APPENDIX G:

PROJECTILE POINT STUDY

INTRODUCTION

Three forms of temporal data were considered as part of the chronological analysis of the Frederick Lodge site. One was absolute—AMS dating of organic material from various contexts. The remaining two forms of data were relative, consisting of the identification of diagnostic artifacts (mostly projectile points), and the assessment of stratigraphic associations. The presence of sub-plowzone deposits and features at the site offered the potential to confidently place projectile point finds in association with specific contexts. In addition, the horizontally discrete nature of the occupations provided separation of cultural components in several areas where vertical stratification was absent. Consequently, the chronological data at the Frederick Lodge Site Complex had the potential to provide clarification in regard to local material culture sequences.

As background to the findings, the temporal and geographical associations of formally described points types recovered at the site are provided in this appendix, along with a quantitative analysis of the material and morphological characteristics of the artifacts. Comparative data are presented using published dimensional ranges from large type collections. Where possible, the statistics have been derived from original reports of the type sites for each point type. Since this form of data can be relatively limited in availability, the entries have in some cases been supplemented by data from other large, published collections. Assemblages from Delaware are used when possible, although most of the data are derived from sites to the north, in the Delaware River Valley. Projectile points from the site that did not occur within formally described types are also detailed.

Research Context for the Frederick Lodge Projectile Point Study

While the scarcity of stratified contexts in Delaware has to some degree inhibited the chronological refinement of projectile point sequences, other factors challenge the investigator attempting to sort and chronologically classify artifact assemblages in the state. Not the least of these is the occurrence of a large number of stemmed point styles, many of which overlap morphologically. These types include the Lackawaxen/Poplar Island/Bare Island group, Savannah River variants, as well as Rossville and Piscataway. The presence of Adena influences and Adena-like points in Delmarva adds another stemmed form. And although not often described in the Delaware literature, the Middle Archaic Morrow Mountain II point is similar to many of the later types and appears to occur in some parts of the state.

Not only are these types similar morphologically, there is often not a clear dividing line between the forms. Such gradations in form may be expressed not only across geographic ranges, but also through time, an observation that appears to hold particularly true during Late Archaic and Early Woodland periods. For example, numerous researchers have remarked on similarities between certain narrow-bladed Late Archaic points and the late Middle Archaic Halifax and Brewerton traditions. Some have proposed that various Late Archaic types may represent in situ development from the earlier, notched forms (Dincauze 1976; Dent 1995). Also commonly cited is the observation that broad-bladed types occurring at the end of the Late Archaic may have antecedents in the southern Savannah River tradition (Ritchie 1971; Mouer 1990; Dent 1995). Ritchie (1971) postulated a genetic link between

the Early/Middle Woodland Rossville point and the earlier, Poplar Island type. He further argued a geographically based relationship between the temporally related Susquehanna and Fishtail types, two points that in fact appear very different morphologically when viewed as classic or modal forms.

The notion of morphological variation across geographic ranges has important implications for Delaware. The state is centrally located between the Northeast and Southeast prehistoric cultural regions. As a result, Delaware was potentially subject to cultural influences originating from well outside its geographic bounds. Delmarva comprises part of the Chesapeake basin, the southern end of which borders the Carolina Sounds drainage. Yet, while some Southeastern influences likely occurred in Delmarva, the Delaware Valley, to the north, provided a ready conduit for movement of populations and cultural features from that direction. The location of the state is thus likely to have affected both the occurrence and the morphological expression of certain local point styles.

In addition, the apparent use of local lithic material, in the form of pebbles and small cobbles, may have influenced the morphological attributes of particular point forms that would have been more fully expressed without the constraints imposed by the raw material size. Similarly, points brought into the area, or manufactured on material foreign to the Delaware Coastal Plain, are likely to have been highly curated, and therefore heavily resharpened before being discarded. As some researchers have argued, long-term maintenance and extensive resharpening have the potential to make the identification of temporally diagnostic artifacts more difficult (Frison 1968; Dibble 1995). Together these factors pose a considerable challenge to the study of chronology in Delaware, particularly on sites dating to the Late Archaic through Early Woodland periods, a time range that appears to be well represented in the local archaeological record.

Custer (1994) took a somewhat unconventional approach to sorting out the chronological implications of Delaware projectile point morphology by dropping the traditional type names associated with most stemmed points, replacing them with letter designations. This abstract nomenclature was based on a proposed seriation initiated by Kent (1970) at the Piney Island site in the Lower Susquehanna Valley. Custer integrated the seriation with his proposed Delmarva chronology. In formulating this non-traditional classification, Custer (1989) questioned what some have coined the "Coe Axiom," in reference the concept that limited morphological variability in projectile point form is chronologically specific (Brennan 1967). While stating that certain Archaic period point sequences, such as those presented by Broyles (1971), in West Virginia, or Chapman (1975), along the Tennessee River, are valid, Custer maintained that their validity pertains only to the period prior to 5000 years BP. After this time, "the appearance of numerous stemmed points confounds the situation" (Custer 1989:146). In particular, the use of "typical" forms to define and illustrate an established type may obscure the range of variation inherent within that type, especially those types associated with the second half of the Archaic period.

Yet, in examining the broader regional data base on Archaic period point styles, there seems little evidence to support the contention that the range of variation present in later Archaic contexts is sufficient to throw the established point typologies into question. In fact, the

