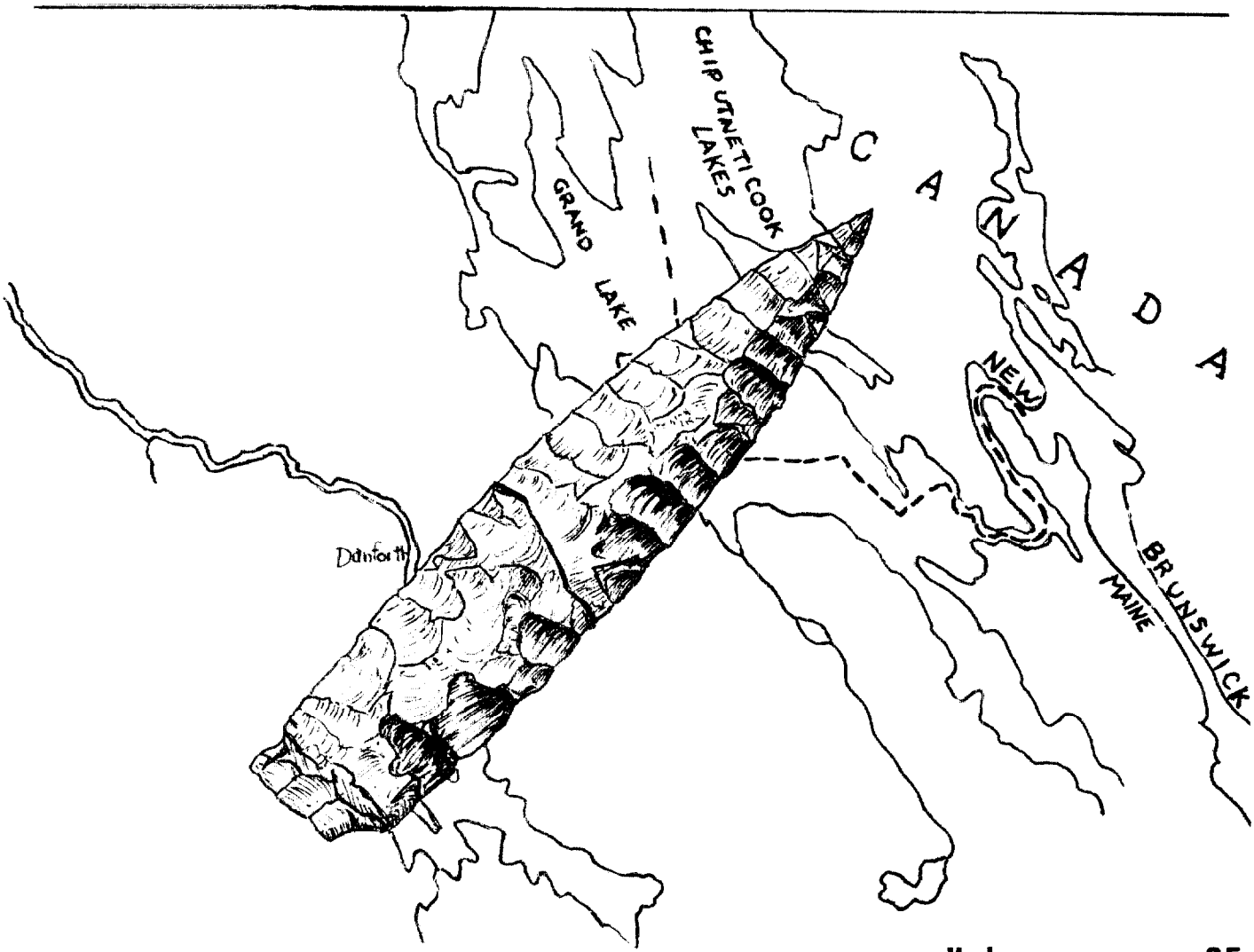
THE MAINE ARCHAEOLOGICAL SOCIETY INC. BULLETIN



Volume 25

Number 2

Fall 1985

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THE MAINE ARCHAEOLOGICAL SOCIETY BULLETIN

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Cover Design by David Putnam from the Eddie Brown Collection

LETTER FROM THE PRESIDENT

I hope this finds all well with you. As this summer draws to a close I look back on a summer that was for me very exciting. Several projects and field schools were conducted and the data they produce will, no doubt, prove interesting.

I'm sure that many of our members pursued their usual river bank walks and generally kept their eyes open for things archaeological. I know I did and picked up numerous pieces from the eroded banks. Among the most exciting things I found were three small pottery fragments that Jim Petersen identified as pseudo-scalloped, grit tempered, undecorated pottery from the early Ceramic era, 400 BC-300 AD. This site, 106.21 on the Pleasant River in Piscataquis County, has yielded many artifacts from the Mid-Archaic but this was the first pottery every found there.

Another exciting find came when Mike Brigham noticed several deep, charcoal stains showing in the sharply eroded bank at the forks of the Pleasant, site 106.29. This place is across from the sandy field where MAS member Scott Kirby found a Paleo era plano point and the red ochre burial that has produced the earliest C14 date for such a grave, 5900 BP. (Site 106.23). We used a spade to cut the bank down perpendicularly to sterile material so we could see these charcoal stains more clearly. In the several charcoal lenses fire-cracked rock showed up in small amounts. Once we had cleaned up the face of the bank we used Mike's video tape equipment to record the stratigraphy. We were very happy, there seemed to be seven layers of charcoal, and the depth was about five feet.

If we could find another deeply stratified site, such as the Brigham site in Milo, we would be very satisfied.

I took Nathan Hamilton, like Jim Petersen a trained archaeologist, over to 106.29 to show him our "seven" charcoal horizons. Nate stepped ashore at the bank and, with trowel and spade, exposed, measured, drew and photographed thirty-five horizons! Nate said that with the exception of the Brigham site, this was the best stratigraphy he had ever seen!

Obviously much more has to be done at this place. We do have some tantalizing possibilities but they must wait for professional attention. Mike and I are content. If this site proves to be what it seems, namely a deep, well stratified site with good charcoal preservation, it will require a multi-disciplinary effort that has the personnel and labs and equipment necessary to deal with the tough problems common to the interior of Maine.

I hope to see you at our Fall '85 MAS Meeting in Winthrop, Maine at the end of October. We have an excellent program and hope to have archaeological materials on display.

THE MAINE ARCHAEOLOGICAL SOCIETY, INC.
FALL MEETING

Sunday, October 27
Winthrop Grade School All-Purpose Room

9:30	Directors' Meeting
10:00	Arrive and set up displays
11:00	Dick Doyle: Site Report on Sebasticook River
	Dave Cook: Sebasticook River as a Prehistoric Travel Route
12:00	Lunch (bring your own, we provide dessert and coffee or tea)
1:00	Business meeting, Election of 1985-86 officers
1:30	Riley Sunderland: Viking York: The English Pompeii

THE EDDIE BROWN COLLECTION OF THE WEST GRAND LAKE AREA, MAINE

Diane Kopec
The Abbe Museum
Bar Harbor

INTRODUCTION

Eddie Brown, of Grand Lake Stream, Maine, developed an interest in Indian history while in his youth. As a fishing guide for many years, his work provided him with ample opportunities to locate prehistoric sites and collect artifacts from these locations.

The Brown Collection consists of 5,540 specimens which have a wide range of artifact types. Brown collected from 38 sites located on a major group of lakes in Washington County and bordering Penobscot County between 45°00´and 45° 20´North Lattitude and 67° 35´and 68° 5´West Longitude (Figure 1).

The Maine State Museum acquired this collection from Mr. and Mrs. Eddie Brown in 1982 and the preliminary analysis of this collection began in the spring of 1983. A formal inventory, initial artifact analysis, and field verification of sites was subsequently undertaken to preserve and increase the data available from this collection (Kopec 1984).

The Brown Collection was surface collected and excavated without stratigraphic controls, thus the data which can be derived from such specimens is limited. Therefore, caution must be exercised in any discussion of the cultural history. This paper is, therefore, not intended to interpret the cultural history based on such limited data. Its purpose is to present a summary of the known artifacts and sites from the West Grand Lake area and to provide descriptions of the diagnostic bifaces for comparative purposes.

First, a summary of various aspects of the physical environment, along with historic land use, provides the "Setting of the Study Area"; "Historic Accounts and Previous Research" completes the background for the Brown Collection. For the purpose of this paper, "The Artifacts" section emphasizes the diagnostic stemmed and nonstemmed bifaces and comparisons are drawn between those of the Brown Collection and others in the northeast. "The Sites" section examines site locations and discusses the major sites. The final section summarizes the Brown Collection as a representative prehistoric sampling from the West Grand Lake area.

SETTING OF THE STUDY AREA

Physical

The Norumbega-Fredericton Fault runs through the study area trending northeast-southwest (Ludman 1980:3). Areas northwest of the fault lie within the Miramichi Anticlinorium and bedrock exposed here is primarily granitic plutons of Devonian age. Areas southeast of the fault lie within the Fredericton Trough of Early Devonian age. Exposed bedrock here consists of calcareous and non-calcareous and sandstones, siltstones with locally prominent slate interbeds, quartzofelspathic wackes and phyllites (Ludman 1982:5). Topographically, granitic bedrock hills, which rise to elevations of 500-900 ft., dominate the area. Between these hills lie lakes, rivers and swamps.

Till, gravel and swamp comprise the three major surficial covers of this area, although bedrock lies at the surface in many hilly regions. Till, deposited directly by glacial ice, consists here of a mixture of sand and silt with boulders. This sediment has been shaped into glacially-streamlined landforms such as fluted ridges throughout the region (Thompson and Borns 1984). In the study area these streamlined landforms are well expressed as peninsulas jutting into the lakes. Interestingly, a large number of sites are located on these well-drained features. Most of the gravel within the study area lie within eskers. Several sites are located on one such landform.

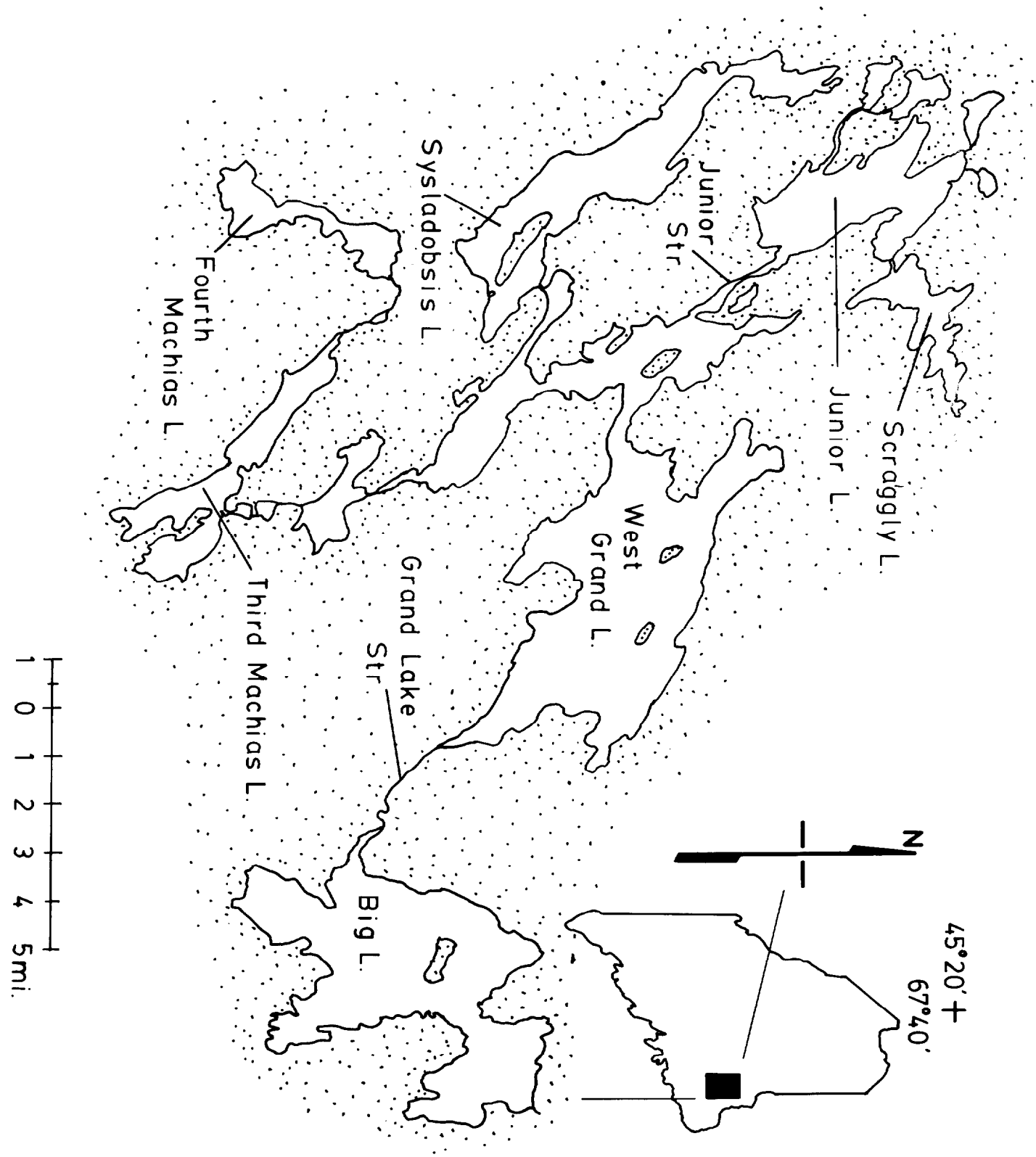

Figure 1. The Study Area - West Grand Lake

Glacial ice retreated from southwestern Maine between 13,000 and 12,000 years ago allowing many portions of the adjacent Maine coast to undergo marine submergence (Stuiver and Borns 1975). However, within the study area only Big Lake appears to be within the area of submergence. This is based on interpretation of deltaic structures exposed in a gravel pit north of Cass Cove, Big Lake, and west of Musquash Stream (William Holland, personal communication). If these structures are marine in origin, the sea may have stood at a relative elevation of 259 ft. in this area.

The study area is in a region of northern hardwoods-spruce forest. The dominant components today are sugar maple (Acer saccharum), yellow birch (Betula alleghaniensis), beech (Fagus grandifolia), red spruce (Picea rubens), and hemlock (Tsuga canadensis). Present in lesser amounts are balsam fir (Abies balsamea), red maple (Acer rubrum), mountain maple (Acer spicatum), paper birch (Betula papyrifera), red pine (Pinus resinosa), eastern white pine (Pinus strobus), and American basswood (Tilia americana) (Küchler 1964; Maine Forest Service 1981).

Historic Land Use

Historic land use - a tannery, boat landings, camps, logging and dams - of the study area, and in particular Grand Lake Stream, has been extensive. The tannery, constructed in 1870, had a large impact upon the stream. A canal 20 ft. wide and 25 ft. deep was dug for what was then the largest tannery in the world; in addition, the tannery and supporting camps were erected.

Logs, from which the bark was stripped for the tanning process, were driven from Grand Lake, through Grand Lake Stream to Big Lake, and onto Mill Town (Atkinson 1920). Similar log runs, which impacted the stream's banks, continued in this area until the mid-1950s (Feher, personal communication to Sanger).

Present day land use consists of sporting activities, boat landings, camping and picnicking grounds, private camps, and logging operations. Many of the prehistoric sites are located at these areas of modern activity. One factor contributing to the modification of sites is the artificially high lake levels resulting from numerous dams. Many sites are presently under water and, even at times of low water, it is difficult to determine whether sites are completely under water or no longer exist.

HISTORIC ACCOUNTS AND PREVIOUS RESEARCH

The lakes from which Brown collected make up part of what Ganong referred to as the 'Scoodic Chain'. As early as the mid-18th century, the waterways of Washington County were recorded to have been major aboriginal canoe routes along which settlements were established. One of the most important travel routes, connecting the St. John River to the Penobscot River and/or Passamaquoddy Bay, went through the Scoodic Chain (1899).

Local stories tell of aboriginal travel through these lakes. Records indicate that members of the Passamaquoddy tribe traveled from Passamaquoddy Bay to the head of Big Lake, where they either camped or portaged to Grand Lake for camping. Colonel Allen's journal of 1793 states: "On the lakes you will find numbers of Indians from Canada, St. Johns, Penobscot and the Mickmack Country, persuing their several employments agreeable to the seasons. Some constant residents, and many of them for years not seen on the sea coast, being perpetually on the move" (Atkinson 1920:1-6).

Some of the sites referred to in the historic accounts are represented in amateur collections from the study area. In addition to Brown's, a few other collections, including that of Steve Feher (1969, 1976) have been reported. Systematic archaeological research in the study area did not begin until 1982 when Sanger conducted a limited survey and testing operation.

RESEARCH METHODS

Initial laboratory work consisted of organizing the artifacts and site records,

coordinating the Brown records with the state site maps, and preparing the artifacts for cataloguing. The collection was registered and then catalogued in both a written and a more detailed computer format.

The field area was visited twice in conjunction with the laboratory analysis of the Brown Collection. The first field visit relocated some of the sites reported by Brown; the second field visit checked additional sites, collected lithic samples, and determined the amount of disturbance at those sites rich in cultural remains. Information from both field visits allowed the preparation of Site Survey Records and the entry of site locations on quadrangle maps.

