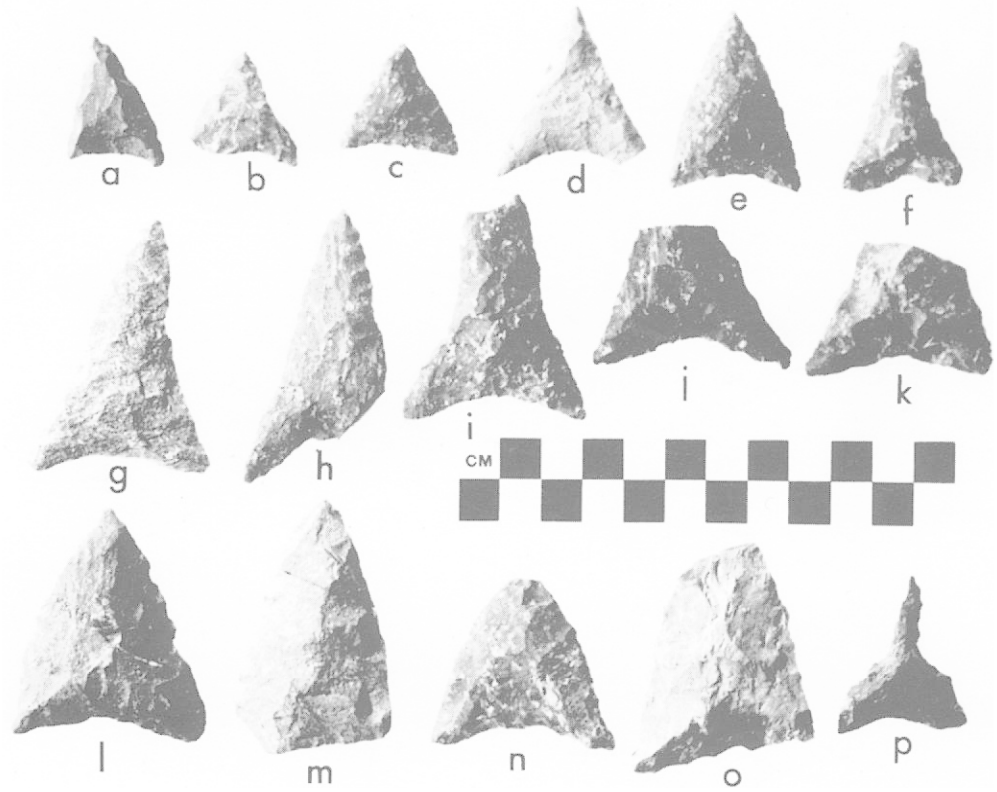
THE MAINE ARCHAEOLOGICAL SOCIETY INC. BULLETIN



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MAINE ARCHAEOLOGICAL SOCIETY BULLETIN

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PROJECTILE POINTS, OTHER DIAGNOSTIC THINGS AND CULTURE BOUNDARIES IN THE GULF OF MAINE REGION

Brian S. Robinson

INTRODUCTION

A dozen years ago it was thought that the central Gulf of Maine region was inhabited by a comparatively small number of people between 5000-10,000 years ago. This perception was based entirely on the low density of projectile points of this age from northern New England. After extensive excavations in deeply stratified sites in New Hampshire and central Maine (Bolian 1980; Petersen 1991; Robinson et al. 1992; Sanger 1996a), it was recognized that bifacial projectile points from much of this time period *were* rare, but other artifact forms were quite common. Some of the newly recognized forms (such as the dominant core and flake technology) are not highly distinctive, while more distinctive ground stone tool forms (full-channelled gouges and stone rods) often occur at relatively low frequencies and thus were known mostly from surface collections. Sorting out the new assemblages brought to attention (once again) the strong influence of artifact types that are both distinctive and abundant, on the way archaeologists structure the past. This paper suggests that cultural assemblages lacking diagnostic artifacts may occur throughout prehistoric times in the Gulf of Maine region, and that some of these, at least, may be identified through regional patterns of artifact frequency and assemblage analysis.

Definitions of archaeological units of culture history (e.g., traditions, phases, complexes, per Willey and Phillips 1958) typically include different functional classes and styles of artifacts, or "material signatures," and rules about how they are associated. Most archaeological culture history units are defined on the basis of *diagnostic* artifacts (those that are unique to the unit), and a broader set of *characteristic* artifacts (that are typical, but that are not unique). In the Northeast, the most frequently employed diagnostic artifacts have been bifacial projectile points, especially for the Archaic period (before the production of diverse pottery styles). Projectile points are often *necessary* to tie down the cultural attribution, and in practice they are sometimes *sufficient* to do so as well, to the extent that a single tool may serve to identify the presence of a large archaeological abstraction.

The problem with a dependence on diagnostic artifacts is that there was never any rule that people had to make artifacts that were unique to themselves, especially out of stone. Thus, culture history units based on diagnostic artifacts exclude (by definition) cultures that did not produce them. Across the country cultural resource management plans often depend on (or require) diagnostic artifacts as one criteria for establishing the significance of a site, eliminating (by law?) those cultures that did not produce them in a durable material.

The limitations of cultural units (or any other analytical constructs) that are defined by a single dominant characteristic (called a "monothetic set," Clarke 1978:492) have long been known. For example:

> ...The tendency of people studying the Eastern Archaic to rely on point description as the focal point of "cultural" interpretation is too narrow a viewpoint to be further pursued. The usefulness of points is readily accepted. However, other components of a prehistoric assemblage may be just as, and sometimes more, meaningful... (Fitzhugh 1972:3).

The problem is not a simple one to resolve, however, when archaeologists attempt to make the best of what little information they have. Both archaeological analysis and cultural resource management plans require definitions that clearly distinguish different archaeological units from each other. In short they require diagnostic characteristics. It is important to remember, however, that there is a far greater variety of potentially diagnostic characteristics than there are diagnostic artifacts.

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Assemblages of artifacts may be very distinctive, even though none of the specific artifacts are diagnostic by themselves.

In general, more complex diagnostic patterns are more difficult to identify, but they increase the range of variability that can be defined. More visible or more discrete kinds of evidence (such as projectile points) are easier to identify, but may mask the actual range of variation if depended upon too heavily. The temptation is great. Chipped stone projectile points are often well-patterned and suitable for stylistic analysis. For their makers, they were fragile and needed to be replaced frequently, and they are therefore comparatively abundant in the archaeological record. Studies of assemblage variability would show far less diversity without them. The problem with projectile points analytically is that they are *too* visible and *too* mobile. The distribution of a particular projectile point type is often extremely broad, obscuring any meaningful cultural boundaries, except at the broadest level of hunting technology. At the same time, like other small objects, projectile points may end up at great distances from their point of origin (such as Ramah quartzite bifaces from northern Labrador found in burial sites of Maine). Larger and more stationary facilities, such as cemeteries, may also be broadly distributed but they are, at least, not easily lost or traded.

Perhaps more importantly, the problem with bifacial stone projectile points as diagnostic artifacts is that they were not necessary components of an assemblage. Alternate materials and technologies were available, and cultural development proceeded in many areas of the world without stone points. It may be argued that their abundance in parts of North America is the exception rather than the rule. Thus, counting projectile points may, or may not, provide a useful means of quantifying the number of people in "different cultures," or relative to contrasting environments. The same cautionary tale applies to other classes of information including, for example, the frequency of radiocarbon dates. Pronounced clusters of radiocarbon dates at one period of time may represent more fires (and more people), or an increased depth of smudge pits (for smoking food or hides), given that deeper pits provide more visible and cleaner charcoal samples in typical nonstratified sites.

A broad technological tradition lacking bifacial projectile points has been defined for the Early and Middle Archaic periods. This and potential cases from the Late Archaic and Ceramic periods provide examples of culture patterns that could be missed or misinterpreted from a projectile point-dependent perspective.

THE EARLY AND MIDDLE ARCHAIC PERIODS

After the Neville site (Dincauze 1976) opened the door to a relative abundance of Middle Archaic period evidence in southern and central New England, Neville, Stark and the earlier bifurcate base point distributions were drawn upon to extend insights of early occupation into northern New England (Sanger 1979; Spiess et. al 1983). The apparent paucity of early projectile points in northern regions appeared so well established that environmental explanations were generally sought to explain the apparent low density of artifacts.

In the meantime, contract and research archaeology in the Gulf of Maine produced increasing evidence of early populations. In the Merrimack River valley, for example, artifact assemblages contained few projectile points but an abundance of quartz cores and unifaces, along with ground stone rods at 9000 B.P. (Bolian 1980; Bunker 1992). Central Maine sites also generally lacked projectile points in the Early and Middle Archaic periods, producing core and flake technology of rhyolite as well as quartz. In central Maine, there is also a broader array of ground stone tool forms. Full-channelled gouges and stone rods occurred by about 8000 B.P. (Petersen 1991; Sanger 1996a), with the addition of ground slate points and a variety of less common forms such as full-grooved pebbles, perforated pebbles and ground knives by 6000-6400 B.P. or earlier (Petersen 1991).

The problem with these artifacts for defining a new archaeological tradition or complex is that they

are not necessarily unique to the assemblages of central Maine, even though the whole assemblage may contrast sharply with those defined for the Neville or Stark complexes, for example. What then are appropriate characteristics and boundaries that may be used to define the new evidence?

Should the most distinctive artifact form, the ground stone rod, be established as diagnostic of a new complex? This alternative is not particularly appealing and a search for ground stone rods in extant collections surely would not provide a satisfactory indicator of the broader pattern.

Could the full-channelled gouge serve as a diagnostic artifact? Perhaps, but given that they are distributed from the Great Lakes through the mid-Atlantic states, this tool seems characteristic, but not necessarily diagnostic of the pattern in the Gulf of Maine.

There is a more fundamental reason why these tool forms appear inappropriate for use as diagnostic artifacts. The vast majority of Archaic period culture history units are defined by diagnostic *projectile points*, forming a precedent that is difficult to break for reasons that are inherent in the use of diagnostic artifacts as pattern indicators, in general. When diagnostic artifacts are depended upon, there is a strong incentive to use artifact forms that are mutually exclusive in time and space. For example, two different projectile point styles are less likely to overlap in time than are two different functional classes of artifacts such as projectile points and full-channelled gouges. Increasing the number of diagnostic artifacts for a single cultural pattern muddies the water, unless one of the forms is considered to be the *primary* diagnostic form. By this means, projectile points have come to dominate archaeological patterning, creating projectile point boundaries that structure culture history with little justification beyond analytical convenience or in some cases analytical necessity.

In the case of the essentially non-flaked projectile point assemblages of the Gulf of Maine region, it is clear that raising any single artifact to the status of "diagnostic" would only further confuse the issue. Therefore, it seemed most constructive to identify a new technological tradition and to structure it as a pattern that was not dependent on diagnostic artifacts. The Gulf of Maine Archaic tradition (Robinson 1992) was proposed as a technological tradition in which there are no actual diagnostic artifacts, but in which the frequency and proportions of characteristic artifacts can be contrasted with previously described archaeological traditions (as in polythetic sets, Clarke 1978:264).

The intended contribution of such broad traditions is both to identify broad patterns of similarity and to structure the rules by which they are defined. In the case of the Gulf of Maine Archaic tradition, for example, it was necessary to renounce the dominant role of diagnostic artifacts in order to resist the imposition of other large-scale traditions based on the occurrence of a small number of distinctive artifacts. The find of a full-channelled gouge does not *necessarily* signify presence of the Gulf of Maine Archaic any more than an isolated bifurcate base point signifies the presence of the bifurcate base tradition. Both artifact types are important horizon markers (signifying time periods) that need to be supported by broader assemblages before being declared representative of a whole culture or a limited technological pattern. Although the "one projectile point-one culture" model was relinquished long ago in theory, it persists in effect, whenever diagnostic artifacts are used as major cultural indicators.

So, what's to be done with diagnostic artifacts collected from riverbanks and plowed fields, or for that matter with the archaeological traditions that are defined to encompass them? A quick answer is probably business-as-usual, since cautionary tales that leave one unable to say much about prehistory are not very popular. In practical terms, once an archaeological pattern is convincingly proposed to occupy a particular region and time period, there is strong temptation to attribute sites in the right time and place to it. For example, although the Gulf of Maine Archaic tradition is, at present, a rather large and awkward abstraction, early assemblages that lack projectile points may be conveniently plugged into it with little other evidence. If this negative

criteria is applied too broadly, however, the technological tradition risks becoming a catch-all for nondescript assemblages.

There is nothing inherently wrong with finding more evidence to support a known pattern. When the data are of sufficient quality, however, a more constructive objective is to look for patterns of variability within the broad abstraction to begin the process of distinguishing regional and local culture patterns from special activity sites (Binford 1973). Only by gleaning from the archaeological record all of the sources of variability (including variability in tool kits, artifact style, raw material usage, settlement, subsistence and burial patterns, etc.) can we hope to bring the broadly abstracted tradition down to a scale at which people interacted within specific cultures and environments. In short, we should avoid being satisfied that we know an archaeological "culture" because it has been named.

THE LATE ARCHAIC PERIOD

The dominating role often played by projectile points is not limited to the Early and Middle Archaic periods of northern New England. A case in point may be seen in the correlation of the Moorehead burial tradition and corresponding occupation evidence. There is now evidence that periods of mortuary elaboration related to the Moorehead burial tradition span nearly 5000 years in the Gulf of Maine, from ca. 8500-3700 B.P. (Robinson 1996). Given that mortuary artifacts are often specialized assemblages reflecting mortuary symbolism, it is not always easy to find the corresponding artifacts in occupation sites.