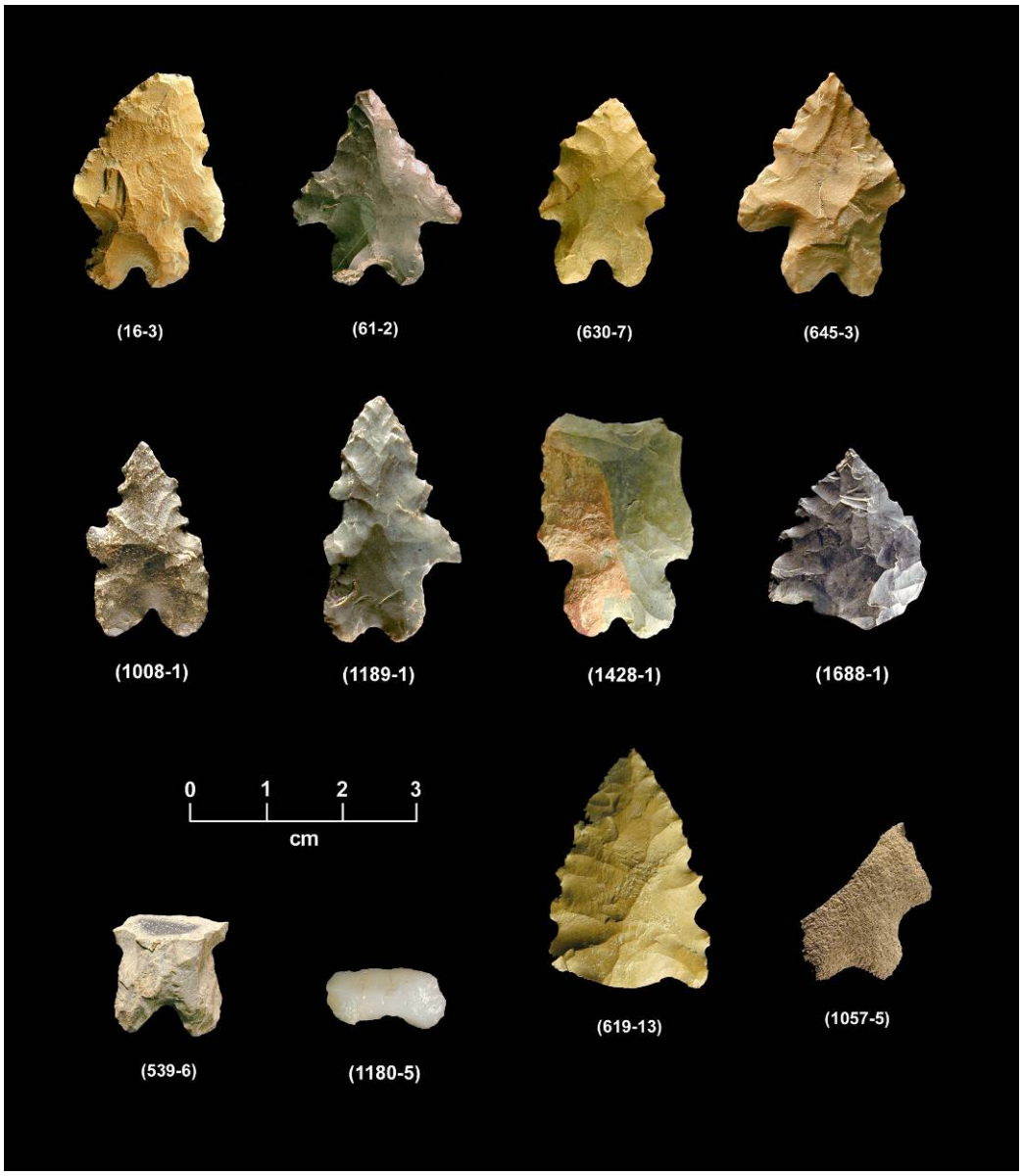
opposite seems true. Findings from a number of important stratified sites from the latter end of the Archaic period strongly support Coe's observation that projectile points from individual contexts represent morphological variations on specific themes and are temporally diagnostic. Russell Cave, in northern Alabama, for example, contained a deeply stratified sequence that provided a refined view of the second half of the Archaic period (Griffin 1974). Closer to the present study area, Benthal's (1990) excavations at the Daugherty's Cave, in southwest Virginia, defined a distinctive, small-stemmed point variety, designated Cedar Creek. These points were encountered in stratified late Middle Archaic context separated from an overlying Savannah River horizon by culturally sterile soils (Benthall 1990). The Slade site, located on the Nottoway River, in southeast Virginia, provided a fully stratified Middle Atlantic Coastal Plain Archaic sequence (Egloff and McAvoy 1990). Excavations at this site identified a Stanley-Morrow-Mountain-Guilford-Halifax-Savannah River sequence that closely followed the sequence originally proposed by Coe (1964) for the North Carolina Piedmont. Also identified was a pure Lamoka-like level below the Savannah River contexts. Egloff and McAvoy (1990) reported another distinctive later Archaic point, described as very similar to Bentall's (1990) Camp Creek, in other stratified Nottoway River sites, also from contexts just below Savannah River levels. The Cactus Hill site, better known for its Clovis and purported Pre-Clovis components, also exhibited a later Archaic point sequence closely following Coe's (McAvoy and McAvoy 1997).

While these sites occurred on the opposite side of the Chesapeake Bay from the Frederick Lodge site complex, they occur in Coastal Plain settings very like those in Delaware. The sequenced temporal data they contained conforms with that documented at sites in other areas of the Atlantic Coastal Plain, and thus appears regional in application. While it remains to locate buried, stratified sequences in Delaware, the information from surrounding regions can be used as a general guide. The findings clearly indicate a direct association between recognizable projectile point forms and specific contexts dating to the second half of the Archaic. They demonstrate that the chronologically diagnostic nature of projectile point types, a phenomenon well documented for the Paleo-Indian and Early Archaic periods, clearly continues through the later Archaic. While the type designations and sequence extending into the early portions of the Woodland period are less clear-cut, it is argued that the range of point forms that occurred in Delaware at this time was not the result of a breakdown of point morphology as a form of cultural/chronological marker, but rather is attributable to the cultural dynamism that to a large degree, defines the period.

With this perspective in mind, the points from the Frederick Lodge site are described below. The types represented in the collection are arranged in approximate chronological order. Detailed descriptions of the points are provided, followed by comparative data.

Formally Described Point Types

Bifurcates (Broyles 1971; Chapman 1977)



(n=12)

raw material: 5 chert, 4 jasper, 1 rhyolite, 1 argillite, 1 quartz

dimensions (in mm):	length	width	thickness	stem width
range	26-33	16-23	4-7	13-15
mean	27.8	20.0	5.6	14.0
standard deviation	2.8	2.5	0.9	0.8
n=	6	8	8	7

Note that sample sizes vary due to incomplete specimens. Blade serration was evident on all of the points on which blades were present. Two of the points (#16-2 and #645-3) exhibited sloping shoulders that appeared to have been the result of corner notches. The angle of these notches gave the blades a barbed appearance. Artifact #630-7 was heavily resharpened and the original shoulder configuration was no longer discernible. However, the angle of the flake scars present where the blade joined the base suggested that the specimen had been corner-notched. Artifact #1688-1 was heavily damaged. Although grinding was not present on any of the points, three (#1008-1, #1189-1, #1428-1) had dulled edges on the hafting element, probably from haft wear, while the ends of the serrations of #1428-1 and the serrations and tip of #1688-1 were dulled.