Further laboratory work included the examination and measurement of selected attributes for all tool classes. These attributes were recorded for each artifact in the computer catalog. However, no attempt has been made to perform an attribute analysis of the recorded data for two reasons. First, time and scope prohibited this method of analysis. Secondly, because this collection lacks independent stratigraphic data, our present knowledge of Maine prehistory would not at this time be greatly expanded by attribute analysis of specimens collected under these conditions.

Therefore, the diagnostic artifacts of the stemmed and nonstemmed biface classes were placed into previously established cultural/chronological groupings. The following section summarizes the various artifact classes and presents descriptions of selected attributes of the diagnostic bifaces within their groupings.

THE ARTIFACTS

The 5,540 specimens in the Brown Collection represent a wide range of artifacts, with the most abundant being stone tools. The stone tools comprise 24 classes including, but not limited to, stemmed and nonstemmed bifaces, drills, scrapers, celts, gouges, plummets, axes, grooved stones, abraders, pendants, slate points and hammerstones. The lithic materials utilized in the production of these tools vary and include meta-sedimentary rocks such as sandstone, siltstone, and slate; greenstone, fine-grained volcanic, felsite, quartzite, quartz, and various forms of cryptocrystalline quartz.

In addition to stone tools, the collection contains pottery with tempering of both grit and shell with stamped and impressed decorations, including several sherds of Vinette I. Small amounts of red ochre, bone, and charcoal, along with a number of unusual items such as a copper stemmed point, a tiny clay bowl and trade beads are also a part of this collection. Historic artifacts including pipe bowls and stems, a ceramic doll fragment and a slate writing pencil round out the collection.

Following are descriptions and a discussion of the diagnostic bifaces within established cultural/chronological groupings. The descriptions for all but the Paleo-Indian and Early Archaic periods are presented in Table 1. The discussion includes comparisons with New York and/or Massachusetts types to provide a minimal cultural history within this provisional framework. When possible, dates and cultural affiliations with Maine-Maritime collections are also presented in the following discussion.

Paleo-Indian Period

A single fluted point is present within the Brown Collection (Plate 1, left). This well-made specimen is small, measuring 21mm in width by 50mm in length, with both surfaces fluted; one of the flutes extends the length of the blade. The blade is serrated as a result of the parallel flaking of the blade edges and the concave base is unthinned. It is produced from red jasper with blue and white marbling. In Maine fluted points are found at the Vail site in western Maine (Gramly 1982) and in the Munsungan Lake area in northcentral Maine (Bonnichson n.d.).
(Editor's Note: See Spiess this issue.)

Late Paleo-Indian Period

The collection contains one plano-like point which measures 20mm in width and 98mm in length (Plate 1, right). The lanceolate-shaped blade is thin with parallel flake scars along the edges and the slightly

concave base is thinned. It is highly weathered, but appears to be of volcanic lithology. Similar points are found from southern Maine near Sebago Lake (housed at the University of Maine at Orono) to northwestern Maine at Seboomook Lake (Hamilton et al. 1984: 21-23).

Early Archaic Period

Four unique specimens may represent the Early Archaic period (Plate 2). A bifurcated-base point, measuring 27mm in width and 31mm in length, has one complete shoulder which flares to a narrow angle (Plate 2, left). The base and ears are thinned and it is made from a fine-grained volcanic. This specimen is quite different from others found in Maine, but variations of Early Archaic bifurcated-base points have been found at the Ormsby Site on the Androscoggin River in Brunswick (Sanger 1979: 25), in the Blue Hill Bay area, and at Crawford Pond on the St. George's River in Warren (Spiess et al. 1983: 231-232).

The three remaining specimens all have serrated blade edges. The first is fragmentary; the tip, shoulders, stem and base are broken (Plate 2, second from left). The blade is triangular, the blade edges serrated, and the shoulders well-defined with wide and exaggerated barbs. The stem expands slightly, but the pronounced barbs result in deep corner notches. It is made from a pink and brown jasper. Bifaces similar to this specimen are not reported in Maine literature, but it shares a likeness to some Early Archaic specimens in such traits as the serrated blade and wide, pronounced barbs.

A Kirk-like point, complete except for portions of the shoulders and stem, measures 25mm in width by 59mm in length (Plate 2, third from left). The blade edges are formed by parallel flaking and are serrated. Because of the fragmentary nature of the shoulders and stem the notching cannot be defined, but one shoulder has a well-pronounced barb. The base is concave and thinned. It is made from a cryptocrystalline quartz. This biface is similar to Kirk points found in West Virginia (Broyles 1966: 2-23). A Kirk-like side notched biface occurs at Newbury Neck in Hancock County (Sanger 1979: 23-25).

The last specimen possibly representing the Early Archaic, a moderately-sized biface measuring 29mm in width and 62mm in length, is made from a flake (Plate 2, right). The blade is curved in profile resulting in one concave surface. The blade edges, formed by the removal of large, parallel flakes, are serrated. The base is very concave and thinned by the removal of two deep flakes. It is produced from a black chert. Even though no bifaces resembling this specimen are reported for Maine, it is technologically similar to other Early Archaic points in its serrated blade edges and extensively thinned base.

Middle Archaic Period

Thirteen specimens with attributes similar to the Neville (Plate 3, top row) and Stark types and their variants (Plate 3, center and bottom rows) are present in the collection (Table 1). The Stark-like specimens fall within the size range in length and width of the Stark type, although two of the Neville-like specimens are longer than the size range of Neville and Neville variants (Dincauze 1976: 51). According to Dincauze (1976: 34) Stark points are only suitable for piercing. Of the bifaces in this group the three specimens with pointed bases (second row, left to center) have tips which appear to have functioned as perforator tips.

Since the Neville and Stark point types were described by Dincauze for southern New England (1976: 26-38), bifaces resembling these types and their variants are being recognized in numerous sites in Maine. They occur at the central coast area, the Goddard site in Blue Hill (Bourque and Cox 1981: 7) and the Basin site on Vinalhaven (Bourque 1971: 43-45), along the Penobscot drainage at the Hirundo site (Sanger et al. 1977) and on the lower Penobscot River (Sanger 1984: 27), in northwestern Maine at the Moosehead Lake region (Hamilton et al. 1984: 9), and especially in the western section of Maine (Spiess et al. 1983).

Late Archaic Period

Stemmed bifaces reminiscent of the Moorehead phase of the Maritime Archaic complex, the Vergennes-Brewerton phases of the Laurentian tradition and the Susquehanna tradition are all present in the collection.

Moorehead phase of the Maritime Archaic complex: The thirteen specimens comprising this grouping are placed into three style variations which are reported in Table 1 (Plate 4). The first variation (Plate 4, bottom row) is found at numerous sites in the northeast including the Turner Farm site on North Haven Island in the Penobscot Bay, Maine (Bourque 1975:37) and the Cow Point Site in New Brunswick (Sanger 1973: 72, 208; Plate 17). The third variation (Plate 4, top row, center to right) is similar to those found at Archaic cemeteries in Maine, for example, the Bradley Cemetery (Bourque 1971: 50, Plate 31).

Laurentian tradition: Two distinctive type-like variations, Brewerton and Otter Creek, are present in the collection. The Brewerton-like group contains a good deal of variation which can be seen in Table 1/Plate 5. These specimens resemble some of the Brewerton varieties found in New England (Ritchie 1971: 16-18). In addition, Robert Funk of the New York State Museum examined a number of these specimens and pronounced them to be of the Brewerton phase.

The Otter Creek-like specimens (Plate 6) are similar to other wide-notched specimens found in Maine from the central coast area at the Goddard site (Bourque and Cox 1981: 7-8) through central Maine at the Hirundo site (Sanger 1979: 36-45). Comparable specimens occur from the Spednik Lake area in the Crocker collection which is housed at the University of Maine at Orono (Sanger 1975).

Susquehanna tradition: One hundred and twenty-four specimens comprise this grouping which consists of two major style variations based on the stem: contracting and expanding (Table 1/ Plate 7). The contracting stem grouping (Plate 7, top and bottom rows) contain a number of points similar to the Snook Kill type of New York (Ritchie 1971) or Atlantic points of Massachusetts (Dincauze 1972). Susquehanna related points are found throughout the northeast. In Maine they extend from the coast at the Turner Farm site (Bourque 1975), inland to the Hirundo site (Sanger et al. 1977) and the Young site in Alton (Borstel 1982), and northeast to the Mud Lake Stream site in southwestern New Brunswick (Deal 1984: 11).

Forty-three miscellaneous specimens are placed in the Late Archaic period. This grouping consists of many variations which appear to be from the Late Archaic time period based on attributes; however, they do not resemble recognized types in the northeast.

Late Archaic/Early Ceramic Period

Ninety-two specimens comprise a possible Late Archaic / Early Ceramic grouping. Most of the specimens have contracting stems, but a few possess expanding stems. This grouping (Table 1/ Plate 8) includes many specimens which have some similarities to a number of New York and Massachusetts types (Merrimack, Rossville, Poplar Island and Orient Fishtail), but application of such type-like names is avoided here because of overlapping descriptions of these types and similarities to other forms found in Maine.

Early Ceramic Period

Fifty-six specimens, most of which are finely-notched stemmed bifaces, make up this grouping. A number are similar to the Meadowood type of New York (Table 1/Plate 9, bottom row). There is an increase in this group from aceramic groups in the number of bifaces made from cryptocrystalline quartz. Specimens resembling those with the box-like necks are found in Maine at the Young site (Borstel 1982: 22-25) and at the coast at Flye Point near Blue Hill (Cox 1983:26).

Three specimens, which are not finely-notched, are also placed into this chronological grouping. Two are bipointed specimens (Plate 9, top row, right and center) which have similarities to early ceramic bipoints at the Oxbow site in New Brunswick (Allen 1980: 9-12, 21).

The third specimen (Plate 9, top tow, left) is a large biface, the tip of which has been reworked into a drill. The blade edges are flattened, shiny and striated. As a result of the blade edge wear, the shoulders have probably taken on a different configuration; the base is concave and thinned. The point is made from a fine-grained volcanic. This form is similar to the Fox Creek type (Steubenville) which is found from the Ohio Valley eastward (Ritchie 1971: preface, 51).

Ceramic Period

Seventy-four small to moderately-sized notched specimens comprise this grouping (Table 1/Plate 10, top row). As with specimens of the Early Ceramic grouping, most of the unweathered specimens are made from cryptocrystalline quartz and quartz. These forms are common in Ceramic period sites in Maine, especially west of Washington County at sites such as Fernald Point in Southwest Harbor (Sanger 1980: 27, 91) and Flye Point in Brooklin (Cox 1983: 23-28).

Late Ceramic Period

Sixty-five narrow corner-notched stemmed bifaces (Table 1/Plate 10, bottom row), and 20 triangular nonstemmed bifaces (Table 1/Plate 11) represent two groupings within this period. Again, most of the unweathered specimens are produced from cryptocrystalline quartz, quartz and quartzite. The narrow corner-notched bifaces are typical of many Late Ceramic sites in Maine extending from downeast Maine to New Brunswick at the Carson Site on Passamaquoddy Bay (Sanger, personal communication).

Some of the nonstemmed bifaces have similarities in appearance to Archaic bifaces from the northeast (Dincauze 1976: 37), but due to lack of context they are not designated as such. Most, however, appear similar to others of the Late Ceramic time period in Maine and some are reminiscent of the Levanna type of New York, and one is Madison-like (Ritchie 1971: 31-34).

Seventy-seven specimens are termed miscellaneous. There is a great deal of variation within this group. Specimens range from parallel and contracting stemmed to expanding stemmed bifaces with deep side and corner notching. There could be a wide range of antiquity represented here, but such distinctions cannot be made confidently, as many of these specimens are fragmentary and/or extremely weathered.

THE SITES

An examination of geographical locations and directional orientations provides site distribution information for the 62 recorded sites in the study area. Brown recorded and/or collected from 38 of these sites, 28 of which are represented by diagnostic artifacts. The occupation periods of these 28 sites are summarized, followed by a more in-depth look at three specific site areas.

Seven geographical locations are selected for the site distribution examination (Figure 2). Of the selected geographic locations, lake inlets and outlets were favored for settlement with 32.3% (n=20) of the total recorded sites. Points of land were the second-most preferred location with 19.4% (n=12) of the recorded sites. These points (previously discussed in "Setting of the Study Area") are well-drained, glacially-streamlined forms which form peninsulas in the lakes. Lake shores, without the presence of streams, and thoroughfares (navigable passages connecting the lakes), follow points of land closely as preferred site locations with 16.1% (n=10) and 14.5% (n=9) of the recorded sites respectively. The least favored site locations were on islands, 6.5% (n=4), on streams, and at lake shores at streams, both with 4.8% (n=3) of the recorded sites. The most highly favored locations in the study area are similar, but not identical, to site distributions in the Moosehead Lake Region where 33.8% (n=27) of the sites were located at inlets and outlets, 25% (n=20) at lake shores away from streams and 15% (n=12) on points on the lakes (Hamilton et al. 1984: 27-35).

Figure 3 displays the directional orientations of the sites by their geographical locations. Thirty-five percent

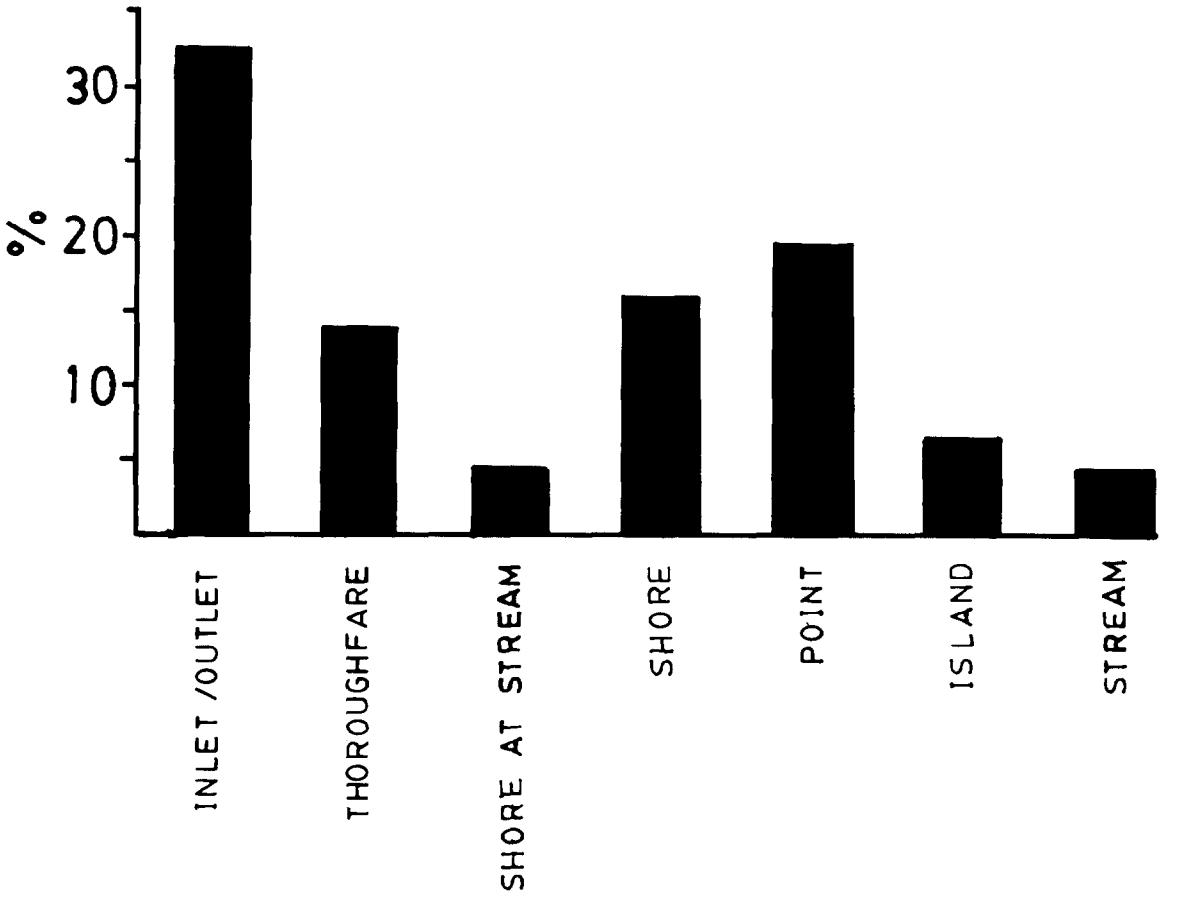

Figure 2. Site Distribution

(n=22) of the recorded sites face the southeast. The percentage oriented northeast and southwest are nearly identical at 26% (n=16) and 24% (n=15) respectively, followed by a northwest orientation of 15% (n=9) of the recorded sites. This pattern is not rigidly maintained for the specific geographical locations; however, most of the fluctuations are slight. The pattern is easily swayed by one site because the site counts, when broken down into geographical locations and directional orientations, are so low. The orientation of sites on islands, however, is a reverse of the pattern seen in the total sites. In summary, the greatest percentages of sites are located on lake inlets and outlets and have a southeast orientation.

Based on the 28 sites represented in the Brown Collection by diagnostic artifacts, the West Grand Lake area was possibly occupied from the Paleo-Indian through the Late Ceramic periods (Table 2). However, since the number of sites (5) occupied from the Paleo-Indian through the Middle Archaic periods is low (18%), and in some cases the occupation is based on single artifacts (Paleo- and Late Paleo-Indian periods), these early occupations should be viewed tentatively. The Late Archaic period is the most strongly represented period, with 25 of the 28 sites (89%) producing artifacts similar to Late Archaic styles. Usage of the West Grand Lake area appears to have decreased after that with only 50% of the 28 sites occupied from the Late Archaic through the Late Ceramic periods. Discussion of three of these site areas, those containing the largest number of artifacts and possibly covering the longest periods of occupation, follow.

