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a TYPOLOGY
and NOMENCLATURE
for NEW YORK
PROJECTILE POINTS

BY
WILLIAM A. RITCHIE
*State Archeologist
New York State Museum
and Science Service*

NEW YORK STATE MUSEUM
AND SCIENCE SERVICE

BULLETIN NUMBER 384

*The University of the State of New York
The State Education Department*

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April 1961

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A Typology and Nomenclature for New York Projectile Points

WILLIAM A. RITCHIE
State Archeologist

NEW YORK STATE MUSEUM AND SCIENCE SERVICE

Introduction

LONG AND INTIMATE FAMILIARITY with the projectile points of the New York State area led the writer, quite some time ago, to a recognition of about 18 style categories, most of which could be related through site excavations to particular culture complexes and relative time periods. Subsequently, with radiocarbon dating, this chronological sequence was not only sustained but given an approximate actual value. Consequently, projectile point succession, as currently known, spans a period of about 5,000 years before the present.

Until rather recently, the author has discussed these projectile points in site reports and elsewhere in such general descriptive terms as broad, heavy, side-notched points, or narrow-bladed stemmed points, while at the same time exhibiting a tendency to refer to the very same points as Brewerton or Laurentian side-notched points, or Lamoka stemmed points, in accordance with the cultural associations he has been able to demonstrate through excavations.

The need for some convenient classification and nomenclature to replace this awkward phraseology has grown more insistent with the progress of research. The utility of a ceramic typology for the same area¹ encouraged the effort, which has currently attained to the dimensions indicated by the present publication. It seems safe to predict, especially in view of the still untyped points discussed below, that continuing research within the area will lead to the addition of new types, and, with some probability, to certain revisions of the series herein defined.

As the term is employed in this study, projectile points include: arrowpoints; dartpoints, or the armament of javelins or short throwing spears, hurled by hand either directly or with the aid of a dart thrower or atlatl; and spearpoints, or the stabbing heads affixed to relatively

¹ Ritchie and MacNeish, 1949; MacNeish, 1952.

long-handled thrusting weapons, not designed to leave the hand. Since in many, perhaps most, instances, the function cannot with certainty be deduced from the remaining part, the writer's attempts at such identification, where hazarded, are equivocal.

Furthermore, certain of the objects herein described (as in the Fulton Turkey Tail type) may have been primarily or interchangeably used as specialized cutting tools or knives. To the best of the author's knowledge and intent, however, only projectile point forms are included in this analysis.

The scope, as suggested by the title, is somewhat misleading, inasmuch as none of the point types herein defined is restricted in range to the geographical limits of the State of New York. In order, however, to achieve a reasonable delimitation to this initial effort for the area, it was decided to include only such point types as were known to have representation within the State's boundaries. It is hoped that other workers in the Northeast will add to the picture with similar analyses of point groups better represented and culturally known in their respective regions, so that ultimately a collation for the entire Northeast can be achieved.

In this typological study the author has been guided by the work of Rouse (1939, 1960), Krieger (1944) and others. The presentation of the data follows, in general, that of Scully (1951), Suhm, Krieger and Jelks (1954), Kneberg (1956) and Bell (1958). The methodology employed is that recommended by Krieger (1944, pp. 279-282) and may be outlined as follows:

1. The material was first sorted into major groups of generally similar points.

2. This sorting, or analysis, was governed by variations in the form, size, proportions, chipping characteristics etc., of such morphological features of the specimens as the blade, stem, notching, base etc., variously referred to by Rouse and Krieger, as "modes" or "attributes." (See figure 1.)

3. These formal variations in the inherent morphological features, modes or attributes became the basis for the tentative classification of the points into types.

4. The next step was the testing of the probable validity of the arbitrarily-constituted type by identifying it in collections from various sites or geographical areas. If it could be shown to persist as an entity with cultural, spatial and/or temporal (i.e., historical) associations, it was felt to be acceptable for the final step in the classification.²

² A total of 10,800 points from eastern, central and western New York were typed in this phase of the work in which the author was assisted by James H. Zell.

5. This step consisted in giving a name and description to the type group.

The description allowed for the observed range of variation in the modes, arising most likely from the vagaries encountered by individual makers in the execution, from a refractory material, of an ideal model or norm. It also provided for sufficient latitude or flexibility, so that minor variations in additional material of the same kind could be encompassed.

Finally, a nomenclature was provided, since the writer agrees with Krieger (1944, pp. 275, 277-279) that for maximum convenience, both in the construction and use of the typology, names, rather than numbers or letters in a classificatory system, should be used. The latter method of designation, usually derived from a geometric analysis and expressed in formulistic terminology, he finds awkward and difficult to remember.

Following Krieger's recommendation, he has chosen a locative nomenclature taken from the site or geographical locale where the type was first found or recognized, occurred most plentifully or was best culturally attributed. Linguistic, ethnic and cultural names (except where the latter is called from a type site; e.g., Lamoka) were avoided.

According to established usage, his descriptions include significant data concerning the age and cultural affiliations, distribution, literary references etc. Any previously employed terminology for the group is included in the latter.

Every effort has been made to avoid attaching new labels to already described point types. Wherever it could be shown, generally by submitting samples of specimens to the person responsible, that the group in question had already been named, the prevailing designation and definition or description (where available) were used explicitly and duly credited.³ Additional data from the New York sample have been clearly incorporated.

Certain fundamental assumptions, which the author shares with his colleagues whose methodology, in general, he has applied, underlie his work on this typology. These may succinctly be stated as follows:

The remarkable stylistic constancy in the modes or attributes, which undeniably can be demonstrated within a series of points collected over a wide geographical range or from numerous components of the same culture complex, indicates the reality of a stylistic model in the

³ The writer gratefully acknowledges cooperation of this kind from the following persons: Lewis R. Binford, Don W. Dragoo, W. Fred Kinsey III, William J. Mayer-Oakes and John Witthoft. For the loan of specimens used in this study, the writer is also indebted to Edward B. Christman, Thomas E. Daniels, R. Arthur Johnson, William J. Kirby, Museum of Anthropology of the University of Michigan, Rochester Museum of Arts and Sciences, Carl S. Sundler and James H. Zell.

minds of the prehistoric makers. Clearly they were working not from caprice but from a "cultural compulsive" which impelled them to conform to current fashions or established norms for their particular area and period. The surviving material product of this long extinct cultural concept can be recognized by the typologist and analyzed by means of definite morphological features of form, proportions etc., into various attributes or modes, as already outlined. Although these attributes are arbitrarily selected to conform to the purposes of the investigator, it is believed that the end product of the analysis approximates in important formal respects the ideal or norm of the maker.

It is further assumed that the typological configurations reflect standardized behavior and the fixation of motor habits, through traditional or culturally approved ways of doing things in the aboriginal society concerned. The strong conservatism, widely remarked for primitive societies, seems to be well illustrated in the marked degree of uniformity found within each of our point type categories (Boas, 1927, p. 145ff.; Redfield, 1953, pp. 14, 120).

Finally, it should be made explicit that in these statements regarding the "recapture" of ancient cultural concepts, the author is fully aware that, as Rouse and others have pointed out, "Culture does not consist of artifacts. The latter are merely the results of culturally conditioned behavior performed by the artisan. Types and modes express the culture which conditions the artisan's behavior." (Rouse, 1939, p. 15.)

In more philosophical phraseology, "All records show only the apparent forms of the truly existing inner reality." (Wilhelm Dilthey, quoted in Kluback, 1956, p. 60.)

As has been stated on page 6, the probable validity of the typology derived in the present study from the combination of a background of long familiarity with the materials and the specific analysis of several thousand specimens, was tested in the fourth step of the procedure by application to 10,800 additional projectile points. These formed part of two New York State Museum collections and one private collection from surface sites which were selected to represent an equal number of areas in the State. They came, respectively, from the middle regions of the Hudson River Valley (Greene and Rensselaer Counties), the Seneca River Valley (Onondaga County), and the Genesee River Valley (Livingston County).⁴

⁴ This investigation will be expanded to include more large collections, both public and private, from the same and other areas. In addition to typological data, significant distributional information is being accumulated for expanded treatment in a subsequent report.