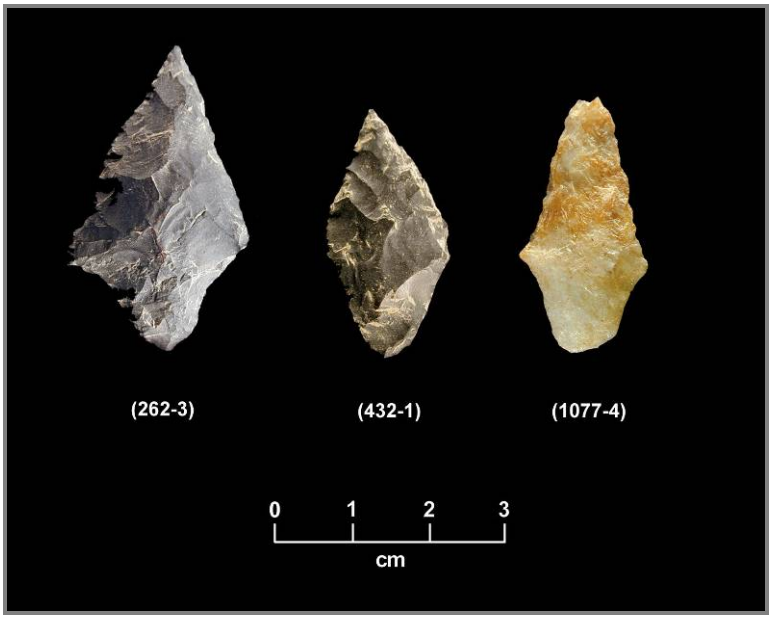
Four specimens were too fragmentary for dimensional measurements to be taken. Three of these specimens consisted of basal fragments only. No grinding was evident. The fourth fragment, #619-13, consisted of most of the blade segment. The base had snapped across the neck of the hafting element, leaving only part of the notching visible below both shoulders. The cross section of the blade and the flaking patterns in evidence were similar to those on other bifurcate points from the site. These parallels, together with the serrated blade edges, allowed the specimen to be included in the bifurcate type with reasonable confidence. The blade appeared fully intact rather than resharpened. It exhibited convex edges with serration present along the lower half of the blade.

Comparative Data: As a group, bifurcate points span the traditional break between the Early and Middle Archaic periods. In the work, they were considered characteristic of the early part of the Middle Archaic. Collectively, bifurcates appeared to have a long date range, with radiocarbon dates spanning nearly 2,000 years. Dent (1995) cites a range of ca. 8920 to 7150 years BP for the bifurcate form.

Most of the Frederick Lodge examples occur well within the LeCroy sub-type as defined by Broyles (1971). Broyles differentiated the LeCroy sub-type from other bifurcates on the basis of their small size and thin triangular blade. Pronounced shoulders usually at right angles to the stem were also described as a defining characteristic (Broyles 1971:69). As a sub-type, LeCroy appears to have a tighter date range than bifurcates as a whole. A date of 8250 years BP was obtained for a LeCroy level at the St. Albans site, following the St. Albans sub-type by approximately 500 years (Broyles 1971). Chapman also placed LeCroy at ca. 8250 years BP along the Little Tennessee River (Chapman 1985). At the Slade site, on the Inner Coastal Plain of Virginia, a LeCroy hearth was dated to 8300 years BP (McAvoy and McAvoy 1997:50).

The bifurcate examples from the Frederick Lodge site complex were similar in dimensional range in comparison with published data from large assemblages at sites in West Virginia and Tennessee: Broyles (1971:69) reported lengths ranging from 19-35 mm and widths from 16-28 mm; Chapman (1975:125-6) reported lengths from 16-35.5 mm (mean 26.5) and widths from 17.5-26 mm (mean 20.7).

Morrow Mountain II (Coe 1964)



(n=3)

raw material: 2 chert, 1 quartz

dimensions (in mm):	length	width	thickness
262-3	40	24	9
432-1	32	16	6
1077-4	33	17	8

These three artifacts closely resembled Morrow Mountain II points described by Coe (1964), from a sample of 16 points at the Doerschuk site. Coe described the Morrow Mountain II point blades as being long and narrow, with some specimens having an outward curve or flare at the shoulders giving the impression of a cross (Coe 1964:37). Two of the specimens from the Frederick Lodge site, #262-3 and #1077-4, exhibited this shoulder configuration. Artifact #432-1 appeared to have been resharpened to the extent that the blade was triangular, slightly asymmetrical, and reduced to the width of the rounded, contracting stem. A large sample of Morrow Mountain II points (n=107) was recovered at the Cactus Hill site (McAvoy and McAvoy 1997). The basal margins of points in that assemblage were described as being well-smoothed (ground), as were portions of the blades above the shoulders (McAvoy and McAvoy 1997: Appendix A). Both Artifact #432-1 and #1077-4 exhibited extensive grinding along their rounded bases, while no grinding was observed on #262-3.

Comparative Data: First described by Coe (1964) on the North Carolina Piedmont, the Morrow Mountain type has been shown to have an extremely broad geographic range, extending from Alabama (Griffin 1974) to New York, and perhaps northward through New England (Dent 1995). Coe (1964) differentiated between the Morrow Mountain I and II sub-types on the basis of stem form. In general, Morrow Mountain I points exhibited short, almost vestigial stems, while the Morrow Mountain II had elongated, or lobate contracting stems.

Morrow Mountain II points in particular appear widely distributed across much of the eastern United States. They are found from New York (Kinsey 1972), south to Alabama (Griffin 1974), and west across the Appalachians, and they almost certainly occur in Delaware. Dent (1995) has remarked on the probability of an archaeological oversight in terms of the apparent lack of Middle Archaic site components in the northern Chesapeake area. In addressing this phenomenon, he writes: "Part of the problem within the study area might be that Middle Archaic points appear to be candidates for frequent taxonomic misidentification across the region. They are often collected and identified as Late Archaic broad-stemmed types" (Dent 1995:175). The infrequency with which Morrow Mountain II points have been reported in Delaware may in part be connected with this situation.

