

The Bulletin

Number 75 March 1979

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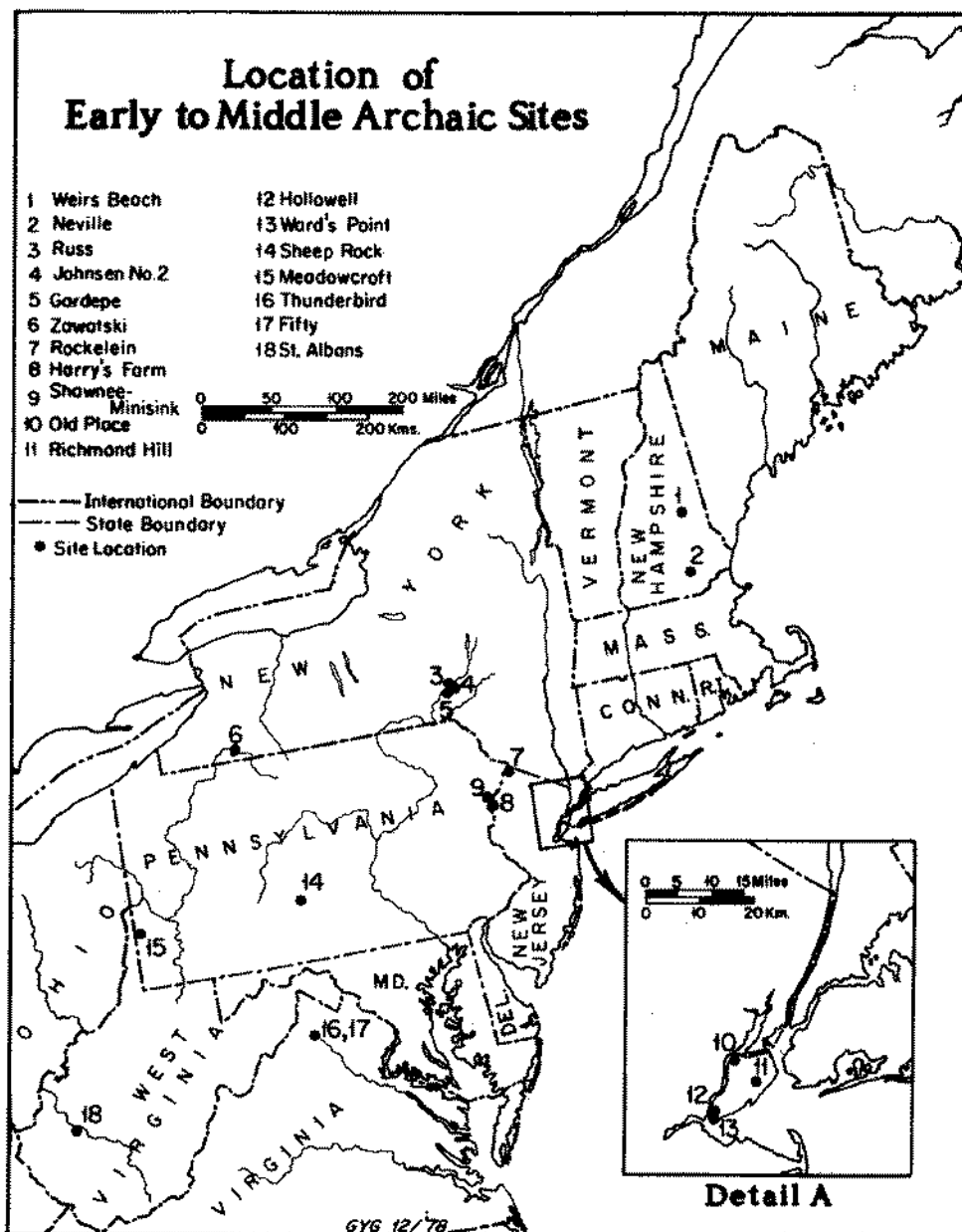


THE BULLETIN

NUMBER 75

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25th ANNIVERSARY NUMBER



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The Bulletin

Editor	Assistant Editor	Publications Chairman
Louis A. Brennan	Roberta Wingerson	Roberta Wingerson
39 Hamilton Avenue	60 Pinesbridge Rd.	60 Pinesbridge Rd.
Ossining, N.Y. 10562	Ossining, N.Y. 10562	Ossining, N.Y. 10562

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SYMPOSIUM ON THE EARLY ARCHAIC

The Sunday morning session, which extended into the afternoon, at the NYSAA annual meeting at Pawling in April of 1978, consisted of a series of papers on the Early Archaic of New York State. The organizer of the symposium, who acted as chairman, was Louis A. Brennan, and the invited contributors were Dr. Elizabeth Dumont, Dr. Robert Funk, Dr. Neal Trubowitz and Curt Tompkins. Herbert Kraft was an invited contributor but could not appear (car trouble at the last moment). Dr. William A. Ritchie, founder of the concept of the Archaic, who was present, delivered ex tempore a very valuable environmental treatment of the region. Russell Handsman of the American Indian Archaeological Institute of Connecticut offered to add a paper to the publication of the symposium proceedings and it appears at the end of the series. The piece by William Starna is a bonus, to make this 25th anniversary a memorable one.

Brennan, as the initiator of the session, sent out to the contributors some months ahead of the meeting the paper printed below as a measure to draw out the contributors. They were told that they had no obligation to comment on it and were free to follow their own inclinations. This paper was read at the beginning of the session.

L. A. B.

PROPOSITIONS CONCERNING THE EARLY ARCHAIC IN NEW YORK

Louis A. Brennan NYSAAF

Metropolitan Chapter

1. The early Archaic of New York is that horizon within the Archaic recognized here by the presence of projectile point types the type sites for which are to be found in the Carolina Piedmont as described by Joffre Coe (1963) and at the St. Albans, West Virginia site reported by Bettye Broyles (1971).

The time brackets for the Early Archaic in at least southern and coastal New York, using date guidelines from the Staten Early Archaic finds by Anderson, Bodnar, Sainz et al (Ritchie 1971) would be ca. 10,000 to 7,500 C¹⁴ yrs. B.P.

2. The presence of projectile points of Carolina Piedmont types in southern and coastal New York indicates a line of advance northward along the coastal plain where, because of the near-sea level altitude the Carolina biotic province (the deciduous tree environment) would have extended northward faster than through the cooler, higher inland. With the deciduous forest environment fingering in from the coastal plain along the near-sea level river valleys the Early Archaic of Carolina Piedmont aspect would have entered interior and northern New York along the Hudson.

The Early Archaic of Carolina Piedmont aspect was, therefore, the first entrant into New York (and the Northeast) of an Archaic pattern, deciduous forest-adapted culture. Its age in southern and coastal New York should be nearly contemporary with that of the Carolina Piedmont Early Archaic succession of type changes.

3. The presence of projectile points of West Virginia Early Archaic types indicate a line of advance into New York along the Appalachian slopes, with a few groups splitting off toward the east, but the main body of people of this aspect pushing westward into the Ohio Valley. The argument for this reading stems from the fact that the point types for which the type site is St. Albans on the Kanawha River, West Virginia, are to be found abundantly at the "bear waller" mountain top sites (Wilkins 1978) in West Virginia. Thus it is clear that the people of what we will call the St. Albans Early Archaic aspect found ridges as high as 3,000 ft. above sea level useful and compatible environments. Since it is most unlikely that St. Albans aspect people traveled directly to New York over the Alleghenies we can best account for the presence of their projectile point types in New York by assuming that some groups advanced northward along the eastern slopes of the Appalachian chain.

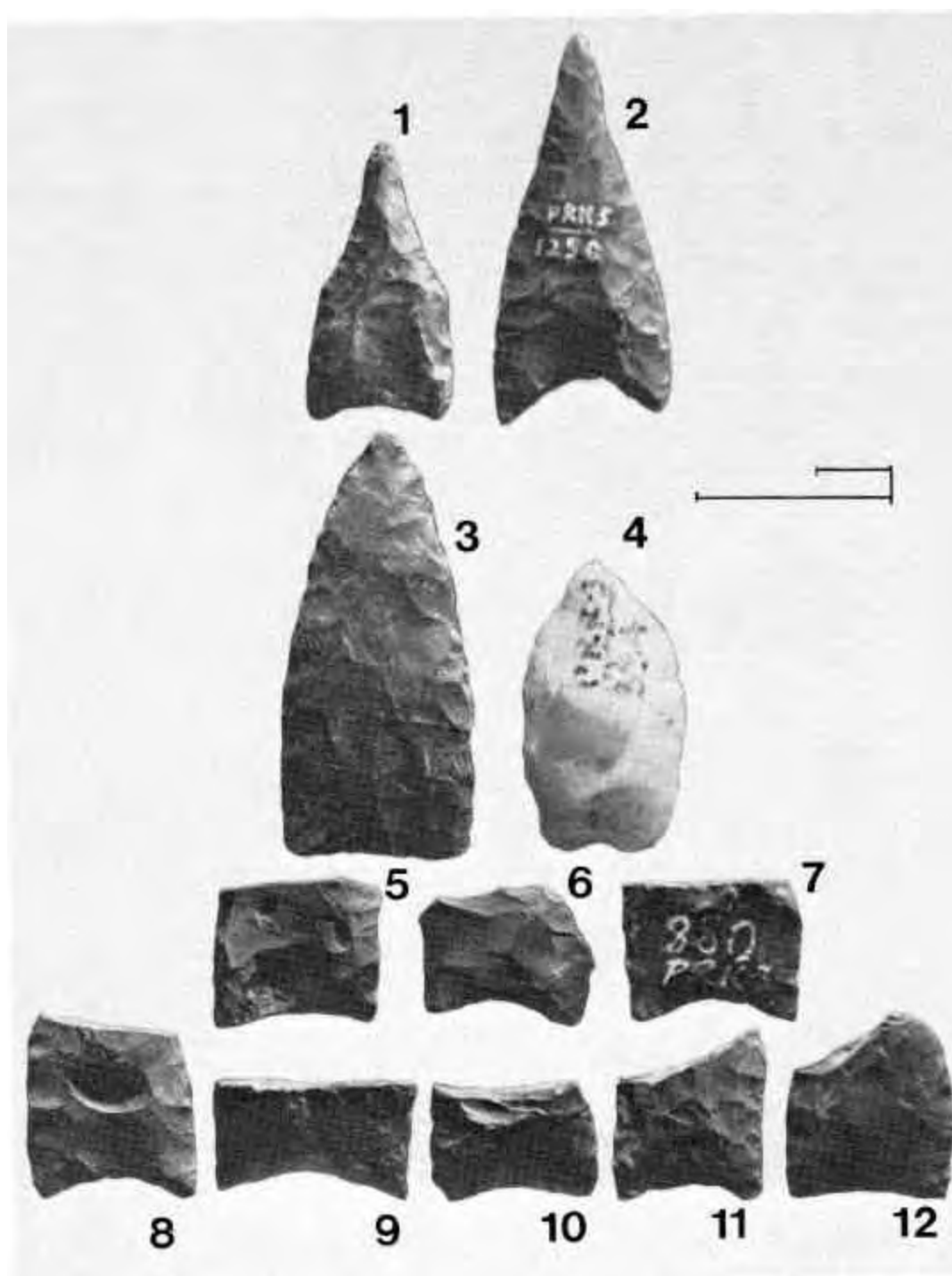


PLATE 1. From Lower Hudson Shell Midden Sites: 1, 2, fluted Dalton-like; 3, lanceolate blade with narrow multiple flutes; 4, bifacially fluted point; 5-12, fluted basal fragments of lanceolate points.

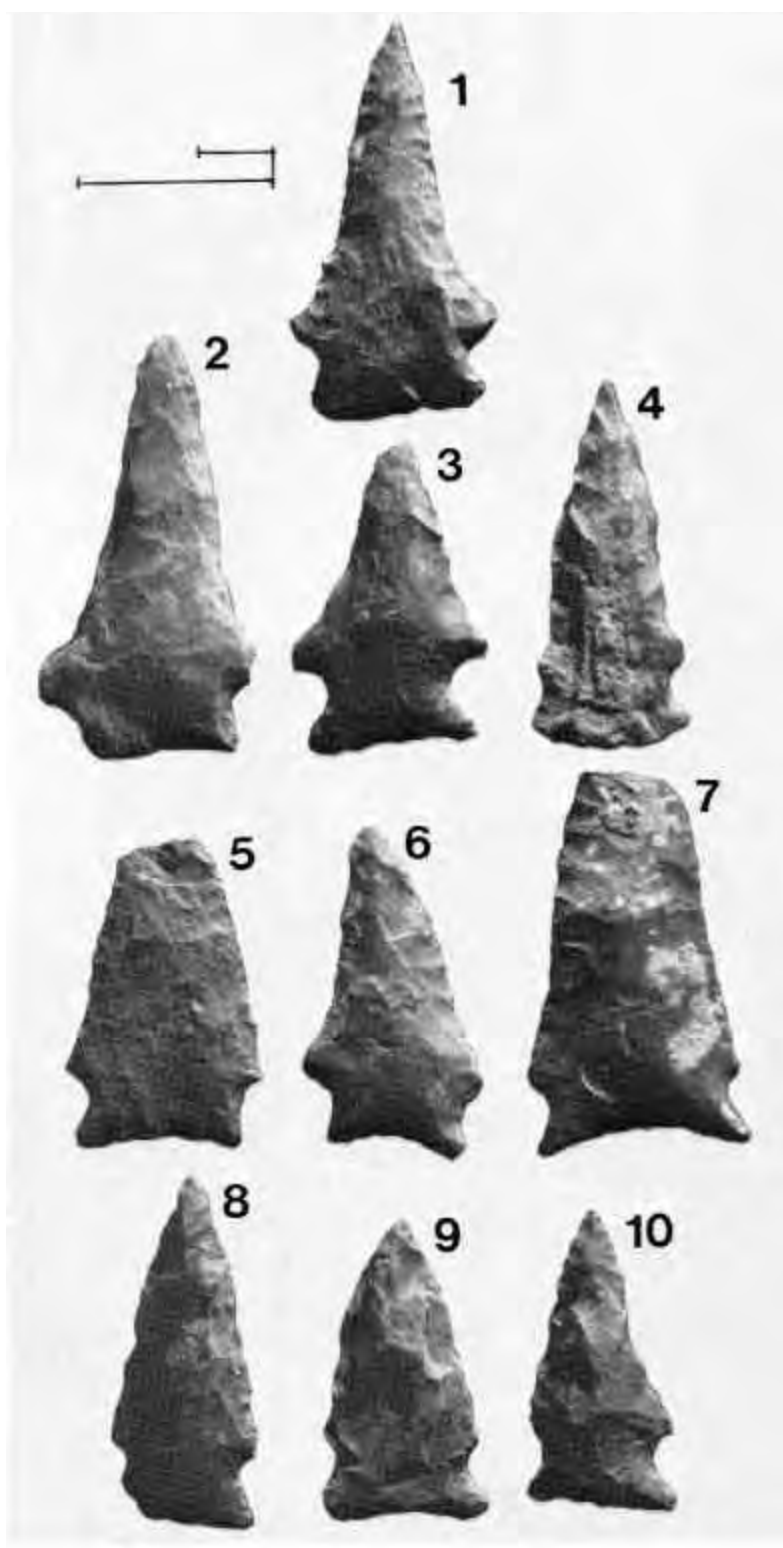


PLATE 2. Lower Hudson Shell Midden Sites: Kirk tradition types. 1, from West Virginia Mountain Top Site, for comparison; 2-10, variations on the theme. Carolina aspect

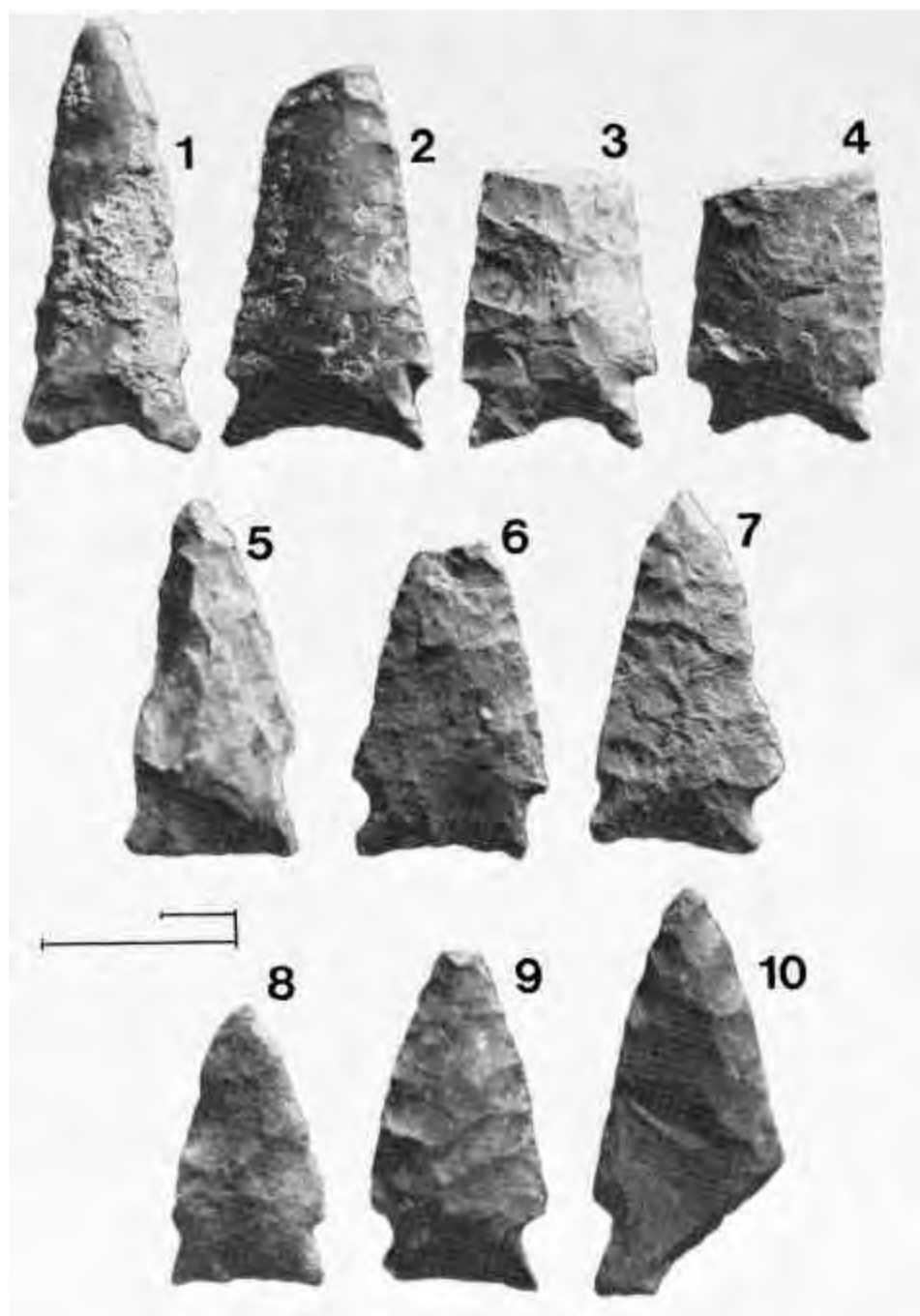


PLATE 3. Lower Hudson Shell Midden Sites. 1, Colbert Dalton; 2-10, cluster of variations on the theme which verge into Kirk-corner-notched-like outlines. There are no Vosburg points on this plate. Carolina aspect

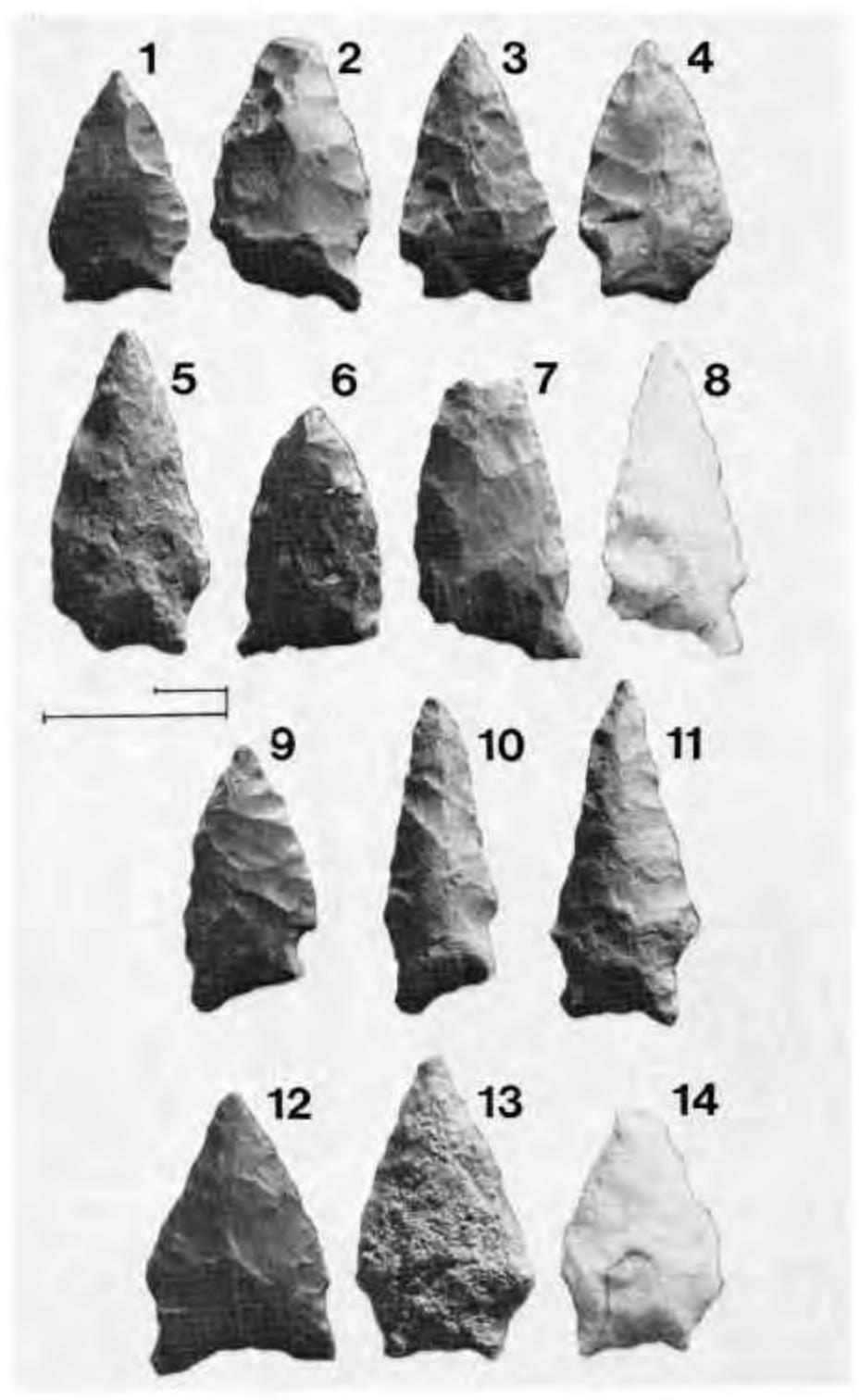


PLATE 4. Lower Hudson Shell Midden Sites; 1, 3, 4, 5, 13, 14, San Patrice-like (Dalton horizon); 2, 6, 7, 8, 12, "Eared," yoke-base points probably a Dalton variety; 11, Kirk stemmed; 9, 10, "one-eared" Kirk variant. Carolina aspect

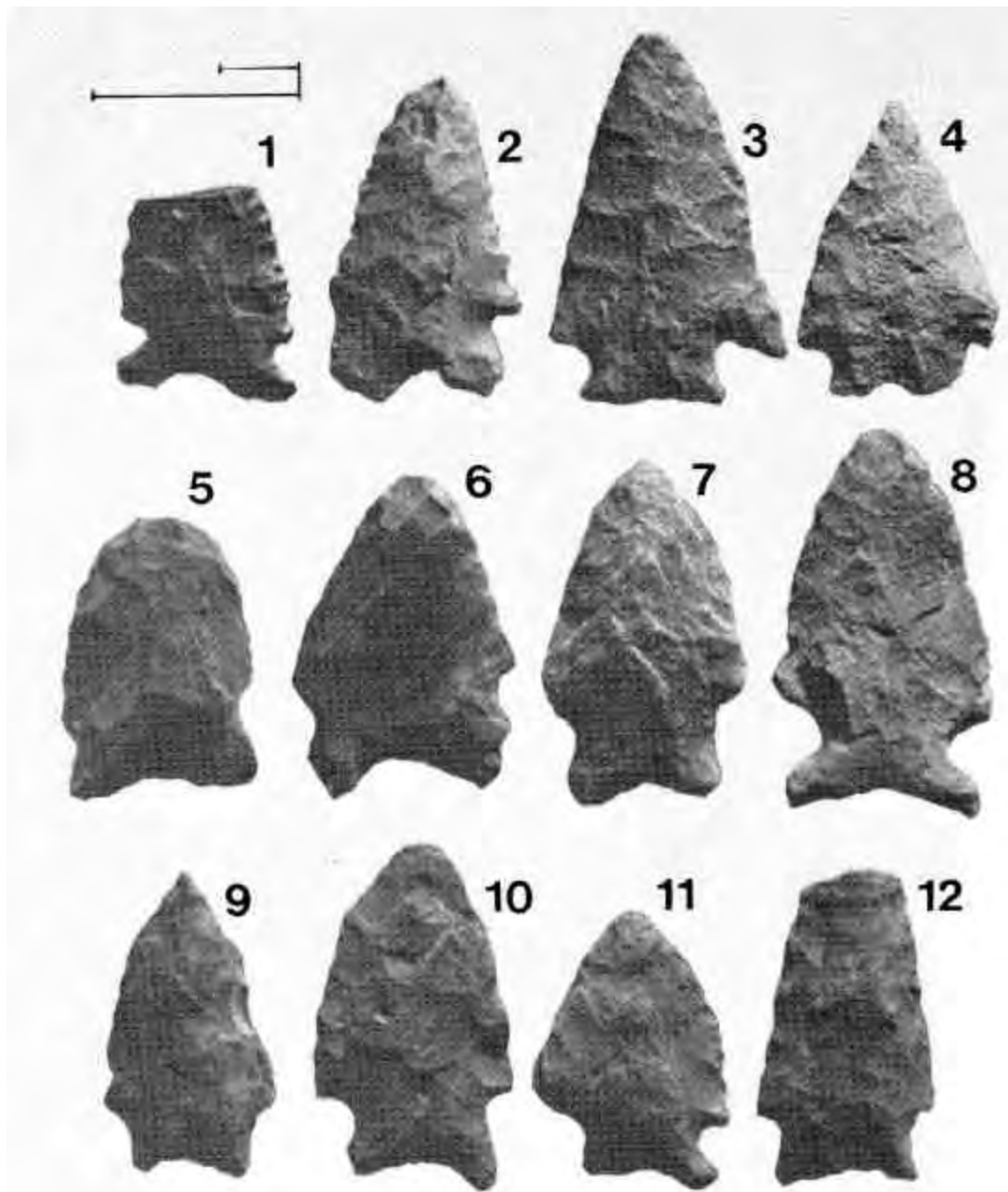


PLATE 5. Lower Hudson Shell Midden Sites: 1, Kessell; 2, McCorkle; 3, Charleston; 4, St. Albans; 5, 6, McCorkles; 7-11, untyped points with Early to Middle Archaic attributes; 12, Kirk-like. West Virginia aspect

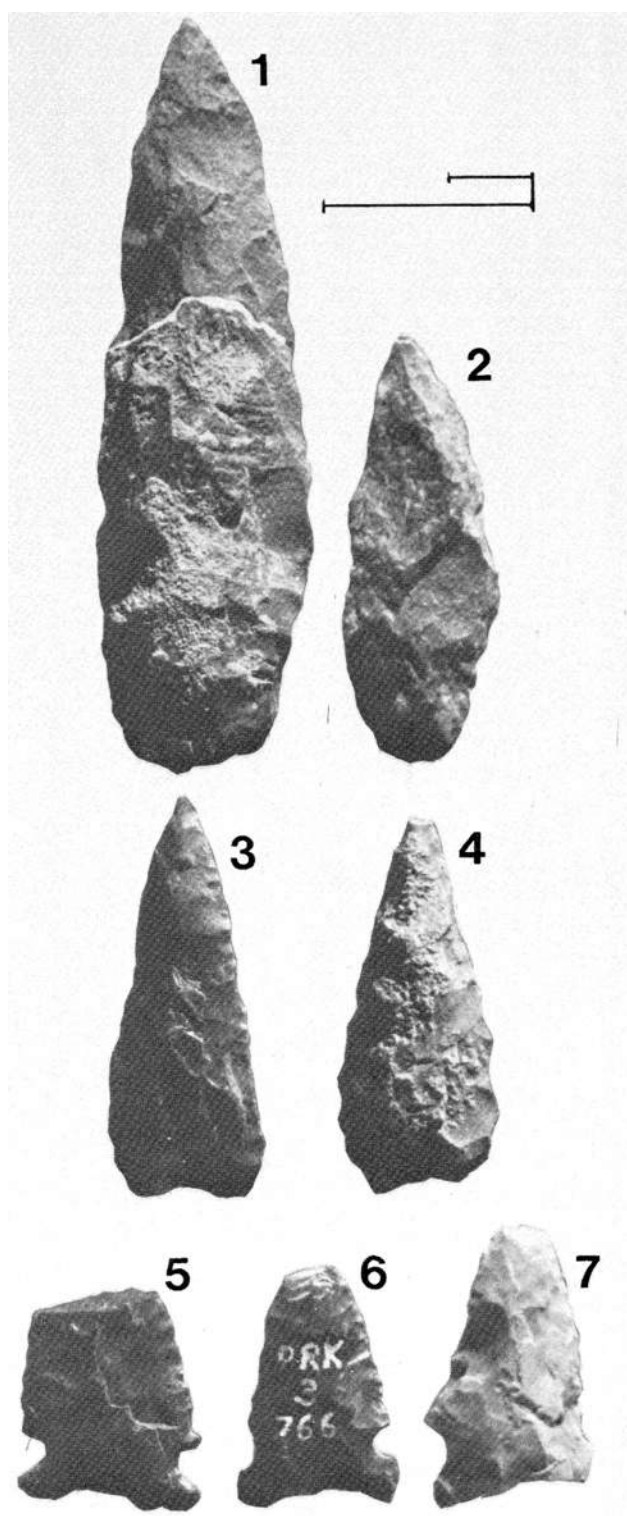


PLATE 6. Lower Hudson Shell Midden Sites: 1, 2, Lerma; 3, 4, untyped Wheeler-like; 5, Kessell; 6, 7, Big Sandy. West Virginia aspect

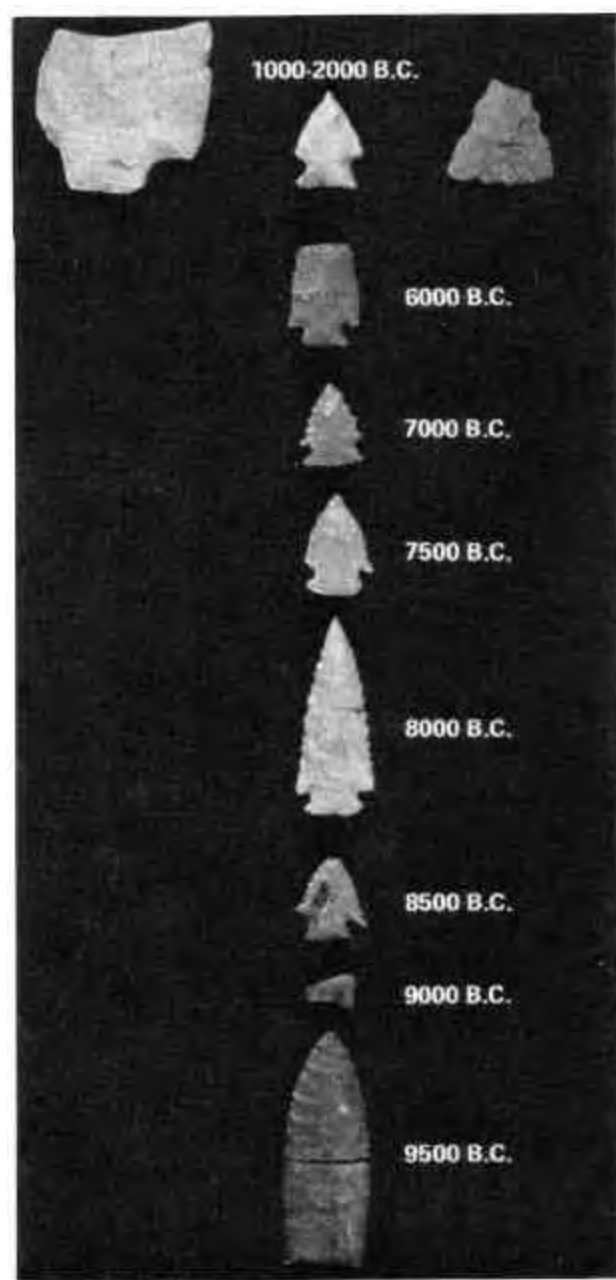


PLATE 7. Early Archaic sequence at the Thunderbird Site, Front Royal, Virginia. For comparison with point types on Plates 8 and 9.