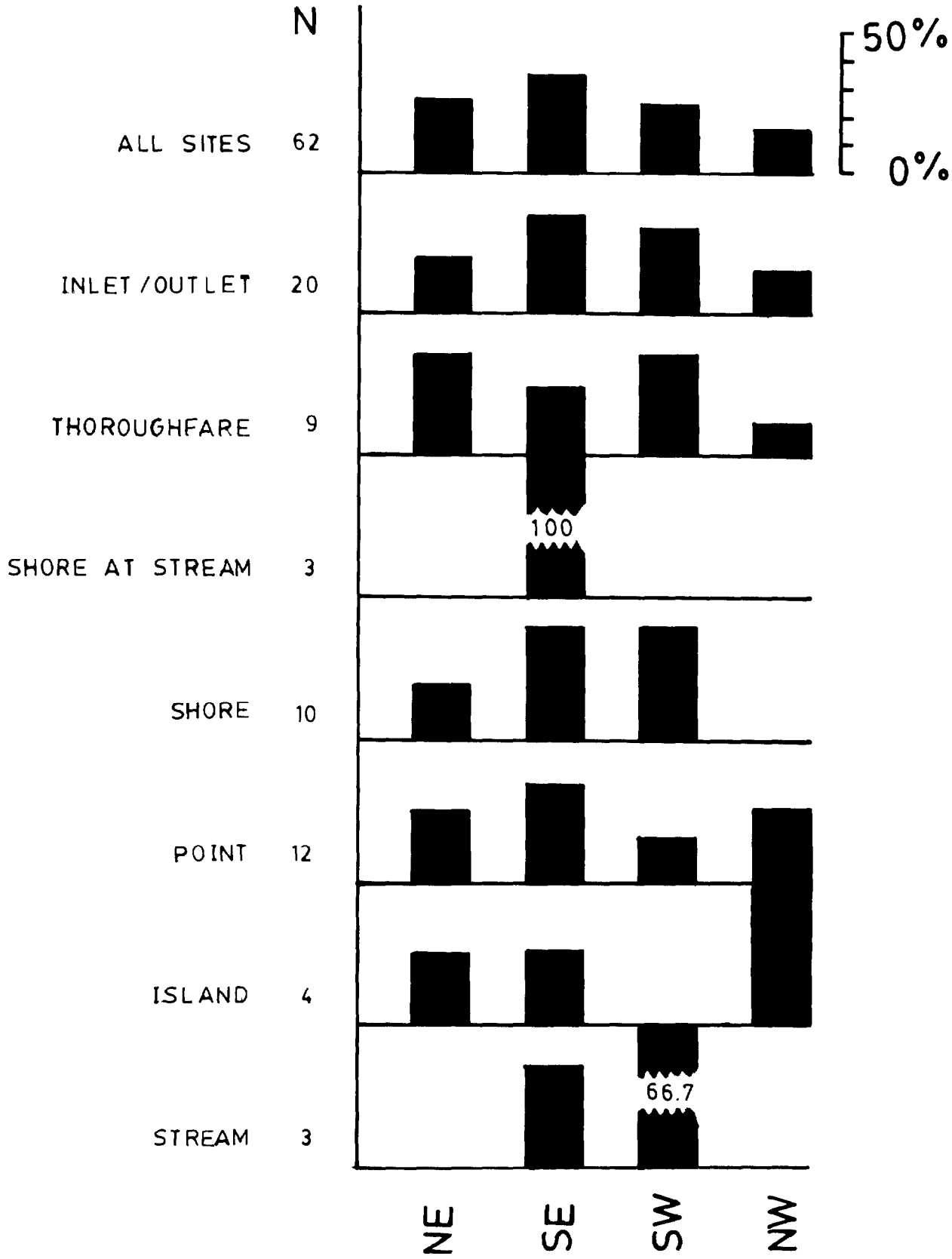

Figure 3. Site Orientation

Junior Stream - Quadrangle 111

Three sites located along Junior Stream (Figure 1) with a large number of artifacts (2711) suggest extensive usage of the thoroughfare. Points possibly representing the Early Archaic through the Late Ceramic period are among the artifacts from one of these sites.

At this site, one point reminiscent of Kirk-like points of the Early Archaic, as well as Neville and Stark-like points, commonly designated as being from the Middle Archaic period, are present. Both the Moorehead phase of the Maritime Archaic complex and the Vergennes-Brewerton phases of the Laurentian tradition of the Late Archiac period are possibly represented by stemmed bifaces. Gouges, plummets, a slate bayonet and a small amount of red ochre, artifacts commonly associated with this time period, also occur at this site.

Stemmed bifaces and a large number of perforators, typical of the Susquehanna tradition, are present. A possible Late Archaic/Early Ceramic period occupation is suggested based on stemmed bifaces reminiscent of this period. Several styles of bifaces, including a bipoint and one Fox Creek-like stemmed biface with the tip reworked into a drill, possibly represent the Early Ceramic period. Narrow-notched stemmed bifaces and a triangular nonstemmed biface, typically associated with the Late Ceramic period, are present. Trade beads and a large number of ceramic pipes also occur at the site.

Junior Stream also yielded a major amount of ceramics. Sherds of Vinette I (Plate 12) are present as well as ceramics exhibiting a wide range of decorative styles. Stamping (Plate 13) includes rocker top row, left and center), pseudo-scallop shell (top row, right), dentate-rocker (center row) and dentate (bottom row); fabric-impressed techniques (Plate 14) include corded-rocker (top row, corded (middle row) and cord wrapped stick (bottom row).

Grand Lake Stream, West - Quadrangle 94

Nine sites, mostly clustered around the mouth of the stream, lie within a 4.5 km stretch of West Grand Lake and Grand Lake Stream (Figure 1). Two of the sites on the eastern side of the stream together produced a total of 1051 artifacts. Based on Neville- and Stark-like stemmed bifaces, occupation of these sites possibly began during the Middle Archaic period. Artifacts reminiscent of the Late Archaic period are more numerous in the archaeological record than for any other period represented at these sites along Grand Lake Stream, suggesting more intensive utilization at this time. Stemmed bifaces, possibly representing the Moorehead phase of the Maritime Archaic, many Otter Creek-like points of the Vergennes phase of the Laurentian tradition, along with plummets, perforated pendants and gouges are present. Abundant stemmed bifaces and perforators characteristic of the Susquehanna tradition also occur at these sites. Among the artifacts possibly representing the Early Ceramic period are several Meadowood-like stemmed bifaces. Possible occupation began as early as the Middle Archaic period and continued through the Ceramic.

Brown excavated an area here containing an unknown number of burials. Artifacts include ground slate bayonets (Plate 15), stemmed bifaces of the Moorehead phase of the Maritime Archaic complex (Plate 16, top row), perforators of the Susquehanna tradition (Plate 16, bottom row), a perforated slate gorget, an incised flat pebble (Plate 17), and a number of bifaces possessing some attributes reminiscent of the Adena Culture (Sanger, personal communication) (Plates 17, 18). Red ochre is adhered to many of the stone tools and the slate bayonets have lineations which Spiess feels may be fabric-impressed (personal communication). Unfortunately, there are no proveniences for these artifacts to unravel this complicated burial sequence.

Grand Lake Stream, East - Quadrangle 95

Fifteen known sites are situated along the eastern portion of Grand Lake Stream and Big Lake (Figure 1). Of these sites, one suggests a major occupation based on the number of artifacts (1060), antiquity and uniqueness of a number of these artifacts.

The single fluted point, which Brown

found on green/blue clay during his excavations, comes from this site. However, occupation cannot be established based on the presence of one specimen. Three stemmed bifaces (Plate 2, left, second from left, right), including a bifurcate-based point, possibly represent the Early Archaic period followed by Neville- and Stark-like stemmed bifaces reminiscent of the Middle Archaic period. Stemmed bifaces of the Moorehead phase of the Maritime Archaic complex, the Vergennes-Brewerton phases of the Laurentian tradition, and the Susquehanna tradition, along with plummets and gouges similar to others believed to be of the Late Archaic period are present. There are a number of stemmed bifaces suggestive of the Late Archaic/Early Ceramic period including several resembling the Orient Fishtail type. Occupation continued through the Late Ceramic which is represented by narrow-notched stemmed bifaces and triangular nonstemmed bifaces. The copper point of the Brown collection is from this site.

In addition to this site's possible antiquity, expressed by artifacts reminiscent of the Paleo-Indian and Erly Archaic biface styles believed to represent an Early Archaic occuption which have not been observed elsewhere in Maine (Plate 2, left, second from left, and right).

SUMMARY

The Brown Collection, consisting of 5,540 artifacts and records, represents 38 sites located in a major lake region of Washington County. An extensive prehistoric occupation of this significant waterway system is expressed in the archaeological record with artifacts characteristic of all known cultural/chronological periods of Maine found within the Brown Collection.

The study area was possibly occupied from the Paleo-Indian period through the Late Ceramic period with some of the sites occupied during the Historic period. Occupation of the West Grand Lake area during the earliest periods of Maine prehistory cannot definitely be established at this time, however, because of the small number of diagnostic artifacts in the collection representative of these periods. The suggested Early Archaic occupation of this area, represented by a variety of point styles including one bifurcate-based point, extends eastward the previously known limit (the Penobscot River) of Early Archaic occupations in Maine (Spiess et al. 1983). Of these periods, the Late Archaic occuptions including the Moorehead phase of the Maritime Archaic complex, the Vergennes-Brewerton phases of the Laurentian tradition, and the Susquehanna tradition, are most strongly represented in the archaeological record. After the Late Archaic period, utilization of the area appears to have decreased (Table 2).

Most of the known culture history of this area is based on amateur collections without accompanying provenience data. The potential for future research in an area where archaeological activity has been extremely limited is evident in the number of sites and the number, antiquity and uniqueness of the artifacts of the Eddie Brown Collection.

ACKNOWLEDGEMENTS

The preliminary analysis of this collection was made possible through a grant from the Maine Historic Preservation Commission whose funding and support is appreciated.

The Department of Anthropology at the University of Maine at Orono provided laboratory and office space. I would like to thank Stephen Bicknell, University of Maine at Orono, who photographed the collection, Mr. and Mrs. Brown, who were extremely hospitable and helpful in clarifying their records of this collection, and Steve Feher, who kindly sent records and artifact drawings of his collection to Dr. David Sanger. Special thanks to Thomas V. Lowell, SUNY at Buffalo, for his contributions with the geology of the area and his critique, and Dr. David Sanger for his discussions and support during this project.

TABLE 1

SELECTED ATTRIBUTE DESCRIPTIONS
OF STEMMED AND NONSTEMMED BIFACES
FOR THE MIDDLE ARCHAIC THROUGH LATE CERAMIC PERIODS

Groupings	#	Size Range (mm) Length/Width	Blade Edge	Shoulders
Middle Archaic	13	40-93/16-31		
Neville-like	3	40-93/23-31	straight, 1 serrated	well defined narrow angle, slightly barbed
Stark-like	10	44-48/16-27	straight-excurvate	mod. defined wide angle, rounded
Late Archaic	2227			
Moorehead phase-Maritime Archaic c.	13	48-91+/13-26		
Variation 1	8	7-91+/21-26	straight-excurvate	mod. to well defined, wide angle, rounded
Variation 2	2	71-73/18-19	incurvate-excurvate	weakly to mod. defined, wide angle, rounded
Variation 3	3	48-53/13-16	straight-excurvate	weakly to mod. defined
Vergennes-Brewerton p. Laurentian tradition	47	25-100/17-36		
Brewerton-like	11	25-53/17-33	incurate-straight-excurvate	weakly to well defined some barbed
Otter Creek-like	36	50-100/18-36	incurvate-straight-excurvate	mod. to well defined
Susquehanna t.	124	41-112/26-58		
Contracting Stem	113	41-112/26-58	incurvate-straight-excurvate	well defined, flaring; or wide angle' rounded
Expanding Stem	11	62-85/28-42	incurvate straight-excurvate	flaring, more rounded than angular
Miscellaneous	43			
L. Archaic/E. Ceramic	92	29-82/13-30		
Contracting Stem		29-82/13-30	straight-	weakly to well defined
Expanding		36-60/12-22	excurvate	weakly defined
Early Ceramic	56	25-59/14-31	straight-excurvate	well defined some barbed
Ceramic	74	27-74/11-34	straight-excurvate	well defined, some barbed
Late Ceramic	65	27-91/16-31		
Stemmed		31-91/16-31	straight-excurvate, some serrated	well defined, barbed
Triangular Nonstemmed		27-55/16-31	incurvate-straight-excurvate	
Miscellaneous	77			

Notch	Stem	Base	Material	Plate #
	contracting to parallel	concave, thinned	quartz fine- grained volcanic	3-top row
	contracting	convex to pointed	volcanic metasedimentary quartz	3-center and bottom rows
				4
	contracting	convex	volcanics (mostly rhyolite and felsite)	4-bottom row
	slight expansion at base	convex	fine grained volcanic	4-top row, left & second from left
	contracting	unfinished	volcanic	4-top row center to right
side & corner, narrow & deep, wide & shallow	expanding	concave-straight convex, some earred	volcanic fine-grained chert quartz similar to NY flint	5
wide side & corner	expanding	concave-straight	volcanic metasedimentary	6
	contracting	straight convex	felsite volcanic metasedimentary 2 similar to NY flint	7-top and bottom rows
	expanding (constricted neck)	convex	felsite	7-center row
				8
	contracting	convex to pointed	volcanic (including felsite metasedimentary quartzite quartz	
	expanding (constricted neck)	concave	cryptocrystalline quartz volcanic metasedimentary	9-bottom row
side & corner, fine	expanding	straight-convex	cryptocrystalline quartz quartz metasedimentary volcanic (including felsite)	10-top row
wide corner, 3mm	expanding	straight-		
narrow corner, 3mm	expanding	convex-straight-concave	cryptocrystalline quartz quartz quartzite felsite	10-bottom row
		concave, thinned	cryptocrystalline quartz quartzite volcanic (including felsite)	11

Table 2
Cultural/chronological periods
represented by sites of the Brown Collection

Sites	Paleo	L. Paleo	Early Archaic	Middle Archaic	Late Archaic				Late Archaic/ Early Ceramic	Early Ceramic	Ceramic	Late Ceramic
					Maritime Archaic	Laurentian	Susquehanna	General*				
94. 1						X						
8					X			X				
9					X	X	X.		X	X	X	X
10		X				X			X	X	X	X
12									X			
15										X		
20							X				X	
21								X				
23									X		X	
24								X				
25								X				
26								X			X	
27				X	X	X	X	X	X	X	X	X
28								X				
29								X				
95. 3	X		X	X	X	X	X	X	X	X	X	X
5								X				
10								X	X			
11								X				
14								X				
110. 3					X	X	X		X		X	X
111. 1								X				
2			X	X	X	X	X		X	X	X	X
4								X				
5				X		X	X		X			X
6								X				
7						X						X
9						X	X					

*Artifacts are diagnostic of the Late Archaic period but cannot be placed into one of the specific Late Archaic Groupings.