The earliest reliable radiocarbon date for Morrow Mountain is 7260 years BP from Wards Point, New York (Dent 1995:159), while the majority of dates for Morrow Mountain I occur between 7150 and 6450 years BP (Egloff and McAvoy 1990). Based on stratigraphic distributions at the Doerschuk site and other contexts, Coe (1964) suggested that Morrow Mountain II may have had a longer temporal range than the Morrow Mountain I subtype, while radiometric and stratigraphic evidence suggests a somewhat later date for the form. A date of 5350 years BP was obtained at Peaks of Otter site, in Virginia (Griffin 1974). At the Slade site, Morrow Mountain II points occurred together with Guilford points in a level above Morrow Mountain I, but below Halifax material that was dated 5430 years BP (Egloff and McAvoy 1990:73).

Morrow Mountain II points appear to exhibit a wide dimensional range, particularly in regard to blade length, which may be an indication that resharpening was common. Coe (1964) cites a length range of 30-80 mm (mean 60 mm), for the Doerschuk site assemblage. Width range is reported as 18-30 mm (mean 20 mm). The Cactus Hill assemblage had a length range of 35-80 mm; a width range of 18-30 mm; and thickness 6-10 mm (McAvoy and MacAvoy 1997). The Frederick Lodge examples were at the low ends of these reported ranges.

Poplar Island/Lackawaxen, Bare Island (Kinsey 1959, 1972; Ritchie 1971)

Lackawaxen

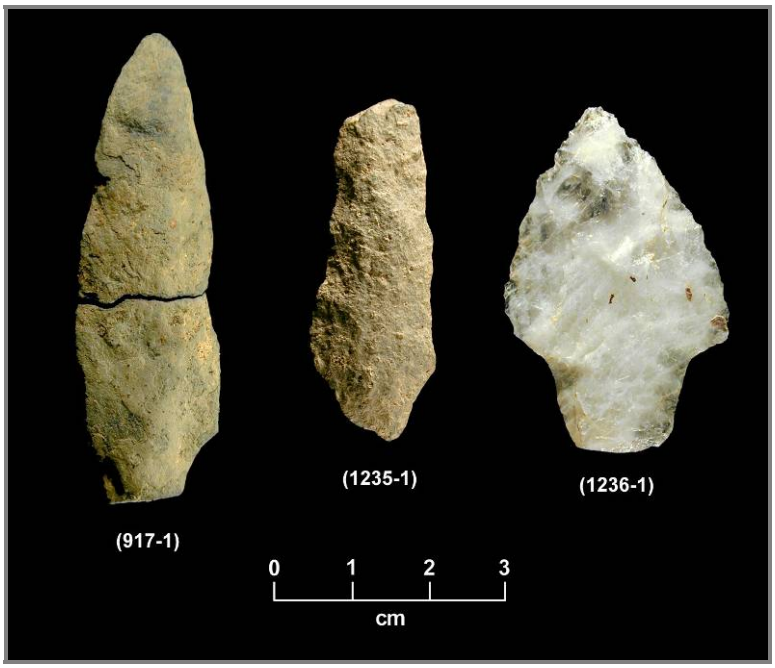
(n=2)

raw material: argillite

dimensions (in mm):	length	width	thickness
917-1	59	18	8
1235-1	45	17	8

Both specimens are made from argillite and were heavily weathered. Artifact #917-1 exhibited a long narrow blade and a short straight stem. One shoulder was missing, but whether as a result of damage or resharpening was unclear, due the degree of weathering on the artifact. The blade was snapped midway along its length. Both pieces were recovered, but again due to excessive weathering, the cause of the break—use or post-depositional damage—was unclear. The second point, #1235-1, was also long and narrow-bladed. It displayed oblique breaks on the base and distal end. The point appeared to have been

finished, but deep flake scars along one blade edge suggested reworking of the edge by percussion flaking.



Bare Island

(n=1)

raw material: quartz

dimensions (in mm):	length	width	thickness
917-1	59	18	8

Artifact #1236-1 was slightly plano-convex in cross section, and thus had probably been manufactured on a large flake or bipolar core fragment. It exhibited a wide blade that was slightly asymmetrical, which, along with one rounded shoulder, suggested that the point had been resharpened.

Comparative Data: In the present study, the Poplar Island and Lackawaxen types are viewed collectively, while Bare Island is seen as a closely related type. All three point types were originally defined by Kinsey at the Kent Halley site in the Lower Susquehanna River Valley (Kinsey 1959), and were further described by Ritchie (1965, 1971). Dent (1995:179) stated that many researchers simply refer to these types collectively as Bare Island/Lackawaxen, in deference to the two men. Nevertheless, Kinsey and Ritchie clearly differentiated between the types. While acknowledging similarities between the forms, Kinsey viewed the pronounced shoulders on the Bare Island type as a defining characteristic (Kinsey 1959). In illustrating examples from the Kent Halley site, Ritchie (1971) selected examples with crisp shoulders and squared stems, and he noted a preference for quartz as raw material. Kinsey (1972:335-336) originally defined Lackawaxen points as being the expression of a distinctive Late Archaic Delaware Valley tradition focused on the utilization of locally available lithics,

usually shale or argilliceous shale. He described the Lackawaxen point as being long and narrow, with a variable stem form. In the broader Northeast archaeological literature, the Lackawaxen type is often illustrated as elongated, almost spike-like in shape. In contrast to the range of stem forms seen in Lackawaxen, Poplar Island points tend to have contracting stems that are long in relation to the blade, while steeply flaked blades produce distinct medial ridges. Lackawaxen and Poplar Island types have a similar geographic range, and along with shared morphological attributes, both were typically made from argillite or other coarse-grained materials. The two forms are therefore seen as very closely related.

Other researches have arrived at similar conclusions regarding these two types. Lothrop and Koldehoff (1994) reported Lackawaxen and Poplar Island points from sites along the middle Delaware River in south-central New Jersey (28GL111, 28GL210). While their illustrated examples showed some differences in blade and stem form that were used to differentiate between the two types, the site assemblage was 100 percent argillite, strongly linking the two styles. Further, the horizontal spatial patterning on the site led to researchers to conclude that the artifact assemblages represented a single cultural component (Lothrop and Koldehoff 1994).