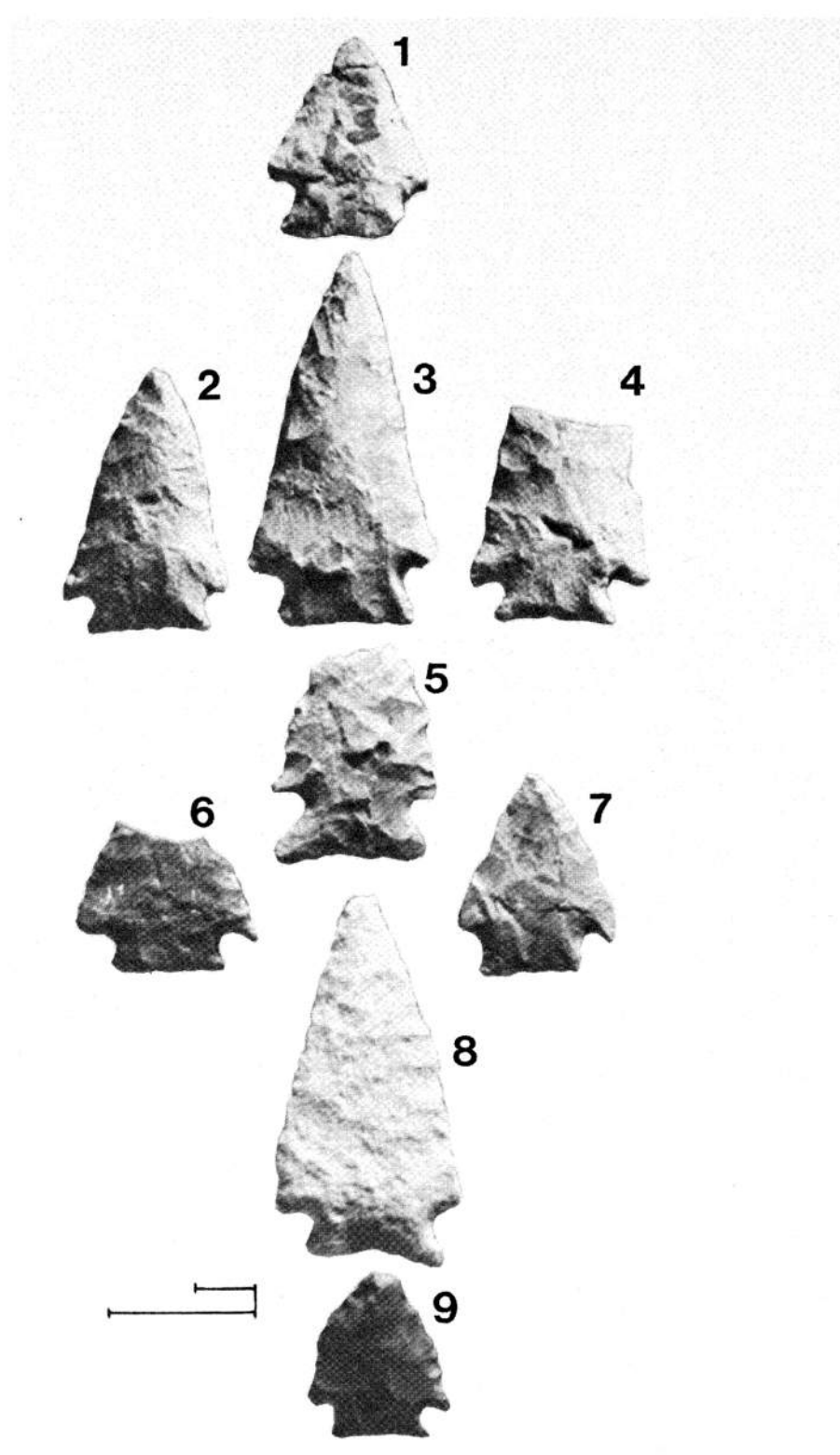


PLATE 8. Lower Hudson Shell Midden Sites: For comparison with Thunderbird sequence. No dates available for these types.

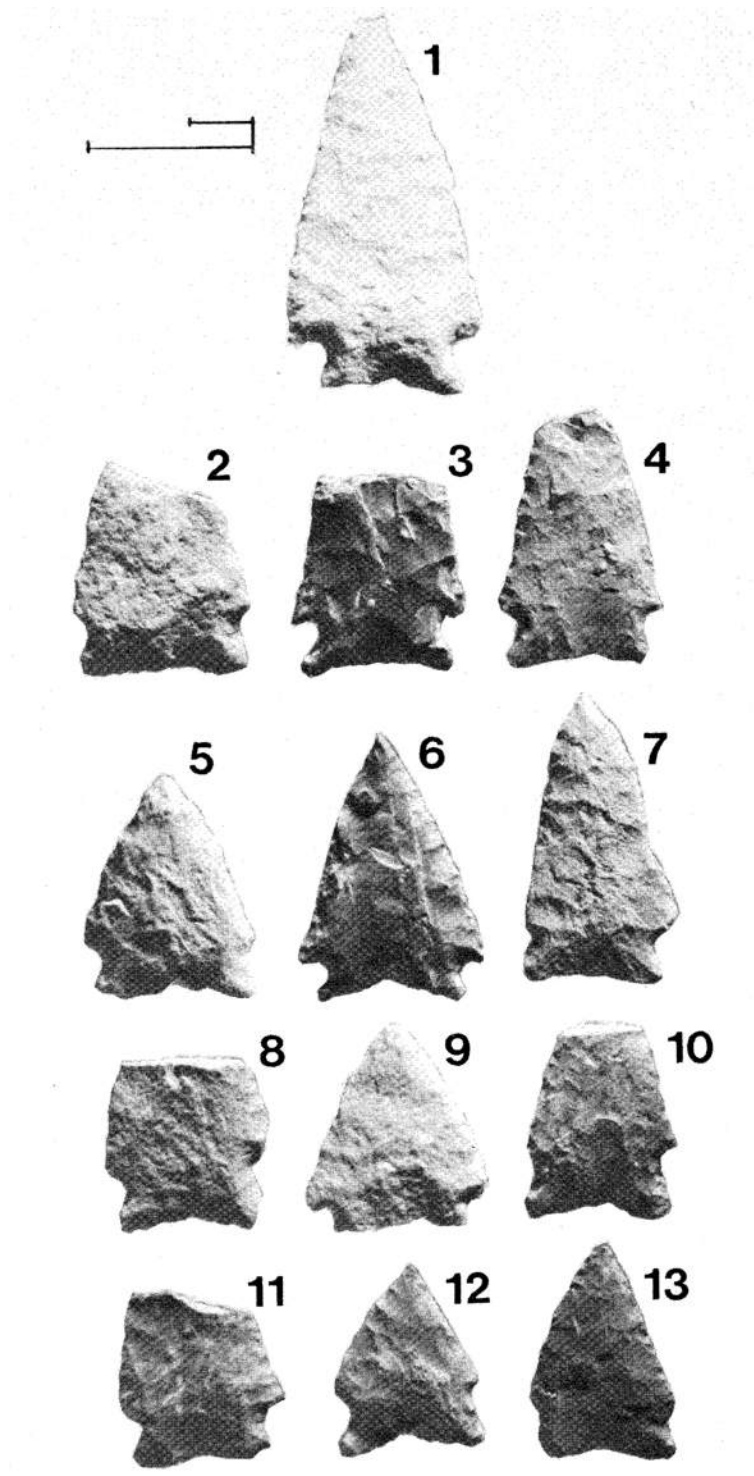


PLATE 9. Lower Hudson Shell Midden Sites: No. 1 is No. 8 of Plate 8, which is an almost exact duplicate but in quartzite, of the point 5th from the top in the Thunderbird sequence; 2-13, variations on the same theme close enough to form a family.

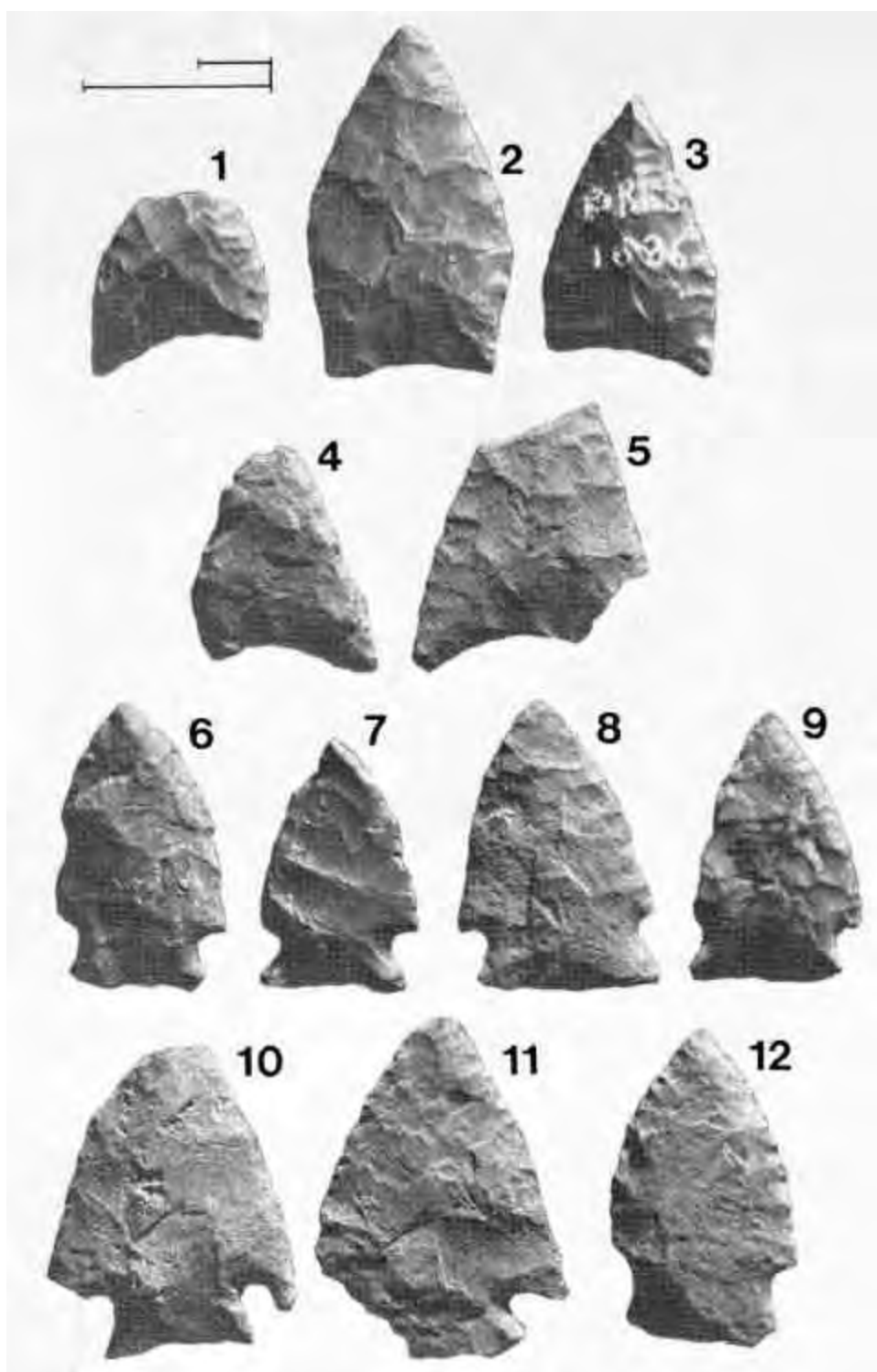


PLATE 10. Lower Hudson Shell Midden Sites: 1, 3, 4, 5, series of thin, asymmetric trianguloids with flute-like thinning of base, certainly Archaic but not dated; 2, a pentagonal of the same markmanship; 6-9, side-corner notched series with No. 7 dated at more *than* 5,135 C¹⁴ years ago; 10-12, untyped probably Middle Archaic types.

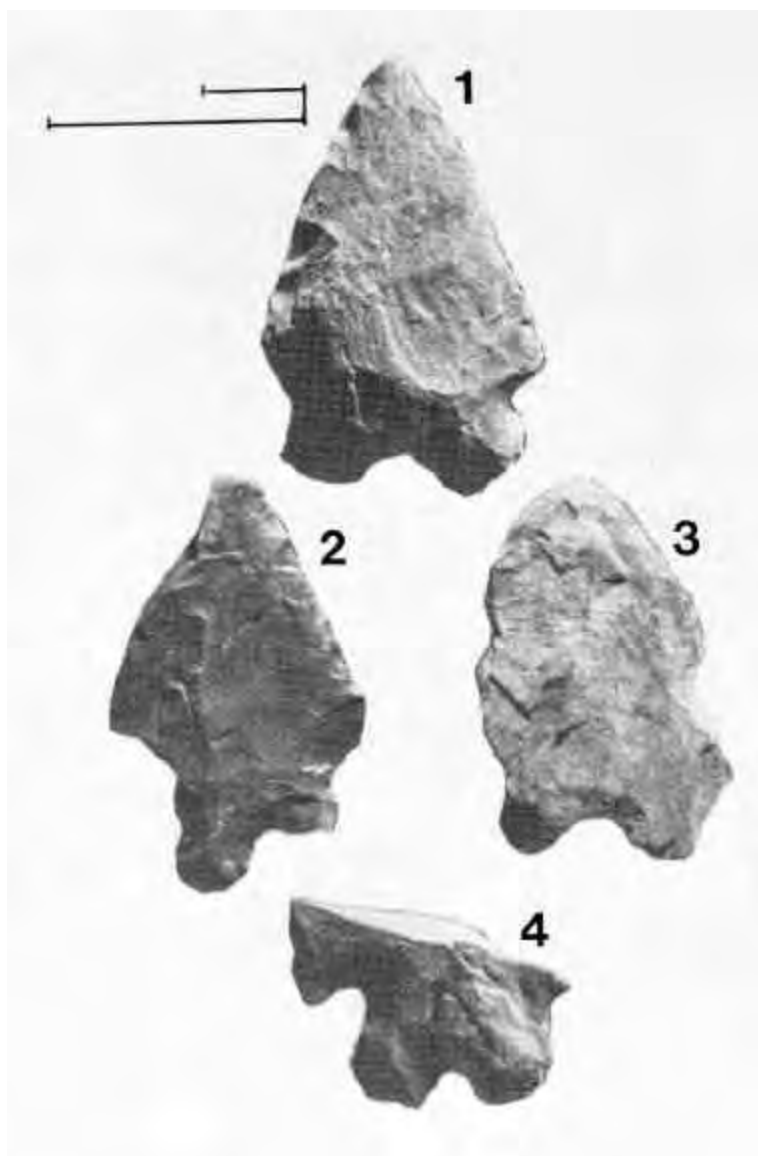


PLATE 11a. Lower Hudson Valley Shell Midden Sites: large bifurcates

If the deciduous forest environment advanced northward more slowly inland than along the coast then St. Albans aspect people would have arrived here somewhat later than the Carolina Piedmont aspect people. If the glacial interval called the Cochrane did occur and if it did have an adverse effect on climate and environment at this latitude, then the St. Albans aspect complexes may not have reached New York until 8,000 B.P.

4. The presence of projectile points in the Croton River mouth area of a type we have named Arden which very closely resembles a type found at the Thunderbird site, Virginia, and dated at circa 10,000 B.P., indicates that a third Early Archaic aspect reached at least that area at a time not now determinable. It is probable that when this type is better understood and more widely recognized the distribution will be seen to cover the Northeast region; the type seems to consist of a constellation of sub-types or varieties. The line of advance of this Virginia aspect would logically have been a middle route between the Carolina Piedmont and the West Virginia aspects. This route would, therefore, have

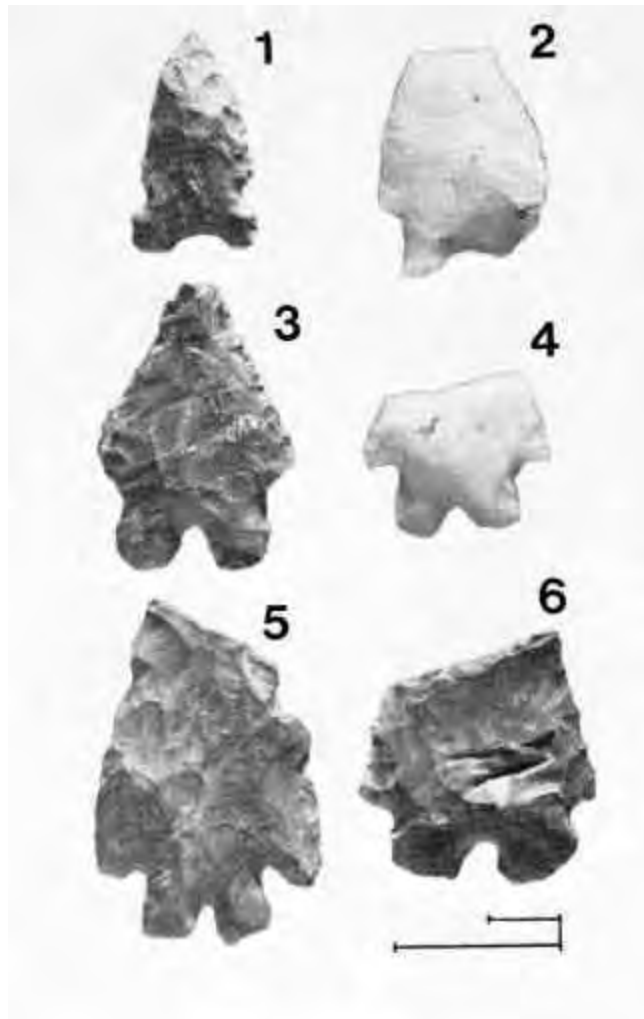


PLATE 11b. Grasslands Farms (inland Westchester County, Sawmill River drainage: 1, Rowan; 2, Hardaway; 3, 4, untyped bifurcate; 5, 6, Montell.

crossed New Jersey where the point type should be present in at least some collections. In holotype the Arden point is about 2 in. long, with a triangular blade about 1 in. wide at base of the blade. The angle of notching is upward from the corner and the base of the shank is less than the base of the blade, about $\frac{1}{2}$ in. wide. The corners of the shank base are upturned and there is usually a notch in the middle of the tang base, the result of basal thinning.

5. The presence of large bifurcate base, notched points of a type Funk has discovered at a site on the Upper Susquehanna apparently associated with a charcoal date of ca. 9,300 B.P. places in New York an early Archaic aspect about which we know nothing except that it existed. In a study of bifurcate base points Fitting (1964) segregated the large bifurcate from the much smaller Lecroy type and estimated their ages at greater than 7,000 B.P. on provenience data from Tennessee and North Carolina. A Tennessee large bifurcate aspect would probably have entered western New York from Ohio. A North Carolina aspect would probably have trailed along the Appalachian slopes.

6. The presence of triangular projectile points older than 5,000 B.P., a situation unique to sporadic areas in the Northeast, suggests a derivation of this form from a Paleo-hunter tradition which left detached groups behind, when the herd animal environment disappeared, to adapt to the temperate forest environment. This descendant or epi-Paleo-hunter may well be a fifth aspect of the New York Early Archaic.

7. The Early Archaic was the period of settlement of the woodlands of the eastern seaboard by hunting-fishing-fowling-gathering cultures that had developed the skills and practices to exploit the general deciduous forest environment and the micro-environments within the general environment. At about 11,500 B.P. the deciduous forest environment of the East was confined to a region between Virginia and Florida, and the Appalachian highlands and the Atlantic coast. Post glacial rise in sea level reduced this region rapidly during the Early and into the Middle Archaic but the amelioration of climate beginning about 10,500 B.P. effected an enlargement of the deciduous forest environment that more than made up for the loss. It is assumed, perhaps over-simplistically, that the Early Archaic cultures of the original forest environment drifted northward because the deciduous forest environment was expanding in that direction. But there must have been two other factors that induced movement. One of these would be the increasing population; this can be explained, at least partially, by the forcing inland of coastal plain dwellers by the rising sea. However, there must have been some lure of greater abundance in the north. This would have been the greater biotic carrying capacity of the edge area at the northern front of the forest advance. The forests of the original region had had the time to reach a state of maturity called climax. The biotic carrying capacity of climax forests is low. But where timber is thinner, and stands of it more sporadic and more varied, both animal and vegetal foods are in much greater supply. It seems probable, therefore, that the Early Archaic cultures of the aspects names above moved somewhat ahead of the solid forest front. These Early Archaic migrants must have left descendants in New York which we have not yet recognized.

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SOME REGIONAL ECOLOGICAL FACTORS IN THE PREHISTORY OF MAN IN THE NORTHEAST

William A. Ritchie NYSAAF

Van Epps-Hartley Chapter

Throughout the area of the Northeast as a whole, it would seem that Early Paleo-Indian remains are much more numerous than those of either the Late Paleo-Indian or the Early Archaic periods, with the

possible exception of the category of bifurcated-base projectile points which pertain to the closing phases of the latter period. Projectile points attributable to the Late Paleo-Indian are exceedingly rare (Funk and Schambach 1964; Ritchie 1965:16-9), while evidence for Early Archaic occupation, although somewhat more abundant, is scarce and scattered (Ritchie 1965:32-3, 1971b:2-3; Ritchie and Funk 1973:37; Funk 1976:231-4, 1977a:21-4, 1977b:326; Dincauze and Mulholland 1977:439-40; Funk and Rippeteau 1977:28; Rippeteau 1977:393; Snow 1977).

Prior especially to the work of Coe in the Carolina Piedmont (Coe 1964), Broyles in West Virginia (Broyles 1966, 1971) and Dincauze in southeastern New Hampshire (Dincauze 1976), the only well recognized post-Paleo-Indian early projectile point form in the Northeast was the broad category of bifurcated-base points. In recent years, projectile point studies in the Northeast have noted the presence in very minor proportions of certain of Coe's, Broyles' and Dincauze's types, or of generally similar forms, described as Kirk-like, Palmer-like, Dalton-like, Neville-like, etc.

Funk observes that along the Hudson River "traces of the earliest groups, represented by Hardaway, Kirk, Palmer and other point styles, are extremely sparse in surface or excavated collections," and that he has seen "perhaps half a dozen such types *combined* (italics his) in the 8,000 projectile points recorded" in his study of the middle and upper Hudson Valley. More numerous in this area were bifurcated-base points (48 examples or .6% of the total) and recognizable Neville points. He also remarks on the evidence there for a gradual population increase from Early Archaic through late Middle Archaic times (Funk 1977a:24).

Funk's excavations with Bruce Rippeteau in the upper Susquehanna Valley have yielded similar slim traces of early and Middle Archaic occupations. In fact, with the exception of the Gardepe and Russ sites, no such data were observed "apart from occasional projectile points affiliated with southeastern Early Archaic types, usually recorded in surface collections. These included Kirk Stemmed, Kirk Corner-Notched and various bifurcated-base forms" (Funk and Rippeteau 1977:28).

At the Gardepe site a single bifurcated-base point was found in Zone 6, while at the Russ site, in undifferentiated alluvium below a foot thick plow zone, the excavators discovered a bifurcated-base point, five points resembling the Kanawha Stemmed variety (dated c. 6,000 B.C. in West Virginia), a Kirk Stemmed point (c. 7,000 B.C. in West Virginia), a possible Kirk Corner-Notched and several other corner-notched points of undetermined affiliation. Hearth features in the same general level produced C¹⁴ dates between 5,930 B.C. $\pm$ 145 years and 6,270 B.C. $\pm$ 420 years (Funk 1977a:23).

It should also be recalled that the writer's typological analysis and description of a random sample of 10,800 projectile points from surface sites in the middle Hudson Valley, the Seneca River Valley of central New York, and the Genesee River Valley of western New York, resulted in an untyped residue containing only 48 bifurcated-base points (Ritchie 1961:Plate 34).

While it is possible to have included in certain of my categories a minute number of the then unrecognized and unpublished Early and Middle Archaic styles, reference to the large number of projectile point illustrations in my many site reports fails to indicate this.

A general class of bifurcated-base points from the Northeast, many of which do not exactly conform with southeastern styles called LeCroy, St. Albans and Kanawha Stemmed (Broyles 1966, 1971), has long been recognized as probably pertaining to an earlier Archaic horizon since they have no obvious place in any recognized Late Archaic phase or complex in the Northeast (Ritchie 1961:Plate 34, figs. 4,7-9, 1971a:2, 1971b:3). Such points occur widely over New York State and much of New England, usually as a very thin, apparently random surface distribution, a major exception being their concentration on six sites in the upper Taunton River Valley of eastern Massachusetts (Taylor 1976).

They are also occasionally present in excavated sites in very small numbers, one to a few examples, interspersed with more recent materials, principally of Late Archaic age, in no consistent or significant manner, a fact noted long ago at the Brewerton Laurentian Sites (Ritchie 1940:29, 66) and in the middle Hudson Valley (Ritchie 1958:68) where they have also been reported by Funk (Funk 1976:233). Brennan has described them from the lower Hudson Valley (Brennan 1977) and Calkins and Miller from western New York (Calkins and Miller 1977).

The area of distribution of bifurcated-base points includes northeastern New York (Snow 1977) and western Vermont, where they have been recorded by the writer from several sites, principally along Otter Creek, viz., Otter Creek No. 2 in Rutland County, one example (Ritchie nd.a); Huntley Island, Addison County, two specimens with Brewerton phase association; and Hemlock Point, Rutland County, one example in a site of the Vergennes phase. On the predominantly Vergennes phase Auclair site in Chittenden County, no fewer than five bifurcated-base points (three quartzite, two of weathered flint)

were found randomly intermingled with other artifacts, including some characteristic of Transitional and Woodland complexes, in excavations conducted by Kenneth E. Varney of Burlington, Vermont and associates. During the course of his archeological survey of Vermont in 1970, the writer briefly participated in these excavations through the courtesy of Mr. Varney (Ritchie nd.b).

Staten Island is the sole area in the Northeast known to me where bifurcated-base points, some of them referable to the LeCroy and Kanawha Stemmed types, occurred in contexts which included such other Early Archaic point styles as Kirk Stemmed, Palmer Corner-Notched, Hardaway and possibly other southeastern styles, together with certain other chipped stone artifacts, some of varieties found at St. Albans, West Virginia, plus a small assemblage of rough stone tools having no representation in the St. Albans site series. On Staten Island they have been excavated from four stratified sites by Albert and Robert Anderson, Joseph Bodnar, Donald Hollowell and Donald Sainz, listed alphabetically. These sites have been radiocarbon dated on hearth charcoal between 5,310 B.C. $\pm$ 140 years (I-4070) on the Old Place site, and 7,410 B.C. $\pm$ 120 years (I-4929) at the Richmond Hill component. A rather perplexing association in one stratigraphic zone of sundry point types which occur in discrete levels at sites in North Carolina and West Virginia, was present on all four Staten Island sites (Ritchie and Funk 1971).

It has been speculated that the paucity of evidence for Late Paleo-Indian and Early Archaic habitation in the Northeast can be attributed to unfavorable ecological conditions believed to have prevailed over much of that region between approximately 7,500 B.C. and 5,800 B.C. (the B zone of palynologists) (Fitting 1968; Ritchie 1969b: 212-3; 1971b:3; Ritchie and Funk 1973:37-8). This period seems to have been characterized by a heavy pine forest cover which attained its climax around 7,000 B.C.

In southern New York and New England an early strong pine-birch association and a later strong pine-oak association have been noted in the pollen profiles. White pine was a major species, at least in New York, but red and jack pine were also present. Other arboreal species in these forests included black ash, poplar and elm. Oak, red and bir, at least, were present throughout the B zone forests of the Northeast (Davis 1958, 1967, 1969; Cox 1959; Miller 1973; Sirkin 1977).

The gradual transition, beginning around 6,000 B.C., from the more boreal mixed pine-oak forests to the more temperate oak-hemlock deciduous forests, apparently and logically correlates with the observed rise in Middle Archaic population. This period encompasses the oak maximum for the southern portions of the region, and probably even more importantly, a marked rise in beech, one of the best mast foods for the white-tailed deer, black bear, turkey and passenger pigeon.

The level of Archaic population and cultural diversification in the Northeast seems to have increased proportionately with the rise in numbers and variety of those tree species having a direct or indirect influence over food supply. The geographic variation in forest character, due at least in part to local conditions, seems to be reflected in the relative a real abundance of archeological remains. An essentially modern forest milieu supporting a diversified hardwood forest and a fauna like that at the time of European discovery, probably prevailed at least by 4,500 B.C. when the Late Archaic cultures of the area make their initial appearance.

Some prehistorians, objecting to the environmental hypothesis, maintain that coniferous-deciduous forest conditions around 7,000 B.C. in the Northeast were propitious for hunter-forager bands on the Early Archaic culture level, but offer no adequate explanation for the extreme scarcity of artifact remains of that period. Simply to assert the destruction on Early Archaic sites by various agencies fails to account for the near absence of Early Archaic artifactual remains which would have endured, as have those of the Early Paleo-Indian period in the same region. Nor, as I have already stated, is a satisfactory explanation to be found- in the alleged failure of archeologists to recognize such evidence if it existed.

I still incline to my earlier hypothesis that the most logical explanation to account for the meager traces of Late Paleo-Indian and Early Archaic occupation in upstate New York and adjacent portions of New England is the probably low carrying capacity of the forests of this region for the food animals required by the primarily hunting bands of this early time. Data accumulated by other investigators tend to support this population-resources model (Funk 1977a: 23-6; Rippeteau 1977:393; Sanger 1977:467). At the Meadowcroft Rockshelter, situated near the southwestern margin of the Northeast, in Washington County, Pennsylvania, a transitional zone from Paleo-Indian to Archaic, with a few Stanly, Halifax and Morrow Mountain 1 points, seems to date around 6,000 B.C. (Adovasio et al, 1977:33, 48, 88).

While accepting the present uncertainty regarding this ecological hypothesis for the scarcity of Late Paleo-Indian and earlier Archaic remains in the Northeast, created by insufficient and sometimes

conflicting evidence of pollen analysis, a paucity of radiocarbon dates and their sundry interpretations, I am unwilling to recognize its total negation by assumptions I regard as currently unwarranted. Aside from the larger environmental setting is the notable fact that the areas which have thus far yielded the major evidences of Early Archaic inhabitation in the Northeast lie within the Carolinian biotic province or adjacent to its interface with the Canadian province as defined by Dice (1943). The present Carolinian boundary crosses eastern Pennsylvania, southeastern New York, to include the lower Hudson Valley, and southern New England (Dice, 1943:Map 1). But can the more salubrious conditions associated with this major biome be assumed to have existed there some 8,000 years ago?

The Early and Middle Archaic complexes of the Carolina Piedmont and West Virginia probably then as now, thrived within the broad Carolinian biotic province. The upper limits of this zone have doubtless progressively shifted northward since the beginning of postglacial times, marking the slow northward spread of the temperate deciduous-coniferous forests, with their larger and more abundant faunal associations, including the Archaic hunters and gatherers.

We lack the required data to determine when the Carolinian zonal frontier had reached as far north as southeastern New York and New England, but it seems not adventitious that the area of known Early Archaic sites on Staten Island (Ritchie and Funk 1971), northern New Jersey (Dumont 1974), the lower Hudson Valley (Brennan 1964, 1974, 1977), and much of southern and eastern New England (Dincauze 1976; Dincauze and Mulholland 1977), coincides precisely with the present Carolinian-Canadian interface (Ritchie 1971b:3; Ritchie and Funk 1971:56).