The analysis of this large sample resulted in a remainder of 917 points (.084 percent of the total) which could not with certainty be attributed to the 27 types herein described. Some of the difficulty in typing the material arose from the lack, in certain specimens, of "crisp" diagnostic criteria or from the presence, in others, of typologically interlinking features. There were also a fair number of points too crudely made to render determinate the essential form and a much smaller number which showed obscuring secondary alterations.

From this untyped residue of 917 points can be extracted at least the three following small groups:

1. Bifurcated base points totaling 48 (plate 34)
2. A long, narrow, triangular form, with 35 examples (plate 35)
3. A broad-bladed, stemmed form, represented by 34 points (plate 36). Some of these resemble Snook Kill points and may be variants of that type. (See plate 27.)

The bifurcated forms, on the basis of scanty existing data, apparently cannot be unified by their prominent attribute of stem bifurcation. On the other hand, when the samples can be expanded and cultural and temporal data supplied, the triangular and broad, stemmed forms may become candidates for additional types.

There are left 800 points, from which can be isolated six or seven small lots. Each consists of a dozen or less points in which the similarity is sufficient to hint at type categories from future research.

In accounting for the others, it is likely, especially where the material as well as the form is exotic to the area, that an indeterminate number may be erratics from undescribed point groups of distant proveniences. (See plate 33.) Among the rest are a fair number of specimens that may plausibly be regarded as aberrant objects resulting from accidents of the chipping process, perhaps from technical difficulties with the material; from the artisan's caprice; or, perhaps, even from his experimental design, unique and unadopted, since the element of inventiveness must be admitted to account originally for some unknown portion of all point styles.

EXPLANATION

In the following descriptions the projectile point types are arranged alphabetically, in accord with the usual procedure. A single very typical specimen ("holotype") is reproduced natural size from a carefully made drawing showing details of the chipping characteristics, with descriptive text for each group. Following this, one or more photographic assemblages depicting the range in size and form of the type, are given, with data on provenience, material and ownership.

To aid the general student in identifying his own material, the point types are also listed below under two categories: (1) by major period provenience, table 1; and (2) by their principal morphological attribute characteristics, table 2. To more readily comprehend the latter, the standard terminology for projectile points is shown in the illustration, figure 1, on page 11.

Table 1
Major Period Provenience of Projectile Point Types

| GENERAL PERIODS | PROJECTILE POINT TYPES | GENERAL PERIODS | PROJECTILE POINT TYPES |
|-------------------------------|---------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------|
| Late Woodland | Madison Levanna | | Genesee Brewerton Eared-Triangle Brewerton Eared-Notched Normanskill |
| Middle Woodland | Jack's Reef Pentagonal Jack's Reef Corner-Notched Snyders | Middle Archaic | Brewerton Corner-Notched Brewerton Side-Notched Otter Creek Vosburg |
| Early Woodland | Adena Fulton Turkey Tail Meadowood | Early Archaic | Lamoka |
| | Steubenville Lanceolate (?) Steubenville Stemmed (?) Orient Fishtail | Paleo-Indian | Clovis |
| Transitional and Late Archaic | Susquehanna Broad Perkiomen Broad Rossville Bare Island Poplar Island (?) Snook Kill (?) | | |

Table 2
Point Types Grouped by Primary Morphological Feature

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Side-Notched Points Brewerton Side-Notched Brewerton Eared-Notched Fulton Turkey Tail Lamoka (in part) Meadowood Normanskill Otter Creek | Contracting Stemmed Points Adena Poplar Island Rossville Snook Kill |
| Corner-Notched Points Brewerton Corner-Notched Jack's Reef Corner-Notched Snyders Vosburg | Expanding Stemmed Points Orient Fishtail Perkiomen Broad Susquehanna Broad |
| Straight Stemmed Points Bare Island Genesee Lamoka (in part) Steubenville Stemmed | Stemless Points—Triangular or Lanceolate Brewerton Eared-Triangle Clovis Jack's Reef Pentagonal Levanna Madison Steubenville Lanceolate |

NEW YORK PROJECTILE POINTS

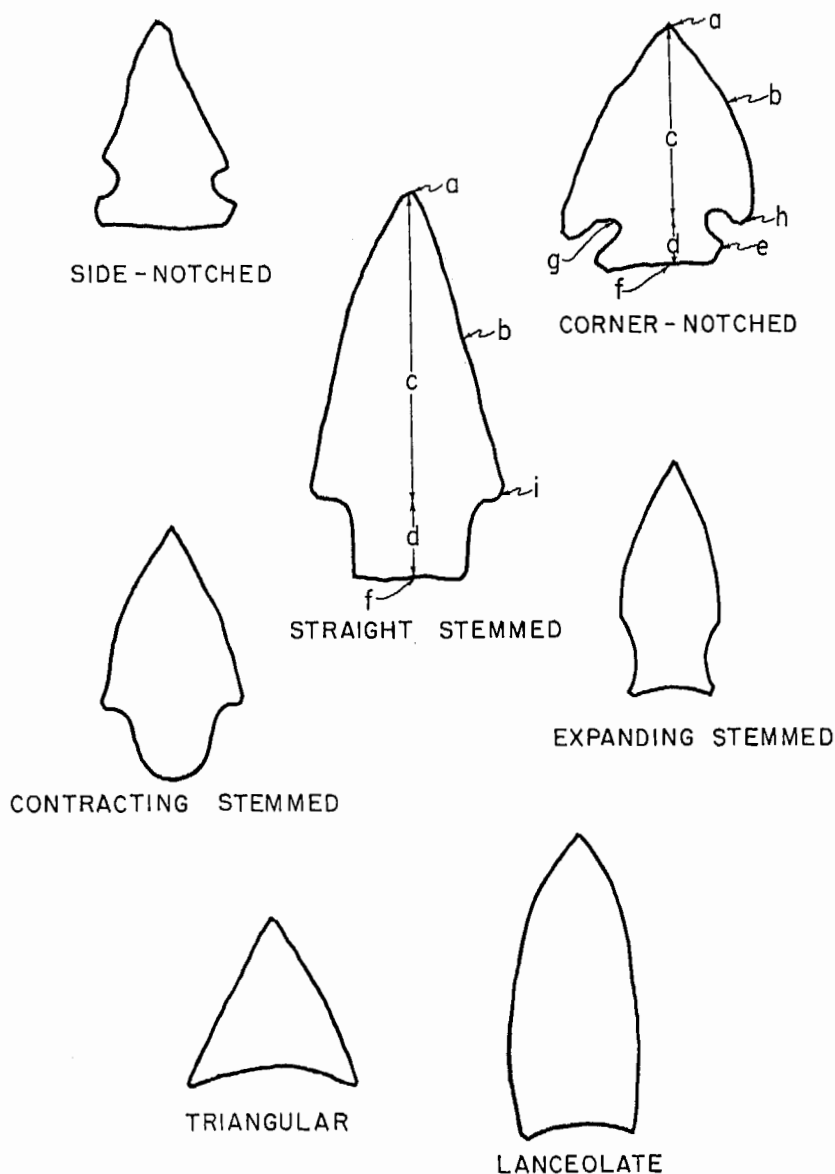


FIGURE 1—STANDARD PROJECTILE POINT TERMINOLOGY: a, point or tip; b, edge; c, blade or face; d, stem; e, tang; f, base; g, notch; h, barb; i, shoulder.

ADENA POINTS (plate 1)



General description: Large points with broad, lobate stems.

Size: According to Bell (1958, p. 4) most points of this type measure between 3 and 5 inches in length. In a sample of 50 from New York, the shortest was $1\frac{11}{16}$ inches, the longest 4 inches, with the majority falling between 2 and 3 inches. In thickness, the New York sample varied from $\frac{1}{4}$ to $\frac{7}{16}$ of an inch; nearly all, however, fell between $\frac{5}{16}$ and $\frac{3}{8}$ of an inch. Such points are generally considered dart points. Longer, probable spear points, also occur. (See e.g., Ritchie and Dragoo, 1960, plate 8, figure 6).