Moreover, highly elaborated (and therefore highly visible) burial patterns may present the same problem that projectile points have here been accused, domination of the archaeological record. It should not be surprising that mortuary patterns sometimes provide greater resolution (more distinctive patterns over time) than the corresponding occupation patterns. A number of shorter burial complexes have been recognized within the broad Moorehead burial tradition. For example, during the Middle Archaic period, the Morrill Point burial complex (ca. 8000-7000 B.P.), with its full-channelled gouges and stone rods, is to some degree correlated with the Gulf of Maine Archaic tradition (Robinson 1992). In the later portion of the Late Archaic period (ca. 4500-3700 B.P.), the Moorehead burial tradition is more directly associated with the Moorehead *phase*, a whole-culture archaeological unit (Bourque 1971, 1995). The question posed here is: Where does the intervening Hathaway burial complex (ca. 5000 B.P.) belong?

The Hathaway complex is best known from the Hathaway I component of the Passadumkeag site (Figure 1) as excavated by Moorehead (1922) and refined and dated to 5100 B.P. by Snow (1975). This site, along with five others between the Kennebec and St Croix rivers, constitute the recently defined Hathaway burial complex (Robinson 1996). The artifact assemblage related to this burial complex is highly structured, with strong similarities between the respective Hathaway burial sites and strong contrasts with other Moorehead tradition sites. Almost all of the major artifact forms are diagnostic of the complex. These include particular forms of greenstone tuff gouges and adzes, "Penobscot pendants," bannerstones, "Godfrey knives," plummets, full-channelled pebble weights, and polished pebble strikers or fire-stones.

Nearly every one of the Hathaway complex artifact styles (but not functional categories) is absent from subsequent assemblages in the Moorehead burial tradition. The specific burial assemblage thus appears to have ended rather abruptly, but it is not known to which occupation assemblage the mortuary complex may be related. The current list of occupation alternatives at about 5000 years ago is not large, consisting of the Laurentian tradition (Cox 1991; Funk 1988; Ritchie 1968; Sanger et al. 1977) and the Small Stemmed Point (or Narrow Point) tradition (Bourque 1995:234; Ritchie 1969: 215).

The most diagnostic artifacts of the Laurentian tradition are the large side-notched Otter Creek-like points (of the earlier Vergennes phase) and a variety of related point styles (of the later Brewerton phase) that are more common in western Maine (Cox

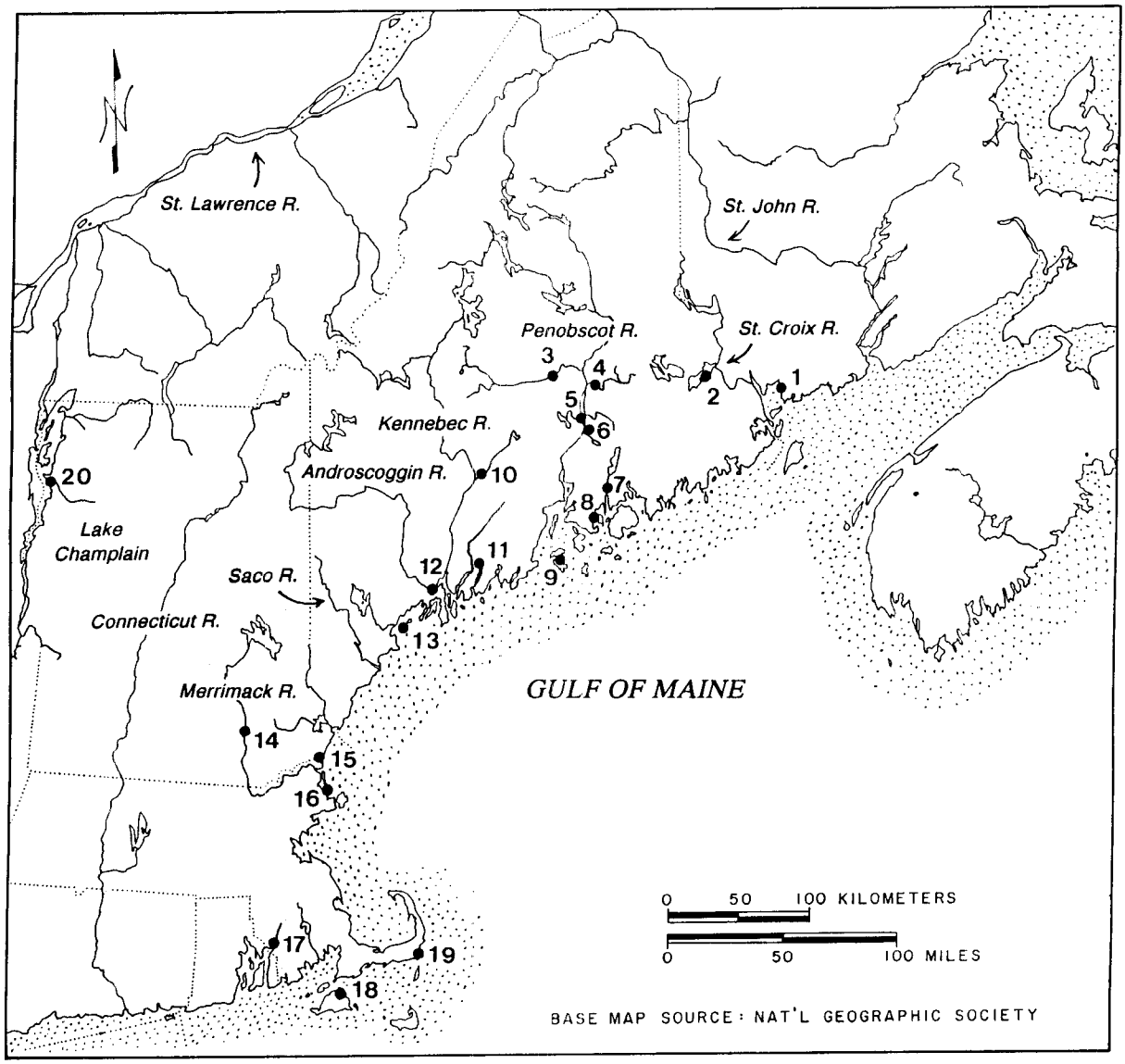

Figure 1. Map of Archaic and Ceramic Period sites referred to in text: 1) Carson, 2) Site 95.20, 3) Sharrow, 4) Passadumkeag, 5) Godfrey and Loring, 6) Blackman Stream, 7) Ellsworth Falls, 8) Goddard, 9) Turner Farm, 10) "Levanna," 11) Davis-Tobie, 12) Simpson, 13) Great Diamond Island, 14) Neville, 15) Rocks Road, 16) Clarks Pond, 17) Bear Swamp, 18) Cunningham and Vincent, 19) Mattaquason Purchase, 20) Winooski.

1991:156; Ritchie 1971). Assemblages include ground slate points and knives (ulus), gouges, and plummets, among other forms. The broad side-notched points have been dated to between 5800 and 5000 years ago in Maine (Cox 1991:153; Petersen 1991). Most of the other ground stone tool forms are, however, also characteristic of the preceding Middle Archaic period (Cox 1991), and are therefore not properly *diagnostic* of the Laurentian tradition. Assemblage composition of the Laurentian tradition therefore requires temporal control based on stratification or discrete spatial patterns. There remains much uncertainty concerning the discreteness of the Laurentian tradition in Maine and the nature of its boundaries with other potential patterns. Nonetheless, the body of material attributed to the Laurentian tradition, and the broad side-notched points in particular, constitute important patterns of the first half of the Late Archaic period, with one of the more intriguing patterns being the apparent interior distribution of the large side-notched points (Cox 1991).

The most characteristic artifacts of the Small Stemmed Point tradition are the projectile points described by the tradition name. Like the Laurentian tradition, they are accompanied by plummets, gouges and other tool forms that are characteristic but not generally diagnostic of the pattern. While the Laurentian tradition as originally defined (Funk 1988; Ritchie 1969) is centered generally north and west of the Gulf of Maine region, the Small Stemmed Point tradition is broadly situated to the south, encompassing the entire of southern New England and beyond. The Small Stemmed Point tradition has most often been dated in the vicinity of 4400-4000 B.P. (e.g., Cox and Wilson 1991; Ritchie 1969:214), with older dates (5200-4600 B.P.) from the Turner Farm site in Penobscot Bay (Bourque 1995) and the Bear Swamp site in southern Massachusetts (Staples and Athearn 1969). While the large side-notched points of the Laurentian tradition are mostly interior in distribution, small stemmed points occur at interior sites in southwestern Maine, with clear coastal components as well (Bourque 1995; Robinson 1985).

In the search for occupation correlates with the Hathaway burial complex, it is not necessarily expected that a relatively local mortuary pattern (located between the Kennebec and St. Croix rivers) will fit precisely with one of the broad-scale traditions just described. It may be better to search for correlates in individual site assemblages and, in fact, it is possible to match specific artifacts between the Hathaway complex and such sites as Sharrow (Petersen and Putnam 1992), site 95.20 (Cox 1991), and the Davis Tobie site (Bourque 1995, personal communication 1995). However, at the well-dated Sharrow site, the size of the assemblage dated to ca. 5000 B.P. is small, while the other sites have potentially compressed basal stratigraphy, leaving some question as to the dating of specific artifacts. Clearly there is much to be learned from well-dated components of this period. Alternately, it is constructive to search the Hathaway complex for similarities with the known traditions, however broad the scale.

Projectile point forms are the most obvious distinguishing characteristic between the Laurentian and Small Stemmed Point traditions. Unfortunately, the Hathaway complex is not noted for its biface technology. The Hathaway I component of the Passadumkeag site produced only two bifaces (Snow 1969). A relatively distinctive biface form has recently been described from the Godfrey cemetery (Robinson 1996), the largest known of the Hathaway complex sites. The "Godfrey knife" is at present considered to be a specialized mortuary form that was made on selected large flakes with minimal edge retouch, but often with pronounced serration (Figure 2). The form has been termed a "knife" due to its apparent lack of symmetry, especially in profile, which often retains the curvature of the original flake.

While specialized mortuary function may preclude close correlates of Godfrey knives in occupation context, there are examples of similar technology, if not form. Most notable is a notched and serrated point from the Sharrow site(Petersen 1991:Figure 41 upper right) which is retouched only at the edges and is asymmetric in profile. The

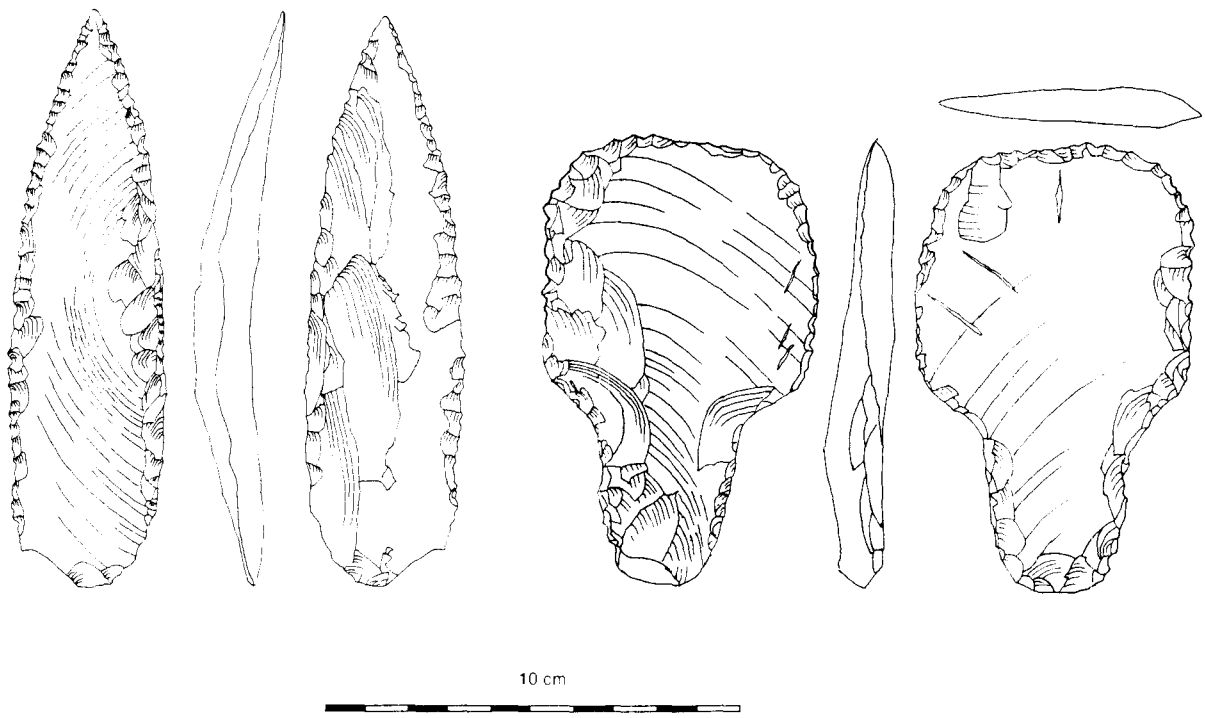

Figure 2. Examples of serrated "Godfrey knives" from the Godfrey site, including a unique, stemmed specimen (right) recovered by Moorehead in 1918 from Grave 279.

men is probably dated between 5370±120 and about 5000 B.P. Petersen (personal communication 1996) has noted that the general character of knives on edge-retouched, side-blow flakes is a characteristic found from the Early to Late Archaic periods at Sharrow and Brigham, although this simple technology is rather generalized in the absence of serration and taken out of mortuary context. For this reason, I have avoided attributing specimens as Godfrey knives outside of mortuary context, fearing that the category could become a catch-all for rather crudely retouched flake knives that otherwise resist classification.