This particular region is furthermore especially favored by a set of ecological factors, largely overlooked, which probably contributed to its attraction for the earlier Archaic peoples. These factors include a relatively long frost-free period, greater annual reception of sunlight, and the tempering effects of a coastal environment. In assessing these regional environmental factors, one should probably not discount their salutary effects on the physiological and psychological comfort and health of the Indian population, as well as their economic benefits.

There seems little reason for doubt that substantially equivalent conditions to those now prevailing, existed throughout much or all of the recognized Archaic time span, since there appear to have been no radical changes in the physiographic features upon which they depend.

As shown in Figure 1, the average length of the freeze-free period, or the total number of days annually between the last freeze in spring (32°F, 0°C) and the first freeze in autumn, varies considerably over the area of our interest. Along the coastal zone of New Jersey, on most of Long Island, and in the Hudson Valley to the vicinity of the City of Hudson; in coastal Connecticut, including the Connecticut River Valley to New Haven; coastal Massachusetts and Rhode Island, the freeze-free period consists of 180 days. Staten Island, Cape Cod and the off-shore islands enjoy about 210 days without frost.

A frost-free period of between 180-150 days characterizes the middle Hudson Valley to near Albany, the major portion of Connecticut and Massachusetts, southeastern New Hampshire and southeastern Maine, while most of upstate New York, western Massachusetts, most of New Hampshire and Maine experience only 150-120 frost-free days, even as few as 90 in the highest elevations of these areas, the Catskill and Adirondack Mountains.

Another climatic factor doubtless affecting the comfort and well-being of ancient as well as modern man, is the duration of periods of sunshine. On Figure 2, where this factor is illustrated in mean annual hours, it is apparent that eastern Pennsylvania, New Jersey, Staten Island, Long Island, southeastern Connecticut and eastern Massachusetts receive on an average in excess of 2,600 hours of sunshine annually, while eastern New York to the vicinity of Glens Falls, most of southern New England, southeastern New Hampshire and Maine have between 2,600 and 2,400 annual hours of sunshine. Over most of New York State, northcentral Massachusetts, and much of northern New England, the number is less than 2,400 hours, as little as 2,200 hours in most northern sections.

Still another factor, doubtless of consequence in providing especially favorable conditions for the occupation of southern New York and southern and eastern New England in early as well as in later prehistoric times, when this region was clearly heavily inhabited, as attested both by archeological and historical evidence, is the climate-tempering coastal effect. As shown in Figure 3, the moderating influences of the sea are experienced over the eastern half of New Jersey; all of coastal New York, including the lower Hudson Valley to the vicinity of Peekskill; all of southern and eastern New England; as well as southeastern New Hampshire and the Maine coast, in a zone varying in breadth from approximately 15 to 40 miles.

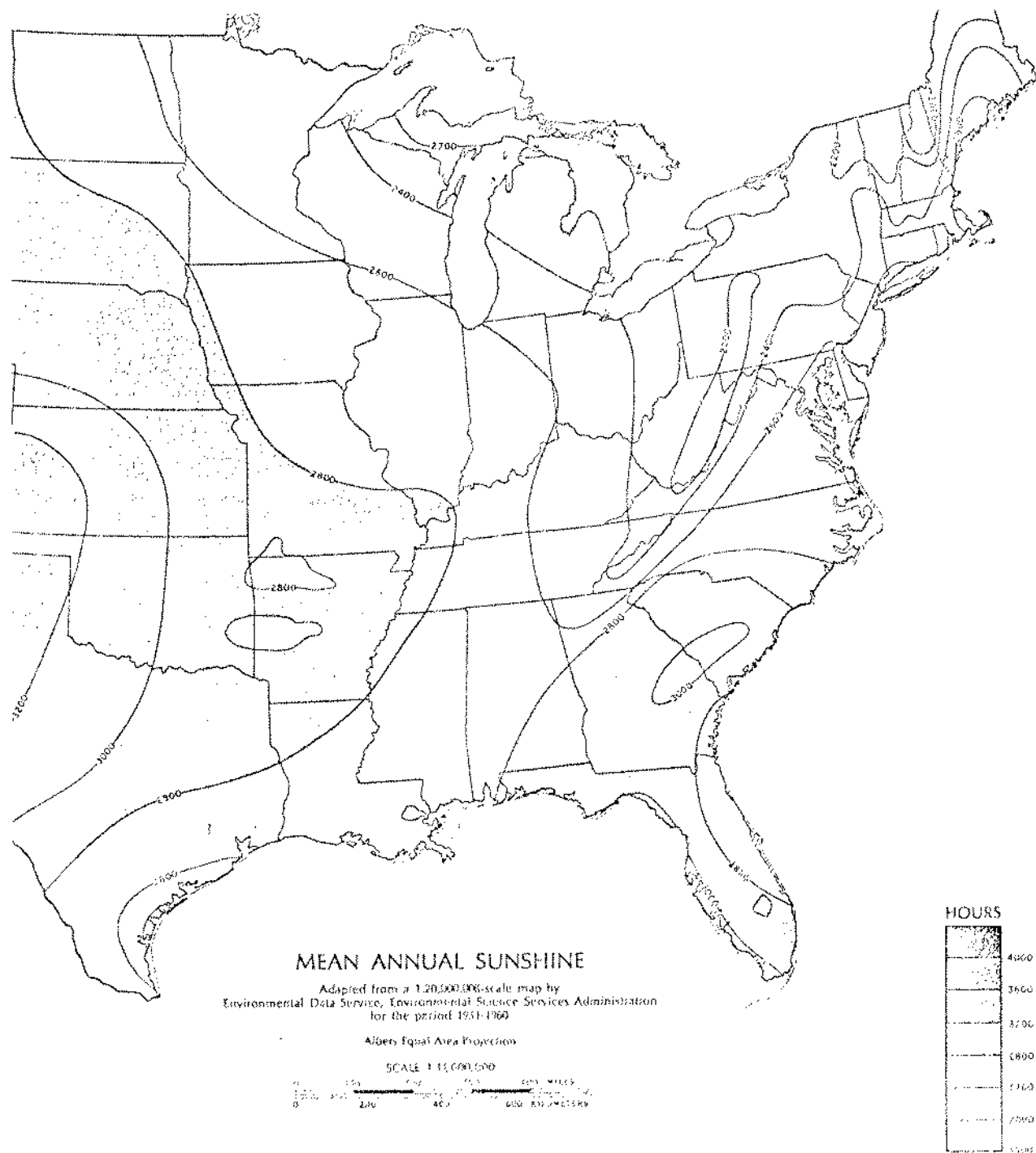


Fig. 2. Mean annual sunshine over the Central and Eastern United States for the period 1931-1960. From the National Atlas of the United States of America, U.S. Department of the Interior, Washington, D.C. 1970.

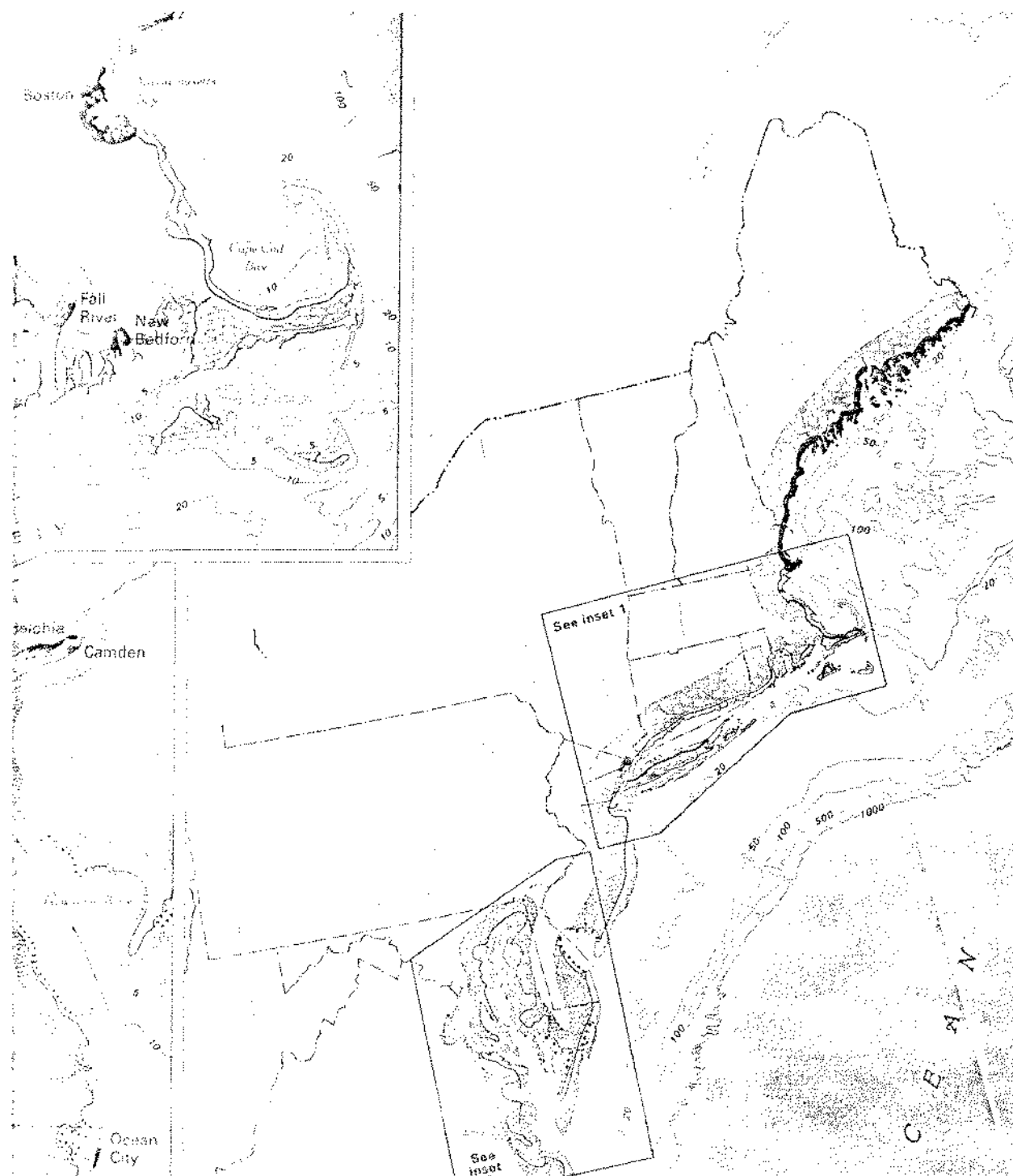


Fig. 3. Coastal effects over the Eastern United States seaboard. From National Atlas of the United States of America. Washington, D.C. 1970.

These conditions have likely prevailed since the sea reached its nearly stable present levels, no later than 4,000 B.C. They were probably attained much earlier than that, at the latest by the Middle Archaic period of about 6,000 B.C., due in part to the nature of the broad, flat continental shelf and the probably higher temperatures than today of the inshore waters off these coasts during much of the past 5,000 to 10,000 years (Edwards and Emery 1977:247-9, 252).

Snowfall over the peripheral coastal lands is normally light and transient. The heavy, deep accumulations, aggravated by drifting, found over interior portions of the Northeast, which must have created grave problems of mobility and comfort for Archaic hunters, are rare or absent there.

The combined interrelated data discussed in this paper tend, I believe, to sustain the hypothesis of regional ecological factors to account for the known distribution in the Northeast of Early and Middle Archaic evidence disseminating into this area from the south and southwest.

Acknowledgements

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THE EARLY AND MIDDLE ARCHAIC IN NEW YORK AS SEEN FROM THE UPPER SUSQUEHANNA VALLEY*

Robert E. Funk NYSAAF

Van Epps-Hartley Chapter

Brennan has provided us with a position paper designed to elicit our responses on the Early Archaic period as currently known in New York State. I will address my remarks to some of the issues he raises and will also consider other aspects of the subject in the light of contributions made by our current program of research in the Upper Susquehanna Valley.

This paper is concerned chiefly with the following problems:

- 1) The identifying or diagnostic traits of Early to Middle Archaic complexes;
- 2) The external relationships of these complexes;
- 3) Relative and absolute chronology, i.e. the position of traits and complexes in the northeastern developmental sequence and their age in ^{14}C years;
- 4) The geographic distribution of traits and complexes in relation to possible routes of migration or diffusion;
- 5) The density or abundance of surviving lithic remains as compared to other periods, with implications for estimates of population size.

Following Fowler (1959), the Early Archaic is defined as the period of 8,000-6,000 B.C. and the Middle Archaic as the period of 6,000-4,000 B.C. In the Northeast, the Late Archaic period of ca. 4,000-1,500 B.C. is well represented in the literature as a result of extensive work by Ritchie and others. However from the mid-1950's to about 1970 the antecedents of the Late Archaic complexes in our area remained a mystery despite the voluminous quantities of Early to Middle Archaic materials reported in the Southeast (Ritchie 1965, 1969a, 1971a; Fitting 1968; Griffin 1964; Quimby 1960; Ritchie and Funk 1971, 1973). Sites of this age proved difficult to locate despite intensive search by archeologists.

In the last decade quite a number of Early to Middle Archaic sites have been reported in the Northeast, including the Neville site in New Hampshire (Dincauze 1976), the Ward's Point, Richmond Hill, Hollowell, and Old Place sites on Staten Island (Ritchie and Funk 1971), the Zawatski site in western New York (Calkin and Miller 1977), the Shawnee-Minisink site in eastern Pennsylvania (McNett and McMillan 1977), the Meadowcraft Rockshelter in western Pennsylvania (Adovasio, et al 1975, 1977), the Sheep Rock Shelter in central Pennsylvania (Michels and Smith, 1967), Harry's Farm in New Jersey (Kraft 1975), the Rockelein site, also in New Jersey (Dumont, n.d.) and the Weirs site, New Hampshire (Charles Bolian, personal communication). Early components have also been discovered at the Gardepe and Russ sites near Wells Bridge, New York (Funk 1977a, 1977b; Funk and Rippeteau 1977; Rippeteau 1977). All of the sites mentioned are located on the map, Figure 1.

The flood of new data has transformed our view of early postglacial cultures in the northeastern U.S. It is true that the presence in surface collections of occasional bifurcated-base points and other Early Archaic horizon markers had been recognized by Ritchie (1961, 1965) and other workers for years. However these traits had not been found in undisturbed stratigraphic context or ^{14}C dated. It is also true that the majority of sites listed above are in Pennsylvania, New Jersey and other areas lying south of upstate New York and New England. But we now have enough information to outline a preliminary

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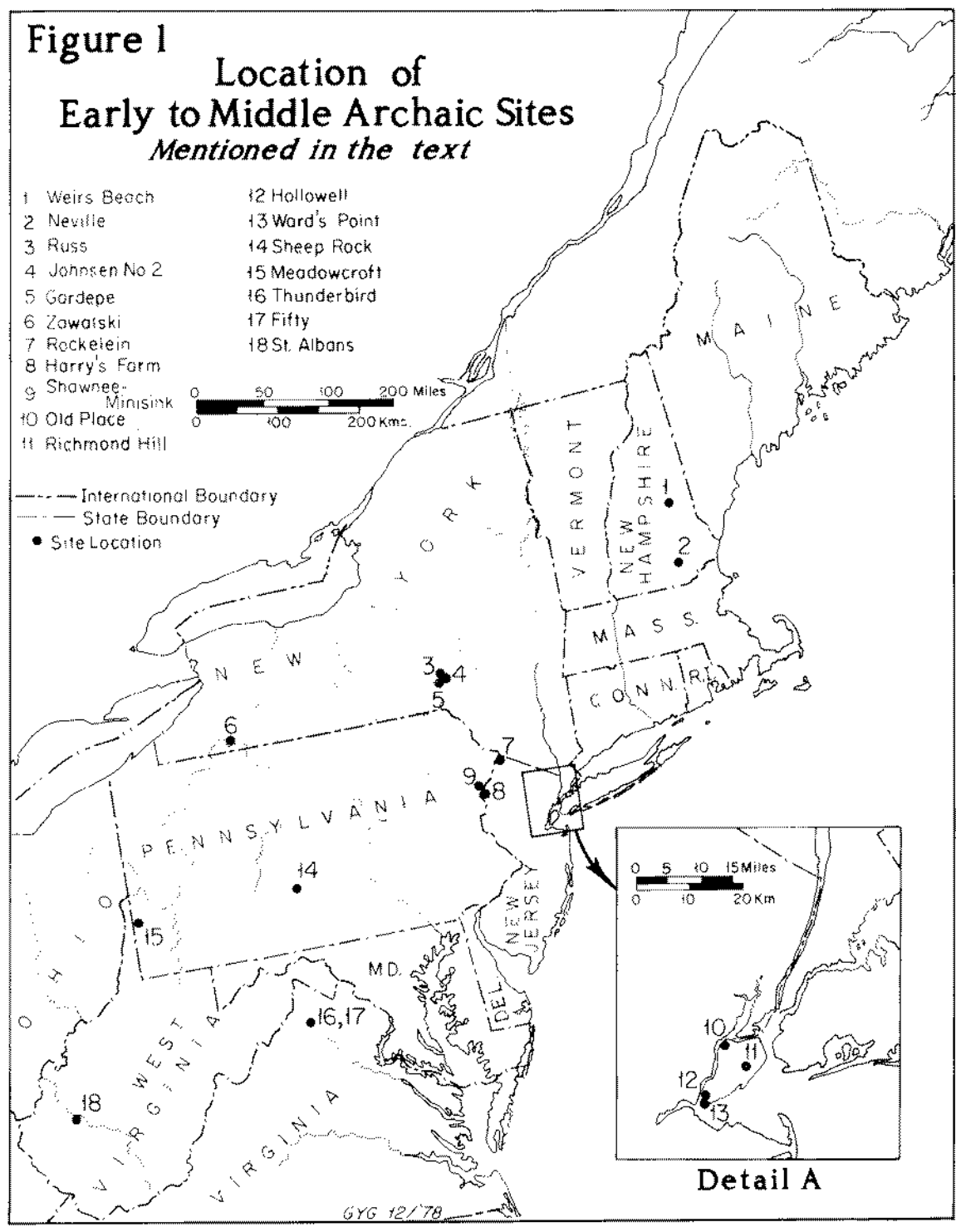


FIG. 1 The Early and Middle Archaic as seen from the Upper Susquehanna Valley.

cultural sequence, to sketch a partial chronology in ^{14}C years, to trace linkages with southeastern groups, and to construct heuristically useful models of adaptive systems.

The Gardepe and Russ sites were investigated as part of a major program of research on the prehistory of the Upper Susquehanna Valley directed by the writer and Bruce E. Rippeteau (Funk and Rippeteau 1977). One of the principal objectives of this program was to locate and excavate intact sites of the Early Archaic period previously found only on Staten Island. For several reasons we felt that the chances of finding such sites in the Susquehanna drainage were good, perhaps even better than in other drainages. The prehistoric environment was certainly highly favorable for hunters and gatherers, the present-day valley was relatively unspoiled by modern civilization, and the valley floor contained great expanses of floodplain in which early sites might be preserved under alluvium. The favorable ecological aspects of the early Holocene environment as reconstructed from pollen spectra and extrapolated from conditions observed in the Colonial period included among other things abundant fish and game resources and convenient routes of travel by canoe or on foot.

Despite a series of surveys, begun in 1970, we were only moderately successful in our search for early sites. Such sites have also eluded the highway salvage surveys carried out along Interstate 88 (the Susquehanna Expressway) by the Department of Anthropology, State University at Binghamton, under the auspices of the New York State Education Department. The Gardepe and Russ sites were located by a State Museum research associate, F. J. Hesse, on survey in 1973. With the aid of field school groups from the State University of New York at Oneonta (led by Bruce E. Rippeteau in 1974-75, the writer in 1976 and W. A. Starna in 1977) our State Museum crews excavated the Gardepe site in the summer of 1974 and the Russ site in the summers of 1975, 1976, and 1977.

Situated on the south side of a crescentic bend in the Susquehanna River just west of Wells Bridge village, the Gardepe site consists of four separate loci, two on the riverbank, and two adjoining a kettle hole bog 35 meters back from the river. Our main excavation at Locus 1 (plate 1), where about 180 cubic meters were explored, disclosed six stratigraphic zones of diverse origins (plate 2). Proceeding from the surface down, Zones 1 and 2 were both products of modern civilization and Zone 3 was an old midden slightly disturbed by the plow; these levels produced numerous artifacts ranging in age from Late Archaic through Late Woodland but consisting largely of Early Woodland and Middle Woodland items. Two hearths in Zone 3 were dated A.D. 290 ± 100 55 (Dic-249) and A.D. 550 ± 55 (Dic-262) or within the Middle Woodland period. Zone 4 was an undisturbed yellow-brown silt, which produced a few Late



PLATE 1. View of 1974 excavations at Locus 1 of the Gardepe site, Delaware County, N.Y. Looking northwest.

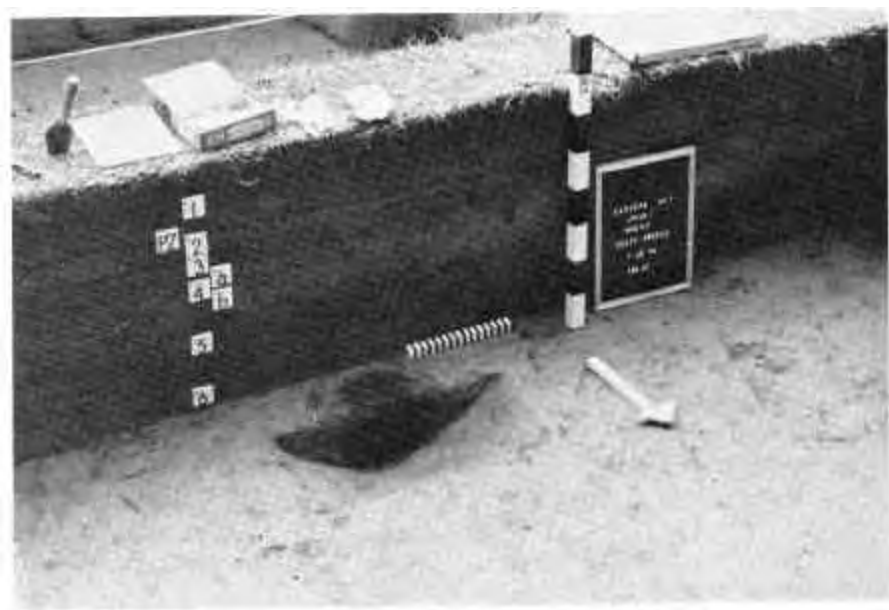


PLATE 2. Stratigraphic profile in section E40N0, Gardepe site. Strata are marked by tags. Zone 1 is present plow zone; 2, lower portion of older plow zone; 3, dark brown to black midden, partly disturbed by cultivation; 4, intact powdery yellow-brown silt; 5, reddish-brown humus and silt; 6, olive-brown compact silt. Cultural material occurred in all levels shown. Clearly visible is Feature 23, originating near top of Zone 6, which produced charcoal dated 7,430 B.C. $\pm$ 100 years (Dic-261).

Archaic artifacts and some elements of an enigmatic Early Woodland or early Middle Woodland complex (plate 3, figs. 3, 4, 7-10, 13-23). An associated feature was dated A.D. 130 $\pm$ (Dic-263). Zone 5, a reddish-brown weathered silt, produced just three thin, broad, corner-notched points and a handful of other items (plate 3, figs. 24, 27-9). In certain attributes the points resemble some Late Archaic types such as Vestal Notched (Ritchie 1971b) but may actually be much older; there is a resemblance, admittedly vague, to unserrated examples of Kirk Corner-Notched and Charleston points from the St. Albans site, West Virginia (Broyles 1971). Nearly identical points occurred in Early Archaic levels at the Russ site and in the subsurface levels at the adjacent Johnsen No. 2 site. Zone 6 at Gardepe's was a thick olive-brown silt resting on morainal gravels; its top levels yielded a small number of artifacts including a corner-notched point similar to some Middle Woodland forms (plate 3, fig. 26) and a bifurcated-base point (fig. 25). Lower portions of the zone were devoid of cultural remains. About three meters distant from the bifurcated-base point and in the same level was a charcoal-rich hearth dated 9,380 B.P. or 7,430 B.C. $\pm$ 100 years (Dic-261). Although this date falls well within the Early Archaic range, it is too early for bifurcates when compared to the southeastern chronology and would be more appropriate for Kirk points, no clear examples of which were found on the site.

This early date and the date for Zone 4 bracket Zone 5 within a span of over 7,000 years, thus contributing little to placement of the Zone 5 artifacts. Pollen, soil and flotation samples were collected from the site's various loci. Most of the pollen samples produced disappointing results; almost no pollen grains occurred in Zones 5 and 6. No refuse bone or charred vegetal foods were found in these levels. The adjoining bog produced a pollen profile reflecting a long period of postglacial deposition (Melia 1975). Pollen spectra from this and other bogs which we sampled provide the basis for a reconstruction of the changing postglacial environment. The data are currently being analyzed by D. M. Lewis, Palynologist in the New York State Museum Science Service.

The Russ site, located upstream from Gardepe's, on the north side of the river just where it bends to the south, occupies the east end of a large, crescent-shaped, cultivated piece of floodplain (plate 4). Numerous tests in the field failed to reveal subsurface remains except on the Russ property and within a limited area of the adjoining Johnsen property. However, surface material occurs in concentrations

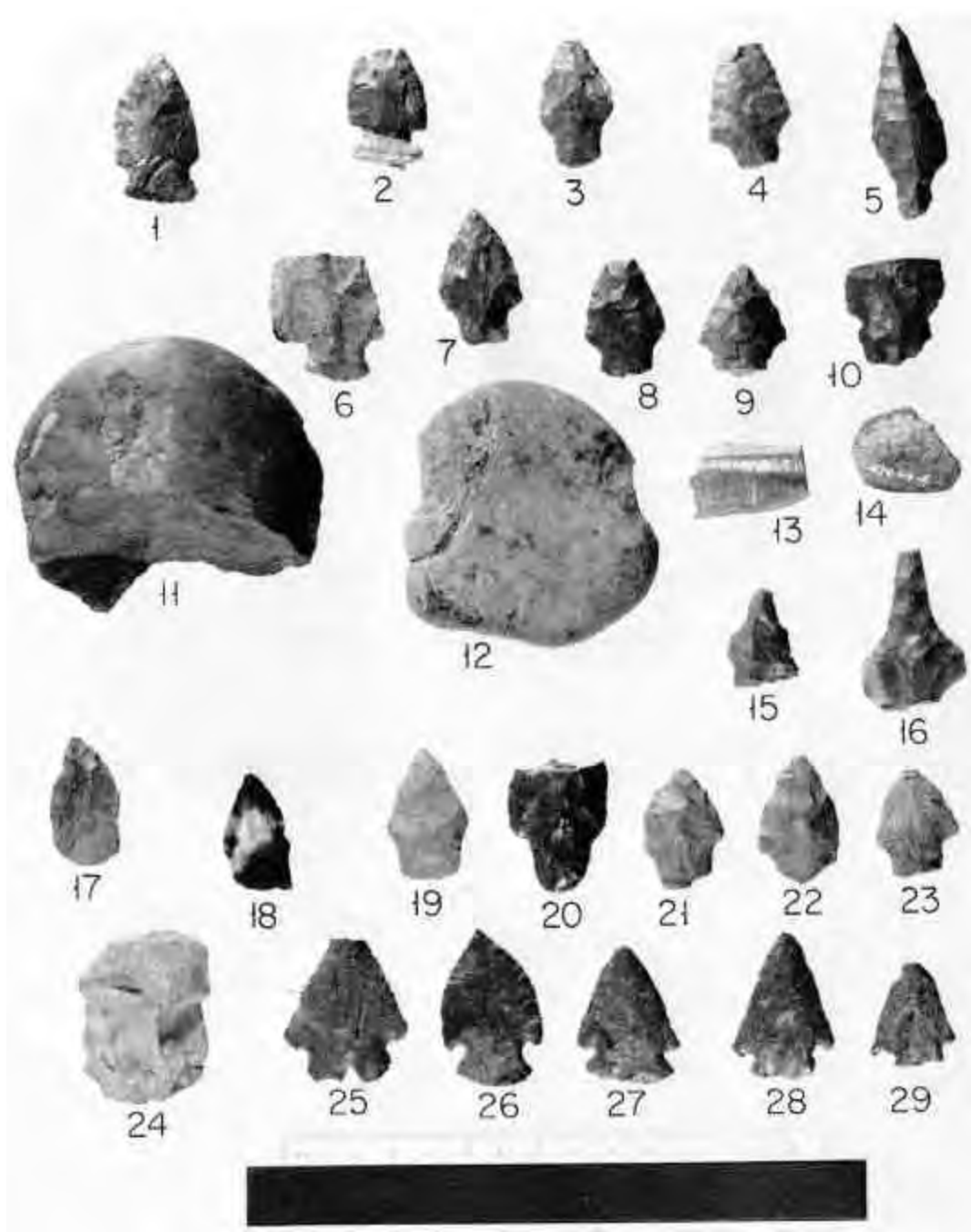


PLATE 3. Artifacts from Zones 4, 5, 6 at the Gardepe site, Delaware County, N.Y. Figs. 1-23 from Zone 4; 24, 27-29, from Zone 5; 25, 26 from Zone 6. Figs. 1, 2, side-notched points of possible Middle Woodland affiliation; 3, 4, 7-10, 17-19, 21-23, small, broad, stemmed points assigned to the type Sand Hill Stemmed; 20, Adena point; 5, narrow-stemmed point; 6, Perkiomen point; 11, anvilstone; 12, notched netsinker; 13, 14, fragments of blocked-end tube; 15, 16, expanded-base drills; 24, end scraper; 25, bifurcated-base point; 26, corner-notched point similar to Jack's Reef Corner-notched type; 27-29, untyped corner-notched points. Materials: 1-10, 15-29, eastern New York Onondaga flint; 2, Normanskill flint; 11, 12, siltstone; 13, 14, Ohio fireclay.



PLATE 4. View of Locus 2 excavations at the Russ site, Otsego County, N.Y. Looking south.

throughout the field. The floodplain is structured as three low, concentric terraces within the river's bend, ascending in successive steps from the south to north. Late Archaic through Woodland artifacts occur on the two highest levels, but the traits picked up from the lowest terrace are nearly all from Woodland occupations. It appears that the river has swung southward during the Holocene, building sequentially lower terraces, and this is supported by internal data from our excavations and by the present erosional pattern which involves undercutting of the south bank at Gardepe's.

Artifacts are abundant on the surface of the two higher terrace levels at the Russ site itself. Test pits and excavations showed that artifacts representing the last 6,000 years of prehistory, from Otter Creek and Brewerton through Lamoka, Vestal, Jack's Reef and Levanna points (Ritchie 1969a, 1971b) were scattered through the plow zone, but such materials were only rarely encountered in the underlying deposits. These deposits consisted of compact yellow-brown floodplain silts varying in age according to depth and distance from the river. By means of manual methods and limited backhoe trenching over 1,000 cubic meters of deposit were excavated. Except for a few basin-shaped features at the base of the plow zone, no subsurface cultural remains were present on the highest terrace, which was made up almost entirely of late-glacial sediments radiocarbon-dated from ca. 10,000 to 14,000 years ago. A charcoal concentration 1.7 m deep within the silt, dated between 7,640 and 9,760 B.C., resembled a hearth and raised hopes that we had encountered a Paleo-Indian level (plate 5). These hopes were dashed when further excavation failed to produce any artifacts, debitage, or fire-cracked rocks. Thus the charcoal and a large area of associated fire-reddened earth apparently resulted from an old forest fire.