Proportions: For the most part, about two to two and one-half times as long as wide.

Shape: Blade generally ovoid in outline; some of the narrower specimens could be described as lanceolate; biconvex to nearly flat in cross section; edges excurvate. Shoulders weak to moderate in development, never barbed, sloping to approximately right angular in profile. Stem broad, long, contracted, lobate in outline, with convex, sometimes nearly pointed base. While stem grinding is reported for some Adena points, it is absent in the New York sample studied.

Age and cultural affiliations: This is the characteristic point style of the Adena culture, of Early Woodland times, radiocarbon dated between about 800 B.C. and A.D. 800. It is also a trait of the Middlesex complex in the Northeast, which is believed to have been derived in part from the Adena (Ritchie and Dragoo, 1959, pp. 43-50; 1960, p. 26ff.).

Kneberg says that "the type is also associated with the late Archaic culture in the Tennessee area, dating from about 1000 B.C. to the early centuries A.D." (Kneberg, 1956, p. 26.)

Distribution: "The Adena type is found chiefly in the upper Ohio River Valley, especially the states of Ohio, Kentucky, Indiana, West Virginia and Pennsylvania." (Bell, 1958, p. 4.) It has an uncertain peripheral distribution which includes Tennessee and New York.

NEW YORK PROJECTILE POINTS

References: Kneberg, 1956, pp. 26-27; Bell, 1958, pp. 4-5; Ritchie, 1958, pp. 100-102, where it is called a "lobate stemmed point"; Ritchie and Dragoo, 1960.

Remarks: In the upper Ohio Valley area Adena points are frequently made of Flint Ridge, Ohio chalcedony or of Harrison County, Indiana flint. Specimens made of these materials are also known from New York, but most New York examples are of regional flints—Onondaga, Oriskany, Helderberg, Normanskill, Deepkill, Fort Ann—or very rarely of quartz. These seem to be local copies, in readily available materials, but often on a somewhat smaller scale, of introduced Adena points.

BARE ISLAND POINTS (plates 2 and 3)

This description was prepared by W. Fred Kinsey III.



General description: Medium to large, finely flaked, symmetrical points, having slender isosceles triangular blades. The stem is straight with parallel sides and the base is also straight.

Size: They range from 1.2 inches to 3.8 inches long with the average length slightly over 2 inches. In cross section they are oval and relatively thick.

Proportions: Blade width is between $\frac{1}{2}$ and $\frac{1}{3}$ of the total length. A rather slender shape predominates, although extreme narrow-bladed examples are in the minority.

Shape: The blade exhibits considerable symmetry in the form of an isosceles triangle. Edges are generally slightly convex with the edges on the larger specimens tending to be straighter. Greatest convexity usually occurs at the middle of the blade. Tips are sharply pointed and are always on center with the stem although there is no distinct medial ridge. Points made of quartz are thicker than those fashioned from other lithic materials. Probably this is a function of the way quartz flakes, rather than a trait of cultural significance.

Shoulders are slightly rounded and tapered but not conspicuously so. On a few specimens the shoulders are quite sharply angled and well defined. An obtuse angle is formed between the blade and stem, but in some instances a right angle is present. There are intergrades between the Bare Island point and the Poplar Island point, but the rounded shoulder is conspicuous on the latter type. This is a distinguishing characteristic. The shoulder on the Bare Island point is more crisp.

The stem is always narrower than the blade. The long sides of the stem are parallel or nearly so forming a nearly perfect square or rectangle. The base is usually quite straight, but it is sometimes slightly convex. A few examples intergrade with a large corner-notched point form that has an expanded stem. There are often traces of grinding

along the stem edges and at the base. Corners approach right angles and on some specimens they are quite sharp.

Age and cultural affiliations: This is a distinctive point type found on numerous Archaic sites in the lower Susquehanna watershed. It is more abundant on the islands of the Susquehanna rather than the hilltop sites back from the river. Although not found as yet in any deeply stratified sites, it is the major point type in all levels at the Kent-Hally site on Bare Island. It is also abundant at the Fallen Tree site on the same island. The type is presumed to be part of a varied and complex Late Archaic. Locally, the author believes it is contemporaneous with steatite bowls.

Similarities between the Bare Island point and a component of the Accokeek Creek site on the lower Potomac River, south of Washington, D.C., are striking. It may be that the antecedent for this type lies in the Virginia and Carolina Piedmont and the Savannah River in Georgia.

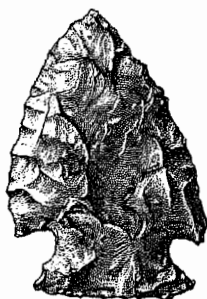
Distribution: The type is found in the lower Susquehanna Valley, particularly the river islands. It extends southward along Elk River in Maryland, the Chesapeake and the lower Potomac. East of the Susquehanna, it is found along the headwaters of the White Clay Creek and the Brandywine in Chester County. West of the Susquehanna, it is not common in the Adams and Franklin County sections of the Cumberland Valley. The writer believes the distribution is also spotty along the west and north branches of the Susquehanna.

[The distribution of these points extends across New Jersey into southern and eastern New York. They occur in some abundance on Staten Island and Long Island, and with diminishing frequency northward up the Hudson Valley, at least to Saratoga County. The Ctl. 1 site in Greene County provided a sample of 114. In the southern part of this range, quartz is the commonest material. Farther north flint predominates, although quartz and quartzite are still present. (See plate 3). W.A.R.]

References: Kinsey, 1959, p. 115, where they are called "straight-stemmed, Type A."

Remarks: At the Kent-Hally site nearly 50 percent of these points were made of quartz. Other locally available stones in order of preference are: siltstone, quartzite, rhyolite, argillite, and a very few of flint, gneiss and schist. No attempt was made to utilize the available flint and jasper sources. The reasons for this cultural preference are unknown.

BREWERTON CORNER-NOTCHED POINTS (plate 4)



General description: Broad, thick, corner-notched points, predominantly of medium size.

Size: Length range from about $\frac{15}{16}$ to $3\frac{1}{8}$ inches. Majority fall between $1\frac{1}{4}$ and $2\frac{1}{4}$ inches.

Thickness about $\frac{3}{16}$ to $\frac{3}{8}$ of an inch; majority about $\frac{5}{16}$ of an inch.

Proportions: These points are one and one-fourth to one and one-half times as long as wide. The larger examples are about twice as long as wide.

Shape: Blade trianguloid in outline, biconvex in cross section; edges slightly excurvate, less often straight, or rarely incurvate. Stem corner-notched with medium to large corner notches forming prominent barbs, and basally expanded. Base straight, slightly convex or rarely slightly concave. About two-thirds have the base ground smooth.

Age and cultural affiliations: This constitutes a minority point type in the Archaic Brewerton complex of Laurentian and in the Frontenac complex in New York. There is some evidence that it appeared later than the Brewerton Side-Notched type in the Brewerton complex. The Vosburg Point of the eastern New York manifestation of Laurentian differs from the Brewerton Corner-Notched type in its shorter stem, smaller notches and usually weaker barbs. The two forms overlap, however, and appear to be genetically related and generally contemporaneous.

Distribution: Primarily a central and western New York form. Present also in eastern New York with occasional examples as far south as central New Jersey. Similar points occur also as a minor and relatively late type on sites attributed to the Laurentian of the upper Ohio Valley (Dragoo, 1959, pp. 162, 176-180).

References: Ritchie, 1940, pp. 29, 48-49, 66, 88, where they are described as "corner-notched points." Subsequently the writer has referred to them as "broad corner-notched points."

Remarks: Usually made of local Onondaga gray flint and apparently in the same manner as the Brewerton Side-Notched form.

BREWERTON EARED-NOTCHED POINTS (plate 5)



General description: Generally broad, thick, weakly side-notched points, small to medium in size, characterized by a broad base with flanges which often project beyond the edges and, for the most part, have been carefully chipped into small and delicate prominences or "ears."