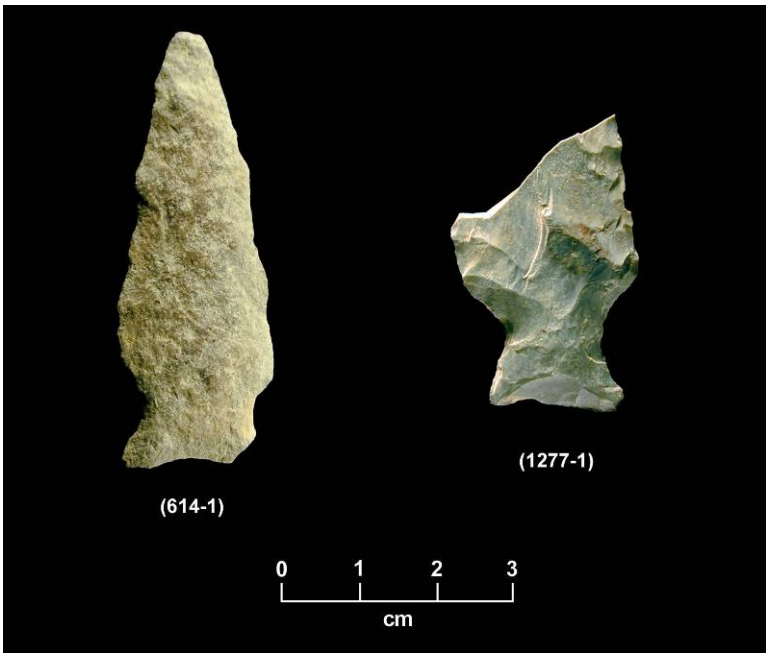
Radiocarbon dates for Lackawaxen have a fairly wide range. Kinsey (1972) reported three dates—4130 years BP, 4445 years BP, and 4560 years BP—from hearths associated with the points at the Faucett site in the Upper Delaware Valley. Lothrop and Koldnenhoff (1994) reported a date of 3830 years BP for Lackawaxen contexts at the above mentioned excavations (28GL111, 28GL210) along the middle Delaware River Valley. A set of significantly later dates has also been reported. The Abbott Farm Complex sites yielded dates of 2840±140 years BP, at the Shady Brook site (Stewart 1986:VI-55), and 2650±120 years BP, at Gropp's Lake (Stewart 1987). Stewart proposed several explanations for the late dates, but noted repeated instances in which Lackawaxen-like points were found together with broadspear and Fishtail variants, suggesting that the Lackawaxen form may have had considerable longevity (Stewart 1986:VI-55).

In Delaware, Custer and Bachman (1986) reported a date of 4200±75 BP at the Hawthorne site in association with what they referred to as Bare Island/Lackawaxen points, corresponding with the early dates reported by Kinsey (1972). At the Clyde Farm site, Custer et al. (1986) reported Bare Island/Lackawaxen points in association with Fishtails and Marcey Creek and Dames Quarter ceramics, correlating with the late radiocarbon dates and contextual associations reported by Stewart in New Jersey.

The Lackawaxen points at the Frederick Lodge site were smaller than examples from assemblages in the Delaware Valley, based on published length and width measurements: Kinsey (1972:408-410), 35-90 mm (mean 62), width 19-25 mm (mean 22), thickness 6-10 mm (mean 8.3) (n=91); Kraft (1975:30) length 44-95 mm (mean 67), width 14-27 mm (mean 20), thickness 5-20 mm (mean 11) (n=35). The points were similar in size to a sample from northern Delaware, at the Lums Pond site in New Castle County: length 40-73 mm (mean 57), width 17-28 mm (mean 23), thickness 7-12 mm (mean 9.8) (n=11). The Bare Island point occurred within the range of variation reported from two large assemblages. At the Kent-Halley site, lengths were reported by Kinsey (in Ritchie 1971:44), ranging from 30-97

mm (mean 51), and widths from 10-15 mm. Stephenson and Ferguson (1963:142) reported lengths of 45-83 mm (mean 69) and widths of 16-30 mm (mean 21), in a sample of 269 points from the Accokeek Creek site, on the Maryland shore of the Potomac River.

Fishtail (Kinsey 1959; Ritchie 1959)



(n=2)

raw material: argillite, chert

dimensions (in mm):	length	width	thickness
614-1	58	20	5
1277-1	--	25	6

Artifact #614-1, was made from argillite and was heavily weathered. Nevertheless, it was thin and well-shaped, with straight blade edges, sloping shoulders, and a concave base. The second specimen, #1277-1 was manufactured of bluish-green chert. A large portion of the distal end of the point was missing at an oblique snap break. Several protruding parts, including the basal tangs and one of the shoulders, were rounded, suggesting haft wear and implying that the point had been broken during use, rather than as part of the manufacturing process.

Comparative Data: Ritchie (1959) first described the Fishtail point as characteristic of the Late Archaic and the early part of the Woodland period in eastern and southern New York. The type is particularly prevalent along the middle reaches of the Hudson Valley (Funk 1976). Kinsey (1972) expanded the reported range of the type based on finds from several sites along the Upper Delaware Valley.

The Fishtail type and related variants are now seen as having a wide distribution across the Middle Atlantic region, as well. For example, Fishtails appear to be the most common point form attributable to the Early Woodland occupations of the Trenton Complex at the Abbott Farm in the Middle Delaware Valley (Wall et al. 1996). Here the morphological gradation between the Susquehanna and Fishtail points first noted by Ritchie (1971) was observed on least one site (Wall et al. 1996). In Delaware, Custer included Fishtail in his definition of the Clyde Farm and Barker's Landing Complexes (Custer 1994). Further south, Fishtails have a wide, but uneven distribution across Virginia. They are known along sections of the Coastal Plain and have been reported as far west as Cumberland Gap, Tennessee, along the headwaters of the Tennessee River drainage (Egghart 1991). In Outer Piedmont sections of James River, Mouer (1991) reported horizontally discrete surface clusters of Marcey Creek and Accokeek/Elk Island ceramics together with small Savannah River and Fishtail variants.

In the Hudson Valley, Ritchie (1971) linked Fishtails to steatite containers. More recently, Fishtails have been shown to occur together with early ceramics. In Delaware, Custer (1989) reported Fishtails in stratigraphic association with Marcey Creek and Dames Quarter ceramics at the Clyde Farm site. Dent (1995) cited a range of radiocarbon dates from 3230 to 2713 years BP for the type.

The complete example from the Frederick Lodge site was longer and thinner than mean values for a large assemblage of Fishtails (Dry Brook variant, n=84) from the Delaware Valley (Kinsey 1972:432), where length ranged from 28-70 mm (mean 47), width from 18-28 mm (mean 21), and thickness from 5-8 mm (mean 7).