Adjoining and partially overlapping the late-glacial terrace was the second depositional unit, also a yellow-brown silt, which was about 1.5 m thick below plow zone and produced moderate amounts of occupation debris in its upper 60 cm. Since these silts were essentially structureless the site could not be dug in natural levels. Also living floors, though present, were of limited horizontal extent where visible, only lightly stained by charcoal or fire-reddening (plate 6). Hence individual floors could not be traced across the site and tightly correlated with other floors in a universal vertical column. In an effort to exert the maximum possible stratigraphic control we adopted a complicated system of excavation by arbitrary levels and quadrants and kept highly detailed records of all cultural remains on each level, with the hope of eventually synthesizing the data into a general sequence of occupation floors. When analyses are

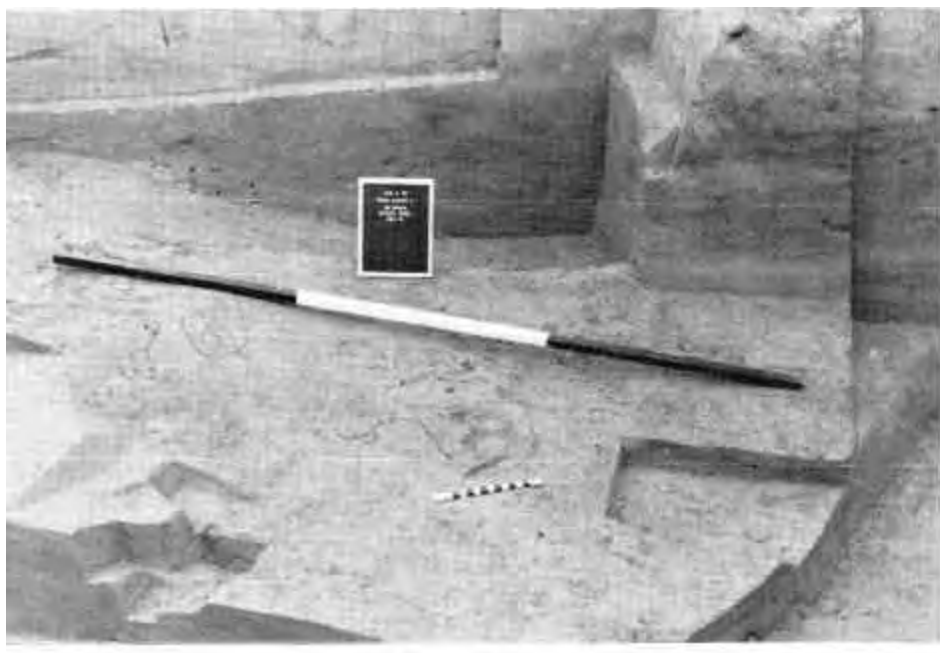


PLATE 5. Pre-occupation land surface at the Russ site, sloping upward to the left (north). Charcoal stains and fire-reddened areas are outlined on silt between range pole and north arrow. Two samples of the charcoal were dated 9,760 B.C.+1440/-1220 (Dic-476) and 7,640 B.C. +1040/-920 (Dic-751).



PLATE 6. Stratigraphic profile in section W6S36 at the Russ site. Various defined levels or zones are marked by tags. Zone "O" is overburden of backfill from previous year's excavation; 1 is modern plow zone; 2 is yellow-brown silt; 3 is lighter-colored band of sandy silt, just below which is occupation floor containing hearth feature 51; and 4 is another zone of yellow-brown silt.

complete these procedures also should enable us to discern internal patterning of activity areas on the site.

There were three to six living floors in the most intensively occupied part of the site. At this stage of our analysis it is impossible to propose an internally defined sequence of point types or assemblages, since the deposits were relatively shallow, the sequence of floors is not clear, and the various types were found at a considerable range of absolute depths. However, there was a tendency for points of certain types to occur in horizontal clusters.

The diversity of forms is considerable, but in most cases relationships to defined types are evident. Several stemmed points (plate 7, figs. 3-5; plate 8, fig. 1) conform to the Middle Archaic Neville type (Dincauze 1976); others are stemmed with indented bases and fall morphologically between Kanawha Stemmed (Broyles 1971) and Neville points (plate 7, figs. 12, 14-18); two are Kirk Stemmed points (plate 8, figs. 10, 11); three are side-notched and corner-notched points similar to Brewerton types but sharing attributes with some Kirk varieties (plate 8, figs. 12-14); there is one large bifurcated-base point (fig. 6); two corner-notched points show resemblance to Benton points defined in Tennessee (figs. 7, 8) (Lewis and Lewis 1961); and a group of side-notched and stemmed points display general similarities to Early Archaic points unearthed at the Fifty site in Virginia (plate 7, figs. 2, 6-11; plate 8, figs. 2-5) (Gardner, 1975). There are a variety of tools in addition to points, including end scrapers (plate 8, figs. 16-21), side-scrapers (figs. 15, 22), utilized flakes, hammerstones, anvilstones, choppers (plate 9, figs. 1, 5-7) and netsinkers (figs. 24). Four end scrapers from the deepest floor on the site bear graving spurs and are indistinguishable from Paleo-Indian forms (plate 8, figs. 17-20). In their vicinity were two fragmentary stemmed points, one of which may have been displaced from a higher level by rodent burrowing (figs. 1, 9). Associated features were all hearths in the form of fire-reddened lenses of silt, amorphous in outline, sometimes containing charcoal, fire-cracked stones and bits of calcined bone. (plate 6).

Three ^{14}C dates on hearths in an area where the indented-base (Kanawha-like) points were clustered are; 5,930 B.C. $\pm$ 145 years (Dic-474), 6,010 B.C. $\pm$ 215 years (Dic-473), and 6,270 B.C. $\pm$ 470 years (Dic-475). Since Kanawha points are dated ca. 6,200 B.C. at the St. Albans site, West Virginia, and Nevilles are dated ca. 5,000 B.C. on the Neville site, New Hampshire, the three Russ sites dates for a morphologically intermediate type are in perfect accord with a presumed evolutionary sequence of these three forms. However, the Kirk points and some other points at Russ' were in the same general levels as the indented-base points. Since Kirks have been dated ca. 7,000 B.C. in the Southeast, their stratigraphic position at Russ' seems to be anomalous. The Benton-like points were found close together near a hearth dated 5,010 B.C. $\pm$ 215 years (Dic-752). If these points are indeed closely allied to the Benton type this age reading would seem too old by at least a millennium. No identifiable subsistence remains were recovered in the Early Archaic levels. As at our other sites, we collected samples to be subjected to sedimentological, geochemical, and palynological analyses. Unfortunately preliminary studies indicate a near-absence of pollen in the deposits. The flotation of samples from features may provide some data on subsistence practices.

At the base of the plow zone were a number of features which originated in a Late Archaic occupation zone destroyed by cultivation. These have been dated from 2,050 to 2,400 B.C., probably pertained to a component of the Late Archaic Vestal phase, and provide a *terminus ante quem* for the sub-plow line deposits (which, judging from the artifact types in the plow zone, must actually precede 4,000 B.C.).

In considering the wider implications of the Gardepe and Russ site data, it is worth asking, How do we recognize an Early or Middle Archaic component when we encounter one? Brennan is correct in stressing the diagnostic value of projectile point types first defined in southeastern contexts. Upon the discovery of Kirk Stemmed points or bifurcated-base points, it is clear that Early Archaic manifestations are represented. However, it appears that there was considerable variability in the projectile points of the period. Even those styles which provide crossties with southeastern complexes may consistently differ in some attributes from the southeastern point types. Neville points are an example. Other points may have no precise counterparts in the Southeast.

It is unlikely that all of the early styles found at the Russ site were manufactured and used by one group, despite the lack of good vertical separation, since the silt deposits were not thick and independent evidence suggests that most of the types were segregated in time. However, it seems likely that two or more types were coeval in some periods. This is borne out by the evidence from various well-stratified sites including the Koster site in Illinois (Stuart Struever, personal communication).

Eventually we will have a sequence of Early to Middle Archaic complexes generally compatible with

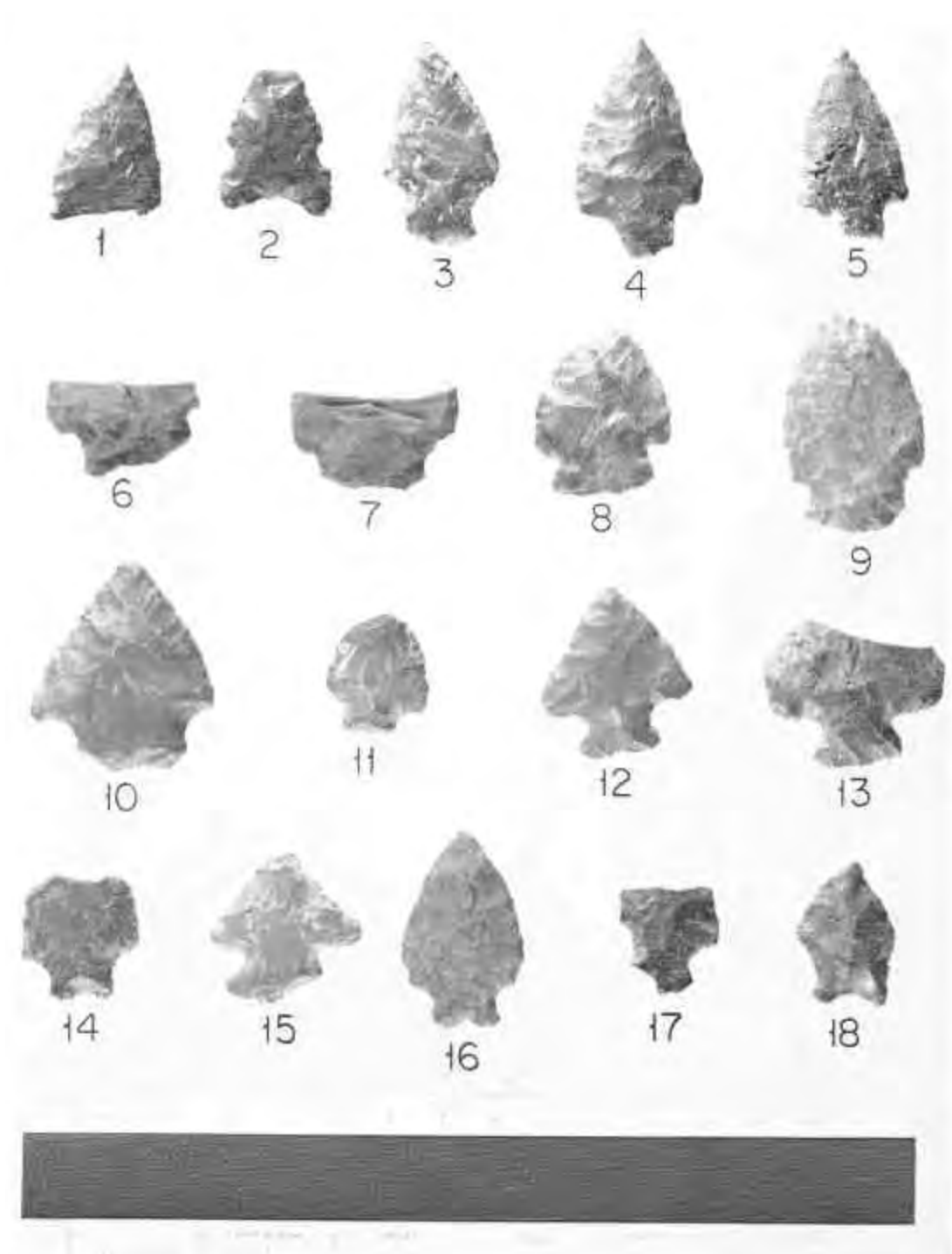


PLATE 7. Projectile points from the Russ site, Otsego County, N.Y. All items shown were recovered from silt deposits below the plow zone. Fig. 1, possible Brewerton Eared Triangle point (broken base); 2, Amos Side-Notched point; 3-5, medium-sized broad stemmed points similar to Neville type; 6-10, untyped large stemmed points; 13, Perkiomen point; 12, 14-18, indented-base points suggesting a transition between the Kanawha and Neville types. Materials: all eastern New York Onondaga flint, except possibly fig. 15, of reddish-brown flint.

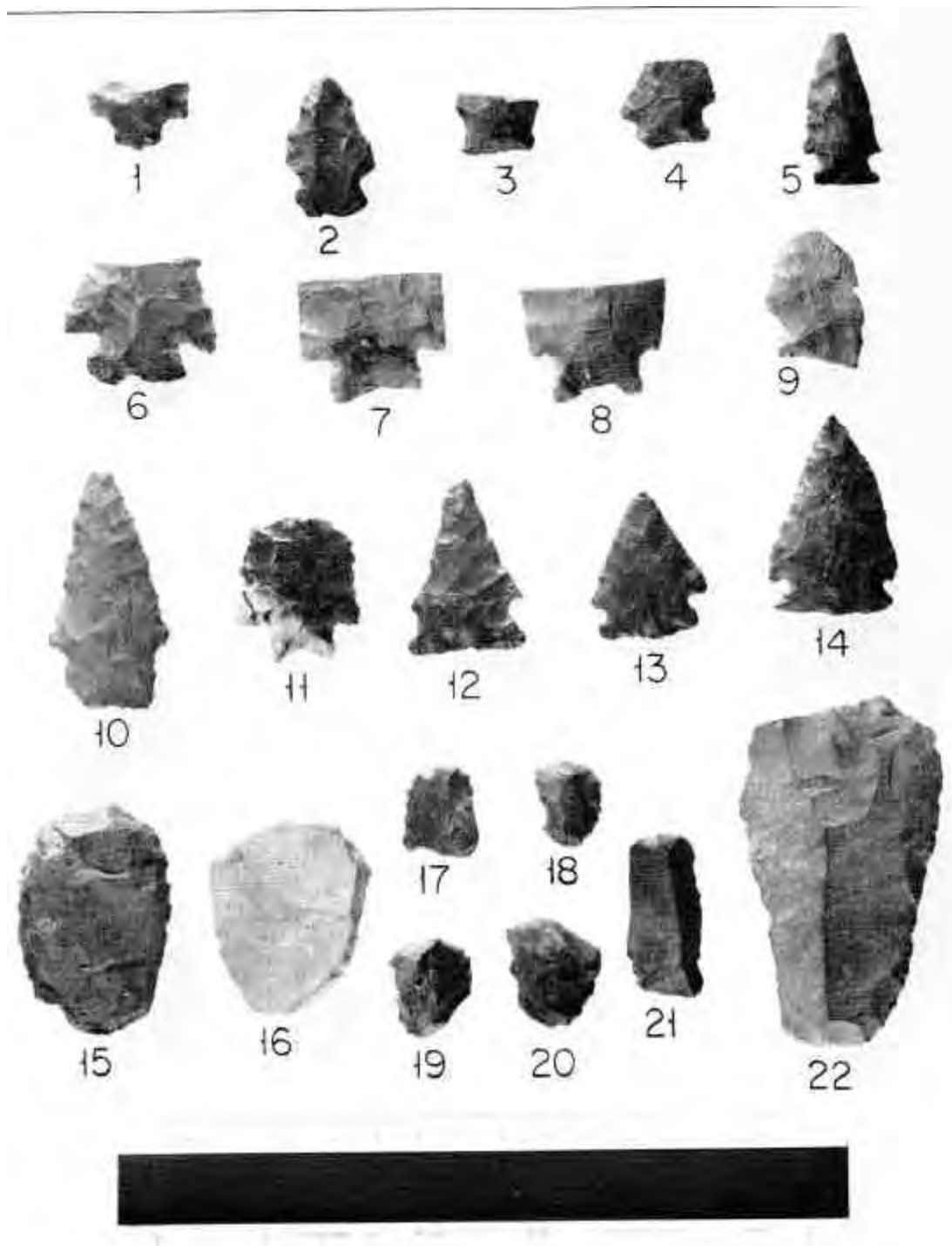


PLATE 8. Chipped stone artifacts from the Russ site, Otsego County, N.Y. All items shown were recovered from silt deposits below plow zone. Figs. 1, 5, 9, 17-20 were from the deepest living floors on site. Figs. 1, 9, untyped broad stemmed points; 2-4, untyped small side-notched points; 6, bifurcated-base point; 7, 8, large untyped corner-notched points; 10, 11, Kirk Stemmed points; 12-14, large broad corner-notched points; 16, large end scraper; 17-20, end scrapers with graving spurs; 21, end scraper on blade; 15, 22, large side scrapers. Materials: all of eastern New York Onondaga flint except 11, Normanskill flint, and 16, of light gray mottled tan flint.

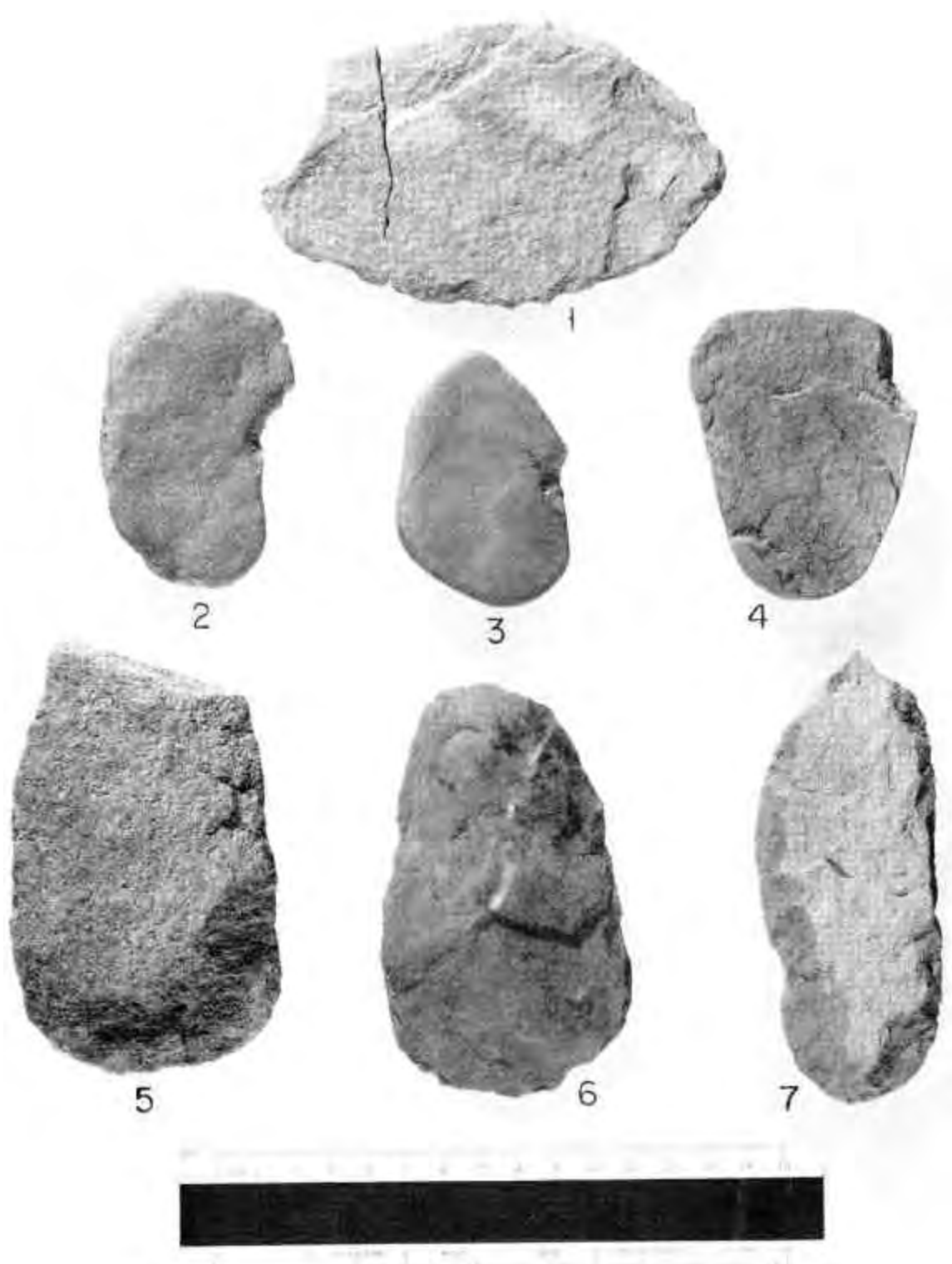


PLATE 9. Rough stone artifacts from the Russ site, Otsego County N.Y. Figs. 1, 5-7, oval "choppers" (possible hide-working tools); 2-4, single-notched pebble netsinkers. Materials: 1-3, 6, siltstone; 4, 5, 7, sandstone.

that in the Southeast. Beginning the sequence, Hardaway, Palmer, Kirk, and other very early southeastern types occur in the Staten Island sites and are found upstate where they are very rare. These would fall in the period of 8,000-7,000 B.C.

More commonly seen in collections are the bifurcated-base points and related styles, which could date between 7,000 and 6,000 B.C. The indented-base points at the Russ site would belong to this group. Taken together, the bifurcates comprise less than one percent of the 8,000 projectile points examined for the writer's Hudson Valley study (Funk 1976). Comparable data are not yet available for the Susquehanna Valley. The next major horizon would be represented by Neville points, roughly as frequent as bifurcates in surface collections. These should date to around 5,000 B.C. or slightly older. At the Neville site Dincauze (1976) defined the Stark and Merrimac types, which followed Nevilles in the stratigraphic sequence. These should date between 5,000 and 4,000 B.C. but neither type has been identified in New York State, in surface or excavated collections. Perhaps this is because they are easily confused with much younger "look-alikes" such as Rossville and Wading River (Ritchie 1971b). By 4,000 B.C. we are confronted by abundant evidence for an important, widespread horizon represented by large side-notched points, chiefly the Otter Creek point (Funk 1976). For want of a better name this cultural level is referred to as "Early" or "Proto-Laurentian." It begins the much better known Late Archaic period and has no further place in this discussion.

The chronology of Early to Middle Archaic complexes in the Northeast may not be precisely equivalent to that in the Southeast. For example Kirk-like stemmed points from Rockelein, Harry's Farm and other sites have been ¹⁴C dated between 5,570 and 5,100 B.C., indicating either a considerable lag in south-to-north diffusion of the Kirk tradition or an unusually long persistence once established in the Northeast (Dumont, n.d.; Kraft 1975; Michels and Smith 1967).

In his opening statement Brennan has postulated several diffusion routes for different Early Archaic traditions moving into the Northeast from areas to the south. His terminology, perhaps unintentionally, implies that he views such movements of traits to be the result of actual migrations of groups of people. I believe secondary diffusion is the more likely mechanism, from the south into an area already populated, however thinly. Unfortunately our knowledge of geographic distributions is still very sketchy, and it does not presently support a model of the type Brennan postulates. For example, he mentions the large bifurcated-base point from the Gardepe site, gives the ¹⁴C date from the same level, and postulates movement of a tradition of large bifurcated-base points from Tennessee via the Upper Ohio Valley. However, the point from Gardepe's was the only one of its kind, and as stated earlier the association of the point and dated hearth is open to question. Furthermore, we almost completely lack data on the frequency and distribution of large bifurcates, and they remain to be described as a meaningful type. As stated earlier several Kanawha-like points occurred at the Russ site; similar points plus LeCroy points are occasionally found in surface collections in the Upper Susquehanna basin. The presence of all these types which Brennan assigns to a "St. Albans Aspect" does not support any particular pattern of diffusion since the writer has seen and recorded similar types throughout the Hudson Valley. As another example Kirk Stemmed points, although rare in all parts of upstate New York, are about of equal frequency in the central and eastern regions. Also we have next to no information on the upstate incidence of the diverse untyped points from the Thunderbird and Fifty sites in Virginia. Even in terms of the southeastern data it seems premature to define and distinguish Early Archaic traditions such as a "St. Albans aspect," a "Carolinian Piedmont aspect," etc. The West Virginia sequence appears to contrast with the Piedmont sequence by virtue of its bifurcated-base point series. Yet Coe and others have recognized significant quantities of bifurcates in surface collections from the Carolinas; these have yet to be found in context in the Piedmont. It should be evident that we need much more information on the distribution and chronology of Early Archaic point types, sites, and assemblages before we can begin to construct reasonably cogent models for cultural processes during the early Holocene in the Northeast.

Brennan correctly emphasizes that Archaic groups were basically forest-adapted, and that environmental change played a role in stimulating and channeling movements of traits and people. He suggests that during postglacial recovery the deciduous forests penetrated the coastal regions of New York and New England more rapidly than in the cooler and higher inland regions. In this event, Early Archaic groups would have appeared in coastal areas well before they ranged into central New York. So far the evidence for this hypothesis is equivocal. For example the dated pollen sequences for the Susquehanna Valley do not show substantial differences from those reported for coastal regions or other northeastern areas, so that there are no grounds for postulating different rates of change in forest assemblages. Also

the ^{14}C dates for the Russ and Gardepe sites are about equivalent to those for the Staten Island sites, i.e. the range is ca. 7,400-5,000 B.C.

The question of environmental change leads to the problem of why Early Archaic traces are so scanty in upstate New York and interior New England. With the discovery of many new sites in the last few years, largely on the southern fringes of the Northeast, some archeologists have suggested that the Early Archaic "information gap" was actually a consequence of inadequate survey coverage. Thus they have rejected the ecological hypothesis of Ritchie (1969b:212-3) and Fitting (1968). This model holds that the conifer-dominated early postglacial forest (Davis 1969; Miller 1973; Sirkin 1977; Bernabo and Webb 1977) was unfavorable for occupation by hunters and gatherers, because it was poor in animal and plant resources upon which their survival depended (Cleland 1966; Butzer 1971); such a limitation of the resource base would severely restrict the size of Archaic groups, hence the material products of their activities would be reduced in quantity. But Dincauze and Mulholland (1977), among others, suggest that the rapidly changing early postglacial vegetation constituted an edge area or ecotone which readily supported human populations. A few of the skeptics also believe that with continued research Early to Middle Archaic populations will prove to have been almost as large or as dense as Late Archaic populations.

The available quantitative evidence does not support the last assertion. Granting that the Early Archaic period ranged from ca. 8,000 to 6,000 B.C., then physical residues of occupancy during this period are exceedingly sparse by any measure. Hardaway, Palmer, Kirk, and other very early diagnostic types are each represented by a mere handful of specimens in the total surface or excavated collections the writer has examined from the Hudson, Mohawk, Schoharie, and Susquehanna Valleys. The two Kirk Stemmed points from the Russ site are among the three or four excavated examples from the entire state. Only the bifurcates, dating to about 6,000 B.C., are a significant though small minority in the collections. According to the limited data, the Middle Archaic groups are also poorly represented.

It is possible that some Early Archaic sites have been destroyed by erosion, as for example by the lateral cutting of rivers into their floodplains. Also it could be proposed that Early Archaic groups tended to inhabit localities subsequently buried deeply by geological processes, or hidden in remote locations rarely visited by collectors. Other early components may not have been recognized as such because the assemblages contain unfamiliar point styles. For various reasons these explanations of the problem are not convincing. First, although some old floodplain sites must have been eroded away by meandering rivers, many early postglacial levees and terraces still remain in the Susquehanna, Genesee, and other basins. Considerable numbers of these have been examined in search of sites. Second, there is no doubt that some Early Archaic sites lie deeply buried in sediments, but since geological processes are locally variable this is also true of later sites. Third, it is highly improbable that Early Archaic sites are *consistently* located below thick deposits or in remote, inaccessible terrain. Field coverage of the State by collectors and archeologists has been extensive and of long duration and fails to support such a picture. Also, all the data point to Early Archaic settlement patterns generally similar to those of later Archaic groups. Finally, although it is likely that the Early Archaic status of a few sites was not understood due to the absence of known diagnostics, this is certainly not true of the majority of sites.

Thus it seems virtually certain that, if Early Archaic groups were as populous as their late Archaic successors, their material remains would be proportionately represented in surface collections. This is not the case.

The Russ and Gardepe sites provided the first excavatable Early Archaic components in upstate New York or interior New England. They were located only after years of effort on the part of many amateur and professional archeologists. It is probably significant that even these components produced very small quantities of artifacts, from thin dispersed occupation debris. The density of lithic remains at Russ' was extremely low (less than 5.5 artifacts and 52 flakes per cubic meter of excavation). Each individual component was represented by a small number of projectile points and other items. The general paucity of remains could reflect a number of factors, such as the relatively small size of occupying groups, relatively infrequent visits by such groups, or a fairly short duration of visits. Thus, the evidence indicates that the often-noted paucity of Early Archaic traces relative to those of later occupations reflects prehistoric reality, whatever the ultimate explanation may be.

In the writer's opinion, an ecological explanation for the hiatus is still the most likely, and must rely principally on assumptions about the composition and carrying capacity of the floristic environment. It had been suggested that in the period of 8,000 to 6,000 B.C. in upstate New York the strong coniferous

element in the forests was an important factor in maintaining a low Archaic population density. Unfortunately much remains to be learned about the nature of such environments, their associated faunal components, and their relationships to hunter-gatherer populations. It is illogical to insist, as some archeologists have done, that the truly radical floristic changes manifest in early postglacial pollen profiles did not have important consequences for human adaptations. We are truly dependent on the paleo-ecologists for advances in their own discipline which will aid us in understanding the mechanism of such culture-environment interactions.

The writer has offered a model of Early Archaic subsistence and settlement in upstate New York during the Pine-Oak vegetation period (Funk 1977b). This model assumes a relative paucity of white-tailed deer, elk, turkey and some other modern game animals, a moderate abundance of acorns in the fall (largely from stands of oak on the south-facing slopes of upland hills), and a considerable richness of aquatic plant and animal resources in the spring and summer, depending heavily on fish, mussels, reptiles, waterfowl, small mammals, and aquatic plants. Perhaps some dispersal into the uplands occurred in the fall when acorns peaked in ripeness and quantity (other species of mast-producing trees are poorly represented in pollen profiles of the Pine-Oak period).

These adaptations would be reflected in tool inventories. Thus hunting and butchering equipment such as points and biface knives should be less important than in Late Archaic times, while there should be an emphasis on fishing gear and relatively high frequencies of retouched flake scrapers, hammerstones, anvilstones and other items used to process fish and make other tools. Ground stone woodworking tools, pestles, mullers, mortars, pitted stones and other artifacts generally assumed to have served to process seeds and nuts should be of very low incidence in the assemblages, except possibly on upland camps.

Although this model could be tested with data from future discoveries of Early Archaic assemblages, the probability of finding such sites with direct evidence in the form of faunal remains is extremely low. In conclusion, our investigations at the Gardepe and Russ sites have done little to establish the relative chronological positions of sundry Early to Middle Archaic point types, but they have clearly demonstrated the presence of forest-adapted hunters and gatherers in upstate New York by at least 7,000 B.C. A complex represented in part by Kanawha-like points occupied the region at ca. 6,000 B.C. The occupying groups were affiliated with contemporaneous groups living in the Southeast, but a degree of regional variation is clearly evident. Continued survey and excavation work will enable us to generate and test hypotheses about such variation, and to achieve some understanding of regional subsistence and settlement patterns.

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OF PARADIGMS AND PROJECTILE POINTS: Two Perspectives on the Early Archaic in the Northeast

Elizabeth M. Dumont

Lewis A. Dumont (maps and photographs)

Inc. Orange County Chapter

N.Y.S.A.A.

In his series of propositions, Louis Brennan has presented a model in terms of which the increasing body of factual evidence for an Early Archaic occupation of the Northeast can be interpreted. In as much as the success or failure of a model is a function of many factors, some internal to the model itself, some concerning the relation between the model and the facts it interprets, I feel it essential that my contribution to this discussion take two forms: 1), a theoretical discussion-translated into ordinary language-of the nature and function of a model and of the norms customarily used in evaluating models, coupled with the application of those norms to the Brennan model; and 2), a summary presentation of archaeological evidence from southeastern New York and northwestern New Jersey, which evidence, particularly that emerging on the Rockelein site, adds considerably to the Early Archaic data base.

A model (of theory or hypothesis as it is alternatively called) is a conceptual scheme-a complex web of ideas-constructed to give an account of the interconnections between observed facts when those interconnections are not themselves observable. To take a homely 'for instance', if a physician were to observe a patient manifesting sneezing, a high fever, a nagging cough, swollen glands and an inflamed throat, he might postulate a viral infection as the cause producing and coordinating the multiplicity of observed symptoms. His theory-his model-is a complex of interrelated ideas concerning the nature of a virus, its behavior within the human body, and the body's reaction to that behavior. The archaeologist engages in a similar activity when after observing the 'symptoms' of cultural process-the data recovered from archaeological sites- he or she constructs a model which hypothesizes the relations among this data. However, the archaeologist is disadvantaged by comparison with the physician. The latter, by refining his observational techniques through the use of electron microscopes and the like, can bring his predicted virus and its effects on the body under direct observation. Until time machines are part of the archaeological tool kit, an archaeologist can never directly observe the interconnections theoretically postulated. All archaeological models are therefore 'likely stories', imaginative constructs which, as a result of the paradoxes of hypothetical reasoning, can be proved false but can never be proved true in an

unqualified sense. In the words of Alfred North Whitehead, a conceptual schema "is true *with unformulated qualifications, exceptions, limitations and new interpretations.*" (Whitehead, 1929:13, emphasis added)

This is not to say, however, that theories or models cannot be evaluated, that criteria do not exist by the application of which we may make informed choices among competing models or alternative 'likely stories'. Models can be and are evaluated in terms of norms which have been the subject of philosophical investigation since the time of Socrates.