PLATES

Plate 1. Nonstemmed Bifaces--Paleo and Late-Paleo Indian Periods

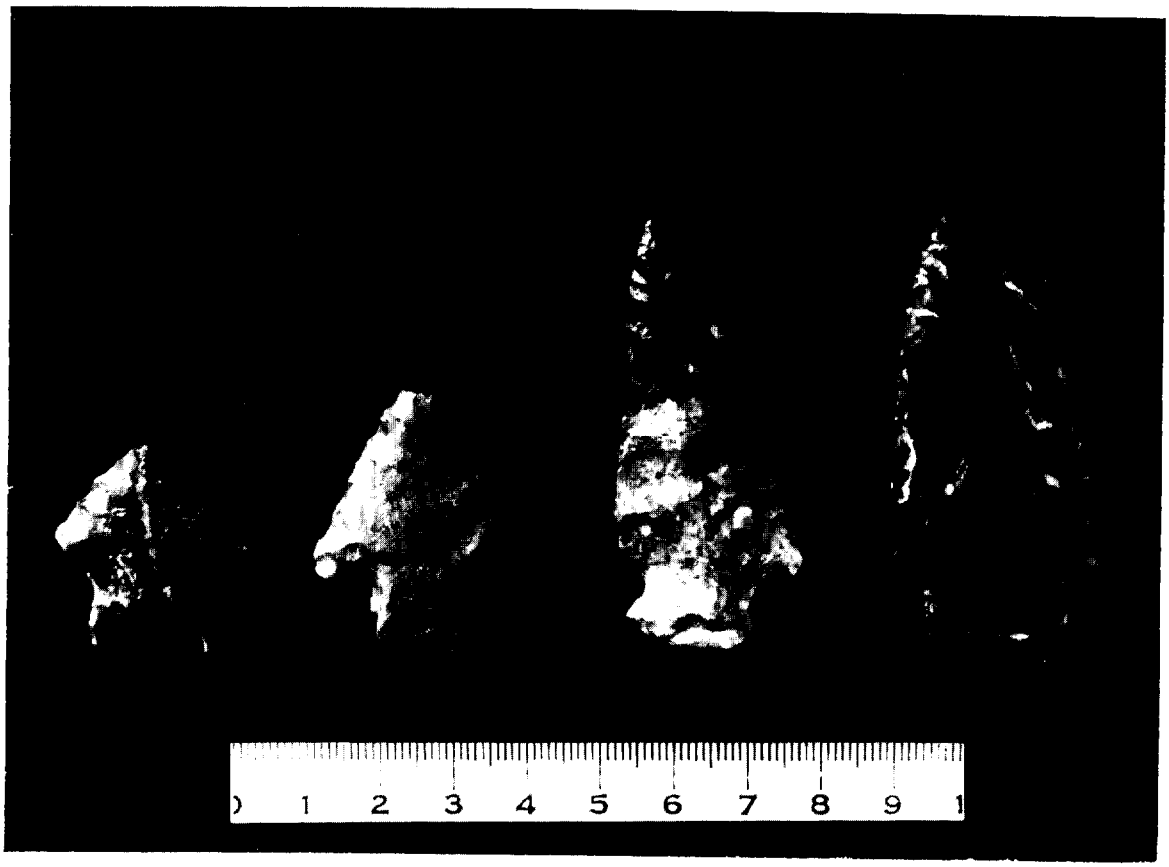

Plate 2. Stemmed Bifaces--Early Archaic Period

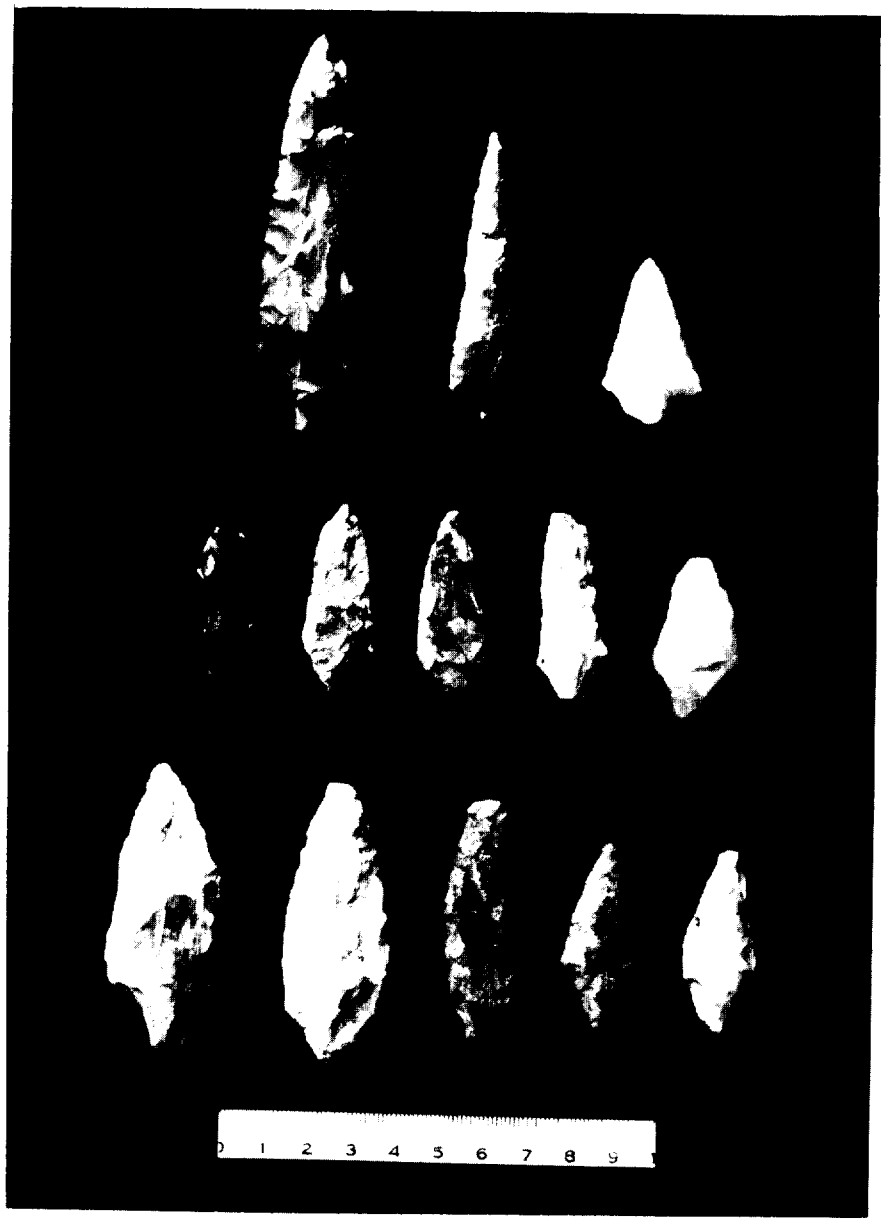

Plate 3. Stemmed Bifaces--Middle Archaic Period

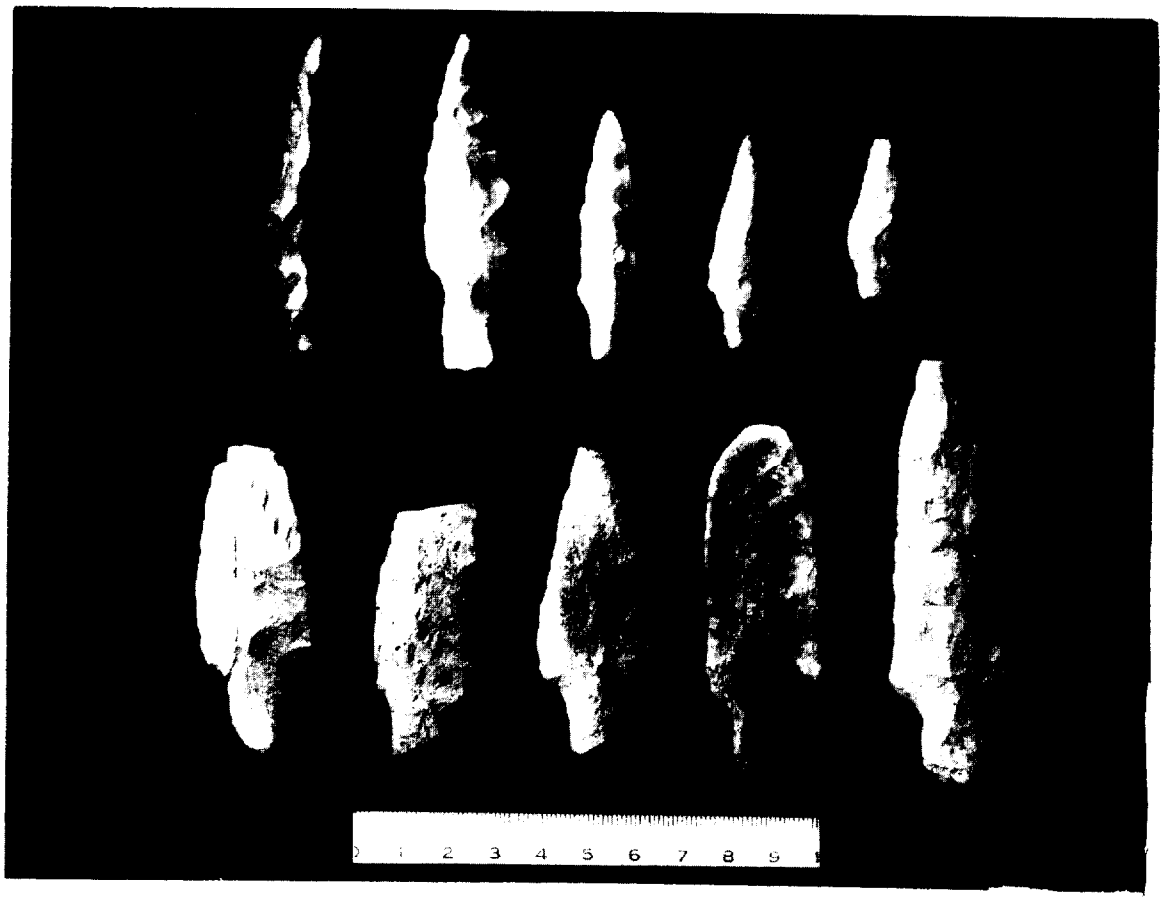

Plate 4. Stemmed Bifaces--Maritime Archaic, Moorehead Phase

Plate 5. Stemmed Bifaces--Laurentian Tradition, Vergennes-Brewerton Phases

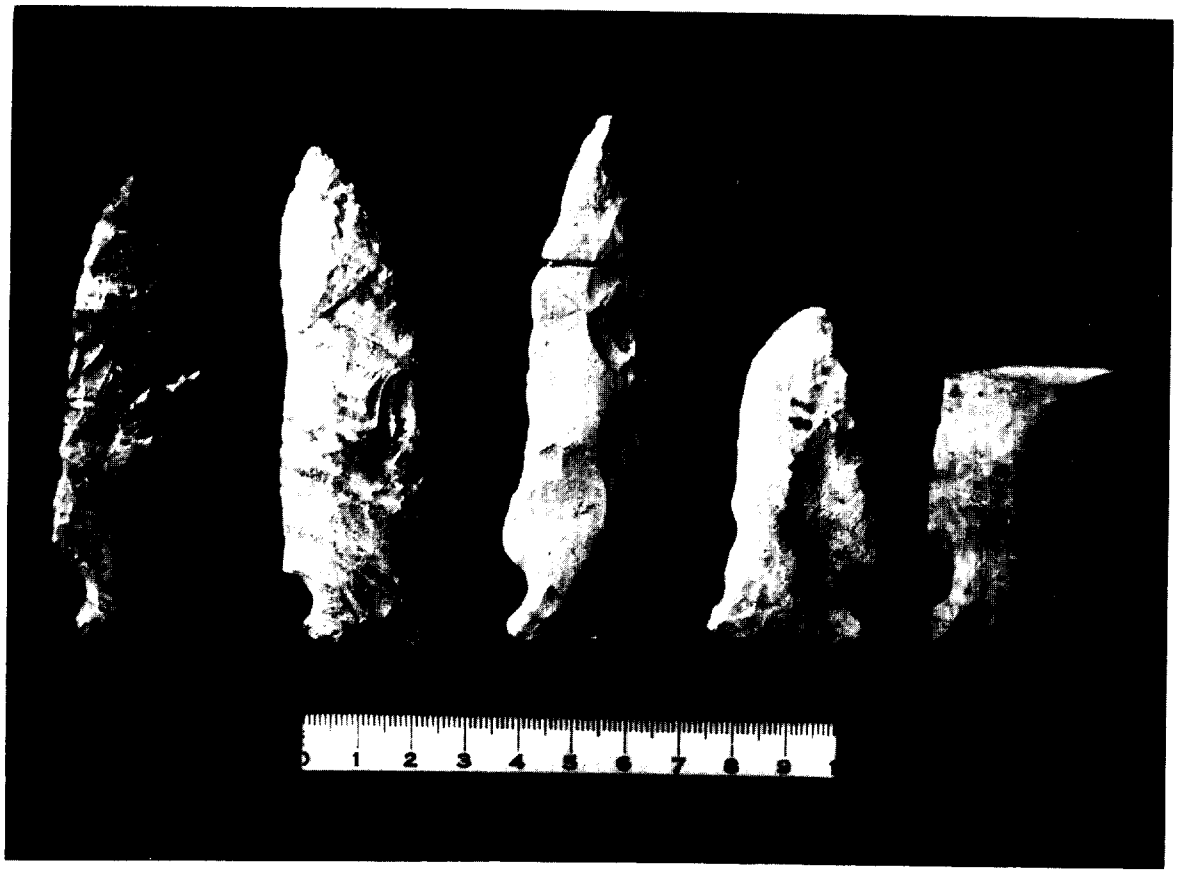

Plate 6. Stemmed Bifaces-- Laurentian Tradition, Vergennes-Brewerton Phases

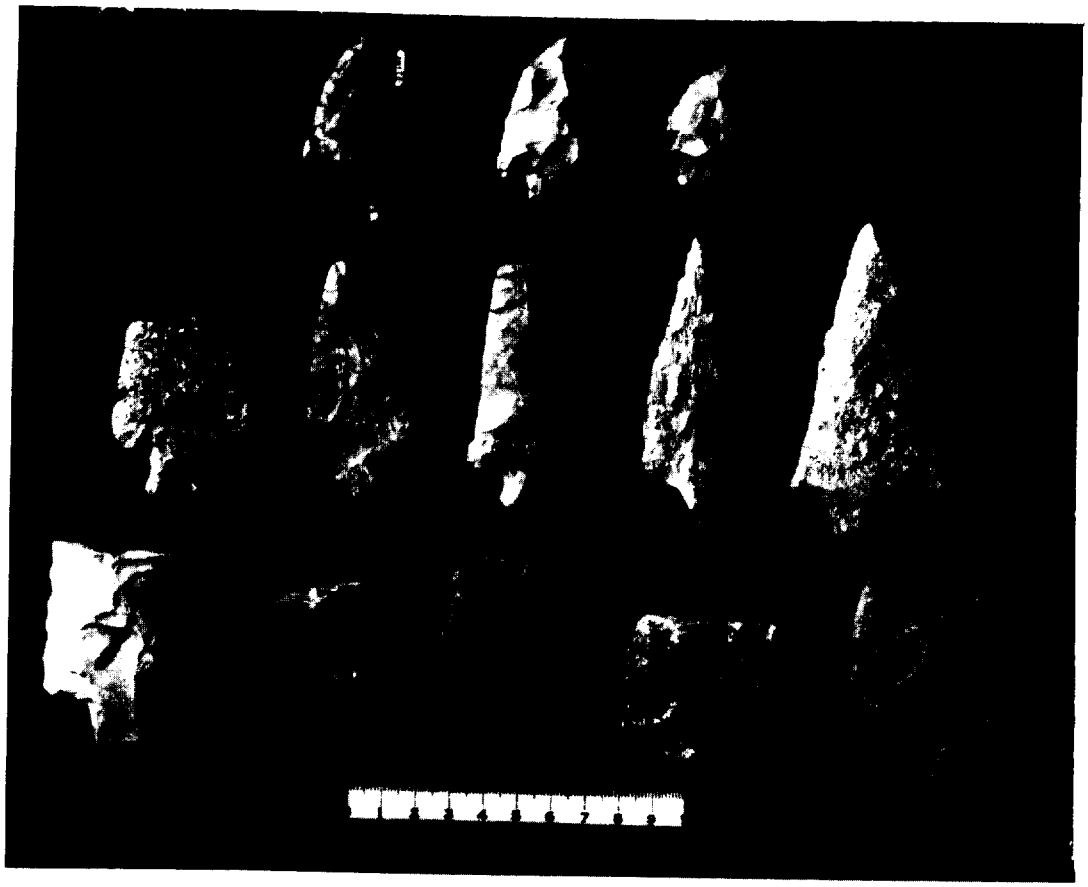

Plate 7. Stemmed Bifaces--Susquehanna/Broadspear tradition.