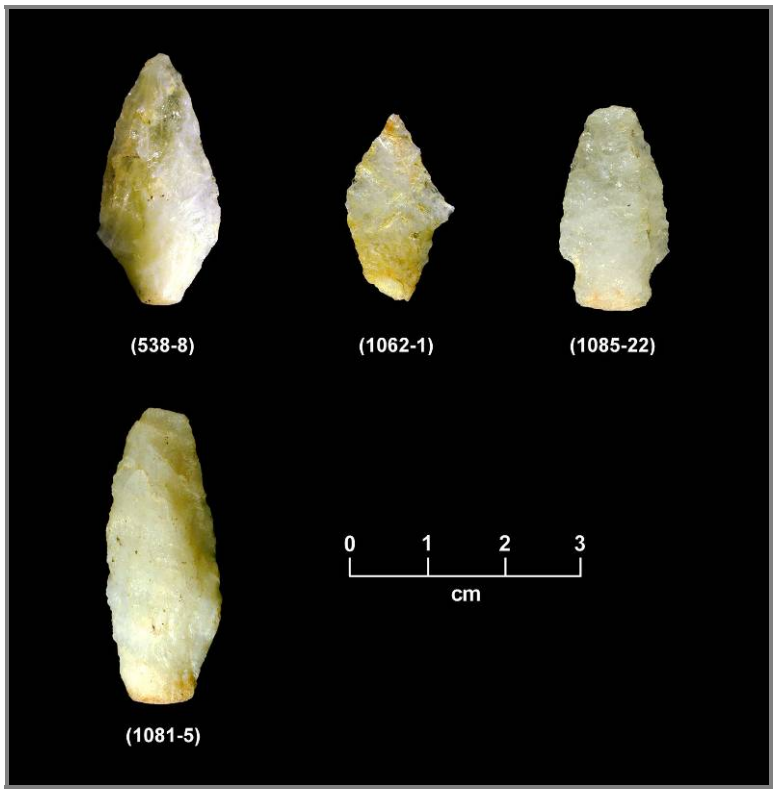
Piscataway (Stephenson and Ferguson1963; Mouer 1990; McLearen 1991a, 1991b)

(n=4)

raw material: quartz

dimensions (in mm):	**length**	**width**	**thickness**
range	19-39	14-16	6-9
mean	29.3	14.8	7.3
standard deviation	8.7	1.0	1.5

All four specimens typed as Piscataway were manufactured of a medium quality quartz. Cortex was present on the bases of three of the points. No systematic edgewear was observed on any of the artifacts, although direct evidence of use was seen in a possible impact fracture on one of the lozenge-shaped specimens (#1081-5), and extensive reworking of one of the contracting stemmed examples (#1062-1). On the latter specimen, the blade was shorter than the stem and was inset from the shoulder, in a manner typical of resharpening while hafted.



Comparative Data: The Piscataway type was originally described by Stephenson and Ferguson (1963) at the Accokeek Creek site, located near the fall line on the Potomac River. Based on the large number of points that were recovered, as well as their small size, Stephenson assumed an association with the major Late Woodland/Proto-Historic component on the site. Although most researchers now accept an Early Woodland date for Piscataway, some controversy surrounds the temporal associations of the point form. Dent (1995:180), for example, proposed a Late Archaic association for the type based on a reported stratigraphic occurrence together with or below other Late Archaic types on two sites in the Potomac drainage.

In addition to their occurrence on the Accokeek Creek site, a number of sites in Virginia closely link Piscataway points with the Accokeek regional ceramic complex. McLearen (1991a, 1991b) expanded the morphological parameters of the Piscataway type as first described by Stephenson. In a large assemblage at the Scott #2 site, (44GO25), in the Outer Piedmont of the James River Valley, he identified ovoid or foliate shapes typical of the type, and included a weakly contracting stemmed form. Mouer (1991) placed Piscataway in his Early Woodland period Elk Island tradition in the same James River region. McLearen (1991b) also linked Picsataway with Accokeek ceramics in an Early Woodland context that contained house structures (patterned post holes) and radiocarbon-dated pit features at the 522 Bridge site (44WR329), in the Shenandoah Valley in northern Virginia.

The points typed as Piscataway at the Frederick Lodge site complex closely resembled those from the James River collections in terms of size, quartz manufacture, and range of morphology—in particular, the proximal end configuration. This variation ranged from the

symmetrically tapered end of the classic type to a more sharply contracting stem and a weakly shouldered, lanceolate outline. The Frederick Lodge examples were smaller than Piscataway points at the type site, Accokeek Creek. As reported by Stephenson and Ferguson (1963:146-7), Piscataways ranged in length from 29-49 mm (mean 37), in width from 10-21 mm (mean 14), and in thickness from 5-10 mm (mean 7).