While most of the bifaces in the Hathaway complex may be knife forms that do not have direct counterparts in known occupation context, a concerted effort to identify projectile points comparable to those from occupation sites yielded two specimens with reasonably good context. One of these comes from the Loring site on Indian Island, Old Town, Maine (Robinson 1996). The specimen was excavated by Frank Loring near a water main in 1972 and is now, unfortunately, unavailable for study. It was photographed, however, by Robert MacKay (University of Maine at Orono) on the day of its discovery, and is attributed as one of five bifaces reported by Frank Loring to have been recovered in a basin-shaped pit with a winged bannerstone nearly identical to those from the nearby Godfrey site. The Loring site produced multiple red ocher deposits and an assemblage of 39 typical Hathaway complex artifacts.

The projectile point in question (Figure 3c) appears to be made from a dark gray rhyolite (not Kineo rhyolite) resembling that of another untyped biface (Figure 3a) attributed to the same deposit. A third biface resembles a large Godfrey knife (Figure 3b). The projectile point closely resembles the

Figure 3. Three of five bifaces recovered with a bannerstone from a basin-shaped, ocher filled pit at the Loring site including: a biface of unknown form (a); a large Godfrey knife, apparently with the striking platform on right side (b); and a Brewerton Eared-Triangle point of dark gray rhyolite (c). From a color slide taken on the day of recovery in 1972 by Robert MacKay. University of Maine at Orono (slide L 21).

Brewerton Eared-Triangle point type (Ritchie 1971:18), a form that is relatively scarce in the Penobscot River valley but more common in western Maine. If the Loring site specimen is correctly attributed (both in context and in type), then one of two projectile points known from the Hathaway complex is most commonly associated with the late end of the Laurentian tradition.

The second recognizable projectile point was excavated in 1918 at the Godfrey site by Warren K. Moorehead (1922:95) in Grave 276, along with five gouges and adzes and one Penobscot pendant. The specimen was retained by the Godfrey family but was not physically labeled until 1948 (G-57) by Byers and Hadlock. The recent attribution of the piece to Grave 276 was made after a relatively exhaustive reconstruction of a 1916 Godfrey catalog, as well as the 1918 artifact assemblage excavated by Moorehead, which left only one artifact in the Godfrey collection as a possible match for that excavated by Moorehead. The white quartz specimen is now on loan to the Old Town Library (Figure 4) and it matches Moorehead's description in material, size and by the presence of light ocher stains in its flake scars.

When first observed, this specimen was inter-

preted as a rather large, quartz, small stemmed point, as indicated to Bruce Bourque (1995: 235). After examining the piece under a stereoscope (revealing the ocher) and measuring it, the only doubt about this attribution is its large size (maximum dimensions: 64 x 24 x 10 mm). This, of course, could be accounted for by its selection for use in a mortuary context, but it is also possible that the artifact represents a larger form of stemmed point that happens to be quartz. To some degree, the occurrence of a Brewerton Eared-Triangle point in the Hathaway complex lends some support to the attribution of the Godfrey point as a small stemmed point, because Brewerton points are thought to date late in the Laurentian tradition, ca. 5000-4500 B.P., more closely overlapping the known time range for small stemmed points even setting aside the early date of ca. 5200 B.P. from the Turner Farm site. Based on very tentative evidence (gouge and adz forms), the Godfrey cemetery may, in fact, date to the late end of the Hathaway complex.

Even if both of the points are correctly attributed here, it may be questioned to what degree this projectile point search contributes to the identification of the Hathaway burial complex in general. Unless the objective is, in effect, to attribute the entire mortuary complex (six cemeteries) to the best-fit projectile point, the presence or absence of a few diagnostic artifacts provides very tentative evidence at best. Other artifact forms also have correlates in occupation and mortuary context. Penobscot pendants (thought to be elaborated whetstones) are reminiscent of the perforated stone rods of the Morrill Point complex and the Gulf of Maine Archaic tradition. The plummets from the Passadumkeag and Godfrey sites resemble forms attributed to the Laurentian tradition (Cox 1991), or simply to early plummet forms that appear to have originated about 6000 years ago (Petersen and Putnam 1992:44). Bannerstones are characteristic of the Laurentian tradition as well as the Small Stemmed Point tradition of southern New England. Thus some of the distinctive artifacts of the Hathaway complex recall earlier forms of the Middle Archaic period while the basic tool classes occur in both the Laurentian and Small Stemmed Point traditions of the Late Archaic period.

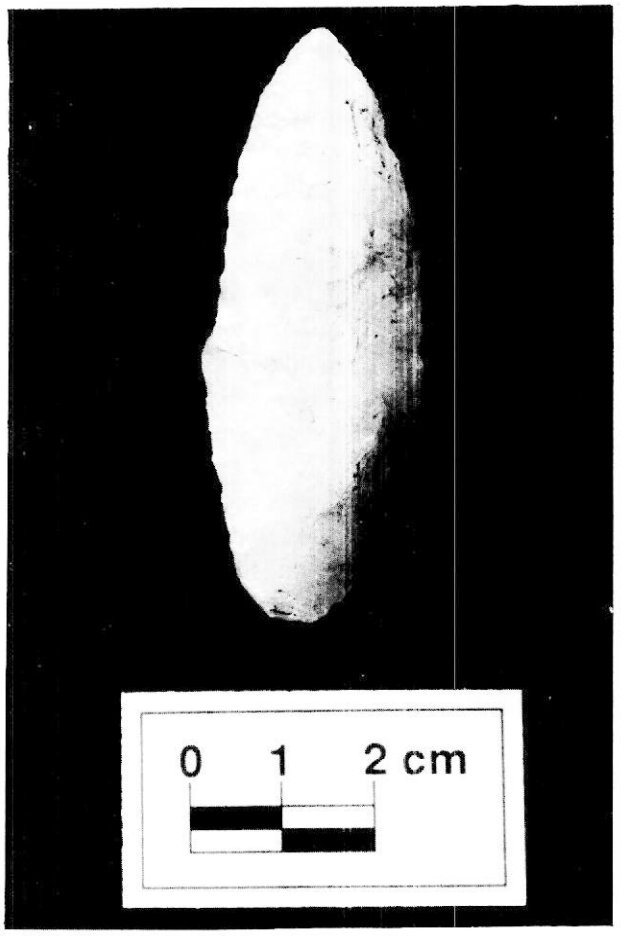

Figure 4. Quartz stemmed point attributed to Grave 276 of the Godfrey cemetery, excavated by Moorehead in 1918. Godfrey Collection, Old Town Library.

It is quite likely that other traditions or complexes remain to be identified that are of a scale more appropriate to the Hathaway burial complex. Both radiocarbon dates and artifacts suggest associations of the Hathaway complex with the early end of the Late Archaic period. If one accepts an earlier (although perhaps overlapping) range of dates for the Laurentian as compared to the Small Stemmed Point tradition, in addition to an apparent interior distribution of the broad side-notched points of the Laurentian tradition, then it is reasonable to ask:

What archaeological assemblages best represent the coast between ca. 6000-5000 B.P.?

Cox (1991) has noted the Laurentian-like character of isolated artifacts dredged from the sea floor in the Gulf of Maine, including large bifaces, and in particular, ulus. It is emphasized, however, that "Laurentian-like," in the absence of large side-notched projectile points, could also be termed "Middle Archaic-like." Given coastal submergence by relative sea level rise, our best approximation of coastal assemblages is likely to come from near-coastal sites on lower river drainages.

Similar assemblages, generally without large side-notched points, occur at the near-coastal sites of Ellsworth Falls on the Union River (Byers 1959), Blackman Stream on the lower Penobscot (Sanger et al. 1992) and at the Simpson site (site 15.53) on the lower Androscoggin (Bourque, personal communication 1995). Of these sites, Blackman Stream is known to be of Middle Archaic age, while Ellsworth Falls has compressed stratigraphy and the Simpson site was surface collected, the latter two potentially of Middle and/or Late Archaic period age. If "Middle Archaic-like" assemblages persisted on the interior through the sixth millennium B.P. (with the addition of side-notched points), such assemblages may have persisted on the coast as well, minus the diagnostic Laurentian projectile points. Although the question remains hypothetical at present, it is useful to consider whether a coastal component, lacking large side-notched points but similar in all other regards to assemblages attributed to the Laurentian in Maine, should be called Laurentian or even Laurentian-like, given the apparent

itage of this technology in the Gulf of Maine.

The discussion of hypothetical names may seem academic, but it bears on broader issues of cultural origins, relationships and their recognition in the archaeological record. The patterns of the Early and Middle Archaic period in the Gulf of Maine put us on notice that both the presence *and* absence of projectile points need to be considered in the definition archaeological units. In the southwestern Gulf of Maine region, the earliest well demonstrated projectile point technology following the Late Paleoindian (Petersen 1995) and Gulf of Maine Archaic tradition is that of the Neville complex (Dincauze 1976), at ca. 7500-7000 B.P.). In northern interior Maine, the earliest well represented bifacial point following the Gulf of Maine Archaic is the large side-notched point of the Vergennes phase (ca. 5800-5000 B.P.). In central coastal Maine, the earliest well represented projectile point style following the Gulf of Maine Archaic may be the small stemmed point (ca. 5200-4400 B.P.).

Although the designated "first point" in each of these regions is subject to change with new discoveries, it is important to consider that the "first point" following a predominantly non-projectile point technology is the most likely to incorporate earlier assemblages by lumping the projectile point type with logical associations that do not have an obvious earlier point style. I used a similar assumption in isolating the Small Stemmed Point assemblage from the Nelson's Island site near the mouth of the Merrimack River, assuming that the large number of plummets and gouges at the site "should be" associated with the dominant point form (Robinson 1985:50), an assumption that may have been correct, but that I would now treat with more caution.

The results are not yet in as to the nature of the occupation component associated with the Hathaway burial complex at ca. 5000 B.P. It may be that Occupation I at the Turner Farm site, with its set of small stemmed points, provides the closest example, but important questions remain about the relationship of the Penobscot Bay manifestation to the large tradition that spans most of southern New England.

Alternatively, a late Laurentian-Archaic association may be found, when the Laurentian is finally disentangled from other long-lived patterns in Maine that look like it. For the moment, my bets lie with the "Hypothetical-Coastal-Middle Archaic-Like" complex, perhaps because there is safety in the unknown.

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THE CERAMIC (WOODLAND) PERIOD

The variable role of chipped stone projectile points is probably not restricted to the Archaic

period. Unlike the Archaic period, however, projectile points have a less-dominant role in the definition of Ceramic period culture history units. Pottery provides a great range of decorative and technological variability, often providing finer resolution in time as well as regional patterning, at least relative to stone artifacts. At the same time, especially toward the South and Midwest, Woodland period trait lists include a greater variety and more complex characteristics ranging from trade goods to public architecture and social stratification, making any single class of artifact less likely to serve as a satisfactory diagnostic for culture patterns. In Maine and the Canadian Maritimes, the most finely resolved temporal sequence of artifacts lies in ceramics, rather than projectile points (Petersen and Sanger 1991). Yet the "whole-culture" status of the seven Ceramic period subdivisions is emphatically denied, and no phase, complex or tradition bears the same name as a pottery type, as so often occurs with Archaic period projectile point types. Referring to the recently proposed ceramic sequence:

> The subdivisions are not intended to be equated with phases or other comparable entities since they are based on homogeneity in only one form of material culture, ceramics, across a broad region rather than strictly local phenomena which are employed typically to define culture types.... (Petersen and Sanger 1991: 124).

Furthermore, the large number of pottery attributes makes it clear that variation in different attributes may correspond to different kinds and scales of culture boundaries. Seemingly subtle variations (for example, the width of punctations or the orientation of otherwise identical design elements) may have huge areas of common distribution, over much of the Northeast, while others may have regional or local distributions. One of the most powerful variables from the point of view of Northeast coastal studies, is the analysis of cordage impressions, where the spin and twist of the cordage can be either right ("S") or left ("Z") (Petersen 1996), providing a binary code of sorts that has been found to have a strong correlation with some social boundaries, but not others. Being an "on-or-off" type code it clearly cannot be used to distinguish all social boundaries, as one neighbor may have the same "twist," while another has the opposite, thus variably lumping some while distinguishing others. In Northeast coastal sites, the pattern observed, especially for Ceramic periods 1-4 (3000-1000 B.P.), is a strong correlation with "Z" twist on the coast, and "S" twist on the interior (Petersen 1996:110-111), suggesting a narrow coastal zone of uniform spin an twist, spanning the coast of the Gulf of Maine and cross-cutting boundaries of other ceramic styles.

Returning again to stone tools, this narrow band of coastal twist also cross-cuts one of the major projectile point boundaries of the Ceramic period, that between the characteristically southern Levanna Triangle type points (Ritchie 1971) and the side-notched points that characterize the Penobscot through Passamaquoddy bays (e.g., Bourque 1971; Sanger 1987). The contrasting point ranges presumably mark some kind of broad culture pattern boundary, but they are not known to demonstrate strong coastal/interior stylistic variation. Thus cordage twist may provide a more sensitive indicator of coastal versus non-coastal culture patterns, while projectile points (and other ceramic attributes) identify other potentially important social boundaries.