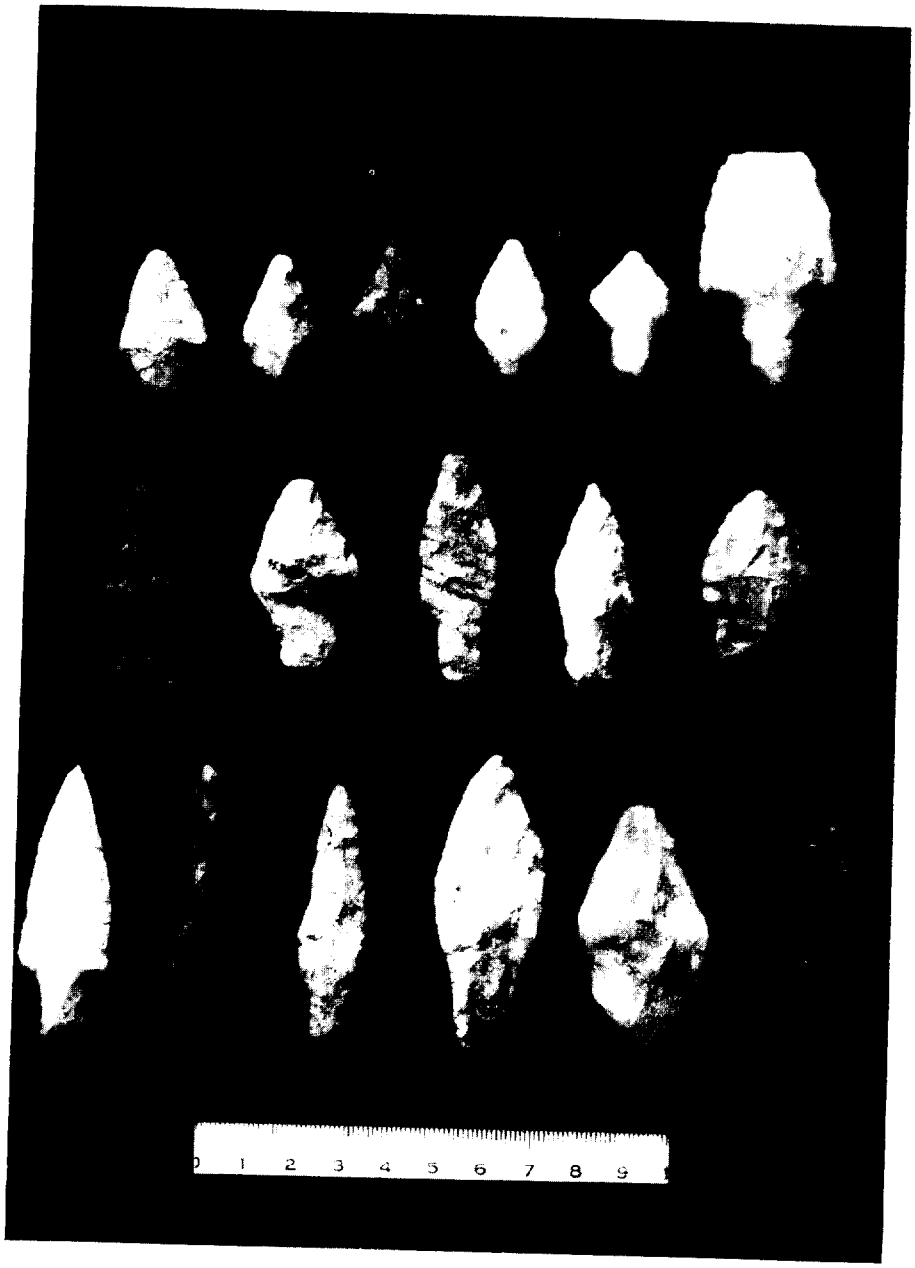

Plate 8. Stemmed Bifaces--Late Archaic/Early Ceramic Period

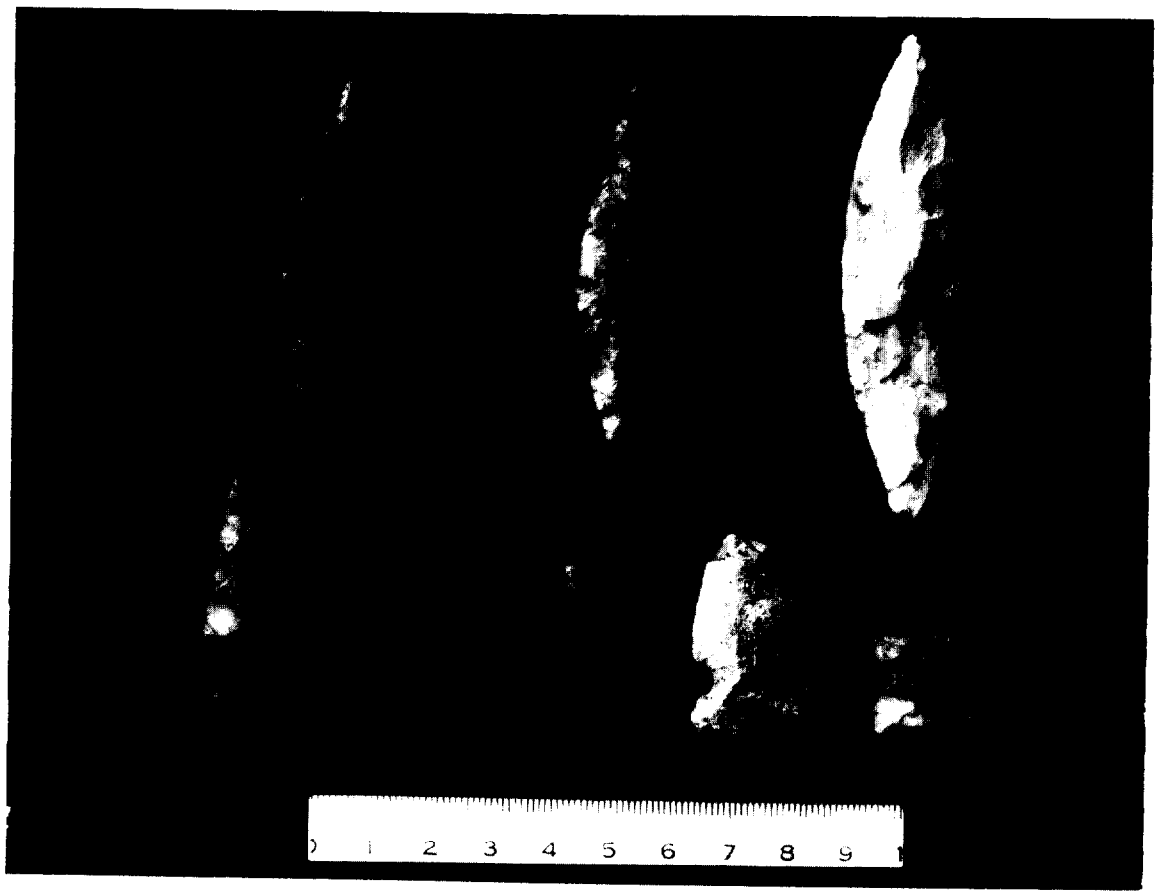

Plate 9. Stemmed Bifaces--Early Ceramic Period

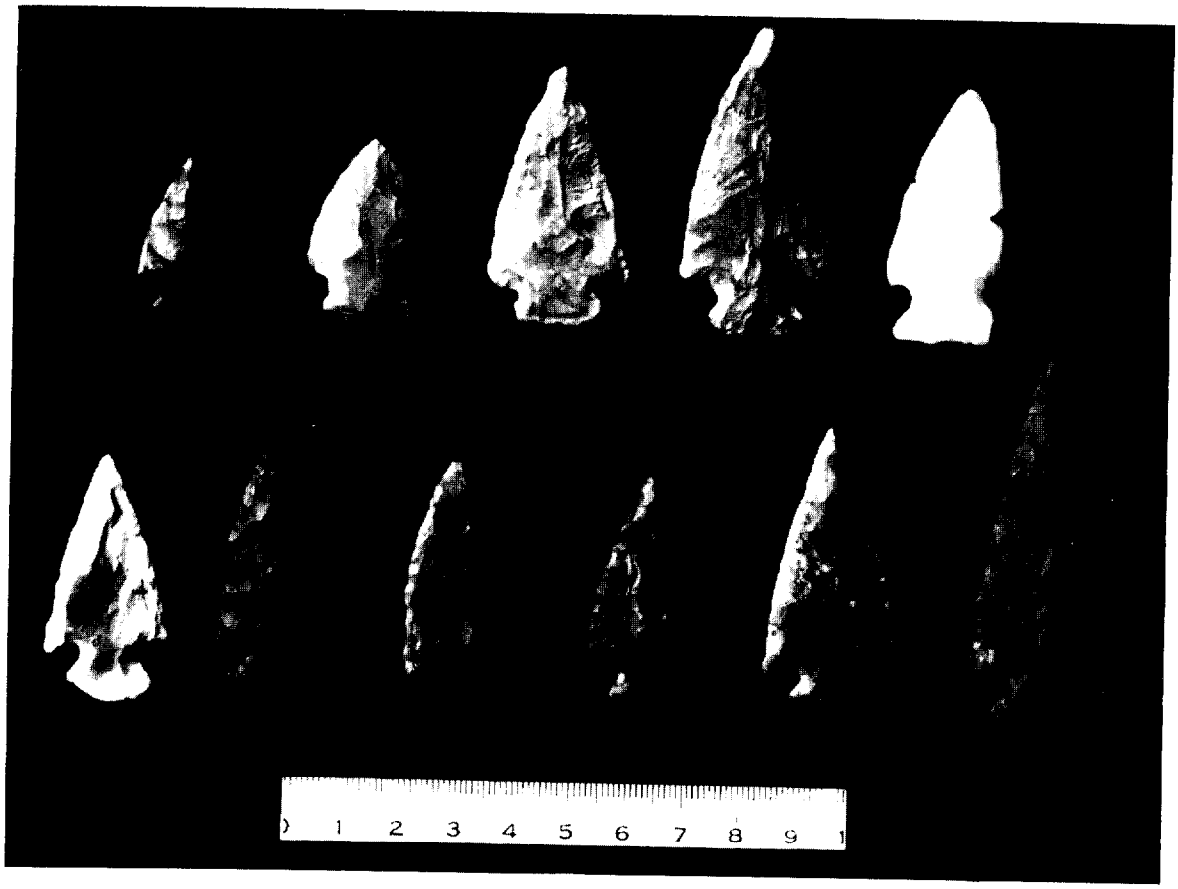

Plate 10. Stemmed Bifaces--Ceramic and Late Ceramic Period

Plate 11. Nonstemmed Bifaces--Triangular

Plate 12. Ceramics--Vinette I

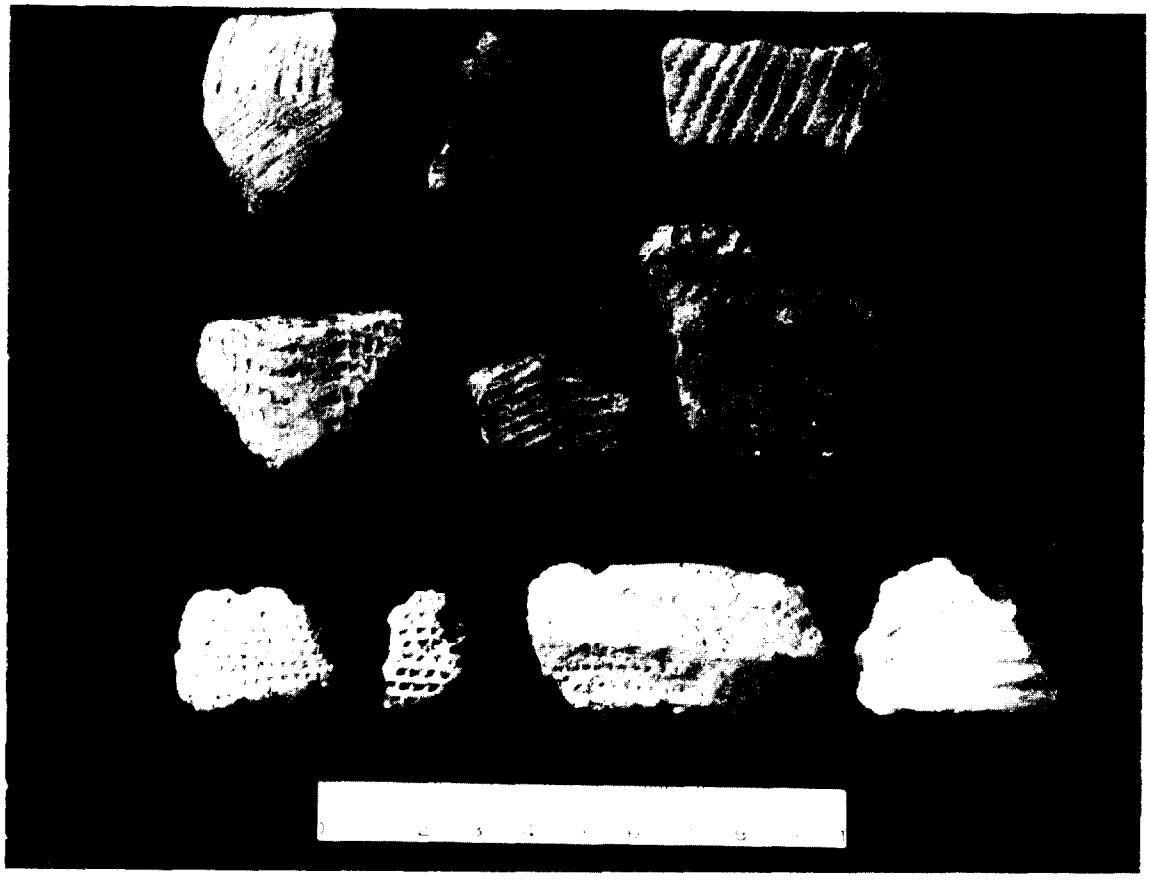

Plate 13. Ceramics--Stamped Decorations

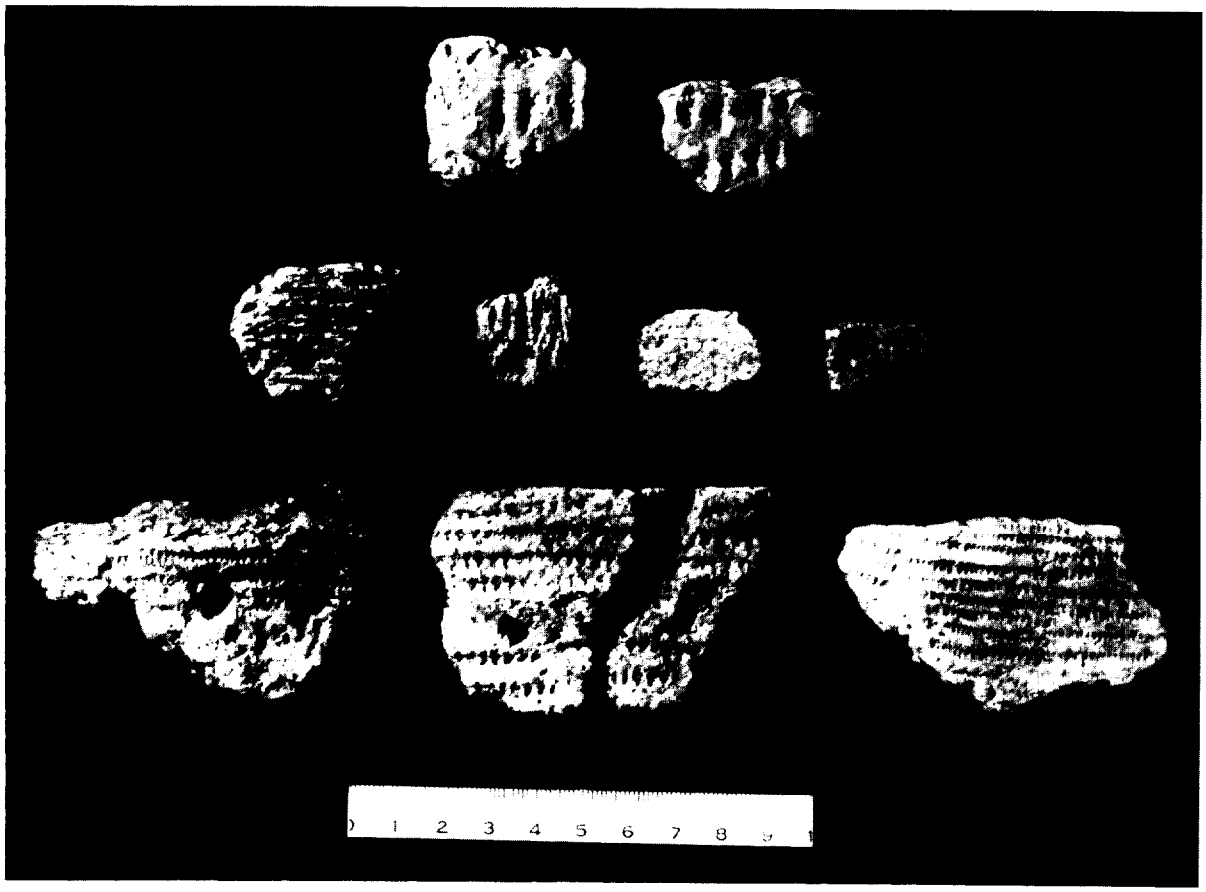

Plate 14. Ceramics--Impressed Decorations

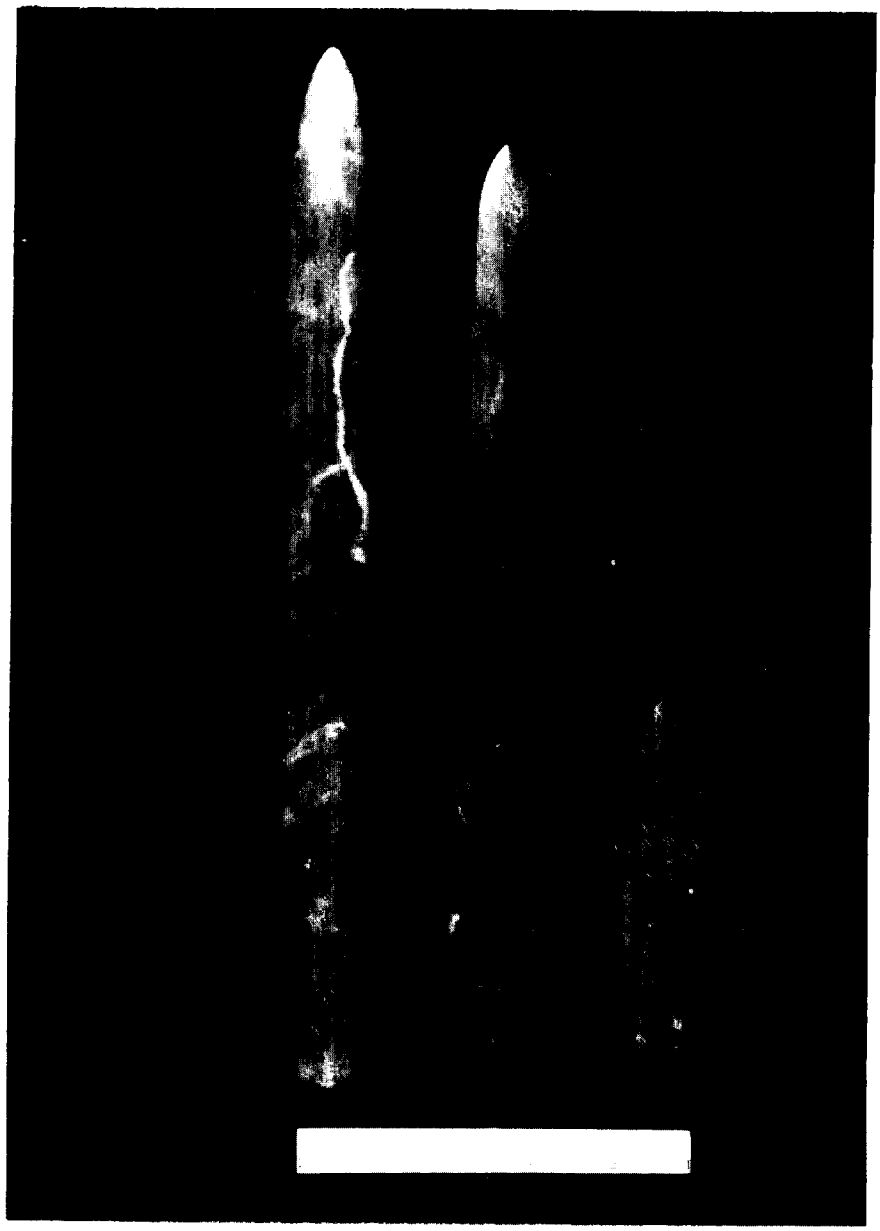

Plate 15. Burial Goods--Ground Slate Bayonets

Plate 16. Burial Goods--Stemmed Bifaces: Moorehead Phase
--Perforators: Susquehanna Tradition