Size: The length range is from $\frac{3}{4}$ to $2\frac{1}{2}$ inches, the majority being between 1 and $1\frac{1}{2}$ inches long. Thickness $\frac{3}{16}$ to $\frac{5}{16}$ of an inch, with $\frac{1}{4}$ of an inch for most examples.

Proportions: About one and one-half to two times as long as wide.

Shape: Blade trianguloid or ovoid in outline, biconvex in cross section; edges prevailing excurvate, less frequently straight. Stem broad, with small side notches and pronounced lateral, carefully chipped "ears." Ears and base, the latter in most instances slightly concave, occasionally straight, are sharp, except in a very few examples where they are ground smooth.

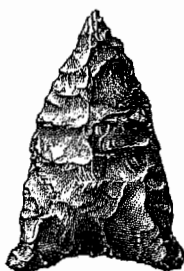
Age and cultural affiliations: A minority type in the Brewerton complex, where it constitutes 8 percent of the projectile point inventory at the Robinson site, but is barely represented at the nearby Oberlander No. 1 station. Present also as a minority form on Middle and Late Archaic period sites in eastern New York and southern New England.

Distribution: Central and eastern New York and southern New England, especially Massachusetts.

References: Ritchie, 1940, pp. 28, 66, where it is called the "eared notched point;" 1958, where it is referred to throughout as the "eared side-notched point."

Remarks: This point type was probably derived from the Brewerton Side-Notched type in upper Middle Archaic times. The material of the Brewerton series in central New York is Onondaga flint; of the eastern New York series, predominantly local flints.

BREWERTON EARED TRIANGLE POINTS (plate 6)



General description: Relatively thin, isosceles triangular points, small to medium in size, distinguished by small, delicately chipped "ears" on either side of the base.

Size: Only one site has produced a sizable sample of these points, the Robinson site at Brewerton, N.Y. As represented by the 60 such points at this site, the length range is from $\frac{7}{8}$ to $2\frac{1}{8}$ inches, the majority falling between $1\frac{1}{16}$ and $1\frac{1}{2}$ inches.

Proportions: About one and one-half to two times as long as wide.

Shape: Blade trianguloid or ovoid in outline, biconvex in cross section; edges prevailingly excurvate, occasionally straight. Stemless, base broad and slightly concave or infrequently straight. Very delicately chipped "ears" occur on either side of the base, which in some examples has been rubbed smooth.

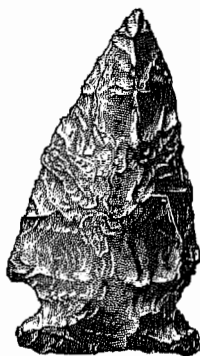
Age and cultural affiliations: Like the evidently related Brewerton Eared-Notched point, this is a minority type in the Brewerton complex, where it comprises only 5.38 percent of the total point series at the Robinson site, and is barely represented at the nearby Oberlander No. 1 site. It also occurs occasionally in eastern New York sites of the Laurentian tradition and in related sites of southern New England. The author regards it as a type of the upper Middle and Late Archaic horizons in these several areas.

Distribution: Central and eastern New York and southern New England, especially Massachusetts.

References: Ritchie, 1940, pp. 32, 67, where it is described as the "eared-triangular point."

Remarks: This type intergrades with the Brewerton Eared-Notched type and may well have developed from it. Most examples from the Brewerton sites are of local flints, carefully made by pressure flaking techniques.

BREWERTON SIDE-NOTCHED POINTS (plate 7)



General description: Broad, thick, side-notched points, predominantly of medium size.

Size: Length range from about $\frac{13}{16}$ to $3\frac{7}{8}$ inches, prevailing between $1\frac{1}{4}$ and $2\frac{1}{4}$ inches.

Thickness about $\frac{1}{4}$ to $\frac{1}{2}$ inch; $\frac{5}{16}$ to $\frac{3}{8}$ of an inch for the large majority.

Proportions: These points are one and one-fourth to one and one-half times as long as wide. The larger examples are about twice as long as wide.

Shape: Blade trianguloid in outline, biconvex in cross section; edges slightly excurvate, straight, or rarely incurvate; faintly serrated in rare instances. Stem side-notched (occasionally with dual notches) and basally expanded, sometimes to a pronounced degree, resulting in lateral projections or "ears." Base straight, slightly convex or less often mildly concave. About two-thirds of all specimens have the base ground smooth.

Age and cultural affiliations: This is the commonest point of all Archaic Laurentian complexes of New York.

Distribution: All of New York. Also a dominant type on upper Ohio Valley sites attributed to the Laurentian (Dragoo 1959). It is a minority type on certain southern New England Archaic sites and is present in Laurentian and Laurentian-like contexts in southern Ontario, Pennsylvania and elsewhere in the Northeast.

References: Ritchie, 1940, pp. 28, 64-66, where they are termed "side notched points." In later reports the writer has called them "broad side-notched points."

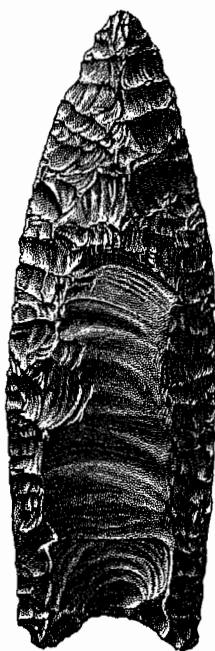
Remarks: These points probably were, for the most part, javelin heads. The larger sizes seem to have been spearpoints, while the smaller variety could apparently have served as arrowpoints. It is, however, unlikely that the bow and arrow was a hunting device at the period, probably from around 3000 B.C. to early A.D. when this type of point seems to have been used. Some of the more convex

edged specimens, especially those with short blade, were likely knives. Rechipping to sharpen may account for some of the short-bladed examples (plate 7, figure 8) and this process would accentuate the proportions of the base.

For the most part these points seem to have been manufactured by percussion chipping from local flints. Pressure flaking to produce a sharp retouched edge is common.

The Brewerton Side-Notched point is probably related to the Otter Creek point (plate 20 and pp. 40-41 herein), the Black Sand Notched (Scully, 1951, p. 10), the Big Sandy Side-Notched (Kneberg, 1956, p. 25), and other forms, including very similar examples from the Shell Mound complex of the Southeast. The writer suspects it is genetically related to other very old and widely-distributed, side-notched, American projectile points.

CLOVIS POINTS (plate 8)



General description: Narrow, fluted, lanceolate points, of medium to large size, with concave bases.

Size: Length range from about 1 to 5 inches. The majority, in a series of 66 such points from New York State, measure between about $2\frac{1}{2}$ and $3\frac{1}{2}$ inches in length, and between $\frac{3}{16}$ and $\frac{5}{16}$ of an inch in maximum thickness (range $\frac{1}{8}$ to $\frac{3}{8}$ of an inch).

Proportions: Two to four times as long as wide.

Shape: Lanceolate, with parallel or excurvate edges and concave base. Basal and lower lateral edges usually ground smooth. Both faces (rarely only one) fluted, the channel scars extending for varying distances on either side from base to tip. Frequently more than one channel flake was struck off on each face.

Age and cultural affiliations: Early paleo-Indian. Recent radiocarbon dates from

the Lehner site, a mammoth kill site in southeastern Arizona with Clovis points, indicate an antiquity of 11,000 to 12,000 years (Haury, Sayles and Wasley, 1959, pp. 24-25) for the Llano complex to which the Clovis point type has been assigned, at least in the western United States (Sellards, 1952, pp. 17-18).

Carbon 14 dates averaging about 9,000 years ago have been obtained for the Bull Brook site in northeastern Massachusetts (Byers, 1959), where Clovis type points comprise part of a paleo-Indian chipped stone tool complex, having parallels elsewhere in the eastern United States.