Levanna Triangle points are the dominant point style of the late Middle Woodland and Late Woodland periods in southern New England and along much of the eastern seaboard. Although apparently a minority point style for the Late Ceramic period in the Penobscot River drainage and areas further east, Levanna points dominate some lithic assemblages on interior sites of southwestern Maine, with large samples noted from the Sebasticook River (Kennebec River drainage) and the upper Saco River drainage. For example, a large, multicomponent site on the Sebasticook River produced one surface collection (site 54.15, Doyle 1984:Plates 34-36), with 21 Levanna points and approximately 10

Site 53.75 Artifact Category	Material						Total
	1 rhyo-lite/ Igneous	2 quartz/ quart-zite	3 chert	4 chert rd/gy Mun-sungan	5 argillite	6 meta-morphic	
Projectile Points							
Levanna Triangle	53	2					55
Levanna Triangle initial preform	8						8
Eared-triangle point	3						3
Small side-notched	8	1	3	1			13
Small side-notched preform	3	1		1			5
Stemmed, straight-contracting stem	2	1	2				5
Stemmed point, indeterminate form	4			1			5
Bifaces and Fragments							
Biface fragment (well thinned)	40	1	2	1	2		46
Biface and fragment (intermediate)	25						25
Biface and fragment (initial stage)	39						39
Unifaces and Perforators							
Uniface scraper	87	12	11	5			115
Uniface denticulate	6						6
Uniface and biface perforator	4			1			5
Levanna perforator	2						2
Flake Cores and Wedges							
Core, bifacial or disk	15						15
Core, unifacial	12						12
Core, irregular	8	1					9
Wedge	8	17	2	2			29
Flake Tools and Debitage							
Modified flake	52	1	7	4			64
Flake or fragment	3572	434	60	9	14		4089
Large flake or core fragment	106						106
Ground Stone Tools							
Core hammerstone and spall	3	1					4
Cobble hammerstone and spall	4						4
Small celt						3	3
Notched pebble						1	1
Pebble whetstone						8	8
Pebble rod		1				6	7
Tabular flaked stone						3	3
Other ground stone tool fragment						2	2
Total	4064	473	87	25	16	23	4688

Table 1. Frequencies of Lithic Artifacts from the Levanna Site.

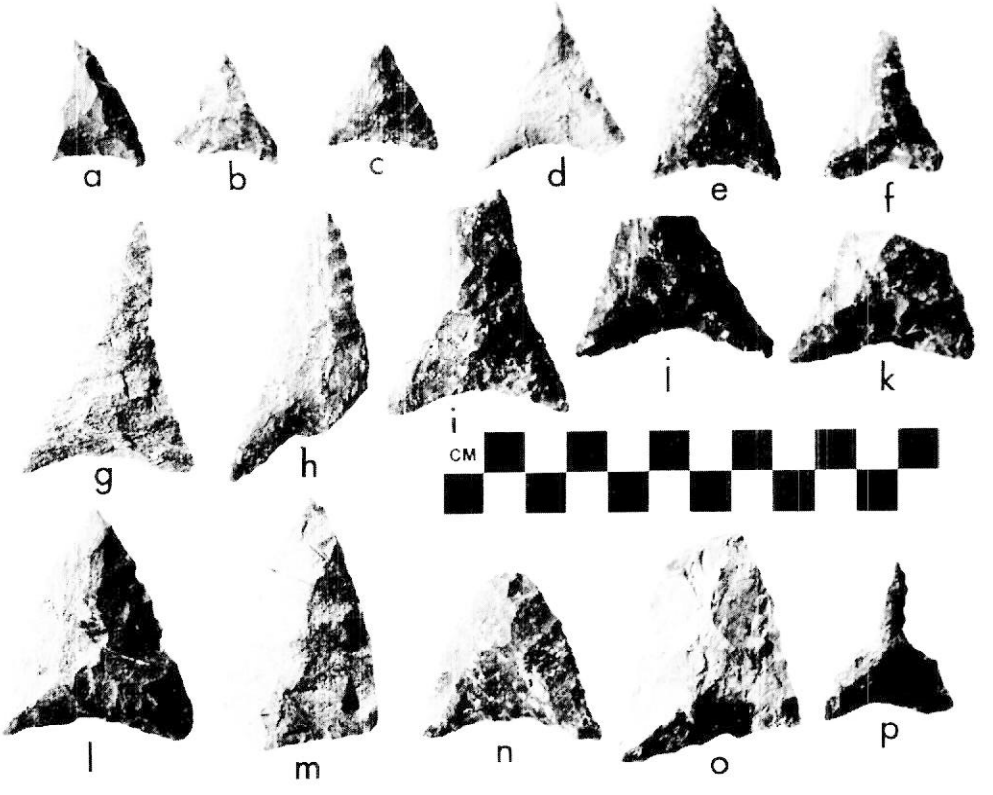

Figure 5. Levanna Triangles from the "Levanna" site (53.75): finished and intermediate stage points (a-n), preform reworked from probable Archaic biface (o), perforator (p). "Levanna" site artifacts from the Eames and Kidd collections.

Ceramic period side-notched points, with additional triangles recovered by other collectors (Bartone et al. 1992:102-140).

The "Levanna" Site on the Sebasticook River

Another site on the Sebasticook River (53.75) was recently discovered that yielded a large surface collection attributable to the early Late Ceramic period. A brief description and artifact frequencies for this site are provided here as an example of an interior, western Maine site, occurring 35 kilometers above the head of tide at Augusta. The site was collected by two avocational archaeologists, Richard Eames and David Kidd, from a low floodplain (apparently isolated from older landforms) that has been completely inundated by a hydroelectric impoundment and is now exposed only at extremely low water levels. At the time of exposure a high density of artifacts was found eroded from the face of the landform. The short-term character of the component was recognized in the field, and all artifacts were collected including flaking debris and pottery. The site was dubbed the "Levanna" site by its discoverers based on the dominant artifact form, a name retained here (in quotes). The full collection was cataloged at the University of Maine at Farmington and provides a representative cross-section of lithic tools, although ceramics are likely underrepresented due to erosion. It cannot be stated that earlier artifacts are absent from the collection, as the limits of this submerged floodplain approach other known multicomponent sites on higher landforms. Nonetheless, diagnostic artifacts from this site pertinent to this discussion are exclusively late.

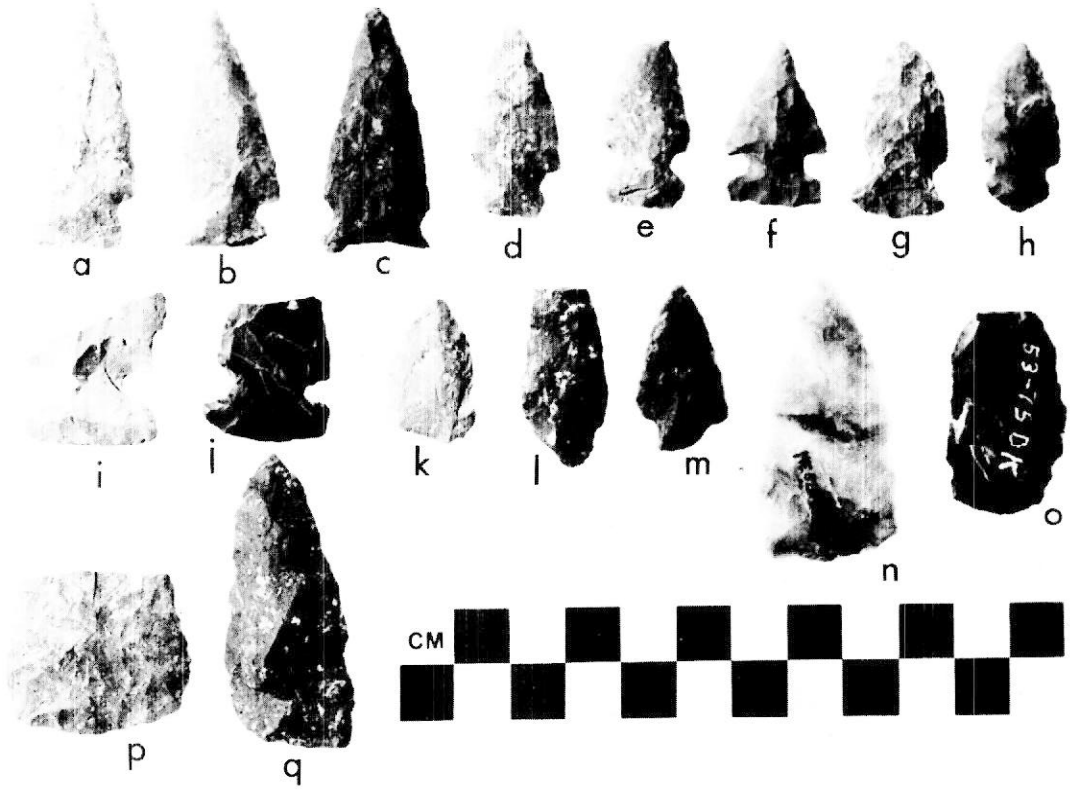

Figure 6. Stemmed projectile points and probable preforms from the "Levanna" site: small side-notched points (a-k), straight stemmed points (l-m), probable preforms for notched points (n-p) and early stage narrow preforms that could be related to the side-notched points (q).

Frequencies of all artifact forms are provided (Table 1).

The clear dominance of Late Ceramic period triangular points, including 55 points and 8 preforms, (Figure 5), is accompanied by abundant evidence of lithic reduction. Flakes removed from water-worn cobbles of rhyolite were worked early into crude triangular preforms that are easily recognized. Small side-notched points similar to those common in northeastern Maine also characterize the site, including 13 specimens (Figure 6a-k), at a ratio to the triangular points of 1:4. The presence of a small number of typical, well-formed biface preforms for the side-notched points (Figure 6n-p) indicates at least some degree of local production.

Material frequencies are significantly contrasted between the two point styles. Although the sample is small, five of the 13 side-notched points (38%) are made from exotic materials, including one of red/gray Munsungan chert (Figure 6j), three of gray chert (Figure 6f, h, I) and one of a relatively fine white quartzite. Two of the four distinct preform fragments are of exotic cherts (Figure 6n, o), although an additional seven rhyolite bifaces were cataloged as narrow preforms (Figure 6q), a portion of which could have served as preforms for the side-notched points. In contrast to the sample of side-notched points, not a single Levanna triangle point or preform out of 63 specimens is made of chert or any other recognizably northern material. No exotic materials were recognized with the possible exception of a banded tan rhyolite triangle (Figure 5d), that with two flakes resemble Connecticut River valley rhyolite (Petersen, personal communication

Figure 7. Unifaces and wedges from the "Levanna" site: end scrapers (a-i, k-n), serrated uniface (j), bipolar wedges (o, p, r), and wedge spall (q).

1996). The vast majority of material is probably related to Kineo-Traveler Mountain rhyolite (Bourque 1995:304), that is here usually gray (less commonly gray/green) with feldspar and glassy quartz phenocrysts. Debitage and core fragments include 25 kilograms of local cobble rhyolite as compared to only 18 grams of Munsungan chert. While the "Levanna" site may or may not be typical of a broader Late Ceramic pattern in southwestern Maine, the assemblage of triangular projectile points suggests a marked usage of local materials, in contrast to the side-notched points and their network of northern lithic sources.

With the projectile points at the "Levanna" site are 115 uniface scrapers (Figure 7a-n) and 29 bipolar "wedges" and fragments (Figure 7o-r), both of which are general characteristics of northeastern Maine, as well as western Vermont at the Winooski site, for example (Petersen and Power 1983; Power et al. 1980). Given the extremely high frequency of scrapers that often occur with the side-notched points, it is not possible to say whether the 115 scrapers are properly associated with the 13 side-notched points or the 55 Levanna triangles, although the dominance of local lithics used for scrapers, combined with limited use of exotic materials (86% rhyolite and quartz, 10% chert, 4% red/gray Munsungan), suggest that the scrapers occurred with both projectile point styles.

A preliminary analysis of the pottery from the "Levanna site" was done by James Petersen, who identified 20 vessel lots, of which 19 are cord-wrapped stick impressed (Figure 8) and one is rocker dentate. It was Petersen's impression that except for the dentate sherd, the sample was clearly from Ceramic periods 4/5, ca. A.D. 600-1300, but most representative of Ceramic period 5 of the early Late Ceramic period, ca. A.D. 1000-1300 (Petersen 1996:101). Cordage twist direction could be identified for 16 of the 19 cord-wrapped stick impressed vessels, with nine S-twist (56%) and seven Z-twist (44%) vessels. The slight dominance of S-twist

Figure 8. Cord-wrapped-stick impressed pottery from the "Levanna" site with S-twist, 2 ply Z-spun cordage (left) and Z-twist, 2 ply S-spun cordage (right).

cordage (normally interior) at the "Levanna" site occurred at a time when the "coastal-interior distinction disappeared in Ceramic Period 5" (Petersen 1996:111), thus, the "Levanna" site appears to be representative of a broader pattern of cordage twist shifts that occurred across much of the Gulf of Maine. Perhaps more indicative of interior location is the complete lack of shell temper, at a time when the use of shell increased markedly on the coast (Petersen and Sanger 1991:144).

The "Levanna" site yielded a comparatively large surface collection of lithics and ceramics that is representative of a relatively narrow slice of time. The large lithic sample, with reduction of local cobbles for bifacial projectile points and uniface tools, also demonstrates the high frequency of cores, debitage and biface fragments that typify assemblages that employ biface technology for projectile points.

Ceramic Period Comparisons

Selected artifact frequencies are provided (Table 2) for seven coastal sites (between Passamaquoddy Bay in New Brunswick and Martha's Vineyard in Massachusetts) and two interior sites (one each from Maine and Vermont). The principal comparison is the proportion of Late Ceramic period side- and corner-notched points, characteristic of northern sites, to Levanna Triangles that are more common to the south and west. These, in turn, may be compared to frequencies of uniface scrapers and bipolar wedges which also separate into northern and southern patterns. The frequency of bipolar wedges suffers from recognition and differential selection problems, and that of nondiagnostic biface fragments is variably reported. The size of the excavations provides a measure of artifact density. Despite unevenness in the samples, the patterns are sufficiently clear to serve as an example of regional-scale variation in artifact proportions and frequencies.

Late Ceramic period sites of northeastern Maine (northeast of the Kennebec River) produce assemblages more or less represented by the Carson Site in Passamaquoddy Bay:

> Corner and side-notched bifaces (projectile points) and the cord wrapped stick impressed pottery constitute the most diagnostic specimens. However, the high incidence of small, nonstemmed bifaces and the small formed unifaces (scrapers), are also diagnostic of Late Ceramic Period assemblages (Sanger 1987:56).

