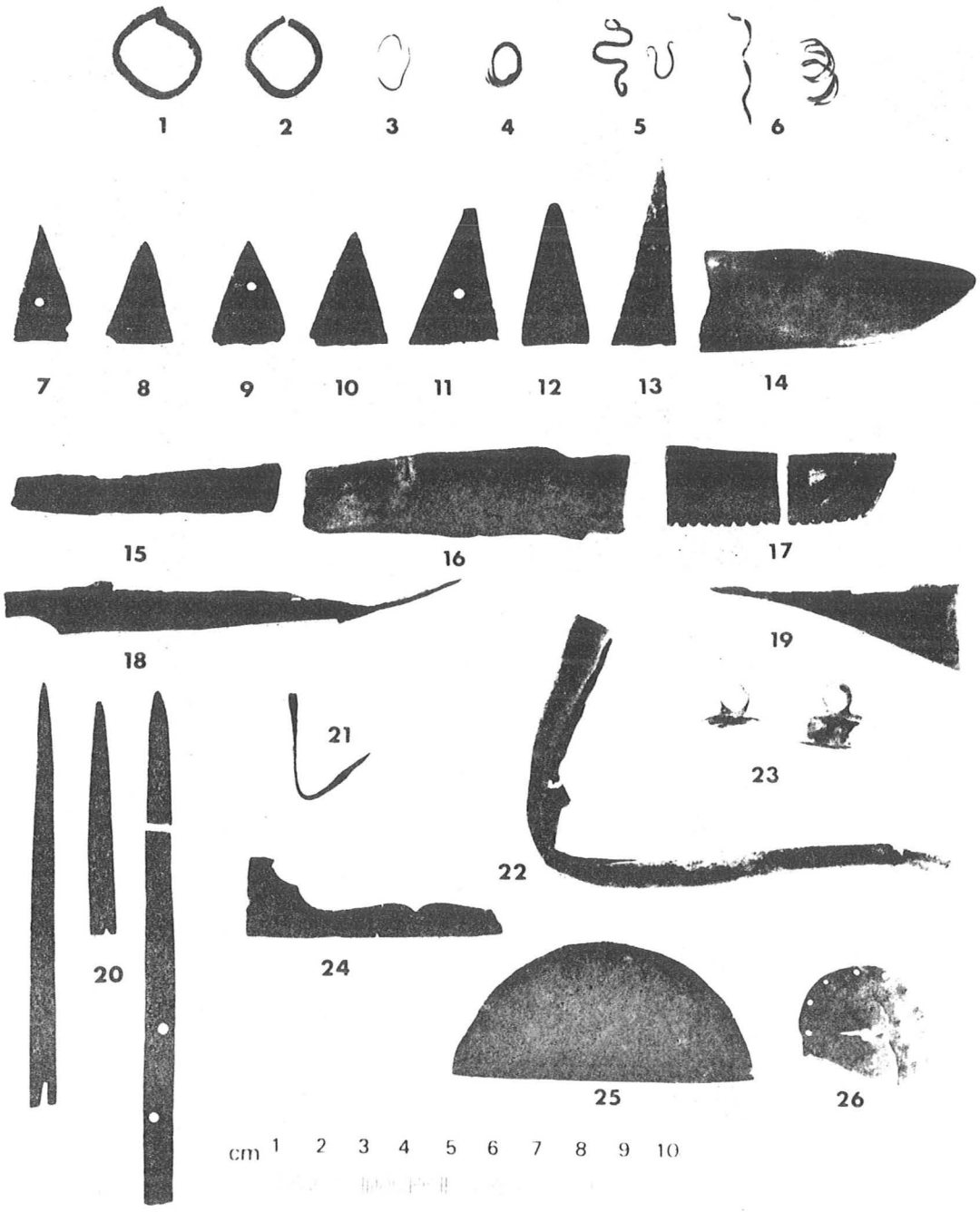
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FIG. 49. Hamilton iron artifacts.

1. Axe fragment showing use as wedge. Attempt has been made to cut the blade into two segments. Straight top edge.

2. Iron axe, straight top edge.

3. Iron axe with curved top edge.

4. Iron celt.

5. Iron wedge.

6-7 Iron clasp-knife blades.

8. Collared rat tail knife.

9. Knife blade fragment with part of blade edge rolled to create a handle.

10. Bayonette type iron awl.

11. Iron awl.

12. Bipointed iron awl likely fashioned from kettle bail.

13. Dagger or lance head.


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