Plate 17. Burial Goods--Perforated Slate Gorget, Incised Pebble Stemmed Biface

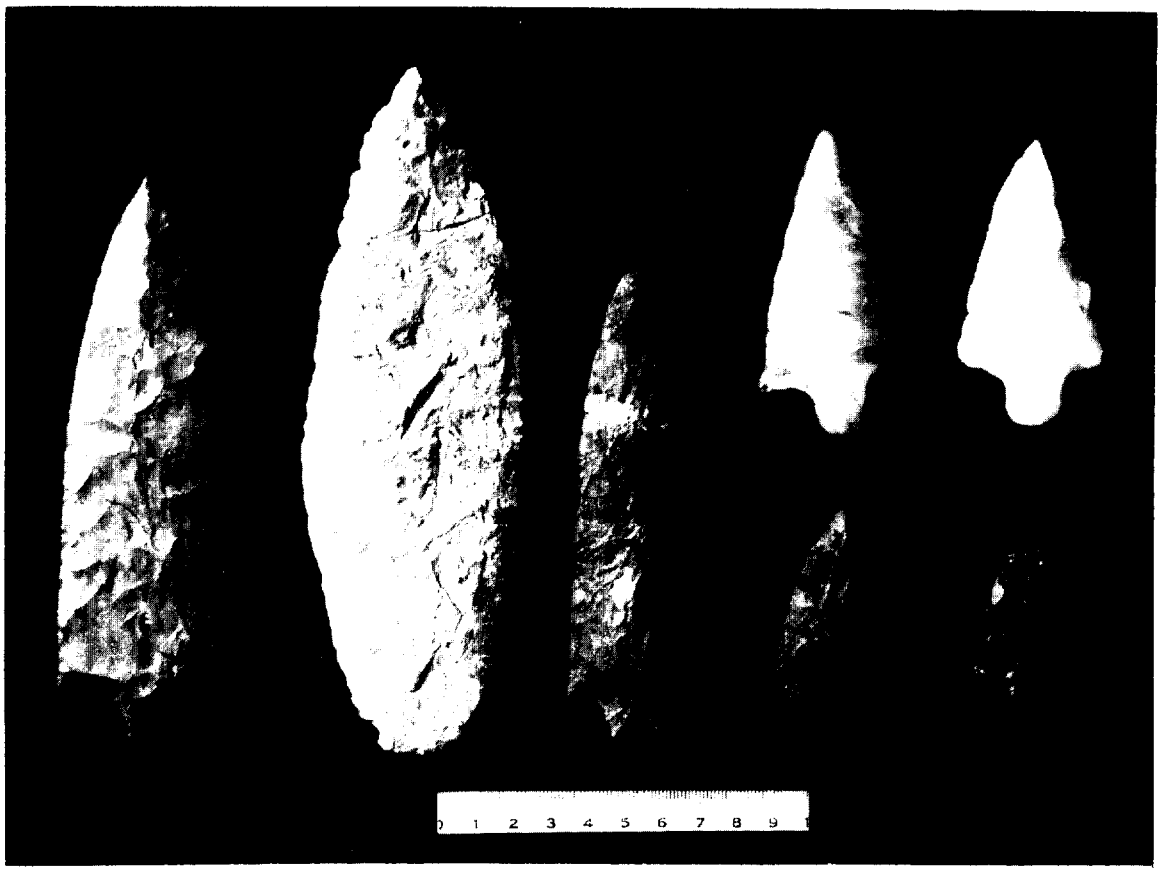

Plate 18. Burial Goods--Stemmed and Nonstemmed Bifaces

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THE MICHAUD SITE (23.12):

A New Major FLuted-Point PaleoIndian Site in Auburn, Maine

Arthur Spiess
Maine Historic Preservation Commission

This article constitutes the first public announcement of the existence of the Michaud Site (Maine Archaeological Survey Site #23.12), a fluted point Paleoindian site recently discovered near Auburn, Maine.

The site was discovered and originally surface collected by field workers for the Maine Department of Transportation, Materials Branch, during studies for a new road righ-of-way. These individuals, George Eaton, Ray Woodman, Sylvia Michaud, and Rebecca Hewitt, have been most cooperative in locating all their finds on subsequently developed site maps, and in other types of preliminary studies of the site. The site is named after Mrs. Michaud, who was the first to succeed in bringing it to my attention.

The following description is based on the artifacts and information recovered by the M.D.O.T. personnel, plus about 25 man-days worth of preliminary testing directed by Spiess. By the time this report goes to press, the site will be under excavation as part of mitigation for construction of a new road. Access to the site will be limited.

Paleoindian artifacts are distributed over an area of at least 2,000 m.^{2}, although we have as yet no idea how much of this space is taken up by artifact concentrations (loci) or how much is empty space. The potential for recovering paleoenvironmental information, in the form of buried organic deposits in a stream valley associated with the site will not be reduced by the construction project. The road will have relatively little effect on the landforms in the vicinity, which will remain available for study after construction. Unfortunately, due to various engineering and other environmental constraints, it is impossible to re-route the road.

The site has so far yielded three fluted points and a fluting channel flake from a fourth fluted point. Other artifacts include end scrapers and side scrapers, and there are at least several hundred flakes of stone that have been recovered. In addition to lithic material, Spiess' excavation so far has recovered several fragments of calcined (burned) bone which was identifiable as large mammal longbone fragments, and several smaller fragments of unidentifiable calcined bone. The direct association of these calcined bone fragments with the Paleoindian component is suspected but not confirmed.

The site is a classic fluted point Paleoindian site of which there are three other large sites in New England and the Maritime Provinces: the Vail Site in Maine, the Bull Brook Site in Massachusetts, and the Debert Site in Nova Scotia, and many smaller sites and find spots. Such sites have consistently radiocarbon dated between approximately 10,300 years old and 10,800 years old in the Northeast. This is an extremely significant site, which will probably attract National attention.

The site is partially vegetated by grass. A good proportion of it has been de-vegetated by shifting sand, leaving either an intact B soil horizon containing artifacts in situ, or producing blow-outs which are bowl shaped wind excavated depressions in the sand with the sand redeposited downwind in a dune form. Some of the topsoil of the site has been redistributed by heavy machinery. The current best guess is that 25% of the site area has been disturbed by blow-out, 25% by machinery, with the rest of the site being in situ in the A or B horizon of a forest podsoil.

Woods clearing activities during the late 1960s and early 1970s, plus limited topsoil relocation to level some hummocks and fill a deep drainage channel has resulted in disturbance by man of much of the site surface area. Following devegetation approximately 25% of the site area has "blown out." Some of the sandy soil has been deflated and redeposited as drift sand.

Michaud site intact soils (either undisturbed or buried under recent dune sands) consist of a black or dark brown A_1 and A_2 horizon about 5 cm. thick, overlying a discontinuous (0-2 cm.) light grey E horizon overlying a reddish yellow or brownish yellow B_1 and B_2 horizon up to 30 cm. thick combined. The B horizon sands can be quite intensely "orange" to slightly orange when compared with tan C horizon sand (up to 60 cm. thick). The color intensity decrease from B_1 to B_2 to C horizon is a gradual one. Deep in the C horizon, up to 120 cm. below the A horizon, is a well-developed grey soil with some small iron concentrations. This grey horizon may be a gley soil developed on a perched water table, but until that hypothesis is tested, it will be called the "grey layer."

It is visually easy to distinquish among these different colored soils. If there is any question, an auger test to expose the next underlying soil will answer a specific question.

The largest rocks native to the fine sands apparently are small, water-rounded pebbles.

Very recently two depositional events have moved some of the sands. Aeolian redeposition has picked up primarily B and C horizon sands and redeposited them in their tan colored dunes overlying, in some cases, intact A horizon soils. Mechanized equipment has also stripped the thin A horizon in places, mixed it with some B horizon sand and pushed it into low spots. These redeposited sands are also visually distinct: a swirled, mottled black, brown and orange in the latter case.

So far, Paleoindian cultural material consists of lithic artifacts, debitage (flakes), and possibly a few pieces of calcined bone. There is a great deal of charcoal on the site, often in the form of partially charred roots or stump fragments, evidently from forest clearance and buring recently. A few large pieces of fire-cracked rock (cobbles) can also possibly be ascribed to the Paleoindian occupation, as imported rock (possibly fire-cracked later by forest fire). So far, no (structural) features have been recognized.

In all cases except one, the Paleoindian material culture has been associated with intact A, B1, or B2 soil horizons, or with redeposited A mixed with B soil. A great deal of C horizon sand and grey horizon sand is exposed in "blow outs," and those exposures are sterile.

Our model of site formation is that Paleoindian occupation took place on a relatively regular surface, probably seasonally vegetated. There has been no source of sediment to bury that surface until recent aeolian redeposition. Thus, we would expect the Paleoindian material to be shallowly buried. Soil development (podsoil: A, E and B horizon formation) must post-date the occupation, at least in part.

The shallowly buried Paleoindian material is marked coincidentally by the distinctive color of the A, E and B horizons soils, which mark the upper 40 cm. of original (pre-1960 A.D.) ground surface. Our main working hypothesis is that by excavating intact A, E and B horizon soils, we can recover in situ Paleoindian artifacts. Any mechanically redeposited A, E or B horizon soils should also be excavated (rapidly) to recover material culture. It is very unlikely that C horizon or grey horizon soils contain Paleoindian material culture remains, unless the material has been "dropped" onto that surface by recent aeolian deflation.

An alternative hypothesis, of course, is that aeolian excavation following forest fire has been common in the past 10,000 years, and that there might be commonly deeply buried material (down into the grey horizon, for example). So far, the data are firmly against this hypothesis.

Figures 1 and 2 (scale in centimeters) show obverse and reverse images of 3

Figure 1

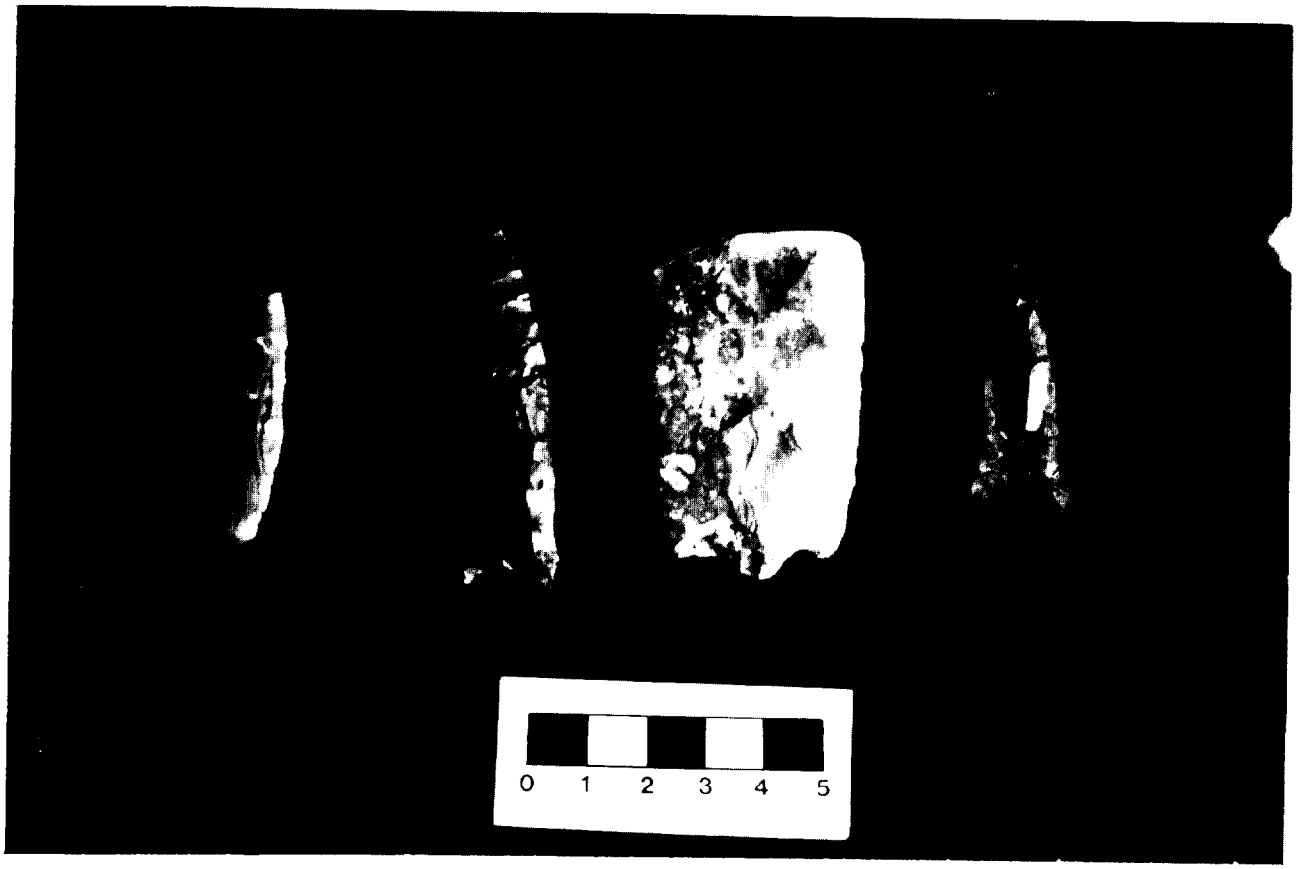


Figure 2

fluted points and one fluting channel flake so far recovered from the site. At the left is a fluting channel flake made of a red opaque grainy chert which is visually identical to red chert from the Munsungun Lake area, northern Maine, currently under investigation by Bonnichsen.

Second from left is a fluted point made on a black and grey-black banded opaque chert, visibly identical to chert common in the Bull Brook site collection (John Grimes, pers. comm.). The point is fluted on both sides, but it broke apparently "hinging out" during the production of the second flute. The tip piece ws retouched (Figure 2) and re-utilized. The tip was found 30 meters or more away from the base, in situ in intact B horizon soils.

The large point base second from the right broke upon the first fluting attempt. A classic nipple striking platform is still present. The raw material is a patinated honey-colored opaque chert with a slight waxy lustre. To date no debitage of this material has been recovered from the site. This chert is not present in collections from the Munsungun area, the Vail site, or the Bull Brook site, as far as I can remember. Is it possible that this broken fluted point base was imported as a piece of raw material?

The point on the right is reconstructed from 4 fragments possibly produced by force from heavy machinery working on the western portion of the site. At least the fracture pattern is not an impact fracture and not a fluting mishap. It is made on a black chert very similar to that of the point second from left.

Figures 3 and 4 illustrate the dorsal and ventral surfaces of three endscrapers from the site (3 left-most), and one side-scraper/spoke shave (right). The three right-hand-most specimens are made of red Munsungun-like chert. The left-hand specimen is made on a flake of silicious rhyolite (?) with a light-brownish-tan groundmass, through which pass grey pencil-line-like lines and dots. The material is new to the author's experience, but biface-thinning debitage of this material is common on the site. It may originate somewhere around Boston (Grimes, pers. comm.).

This being a very preliminary announcement, we have only one major observational theme to emphasize. The Michaud site is located on the margins of the Androscoggin River drainage, yet it appears to be unrelated to the major occupation at the Vail site on the headwaters of the Androscoggin drainage, 80 miles by air to the north-northwest. The Vail site fluted points are deeply indented on the base, which the Michaud site points are not. At least in terms of raw material frequency, the Michaud site collection shows a close tie to the Munsungun Lake area, 180 miles north-northeast by air, which is on the headwaters of the Aroostook River drainage, and possibly also with the Bull Brook site and other Paleoindian sites in eastern Massachusetts.

If the Vail site and Michaud site are contemporary, then we might have recovered evidence of two different bands of Paleoindians. In any case, the Michaud site inhabitants were not relying on the nearest known (to us) chert quarry, the one near the Vail site.