In the Quoddy region in general, "occasional triangular blades may represent re-worked or re-sharpened points.... Small, triangular, projectile points are rare in Quoddy region sites (Sanger 1987:121). The Goddard site in Blue Hill Bay produced the largest sample size from a single coastal site, with approximately 1100 complete and

Region and Site	Ceramic Period and Environment	Area sq. m	Projectile Points				Other Bi-face	Uni-face Scraper	Bi-polar wedge	small celt/ adze
			Side/ Corner Notch	Other Stemmed	Triangle	Other-including Archaic				
Passamaquoddy Bay, NB										
1) Carson	Late, Coastal	98	12				43	47		6
Blue Hill Bay, ME										
2) Goddard Area-5	Late, Coastal	74	96		19	19	589	339	87	1
Penobscot Bay, ME										
3) Turner Farm, 4	General, Coastal	398	55	125	19		270	177		
Kennebec Drainage, ME										
4) "Levanna" site	Late, Interior	?	13	10	55	3	123	115	29	1
Champlain Valley, VT										
5) Winooski, Locus 1	Late, Interior	84	1		38	1	13	17	4	
Casco Bay, ME										
6) Great Diamond, B	General, Coastal	60	3	6			7	4		2
Hampton Estuary, NH										
7) Rocks Road	General, Coastal	630	9*	3	4	12	72	38	4	1
Martha's Vineyard, MA										
8) Cunningham, 1-2	Late, Coastal	66	4*	5	19	1				1
9) Vincent, 1B	Late, Coastal	42		3	20	1		2		1

* Mostly Jack's Reef corner-notched and Meadowood side-notched from NH and MA.

Table 2. Frequencies of artifacts from selected Ceramic (Woodland) Period sites. Sources: 1) Sanger 1987:22, 40-46; 2) Cox 1995: Table of 1978-80 artifact frequencies; 3) Bourque 1995:18, 174-180; 4) Table 1 this paper; 5) Petersen and Power 1983: Table 26; 6) Hamilton 1985: Table 9, 220-223, 234; 7) Robert Goodby, personal communication 1996; 8 and 9) Ritchie 1969: 111, 112, 151, 152.

fragmentary small side-notched points in addition to a subsample of over 500 small biface blades (considered to be unnotched preforms, Cox 1995). Notably, this site also produced approximately 120 complete or fragmentary Levanna Triangle points, perhaps the largest sample from Maine, but still only about 1/10 of the number of notched points. Also at the Goddard site, from a study sample of 60 Levanna points, 28% are made from exotic cherts, including six points of Nova Scotia chalcedony, two of Munsungan and one point of Onondaga chert from New York (Cox 1995). The high percentage of exotic material is in contrast to the "Levanna" site described above (Table 1), reflecting the overall influx of traded material during the Late Ceramic period at Goddard (Bourque and Cox 1983).

At the Turner Farm site, the ratio of Late Ceramic period Levanna Triangle points to notched points is approximately 1:3 with 55 notched points. While this is not by any means a small sample, Bourque (1995:178) notes regarding notched points that:

> Some resemble the huge, highly uniform sample from the Goddard site in nearby Blue Hill Bay... but in drastically smaller numbers relative to cord-wrapped-stick-impressed pottery. The same relative scarcity has been noted at numerous other Ceramic period sites in Penobscot Bay, suggesting that some important reorganization of the population's economic activity occurred during late prehistory along this area of the coast.

Between the Turner Farm and "Levanna" sites, the relative proportion of Levanna to notched-points increases by a factor of 12, the significance of which is emphasized by the fact that the two sites lie within adjacent river drainages, with the Levanna site on the Sebasticook River, the major interior

water route between the Kennebec and Penobscot rivers (Cook 1985). The "Levanna" site is presented as an interior site, along with the Winooski site, a *far* interior example on Lake Champlain in Vermont. The Winooski and "Levanna" sites bear similarities (in the frequency of scrapers, wedges and other tool forms) that may suggest a closer relationship between the sites on the Sebasticook and Lake Champlain than to the Late Woodland of southern New England. This apparent relationship may stem from common relations in the St. Lawrence River area, given that the Kennebec River is one of the major interior routes to that river, more or less following Arnold's trail of the Revolutionary War.

If the "Levanna" site represents a change in point style between the Penobscot and interior Kennebec, the move to southwestern coastal Maine appears to represent a change in technological organization altogether. The relative sparseness of projectile points noted by Bourque for the Penobscot drainage is greatly amplified to the south, with coastal middens often seeming to produce one or two of each point type. Unfortunately, this *impression* derives from small lithic samples that provide relatively unconvincing sample sizes.

The Great Diamond Island site in Casco Bay produced a relatively large ceramic sample as compared to lithics (Hamilton 1985). The major excavation (Area B, 60 square meters) produced a total of nine projectile points, seven other bifaces, 235 flakes and 58 ceramic vessel lots (Hamilton 1985:193, 230, 310-340). Ceramics and lithics are dominated by Middle Ceramic forms, with the Late Ceramic represented by at least five corded vessel lots and some portion of the incised and undecorated vessels. Of projectile points, there are three side-notched, six stemmed and no triangular points. One triangular specimen is included with the less well formed bifaces. One triangular point and three triangular bifaces of irregular form are recorded from disturbed contexts at the site. The sample of lithics from the Great Diamond Island site is small but appears typical of shell middens of the southern Gulf of Maine.

Further south in the Seabrook/Hampton estuary of New Hampshire, 630 square meters of the Rocks Road site were excavated, yielding mostly Woodland period evidence (Robinson and Bolian 1987). The site is best known for its Contact period and Middle Woodland (Jack's Reef) components. The Jack's Reef component produced over 50 tools made of "Pennsylvania" jasper, including 26 bifaces and fragments which constitute a remarkable 25% of all bifaces from the site. Jasper also represented a high proportion of the Middle Woodland period flaking debris (Goodby 1988, personal communication 1996). The Late Woodland period was less well represented, with nine Late Woodland period ceramic vessel lots representing 21% of all vessels documented from the site (Goodby 1995:53). Associated with this component are two fragmentary triangular projectile points of questionable type and two Levanna triangle perforators. The proportion of Levanna perforators to projectile points (1:1) is high (Robinson and Bolian 1987:41-42) compared to the "Levanna" site (1:27) and the Winooski site (1:35). It is noted that because the Rocks Road site was not well stratified, artifact totals (Table 2) include Archaic as well as Woodland forms, with up to a dozen Archaic points identified (Goodby, personal communication 1996).

Toward the southern end of the Gulf of Maine, in the Plum Island estuary in Ipswich, Massachusetts, somewhat higher (but still unimpressive) numbers of Levanna points are recorded from the Clark's Pond shell heap (Bullen 1949). The main excavation (237 square meters) produced at least six Levanna points (large and small triangles), while seven additional "medium" triangles include both Levanna and earlier (jasper) pentagonal points (Bullen 1949:121, Plate XVI). These were found among a total of 62 projectile points, 850 mineral-tempered pot sherds and 750 shell-tempered pot sherds, the latter indicating a strong Late Woodland component.

Further south, in the vicinity of Cape Cod, coastal sites again seem to produce larger numbers of Levanna Triangle points, more representative of what might constitute regular use in hunting tech-

nology. The Cunningham (strata 1,2) and Vincent (stratum 1B) sites both produced 19-20 Levanna points from 65 and 42 square meters of excavation, respectively (Ritchie 1969:111-114, 151-154). The Mattaquason Purchase site, a shell midden in North Chatham, produced 36 large and small triangles (Levanna-like) and 10 crude triangular bifaces in 423 square meters of excavation, in addition to 22 points of all other types combined (Eteson et al. 1978:Figures 15-17). All of these Massachusetts coastal examples are dominated by shell-tempered pottery of the Late Woodland period.

The Late Ceramic period pattern of projectile point distribution outlined here suggests: a coastal pattern ranging from high frequencies of small side-notched points in the northern Gulf of Maine, to comparatively meager combination of Levanna Triangle points and side-notched points from coastal sites of the southern Gulf of Maine, and an increase in the number of coastal Levanna Triangle points from about Cape Cod southward. In the interior, high frequencies of Levanna Triangle points occur opposite the coastal pattern of low biface density.

The coastal pattern of low biface density leaves one wondering what role flaked stone projectile points played in the local technologies. Are the small number of points simply the result of low density occupation? Do the coastal sites represent special activity sites with hunting equipment produced elsewhere? Or did the coastal groups substitute other materials for projectile point use, with the few points that do occur representing marginal occurrences of more distant technologies? If stone points were used, did flaked stone points arm the tips of 90% of hafted projectiles or 10% (with organic materials serving for the balance)?

These questions are not easily answered without some independent means of evaluation, given that presumed coastal and interior cultures may have overlapped considerably in their use of coastal and interior settings. Settlement, seasonality, and cordage twist patterns provide alternate means of evaluation as variability in each of these categories becomes better defined (e.g., Petersen 1996; Sanger 1996b). If the low frequency of projectile points on coastal sites in the southwestern Gulf of Maine proves to be a systematic pattern, two of the more obvious explanations would include: 1) a regional (southwestern Gulf of Maine) pattern of transhumance between coastal and interior sites with projectile point production focused on interior hunting activities, or 2) a general low production of stone points in favor of alternate materials among coastal groups. It should be noted, however, that the proposition of a specialized interior hunting activity would also have to account for the relatively high frequency of white-tailed deer in coastal sites (Hamilton 1985:391; Robinson and Bolian 1987: 34).

The case is made that small-scale culture areas are as likely to include or exclude flaked stone projectile points from their repertoire of tools, as are large-scale technological traditions, such as the Gulf of Maine Archaic tradition, especially when the small-scale areas span environments as different as a narrow coastal margin, and broad interior forests, rivers and lakes. The potential ramification of the alternative selection of raw materials becomes clear when it is considered that a culture group that used few stone points may be situated within 10-20 kilometers of a group that produced them in abundance, groups that in all likelihood interacted on a regular basis. Indeed it would be quite surprising if a small number of stone points from near neighbors did not end up in a well-used coastal site. When such artifacts are recovered, it may be asked- whom or what are they diagnostic of? Are the few projectile points found diagnostic of visiting neighbors, rather than longer term occupants? Father Rasle recorded in 1723 that the inhabitants of the upper Kennebec Mission at Norridgewock left their fields between planting and harvest and then again in the fall "to go to the shore of the sea in search of food" (Rasle, letter of October 12, 1723, cited in Calvert 1991:127). Hopefully, their earlier counterparts brought the appropriately cord-marked pottery with them to the coast, to identify themselves.

CONCLUSIONS

Flaked stone projectile points along with other diagnostic artifact types play an important role in sorting out the temporal and spatial patterns of the past. For the Early and Middle Archaic periods, a relative absence of the expected diagnostic artifacts resulted in delayed recognition by researchers of widespread technological patterning that spanned the Gulf of Maine region. It took a series of deeply stratified sites with a battery of radiocarbon dates (Petersen and Putnam 1992:Table 1) to dispel the expectations that accompanied distributions of highly visible diagnostic artifacts. The formulation of the Gulf of Maine Archaic tradition as a technology based on frequencies of characteristic artifacts, rather than the presence or absence of diagnostic types, was intended to increase the range of variability recognized in the archaeological record and at the same time resist the dominant role that is some times played by a few particularly diagnostic forms.

This emphasis on the analysis of whole assemblages is (by now) an old theoretical approach (e.g., Clarke 1978), but the common-sense theory bears continuous exploration, balancing highly visible archaeological landmarks against the less-obvious patterns that undoubtedly dominated past behavior. It is, perhaps, worth noting that while numerous investigators were working to make sense out of the enigmatic early Holocene record of the Gulf of Maine region, there were not many precedents (in the Northeast, or for the Archaic period) to follow for gleaning patterns of variability from assemblages that lack the traditional signposts. A review of articles that implicitly equate projectile point frequencies with population size, or that imply that projectile points are an expected part of every cultural assemblage, suggests that the potential problem is widespread. In one example from southeastern Arizona, the Archaic period Cochise sequence held out for many years as a possible exception to the "rule."

> A puzzling aspect of this sequence is the absence of projectile points in the earliest (Sulfur Spring) stage. This notable anomaly has no parallel elsewhere in the early Archaic of North America (Schiffer 1987:253).

Eventual discovery of projectile points in deposits contemporary with the Sulfur Spring stage of the Cochise was said to have "resolved the controversy.... The Early Archaic in southern Arizona does have projectile points" (Schiffer 1987: 253, 254). The day is anticipated when a well-defined biface reduction station will be discovered in Early Archaic period deposits in Maine. It is hoped, however, that this will not be considered to "resolve the controversy" in Maine, eliminating the need for those cumbersome frequencies.

To some degree, the broader significance of the Early and Middle Archaic period technological pattern of Maine depends on whether it is perceived as an isolated, "Made in Maine" phenomenon, or as an example of potentially widespread patterns. The present paper focusses on the Gulf of Maine region, but suggests that cultural assemblages lacking the traditional diagnostic artifacts are widespread through time. The Laurentian tradition in Maine has long posed problems because it has most often been defined in compressed stratigraphic contexts that potentially result in the clustering of artifacts from different time periods around the diagnostic, large side-notched points. The "Hypothetical-Coastal-Middle Archaic-Like" complex ("HCMAL") without projectile points does not "resolve the controversy," but if present, such a pattern would significantly influence the criteria required to identify the Laurentian tradition, not to mention the fact that the "HCMAL" complex will be quite difficult to identify if the presence of one or two projectile points is considered to be diagnostic of a competing tradition.