A.

In the first, any model derives its intelligibility from the wider context of a web of presuppositions (or assumptions) in which it is imbedded, and is only as good as those presuppositions on which it depends. For example, our witch doctor might have diagnosed a patient of a few pages ago as having been possessed by an evil spirit, a diagnosis presupposing a whole set of interrelated beliefs about supernatural beings who control natural events; whereas the doctor presupposed that natural events have natural causes. Before a model merits further consideration, its proximate and important presuppositions must be exposed, articulated and critically examined. It is this form of model criticism that we find Plato exemplifying in Socrates' attacks on Euthyphro, Meno, *et al.* in the *Dialogues* and discussing in Books VI and VII of *The Republic*.

The immediate presupposition of the Brennan model is the Coe Axiom: one point, one culture. (See Coe:1964) The Coe Axiom is itself hypothetical, being founded on a traditionalist notion viewing culture as a complex of ideas, values, mental templates, etc. passed from generation to generation through time. Under this reading, culture change across space and time, unless disturbed by the intrusion of extraneous cultures, is gradual (comparable to the genetic drift or insensible variation discussed by evolutionary biologists) and developmental sequences ought to be observable if the archaeological record spans a sufficient length of time. If culture is defined in this way, then any observed discontinuities in the archaeological record, e.g., the appearance of a new projectile point style, signal the intrusion of a different cultural group bearing different ideas, values, mental templates etc., which different group displaces either the old population or its ideas.

The key assumptions in this chain of inferences are a), that culture is solely a mental phenomenon, and b), that the human is a culture-bearing animal, a pipeline through which a tradition is propagated, a pipeline relatively passive with respect to the tradition, incapable or unwilling to modify it in any significant way. I must add that this interpretation of culture and its relation to temporally ordered populations held sway in archaeology before the archaeological revolution of the last few decades. It has been subjected to severe criticism because it fails to take into account the fact that inherited cultural patterns are not the only influences shaping behavior. Humans do not merely think and act. They think and act in an environment. To be more precise, they **interact** with their environment. As Binford has expressed it, ". . . culture is an extra-somatic [i.e. non-biological] adaptive system that is employed in the integration of a society with its environment and with other socio-cultural systems." (in Leone 1972:127) He continues, "This complex set of interrelationships is not explicable by reduction to a single component-ideas-any more than the functioning of a motor is explainable in terms of a single component, such as gasoline, a battery, or lubricating oil." (*ibid.*) Under this reading, the "locus of cultural process is in the dynamic articulation of these sub-systems"; (Binford, in Leone 1972:*ibid.*) hence a discontinuity in the archaeological record can signal an environmental change provoking a new, more workable adaptation, and not necessarily the incursion of a new population.

In terms of our present topic, the Early Archaic, assuming the Binford definition of culture enables us to interpret the dramatic change in projectile point styles and technology appearing in northeastern archaeological contexts dated c. 10,000 B.P. as evidence for a change in the subsistence pattern of an already resident population, a change brought about by the post-Pleistocene climatic changes and their subsequent ecological changes. The interpretation would postulate a shift from herd-animal hunting to the exploitation of marine, riverine and lacustrine resources, which shift would necessitate many modifications in the material aspect of the cultural baggage, particularly with respect to the hunting-related implements in the aboriginal tool kit. The similarity in the tool styles selected could be readily accounted for in terms of diffusion or parallel invention.

Although this nest of hypotheses is strongly attractive to me, it is not the point of my paper, at least of this portion of it, to make a case for it. Rather, my intent has been to show that an examination of the presuppositions of **any** model reveals it to be a 'story' more or less likely depending on the sorts of more general models (in this case, theories about the culture) on which it rests.

An additional and quite significant presupposition is forced willy-nilly upon Brennan by the status of Early Archaic studies in the Northeast: namely that one can postulate cultural similarities and differences on the basis of similarities and differences among projectile points alone. Two problems are generated by this presupposition.

1) The temptation becomes almost overwhelming to identify a culture with a limited aspect of its lithic technology, specifically, to *define* the Early Archaic peoples as "makers" of certain style projectile points rather than as groups adapted to their environment via a certain subsistence/settlement pattern, to *define* the Early Archaic as a technology style rather than as a life style. It is reasoning of this sort that undergirds Brennan's tendency to opt for a migration model rather than an *in situ* development model with respect to the Early Archaic.

2) Despite the extremely small size of the Northeastern sample of Early Archaic points, the temptation to *identify* the styles with those from the Carolina Piedmont becomes difficult to resist. I seriously question whether we have the right to speak of Kirk, Stanly, Palmer, LeCroy etc. points as having been found in the Northeast until our samples are large enough to perform statistically valid comparisons upon them, thereby obtaining some objective, quantitative assessment of their similarities to the Piedmont types. At the present moment we perforce must rely on intuition to classify the few Early Archaic points encountered in our sites. In our moments of total candor we call them Kirk-like, Stanly-like, etc., because even intuitively we recognize the fact that they are not 'line-for-line' copies of a southeastern holotype; yet we tend to drop the '-like' when we generate models to account for their presence. It is just as likely that the Southeastern and Northeastern styles represent a continuum of variation within a relatively homogeneous cultural interaction zone, the same sort of situation characterizing the Paleo-Indian Period.

The first of these temptations can be overcome only by assuming a more anthropological understanding of 'culture'. The second will remain as the evil genie haunting our theoretical enterprises until further archaeological work widens the data base.

B.

Examining the presuppositions of the Brennan model is but the first step in evaluating its 'likeliness' as 'story' about the Northeastern Early Archaic. A second set of criteria-concerning the structure of the model itself and the relation of the model to the data it interprets-must be applied as well. The structural or 'speculative' criteria by which models are judged can be summed up succinctly: a good model should be elegant, i.e., should manifest aesthetic simplicity, economy, coherence and logical connectedness among its theoretical elements. Is the Brennan model elegant? simple? economical? coherent? I tend to respond in the negative. Note first the observed data it aims to interpret via its theoretical structures: the presence of four projectile point styles bearing Southeastern resemblances, and one style of unknown origin, in archaeological contexts in the Northeast. Next, note how the model 'explains' each phenomenon: by postulating a separate cause, a separate 'migration'¹ to account for each. In the example given earlier, would the patient tend to accept the physician's diagnosis if it postulated separate and unrelated causes for each of his symptoms? Certainly not. The diagnosis would be uneconomical, inelegant, incoherent, which is to say that it needs *too many* theoretical elements to accomplish its purpose and that the elements selected do not *cohere*, i.e., hang together in a complex unity in which they are interrelated.

Another incoherence appears in the Brennan model when the question, "where did these immigrants go?" (and the correlative question, 'where did the Paleo-Indian residents go?') is asked. While accounting

¹ I will grant for the sake of argument that Brennan does not intend 'migration' to be interpreted in the 'hard' sense: i.e., that an entire population packed up its gear and walked to New York State; but that he envisions the situation as a gradual northward population drift originating from discrete drift-epicenters.

Note: The word "migration" is nowhere used in the lead paper, nor is that the model suggested, nor are "waves" of population proposed. L. A. B.

for the appearance of successive 'waves' of southern peoples in the northern forests, the model does not provide a mechanism for disposing of them, a mechanism whereby one group conquers, assimilates or displaces its predecessors and/or their ideas.

Finally, if I may be permitted a more general observation, 'migration', even the 'soft' form Brennan proposes, is currently viewed as a last ditch sort of explanation, one proffered when all others (e.g., local adaptation, independent invention, diffusion, etc.) have been tried without success. As Irving Rouse has pointed out (Rouse 1958:63-8), five distinct criteria must be satisfied before an inference of migration can be drawn from anthropological or archaeological data:

1. the supposed migrant population must be identified as "an intrusive unit in the region it has penetrated." (*ibid.*:64) Brennan attempts such a demonstration, but solely on the basis of similarities in projectile point styles, similarities more economically accounted for in terms of the diffusion of ideas to an already resident population forced through environmental necessity to modify its subsistence pattern.

2. the intrusive population must be "traced back to its homeland", (*ibid.*) by a), identifying that homeland, and b), demonstrating a continuum of archaeological evidence for the presence of the group in the postulated migration or 'drift' route. Brennan attempts this, but the archaeological evidence to date is insufficient to support the weight of his conclusions.

3. it must be demonstrated that "all occurrences of the unit are contemporaneous." (*ibid.*) This norm would not apply in the case of Brennan's model, since he is proposing a gradual northward population drift and not a dramatic migration. However, some of the radio-carbon dates established for the Northeastern Early Archaic are coeval with the Piedmont dates, a situation with unhappy repercussions *vis a vis* the Brennan hypothesis, since it would predict younger Northeastern dates. Those Northeastern dates which *are* younger—the Rockelean, Harry's Farm and Sheep Rock Kirk-related dates—are associated with obviously degenerate Kirk forms (crude, thick, lacking the crisply serrated margins of the Piedmont varieties).

4. the existence of favorable conditions for migration must be established. (*ibid.*) This Brennan attempts, postulating the shrinking coastal plain and the resultant pressures on the Southern population, plus the ecological riches of the hardwood forest-edge, as the provoker and sustainer (respectively) of the northward drift. Yet in the absence of demographic studies of the Southern population, how justified is his inference of adverse pressure?

5. finally, it must be demonstrated that "some other hypothesis... does not better fit the facts of the situation." (*ibid.*) This Brennan does not attempt, either in his current set of proposition or in previously published works.

Therefore, in virtue of all the difficulties I see inherent in the Brennan model, I tend almost *a priori* to reject it as a plausible account of the Northeastern Early Archaic.

However, to be fair to Brennan, it is equally important that the practical (as opposed to speculative) norms for judging models be applied as well—which norms evaluate its applicability and adequacy in the face of existing data, which ask the question, "does the data base support this hypothesis *exclusively*, or could it support a different model with equal facility?" To be more precise, we must ask: what observable differences would flow from the Brennan model? are there possible observations *predicted* by it which would *not* be predicted by competing models? As William James has pithily maintained, "What difference would it practically make to anyone if this notion rather than that notion were true?... Whenever a dispute is serious, we ought to be able to show *some practical difference* that must follow from one side or the other's being right." (James 1949:45-6, emphasis added) It is to the task of determining those 'practical differences' that serious-minded investigators into Early Archaic manifestations in the Northeast must set themselves.

However, the discussion of alternative models and the observations predictable in terms of them must be prefaced by an examination and expansion of the data base. My contribution to the latter enterprise, with respect to Early Archaic evidence from New Jersey and Southeastern New York, shall form the bulk of the second part of this essay.

2.

Two surveys of surface-collected Early Archaic points have been conducted in the study area: that of Ted Payne in New Jersey and that of Lewis Dumont in Orange County, New York. Neither of these

researchers have completed or formalized their work at this date; however, the general findings of both show that the Early Archaic sample is dominated by projectile points of the bifurcated base variety. Payne reports (personal communication) plus or minus 80 bifurcated points inventoried, as opposed to only three Kirk-related specimens. Dumont (personal communication) has examined about 40 bifurcated points from Orange County surface collections, and only two or three of the Kirk type. Whether this apparent dominance of the bifurcated base variety represents a population increase or is a function of the surface collectors' bias toward certain collecting locales would have to be determined through further study.

Early Archaic evidence from excavated sites has been steadily building during the last two decades. (see accompanying map, Figure 1) Four sites on Staten Island have produced dates of 9,360, 8,250 and 7,260 B.P. on artifact assemblages including points resembling Kirk, Palmer, Hardaway, Stanly, Kessell, Kanawha and LeCroy, (Ritchie and Funk 1971:44-59) Six sites in the Upper Delaware Valley of New Jersey and one (Shawnee-Minisink) on the Pennsylvania side of the Delaware have likewise produced early Archaic points running the gamut from Kirk through Stanly, plus associated assemblages and features. Three of these sites, Bell-Philhower-Post, (Kraft, personal communication) Bell-Browning (Marchiando in Kinsey 1972) and Pahaquarra (Kraft 1976) yielded a variety of bifurcated points, but in disturbed contexts. An untyped bifurcate with good spatial provenience appeared in Werner's excavation on the Zierdt site, in a stratum intermediary between the Paleo-Indian and Late Archaic zones. (Werner 1964:30-52) Unfortunately, no associated assemblage is reported and no dates were obtainable for any of the zones.

Thus far, the only Upper Delaware Valley Early Archaic sites with both undisturbed and datable contexts are Kraft's Harry's Farm Site (Kraft 1975) and the Rockelein Site, under excavation by the Incorporated Orange County Chapter, N.Y.S.A.A. Both sites yield a fairly complete picture of Early Archaic subsistence activities.

On Harry's Farm, in a context dated 7,380 B.P. 7,320 B.P. (I-6133, I-6600), Kraft recovered a Kirk-stemmed variant (Plate 1, a) associated with an assemblage of artifacts and features indicating that camp-site activities had included the processing of nut meats, the netting of fish (or water fowl), and some sort of butchering activity. No ground stone implements were in evidence, and the total sample recovered is rather small.

Whereas Harry's Farm yielded minimal evidence for a single component Early Archaic occupation, the Rockelein Site has produced not only significant quantities of Early Archaic material but also a sequence of projectile point types which 1), approximates the North Carolina sequence from Kirk through Stanly to Morrow Mountain; 2), includes the West Virginia varieties; 3), continues the Archaic sequence into its Late Archaic (Lackawaxen) climax; and 4), shows the culmination of the sequence in the Terminal Archaic broad-spear-making culture; thus compressing perhaps 8,000 years of Archaic evolution in its five feet of culture-bearing sediments. (See Figure 2)

Four distinct varieties of Early Archaic points have come to light in the 9,000 square feet of deep horizontal exposure on Rockelein: LeCroy ² (and other bifurcated base variants), Kirk, Eva and Stanly (or Neville as Dincauze has named the New Hampshire manifestation). More importantly, the points have been recovered in contexts relatively rich in associated artifacts and features. Thereby permitting us to make well-founded generalizations with respect to subsistence activities practiced on the site. ³

Concentrations of occupational debris have enabled us to identify three horizontally and vertically separable loci of Early Archaic occupation. ⁴ The first, (Locus 1 in Figure 2) characterized by the presence

² I wish to make it clear that my use of the Coe and Broyles terminology should not be interpreted as claiming any more than a 'family resemblance' between the Rockelein points and those defined in the Southeast. I am using the southern type-names for rhetorical reasons only.

³ This paper will present only an abstract of our findings and conclusions. A preliminary site report is currently being prepared, which will flesh out the information presented herein.

⁴ Several factors should be inserted parenthetically at this point to qualify this statement. Although deeply stratified, the site does not manifest visible stratigraphy. The soils are a uniform tan alluvium interlaced with 'red veins' unrelated to aboriginal activity. Although living floors can be detected through artifact concentrations or charcoal scatter, these cannot be traced across the site. Hence we have been compelled to conduct our excavation using artificial stratigraphy, removing three inch increments at a time and seriating the recovered materials in terms of the artificial strata in which they were discovered. This technique allows us to be fairly certain of associations when materials appear at the same level in close propinquity. However, it makes judgments about the association of materials appearing albeit at the same depth but 100 feet removed, tenuous at best. Hence, we cannot at this time

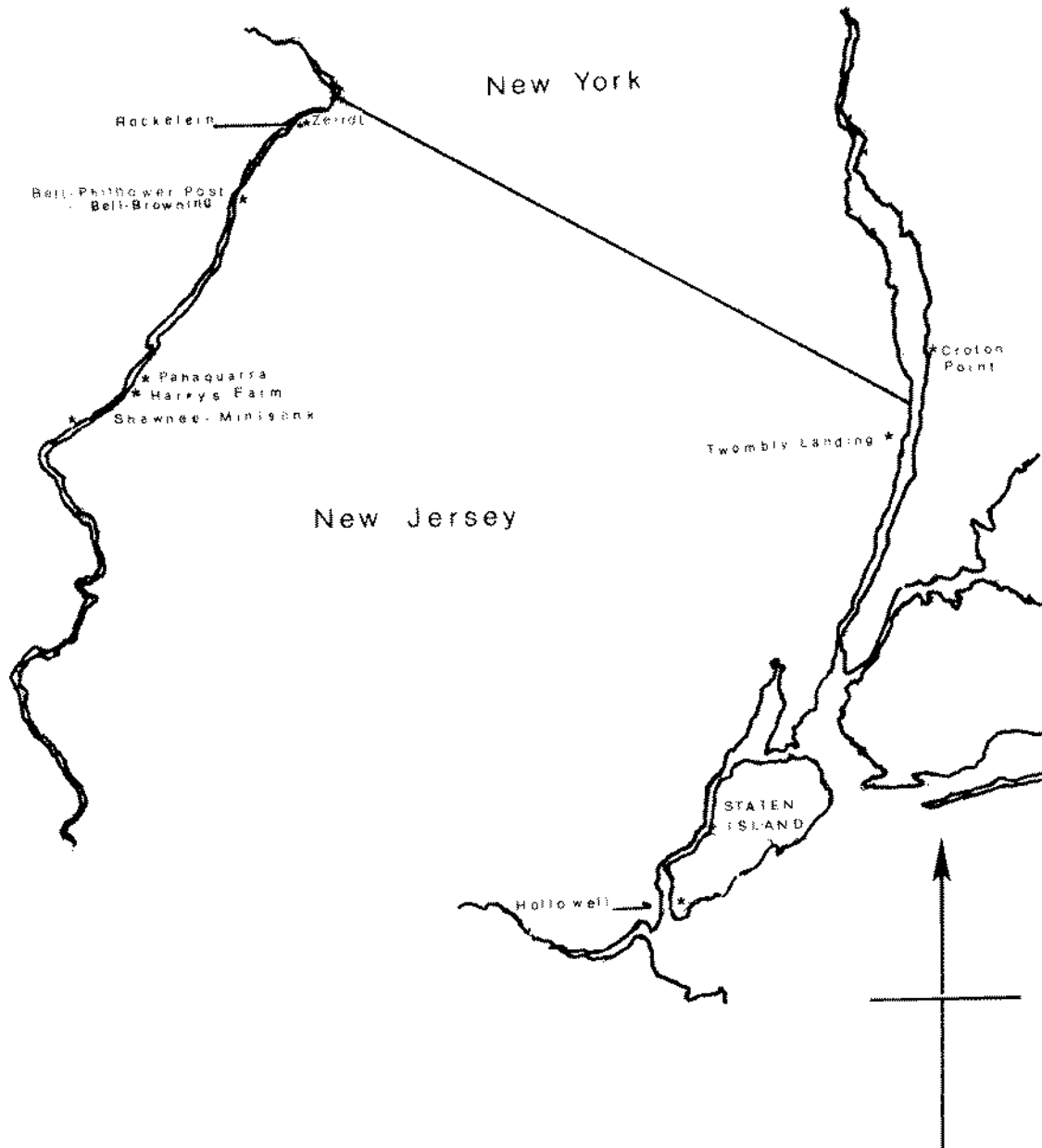


Fig. 1. Early Archaic Sites

footnote 4 continued.

present a crisp, seriation of the point styles recovered. (see *infra*.) Our difficulty is magnified by the fact that the site lacks the extreme depth Broyles and Struever have encountered at St. Albans and Koster, or even the moderate depth Kraft encountered at Harry's Farm, where his Kirk component appeared at 84" to 93" below surface. The Rockelein site, being at a higher elevation above the Delaware than Harry's Farm, seems to have been subjected to less over-bank deposition. It would only have been inundated by the most severe floods, which by their very nature would have deposited less sediment while at the same time causing more disturbance to already deposited aboriginal materials. Consequently, although our judgments about horizontal *clusterings* of artifacts and features are as firm as judgments about the floodplain sites can be, our judgments about cross-site relations of clusters and about vertical relations between clusters must remain hypothetical at the present.

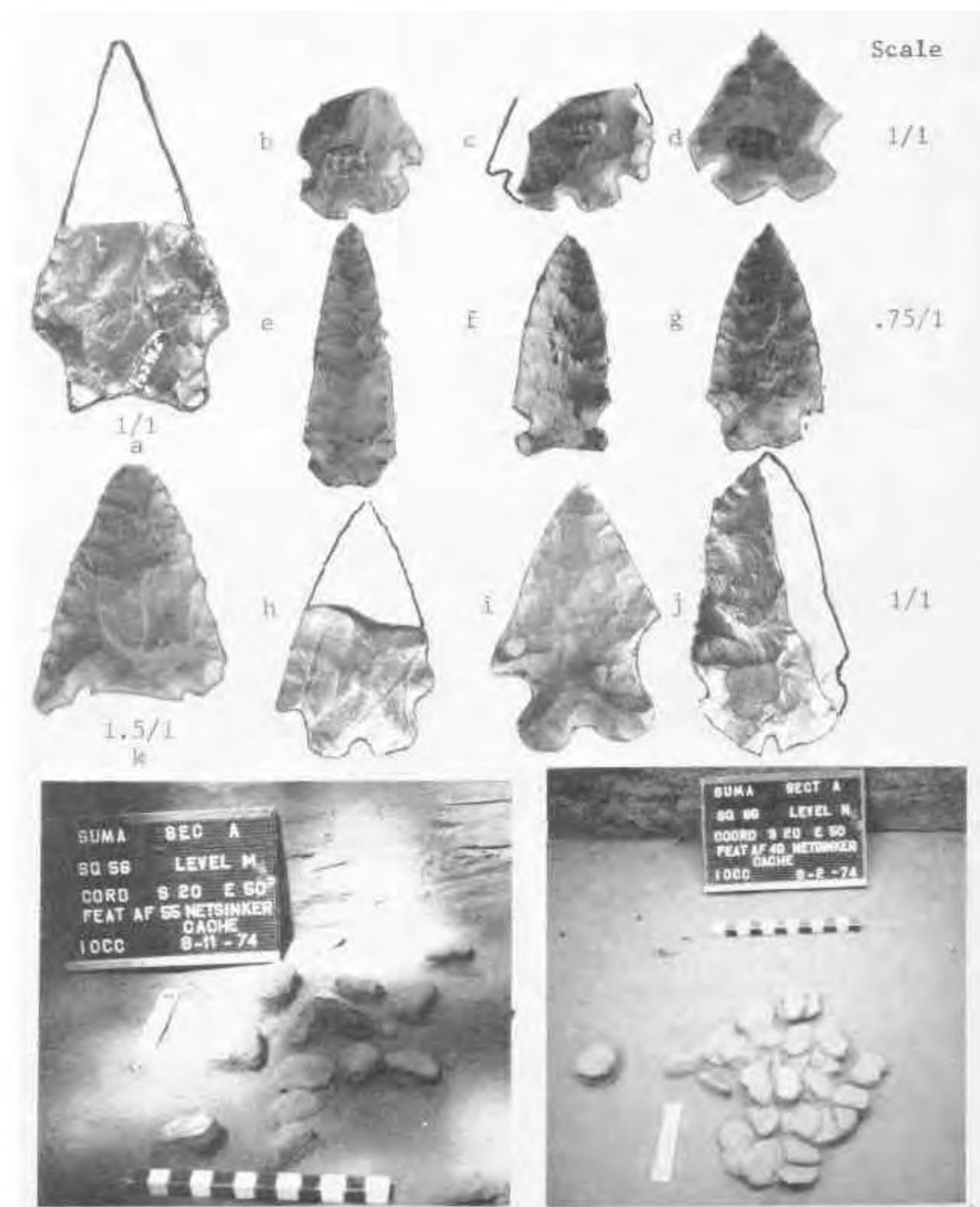


PLATE 1. a, Kirk-like point; b, c, d, e, g, h, i, j Bifurcated points; f, Kirk- or Otter Creek-like point; k, Eva-like point.

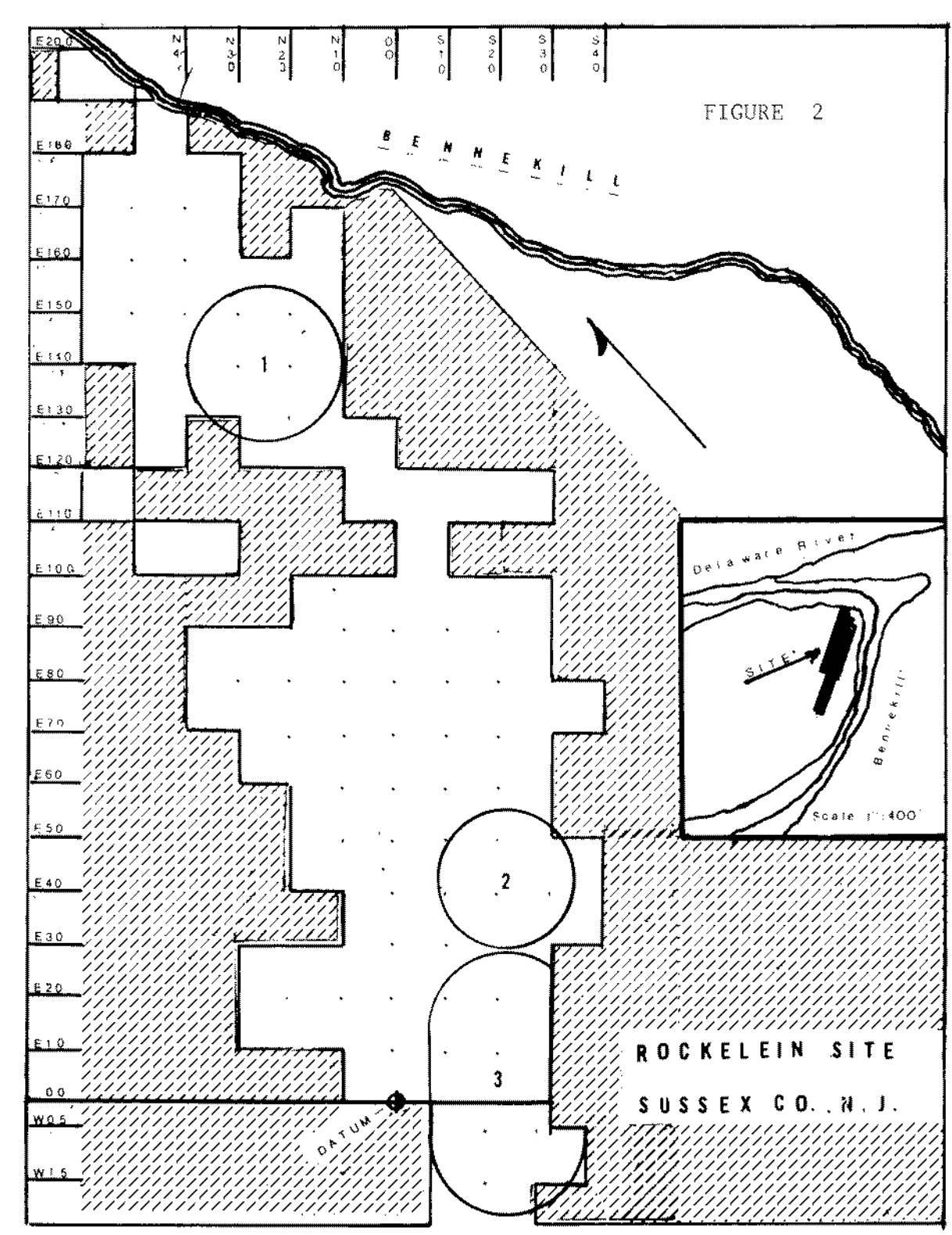


Fig. 2. The Rocklein Site.

of LeCroy points and associated artifacts, occupies a 600 square foot area in the northwest extremity of the site, 20 to 40 feet west of an actively eroding bank on the present day margin of the Bennekil (a cut-off meander of the Delaware, dry except when the river is in flood stage.) In the 18 in. of cultural deposits between L and Q levels (40 in.-58 in. below the surface), three LeCroy points were recovered (Plate 1, b-d), two untyped bifurcated points (Plate 1, e.g.) one concave base Kirk-like or Otter Creek-like side-notched point (Plate 1, f), and a basally notched point resembling the small variety of Eva point from Tennessee. (Plate 1, k) If we look at Broyles' dates for the LeCroy point, they range around 8,250 B.P. (Broyles 1971:69) Since no datable materials have been recovered from the LeCroy locus at Rockelein, one can only hazard a guess as to the temporal provenience, namely that it ought to be similar to the Staten Island range, or plus or minus 8,000 B.P. (Ritchie and Funk 1971:44-59) The Eva-like point, which Kinsey has also discovered in surface collections on the Pennsylvania side of the Upper Delaware and has assigned a Late Archaic provenience, (Kinsey 1972:419) has been dated at 7,150 B.P. in Tennessee, (Lewis and Lewis 1961:40, 43, 44) Its presence on Rockelein is anomalous; yet a similar specimen was recovered at the Hollowell site on Staten Island (Ritchie and Funk 1971:47)

Of considerable interest is the associated assemblage in this locus. A total of 63 tools were recovered. The chipped stone category is represented by end, side, steep-edge and spokeshave scrapers. Hammerstones, whetstones, grubbing tools, anvils, teshoas and net sinkers make up the rough stone tools. The net sinkers differ from those found in the other Early Archaic loci on the site in that they are very crude-some made by striking two notches out of a fire-cracked rock, others made from whatever river pebbles were close at hand. Wherever net sinkers are found in association with bifurcated points on the site, it is always this crude form that appears. Ritchie reports none whatever recovered on the Staten Island sites. This is predictable, however in as much as the lowered elevation of the ocean during the Early Archaic would have placed Staten Island in a situation not favoring this fish-taking technique; whereas the constriction of the Delaware at Rockelein would have presented ideal conditions for seining.

An unusual cache of 18 large, blade-like flakes (Plate 2) some with retouched edges, others with use-modified edges, demonstrates the presence of a hitherto unreported industry among these peoples. The lithic materials include high grade flints, cherts and jaspers, some from New York State and Pennsylvania, some exotic to the area. The role these implements played in the technological complex is currently unknown; they may be indicative of fairly sophisticated woodworking, in as much as wear patterns indicate usage against a hard surface.

A final implement recovered in the LeCroy locus deserves mention: the distal portion of a sandstone adze with a ground bit. Broyles encountered no evidence of ground stone tools on the St. Albans site. The Rockelein adze, taken together with those found in the Staten Island excavations and with the ground-bit celt dated 8,870 B.P. at Sheep Rock (Michels and Smith 1967), indicate a much earlier provenience for ground stone tools in the Northeast than in the Piedmont.

On the basis of the total assemblage, we can infer that the LeCroy locus was a small, seasonal campsite at which the principle subsistence activities were fishing, hunting and gathering (although the gathering may have been restricted to roots and tubers, in as much as no seed or nut processing tools have been encountered with a LeCroy association.) Not present, however, are the large choppers found on the Staten Island sites and interpreted by Ritchie as fleshing tools; so it may be the case that hunting activities were restricted to small game, and that fish replaced big game as the major protein source in the diet. Very little debitage is in evidence, so it would appear that the chipped artifacts were brought to the site and not manufactured there.⁵

The Rockelein site also contains evidence (although sparser) for a Kirk-related component. One possible Kirk point of the later, concave-base variety discussed by Broyles (Broyles 1971:65) appeared in the LeCroy locus (Plate 1, f), (although this may be better interpreted as an Otter Creek variant). The principal Kirk locus (locus 2) lies about 150 feet southeast of Locus 1, occupying four contiguous ten foot squares at N, O and P levels, 46 in. to 55 in. below the surface. Here, two crude, thick Kirk-like points of the side-notched, straight based variety (see Plate 3, ab) were found in association with a small fire pit dated at $7,520 \pm 120$ radio-carbon years ago. (I-8315) The date, taken in isolation, is obviously out of line

⁵ Five additional bifurcated points (Plate 1, h-j) were recovered from the middle portion of the site, in approximately the same levels (K-Q, 37"-58" below the surface), but the paucity of associated artifacts indicates that these areas were not extensively occupied. Many features were encountered in these levels throughout the site, but most cannot be definitely assigned to particular occupations for reasons discussed earlier.