Woodland I Stemmed

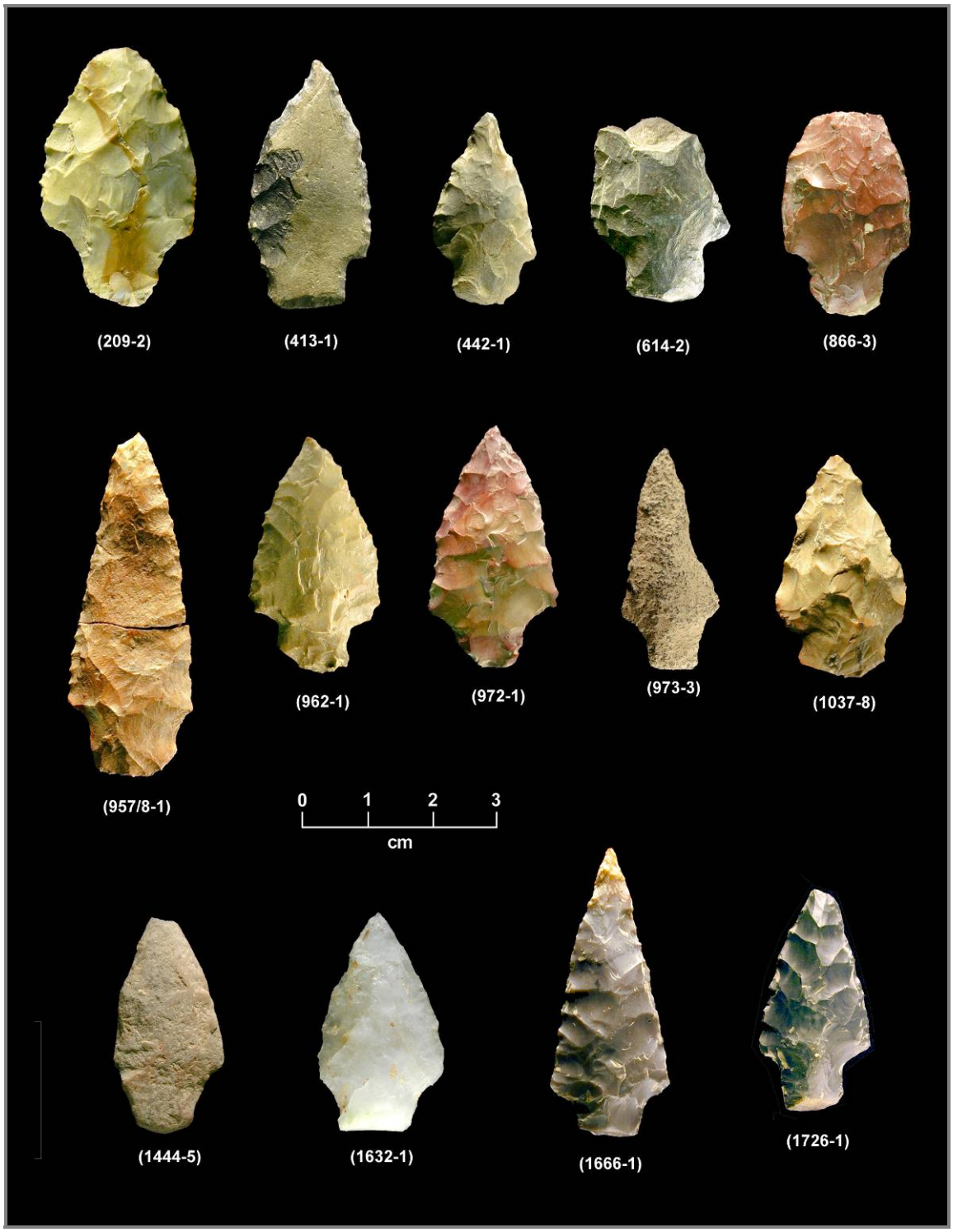
(n=14)

raw material: 7 jasper, 4 chert, 1quartz, 1quartzite, 1argillite

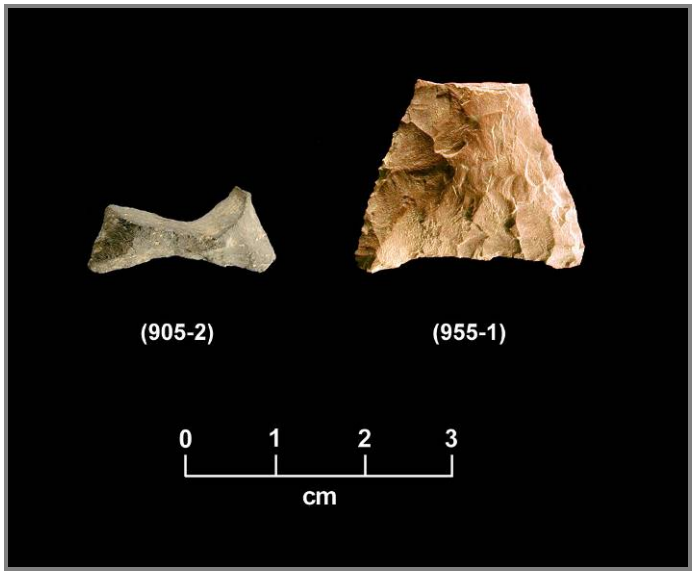
dimensions (in mm):	**length**	**width**	**thickness**
range	30-45	12-25	5-9
mean	35.3	19.0	7.1
standard deviation	4.3	2.1	1.2
n=	12	14	14

Note that sample size for length varies due to incomplete specimens. As a group, the points exhibited short, straight-to-slightly contracting stems with straight-to-convex bases. All had relatively narrow blades in proportion to stem width. Four of the points were made from flakes with only minimal, non-invasive flaking on one face, including the cortical dorsal flake surface of #413-1, and the original ventral flake surfaces of #958-1, #962-1, and #972-1. Two other specimens retained small patches of cortex: #866-3 on its base, and #958-1 on one face of the blade above the shoulder. While most of the points were unbroken, #866-3 bore a minor distal snap, and on a second, #958-1, a transverse snap had removed the distal end of the blade (the distal segment [#957-1], which exhibited a small, flute-like impact fracture at its tip, was recovered and refitted). Few of the points showed obvious signs of use or resharpening, although the distal tips of three, #442-1, #962-1, and #1661-1, were slightly rounded.

Comparative Data: Woodland I Stemmed is a term applied to a group of morphologically similar stemmed projectile points that appear to be common throughout much of Delaware. They are small in size, were typically manufactured on pebbles or small cobbles, and often exhibit a small area of remnant cortex on or near the base. Jasper appeared to have been the favored material, although a range of available lithic types was also used. Although it is uncertain how specifically diagnostic the type may be, as their name implies the points occur with frequency on sites containing components dating the first half of the Woodland period. For example, similar points were the most common form recovered on the Puncheon Run site along the middle reaches of the St. Jones River (LeeDecker et al. 2001). In addition, they comprised the most numerous type recovered on the Hickory Bluff site, located opposite Puncheon Run on the St. Jones River, where they were found in association with Early and Middle Woodland ceramic assemblages. Although often left untyped, the points are illustrated in a number of reported sites throughout the state (e.g., Thomas 1981; Custer et al. 1995). The examples from the Frederick Lodge site complex were similar in size range to the sample of 47 points from the Hickory Bluff site, where lengths ranged from 26-45 mm (mean 34), widths from 15-28 mm (mean 19), and thicknesses from 6-18 mm (mean 8).