In the Late Ceramic period example discussed above, the low number of projectile points in coastal sites of the western Gulf of Maine may represent a modern sampling problem or evidence that different activities took place here as compared to coastal areas to the north and south. Numerous site assemblages are needed to resolve such problems. Perhaps the lack of clarity in stone represents a transition (an area of lithic ambivalence) between two

large projectile point traditions to the north and south. In the western Gulf of Maine region, however, it is instructive that the ethnohistorically known Pawtucket culture area (Salwen 1978:169) fits within this area of "lithic ambivalence."

A curious thing about the process of scientific discovery is that information often becomes redundant (or well known) just before we recognize the variability that leads to the next set of interesting questions. If we are satisfied with small types (like projectile points) or large types (like traditions) because we recognize them, then we risk setting our own limits well before those of the archaeological record. As questions become more fine-tuned, and the archaeological units we define leave the scale of huge regional traditions and approach ethnographic-sized cultures or subcultural activities, there really are few diagnostic artifacts. The projectile point that used to be diagnostic (of a mega-region in time) now must be accompanied by various other forms of data such as the frequency of its type as compared to other artifact forms, evidence of local production or transport, and the association of Z- or S-twist cordage, to name a few. Each of these factors provides different perspective on the cultures involved, and the degree to which boundaries between people and activities are visible in the archaeological record.

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Analysis of the Godfrey cemetery was aided by a grant from the Maine Historic Preservation Commission. The research is an offshoot of dissertation research supported, in part, by Frederick Hadleigh West. For those who feel that my continual harping on projectile points amounts to beating a dead horse, my apologies, hoping that others find it a "good" old dead horse. I am, of course, responsible for oversimplification of much of the cited research.

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A GOUGE, A SCRAPER, AN ADZE LYING AMONGST THE GLADS: A FURTHER LOOK AT THE CATES FARM SITE

Liz Trautman

INTRODUCTION

Explorers have been intrigued by the central Kennebec River Valley since Europeans first visited this part of the world. It was a region well inhabited by the Native Americans these early explorers encountered. John Smith mentioned the village sites of Norridgewock and Taconic as early as 1614, and Benedict Arnold apparently visited and collected at the Norridgewock site during his expedition in 1775 (Willoughby 1980:16-18,32).

Since these early times the Kennebec has been investigated and explored by both amateur and professional archaeologists as well as many collectors. Charles Willoughby surveyed and recorded information in his *Indian Antiquities of the Kennebec Valley* from Moosehead Lake to the coast and Warren K. Moorehead was very active along the Kennebec River, too. Though many of the high profile sites associated with people like Willoughby and Moorehead have been fully excavated and often bulldozed, mined or pot-hunted beyond redemption there is much to learn from the collections and information left behind from earlier sources. The Waterville Cemetery is one such site. Despite the fact that it is now lying beneath the Industrial Marden's in Waterville, study of the site collection and interviews with a contemporaneous source enabled its identification as a Hathaway complex site (ca. 5100 B.P.) within the broad Moorehead burial tradition (Robinson 1996:107-108).

In addition to work on previously excavated sites, considerable recent archaeological survey has been conducted in the area as well. Surveys and excavations directed by James Petersen, Bruce Bourque, Harald Prins, Theodore Bradstreet, Richard Will and Eric Lahti, respectively, have all contributed to the store of information and our understanding of this area during its Native American past. The Maine Historic Preservation Commission (MHPC) has also been active along the Kennebec with excavations at the Evergreen Site, two sites in the Waterville - Winslow area, and at the Cates Farm on China Lake in Vassalboro.

A return to China Lake on MHPC business eventually led to the descriptions and analyses provided herein. For the author and John Mosher a short routine field check at the China Lake public boat ramp in East Vassalboro quickly turned into a morning of pleasure in May of 1994. Soft spring skies and a sparkling, bug-free water view assured our physical comfort. Although the field check did not locate any archaeological remains, our yen for discovery was gratified later when we walked through Vassalboro's new Historical Society quarters and over a small portion of the Cates Farm site (38.10). Betty Taylor provided us a brief tour of the Vassalboro Historical Society's (VHS) collections in its new housing: the old red school house located across the Outlet Stream from Cates Farm. As a result of the Society's relocation, a small box of additional artifacts from the Cates Farm site was rediscovered and subsequently lent to MHPC for recording and analysis. Following our short tour we were granted permission by the Cates family to walk along newly plowed gladioli beds on the Cates Farm property. Here, John Mosher espied yet another artifact which was generously donated to MHPC by George Cates. The following pages will describe these additional Cates Farm artifacts and are intended to supplement an earlier Bulletin article by Trautman and Spiess (1992).

A BRIEF SITE DESCRIPTION

In the summer of 1990 MHPC conducted excavations and detailed contour mapping at the Cates Farm in East Vassalboro. During the following lab season cultural remains were analyzed. Results of these analyses were published along with the description of 61 artifacts lent to MHPC by the Vassalboro Historic Society. A more detailed account of the Cates Farm excavations appears in *The Cates Farm: Archaic and Woodland Occupa-*

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tion at China Lake Outlet (Trautman and Spiess 1992)

Site 38.10 is located along the east side of Outlet Stream at the northwest end of China Lake in Vassalboro, ME, about 15 miles northeast of Augusta. The majority of cultural remains were recovered from a cultivated area measuring about 50 by 80 meters with the greatest concentration recovered from test units and ground surface within 30 meters of the Outlet Stream. Despite the use of the densest portion of the site as a flower and vegetable garden, intact cultural features are still present below the plowzone. In addition to this heavily used area near Outlet Stream, test units dug on a gentle slope about 325 meters to the east-southeast of Outlet Stream also provided positive results. The artifact discovered by Mosher along the freshly plowed gladioli field in May of 1994 was located within five or ten meters of the MHPC testpits which defined the easterly limits of occupation (Figure 1).

The 1990/91 analysis of the VHS artifacts indicates that Cates Farm has been inhabited off and on over a very long span of time, as many as 8,000 years. Three flaked points were attributed to the Early and Middle Archaic periods and several flaked points and scrapers are assigned to the Ceramic period along with six ceramic sherds. More than half (n=11) of the bifacially flaked artifacts, however, were identified as Late Archaic: both Vergennes phase (ca.5,800 to 5,000 B.P.) and Susquehanna tradition dating from about 4,000 to 3,000 B.P. Though a majority of the pecked and ground artifacts could not be attributed to a specific temporal or cultural period several others did help to refine our understanding of prehistoric occupation at 38.10. Four of the adzes corresponded with Robinson's (1992:88, Figure 6) "steeply-bitted" category which is characteristic of the Middle Archaic. Three of the plummets characterize the Moorehead phase of the Late Archaic, while five other plummets are probably Vergennes. A radiocarbon date of 5000±70 B.P. obtained from Feature 2 at Cates Farm corroborates the Late Archaic occupation of the site.

A dominant Late Archaic occupancy is further indicated by the artifacts described in the following pages: the flaked implements are largely of the Susquehanna tradition. While ascription of the ground stone material is less certain, two are undoubtedly Middle Archaic and one is probably Moorehead phase. The presence of Susquehanna tradition and other Archaic cultures along with dateable feature material make the Cates Farm a significant site.

ARCHAIC PRESENCE IN THE CENTRAL KENNEBEC RIVER REGION

Archaic sites are well represented in the central Kennebec River drainage from Norridgewock to Augusta and to the east and west on connected lakes such as Cobbosseecontee and Sebasticook. According to MHPC's computerized sites information (MESITES) Archaic cultural remains have been identified among the cultural material in 57 percent of native sites in this area. This percentage conforms well with the statewide average of 56 percent Archaic representation within non-shell midden sites in Maine. Eight percent of the Archaic sites in the central Kennebec River region are listed on the National Register of Historic Places, while five percent are listed for interior Archaic sites statewide. Identified Early and Middle Archaic materials for the central Kennebec River region also average slightly higher than statewide: Early or Middle Archaic remains are identified at 24 percent of the Archaic sites in the central Kennebec River valley compared with 18 percent statewide. Laurentian or Vergennes remains are also identified more often at 11 percent of Archaic sites in this region and only five percent statewide. Correspondingly fewer Moorehead components have been identified in the central Kennebec Archaic sites: Moorehead components average 11 percent here compared to 20 percent statewide. Susquehanna remains are identified equally in the central Kennebec River area Archaic sites and statewide accounting for some of the cultural remains in 26 percent of sites (MESITES computer database).

Well known sites such as Father Rasles' Norridgewock Mission site, 69.2, best known for its

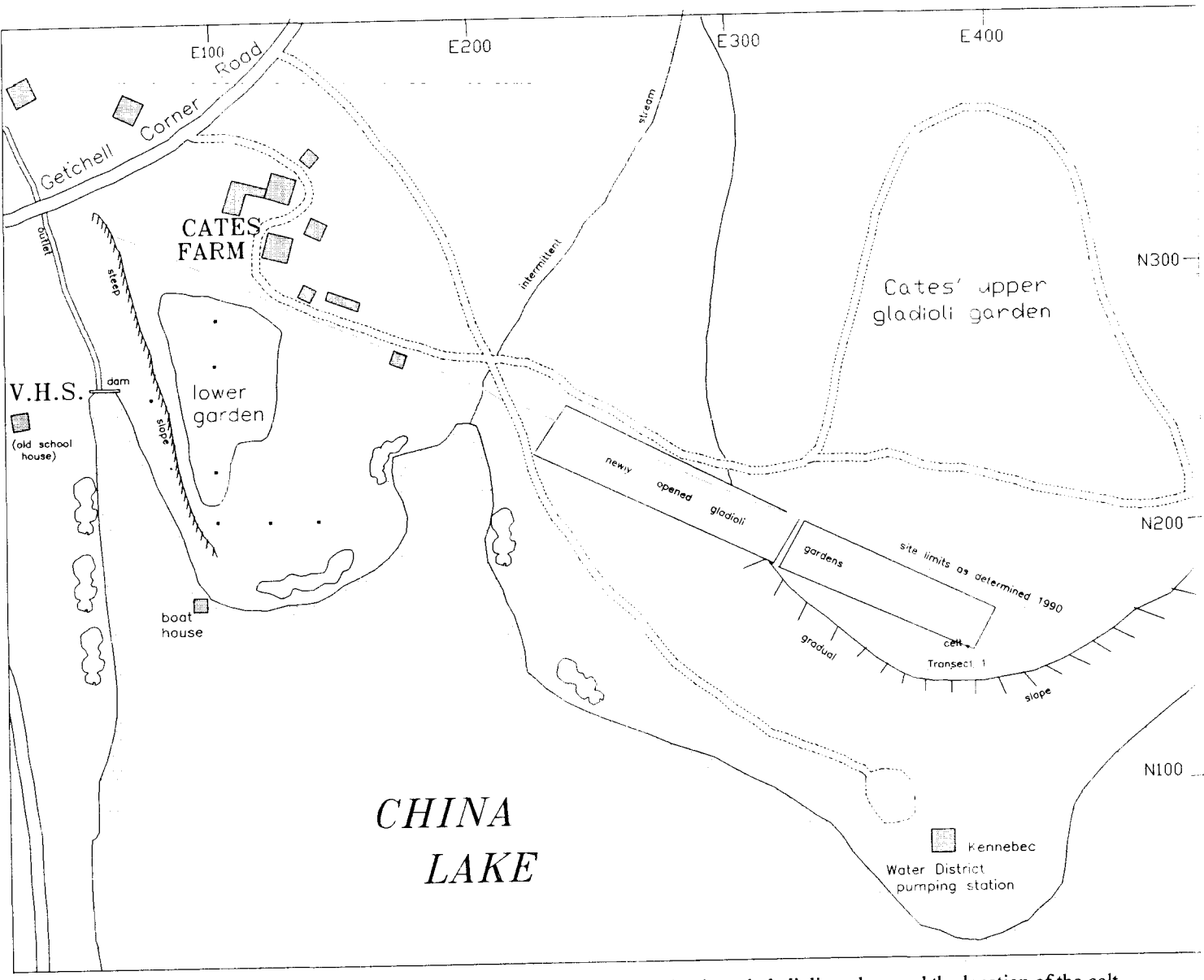

Figure 1. Site map of the Cates Farm site (38.10). Note the newly plowed gladioli gardens and the location of the celt find.

Contact period remains, also contains evidence of Middle Archaic habitation in the form of a full channel gouge fragment (Cowie and Petersen 1992:78-80). Late Archaic materials are also well documented from sites close by the mission site and an Early Archaic bifurcate base point was presumably recovered by an amateur collector from nearby the Father Rasle monument (Prins and Bourque 1987:153).

Exciting evidence of the Late Archaic period can be found at the fish weir site on the Sebasticook Lake, site 71.9. Here, radiocarbon dates on two weir stakes, a horizontal weir element and the discovery of an insitu half channel-gouge establish the use of this area during the early part of the Late Archaic or the Laurentian tradition, the Terminal Archaic

Figure 2. Left and middle left: Susquehanna tradition bifaces (VHS 68.24.82 and .84) . Middle right: Susquehanna tradition drill (VHS 68.24.86). Right: probable Susquehanna biface (VHS 68.24.85)

period (either very late Susquehanna or very early Ceramic) and during the Moorehead phase. Discovery of these perishable artifacts helps bring to life the wood working tools which are so common among the identifiable remains from Archaic period sites. Interestingly the two weir stakes, which provide the earliest and latest Late Archaic dates, differ in their construction as well as their ages. Other evidence of the Archaic period is available in the immediate vicinity of the weir as well, with a Middle Archaic projectile point and gouge fragment recovered by a sports diver in the lake bed proper (Petersen et. al. 1994:197-221).