Distribution: Chiefly as surface finds without faunal or cultural associations, the Clovis point is widely distributed throughout the United States and southwestern Ontario. Definite components, with faunal associations, mainly mammoth remains, have been found in the American Southwest and High Plains; without faunal associations

in the eastern United States from Tennessee to Vermont. Sporadic point occurrences are known from Mexico, western Canada and Alaska.

References: Wormington, 1957, pp. 42-84; Sellards, 1952, pp. 17-46; Suhm, Krieger and Jelks, 1954, p. 412; Ritchie, 1957; Bell, 1958, p. 16.

Remarks: Clovis points are generally skillfully and carefully made, apparently by pressure flaking techniques. The stone material is usually a high grade mineral which frequently is exotic to the area where the points are found.

The Clovis type point should not be confused with the Folsom type, which is also fluted, and which has a much more limited distribution within the western part of the United States. The Folsom type, which at the Blackwater No. 1 locality, New Mexico, has been found stratigraphically above the Llano complex containing the Clovis type, was probably developed from it by paleo-Indian groups in the High Plains who hunted bison of now extinct species (Sellards, 1952, pp. 29-31). A radiocarbon date of $9,883 \pm 350$ years ago has been determined for a Folsom component near Lubbock, Texas (Sellards, 1952, pp. 52-55).

The Folsom point is described by Wormington (1957, p. 263) as "A more specialized type, of excellent workmanship, thought to be derived from the Clovis type. There is some overlap in size between Clovis and Folsom points, but the latter are lighter and usually smaller. They range in length from three quarters of an inch to three inches with an average of about two inches. They are lanceolate in outline and have concave bases usually marked by ear-like projections. There is frequently a small central nipple in the basal concavity. The points were fluted through the removal of longitudinal flakes. The flutes usually extend over most of the length of the point. In most cases one major channel flake was removed from each face, but sometimes only one face was fluted. Most specimens have a fine marginal retouch. The lower edges usually bear evidence of grinding."

FULTON TURKEY TAIL POINTS (plate 9)

Although probably a knife blade rather than a projectile point, this type is listed and described in Scully's paper on projectile point typology (Scully, 1951, p. 11). A small number of specimens have been found in New York, chiefly in the central part of the State, in the Seneca and Oneida Rivers region.

The following description, except for the few New York specimens available, is taken from Scully (*op. cit.*).

"Material: Chipped stone. [All examples of this type seen by the writer were made from Harrison County, Indiana, gray or blue-gray nodular flint. The surface-found New York specimens have weathered to a tan or brown color, the lighter concentric rings in the mineral sometimes weathering almost white. The flaking was very skillfully accomplished by a pressure technique which left broad, flat scars. Fine marginal retouching is universally present.]

"General description: Leaf shaped, pointed at both ends and side notched at one end.

"Size: Average—about 6 inches. [The New York examples range from $3\frac{3}{4}$ to 6 inches long and average $\frac{1}{4}$ of an inch in maximum thickness.]

"Proportions: Three times as long as the widest point.

"Shape: Body—pointed at both ends with widest portion halfway up the length of point.

Notches—shallow, rounded, narrow, side notches located about $\frac{1}{10}$ length from end of point.

"Variants: Proportions vary as do the position of the notches.

"Association: Usually with late Archaic or early Woodland. [A specimen of this kind was found by the writer in a grave of the early Point Peninsula complex, Early Woodland period, on the Oberlander No. 2 site at Brewerton, Oswego County, N.Y. (See Ritchie, 1944, pp. 152-160, plate 71, figure 13. Slight damage to the base of this artifact has resulted in the loss of the characteristic point.) Charcoal from one of the burials, all cremated, in this cemetery, yielded a radio-carbon date of 998 B.C. \pm 170 years (Chicago sample No. 192. Arnold and Libby, 1951, p. 114).

It is a diagnostic trait of the Red Ocher culture of the upper Great Lakes region.]

"Distribution: Central Illinois, eastern Missouri, and southern Illinois and Indiana. [To this range we may add Ohio and central New York.]

"Reference: Titterington, 1950." [Scully, 1951, p. 11.]

GENESEE POINTS (plate 10)



General description: Large, thick, straight stemmed points, of medium breadth.

Size: Length range is from approximately $1\frac{1}{2}$ to 6 inches; the majority falling between 3 and $3\frac{1}{2}$ inches. Specimens longer than 6 inches occasionally occur or are indicated by broken basal sections. Thickness varies from about $\frac{5}{16}$ to $\frac{9}{16}$ of an inch, with most points measuring between $\frac{3}{8}$ and $\frac{7}{16}$ of an inch.

Proportions: Typically about 2 to $2\frac{1}{2}$ times as long as wide.

Shape: Blade trianguloid in outline, markedly biconvex in cross section; edges straight or slightly excurvate. Stem rectangular and straight or parallel-sided. Shoulders weakly to moderately developed, with straight or slightly oblique basal edge. Base straight. About 40 percent show slight grinding of base and sides of stem.

Age and cultural affiliations: Apparently Middle to Late Archaic; part of Laurentian and Frontenac manifestations. Examples were found among the grave goods of 9 burials at Frontenac Island (Ritchie, 1945, pp. 48-80). Radiocarbon dates at this site range from 2980 B.C. \pm 260 (C-191, Arnold and Libby, 1951, p. 114), through 2013 B.C. \pm 80 (Y-459), to 1723 B.C. \pm 250 (W-545).

Distribution: Central and, particularly, western New York and westward across the Niagara Peninsula of Ontario. Especially numerous in the Genesee Valley of New York and the Grand River Valley of Ontario. To a much lesser extent they occur also in eastern New York and southern New England.

References: Ritchie, 1940, p. 29; 1945, p. 30, where they are referred to as "stemmed" and "broad stemmed" points, respectively.

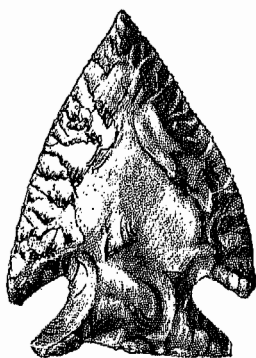
NEW YORK PROJECTILE POINTS

Remarks: Genesee points seem to have served as dart or spear points, perhaps in a few cases as knives. A very large percentage are made from the characteristic mottled gray and brown flint of the Onondaga escarpment of western New York and adjacent Ontario, most of the remainder being of the more uniform gray Onondaga chert of central New York.

Broad, shallow chipping scars suggest percussion technique of manufacture. Marginal retouching is evident in many specimens and probably signifies pressure work.

These points bear a marked similarity to the Kays Stemmed, a Middle to Late Archaic type of the Tennessee area (Kneberg, 1956, p. 26), and to straight stemmed points from the Shell Mound complex of Kentucky (compare, e.g., with figure 32, A. Webb, 1946).

JACK'S REEF CORNER-NOTCHED POINTS (plate 11)



General description: Broad, thin, corner-notched points of medium size, frequently having angular edges.

Size: Length range from about 1 to $2\frac{1}{4}$ inches; for the most part, between $1\frac{3}{4}$ and 2 inches. Maximum thickness $\frac{3}{16}$ to $\frac{1}{4}$ of an inch, the majority do not exceed the minimum figure. There is one larger specimen, probably a spearhead of this type, measuring 4 inches in length, but only $\frac{5}{16}$ of an inch in thickness (plate 33, figure 2).

Proportions: About one and one-fourth times as long as broad.

Shape: Ovoid or pentagonal in outline, and flat or nearly so in cross section. Edges excurvate or angular. Stem corner-notched and basally flaring, barbs small to large, thin and sharp. Base straight, and occasionally slightly smoothed.

Age and cultural affiliations: Later Middle Woodland times and the earlier part of the Late Woodland period.

Its principal period of use in New York encompassed Point Peninsula 2 and 3 complexes and the early Owasco Carpenter Brook complex. One site of the latter complex (White site, Norwich, N.Y.) has been radiocarbon dated at A.D. 905 \pm 250 years (M-176, Crane, 1956, p. 668).

It appears to be one of the forms found in the Intrusive Mound culture graves at the Mound City Hopewell group in Ross County, Ohio (Mills, 1922, p. 579 and figure 94).