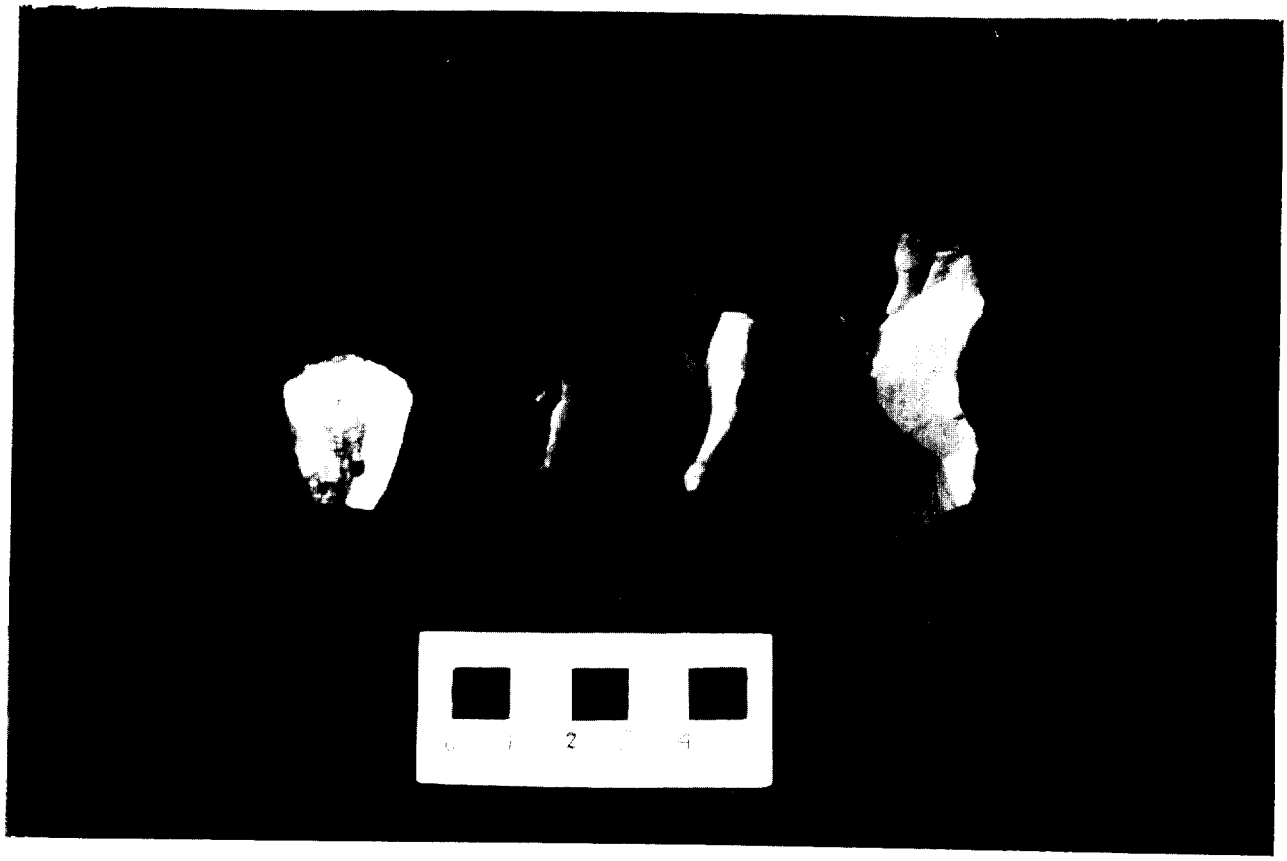


Figure 3

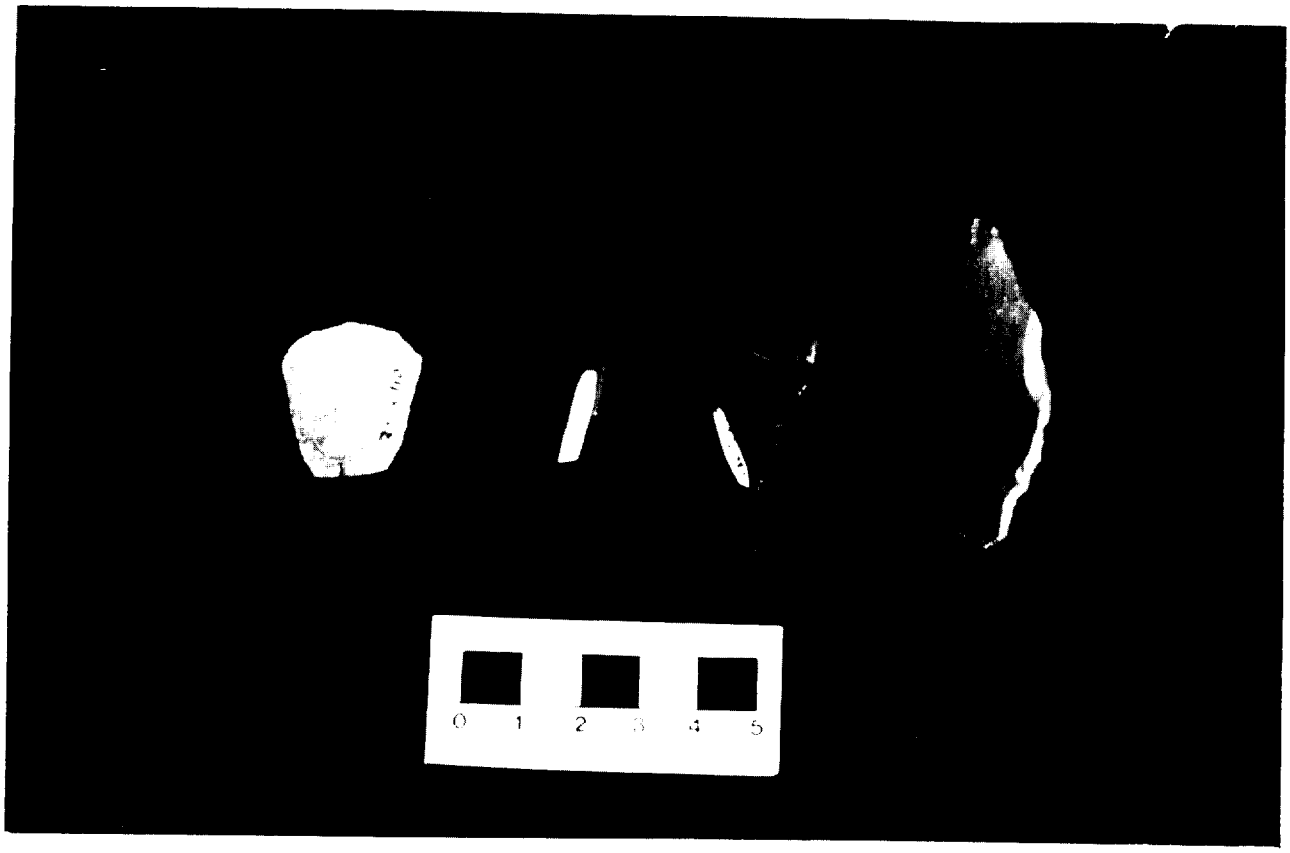


Figure 4

Charles Clark Willoughby (1859-1943) and His Plaster Models: Maine's First Archaeologist and His Records

Arthur E. Spiess

INTRODUCTION

Early in his career as a professional archaeologist (summer, 1892), Charles C. Willoughby excavated a series of red-ochre containing graves and other features dug into a gravel knoll at Orland, Maine. That work was reported in detail, including a pen-and-ink plan of the excavation (Willoughby, 1898: Plate I). By the winter of 1892/3, Willoughby had constructed a remarkable plaster model of his Orland excavation for display at the World's Columbian Exposition (Chicago World's Fair). That model still exists, at Harvard's Peabody Museum (photo reproduced below). Comparing it with the plans and profiles that Willoughby published (1898) shows it to be incredibly accurate, and valuable as a 3-dimensional representation of the excavation in progress.

The Orland mound model was not Willoughby's first, however, for on June 2, 1891 he presented a plaster "model of an Indian oven or fireplace unearthed at Fort Popham by Mr. C. C. Willoughby" to the Kennebec Natural History and Antiquarian Society. The only drawing of this feature occurs as a sketch without explanatory text in Willoughby (1980: 27). At Popham, he had unearthed a perfectly preserved hearth in April, 1890 (1980: 22-23).

In the spring of 1985, Mr. Earle Shettleworth found the plaster model of the Popham fireplace while de-accessioning material from the collection of the Kennebec Historical Society. The Popham model is remarkably detailed and matches the sketch exactly.

Thus, apparently, Willoughby has left us two highly accurate records of sites that would otherwise have been mostly lost information.

WILLOUGHBY: A BIOGRAPHICAL SKETCH

I suppose that it is uncommon for a man combining artistic and scientific talent to remain virtually unknown for nearly a century. Obscurity is even rarer for a man whose artistic interests contributed directly to the development of his scientific discipline. However, fame is public recognition; and Willoughby labored in the unglamorous field of New England archaeology at the turn of the century. The last Indian wars had just been fought on the high plains, while no "romantic" Indians remained in the East. Archaeology to the public was a search for magnificence, carried on by wealthy hobbyists in Greece, or Yucatan, or Asia Minor. Very few Mainer's were interested in the prehistoric inhabitants of their own back yards.

Charles Clark Willoughby was born in Winchendon, Massachusetts. He first appears in Maine in 1882, opening "C. C. Willoughby's Art Rooms" in the Meonian Block on Water Street in Augusta. He married Margaret E. Stanwood in June of 1883, daughter of Daniel Stanwood of Augusta. One of the Stanwood family, probably an Aunt of Margaret, was married to James G. Blaine, Governor of Maine and unsuccessful Republican candidate for President of the United States.

Willoughby was instrumental in founding the Kennebec Natural History and Antiquarian Society, the first organizational meeting being held in his Art Rooms on February 4, 1891. This Society, the ancestor of the Kennebec Historical Society, was active in arranging lectures, collecting historic objects and antiquities, and maintaining a library. Willoughby carried on minor archaeological excavations at Popham and Damariscotta, apparently without formal training. There is no indication that he ever received a post-secondary education.

Frederic Ward Putnam, Director of Harvard's Peabody Museum, had been hiring local men to dig in Maine shellheaps

during the 1880s. We do not know how he heard of Willoughby. Perhaps he saw the Antiquities of the Kennebec Valley manuscript, a hand illustrated summary done for the Kennebec Natural History and Antiquarian Society in 1890/91. Willoughby was hired by the Peabody Museum for the summer of 1892. He dug a Red Paint Cemetery on a gravel knoll in Orland, called Soper's Knoll. Willoughby had his crew dig very carefully, taking measurements and photographs, and making drawings as each grave was exposed. His field technique far surpassed anything else in the Northeast, most of which he apparently invented as the logical way to approach the problem of careful recording of his finds.

Putnam was hired to run the anthropological section at the World's Columbian Exposition of 1892-1893 (Chicago World's Fair). He was so impressed by Willoughby's work that he brought Willoughby along as his assistant, and used the Orland plans, photographs, fieldnotes, and a plaster model as an example of Peabody Museum archaeology at the Fair.

In 1894 Willoughby went to the Peabody Museum as Putnam's assistant, returning occasionally to Maine to do fieldwork in the summers. In 1915 he was made Director of the Museum, retiring in 1928, the foremost northeastern archaeologist of his era.

Apparently, Charles Willoughby did not seek fame. A prominent archaeologist who was a graduate student at Harvard during the 1930s recalls Willoughby as Curator Emeritus of the Peabody Museum: he was a little man laboring in a small office in the Museum basement, the archetypal museum worker, seeming to collect dust as fast as did his collections (Hallum Movius, pers. comm. to Spiess).

Two forces have brought recognition to Willoughby. First, Maine archaeology and archaeology in the Northeast in general are enjoying a decade of unprecedented research success, some just now being presented to the public. The demand is growing for more and more information on the ways of local Indians bridging the gap between the antiquarian concerned for material objects and the professional anthropologist who fits the objects into a complex picture of past society. Second, the recent discovery of an extra-ordinary hand-written and hand-illustrated manuscript by Willoughby, Indian Antiquities of the Kennebec Valley, has forced the realization that he was the first Maine professional to appreciate the aesthetic quality of aboriginal Indian material culture, and some of the complexities of their life.

In December of 1978, Earle G. Shettleworth, Jr., Director of the Maine Historic Preservation Commission, had his attention drawn to an antique auction advertisement of an unnamed manuscript by C. C. Willoughby. He instantly realized that an unknown Willoughby manuscript might be an extremely important scientific document. Unfortunately the auction had occurred the day before the advertisement was noticed, and the item could not be traced. Approximately two months later, Mr. Shettleworth received a telephone inquiry from a Massachusetts antique dealer asking whether the Commission knew anything about a Maine archaeologist named C. C. Willoughby. We had been extremely lucky, because the unknown manuscript had surfaced for us! This author was immediately dispatched to examine the manuscript, and it was found to be an unknown work. The book contained 130 hand-written pages in gray ink, each page bordered in neatly ruled rose ink, the text illuminated with sepia sketches. Bound interspaced between the handwritten text were twenty-two guash or watercolor paintings of Kennebec Valley Indian artifacts, almost photographic in their detail (some of the specimens are in the Maine State Museum). The text contained an informed antiquarian's view of Indian life in Maine, and surprisingly insightful comments on prehistoric technology and trade. For example, he discusses the sources of flakeable stone known to him, the production of unfinished blanks near the quarries, and their possible use in Indian "commerce" or trade.

We now believe that this manuscript was produced by Mr. Willoughby for an 1892 exhibition of the Kennebec Natural History and Antiquarian Society (now the

Kennebec Historical Society) and that it remained in his family for many years afterward. It is now property of the State of Maine.

A full-color facsimile edition of Indian Antiquities, with a biographical introduction and archaeological notes, has been published by the Maine Historic Preservation Commission and Maine State Museum, and is available through the Museum. Willoughby's text is an easily read introduction to prehistoric Indian technology and life; although our understanding of details has changed slightly in the intervening 90 years. Most importantly, Mr. Willoughby's exquisite sensitivity to to the beauty of Indian craftsmanship could only have been expressed by a color reproduction of his work.

Willoughby was the best field archaeologist to work in Maine before the late 1960s, his excellence being partially attributable to his artistic talent. He directed his field crew to dig carefully enough to allow him to draw and photograph prehistoric house floors, fireplaces and other archaeological features, as well as the layering details (stratigraphy) in a site. Willoughby directed the first, and until the late 1960s, most careful examination of Maine's Moorehead Phase cemeteries, the so-called Red Paint sites. He published his plans and notes, but left it to the more ambitious Warren K. Moorehead to popularize the concept of the Red Paint People. Moorehead, however, was a butcher in his field technique, and left us publications that are next to worthless.

Later, at the Peabody Museum and at the Chicago World's Fair, Willoughby used his artistic talent to design and produce detailed scale-model dioramas of Indian villages and archaeological excavations. His preoccupation with models and site plans began with his Popham excavations, reported in Indian Antiquities, from which he produced the scale model of an Indian fireplace at Popham for the Kennebec Historical and Antiquarian Society.

Unfortunately, there are no other known paintings ascribed to Willoughby than those in his 1892 book. He must have been an experienced painter, because one does not begin to produce the artwork that he did without practice. Moreover, he arrived in Augusta and set up an art materials dealership, displaying an extensive familiarity with a range of artistic materials. There must be other works of his extant, ones important to understanding his development as an artist.

Beside his careful work on the "Red Paint" cemeteries, Willoughby's major contribution to the young science of New England archaeology was publication in 1935 of his lifetime of experience in the subject: Antiquities of the New England Indians.

Many of the artifacts illustrated in his 1892 Indian Antiquities book play a prominent role in the 1935 summary; and he continued his artistic contribution by doing all the drawings for the 1935 book.

BACKGROUND TO WILLOUGHBY'S WORK

Antiquities of the New England Indians (1935) is divided into four sections. In the first section he reviews the data on the "Red Paint" people, whom he prudently called the "Pre-Algonkians." He divides the rest of the archaeological collections known to him into "Algonkians in General," "Old Algonkians," and "Later Algonkians." Willoughby was an extremely astute observer, correctly dividing these relative age groups on the basis of minor clues such as preservation of stone, copper and bone. In 1949 the technique of radiocarbon dating was invented, which allows archaeologists to attach a calendric date in years to any organic matter. The technique is most often used on charcoal from fireplaces, making radio-carbon dates a foundation of modern archaeological research. We now know that Willoughby's Later Algonkian group refers to the Indians of New England from approximately 1200 A.D. to the time of European discovery in the 16th century. His Old Algonkian division refers to material related to the Mound-building Adena and Hopewell cultures of the mid-West between roughly 600 B.C. and 400 A.D. The presence of this material in

New England reflects either the spread of religious ideas, or inter-regional trade.

The Algonkian group in general contains other Early, Middle and Late Ceramic period material (circa 500 B.C. to 1500 A.D.) and an occasional Late Archaic piece. We have, since Willoughby's time, discovered subdivisions within the Ceramic period, all variations on a basic theme of life of the last 2,500 years involving hunting, fishing and gathering plant food in an environment similar to that of Maine at European discovery. Shellfish gathering, seal hunting, moose and deer hunting, and fishing for flounder and sturgeon were subsistence strategies. Maine people participated in a trade for exotic stones to be made into tools, in a fur trade with other Indians, and probably trade in locally-produced goods such as hardwood products or seal-hide line. Late in this Ceramic period sequence the concept of corn/bean/squash horticulture was introduced to Maine from southern New England, but light gardening did not cause significant changes in lifestyle over most of Maine. Maine archaeologists are, however, still trying to untangle the exact relationships between the Ceramic period (or "Algonkian") groups and the modern tribes of Maine as we know them today.

Willoughby's Pre-Algonkian group includes mostly material of the Moorehead Phase. This culture flourished in Maine between 4,500 and 3,800 years ago, mostly along the coast and lower river valleys, from the Kennebec Valley eastward. These people buried their dead in spectacular cemeteries with lavish grave furnishings, quantities of powdered iron oxide or "red ochre," and stone tools seeming specially made to accompany the dead. Warren K. Moorehead tried to popularize this religious behavior as a specific tribe: "The Red Paint People." The environment of the time was slightly warmer than it is today, and the Moorehead Phase people of the Maine coast provided food for themselves in some ways not now possible. In the springtime they fished for alewives, salmon and other fish in the lower rivers, they hunted swordfish and fished for codfish in open water during the summer. They based their late fall, winter, and early spring subsistence on white-tailed deer hunting. Moose and seals were very scarce and little utilized by these people in contrast to Ceramic Period subsistence.