Survey work around Cobbosseecontee Lake has also resulted in important findings concerning Archaic period sites. Six sites in this area are known to possess Archaic components, three of these sites are listed on the National Register of Historic Places. One site at the Cobbosseecontee Dam (37.5) yielded two copper fragments from a dated Susquehanna feature (Bourque 1991:5), while at another a bifurcate base point was recovered (MESITES computer database).

Several surveys required by the National Historic Preservation Act in the central Kennebec River region have also refined our understanding of the Archaic period in interior Maine. The Benton Falls project identified or corroborated Archaic materials in six sites (Bradstreet 1985); the Weston project, seven sites (Cowie and Petersen 1992); FERC relicensing along Messalonskee Stream, seven sites (Crock et. al. 1992; Crock and Petersen 1992); DOT bridge building in Waterville, one site (Hedden 1994; and the Augusta hydro project, two sites (Will *et. al.* 1995.

ADDITIONAL ARTIFACTS FROM CATES FARM

The box of artifacts lent to us in May 1994 contained an additional 24 artifacts. The small assemblage is evenly divided between flaked and ground stone tools, with 12 of each. The artifacts are generally a less impressive collection than those analyzed in 1990/91.

Flaked Artifacts

Eight of the twelve flaked implements are of a size and shape suggesting they can be assigned to the Susquehanna tradition. At least three of these are diagnostic and can be designated as Susquehanna tradition with assurance and three more have well documented Susquehanna analogs, increasing the total number of Susquehanna artifacts from the site to ten. Unless otherwise noted, the flaked artifacts described below were formed from Kineo Rhyolite materials ranging in color from dark bluish

Table 1. Flaked stone artifacts, measurements in centimeters, weights in grams.

Catalog # (VHS 68.24.xx)	Munsell Color	Greatest Length	Midsection/ *Greatest Width	Midsection/ *Average Thickness	Base Width	Distal Stem Width	Tip Angle (°)	Edge Angle(°)	Weight
82	5GY 4/1	--	*5.8	*1.1	--	--	52	52	55.4
84	5B 5/1	--	*3.3	*1.0	--	--	79	52	20.4
86, drill tip	5Y 4/1	--	*1.6	*1.0	--	--	--	65	8.5
85	5GY 4/1	--	*2.8	*0.7	--	--	63	48	10.4
81	5GY 4/1	~10.1	4.2	1.3	3.4	--	52	63	64.7
83	5GY 6/1	--	4.2	1.1	--	--	--	58	32.6
80	5GY 4/1	9.2	5.0	1.5	~3.3	--	74	63	73.5
88	5GY 4/1	--	3.5	0.9	2.6	--	--	53	21.4
87	Weath.	5.2	2.7	1.0	2.4	--	--	55	20.2
79	5GY 5/1	10.1	5.6	2.0	4.5	--	--	70	132.2
78	Weath.	--	8.9	1.8	--	--	--	70	141.1
89	5Y 2/1	5.3	1.9	0.4	1.6	--	62	64	13.6

gray to medium greenish gray. Table 1 presents measurements and Munsell Chart color ascriptions for the flaked stone assemblage.

In Figure 2 the tip or distal halves of three bifaces, most likely knives, are shown along with the working end of a Susquehanna drill bit. The two knives on the left, VHS 68.24.82 and .84, are Susquehanna types, while the tip on the far right, VHS 68.24.85, could have been fashioned as either a Susquehanna, Otter Creek or even a Neville point (Dincauze 1975: Plate A) based on its size and shape. But its asymmetrical, knifelike outline indicate that it, too, is probably from the Susquehanna tradition.

The largest of these knives, VHS.68.24.82 is a dark greenish-gray and exhibits a transverse break across its midsection as well as a distal break. It is a well formed tool, obviously finished, indicating that both breaks were the result of use. The presence of a broken tip suggests that this artifact's point was used as well as its edges. The break across its broad midsection is most consistent with its use as a knife (Truncer in Moeller 1990: 26-27). In addition, the surface of the transverse break shows no sign of the differing patination which might be attributed to breakage by a plow nor any percussion bulb or radiating shatter lines which would indicate manufacturing breakage (ibid: 20-22). Several irregular, invasive flake scars signify retouch along its shortest edge (the left edge in Figure) while some dulling along with tiny scars on both sides of this tool probably results from use.

The biface second from the left in Figure 2, VHS 68.24.84, also possesses a knife shape and is large enough to be comfortably attributed to the Susquehanna tradition. It, too, is obviously a finished piece and was therefore most likely broken across the middle during use. It was formed from a bluish gray dull rhyolite with few phenocrysts (see also VHS 68.24.87 below). Both edges of this blade show extensive retouch and use wear flaking. The facial arisses, or peaks between flake scars, also

Figure 3. Knife-like bifaces which fit easily within the Susquehanna tradition (VHS 68.24.80 and .88).

show dulling, even polish. This may result from use, or, as there is also ochre present along the polished arisses we may have the implication of curation.

The knife on the far right of the figure, VHS 68.24.85, is very similar in outline to the knife just described but is a thinner, lighter, slightly serrated implement. It was made from a dark greenish gray fine grained stone, possibly a siltstone. Reworking is apparent along the long edge and tip of this tool. It appears to have been made on a large flake: the shorter, more serrated side is flaked only on one surface. This artifact, too, most likely broke as a result of use and, as mentioned previously, could also derive from the Susquehanna tradition.

There are additional knife-like forms within this collection. Although these cannot be definitely attributed to a specific time period they may be Susquehanna tradition as well. The two bifaces in Figure 3 are very similar in shape; each has one slightly and one strongly convex edge, as well as very thin, finely flaked bases. An artifact described as a "biface/scraper" from the Oosala Park site, 52.18, is attributed to the Late Archaic and provides an analogue for these two bifaces (Cowie and Petersen 1992: 485, Figure 327). Of these two knife-like bifaces in the Cates Farm assemblage, VHS 68.24.88 has very fine flow banding present (see VHS 68.24.81 and VHS 68.24.79 below) and VHS 68.24.80 is marked with trail-like weathering patterns. The smaller of the two, VHS 68.24.88, exhibits signs of considerable resharpening along the straighter edge and use wear along both edges. It is quite a thin tool, except for a residual lump near its distal end, and the break across the distal portion is certainly congruent with use breakage. The larger of these knives, VHS 68. 24.80, was heavily used along its rounder side with an apparent resharpening episode in process along the less convex edge. The tip was not finished but that seems to have done little to reduce this tool's considered usefulness.

Going back briefly to Figure 2 the remaining artifact to be described there is a drill bit, VHS 68.24.86. It typifies Susquehanna tradition drills by its diamond-shaped cross section. Its distal end is not so typical, however, ending with a thin, spatulate tip. Susquehanna analogues for this drill can be observed among collections from at least three sites at the Maine State Museum: site 27.59 in Warren, Cobbosseecontee Dam South nearby to the west of Vassalboro and Cary's Garden along the Androscoggin River in Topsham (Bourque 1991: plate 3; Spiess 1993: 41, Figure 3-11; pers. obs., MSM, 1996). Other blunt ended drills have been identified in "broad spear" contexts, specifically made on Perkiomen points (Truncer in Moeller 1990:12, Figure 6; Kraft in Moeller 1990:69-69, Figure 7.) Extensive use wear on the tip and sides of this drill fragment seem to indicate that it was used to produce large diameter holes or concavities at least as

deep as 4.5 centimeters in a rather hard medium such as bone.

Three more artifacts can probably be attributed to the Susquehanna tradition. The artifact on the left of Figure 4 is classified as a "bifacial end-scraper" in some literature, although VHS 68.24.81 could have functioned as a digging tool and produced the use wear present on it (Cross personal communication 1995). Two small spots of ochre can be identified on one face of VHS 68. 24.81 and the finely flow banded matrix is visually similar to VHS 68.24.88 previously described and VHS 68.24.79 presented later. Both its long edges have been minutely flaked, presumably for hafting. The blunt scraping/ digging end exhibits a lustrous, even polish which extends about 1.5 centimeters up onto each facial surface and each edge. A fairly large flake (about 1.5 X 1 centimeter) which invades this polished surface may support the notion that this tool was used as a digging implement. Tilly soil would provide both the loose silica rich medium to produce the high polish as well as unyielding surfaces, such as rocks, which could have popped off large invasive flakes.

Figure 4. Artifacts with Susquehanna tradition analogs, left to right: VHS 68.24.81, .83 and .87.

Flaked "scrapers" similar to the one presented here are documented in Willoughby (1973: 128, Figure 67:a), Ritchie (1980:158 and 191, Plates 51 and 60) and Dincauze (1968:30, Plates VIII:10, XIII:12 and XVII:12). In addition to Ritchie, references specific to bifacial scrapers such as these being consistent with New England Susquehanna tradition manufacture can be found in Dincauze (1976:64,36 Plate 9:b) and Bourque (1995:110-112, Plate 6.8). These implements are also present in Susquehanna context at Cary's Garden in Topsham (personal observation, MSM, 1996)

Moving right, VHS 68.24.83 in the middle of Figure 4 exhibits evidence of multiple usage. Both sides of this tool have been resharpened and possess the small scars typical of usage. With this artifact, it is unlikely that these areas were the result of hafting preparation, since it appears to have been previously stemmed. A transverse break occurs just below a slight "waisting" along the bottom of the tool which may indicate that it was stemmed at one time. Some signs of reworking are apparent along the break. The suggested stem could indicate reuse of a point although VHS 68.24.83 seems rather crudely fashioned (Ritchie, 1980: 158, Plate 51:19). VHS 68.24.83 exhibits dulling along its blunt tip rather than the high polish of VHS 68.24.81. Along with a slight smoothing of one facial surface, the tip's use wear may indicate that it functioned as fire-striker like the remaining artifact in Figure 4. Or it, too, could have functioned as a digging or scraping tool similar to VHS 68.24.81.

On the right of Figure 4 is a somewhat similar

Figure 5. Likely Susquehanna tradition artifacts. Left: VHS 68.24.79. Lower right: VHS 68.24.78. On the upper right: VHS 68.24.89 (a and b), an unusually shaped non-diagnostic artifact.

tool which conforms well to descriptions of a Susquehanna tradition striker or fire-stone (Dincauze 1968:64, Plate XVII:9-11; Robinson 1996:124-125, Figure 21). Like the artifact Robinson describes, VHS 68.24.87 was formed from a bifacially shaped blade-like flake. Many small invasive scars suggest the end was well used. VHS 68.24.87 shows only the most rudimentary bifacial thinning. It may well be that this tool originally broke while it was being formed and this remaining piece was subsequently used for its thin base and straight sides. This specimen contains few inclusions: the material is visually similar to VHS 68. 24.84, except that it is badly weathered to a rough yellowish gray.

Two other artifacts can be readily assimilated into the Susquehanna portion of this small collection. These are VHS 68.24.79, a large biface preform, on the left of Figure 5 and a "chopper", VHS 68.24.78, in the lower right. The preform retains its fresh color on one face. Its material is visually similar, including the presence of some fine flow banding, to that used to fashion the smaller of the two knife-like bifaces (VHS 68.24 .88) and the scraper/digger (VHS 68.24.81). The transverse break across the proximal end of this preform probably occurred during attempted thinning of the preform. A long, thick ridge about 1.5 centimeters away form one edge (the right side of the artifact in Figure 5) and its attempted removal appears to have

Catalog#(VHS 68.24.xx) and Description	**Table 2.** Ground stone artifacts, measurements in centimeters, weight in grams.					
	Munsell Color	Greatest Length	Proximal Width	Distal Width	Greatest Thickness	Weight
.73, small adze or gouge	5 GY 6/1	7.4	3.0	3.6	2.2	98
.72, adze	N5	14.3	2.8	5.4	3.1	324
.76, large gouge, broken	5B 5/1	10.0	--	3.7	2.7	210
MHPC 38.10.360, celt	5G 5/1	9.6	4.4	4.0	2.8	197
74, adze preform	5 B 5/1	13.6	4.0	2.8	3.2	360
75, adze, broken	N4	11.7	mid width 4.1		3.3	296
69, small chisel	N4	6.4	.9	2.2	.8	18
70, small chisel	5Y 6/1	5.0	1.9	2.2	.6	11
71, small chisel	5Y 6/1	6.6	1.9	2.2	1.5	37
67, stone rod(?), broken	5Y 6/1	--	mid width 2.5		1.3	43
77, plummet, "button"missing	5B 5/1	9.5	mid width 4.6		2.0	108

caused the fracture leaving a bulb of percussion and radiating ripples on the fracture face.

The large implement on the far right in Figure 5, VHS 68.24.78, is referred to here as a chopper for want of a better name. This specimen has the light weathering "trails" similar to the preform, VHS 68.24.80. Except for the broken surface on the right side of the tool, all the edges have been bi-facially worked. Obvious use wear is concentrated to a dulled area as indicated in Figure 5. Two notches have been nibbled into the hinge surface of the broken edge. These may have provided grooves for lashing.

The last flaked implement in this collection, VHS 68.24.89, is a peculiar looking one. Judging by the lateral view of this tool (Figure 5b), its parent material of dark olive black rhyolite with irregular brownish banding may have been a more difficult material to work than was originally thought. The tool maker's perseverant nature is certainly evident in the finely flaked edges which mark this piece despite the presence of an immoveable lump. Any of the tool's edges may have been used despite its knob and it even provides a good thumb hold if an individual wanted to use the point as a graver or an awl. Surely the twelve millimeter long concavity delicately flaked into one edge of the piece, (Figure 5a), must have been intended for use. (Actually, a conversation in the spring of 1995 with one of Maine's experimental stone knappers, Rick Will, reveals that pieces such as this often result during the knapping process.) What really makes this tool seem unusual is that it was not abandoned despite its obstacles.