LEVEL	DEPTH BELOW SURFACE	PENNSYLVANIA BROADSPEAR COMPLEX	LACKAWAXEN STEMMED POINTS	LAURENTIAN-RELATED POINTS	MORROW MOUNTAIN (STARK) POINTS	STANLY (NEVILLE) POINTS	BIFURCATED BASE POINTS	EVA POINTS	KIRK-LIKE POINTS
A	00"-10"	XXXXXXX	XX						
B	10"-13"	XXXXXXXXXX	XXXX						
C	13"-16"	XXXXXXX	XXXXXXXXXXXXXXXXXX						
D	16"-19"	XXX	X						
E	19"-22"	X	XXXXXX	XXX					
F	22"-25"			X					
G	25"-28"				X				
H	28"-31"			XXX	XXX				
I	31"-34"			XXX	X				
J	34"-37"			XXX	XXX				
K	37"-40"				XXXXXXXXXX	X	X		
L	40"-43"				XXXXXXXXXX	XXXX	XXX		
M	43"-46"				XXXX	X			X
N	46"-49"					XXX	XXXX		
O	49"-52"							X	
P	52"-55"					X			XX
Q	55"-58"					XXX			
R	58"-61"					X			X

X = projectile point

Fig. 3. Vertical Distribution of Archaic Projectile Points

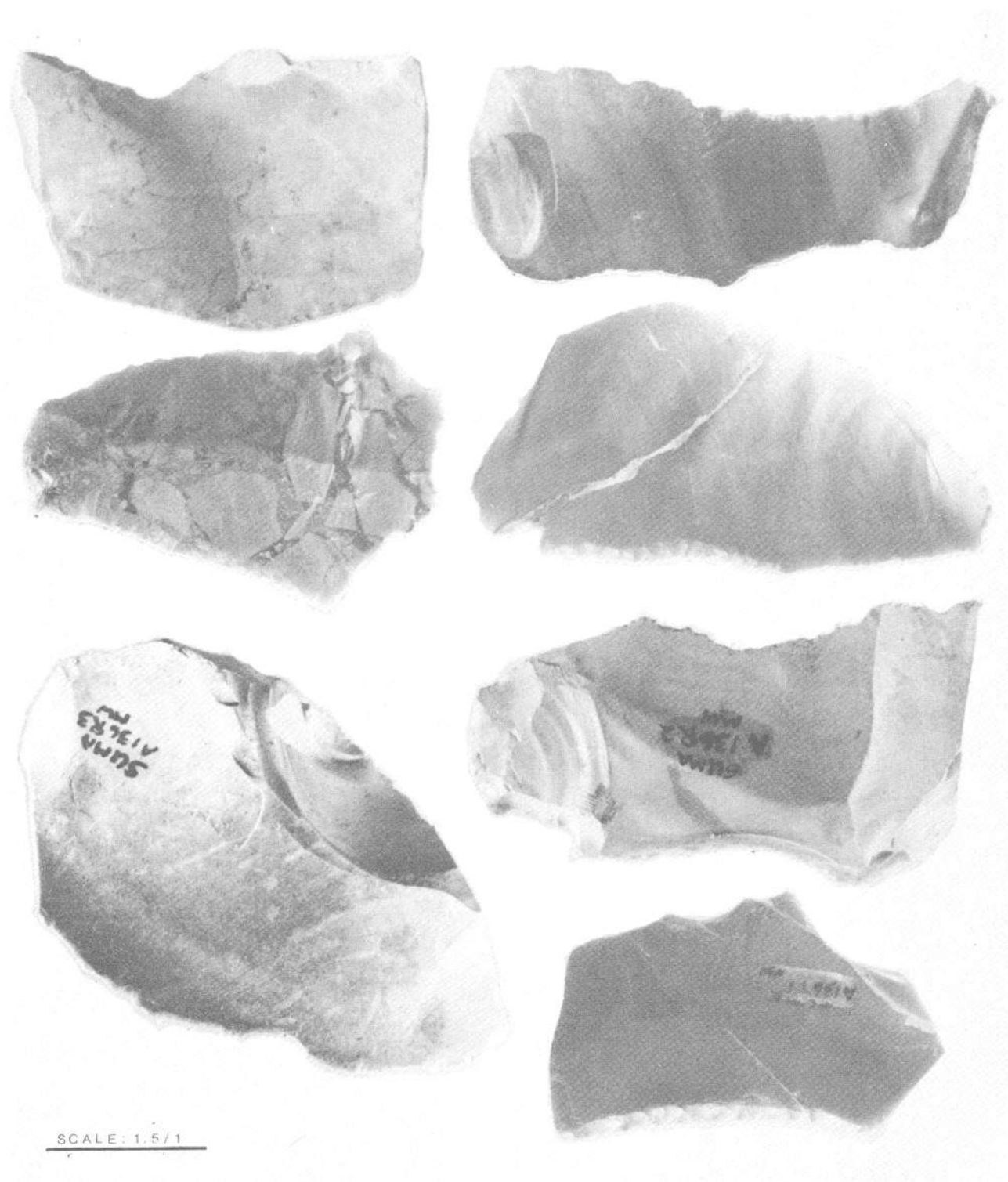


PLATE 2. Blade-like Flakes

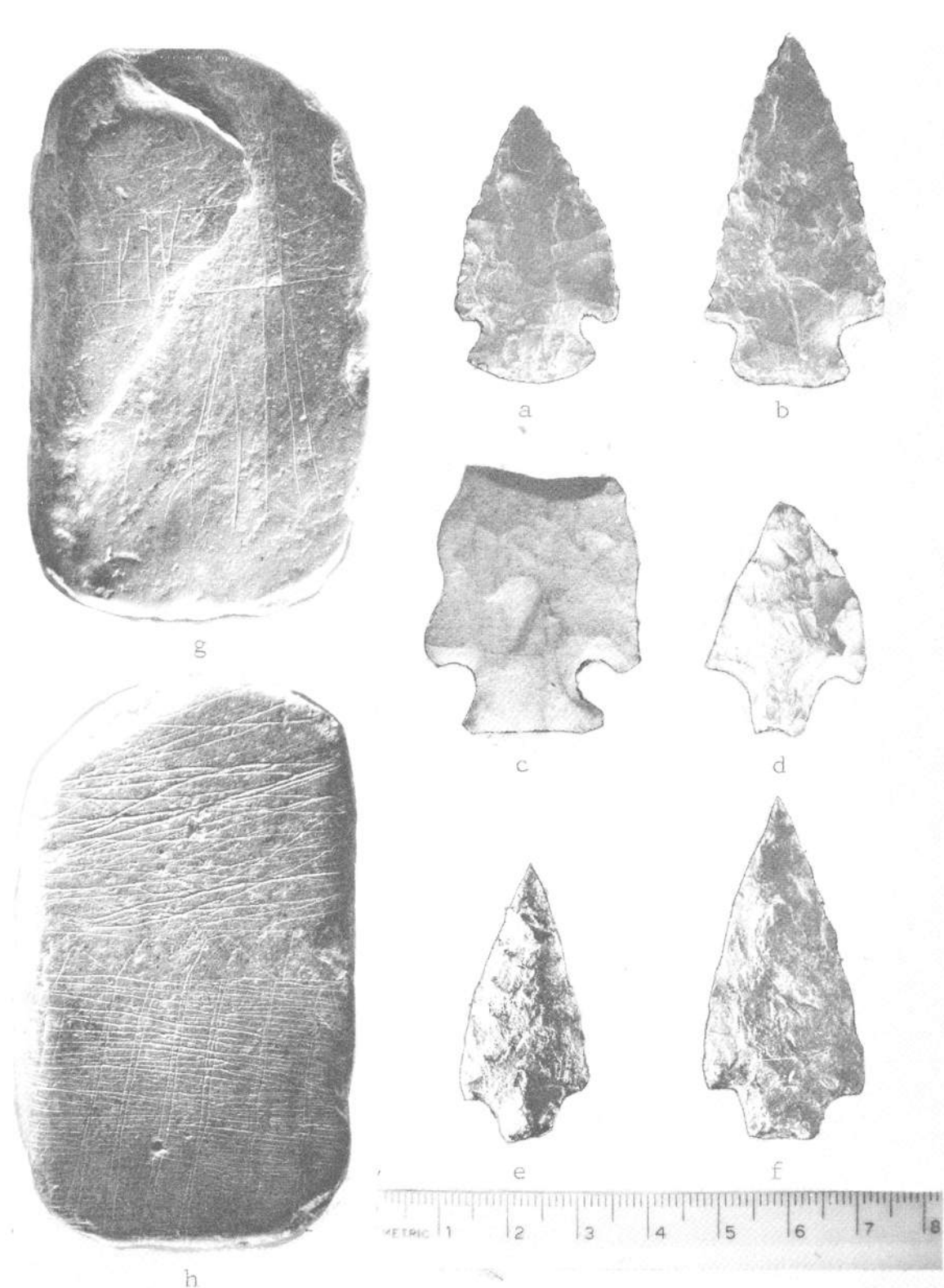


PLATE 3. a, b, c Kirk-like points; d, e, f Stanly-like points; g-h, reverse-obverse, incised tablet.

with Broyles' and Coe's Southeastern dates. However, it is 470 years older than the Kirk date from Sheep Rock - 7,050 B.P. (Michels and Smith 1967) - at which the recovered points were also crude, thick and yet Kirk-like in general configuration and workmanship. Similar points, as yet undated, were also recovered at Shawnee-Minisink (McNett 1974, 1977). Finally, the date lies within the plus or minus range of Kraft's dates from Harry's Farm. Data appear to be accumulating in favor of a Northeastern Kirk evolution which does not follow the Piedmont sequence. Quite obviously, more work must be done before any generalizations can be made with respect to this.

One additional Kirk-like point, of the broad, corner-notched variety (Plate 3, c), was recovered from R level (61 in. below the surface) 40 feet from Locus 2. Although not found in a datable context, it lay below the Stanly component in that area. No serration is visible on the blade edges, but the point is made of argillaceous material and hence is considerably eroded.

Locus 2 seems solely concerned with activities related to fishing. A net sinker workshop was encountered, littered with rejects, spalled-off fragments and other debris, and containing four completed specimens and a broken elongated hammerstone. Seven feet away, a cache of 41 net sinkers, (Plate 1, lower right) plus two large, notched cobbles (probable net anchors), was recovered. Five feet from this, an additional cache (Plate 1, lower left) appeared as well. This entire group of net sinkers is strikingly different from those associated with bifurcated points. They are well-made, on carefully selected flat pebbles of fairly uniform size and configuration.

The same area yielded an expanded base drill and a crude chipped adze. Found within a thirty foot horizontal radius at N through P levels were scrapers of all varieties, hammerstones, pitted stones, large choppers, grubbing tools, anvils, milling stones, abrading stones, and other rough stone tools. If these are attributable to the Kirk component, then the diet included game as well as fish, and intensive foraging was a way of life for the inhabitants of the site during this time period.

The final locus attributable to the Early Archaic on Rockelein, Locus 3, is marked by the presence of Stanly/Neville⁶ points and associated implements. Locus 3 lies in the extreme southeastern portion of the excavated section of the site, encompasses 900 square feet, and is concentrated in K, L and M levels, 37 in. to 46 in. below the surface. Four Stanly-like points (Plate 3, d) were recovered in the area (a fifth appeared a bit deeper, in Q level) as well as all varieties of scrapers, plus the usual assortment of hammerstones, pitted stones, anvils, choppers, milling stones, net sinkers, etc. Twenty feet to the west, another group of points (Plate 3, e-f) bearing Stanly similarities appeared in association with a small group of pits containing carbonized nutshells and surrounded by implements relating to the processing of nutmeats.

One artifact from Locus 3 is totally unique for the study area: a rectangular slate tablet, 4.7 x 8.3 x .6 cm., elaborately incised on both sides. (Plate 3, g-h) One fragment of a similar tablet had been recovered at P level (55" below the surface) in the nutting meat area mentioned above, but did not evidence the design complexity of this one. The incisions are finely incised, probably with a sharp flake. The reverse is randomly incised, with a few pattern areas appearing. The obverse, however, bears a complex design of vertical columns and horizontal rows. Coe had reported several similar tablets from the Hardaway and Doerschuk sites (*ibid.*:82, 53) and one has been reported from Massachusetts, but no provenience was obtainable for any of these. The function these tablets played in the Archaic culture is totally unknown.

Another implement whose purpose is unknown and yet which has appeared in the Early Archaic zones of all deeply stratified sites in the Upper Delaware Valley is the quartz crystal. A total of eighteen were recovered from the Early Archaic level on Rockelein, in contexts not firmly attributable to any of the aspects present. (On Harry's Farm, Kraft recovered such crystals in his Kirk zone.) Some are unmodified, some show evidence of battering, others show striation which may or may not be natural. Again, the use of these remains problematic. Kraft (1975:21) suggests a possible magico-religious purpose.

One conclusion stands out as clearly inferable from the Rockelein data: namely, that the subsistence pattern of the site's Early Archaic inhabitants involved a heavy reliance on the food resources of the river and riverine terraces. Beyond this, the site raises more questions than it provides answers. Although it

⁶Coe places Stanly at 5,000 B.C. (Coe, 1964:121) and uses that date to divide "the beginning of the Archaic" from "the Later Archaic." (*ibid.*:120, 122)

demonstrates a relatively continuous occupation during the Early Archaic⁷, both the temporal parameters and stratigraphic sequence of that occupation remains unclear. The 7,520 B.P. date is too young by Southeastern and Staten Island standards, yet it is not the only anomalous Kirk-related date in the Northeast. The stratigraphic sequence shows Stanly above Kirk; yet the levels yielding bifurcated points vertically overlap both the Stanly and the Kirk levels. Only further work can resolve these difficulties, work that is being done by the dedicated field crew of the Incorporated Orange County Chapter.⁸

Epilogue

A final question: Does the Rockelein evidence support the Brennan explanatory model? I would have to know what would count as evidence *for* and evidence *against* before I would hazard a response.

If we grant Brennan the Coe Axiom for the sake of argument, and allow cultural affinities to be identified on the basis of similarities in projectile point styles, then the Rockelein points are evidence against his models, for they bear only a generic resemblance - a 'family resemblance' - to the southern styles, a resemblance more readily accounted for by trait diffusion. What we do see as characterizing *both* the Northeastern and Southeastern Early Archaic is an adaptation to a riverine niche in the ecosystem. If I were pressed for an alternative model, I would suggest that we avoid migration theories (of either the hard or soft varieties) and think in terms of a resident Paleo-Indian population modifying its subsistence pattern in response to environmental change. I suggest that new subsistence patterns and the technologies needed to support them were first developed where the environmental challenge first appeared - i.e., in the Central Piedmont and spread to the Paleo-Indian bands further north when they too could no longer depend on herd animals as their principal protein source. I suggest, therefore, that the PaleoIndian did not vanish in to the sunrise, but rather abandoned his nomadic existence in favor of the limited wandering characterizing a seasonal round, and in so doing abandoned that by which we perceive must identify his presence - the big game hunter's tool kit - in favor of the less spectacular, more modest tool kit of a fisher/forager.

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⁷It must be added that the occupational continuum extends into the "middle" Archaic as well. The central portion of the site yielded evidence for a substantial inhabitation by a cultural group making projectile points bearing strong similarities to Coe's Morrow Mountain I and II. A fire pit containing a fragment of one of these points was dated at 5,280 ± 110 C¹⁴ years ago. (1-7748)

⁸a crew of skilled and committed avocational archaeologists who have already excavated 110 ten foot squares to an average depth of five feet in pursuit of the elusive Early Archaic evidence.

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THE EARLY ARCHIAIC IN WESTERN NEW YORK

Neal L. Trubowitz

Frederick M. Houghton Chapter

Recognition that Early Archaic human population inhabited western New York between 8,000 and 6,000 B.C. is less than a decade old. That recognition postdated William Ritchie's synthesis of New York State prehistory (1965, 1969), and came only after the publication of excavated data from sites located to the south of New York. Bettye Broyles' (1971) report on the St. Albans site in West Virginia included a radiocarbon dated cultural sequence that put Early Archaic cultural identifications on formerly untyped projectile points found in New York. Since those identifications, archaeological and environmental data bearing on the Early Archaic Period in western New York have been accruing; this paper provides a summary of such data.

For purposes of this paper, western New York is defined as all portions of the state west of Seneca Lake, roughly west of 77 degrees longitude (see Figure 2). Archaeological data come from State University of New York at Buffalo (SUNY/Buffalo), Department of Anthropology photographic files and site files, and two printed sources: "Late Quarternary Environment and Man in Western New York" by Parker Calkin and Kathleen Miller (1977), and my dissertation (1977) "Highway Archaeology and Settlement Study in the Genesee Valley." Extant collections have not been examined in detail as this is intended as a "state of the art" report rather than an exhaustive study.

Since Early Archaic projectile point types were identified and recognized, scattered reports of sites, mostly surface finds, have been recorded in the Northeast. However, the data are still scanty, suggesting that the total Early Archaic population was small. In a 1968 article, "Environmental Potential and the Postglacial Readaptation in Eastern North America," James Fitting hypothesized that a small human population in the Northeast following the end of the Pleistocene was the result of the establishment of closed boreal forests, which had a low carrying capacity for the animals that a hunting and gathering population would have depended on for the major portion of its subsistence. Ritchie (1969 and 1971) and

Robert Funk (Ritchie and Funk 1973) have echoed this theme. Funk (1977:326) has observed that the broad coverage of the Northeast over many years by archaeologists, and the available quantitative data on the distribution of representative artifacts and components, supported the hypotheses of Fitting and Ritchie.

However, the slow but continuing accumulation of Early Archaic data has led other archaeologists to question this hypothesis of a population hiatus or decline; they cite inadequate survey data and biases in the previous exploration of some topographic regions at the expense of others for the lack of Early Archaic information. A number of points can be made to support this contention.

First, there exists a very real problem of recognition of Early Archaic material in extant collections and previous studies as most archaeologists working in New York have depended largely on Ritchie's (1961) typology of projectile points, which was published before the Early Archaic types were identified as such.

Secondly, due to their great age, Early Archaic sites may now be relatively inaccessible, or may have been destroyed by natural processes. Rising sea level has almost certainly drowned sites along the Atlantic coast. Inland rivers in areas such as western New York have aggraded to the postglacial sea level, burying the most likely inland Early Archaic occupation localities beneath the water table of flood plains. The lateral movements of meandering streams and rivers may have already destroyed sites in such locations. Upland areas have suffered large amounts of erosion and deflation, so sites on higher elevations may also have not survived. Caves or rockshelters are not common in western New York for a lack of exposed bedrock conducive to the formation of rock overhangs.

The paucity of Early Archaic sites can also be attributed in part to previous research biases. Very few systematic surveys have been done in western New York, and large portions of the state are virtually unknown archaeologically. Even for areas which are relatively well known, such as the lower Genesee Valley in Livingston and Monroe Counties, I have projected that less than 1% of the probable number of all archaeological sites in the area were recorded in institutional records prior to highway investigations (Trubowitz 1977). Between 1972 and 1976, field research on the Genesee Expressway, the largest archaeological survey project yet carried out in western New York, produced the first four institutionally recorded finds of Early Archaic material in the lower Genesee River basin, and increased the projected sample of all sites in the area to about 3%. The expressway survey also took field crews into upland areas that previously had received little archaeological attention because they were assumed to have contained few sites, but archaeological sites were frequent on that landform, demonstrating that projections of topographic bias have some validity.

In addition, and perhaps most importantly, palynological data for western and central New York show a vegetational sequence which does *not* include a closed boreal forest during the Early Archaic Period, in contrast to other parts of the Northeast. Moving from west to east, there are variations in the environmental data across the Northeast (see Figure 1).

Charles Cleland's (1966) study, "The Prehistoric Animal Ecology and Ethnozoology of the Upper Great Lakes Region," showed a boreal woodland as early as 11,500 B.C. in Michigan. This was followed by a boreal forest between 8,500 and 7,000 B.C., succeeded by a pine forest.

Norton Miller's (1973) "Late-glacial and Postglacial Vegetation Change in Southwestern New York State" documented that in western New York Pleistocene park tundra was replaced during the Two Creeks Interval at about 10,000 B.C. by a spruce woodland. This in turn changed to pine and oak forests between 8,500 and 7,500 B.C. The pine dominated forests were replaced by a hemlock dominated forest assemblage. Other studies, Yaeger (1969), Gehris (1971), and Terlacky (1970), support Miller's western New York data.

A study in central New York by Donald Cox and Donald Lewis (1965), "Pollen Studies in the Criscoe Lake Area of Prehistoric Indian Occupation," yielded the same basic sequence as Miller found for western New York, but with different time spans set on each vegetation succession. The spruce forest replaced park tundra at Criscoe Lake about 8,500 B.C., followed by a pine dominated forest around 7,000 B.C. Hemlock forests became predominant around 6,000 B.C.

Further east, in southern New England, Margaret Davis' "Late Glacial Climate in Northern United States: A Comparison of New England and the Great Lakes Region" (1967) showed park tundra being replaced during the Two Creeks Interval by spruce-oak woodland, followed by a boreal woodland of spruce and fir until about 7,000 B.C. This gave way to a pine-birch-alder forest for a thousand years, until pine-oak forests of mixed hardwoods developed.

VEGETATION SUCCESSION IN THE NORTHEAST.

DATE	GLACIAL SUBSTAGE	ICE FRONT STATUS	VEGETATION BY AREA			
			CENTRAL GREAT LAKES (CLELAND 1966)	WESTERN NEW YORK (MILLER 1973)	CENTRAL NEW YORK (COX & LEWIS 1968)	SOUTHERN NEW ENGLAND (DAVIS 1987)
12,000 B.C.	CARY-FORT HURON	RETREAT	TUNDRA			TUNDRA OR
11,000 B.C.	FORT HURON	ADVANCE RETREAT	BOREAL WOODLAND	PARK TUNDRA		PARK TUNDRA
10,000 B.C.	TWO CREEKS		BOREAL WOODLAND	SPRUCE WOODLAND		SPRUCE-OAK
9,000 B.C.	VALDERE	ADVANCE	SPRUCE DOMINANT		PARK TUNDRA	WOODLAND
8,000 B.C.	POST VALDERE	RETREAT	BOREAL FOREST	SPRUCE DECLINE	SPRUCE FOREST	BOREAL WOODLAND
7,000 B.C.				PINE-OAK INCREASE		SPRUCE-FIR
6,000 B.C.	POST GLACIAL	NONE	PINE FOREST	HEMLOCK FOREST PINE DECREASE	PINE FOREST	PINE-BIRCH-ALDER
5,000 B.C.					DECIDUOUS FOREST HEMLOCK-OAK	PINE-OAK FOREST
4,000 B.C.						
3,000 B.C.						
2,000 B.C.			OAK-PINE FOREST	HEMLOCK DECLINE	HEMLOCK DECLINE	
1,000 B.C.				BROADLEAF INCREASE		
1 A.D.						
1,000 A.D.				HEMLOCK INCREASE	HEMLOCK INCREASE	
PRESENT			EUROPEAN SETTLEMENT ALTERS THE NATURAL VEGETATION OF THE AREA			

TABLE FROM: HIGHWAY ARCHAEOLOGY AND SETTLEMENT STUDY IN THE GENSEE VALLEY N. TRUBOWITZ 1977
PH.D. DISSERTATION. DEPARTMENT OF ANTHROPOLOGY, SUNY BUFFALO.

Fig. 1. Vegetation Succession in the Northeast.

These environmental studies show that central and western New York vegetation during the Early Archaic Period varied from that in Michigan and southern New England. The open spruce boreal woodland in western New York was dominated by both white and black spruce, and included large percentages of herbs, later with jack pine, oak, fir, larch, and birch. The succeeding white pine-oak forest around 8,500 B.C. had significant stands of oak and/or sugar maple in the uplands, with elm and black ash in the lowlands. There is no evidence for a "closed" boreal forest in western New York. Indeed, deciduous trees producing mast foods were present in quantity there around 8,500 B.C., and deciduous forests were predominate after 7,000 B.C. Therefore, as Calkin and Miller (1977) have already pointed out, the unfavorable environmental argument proposed by Fitting and Ritchie does not apply to western New York, where the vegetation sequence indicates that the area could have supported Early Archaic Indians.

Occupation by such Indians appears to have been widespread in the area. Early Archaic finds are recorded from the Appalachian highlands to the Lake Ontario lowlands, and from Seneca Lake to the Niagara River. A check of photographic files at SUNY/Buffalo yielded 32 Early Archaic finds in western New York, half of which have been recorded as site locations, and the remainder as general provenience in private collections (see Figure 2). The known sites are on a variety of landforms, including upland, flood plain, valley slope, and lowland. They are near a variety of water sources, including lakes, major rivers, and small creeks. Site elevations range from less than 290 feet above sea level on the Lake Ontario plain, to over 1,760 feet on a high hill near Avoca, overlooking the Cohocton River in the Appalachian highlands. There are several clusters or patterns of Early Archaic finds, but these are most likely the result of investigative bias.

A number of findings run along the Southern Tier in Chautauqua, Cattaraugus, Allegany, and Steuben counties, including locations near Findley Lake, Sinclairville, Cassadaga, Randolph, Elliottville, Farmersville, Rushford, Angelica, and Avoca. Sites and collections in those counties were mostly recorded in connection with scattered highway investigations. One of the most important sites on the Southern Tier is the Zawatski site (U.B. 961), which lies on the flood plain of the Allegheny River, near Kill Buck in Cattaraugus County. This site, which I first recorded in 1971, yielded two serrated projectile points during limited SUNY/Buffalo test excavations under the direction of Marian White in 1974. Though a carbon date on these point types was in conflict (too young) with their morphological similarity to West Virginia early Archaic point types (see Calkin and Miller 1977), the presence of additional, but as yet unidentified, cultural layers below the depth of these points may indicate that the site could produce significant Early Archaic data. It is one of the few recorded sites in western New York where buried Early Archaic material may exist.

Another cluster of Early Archaic finds from the vicinity of Keuka Lake, where highway surveys recorded a number of collections with such material included. No definite site locations have yet been established there. Richard McCarthy discovered and reported a third grouping in Niagara County near Lockport, to SUNY/Buffalo. He also generously donated his surface collections from the sites to the university. Three of the sites (McCarthy 1A, 2A, and 6A; U.B. 1099, 1100, and 1104) lie near each other on small knolls along 18 Mile Creek and a tributary stream, just below the Niagara Escarpment on the Lake Ontario plain. The fourth site (McCarthy 9A, U.B. 1107) is on an intermediate level of the escarpment about 200 feet higher than the other sites, near a small creek which is a tributary of the east branch of 18 Mile Creek. These four sites may represent individual short-term camps of a single small band of Early Archaic hunters and gatherers. Another Ontario Lake Plain site is Roeser (U.B. 496), which is adjacent to 12 Mile Creek in Niagara County.

Early Archaic sites have been found in both the lower and upper basins of the Genesee River. As already mentioned, highway investigations produced Early Archaic locations in the lower basin, SUNY/ Buffalo recorded two sites in collections from the upper basin, one near Portageville, and another on Silver Lake in Wyoming County. Two of the lower basin sites, Cooper 10 (U.B. 1431) and Genesee 6 (U.B. 1500), were stray finds on the valley slope near the junction of the Genesee River and its principal tributary, Canaseraga Creek. Further north on the lake plain in the lower basin, two possible camp sites were discovered. The Skeritt site (U.B. 1348) lay on a terrace above Honeoye Creek (the second largest Genesee River tributary), while the Halpin site (U.B. 1351) lay on a knoll composed of glacial till, within two miles of Honeoye Creek. Both of these sites yielded Early Archaic points and lithic debris, but as there were later cultural components also on the surface, the chippage could not be positively linked with the Early Archaic points found. Limited test excavations at both sites produced no additional data on the Early Archaic components.

Just outside the Genesee River basin in the Cohocton drainage near Wayland, is a large upland flood plain swamp. Early Archaic material has been found on the Robert Lawrence site there. (U.B. 551). As to the nature of the western New York Early Archaic material, it consists mostly of bifurcated projectile points and a few serrated styles. A total of 44 points were identified as Early Archaic types on the 32 sites and collections. The majority of these (23 or 52.5%) are typed as bifurcated Kanawha Stemmed points, which have been dated at 6,210 B.C. $\pm$ 100 years at the St. Albans site (Broyles 1971). Minority point types include Kirk Stemmed (3), LeCroy (2), Kirk Corner Notched (1), Kessel Side Notched (1), Stanly (1), St. Albans (1), serrated points (4), and unidentified bifurcates (8). Because I had to rely on

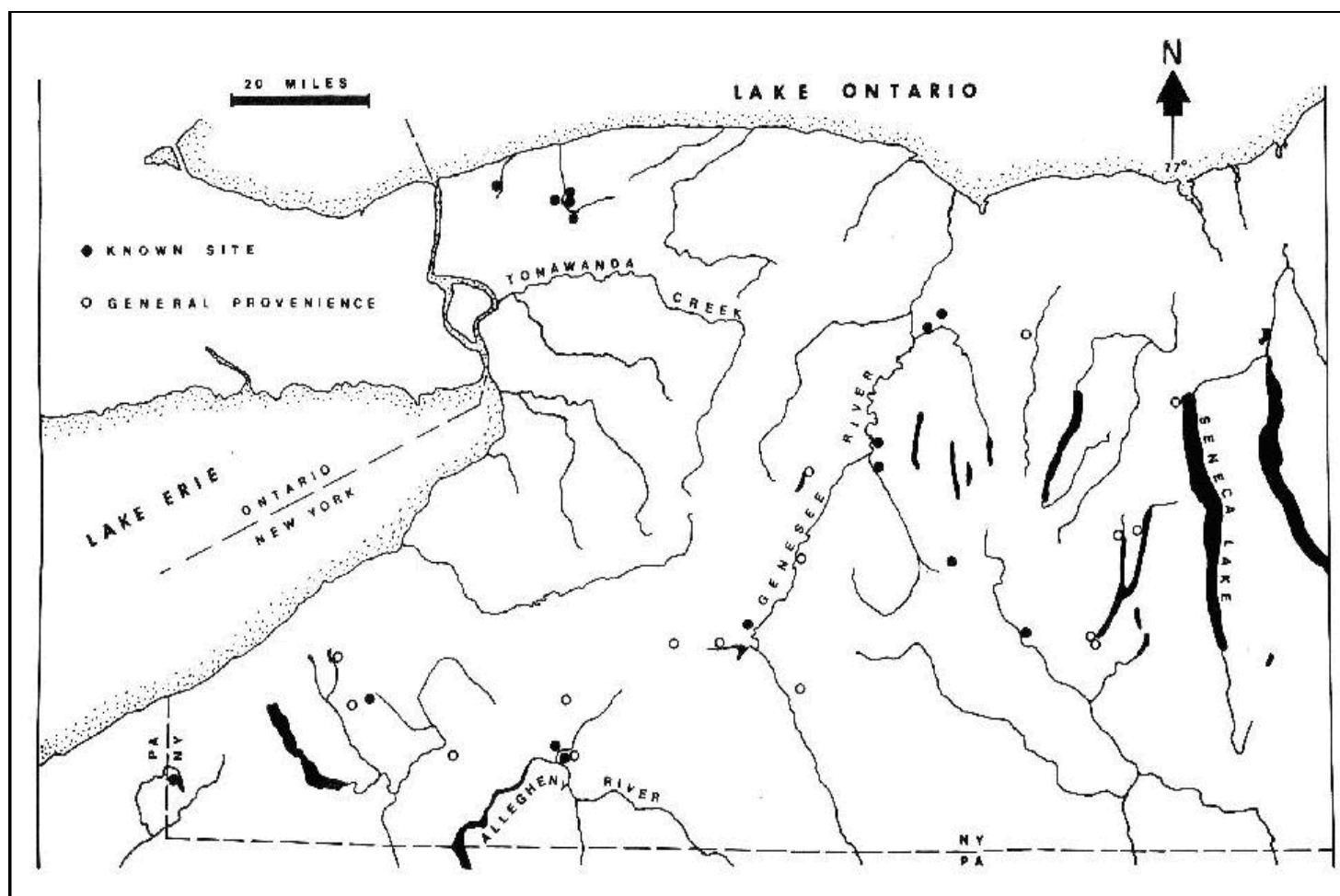


Fig. 2. Early Archaic projectile point finds in Western New York.

photographs for point identifications rather than actual handling of the artifacts in most cases, there is a bias in favor of the bifurcated types which are easier to identify in pictures than the serrated styles. These data demonstrate that the full expanse of western New York was inhabited during the Early Archaic Period. Sites have been identified in the Finger Lakes region, the Appalachian highlands, and on the Lake Ontario plain. The sites are on a variety of landforms adjacent to both major and minor water sources. Available palynological data indicate that a habitable environment existed for hunters and gatherers in western New York between 8,000 and 6,000 B.C. Numerous broad-ranging hunting and gathering bands appear to have been familiar with the environmental variation within their territories there.