(209-2)
(413-1)
(442-1)
(614-2)
(866-3)
(957/8-1)
(962-1)
(972-1)
(973-3)
(1037-8)
0 1 2 3
cm
(1444-5)
(1632-1)
(1666-1)
(1726-1)

Triangle (Ritchie 1971)



(n=2)

raw material: argillite, jasper

dimensions (in mm):	length	width	thickness
905-2	--	21	5
955-1	28	26	5

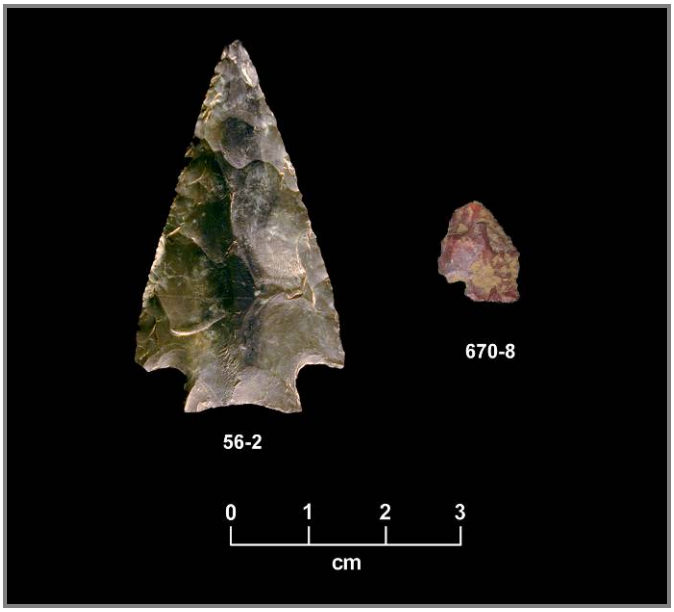
Artifact #905-1 was the base of a small triangle made from argillite. Most of the blade was missing at a perverse snap break. The thickness of the existing portion appeared to have been characteristic of the whole artifact, resulting in a width ratio of 4.2. The base was concave and the edges weathered but well flaked. Artifact #955-1 was made from jasper. While a transverse snap break had removed the distal tip, the point appeared to have been roughly equilateral in shape. The artifact was well-thinned, exhibiting a width:thickness ratio of 5.2. The blade was alternately beveled, and while the blade edges were straight, they were inset slightly near the distal end. Both characteristics suggested symmetrical resharpening of the artifact. No edge wear was detected. The base was slightly convex.

Comparative Data: The current examples occur near the lower end of published dimensional ranges for two of the main triangle types in the Northeast. A sample of 250 Levanna points was reported by Ritchie (1971:31) with lengths ranging from 22-76 mm (most between 32-45 mm), widths from 21-35 mm, and thicknesses averaging 5 mm. Kinsey (1972:441-442) reported examples from the Upper Delaware Valley with lengths ranging from 18-45 mm (mean 34), widths from 18-34 mm (mean 22), and thicknesses from 3-5 mm (mean 4). The present specimens occur at the low end of these reported dimensional ranges. The majority of Levanna points (70 percent in Ritchie's sample) were equilateral triangles, and over 80 percent had distinct, concave bases. Ritchie (1971:31) noted that Levanna originally appeared in New York around AD 700, although it did not become common until AD 900. It was gradually replaced by smaller, straight-based types such as Madison by the mid-fourteenth century. Madison points, typically formed as isosceles triangles, were originally

defined by Scully (1951, in Ritchie 1971), measuring 13-60 mm in length (mean 25). A sample of 100 Madison points from an Iroquois site in New York were reported by Ritchie with lengths ranging from 19-40 mm, widths from 13-27 mm, and thicknesses averaging 3 mm (Ritchie 1971:33). Kinsey reported examples of Madison points from the Upper Delaware Valley with lengths ranging from 23-57 mm (mean 43), widths from 23-43 mm (mean 29), and thicknesses from 4-7 mm (mean 5.5) (Kinsey 1972:442).

Untyped Points

Corner-Notched



(n=2)

raw material: chert, jasper

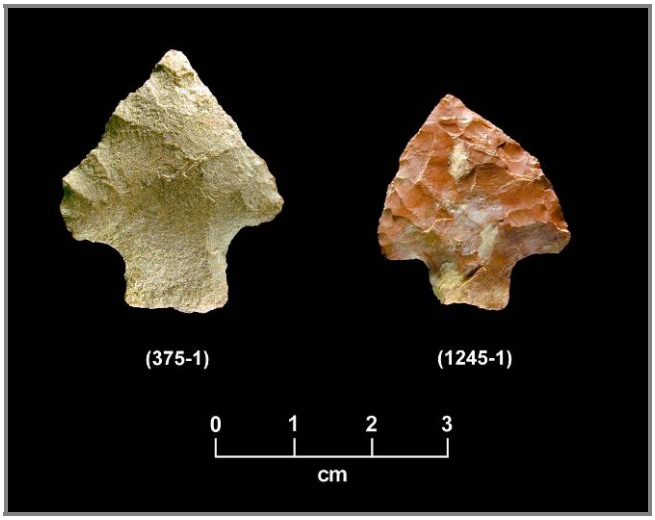
dimensions (in mm):	length	width	thickness
56-2	48	27	6
670-8	--	--	--

Artifact #56-2 was manufactured of a high quality, greenish-gray banded chert. Corner notching was broad and extended inwards from the shoulders at a shallow angle. The blade was thin in cross section (width:thickness ratio 4.5), and triangular in plan. Blade edges were straight with no serration. Flaking was symmetrical and well-placed. Minor grinding was present on the base of the stem. Artifact #670-8 was small and badly damaged. The point appeared to have been burned, resulting in reddening and pot-lidding—most of one face, part of one blade edge, and one shoulder had spalled away.

Comparative Data: The blade shape, base, and notching configuration of the large point, #56-2, were not characteristic of the Early Archaic corner-notched traditions. Rather, the point may date to the Woodland period, possibly with an Adena association. Corner-notched points similar in size and form to the Frederick Lodge example were recovered from mortuary contexts at the Adena-related Rosenkrans site in Sussex County, New Jersey (Kraft

1970). Specifically, Burial #9 on the site contained a set of nine untyped, corner-notched points of similar form. Ritchie (1971:114) illustrated an additional corner-notched point from the Genesee Valley of New York, manufactured on Flint Ridge chalcedony and described as resembling points found on Hopewell sites in Ohio and elsewhere.

Other Stemmed



(n=2)

raw material: jasper

dimensions (in mm):	length	width	thickness
375-1	33	29	7
1245-1	28	25	7

Both points were small, with straight stems, wide blades and pronounced shoulders. Both exhibited evidence of resharpening that had shortened the length of the blade. Reworking of the blade of #375-1 resulted in edges that were slightly inset from the shoulders. Resharpening of #1245-1 produced an asymmetrical blade outline. Portions of the hafting element of this artifact had been ground.

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