Distribution: A major center of use was the Seneca River area of central New York, where it has been found in the burials and/or refuse of the Kipp Island, Jack's Reef, Bluff Point, Wickham and other sites, and on much more numerous surface sites. It is sporadically distributed in western, northern and eastern New York. As already mentioned, it occurs in Ohio, which was probably a primary center of dispersal into New York.

NEW YORK PROJECTILE POINTS

References: Ritchie, 1944, pp. 132 ff., plate 59, figures 8, 14-18, 20, 22-25; p. 173, plate 77, figures 6-8; 1946, p. 20, plate 6, figure 23; 1958, plate 14, figures 5, 6. According to blade outline, the point is alluded to in these references as "broad corner-notched" or "corner-notched with angular edges."

Remarks: This point takes its name from the late Point Peninsula Jack's Reef site in Onondaga County, N.Y., excavated by the writer in 1947 and 1951 (ms. report on file at New York State Museum and Science Service).

Materials include not only central New York Onondaga flint, but eastern Pennsylvania jasper and Flint Ridge, Ohio chalcedony. The points appear to have been made by carefully controlled pressure flaking.

JACK'S REEF PENTAGONAL POINTS (plate 12)



General description: Broad, stemless, pentagonal points.

Size: Range in length from 1 to $1\frac{3}{4}$ inches; majority measure between $1\frac{1}{4}$ to $1\frac{1}{2}$ inches, with a maximum thickness of $\frac{3}{16}$ of an inch.

Proportions: About one and a third times as long as wide.

Shape: Pentagonal, usually with straight sides. Sides, however, may be slightly contracting. Base straight, rarely concave.

Age and cultural affiliations: A larger, thicker and cruder variant (up to $2\frac{1}{4}$ inches long) appears in the Brewerton complex (Middle Archaic). A few smaller, but still crude, examples occur in the middle or Point Peninsula 2 complex (later Middle Woodland). It constitutes a minor, but well-executed form on late Point Peninsula (Point Peninsula 3), and especially on sites which show transitional features into the early Owasco (lower Late Woodland) complex, where it continues, however, as a minor point type. The best example is the White site, near Norwich, Chenango County, N.Y., radiocarbon dated at A.D. 905 ± 250 years (M-176, Crane, 1956, p. 668).

Like the Jack's Reef Corner-Notched point, with which it coexists on both Point Peninsula and Owasco sites in New York, it was present in the Intrusive Mound culture graves at the Mound City Hopewell group in Ross County, Ohio (Mills, 1922, p. 579 and figure 94).

References: Ritchie, 1940, pp. 30-31; 1944, pp. 89, 107, 133; 1946, p. 39. They are termed "pentagonal-shaped points" in these references.

Distribution: Very similar to the Jack's Reef Corner-Notched type. In central and eastern New York it has been found in refuse and/or burials on the Robinson, Wickham, Jack's Reef, Kipp Island, Bluff Point, White and Schermerhorn sites.

It occurs, as mentioned, in Ohio. A similar form is described for Virginia (Holland, 1955, pp. 167-168).

Remarks: Named from the late Point Peninsula Jack's Reef site in Onondaga County, excavated by the writer in 1947 and 1951 (ms. report on file at the New York State Museum and Science Service).

Materials, local flints. Technique, pressure flaking.

LAMOKA POINTS (plates 13 and 14)



General description: Small, narrow, thick points, with weak to moderately pronounced side notches, or straight stemmed with slight, usually sloping shoulders.

Size: The length ranges from less than one inch to about $2\frac{1}{2}$ inches. The majority fall between $1\frac{1}{4}$ and $1\frac{3}{4}$ inches in length, and measure about $\frac{1}{4}$ of an inch in maximum thickness. There are a few longer points, believed to be spearheads, which range up to $5\frac{3}{8}$ inches in length. (Ritchie, 1932, plate V, figures 28-30.)

Proportions: Two to three times as long as wide.

Shape: Blade trianguloid in outline, biconvex or median ridged in cross section; edges straight or slightly excurvate. Stem straight and of moderate length or side-notched. Base straight, oblique, or slightly convex, usually unworked and as thick as blade, often exhibiting broad, unmodified surface of flake or pebble from which point was made. This thick, "unfinished" condition of the base is a prime diagnostic feature of the Lamoka point wherever found.

Age and cultural affiliations: The characteristic point form of the Lamoka complex, for which radiocarbon dates ranging from about 3500 B.C. to 2500 B.C. have been obtained. Both the side-notched and stemmed forms occur together in the same Lamoka components at the same levels, although the proportions vary somewhat from site to site, as noted in the site reports. The type apparently persisted in very minor proportions down to Middle Woodland times, at least in central New York.

Distribution: This type has a wide range beyond the known area of the defined Lamoka complex in central and western New York and adjacent northern portions of Pennsylvania. To the west it is found on the Niagara Peninsula of Ontario, and a very similar form, called the "Dustin point," is well represented in the Lower Peninsula of Michigan. (Data received from, and specimens seen through the courtesy of Lewis R. Binford, Museum of Anthropology, University

of Michigan.) East of the Lamoka culture area it is present in eastern and southeastern New York and it has a still broader random distribution.

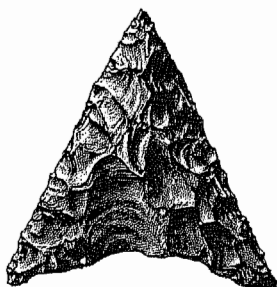
References: Ritchie, 1932, pp. 91-92; 1936, pp. 4-5; 1944, p. 329; 1945, p. 30; 1958, pp. 14, 31-33, 45-46, 60-61; 1959, pp. 84-85, 87-89; Dragoo, 1959, p. 238. (Ritchie has referred, in the later references, to two types, viz., Lamoka Side-Notched and Lamoka Stemmed, herein described as a single type.)

Remarks: Lamoka points seem usually to have been made from local materials, principally flints, quartz or quartzite. A pebble industry was indicated at the Lamoka Lake site. The chipping is generally coarse and marginal retouching is rare. Binford has distinguished two methods of making these points, the more common being lamellar chipping from either edge to produce a medially ridged blade. This is the only method reported by him for the "Dustin" points from Michigan.

The second method has resulted in flatter, randomly placed flaking scars, and a biconvex rather than a rhomboidal cross section for the blade. He regards this distinction as of possible chronological significance. (By conversation of November 1959.) Should his hypothesis be sustained, the writer suggests use of the terms Lamoka B and Lamoka A, respectively, for these groups.

It would seem that Lamoka points constitute a relatively early Archaic horizon style in the New York area.

LEVANNA POINTS (plate 15)



General description: Medium to large, fairly thin, triangular points, generally with concave bases.

Size: In the sample of 250 New York points used in this study, the length range was $\frac{7}{8}$ to 3 inches. The majority measured between $1\frac{1}{4}$ and $1\frac{3}{4}$ inches in length and $\frac{3}{16}$ of an inch in maximum thickness.

Proportions: Characteristically these points are nearly as broad as they are long. In the more slender examples the length varies from about one and one-third to one and one-half times the breadth.

Shape: Approximately 70 percent are equilaterally triangular. The rest may best be described as broad isosceles triangles. Edges usually straight, occasionally incurvate, recurvate, or slightly excurvate. More than 80 percent have a basal concavity, often to a marked degree, nearly V-shaped in a few examples, producing prominent corner barbs, which are occasionally asymmetric (plate 15, figures 5 and 10). The remainder have straight bases.

Age and cultural affiliations: In New York State this type evidently made its appearance in late Middle Woodland times around A.D. 700. It did not, however, become common until the transitional period into Late Woodland, ca. A.D. 900. Thereafter its popularity rapidly increased, until it became the principal Late Woodland point type over much of the area. Around A.D. 1350 it began to be supplanted by the Madison type, mainly in the districts of Iroquois cultural domination.