Based on this information, I propose that there was no hiatus or population decline during the Early Archaic Period in western New York between Paleo-Indian and later Archaic occupations. [This gap may also be closed if ongoing studies on postglacial variations in natural radioactivity indicate that existing radiocarbon dates in the Northeast be pushed back as much as 1,500 years (see Funk 1977).] Their relative lack of Early Archaic material in western New York as compared with contemporary cultures in the woodlands of the Southeast may indicate that a smaller population was in the Northeast. More abundant Middle and Late Archaic Period material in western New York argue for a growing population over time, but the data under consideration here may indicate that the population growth was *in situ* and gradual, with its roots extending directly back to the first Paleo-Indian occupations in the region, rather than coming from the south after a population hiatus. The Indian population of western New York between 8,000 and 6,000 B.C. was not necessarily low in density and the occupation could have been a year-round habitation of the region.

It is important to remember that whatever position one takes on the nature of the Early Archaic population in western New York, it is only an *untested* hypothesis. So far, archaeologists have merely recognized the presence of Early Archaic cultures in the Northeast and have begun to reexamine existing data. Problems of recognition, topographic and regional bias, and site antiquity have complicated our attempts to understand the Early Archaic Period. No one has yet put together a research design meant to test theories about Early Archaic occupations and successfully carried it out. As James Griffin (1977) has noted, a lack of adequate investigation has given the hiatus hypothesis an appearance of truth. It is too soon to accept any Early Archaic theory as proven in the Northeast. However, the reporting of sites with buried components, such as the Zawatski site in western New York indicate that data are still extant for the solution of such questions.

Indeed, the pursuit of such information may yet yield significant data on a little known portion of the prehistory of the Northeast, a time during which human populations had to adapt to a relatively quickly changing environment, spanning the transition from park tundra to deciduous conditions. At present, any Early Archaic finds are of scientific significance, and the discovery of extant sites presents a challenge to all who are interested in the prehistory of the Northeast and the study of human behavior.

Acknowledgements

Many people have shared their site discoveries and collections with the Department of Anthropology at SUNY/Buffalo. I have drawn upon some of their data for this paper, including almost 30 private collections which have been photographed by our staff. I wish to express my appreciation for their work and cooperation, particularly that of Mr. Richard McCarthy, which has enriched our understanding of the prehistory of our state.

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EXCAVATIONS AT MUDDY BROOK ROCKSHELTER, 1975-1976 A PROGRESS REPORT

R. Curt Tompkins
Laurie DiMaria

Mid-Hudson Chapter
Mid-Hudson Chapter

Introduction

Muddy Brook Rockshelter is a stratified, multicomponent site in the northeastern part of Putnam County, N.Y., at 41° 29' 16" N and 73° 36' 21" W on the Brewster Quadrangle. The site was discovered on a site survey of the East Branch of the Croton River in 1974. Excavations were conducted from late spring 1975 to the fall of 1976, with 8 five-foot squares completed to a depth of 90 in.

Quantitatively, the site has thus far yielded: over 650 pottery sherds with 8 different styles of rim sherds; cultural related bone - over 7,700 samples, with 18 species presently identified; 95 projectile points spanning a period of about 9,000 years, with point types in the lower zones bearing a resemblance to types found in the Carolina Piedmont.

Physiography

Geologically, the rockshelter is situated in an area of Putnam County containing Stockbridge and Farmington associations. Bedrock in the Stockbridge soils lies at least 6 ft. below the surface and generally deeper than 10 ft. In the Farmington soils, bedrock outcrops are frequent but small, and bedrock is from 20 to 40 in. below the surface. Some of the terrain in the vicinity of the site is underlain by limestone with rock outcrops of gneiss and schist. The soils in the vicinity are well drained, moderately to slowly permeable loam and silt loam underlain by moderately coarse or medium textured glacial till deposits. The shelter itself is composed of amphibolite gneiss. The site is presently situated about 150 yds. from a pond covering an area of approximately 28 acres (including flood plain). The brook which feeds the pond flows out of the East Branch of the Croton River, now runs beneath a nearby roadway. A map made in 1867 confirmed our belief that one branch of the Muddy Brook had once run within 30 yds. of the rockshelter.

The site lies within the Croton River drainage area and more specifically, the drainage area of the East Branch of the Croton River. More generally, the area falls within the Hudson River Basin in New York and partially in the Housatonic River Basin in Connecticut.

In Putnam County no complete survey has been conducted to identify the native species of plants. The area was included in a study by Syracuse University of the forests of New York State in 1958. In this study, Putnam County forests were classified as being in the New England Highlands region and in a sub-region-Hudson Highlands.

In modern times, trees are mostly in the oak and oak-hardwoods groups with a sub-climax of conifers. The oak group includes several species i.e., red, white, black, chestnut, scarlet, and scrub. Dogwoods, sassafras, and maple are also associated with this plant association. The development of postglacial deciduous forests, specifically oak, in our area appeared around 9,000 B.P.

The shelter faces west, with the slope of the hill affording protection from the north-westerly winds. Within the drip line measurements are: from vertical wall (east) to extreme point of drip line (west)-14 ft.; across the mouth of the shelter (north and south) — 36 ft. at maximum; before excavation, surface to roof of shelter measured 16 ft. at the drip line to 5 ½ ft. at the vertical wall. The talus slope begins 4 ½ ft. beyond the maximum point of the drip line.

Excavation Methods

A permanent elevational datum was established on the vertical wall in the back of the shelter and a temporary elevational datum established on a tree growing at the drip line. Five-foot squares were used, although encroaching rocks from unexcavated squares sometimes caused problems. Grid lines were set up north to south, which worked out rather neatly, due to the 30 ft. vertical wall which ran north to south. All cultural remains were recorded horizontally with respect to the northeastern corner of each square. One hundred percent of all excavation was conducted with trowels, and all excavated soil was sifted. Approximately 77% of the lithic artifacts were located in situ and recorded by using the elevational datum. Thirty-two percent of the lithic artifacts could not be accurately recorded using the above method when they were recovered under circumstances such as "cleaning" a square wall (loose rocks) or, in a burrow where the soil was soft and fluid.

Approximately 60% of the soil was processed by ¼ in. sifters and the remainder by ½ in. sifters. The ½ in. sifters were employed in Zone I due to leafmold, and in Zone III which contained light colored soil where few organic materials were observed. At times a paucity of excavators or damp soil conditions required the use of the larger mesh, much to our regret.

Fauna

During the course of excavation the authors and occasional excavators observed the following fauna in the immediate vicinity of the rockshelter: shrew; mole; possum; woodchuck; whitetail deer; chipmunk; bat; duck; Canada geese; crow; vulture; leopard and green frog; dusky salamander; snapping turtle; and scent of skunk and weasel or mink.

An abundance of bone existed in the squares that lay within the drip line. Approximately 7,700 bones have been recovered with about 8% whole and 90% fractured and in various stages of incineration and carbonization. Bone recovered from Zone VIII, the lowest zone excavated, consisted of very small white fragments. Great effort was made to recover all bone, with the employment of $\frac{1}{4}$ in. sifters in areas with high concentrations. A $\frac{1}{2}$ in. sifter, which is used on many archaeological sites, allows for the passage of quite a lot of material, especially bone.

To date, faunal analysis has consisted primarily of identification of mandibles and bones with distal or proximal ends. Identification of fauna results also from a slowly increasing comparative collection and two or three published sources. Fauna presently identified, regardless of zone:

Table 1
A Partial Listing of Fauna from Muddy Brook Rockshelter

Class	Genus	Species	Common Name
Mammals	Mustela	Vison	Mink
	Vulpes	Fulva	Red Fox
	Urocyon	Cinereoargentus	Gray Fox
	Marmota	Monax	Woodchuck
	Odocoileus	Virginianus	White-tailed Deer
	Ondatra	Zibethica	Muskrat
	Sciurus	Carolinensis	Gray Squirrel
	Procyon	Lotor	Raccoon
	Mephitis	Mephitis	Striped Skunk
	Felis	Concolor	Puma
	Tamias	Striatus	Eastern Chipmunk
	Sylvilagus	Floridanus	Eastern Cottontail
	Lynx	Canadensis	Lynx
	? Lutra	Canasensis	River Otter
	? Castor	Canadensis	Beaver
	? Cervus	Canadensis	Wapiti, Am. Elk
Birds	Meleagris	Gallopavo	Turkey
Reptiles	unknown	unknown	Turtle

Snail shells, representing one species, were present down to the bottom of Zone III (about 37 in.). Freshwater mussels were recovered down to the middle of Zone IV (45 in.).

About 70% of the bone can be associated with cultural artifacts, with a maximum locus of about 4 in. above or below. These important associations and their interpretations will be reported after complete excavation of the rockshelter.

Descriptions of Zones

The 8 presently defined zones are primarily cultural zones, with slight to great variations in soil color and texture.

Zone 1 (surface to 6 in.). This surface zone consists of leafmold and some surface root systems. Numerous snail shells, and skeletons of birds and small mammals were also present. Artifacts consist of small-game traps and gunshells. Surprisingly, little 20th century human refuse existed on or in this zone.

Zone II (6 to 31 in.). A very deep zone consisting of black greasy soil throughout (Ph. 7.6). This zone contained enormous amounts of bone: top 10 in. - non-split bone brought in by historic hunters and trappers; bottom 21 in. - split bones related to prehistoric inhabitants. Artifacts in the top 10 in. consisted of historic artifacts intermixed with prehistoric artifacts. Historic artifacts - two coins 1834 and 1853, 19th century cup fragments, and turn of the century shotgun shells. Prehistoric artifacts - 90% of all pottery comes from this zone, about 650 sherds, with 8 different styles determined by rim sherds. No pottery exists below this zone except in a small burrow in one square. Lithic artifacts consisted of flint chips, flakes, and untyped projectile points.

Zone III (31 to 40 in.). Relatively light soil containing a moderate amount of bone refuse. Lithic artifacts include Orient-fishtail points of flint and bright red jasper, and Brewerton side-notched points. In only one square, (northern corner of shelter), did broadspears occur: Koens-Crispen/Snook Kill (5 samples); Eshback/Eva (2 samples); and several untyped points made of flint and shale. Moderate sized chunks of flint only occurred in this zone. Also abundant were knives and pick-up tools.

Zone IV (40 to 51 in.). Soil was dark colored, distinct from zones III and IV. This was probably our most secure zone, in that projectile points of only two types were present. The top four inches (40 to 44 in.) contained small narrow stemmed Lamoka/Taconic points made from quartz and quartzite (13 samples) recovered from 6 squares (Fig. 1, a-e). The lower part of this zone (44 to 51 in.) yielded small, weakly side-notched points with concave bases (11 samples), also made of quartz and quartzite (Fig. 1, f-j). Only in this zone did we find these point types; no other zone contained projectile points fashioned from these lithic materials.

Kraft's Lamoka points at Harry's Farm appear to be the same as our Taconic, except for the

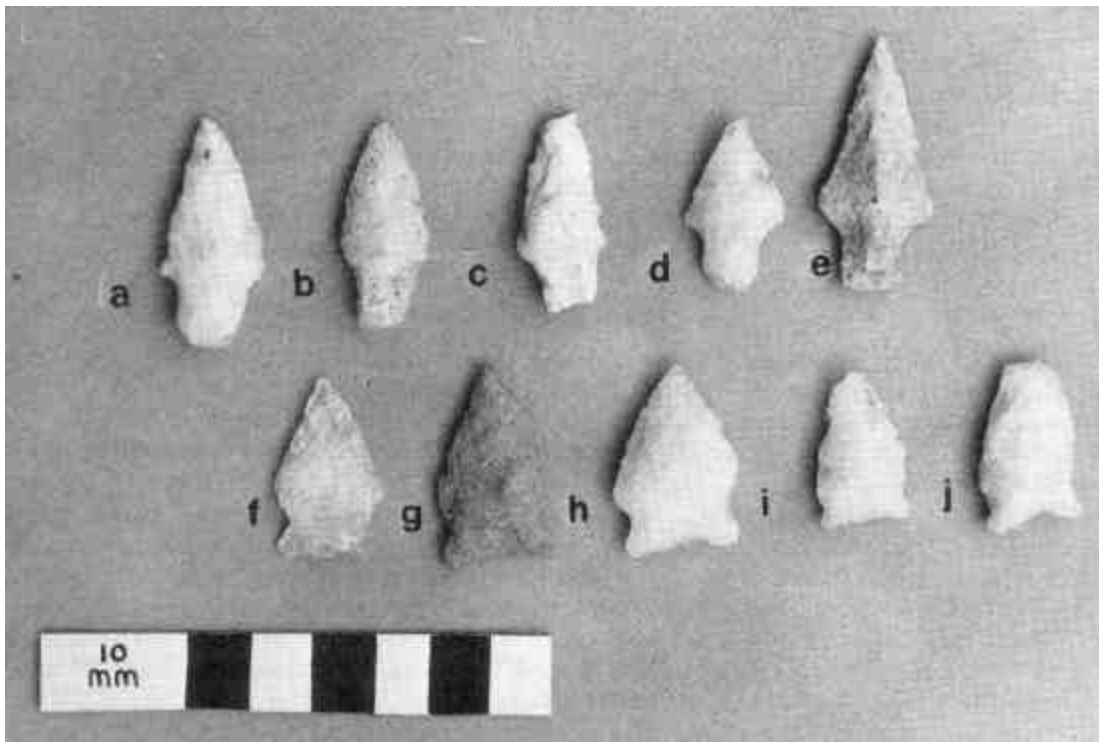


Fig. 1. Late Archaic and Middle Archaic projectile points. a-e, points of the Taconic (Lamoka) tradition (quartz); f-j, Kittatinny-like points (quartz).

difference in materials. Kraft's Kittatinny points, which fall just below his Lamokas, closely resemble in morphology and measurements the 11 weakly side-notched points that lie below our Taconic's (Table 2). To be specific, these 11 points very closely resemble four of Kraft's Kittatinny points (Kraft 1975:Fig. 18, a, b, d, g).

Dena Dincauze displays a projectile point (Dincauze, 1976: Plate 9, j) which in morphology and measurements resembles these Kittatinny points. The point is listed as Late Archaic, with no comments, and was recovered below the small, narrow stemmed points.

At this point, we refer to these projectile points as Kittatinny-like. Taconic points in this region are dated around 4,500 B.P. (Brennan 1974). Kittatinny points in the Delaware Valley are dated at about 5,700 B.P. (Kraft 1975).

Zone V (51 to 65 in.). This zone was very complex in that several living floors were present, each appearing to be one or two cm. deep. Here we encountered a circular hearth containing burnt bone, but no lithic artifacts. About 196 grams of bone were submitted for dating (Queen's College, Radiocarbon Laboratory). A very disappointing uncorrected date of 2,850 + 220 B.P. arrived and not the expected date of about 5,500 B.P.

From the fact that very little C02 was released from the apatite fraction, Dick Pardi of the Queen's College Radiocarbon Laboratory suspected that the bone sample had been cooked. Several reasons may account for this disappointing date: one, we now believe the deep hearth had begun in the upper level of Zone III, around 35 in., but did not become noticeable until around 46 in., the middle of Zone IV; two, the hearth was in the northeastern corner of a square that had been excavated to a depth of 15 in. before the cessation of excavation in the fall of 1975. It was noted the following spring that a sizable mass of soil, from this square, had fallen into an adjacent square, to a degree undermining and creating a slope in the area of concern. It is possible that one or both of these reasons may account for this date. Several untyped projectile points were recovered from this zone.

Zone VI (65 to 74 in.). A zone containing reddish colored soil with small amounts of bone fragments. A large white-tailed deer mandible (possibly elk) with defleshing grooves was submitted for a date, but unfortunately contained too much "humic acid" contaminant for a successful date.

Lithic artifacts include small flake scrapers, and a well made short pestle-muller, one of the few large lithic artifacts recovered thus-far from the site. Three projectile points lay in this zone, two which are classified as Neville points (Fig. 2, a, b) in flake scars and proportions (Dincauze, pers. Comm., 12/9/77). The third point tends stylistically toward the Kirk group (Fig. 2, c) and closely resembles the earliest point from Harry's Farm (Kraft 1975:Fig. 5, a), and an early Kirk-like point described in the Neville report (Dincauze 1976). In both of these cases, the specimens could be construed as contemporaries of Neville (Middle to Early Archaic) in spite of their relationship to older styles. Dates for the Neville points in New Hampshire range from 7,015 to 7,740 B.P. (Dincauze 1976).

Zone VII (74 to 81 in.). A zone containing slightly darker colored soil than Zone VI. Very small fragments of bone were recovered and the above mentioned mandible may be associated with the upper level of this zone. Lithic artifacts include several small flake endscrapers of quartz crystal and two small corner-notched points. Both projectile points were recovered on the last day of excavation of each of the two field sessions (Fig. 2, d, e.).

Both points are serrated and made of jasper, unlike lithic artifacts found in the upper zones. In size, flake scars, and proportions, the points are very similar to Palmer points found in the Carolina Piedmont by Coe and Broyles. The points were located in adjacent squares about 4 ½ feet apart, and vertically at 76 in. and 78 in. below the surface. The recovery of the second Palmer was not without a certain amount of guilt. Due to damp and cold conditions, we had been discarding possibly 8-15 grams of charcoal that had been encountered in the overlying 2 to 3 in. Upon finding the point, a frantic search began for charcoal in association with this artifact. Unfortunately, the sample submitted for dating, after cleaning, was only 1.1 grams. We would have hoped for a good Early Archaic date of around 8,700 B.P.

Zone VIII (81 to 90 in.). This zone consisted of yellow-reddish colored soil, possibly glacial till. About 30 lithic artifacts and a dozen bone fragments were recovered. Lithic artifacts: endscrapers (flint); scraper-gravers (flint); medium to large lanceolate knives of crystal quartz and quartzite; and large wedge-shaped flakes of quartz and quartzite.

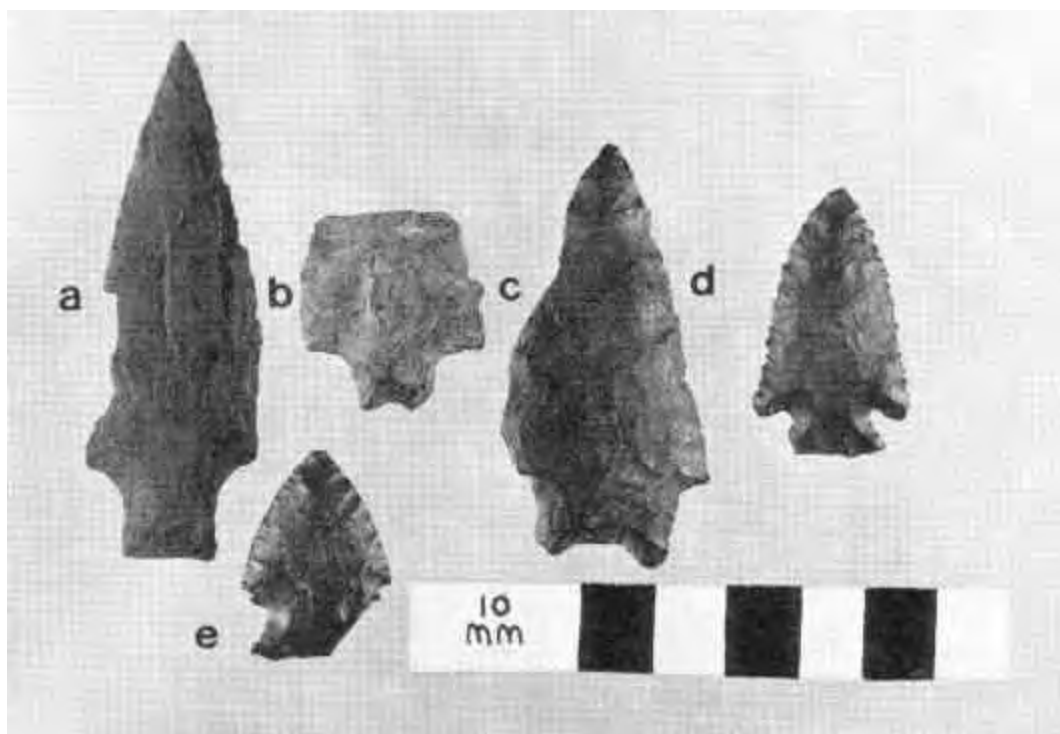


Fig. 2. Middle Archaic and Early Archaic projectile points. a, b, Neville points (a. slate, b. grey flint); c, Kirk-like point (dark grey flint); d, e, Palmer points (d. brown jasper, e. red jasper).

Table 2
Measurements

Kittatinny-like projectile points, lower half of Zone IV:

Average - length-28.7 mm
 width-17.8 mm
 thickness-8.5 mm

Palmer projectile points, Zone VII:

brown jasper (78 in. below surface)
 length-37 mm
 width-22 mm
 thickness-6 mm

red jasper (76 in. below surface)
 length-29 mm
 width-20.5 mm
 thickness-5.2 mm

Due to poor lighting and cold weather, this zone was sealed in the fall of 1975 and 1976 with various plastic materials. A very small test pit was dug down to 104 in., indicating no change in soil color or texture and no evidence of bedrock.

Except for Zone VIII, there have been found to this date very few large lithic tools. One finely worked short pestle-muller and five cobbles with no distinctive shape or functional characteristics are the only representative large tools. Recognizable drills are also absent. Descriptions, locations, and associations of scrapers, knives, utilized flakes (pick-up tools), gravers, bone tools, etc., will be made in a final report. With certain considerations, our intentions are to excavate 3-5 more squares beyond the drip line and below the 90 in., and establish some absolute dates.

Tentative Conclusions

The Kittatinny-like projectile points at Muddy Brook, may at this time be the northern most excavated representatives of the Middle Archaic Kittatinny complex described by Kraft. If this complex is associated, by point resemblance and comparable dates, to Halifax side-notched and Guilford lanceolate points then this complex helps to support the proposition of a continuous northward movement of Carolina Piedmont' cultures or culture traits, even as late as the Middle Archaic.

The presence of Palmer, Kirk-like, and Neville/Stanly points in the lower zones appears to also support the proposition of a line of advance of Early-Middle and Early Archaic cultures. With the advancement of deciduous forests, and their increasing carrying capacity, these medium to small game hunters would undoubtedly have moved onto and up the river valleys and tributaries of the Susquehanna, Delaware, Hudson and Connecticut.

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STRUCTURE, PROCESS, AND LAMOKA LAKE: THE CONTEMPORARY MYTH OF THE PAST

Russell G. Handsman

NYSAA

Anthropological knowledge, as it has been gathered and interpreted for hundreds of years, owes its existence to the development of a concept of the past which first appeared during the Italian Renaissance in the fourteenth and fifteenth centuries. As John Rowe (1965:14) has summarized, this historical period

saw the invention of a theory of perspective distance "at which antiquity or any more recent culture might be seen whole and as an acceptable object of study."

Social historians and ethnographers of the Renaissance were amazed by the world's cultural and historical diversity and based their research and writings on a fundamental assumption which is, today, an archaeological truth. This truth stated that the past was not the present and that knowledge of the past was possible solely through detailed studies of cultural context and history. If one wanted to understand why people behaved the way they did, it was necessary, in some sense, to become those people, or so it was thought.

With some effort, it is possible to turn this theory of the past into a basic anthropological truth, a truth which came to dominate American archaeology. The theoretical separation of the past and the present implied that anthropological knowledge was and had to be relative (the theory of cultural relativity). This further suggests that behavioral practices were only understandable by way of detailed reconstructions of past lifeways, and this is where archaeologists in the Northeast have been for most of their existence.

However, in this collection of papers on the Early Archaic and in several other recent monographs and articles, it is apparent that Northeastern archaeology has moved back into the mainstream of contemporary American archaeology. This change in theoretical orientation is situated within the ecological process of adaptation, particularly as this concept is used by archaeologists studying the Archaic period.

This is not surprising since the original construct of the Archaic created by William A. Ritchie in the 1930's, was oriented to both taxonomic *and* processual concerns. The familiar list of cultural traits—an abundant variety of chipped stone tools, the almost complete lack of polished stone artifacts, and the prevalence of copper tools (Ritchie 1965:31, (Ritchie and Funk 1973:37) - has not been significantly altered by more than four decades of field research.

Similarly, the adaptive model of the Late Archaic, determined in large part by the archaeological record at the Lamoka Lake type site and eventually referred to as primary forest efficiency (Caldwell 1958), continues to serve as a model for research as well as a believable reconstruction of the past. From the perspective of history and critical theory, it is possible to trace a direct linear path between the Archaic (as adaptation) at Lamoka Lake and more recent research in New York State and adjacent areas. This path is progressive in the sense that recent efforts are clearly based upon more adequately documented regional sequences, grounded in consistent series of radiocarbon dates.

Additionally, as hard as this may be for some of us to swallow, contemporary archaeologists in the Northeast have become both theoretical ecologists and theoretical anthropologists. It does not matter that some of us continue to insist that a careful working out of space-time systematics must "pre-date" anthropological studies (see Funk and Rippeteau 1977:5); the fact remains that Northeastern archaeology is more theoretical than it has ever been and as prone to building models and inventing explanations as our brethren in other worlds.

Even if this collection of papers and other archaeological texts are better ethnographies of the past, it is also true, at some level, that they are mirror images of one another and of Lamoka Lake. Here the linear path over the course of some forty years is not progressive but illusory; there is no path at all. What this implies is that Lamoka Lake and every Archaic study since are homologous but at a level of analysis which is quite implicit and hidden. By beginning a textual study with Lamoka Lake and ending with the recent symposium on the Early Archaic, one can see how our theory of the past duplicates that of the Renaissance.

Perhaps the most distinctive quality of Lamoka Lake is the astonishing variability and seemingly pervasive disorder of the archaeological record. After reading the descriptions of the site's cultural stratigraphy and settlement patterns, it is difficult to understand how Ritchie moved from this record of chaotic behavior to an ordered taxon which eventually became used as a developmental stage within the Western Hemisphere (Wiley and Phillips 1958:104-43).

We know that the locality of this site was used for hundreds of years by many occupants and that the record of their behavior is, at best, a complicated heap of isolated acts, lifeways, and subsequent transformational activities. What is most interesting is that Ritchie managed to "read" this heap as representing an organizational structure: a socioeconomic pattern based upon a subsistence orientation, an environmental context, and a set of ethnographic analogs. He invented the Archaic.

In retrospect, it is obvious that Ritchie's analytical strategy eventually became the theoretical and

empirical framework of anthropology's cultural ecologists. Like all social scientists, anthropologists have always been faced with a dilemma: how are we able to think of society when social life consists of constant variability, change, and transformation? Ritchie's response to the record of this dilemma at Lamoka Lake is to move away from pervasive disorder to order, by converting acts into structures. Out of Lamoka Lake's heap of acts and social life, he derives a socioeconomic structure (he calls it a culture), described as follows:

.... a relatively simple stage of economic development, nonagricultural and non-ceramic, based on hunting, fishing, the gathering of wild plant foods, and sometimes of shellfish. Archaic settlement patterns, social organization, and other aspects of culture were functionally interlocked with the economic and technological aspects [Julian Steward's cultural core], and indeed were largely determined by them (Ritchie and Funk 1973:37).

Notice that the derivation of an organizational structure from behavioral acts allows an order to be "discovered" within chaos. More importantly, the derivation of structures from acts allows one to introduce the notion of causality (Murphy 1971:3-35). The logic works something like this.

During the Late Archaic period in central New York State, the environmental context was quite similar to contemporary situations and characterized by the presence of mature deciduous forest communities. People living in the midst of such natural abundance would have derived their living by hunting, fishing, and gathering the available food resources. These "cultural" choices, as behavioral acts, would mean that local populations would organize themselves in particular social and settlement patterns. That is, by knowing something about the environmental context and economic behavior of a population, it is possible to delineate a series of organizational structures.

Implicitly, the theoretical movement from ecology to economy to sociology is one of causality or determination. In Ritchie's original report on Lamoka Lake, this idea of causality is hidden beneath a veneer of descriptive information. More recent studies of the Archaic in other regions of the Northeast (Ritchie and Funk 1973:37-79, 337-44; Funk 1976:230-63; Funk and Rippeteau 1977) show a theoretical orientation which corresponds to that of Lamoka Lake. By way of the medium of settlement archaeology and cultural adaptation, archaeologists have conceded that they see culture as an adaptive process. This "significant" innovation is astonishing, considering that this concept of adaptation was inherent in both Lamoka Lake and the Archaic, more than 40 years ago.

This is not to say that Lamoka Lake and everything since are truly identical; they are not since some of the more recent studies are based upon anthropological models, rather than a single, incredibly impressive, and unique site. For instance, the studies of the Early Archaic by Fitting (1968) and Turnbaugh (1973) are more generalized and attempt to relate some environmental variables to behavioral acts. The recent preliminary monograph by Funk and Rippeteau (1977) as well as several papers from the recent symposium on the Early Archaic (those of Dumont, Funk, and Trubowitz) are based upon a similar imagery, but one in which spatial variation is transformed into change through time.

All of these are not alike, in a sense that each treats the relationship between space and time in a different fashion. Fitting's model is more concerned with space than with time while that of Funk and Rippeteau focuses on the latter. In fact, all "in-situ" models of cultural development are a denial of space and an acceptance of time.

Ritchie's analysis of Lamoka Lake was a study of an adaptive pattern as isolated at a single site, at a "single" moment of time. In a sense, since both were specified, neither existed and Lamoka Lake became timeless and was transformed into the Archaic. The concept of the Archaic has always been one of both taxonomic and processual concerns. As a taxon, it existed in time and space; as a process of adaptation, it was timeless and spaceless. This is what Binford's notion of cultural process is all about and why one can say that archaeology in the Northeast has become something it always was.

Probably, the most ironic implication of this transformation to a "timeless" past is that it is both an acceptance and a denial of the Renaissance concept of the past. When archaeologists started to study cultural processes, they necessarily began by rejecting contextual and historical studies of specific cultures and, by doing so, implied that a perspective distance did not exist. However this meant that the past was not studied as the past but as the present and through the present. Remember that the original Renaissance concept of the past depended upon the worlds of the past and the present being separate. If they were truly separable, the past could not be known, except as a function of the present, and this is what the re-creation of cultural process tells us. It is in this sense that recent archaeology has truly returned to its historical roots.

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**THE ARCHAIC CONCEPT:
ITS DEVELOPMENT IN NORTH AMERICAN PREHISTORY**

William A Starna

SUNY Oneonta

This paper represents a survey of the development and use of the Archaic concept in North America prehistory. It is by no means an exhaustive review of the literature. Instead, it is an historical account of the perception and application of the term "Archaic" in archaeology. The examples cited are regarded here as significant events in that history, and are, in general, synthetic, regional or continental treatises.

Much archaeological data on the Archaic have accumulated since Byers' (1959a) summary. This material has engendered a number of modifications and changes related to the use and meaning of this term.

The use of the term "Archaic" in North American archaeology has had a long and often confusing history. It was first used in conjunction with Middle America studies (Boas 1915; Tozzer 1916; Spinden 1915, 1917a, 1917b), and did not appear in North American archaeological literature until 1919, and then only as an adjective. Alanson Skinner (1919:51-74) had described several crudely chipped points he had excavated at Throgg's Neck, New York, as an "archaic" type. The term was not used in a cultural sense until Ritchie (1932a) referred to an "Archaic Algonkin Period." In his subsequent report on the Lamoka Lake site (1932b), the type station for this Archaic period, he more fully described the archaeological traits of this complex: the beveled adz, choppers, narrow-bladed, notched projectile points and pendant-like antler objects. Emphasis was later placed on negative traits, including the absence of evidence of horticulture, the smoking pipe, pottery, steatite vessels, copper and shell objects and various polished stone tools (Ritchie 1932b, 1936:18). The Archaic, as Ritchie conceived it, was a stage of culture defined primarily by technological inference and restricted to the Northeast. A "stage" is usually defined as a

level in a historical-developmental sequence identified by certain cultural criteria. There are no spatial or temporal connotations (cf. Wiley and Phillips 1958; Krieger 1964; Deetz 1967; Jennings 1974).

It soon became apparent that although there was some archaeological justification in applying the name "Archaic" to the earliest known cultures in the East, it was more difficult to deal with specific, constituent traits. Ford and Wiley (1941:332-3), calling the Archaic a "cultural horizon," noted that "the Eastern Archaic cannot be well characterized by any group of artifacts that are peculiar to this stage. Most of the traits found in it continue on in more or less altered form into the later cultural horizons." Nevertheless, the traits described by Ritchie for the Archaic became established as the dictum for other archaeologists.