Willoughby, being hampered by the lack of radiocarbon dating in his time, could not identify to his satisfaction any pre-Algonkian cultural groups other than the Moorehead Phase, and hence did not discuss them at length. We now see faintly the outlines of Indian life in Maine between 11,000 years ago and about 5,000 years ago, before the Moorehead Phase, and we recognize clearly a culture group that replaced the Moorehead Phase in Maine (Susquehanna Tradition), about 3,600 years ago and which lasted approximately 1,000 years.

Willoughby is to be commended as the man who began investigating the prehistoric people of Maine scientifically. For his time he made a monumental contribution.

THE ORLAND DIG AND MODEL

Willoughby (1898: 30-42) describes the 1892 Orland dig at Soper's Knoll (now listed as Maine Archaeological Survey site 57.1), although most of the description concentrates on the grave contents. The only site plan is presented as a line drawing (Plate IV, p. 30) and a small photograph of the plaster model in the introduction (p. 4). The line drawing from Willoughby's 1898 Plate IV is reprinted here as Figure 1.

In addition, Willoughby presents a series of close-up drawings of artifacts as they were found in the graves (1898: 33, 36, 38, 40) and soil profiles of three fire pits (1898: 41, 42). We are here publishing for the first time close-up photographs of the 1892 plaster model, having found that they add significantly to our understanding of the form of the site and its excavation. The photographs were taken during 1984 by Hillel Burger, Peabody Museum Harvard staff photographer. They are reproduced with permission.

The site was located on a glacial gravel knoll, rising about 15 feet above the shore of Lake Alamoosook, and about

100 feet in basal diameter. The knoll was wooded at the time of Willoughby's dig. He had the trees cut, and all the stumps on the summit and on one side of the knoll, except for four, were drawn out by a team of oxen "without disturbing the earth to any great extent". (Willoughby, 1898: 31).

The four stumps left on the side of the knoll are visible as paired circles with unexcavated dirt around them in the plan (Figure 1) and on the model. These four trees are described as three large oaks and a white birch. In fact the white bark of the paper birch is clearly visible on the stump adjacent to the shovel and backdirt pile, northern (left-hand) end of the site on the model (in section A on the Plan).

"After removing the stumps, the ground was staked out in sections ten feet square. . . ."

Willoughby's attention was originally drawn to the site by three depressions in the summit, averaging about 30" depth and having diameters of 10 to 14 feet. Local people called them "Indian cellars," and they yielded ashes and charcoal to his initial testing. He then started a trench through these depressions and hit a grave with red ochre and tools (Grave J, Section D).

Willoughby states that the junction between disturbed and undisturbed gravel around the graves had been obliterated by geological processes, but that the bordering of disturbance around the firepits were clearly visible.

The scale on the model incidentally is "1/5 inch = 1 foot." Each 10 foot square, therefore, is 2" on a side, the shovels are a little over 1" long, and the longest of the "Red Paint" artifacts are under $\frac{1}{4}$ inch long.

An overhead view of the model is presented in Figure 2, and an oblique view in Figure 3. North is to the left in both cases. The model shows the excavation at an early stage. The initial trench in Sections A and D is at the left, and has intersected Fireholes 1 and 2, which are clearly visible as a band of disturbed gravel and charcoal on the trench wall. Firehole 3 is almost untouched,

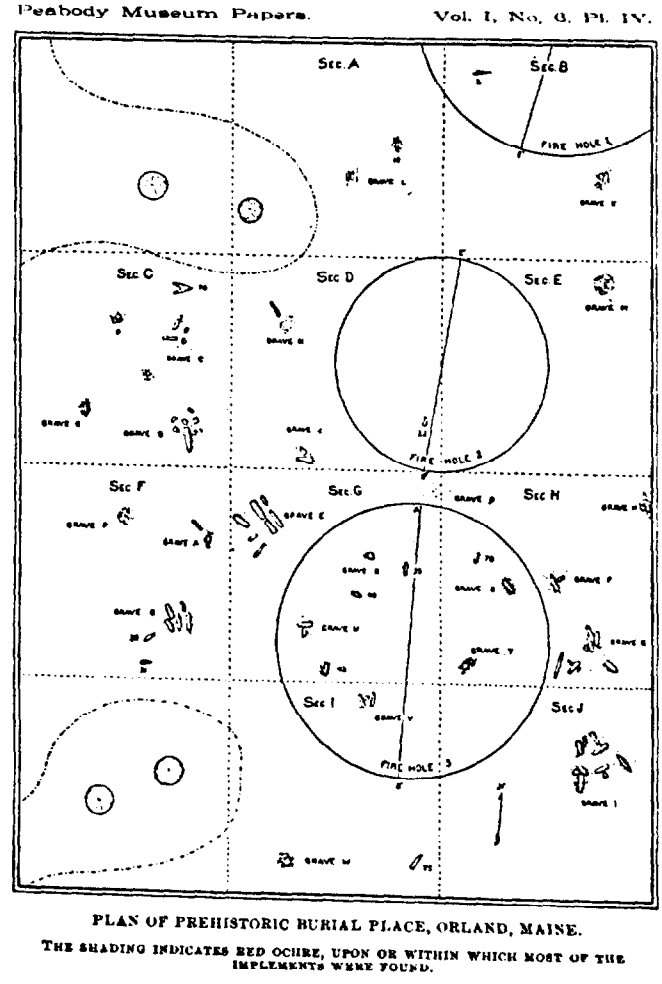


Figure 1. Plan of Soper's Knoll, Orland, Maine, from Willoughby, 1898.

lying immediately west (in front of) Willoughby's camera. Sections C and F between the two pairs of stumps have been excavated to expose graves. In Section J, Grave I has been exposed on a soil block in the northeast quadrant of the section (Section = square). It is being carefully recorded by what Willoughby described as "two tape" triangulation. Although his recording method is not described further in writing, it is clear from the model that he measured distances from the corners of a square (and worked out the intersection of the two radii thus measured).

The backdirt piles are growing rapidly on either side, and a trowel and a brush are evident against the south wall of Section F.

Figure 2. Overhead photograph of 1892 Plaster Model of Soper's Knoll excavations in Progress.

Figure 3. Oblique view of Soper's Knoll excavation Plaster Model.

This model clarified for me the intimate spatial association of the 3 "fireholes" with the red ochre and tool containing "grave" features. While a functional association seems likely, Willoughby, himself (1898: 42) is cautious about the physical evidence for such an association. Perhaps Willoughby saved charcoal from one or more of the fireholes which would turn up with careful work in the Peabody Museum collections and help answer the question of contemporaneity and the possible association of fire with the burial ceremony.

THE POPHAM FIREPLACE

Willoughby (1980: 20-24) discusses the houses of Northeastern Indians at the time of ethnographic contact, closing with a discussion of the fireplaces used to heat these dwellings and for cooking. He closes his discussion (ibid: 24-25) with a brief description of a perfect fireplace, undamaged by the plow, that he excavated at Popham in April, 1890. It was built of waterworn stones laid up in a ring. The open space in the middle, and the spaces between the stones were "packed to the depth of several inches" with ashes. "Many fragments of pottery were found in the ashes, as well as bones of different animals, 'flint' chips, and one perfect arrowhead. Beside the fireplace buried in the sand we found two or three pieces of wood, much decayed and partially burned."

Beside the sketch provided by Willoughby (1890: 27) this description is all we knew about the fireplace until the original plaster model was recovered.

The model itself is approximately 1 foot square, encased in the remains of a glass case and black wooden frame (Figure 4). A label written in Willoughby's printing was loose in the same box as the model (Figure 5).

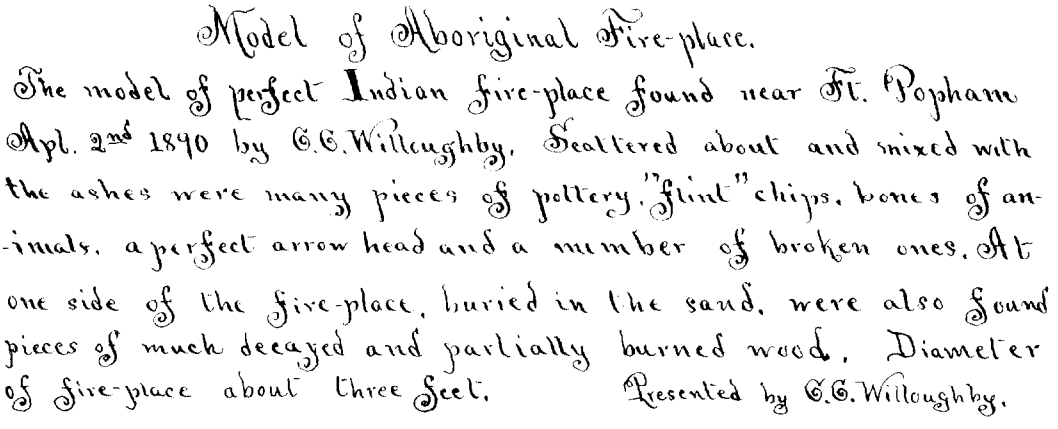
The model (Figures 4 and 6) is constructed of plaster of paris over a wooden board. The fireplace itself consists of water-worn pebbles embedded in the plaster which have been painted orange-red (presumably to simulate oxydation of their iron content). The "ash" of the

Figure 4. Oblique view of Willoughby's 1890 Popham fireplace dig model, with glass case. Length of one side, about one foot.

fireplace is simulated by black paint on the plaster and among the rocks. The wooden branch is a charred twig, while the sand beach is simulated by sand applied to the surface of the plaster. Large sherds of pottery associated with the fireplace are represented by minute fragments of real aboriginal ceramics, and flaked "flint" is represented by small fragments of felsite or chert flakes, glued onto the surface of the model.

The complete arrowhead is represented by a minute (wood?) cut out replica of a recognizable, Late Ceramic side-notched projectile point (#1 in Figure 7).

I think I know Mr. Willoughby well enough to guess that all the little fragments of ceramic glued to the model are in the locations of finds of major pieces of ceramic. Likewise with the flakes of stone and the arrowhead. Although the written records are lacking to prove the case, this model probably preserves the horizontal distribution pattern of cultural material around the fireplace.


Model of Aboriginal Fire-place.

The model of perfect Indian fire-place found near Ft. Popham Apl. 2nd 1840 by C.C. Willoughby. Scattered about and mixed with the ashes were many pieces of pottery, "flint" chips, bones of animals, a perfect arrow head and a number of broken ones. At one side of the fire-place, buried in the sand, were also found pieces of much decayed and partially burned wood. Diameter of fire-place about three feet. Presented by C.C. Willoughby.

Figure 5. Full-size reproduction of label accompanying the fireplace model.

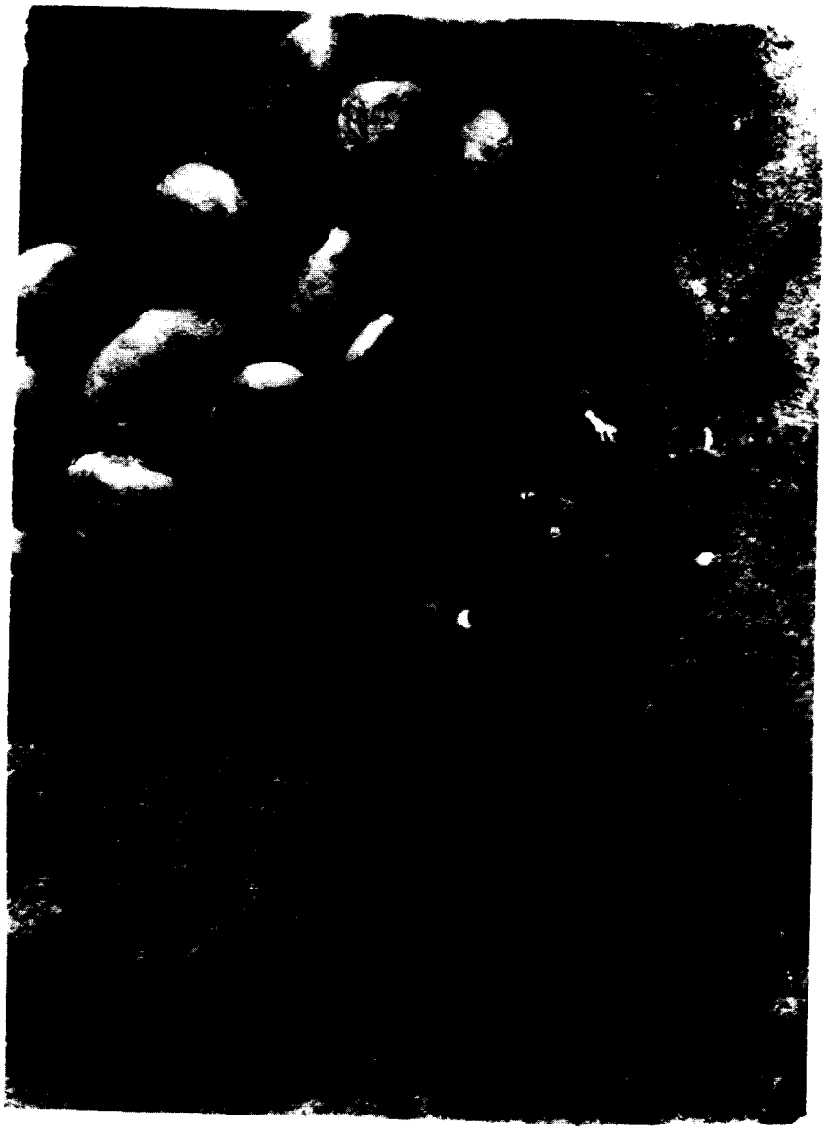


Figure 6. "Overhead" view of the fireplace model.

Figure 7. Close-up of one quadrant of the fireplace model. Forked end of burned stick at lower left. #1 is a minute replica of a complete side-notched projectile point. #2 is a group of grey chert (?) flakes. #3 is a small fragment of aboriginal ceramic.

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Above the Gravel Bar: The Indian Canoe Routes of Maine. By David S. Cook. (Milo, Me.: Milo Printing Company, 1985) 111 pages, photographs, illustrations, map. (paper) $7.50.

David Cook has produced an interesting blend of folklore, history and archaeology in this unique book. Drawing on knowledgeable sources, particularly the work of Fannie Hardy Eckstorm, as well as his own extensive experience as a canoeist and amateur archaeologist, Cook has produced a volume that should provoke research and discussion in all the above areas. In addition to the scholarly purposes the book also serves as a memorial and tribute to Cook's friend and mentor, Myron S. Smart. Smart, a lifelong woodsman, guide, and canoe builder, is presented as typical of a rapidly disappearing group of men whose extensive knowledge of the Maine woods can contribute greatly to our understanding of the adaptations and strategies essential to survival in this environment.

In discussing the canoe as an adaptation to a particular set of environmental contraints, Cook hypothesizes that the Indian cultures of Maine and Canada revolved around this tool much as our culture depends on the automobile. Canoes took on specialized forms for the specific tasks confronting their users such as ocean travel, large river travel, or travel through small streams and bogs in search of game. While modern canoeists tend to regard the canoe as a downstream vehicle, the Indian utilized it upstream as well. This is important for the archaeologist to recognize as he searches for sites along streams and rivers. The frequency and location of sites is determined from an upstream perspective. This is truly recognizing the potential of archaeology as one gains insights into the actual behaviors and mind-sets of the people under study. The chapter entitled "Canoeing, Camping, Carrying, and Castor Canadensis" is of particular value for the "cognitive" archaeologist.

When the reader reaches the section of the book dealing with the actual routes, it is time to abandon the easy chair. Find a table large enough to accommodate the excellent map of the canoe routes, a Maine Atlas, and several topographic maps. As you read the route descriptions and trace them on the maps, you will see Maine in a totally new perspective. You will observe that all the major river systems arise in the uplands of Northwestern Maine within a few miles of one another. You will also see connecting routes, cut-offs, and neighborhood routes. Taken together as a transportation system you will see that virtually every area of the state and adjacent Canada was accessible by canoe. Streams that today seem totally unsuitable for canoe travel become routes when one appreciates the activity of an untrapped beaver population. Indian place names take on real meaning as descriptive signposts along routes for the canoeist. An example is the meaning of Passadumkeag - Above the Gravel Bar - indicating that the Passadumkeag River entered the Penobscot above a gravel bar. The routes are discussed in great detail. The canoeability of various streams, alternate routes, and seasonality of routes are discussed at length. These insights are invaluable to the archaeologist.

No book, however, is without its faults. Above the Gravel Bar is no exception. Perhaps the most serious to this reader is the lack of a precise referencing system. Many of the references in the text do not appear as complete entries either in the chapter notes or in the abbreviated bibliography at the end of the book. This is a serious handicap for the researcher who might wish to pursue these sources. Additions to the work that would improve its usefulness would be a table of contents and an index.

In spite of these criticisms, Above the Gravel Bar easily rates a spot on the archaeologist's bookshelf. The excellent map is itself worth the price of the book. Research problems such as the antiquity of the bark canoe, ancient trade networks, and seasonality will come into focus as one reads and ruminates about this book. Hopefully it will spawn research in the interior of Maine that has, with few exceptions, been neglected.

Eric R. Lahti

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