The Levanna point is associated as a minor type with the middle and late Point Peninsula complexes. It is the characteristic type of the Owasco of all stages of development. On the same time level as Owasco it is an important type in the Bowmans Brook, Clasons Point and Sebonac cultures of coastal New York. It appears in significant proportions in various late prehistoric manifestations of southern New England, New Jersey and Pennsylvania.

Distribution: New York, much of New England, southeastern Ontario, the Middle Atlantic area, at least to Virginia, and eastern Pennsylvania.

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References: Named from the Levanna site, Cayuga County, N. Y. (Ritchie, 1928).

Remarks: Unquestionably an arrowpoint. Very finely chipped by pressure flaking. Materials local flints, jasper, quartz and quartzite.

MADISON POINTS (plate 16)



This point type was described by Scully as the Mississippi Triangular Point, later changed by him to the Madison Point (Scully, 1951, p. 14. The copy received from him contains the penciled nominal revision). He gives the association as "Middle Mississippi," and the distribution as "Middle and Upper Mississippi sites in Illinois, Wisconsin and Missouri."

Kneberg refers to a very similar point as the "Late Mississippi Triangular," but confines it to a form with "straight basal edge" (Kneberg, 1956, p. 24). She relates it to "most of the late Mississippi cultures in Tennessee," including the historic Cherokee, of the period of approximately A.D. 1300-1800. Her "Hamilton Incurvate" type, assigned to several cultures of the Late Woodland period, dating between c. A.D. 500-1000, exhibits the incurvate edges and base found on some of the points included in Scully's description as variants of the Madison type. (Kneberg, *ibid.*)

Suhm, Krieger and Jelks (1954, pp. 504, 498, 506) have defined various triangular types—the Maud, Fresno and Starr—which have features overlapping with the Madison type. These belong to assemblages which flourished during the latter half of the Christian era, and included pottery and agriculture.

The New York specimens herein described have some definite similarities to all of these possibly interrelated types. Since, however, the variations noted in our sample are readily accommodated within the compass of Scully's Madison type this name has been applied.

General description: Small, thin, triangular points.

Size: According to Scully, the length range is from $\frac{1}{2}$ to $2\frac{3}{8}$ inches, with an average of 1 inch. A New York sample of 100 points from a single prehistoric Iroquois site in western New York (plate 16) ranged from $\frac{3}{4}$ to $1\frac{9}{16}$ of an inch, with a majority falling between 1 and $1\frac{1}{4}$ inches. The thickness varied from $\frac{1}{16}$ to $\frac{3}{16}$, most of the specimens measuring $\frac{1}{8}$ of an inch, maximum.

Proportions: These vary from about as long as wide in the nearly squilateral specimens to twice as long as wide in the isosceles triangles, with most of the latter around $1\frac{1}{2}$ times as long as broad.

Shape: Equilateral (20 percent) or isosceles (80 percent) in outline, with straight (47 percent) or concave (53 percent) base (in two examples the base is slightly convex), and straight (75 percent), slightly excurvate (17 percent), or slightly incurvate (8 percent) edges. Flat or nearly so in cross section.

Age and cultural affiliations: Late prehistoric to early historic period. Constitutes, in varying proportions, an arrowpoint type of many Middle and Upper Mississippi and Late Woodland complexes. In the Northeast it is the distinctive Iroquoian form.

Distribution: Has a wide distribution in the eastern United States and southeastern Ontario.

References: Scully, 1951, p. 14.

Remarks: Very finely chipped by pressure flaking. Among the northern Iroquois the principal material employed was Onondaga flint from the exposures of central New York and the Ontario Peninsula.

MEADOWWOOD POINTS (plate 17)



General description: Very thin, medium to large, side-notched points, of medium breadth.

Size: In length these points range from about $1\frac{5}{8}$ to $3\frac{1}{2}$ inches, with the majority falling between $2\frac{1}{4}$ and $2\frac{3}{4}$ inches. The thickness, even of the largest points, rarely exceeds $\frac{3}{16}$ of an inch.

Proportions: The length averages approximately two and a half to three times the breadth.

Shape: Blade trianguloid in outline, flat in cross section; edges are straight, slightly excurvate or incurvate, and are occasionally serrated or steeply beveled from opposite sides. Stem neatly side-notched, sometimes with double notch. Base straight or convex, sometimes expanded in fan shape, or beveled to scraper edge. In about 50 percent base is ground smooth.

Age and cultural affiliations: This is the characteristic point type of the early Point Peninsula (Point Peninsula 1) complex, radiocarbon dated between about 2448 B.C. (C-794, Libby, 1954, p. 137) and 563 B.C. (M-640, Crane and Griffin, 1959, p. 183). It is apparently diagnostic for this Early Woodland culture.

Distribution: Northern, central and western New York and westward across the Niagara Peninsula of southeastern Ontario. Sporadically found in eastern and southern New York, and in the upper Allegheny Valley of western Pennsylvania.

References: Ritchie, 1944, pp. 122, 125-126, 152-160; 1955, pp. 48-49, where they are termed "thin side-notched" points; 1958, p. 68, where the type is referred to as "Meadowwood Side-Notched."

Remarks: While most specimens appear to be projectile points, others seem to have been made or modified for use as side or end scrapers, knives, and perhaps saws. Many could have been manufactured by

slight alteration from the numerous mortuary or "cache" blades found in burials of this culture. The flat, well-controlled pressure flaking, shows great skill. Wherever found, these points (and the accompanying mortuary blades, drills and scrapers) are prevailingly of the peculiar mottled gray and brown flint of the Onondaga exposures in western New York and the Ontario Peninsula, or of the clear gray flints of the central New York Onondaga escarpment.

NORMANSKILL POINTS (plate 18)



General description: Slender, thick points of medium size, with prominent side notches.

Size: Length range from about $1\frac{7}{16}$ to $2\frac{3}{4}$ inches, majority fall between $1\frac{5}{8}$ and 2 inches. Thickness from $\frac{3}{16}$ to $\frac{3}{8}$ of an inch, in the majority the maximum thickness is $\frac{1}{4}$ of an inch.

Proportions: Two to three times as long as wide.

Shape: Blade narrow and triangular in outline, markedly biconvex in cross section; edges straight. Stem boldly side-notched and slightly thinned by coarse flaking from the base. Base straight or very slightly concave. Rarely the base shows a little smoothing.

Age and cultural affiliations: Occurs in varying proportions on sites or site components of Middle Archaic age. Constitutes an element of the Vosburg complex, Laurentian tradition.

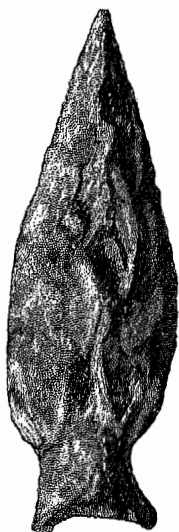
Distribution: Eastern New York, chiefly along the Hudson River and tributary streams, such as the Normanskill, Mohawk River and Hoosic River, from about Glens Falls to Kingston. Excavated from the Harris site (Scv 1-2), Saratoga County, and from Stratum 3 of the Lotus Point site (Ctl 3-1), Greene County. The dominant point form on the river site (Coh 8-3), Saratoga County. Abundant on the Vosburg site, Albany County.

References: Ritchie, 1958, pp. 8-53, plate 3, figures 23-33; plate 12, figures 9, 10; plate 15, figures 11-58, where they are described as "narrow side-notched points."

Remarks: This point suggests a slender variant of the Brewerton Side-Notched type which, described as "broad side-notched" by the writer (1958), occurs with it on the aforementioned eastern and other New York sites. Morphologically it is transitional between the Lamoka side-notched and Brewerton side-notched forms.

The materials used are local flints. The techniques employed in fabrication seem for the most part to have been percussion for the rough shaping of the point and pressure flaking to produce the varying amounts of marginal retouching.

ORIENT FISHTAIL POINTS (plate 19)



General description: A slender, gracefully formed point, of medium size, with characteristically narrow, lanceolate blade merging into a flaring "fishtail" stem.