Haag (1942:221-2) saw a common ancestry in North America for non-ceramic, pre-agricultural cultures. However, he also called attention to the fact that not enough classificatory work had been accomplished to enable archaeologists to define accurately what traits could be used in determining the various manifestations of the Archaic. This admonition notwithstanding, both he and Fairbanks (1942) expanded Ritchie's Archaic areally to include materials found in the Southeast. The primary difference was that these materials were found in shell middens, hence the name "Shell Mound Archaic" (Byers 1959a:230).

In 1944 Ritchie formalized what he had termed the Archaic in this way: "the archaic level as a whole shows (a) a large variety and numerical abundance of chipped stone types; (b) the lack of all the so-called problematical group of polished stone artifacts, except the bannerstone of several simple forms; (c) a considerable typological range in and large number of bone tools; (d) the prevalence of copper tools and the total lack of copper ornaments; (e) the general absence of shell artifacts; (f) the complete dearth of pipes; (g) the want of pottery, except in perhaps the closing phases; (h) the nonexistence of agricultural traces; and (i) the large variety of burial practices, generally not involving mortuary offerings" (1944:31920). However, the Archaic stage came to be called the "Archaic Pattern" in accordance with the McKern taxonomic scheme. The effect of this change on the definition of the Archaic was, nevertheless, rather transitory.

As the concept of an Archaic stage took hold, the diagnostic traits defined by Ritchie proved to be too restrictive for other cultural expressions in the Southeast and elsewhere. Archaeologists, in an effort to agree with each other on exactly what the Archaic was, began instead to rely heavily on two negative traits: the lack of horticulture and pottery.

The theoretical thrust of North American archaeology at this juncture is best illustrated by Ritchie. "It had been possible to show the cultural distribution and frequency of traits; to demonstrate the diagnostic elements, or those restricted to or predominant in each culture entity, and to indicate the common denominators or linked traits variously shared, and thus to reveal the amount of apparent relationship among them" (Ritchie 1944:319). The problem was that fewer and fewer of the diagnostic traits were positive ones, and again, the negative traits were regarded as most significant. At the same time, utilizing primarily the negative traits, Ritchie associated the Archaic in New York with similar cultures in Indiana, Kentucky, Alabama, Tennessee, Georgia and Louisiana (1944:322), and the Archaic concept continued to spread.

Criticism of this concept was not unknown. Griffin (1946) viewed the term Archaic as "inappropriate." He felt that sites of this complex should be considered part of what he termed "Paleo-Indian." However, none of this aided in the clarification of the problem. Sears (1948:123) objected to the term on two points, one being chronology.

There seems to be a consensus that the upper dates for these (Archaic) assemblages run around 500 A.D. There does not seem any warrant for the assumption of any very long duration for them. If the term "archaic" must be used, it should have been reserved for the oldest manifestation in North America, if and when such assemblages are identified.

Considering that there did not exist a method to determine absolute chronology in 1948, it is difficult to understand why there was such a strong position taken based on temporal considerations. Sears' second point is more valid. In comparing trait lists he noted that if ceramics were excluded the Archaic and Early Woodland manifestations would correspond nicely. Of 26 traits listed for Archaic sites, Sears (1948:123-4) could find only 3 that were absent from Early Woodland trait lists. Nevertheless, sites continued to be assigned to the Archaic based on lists of traits.

The Archaic took on continent-wide proportions when Beardsley (1948) compared trait lists of

materials found in California to lists of materials found in Eastern sites. In addition, Jennings and Norbeck (1955) defined what was to be the basis of the Desert Culture, an Archaic manifestation that had been identified in the Southwestern United States.

Griffin (1952:354 ff.), although he had earlier decried anything "Archiac," not only defined a stage of the Archaic, but also subdivided it into "early" and "late" substages based on the postulated addition of various implements of polished stone during the "late Archaic." At the same time previous precise and restricted descriptions regarding assemblages of the Archaic were being replaced by more generalized ones. Also, for the first time the absolute chronology of radiocarbon dating was a significant factor in distinguishing the Archaic from other lifeway manifestations. Nonetheless, the Archaic was still seen primarily from the "stage" concept. One of the few exceptions was the view held by Wittry and Ritzenthaler where the Archaic was used to refer to a time period rather than a cultural assemblage. ..." (1956:244).

In 1956 a conference was held on the "Early Lithic and Archaic Cultures in North America" at Phillips Academy, Andover, Massachusetts (Meighan 1956). Here participants agreed to construct four stages based on technological considerations for preagricultural North America. These were, in chronological order, an unspecialized lithic, a specialized lithic, an unspecialized Archaic and a specialized Archaic. In all stages "the adjectives apply to technological features, not to economy or ecological adaptation" (Meighan 1956:217). In addition, the stage criteria were developed typologically, not chronologically. Also, they were to be applied to a broad geographical range.

The first attempt at standardizing exactly what was to be considered "Archaic" in North America was soon overshadowed by probably the most important treatise ever written regarding this concept. Caldwell's (1958) "Trend and Tradition in the Prehistory of the Eastern United States" broke with any previous notions concerning Archaic. He "... ignored both developmental stages and McKernian groupings in favor of broad economically based patterns crosscut by regional traditions" (Brose 1973:106). "Traditions" are defined as cultural patterns persisting through time (Willey and Phillips 1958:37). This approach, which was couched in terms of "Primary Forest Efficiency," the maximization of available subsistence resources, attempted to explain relationships among economic patterns in specific regions or ecological zones. These in turn crosscut with tradition that represented different styles or ways of doing the same things (Caldwell 1958:viii).

At about the same time that Caldwell's monograph appeared, Willey and Phillips (1958) attempted to define more clearly certain concepts in North American archaeology, including integrative units such as "tradition" and "horizon." Further, they advanced a continent-wide outline for culture history in terms of major developmental stages making use of broad typological patterns (Willey and Phillips 1958:104-43); Brose 1973:106).

Thus, by the end of the 1950's, North American archaeologists perceived the Archaic in three distinct ways. Some saw it as a "period," with all of its temporal implications. Others used it as a "developmental stage." Here reference was made to cultural developments on a continent-wide scope where technological considerations were paramount. Finally, the Archaic was viewed in terms of the relationships among economic patterns functioning in specific ecological regions. All three of these were looked at as being mutually exclusive in most instances.

Until 1959, "few people had yet perceived the possibility that divergences among sites and regional Archaic cultures might be resolved by regarding the Archaic as a cultural stage, spread across the continent and modified by environmental conditions to which response was made in a way best suited to meeting local problems of subsistence" (Byers 1959a:232). This statement best exemplifies the direction Archaic studies were headed. The tendency inferred here is that all three ways in which the Archaic had been viewed previously could be synthesized and then used in defining what was meant when one considered the "Archaic." This is illustrated in the literature from 1959 onward, in one form or another.

Lewis and Kneberg (1959), in their report on the Archaic in the Middle South, apply the stage designation. In addition, they define two traditions, one the Mid-continent and the other the Eastern, both occurring in their area of study. These traditions, comprising the Archaic stage, are defined on the basis of typological and environmental considerations.

Witthoft (1959:85), involved as he was in the East, specifically the Appalachians, was uneasy regarding the broad interpretations being made for the Archaic. Even so, his work reflects an indulgence of the stage definitions developed at the Andover Conference (Meighan 1956; Johnson 1956) avoiding any chronological framework. In fact, in this report he fails to list even a single radiocarbon date.

Byers saw the Archaic as a stage, contending that clear and precise chronological units over broad geographic areas were lacking. "Since stage of culture can only be determined by an analysis of culture traits represented at any site, it is evident that a date *per se* is not necessarily a valid indicator of stage of culture" (Byers 1959b:234). The stage construct allowed for the placement of technological items in a developmental scheme even though they were not simultaneously present in all of North America. Byers' paper is the first where prehistoric linguistic affiliations were made part of a discussion of the Eastern Archaic.

Connections with the Eastern Archaic were also being postulated for the Southwestern Desert cultures. "It is clear. . . that continuous distribution of an Archaic culture and horizon is demonstrable from the Atlantic to the Pacific, linking the eastern Archaic with the southwestern Desert cultures through the geographically and culturally intermediate Valcones phase of Texas" (Kelley 1959:288). Kelley could place this desert "Archaic" temporally between earlier Paleo-Indian complexes and the later ceramic and agricultural groups (1959:288). Meighan (1959), working in California, could not do this, however. Although he defines the Archaic in California and bases this on economic, social, and religious features (Meighan 1959:301-3), he also notes how Western archaeologists have avoided using the term "Archaic." Two reasons are given for this avoidance: "a desire to avoid confusing western cultures with those generally called Archaic in the East," and "the temporal implications of the word 'Archaic'" (Meighan 1959:289). The Archaic, as a lifeway, persists in California until contact. This did not occur in the East.

In the Ozarks, Baerreis (1959:270) defines the Archaic citing Ford and Willey (1941) as the "Archaic stage—one represented by cultures with a hunting and gathering economy and lacking horticulture." Despite the evidence that horticulture in the Ozark "Bluff-Dweller" culture may antedate the appearance of ceramics, the ". . . absence of ceramics and other traits characteristic of later periods may still be the best criterion for the identification of an Archaic period" (Baerreis 1959:271). This throwback to negative traits at this time was disheartening.

Fowler (1959) demonstrates that there was still some hope in broadening our perspective in defining the Archaic. He saw that the Archaic was being employed in two major ways; the first, "as a time period in a local sequence" and the second "as a cultural stage in general preceding the development of agriculture and settled communities" (Fowler 1959:257). Fowler (1959:257) defines it primarily on adaptation made by early inhabitants to the different ecological settings of the post-glacial period:

- 1) cultures adapted in utilizing local flora and fauna and strongly oriented toward gathering as a subsistence pattern.
- 2) wandering over restricted areas utilizing the various resources.
- 3) in the eastern United States, often having tool assemblages that include chopping tools suitable for woodland existence.

Mayer-Oakes (1960:584) defined a "Plains Archaic" with both historical and developmental aspects. He saw the Archaic on the Plains and Prairies as "an historical continuum, comprising a tradition of basic hunting-gathering economy expressed materially in a restricted range of projectile-point styles and associated, though poorly-known, tools" (Mayer-Oakes 1960:584). The Eastern Archaic was seen as the base for other later Archaic manifestations as they occurred to the west.

Haag, who in 1942 had expressed certain reservations regarding the concept and the assignment of complexes to the Archaic, again voiced his concern. "Everywhere the Archaic is easy to recognize, but quite difficult to define in acceptable terms". . . "No single definition of Archaic satisfies local conditions throughout the world of the Americas. . ." (Haag 1961:318-9). Haag did not feel that the Archaic should be applied over a continent-wide area as many North American archaeologists were doing. He preferred to restrict its use to local sequences. "For simplicity and only in its local application, we will consider the Archaic as a single tradition characterized by polished stone artifacts... and other chipped stone implements, many bone and shell ornaments and implements, stone boiling, and dog and human burials" (Haag 1961:319). His concern with restricting free-wheeling definitions of the Archaic did not influence many others, however.

In 1964 several papers appeared in a text edited by Jennings and Norbeck. The papers were concerned with the prehistory of North America, each of them directed toward a major geographic/ cultural area. The Archaic was discussed in each report. Griffin (1964:225) noted that in the Northeastern Woodlands the Archaic complexes represented a variety of hunting, gathering, collecting and fishing

activities over ". . . a long period of gradual cultural change from the initial hunting cultures to the Woodland groups, who had a more stable economic basis and had become more sedentary." He was well aware of environmental factors as they influenced the diversity of Archaic cultural development. For the Southeastern United States Sears (1964:260) makes about the same statement as had Griffin. He saw the Archaic as characterized by a series of diagnostic artifacts representative of a hunting-gathering economy in essentially similar ecological situations. Wedel (1964:199), in discussing the great Plains, viewed the Archaic as being defined on the basis of subsistence techniques and projectile points that had an apparent affinity with the Eastern United States. Reed (1964:176) described the Archaic in technological terms in his paper on the Greater Southwest: "We may safely assume that the cultural inventory of the Archaic people ...and even their fairly remote ancestors, comprised several virtually worldwide items: the throwing spear and its throwing stick or atlatl, domestic dogs, implements of bone and wood and chipped stone, utensils of bark and wood and basketry." Collins (1964:88) noted simply that Archaic point types could be found on the Arctic coast. In the Desert West, Jennings (1964:152-3) states that the term Archaic "... must be understood as a general one, implying not an unvarying complex of archaeological traits or a period of time but a culture stage wherein wide exploitation of available species is a diagnostic attribute." The successful hunter-gatherer adaptation to a special environment is the key to comprehending the Archaic.

As seen in this review of a major body of literature represented by Jennings and Norbeck, the concept of the Archaic is used as more or less given. The writers all used the term, albeit with their own qualifications. The point is that it was an accepted term and it was being utilized by nearly all of the archaeologists in the field at this time. It appears, however, that the manner and mode of subsistence exploitation had become the key consideration regarding the Archaic.

In Gordon Willey's "An Introduction to American Archaeology: Volume I" (1966), the Archaic is not defined solely as a single, continent-wide cultural development. This is in contrast to the position he and Phillips had advocated in their 1958 work. He views the forest environment as the fundamental milieu of the Archaic consisting of the Eastern Woodland Tradition, the California Coast and Valley Tradition, the Boreal Archaic Tradition, and the Eskimo and Denetasiro Tradition (Willey 1966:477). These traditions together represent what he terms the "Full Archaic Stage."

Technology appears to be a prime concern in delineating his updated Archaic stage construct. He sees the Archaic as being characterized by certain technological objects such as "large and broad-bladed dart points and ground-and polished-stone tools and ornaments. . ." that ". . . reflect a variety of regional adaptations for the quest for food" (Willey 1966:247, 60), were based on a subsistence core of an adaptation to hunting, fishing, and collecting. Through this adaptation Archaic cultures varied regionally, and the pressures of the environment were reflected in this variation. "Yet an examination of trait lists, from site component to site component and from phase to phase, shows a high degree of similarity" (Willey 1966:265). This technological similarity allowed him to establish the Archaic as a stage, while through the regional variations he was able to define traditions.

Fitting's "The Archaeology of Michigan" (1970), presents a compromise outlook on the Archaic. His definitions of the Archaic focus on time, subsistence pattern, technology or combinations of these factors (Fitting 1970:64ff.). He is, in fact, concerned with periods, developmental stages and economically based patterns or lifeways. This eclectic approach reflects few biases and allows for a maximization of the available data and their interpretation.

Wright (1972) and Fitzhugh (1971) both point out problems in the classificatory schemes for the Archaic in the Northeast. While Wright provides general trends in terms of "traditions," Fitzhugh advocates a broad approach of "cultural interpretation." Avoiding the use of a developmental model, Fitzhugh instead correlates environmental variation with local cultural variation, a praiseworthy effort. Even so, like many other archaeologists, his unfettered application of the ill-defined term "culture" in reference to various Archaic complexes is puzzling and contradictory (cf. Fitzhugh 1972; Ritchie 1969; Ritchie and Funk 1973; and others).

Ritchie, whose work initiated this discussion on the Archaic, now returns with Robert E. Funk to illustrate what has occurred in the development and evolution of this concept over time. Although they find his 1944 definition as being essentially unchanged in the Northeast today, they prefer ". . . to stress the notion of the Archaic as a relatively simple stage of economic development, nonagricultural and nonceramic, based on hunting, fishing, the gathering of wild plant foods, and sometime

shellfish" (Ritchie and Funk 1973:37). Ritchie's once strong position concerning traits and trait lists is now changed. "Specific traits or trait-complexes are in themselves unsatisfactory criteria of the Archaic, except within restricted time periods and geographic areas" (Ritchie and Funk 1973:37). Finally, they note and recognize the application of processual or systems approaches to the problem of interpretation. "Archaic settlement patterns, social organizations, and other aspects of culture were functionally interlocked with the economic and technological aspects, and indeed were largely determined by them" (Ritchie and Funk 1973:37).

Ford (1974) discussed the Archaic employing traditions, with strong emphasis on environmental factors as developmental determinants. Dragoo (1976) follows essentially the same scheme, although he does term the Archaic a "period."

Jennings (1974:128) states that the Archaic is a stage and can probably best be understood as "a fundamental lifeway, not geared to any ecosystem. Through this approach, regional differences are reduced in importance with the historical implications dominant" (Jennings 1974:129). Regional differences or variations are still recognized; however, he does not think that this takes anything away from using a "stage" designation. He says, "certainly the stage must be defined interpretively, because the artifact assemblages vary so widely that a single definition, on the basis of detailed artifact assemblages, cannot be universally applied" (Jennings 1975:128). This regional variation is explained as resulting from ecological or subsistence concerns and population pressures resulting in local cultural exchange, i.e., diffusion. Generally, Jennings contends that Caldwell's (1958), economically based patterns or lifeways is the best organizing principle for the Archaic (1974:129).

The historical-developmental stage classification is applied to Archaic material from the Hudson Valley (Funk 1976). "Each stage also implies a period of time ...and has its own developmental subdivisions... on a lower hierarchical level, traditions, phases, or complexes are subsumed under stages within defined temporal and spatial limits" (Funk 1976:3). The pitfalls and caveats in the application of these various classificatory designations are outlined. There is also an effort made to correlate culture change in order to formulate explanatory hypotheses regarding the appearance of various archaeological expressions.

In 1974, a symposium on Moorehead and Maritime Archaic problems in Northeastern North America was held at the Smithsonian Institution. It resulted in a volume of papers published in *Arctic Anthropology*, edited by William W. Fitzhugh (1975). By and large, all of the papers reflect similar positions regarding the use and meaning of the term Archaic. On the whole, Ritchie's influence is pervasive although a redirection is apparent. Throughout, the differences in views expressed center around whether or not the Archaic classification should be applied to expansive cultural traditions, to adaptation types, or to restricted regional technological criterion (Fitzhugh 1975:5). There is no clear consensus.

Similarly, another summary volume (Newman and Salwen 1977) illustrates much of the same sentiments and differences as the one mentioned previously. In the chapter entitled "The Archaic," only Kinsey's (1977) article discusses classificatory details and positions, the others being concerned primarily with specific regions, sequences and hypotheses. Even so, his position does not vary from those expressed in the Smithsonian Symposium (Fitzhugh 1975).

Given the vast amount of archaeological data accumulated over the past two decades and the concomitant recognition of complex archaeological variation from region to region and through time, it is clear that the concept or perception of the Archaic requires reappraisal and refinement.

In this brief history, the Archaic has been defined or conceptualized in several ways. Whether these definitions are constructed at the level of trait lists and typological considerations or at the broader, more generalized period or stage level, problems exist. Initially, whatever the measures employed, there are considerable difficulties in finding or isolating criteria that hold for all areas. This occurs not only at broad geographic ranges, e.g., North America, but also regionally, e.g., the Northeast. Also, as Willey and Phillips (1958:104 ff.) have pointed out, there is little congruency among these various classifications and definitions. Developmental or evolutionary stage classification and chronological classifications, for example, do not function hand-in-hand, and often are quite different from one another.

Trait lists and typological considerations have always been problematical, so much so that the criteria established for the Archaic have tended to be negative rather than positive occurring traits. Here the most commonly held premise is that the Archaic is preceramic and pre-agricultural. However, there are few temporal or other correlations related to the first appearance of ceramics and agriculture in, for example, North America. In the Eastern Woodlands ceramics predate any evidence of cultigens (Ritchie

and Funk 1973; Sears 1964). In areas of the Great Southwest the reverse is true (Reed 1964). Wedel (1964) notes that the initial appearance of pottery and the cultivation of crops on the Great Plains is, in general, simultaneous. However, Shoshone occupations in the northwestern Plains exhibit pottery without domesticated plants and agriculture in attendance (Frison 1971). Clearly, to employ these two negative traits as markers for the Archaic is both temporally and spatially contradictory.

It is also instructive to note that often when ceramics first appear in an area or region, there is little conclusive evidence that other aspects of the archaeological culture or lifeway are affected (cf. Willey and Phillips 1958:104 ff.; Cleland 1976). The same can be said about other single items or traits, including levels of lithic technology.

Definitions of the Archaic formulated in accordance with trait lists (cf. Ritchie 1944, 1969) are also problematical. Here the difficulty lies in overextending or over-projecting a list of traits that had initially been isolated and compiled in a restricted locale or region. The assumption is that somehow all Archaic populations should look alike, or present rather specific technological or material culture agreement. It did not take long for archaeologists to find this to be a false assumption. This eventually led to the reliance on negative rather than positive traits in defining the Archaic. Sears' (1948) work, mentioned previously, demonstrated another problem with utilizing trait lists as definitional entities. Whatever the case, the application of single or multiple, negative or positive trait criterion to provide definitional parameters for the Archaic has been less than successful.

From the preceding discussion a number of questions are raised. In defining or conceptualizing the Archaic should the definition or concept be a restrictive one, i.e., pertaining to, and specific for, particular locales, regions, or assemblages, or should it be a broad, inclusive one, essentially atemporal and geographically unbounded, with generalized technological features, e.g., the Archaic Stage? Should the definition and concept be based on either time, technology, economic systems, etc., or on all of these? Should prehistorians employ one or several definitions depending upon the unit(s) under study? What is the efficacy and validity of the present definitions and concepts? Which bases of these are more or less appropriate than others; which are most useful or useless? These are not new questions, nor all that can be asked. Many of these, plus others, have been asked by students of prehistory for years. Neither are there new nor even easy answers. Nevertheless, in order to facilitate communication among prehistorians and more importantly, to provide for the building of models directed toward explanation, some explicit statement regarding the Archaic must be forthcoming.

Following Caldwell (1958), and especially Cleland (1976), it is maintained here that the adaptive strategies of prehistoric populations are the central focus in proposing a viable definition or conception of the Archaic. In order to provide full understanding of this point of view, a number of assumptions are made explicit. One is that culture is the agent with which human populations adapt to their environment (cf. White 1959, 1975; Binford 1965; Sanders and Price 1968). A second assumption is that culture is patterned and that differences that are perceived between and among cultures or archaeological cultures (Childe 1947), as is the case here, are manifestations of distinctive adaptive strategies and are recognized as such (Cleland 1976). In prehistory, these patterned differences are exemplified in the archaeological assemblages. Finally, that environmental differences, both spatial and temporal, exist. Given these basic assumptions, it follows that in differing environments, roughly contemporaneous, patterned archaeological assemblages will contrast, demonstrating the development of areally or regionally specific adaptive strategies.

In comparing and contrasting archaeological assemblages, equivalency must be maintained. For purposes of the definition to be formulated, the adaptive strategies and their constituent elements are the comparable units. Cleland (1966, 1976) has proposed a model for prehistoric adaptive strategies that I believe is workable in the context of this paper. In his model adaptive strategies are placed along a continuum where two types of adaptations are polar extremes. At one end are "focal" adaptations while at the other end are "diffuse."

As an ideal type, focal adaptations are centered on one or a few similar economic resources. These adaptations are highly specialized, conservative and provide stability, although their rigidity and resistance to change is regarded by Cleland as a disadvantage. Focal adaptive strategies are characteristic of hunters, herders and farming economies, e.g., hunters of migratory herd animals, pastoralists, fish harvesters and agriculturists.

Diffuse adaptive strategies, in contrast to focal ones, occur where resources are diverse and scattered. Populations are denied the opportunity to exploit one or a few resources, since no resource is abundant or

reliable enough to allow for economic security. Instead, these populations direct their exploitive energies at a multitude of resources, in fact, maximizing the use of these resources. The economy is dependent on scheduling (cf. Flannery 1969), the systematic exploitation of seasonally available resources. This adaptive strategy is flexible and highly adaptive. Nevertheless, populations with diffuse economies are hard-pressed to accumulate surpluses and must continually maintain a scheduling procedure. Diffuse adaptive strategies are characteristic of hunters-gatherers, as opposed to focal hunters or focal gatherers.

In either of these adaptive strategies, the key to their understanding is the dependency upon a few or many resources, not the specific resources used, nor the environmental context of these resources. It is possible for the environment to change, grossly speaking, and the adaptation to remain the same. This could occur if the change did not affect the resources to the point that pressure is placed on the human populations involved.

Accepting adaptive strategies as the central point for defining the Archaic, other aspects of this or other prehistoric manifestations fall into place. Initially, adaptive strategies rely primarily or centrally upon the technomic-economic subsystem of culture (cf. Binford 1962; Cleland 1976). Therefore, techno economic subassemblages, tool kits or stone-bone-wood implements, i.e., the technological classes of artifacts, would be a major part of and included under this heading. Any other material culture traits identified with the technomic-economic subsystem would also be taken into account. Secondly, adaptive strategies function in the context of the environment. Accordingly, environmental conditions and parameters are incorporated. Thirdly, temporal considerations are not excluded since you can identify and determine the existence and persistence of an adaptive strategy in time. It is pointed out that the three criteria listed above have either singly or in unison functioned as definitional characteristics for the Archaic. It is clear, therefore, that in employing an adaptive strategy-based definition, a number of previously separate and disparate entities can be synthesized. In addition, other aspects of the archaeological culture in question can be included. One of these, community patterns (cf. Beardsley et al., 1956), can also be isolated, identified and then placed within the framework of the adaptive strategy definition. For example, for populations practicing diffuse adaptive strategies two community patterns are regarded as appropriate, i.e., restricted wandering and central-based wandering. Others may be considered. It is also possible to add even greater resolution to the definition locally or regionally. This could occur following the identification and explication of settlement patterns and settlement systems. Here could be included such data as site or settlement types (cf. Ritchie and Funk 1973), and information describing the functional interrelationships of these sites (cf. Winters 1969).

Archaic populations in North America were hunters-gatherers. This mode of subsistence is fundamentally different from and contrasts with earlier hunters or big-game hunters, and later horticulturalists or agriculturists. This, plus other information previously presented allows for the formulation of a definition for the Archaic; i.e., the Archaic is defined as an adaptation characterized by a diffuse adaptive strategy with all of its ramifications, an associated technology, a central-based wandering or restricted wandering community pattern and its associated settlement pattern/system. This definition can be applied generally or specifically; by it one could describe the Archaic for North America or the Northeast. It is especially useful in isolating contemporaneous regionally or locally restricted Archaic adaptations. For example, the Maritime Archaic and the Laurentian Archaic (Ritchie 1969, 1971; Fitzhugh 1975; Tuck 1977) exhibit differences based upon the details of adaptive strategies. Nonetheless, both were diffuse adaptations; hence, they may be defined as Archaic. The environments were disparate providing different food resources. This is then reflected in differences in the techno-economic subsystem, community patterns and settlement system/patterns. Following the definition of the Archaic presented here allows for the classification of each expression within the Archaic, but does not obscure the differences apparent in other cultural subsystems. The definition is flexible permitting accommodations to be made for variation in the adaptive strategies, and the recognition of this variation in a systematic manner.

In addition, the definition is capable of accommodating temporal and evolutionary change that would occur. The Archaic in the Northeast, for example, spans a time range of some 6-7,000 years (c. 10-9,000 B.P. to c. 3,000 B.P.). Little is presently known of the early periods (c. 10,000-6,000 B.P.). It seems reasonable, however, that throughout the Archaic, a diffuse adaptive strategy was present. Most likely this adaptive strategy changed in form over time so that there was an increase in its complexity and efficiency, and in the number of resources available and exploited. Nonetheless, the strategy was still diffuse. Present definitions of the Archaic are not flexible enough to incorporate change over large

expanses of time. This is counter-productive if prehistorians are to accomplish the stated goal of explanation. Fitzhugh (1975:5) has noted ". . . it is an axiom that archaeological classifications must be in flux, reflecting the state of the art, the information and the intent." I believe the definition proposed accurately meets this axiom. Employing adaptive strategies as a central point in such a definition provides for maximum flexibility. Also, in its general and specific application, it satisfies both lumpers and splitters in the discipline. Finally, in contrast to the frequently used historical-developmental evolutionary stages which assume developmental or cultural regularities, the definition presented here take^s into account the evolutionary irregularities. These, in large part, are or should be studied in order to fully understand culture variation and change.

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AN APPEAL ON OUR SILVER ANNIVERSARY

This is the 75th number in the *Bulletin* series, which means, since three numbers are published annually, that it completes the 25th year of publication of our state journal. Since I have not done any research into the publishing history of state society supported periodicals, I feel free to say that the *Bulletin* record of 25 years of issuance without interruption or hiatus is unique in the United States. And if it isn't, *The Bulletin* is one of the two or three journals that can boast such a record. It is a record of more than simple regularity. In nearly every way that publication of this kind, with a limited budget, can improve it has improved and most importantly in its content. Whereas the early editors, Father Grassman and Charles Knoll had nothing to print except notices, editorials and chit-chat, we now put out about 100 very large pages per year of very substantial reporting and research. By being ready to publish it, *The Bulletin* has energized archaeology in New York to a high pitch of productivity.

But will we be able to continue?

This issue had been planned for over a year. The appropriate silver anniversary issue would be, as the editor conceived it, a fat one; it would be about the Archaic to which New York has contributed so much; it would include a piece by William A. Ritchie, now the acknowledged "inventor" of the Archaic lifeway concept, and one by Robert Funk, Ritchie's successor in the office of State Archaeologist and his aptest disciple; it should try for some new departures in thinking about the Archaic (the lead-off propositions and Trubowitz's paper) and it should include some entirely new field information, for which credit Tompkins and Dumont. It was to be a tasty dish, and so it turned out. But -

While the editor had the proofs in hand for correction he attended the NYSAA annual meeting in Rochester. Here he learned, from treasurer Carolyn Weatherwax that the Association is not as well off as he had thought. We can pay for the Silver Anniversary issue but there will not be enough left in the bank to insure that three issues can be possible during the 1979-80 publishing year, that is, No. 76 for July, 1979, No. 77 for November, 1979 and No. 78 for March, 1980. It seems that there has been a cyclic (we hope) decrease in membership over the past two years coinciding with the all-too-well-known machinations of inflation.

Our publication record is genuinely threatened. A year ago that record was in jeopardy because of the lack of textual material. As soon as this condition became known to the membership the contributions began to pour in. We are now in the position of having that material in house, without the funds to print it. At least print it on schedule. It could be two years before the next annual volume of three numbers sees the light.

The simple solution is money, from the members of the Association, given for no better reason than that they want the *Bulletin* to continue to do its appointed work. There is no time to go through the prolix process of raising the dues and waiting for the proceeds to reach the treasurer. The need is immediate. So the editor is asking that you raise your own dues. There is nowhere in this price-mad land where you can buy what you get in the *Bulletin* for what you pay the Association in dues. You are getting the *Bulletin* now at printing cost. The Silver Anniversary issue will cost about \$5 a copy. The editor had hoped that it would be a bonus, as was the Ritchie festschrift; no way, I am sorry to say.

By my estimation the need is for \$1800 to \$2000. A \$2 bill, or two ones, from every member of the Association would do it. But those who can should make \$5, the generous should make it \$10 and the well-heeled might find it in their hearts to go up to-you name it. (The editor will not only be contributing, he will forego his annual recompense for postage and telephone calls.)

Think of it this way: by contributing now you will be forestalling perhaps for two years, a certain increase in dues. It is either that or cut back, or eliminate the *Bulletin*. Printing costs must be tied to the cost of beef, or so it seems from here.

This appeal appears at the tail end of this issue as a psychological ploy. To have printed it at the head of the issue might have spoiled the reader's enjoyment. But now that the reader has seen the product he ought to feel that it is worth the price.

The Treasurer's address is:

Carolyn Weatherwax
1 Fifth Ave.
Saratoga Springs, N.Y. 12866

Contributions now on inventory are as follows; (you will see them when the money is in the till).

Brannan and Robinson: "The Silent Signal System"

Browning-Hoffman: "Can Incised Pottery Give Clues to Prehistoric Basketry?"

Brumbach: "Early Ceramics and Ceramic Technology in the Upper Hudson Valley"

Cottrell: "Analysis of Faunal Material at the Pine Site."

Gwynne: "Prehistoric Archaeology at Mt. Sinai Harbor, Suffolk County, New York"

LaFrance: "Indian Hill Prehistoric Site"

McDowell-Loudan: "The Krauklis Site" Ritchie: in work, Vergennes II.

Starna and Guterrez: "Excavations at the Street Site, Otsego County, N.Y.: A Preliminary Report"

REQUEST

If you know of the existence of any wooden ladles and/or bowls carved by Iroquois Indians, either archeological or ethnological, in good condition and with good provenience, I would appreciate receiving information on them for a study I am preparing based on the collections in the Rochester Museum.

Betty C. Prisch, Associate Curator of Anthropology
Rochester Museum & Science Center
P. O. Box 1480
Rochester, New York 14603