Ground Stone Artifacts

Several ground stone tools are represented in this Cates Farm collection.Three small chisels, three adzes, one celt, a plummet and two other ground-stone implements can be added to the previously

Figure 6. Ridge-backed or V-shaped adzes, VHS 68.24.72 and .73. Upper row shows a cross section of the distal ends.

described collection from site 38.10, for a grand total of 36. As in the prior analysis the following descriptions include color identifications following the Munsell Rock Color Chart along with other qualitative and quantitative attributes. Metric data and Munsell Chart designations for most of the ground stone assemblage is presented in Table 2.

Three of the groundstone specimens in the collection can be reasonablely attributed to the Archaic period. The smallest of the three, VHS. 68. 24.73 is a small adze or gouge formed from a greenish gray schist (Figures 6 and 7). The material is very finely layered and contains a few larger feldspar inclusions. Although this tool is not complete its general shape suggest that it is probably a Moorehead phase tool (ca.4200-3800 B.P.). Its V-shape cross section, as seen in Figure 6, along with its small size are typical Moorehead phase attributes (Moorehead 1917: 103; Robinson 1996 and personal communication 1994). However, VHS 68 .24.73 also has the very steep bit (Figure 7) which may be indicative of Middle Archaic period adzes (Robinson 1992: 88, Fig. 6). Battering or flaking is evident along one of the lateral edges as well as the distal edge, whether from use or reshaping is not apparent. There is no polish or pecking visible on this piece, probably as a result of weathering.

The other V-shaped, or ridge-backed, adze is a much larger one. VHS 68.24.72 in Figures 6 and 7, fulfills Robinson's description of a typical Middle Archaic ridge-backed adze quite well: first, it is made from a dark material, perhaps a fine grained diabase; next, its ventral surface is very flat and heavily pecked; and lastly, the sides decidedly curve toward the dorsal ridge (Robinson, personal communication 1994). It is not nearly as long as Robinson suggests is typical but it is in the process of being reshaped and may have once been longer. As a result of reworking, there is a heavy concentration of flaking and peck-

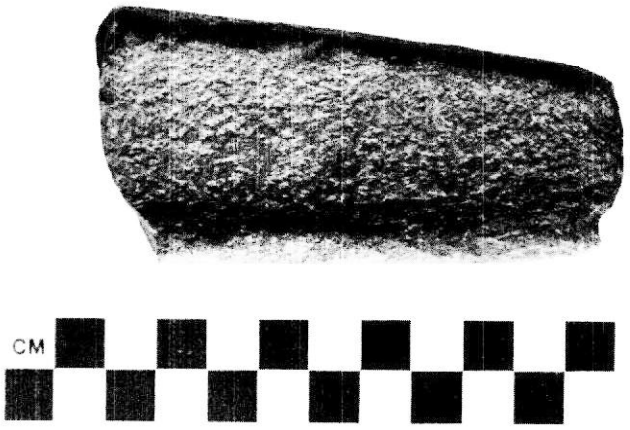

Figure 8. Full-grooved Middle Archaic adze, VHS 68.24.76.

surfaces and on the unpolished bit end as well. The ventral surface was polished smooth. The outline of the polish is not symmetrical and proceeds toward the bit in a diagonal line. In addition to the flaked edge of the bit these attributes produce a lopsided appearance to the bit end as though a sideways motion may have been employed during its use.

The one artifact described here which at least has horizontal provenience information is the celt or axe collected by John Mosher along the newly plowed gladioli garden on the Cates Farm (Figure 1). As was mentioned before, this find corroborates the north eastern site limits indicated in the 1992 Cates Farm report. This celt, 38.10.360 seen in Figure 10, is complete with a sharp bit and slight waisting about 1.5 centimeters from the proximal end presumably for hafting. This tool was constructed from a dark greenish gray igneous rock, possibly olivine.

The sweethearts of this small assemblage can be seen in Figures 11 and 12. These three very small chisels unfortunately are not indicative of any specific prehistoric culture. Similarly sized ground stone tools have been excavated from a variety of contexts in New England and New York: Early Archaic (Petersen 1991: 113, Figure 86), Brewerton (Ritchie 1980:90), probable Susquehanna tradition or Ceramic period (Moorehead 1917, Figures 82 and 83), "Pre-Algonkian" (Willoughby 1973: 27, Figure 13-h") and Ceramic period (Funk 1976: 108; Lewis personal communication 1995). They are variously described as small adzes, chisels, small celts, scrapers and rubbing stones. It is inferred from the relative lack of flaking or pecking that they were fashioned from appropriately shaped pebbles. An experiment conducted by William Burgess, an anthropology major at University of Southern Maine, provided some insight into these small tools: only 15

Figure 9. Non-diagnostic adzes. Top: VHS 68.24.75. Bottom:VHS 68.24.74.

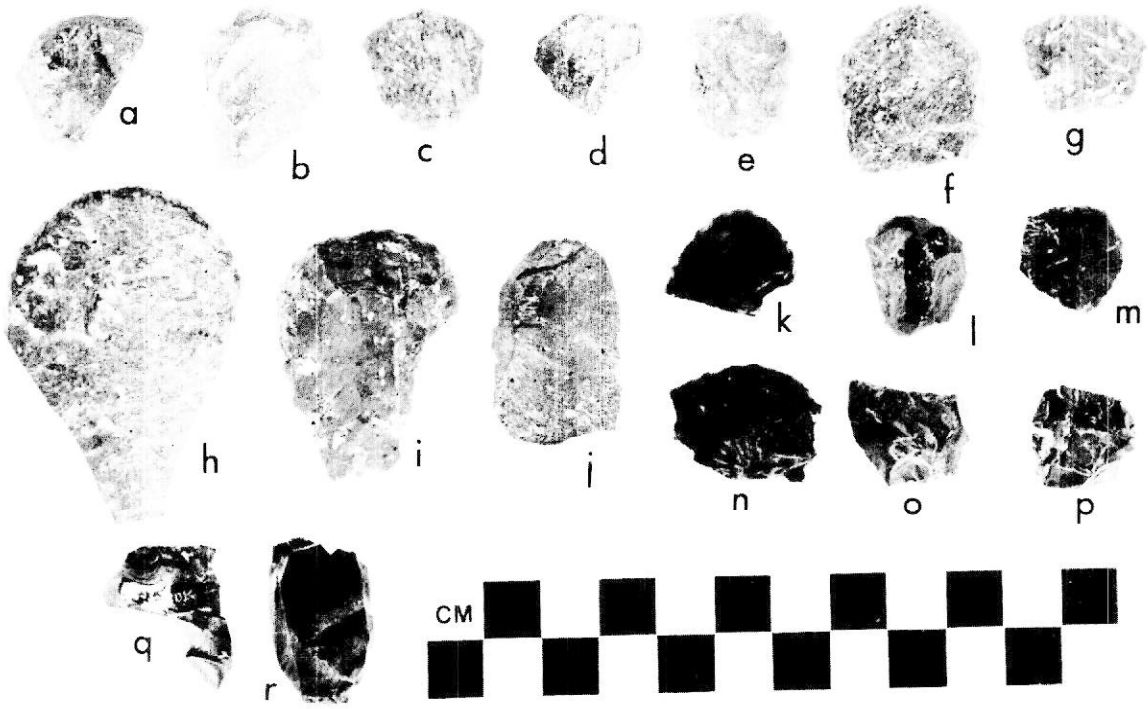

Figure 7. Ridge-backed or V-shaped adzes, VHS 68.24.72 and .73 lateral view showing their steep bits.

ing on the bit end of VHS 68.24.72. The sides and dorsal surfaces are well polished though pecking is still visible overall. In the case of this adze, and perhaps as a result of the reshaping, it is steep-bitted as well as ridge-backed.

The Middle Archaic is represented again by VHS 68.24.76, a full-channeled gouge (Figure 8). Its overall appearance is very dark but fresh scratches show that this gouge was fashioned from a light olive gray micro-granite or diabase. Pecking is evident over all surfaces of this tool. Most of the facial surfaces are polished as well, but only to the extent that the crests between peck marks have been flattened and polished. The channel edges are the only area of extreme polish. These edges also exhibit several flake scars. Flake scars are apparent at both ends of this gouge, even along the broken "bit" end which may mark an attempt at reuse. VHS 68.24.70 strongly resembles a Middle Archaic gouge from the Messalonskee project area (Crock 1992: 49, Figure 4) and another from the Sharrow site (Petersen 1991: 116, Figure 89).

The remainder of the groundstone assemblage cannot be considered diagnostic. Two large adzes are pictured in Figure 9. The distal end of VHS 68.24.75 is broken off and the entire tool is so weathered that little information can be gleaned from it. It was produced from a medium dark gray hornblend schist with a high plagioclase content. Several small specks of ochre are present on the dorsal surface of this adze. Some pecking seems to be apparent though given the natural foliation planes of the material these marks could be a result of weathering.

VHS 68.24.74, seen at the bottom of Figure 9, is a medium blue gray tool formed from a very fine grained, quartz rich sandstone. Very fine peck marks are visible over all the dorsal and lateral

minutes of grinding with an appropriate beach "whetstone" on a beach pebble produced a very sharp bit indeed (Figure 12, top).

VHS 68.24.71 is the largest and best preserved of the three small chisels in this collection. Formed from a phyllite pebble it has a sharp bifacial bit. A large flake scar is present on both the distal and proximal ends. The sides of the chisel are polished but whether from natural or cultural processes cannot be discerned. No pecking is visible beneath this polish nor elsewhere on this piece.

VHS 68.24.69 is a very thin chisel formed from a medium dark gray fine grained sandstone. Every surface of this piece is heavily weathered but the bit is still obviously sharpened. Some few peck marks are discernible on one facial surface and a few small flake scars are visible along the bit.

Figure 10. Celt found along newly plowed garden, MHPC 38.10.360.

The last of these small tools, VHS 68.24. 70, is also formed from a fine grained sandstone, in this case a light gray. It appears to have split along its horizontal midline, leaving one side completely flat. No work is discernible on this piece but its convincing shape has kept it amongst the artifacts.

Two whetstones can be identified within the groundstone assemblage (Figure 13). In each case a very fine grained sandstone was utilized to form the tools. VHS 68.24.68 shows abrasions both old and new. No indication of shaping is apparent on this piece. However, it is similar in form to one from the Hathaway site (Snow 1969:75, Plate 35-2) and two from the Varney Site (Robinson 1994: Figure 12, a and e). In these Hathaway complex contexts it would be identified as a "Passadumkeag Problematical" or a "Penobscot Pendant" and presumably had a perforation on its missing end. This artifact fits well with the Vergennes phase artifacts previously identified at the Cates Farm (Robinson 1996: 110).

Figure 11. Small chisels, VHS 68.24.71, .69 and .70.

Figure 12. Small chisels, lateral view. Top: experimentaly produced. Middle: VHS 68.24.69. Bottom: VHS 68.24.71

The other "whetstone" VHS 68.24.67 has a long, ovoid shape and is broken at one end. It is light olive gray in color. Abrasions are apparent on its surface and the existing end shows some rather heavy use wear. These marks suggest that it might have been used as a pecking stone or pestle as well as an abrader.

There are two remaining artifacts to be described here. The first, VHS 68.24.77, is a plummet (Figure 13) with a flattened, lenticular cross section. It is medium blue gray in hue, formed of microgranite. The proximal end has been broke off. Despite its unusual cross section it is symmetrical in the planar view.

The last of the ground stone assemblage goes untyped (and unphotographed). VHS 68.24.66 is probably a fragment of a large adze or gouge but is not complete enough for certain identification. Pecking is apparent over the unbroken surfaces save the heavily battered "butt" end. Several spots of ochre adhere to both the finished and broken surfaces. This piece was constructed from a medium blue-gray fine grained diabase.

CONCLUSION

The Cates farm site was clearly inhabited during much of the Archaic period as is indicated by the lithic remains collected sitewide and the dated charcoal from Feature 2. Along with a pervasive Susquehanna tradition component, earlier Archaic period cultures dominate the site. The artifacts from the earlier Archaic occupations, described here and in the 1992 Bulletin article, reflect the lives of persons who subsequently comprised several of the burial complexes which form the long Moorehead burial tradition. From the full channeled gouge and the steep-nosed adzes, along with the hexagonal slate "bayonet" and Penobscot Pendant to the perfectly formed Moorehead phase plummets the Cates Farm reveals a glimpse into the lives of those who ritually buried their dead within the Moorehead burial tradition.

Indeed, it is even possible that a cemetery was once present at Cates Farm and was inadvertently plowed up. But the evidence for burials is indirect: ochre is present on twelve of the artifacts from the site, eight of these are ground stone implements. Of the artifacts presented in the earlier 1992 Bulletin article, all three of the plummets identified to the Moorehead phase had some ochre present as did one of the Vergennes plummets. Ochre was also present on a ground stone axe, two of the rather amorphous gouge/adze/axe implements and one shallow channeled gouge among the previously described assemblage, none of which were considered to be diagnostic. (The descriptions of those last ambiguous three; however, are certainly reminiscent of those described as significant markers of the Cow Point complex of the Moorehead burial tradition (Robinson 1996:116-117)). Ochre was also identified on two of the Susquehanna tradition flaked artifacts.

The presence of ochre in an assemblage such as this could be misleading, however. No graves are known there, nor was any calcined bone identified from the site. In addition, none of the artifacts are covered with ochre, rather ochre occurs in spots and streaks. Finally, It is unlikely that all of the burial

Figure 13. Plummet and whetstones. Left: VHS 68.24.77. Middle: VHS 68.24.67. Right: VHS 68.24.68.

traditions which could be represented by ochered artifacts were present at the Cates Farm site. It is more likely that one or two ochre burial traditions may have been present and the subsequent mixing of artifacts from all the habitations there caused the incidental presence of ochre on such a wide variety of artifact forms. But burials or no, Cates Farm is a notable habitation site which could help elucidate the lives of those who buried their kin in the custom of the Moorehead burial tradition.

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