Size: Length range from about $1\frac{3}{16}$ to 4 inches, predominantly 2 to $2\frac{1}{2}$ inches. Maximum thickness $\frac{3}{16}$ to $\frac{7}{16}$ of an inch, majority fall between $\frac{1}{4}$ and $\frac{5}{16}$ of an inch.

Proportions: These points are two and one-half to three and one-half times as long as wide.

Shape: Blade lanceolate in outline, biconvex to nearly flat in cross section; edges excurve. Sloping shoulders merge into flaring stem with incurvate or less often, straight base. Latter occasionally slightly smoothed.

Age and cultural affiliations: Late Archaic and Transition period into Early Wood-

land. The characteristic point type of the Orient complex on Long Island and of a related manifestation with stone vessels in the Hudson Valley and elsewhere. Orient complex radiocarbon dated between 1044 B.C. \pm 300 years (M-586) (Crane and Griffin, 1958, p. 1101) and 763 B.C. \pm 220 years (W-543). (Ritchie, 1959, pp. 47-49, 74-76.)

Distribution: Eastern and southern New York, particularly the middle and lower Hudson Valley and Long Island. Has a light, sporadic representation in central New York, southern New England and northern and central New Jersey.

References: Ritchie, 1944, p. 227 ff.; 1958, esp. pp. 29-31, on the stratigraphic position of these points on a Hudson Valley site; 1959, on the Orient complex. Formal description under same name in latter, pp. 31-32.

Remarks: In the Orient complex of Long Island, a majority of these points were made, apparently by indirect percussion, from the local quartz or quartzite pebbles. Elsewhere regional flints of good quality or occasionally jasper or even slate were employed, and the flat flaking scars suggest reduction from a thick spall by a pressure technique.

OTTER CREEK POINTS (plates 20, 21, 22)



General description: Large, thick, narrow or medium wide, side-notched points, with "square" tangs.

Size: Length range from about $2\frac{1}{4}$ to $4\frac{1}{2}$ inches, majority fall between $2\frac{3}{4}$ and $3\frac{1}{2}$ inches. A few probable spearpoints of larger size have been identified (plate 22). Thickness range $\frac{5}{16}$ to $\frac{1}{2}$ inch, majority measure between $\frac{5}{16}$ and $\frac{1}{16}$ of an inch.

Proportions: Two to three times as long as wide.

Shape: Blade ovoid or lanceolate, rarely trianguloid in outline, biconvex in cross section; edges excurvate, less often straight; stem side-notched, notching seems to have been final operation, resulting in "square" tangs. Base concave or less frequently straight. Almost invariably the base and tang edges have been ground or rubbed smooth, and in nearly all cases this treatment has been extended to the notch.

Age and cultural affiliations: The prevailing point type of certain, still undescribed sites, apparently to be attributed to the poorly defined Vergennes complex of the Archaic Laurentian manifestation in western Vermont (Ritchie, 1944, pp. 253-257).

Distribution: As currently known, west central Vermont, especially the valley of Otter Creek and its tributaries. The predominant point form on certain sites explored by Thomas E. Daniels, Orwell, Vt. (plate 20); present also on the multicomplex Vergennes site (Bailey, 1939) and several other stations in this area. A cross tie with the Brewerton complex in central New York is afforded by the occurrence of a few points of this type on the Robinson site (Ritchie, 1940, plate 13, figure 97) and, conversely, of Brewerton type side-notched, corner-notched and eared-notched types on the Vermont sites in question.

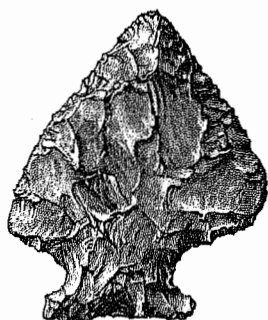
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An occasional point of this type is found on Archaic sites in eastern New York (plate 21).

References: None.

Remarks: The author believes the Otter Creek point is genetically related to the Brewerton Side-Notched point and to other similar types mentioned under the description of the latter (page 72). Side-notched points apparently very like Otter Creek points are reported from levels 5 and 6 of the Graham Cave site in Missouri (Logan, 1952, plate V, G-L; plate VI, A, B), and from the Osceola site of the Old Copper culture in Wisconsin (Ritzenthaler, 1946, plate 6; Bell, 1958, p. 68). Because of its large size it may have been primarily a spearpoint. The material of many of these points is a regional quartzite or metamorphosed siltstone or slate. Some, however, are of native or probably eastern New York flints. The chipping seems to have been done by percussion with secondary marginal pressure flaking on most examples.

PERKIOMEN BROAD POINTS (plate 23)



Witthoft is responsible for the definition of this type which he has termed the "Perkiomen Broad Spearpoint." The following discussion is based largely on his paper, cited below.

General description: "Very broad, boldly flaked spearpoints of semi-lozenge shape, with certain characteristic contour details often exaggerated."

Size: "Rarely less than two inches long and rarely more than four. Specimens up to nine inches long are sometimes found, and I have seen some examples four inches broad and six long."

A small New York sample ranged between $\frac{1}{4}$ and $\frac{5}{16}$ of an inch in thickness, with most examples in the lower range. The average thickness of this type slightly exceeds that of the Susquehanna Broad type.

Proportions: "Generally half as broad as long, or more. Rarely narrow, often very asymmetrical."

Shape: "Blade: Generally approximates an equilateral triangle, with convex edges near tip, and often slight convexity or concavity elsewhere. Blade edges are frequently asymmetrical, and the blade is often somewhat out of center in relation to the tang. Blades are thin, with rarely any medial ridge; where one occurs on one face, the other face is usually flat.

"Ears [Shoulders]: Frequently barbed, sometimes at both ears but more often only at one corner. The ears may form either obtuse or acute angles, but even strongly barbed specimens rarely have very acute ears. Edges in the ear area are always thin and sharp, and were carefully retouched to straight, even edges. Often the blade edge ahead of the ear is somewhat concave or convex. Chipping details of the ears and of the blade are like those of the Susquehanna Broad Spearpoint, but the breaks in contour of the edge are frequently very pronounced in the Perkiomen type, and the barbs and grotesquely turned corners are exaggerations of these shape details. The two edges of a specimen rarely show strong symmetry.

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"Tang [Stem]: Always constricted and almost invariably with a convex base; the base is sometimes straight but is almost never concave. [In about half of the New York specimens the base is straight.] The tang is unusually small compared with the blade, and frequently is tiny in proportion to the rest of the spear. The tang corners are rounded, not prominent, and never suggest barbs. All edges of the tang are always ground smooth, including the basal corners of the tang. [This does not apply to many of the New York specimens.] This edge grinding extends out onto the ears only a short distance, generally to a conspicuous break in outline."

Age and cultural affiliations: Probably like the Susquehanna Broad point, i.e., of the Transitional period from Late Archaic into Early Woodland. Witthoft has hypothesized that "The Susquehanna Broad Spear type appears to be the ancestor of the Perkiomen Broad Spear and the Lehigh Broad Spear [probably related to the Snook Kill point, here-in described, see pp. 47-48] types, . . . as well as of slightly different broad types of central New York and of the Hudson-Mohawk. . . . These derived types are, I believe, both later than and contemporary with the Susquehanna Broad Spear type; at any rate, they are overlapping ages and there do not seem to be any very significant time differences among them. Distributions are more geographic than temporal." (Witthoft, 1953, p. 16.)

Distribution: The Schuylkill Valley and its tributary streams entering from the north, the eastern borders of the Susquehanna Valley, the Delaware and Hudson Valleys. Sporadically distributed in northern and central New Jersey and in the Mohawk, Seneca, and Genesee Valleys of New York.

References: Witthoft, 1953, pp. 16-20.

Remarks: The commonest lithic material of these points is Pennsylvania jasper, usually of the finest grades. Other specimens are of rhyolite; Onondaga flint from central and western New York; Deepkill and Normanskill flint from the Hudson Valley; Flint Ridge, Ohio chalcedony; and rarely, argillite or quartzite.

POPLAR ISLAND POINTS (plates 24 and 25)

This description was prepared by W. Fred Kinsey III.

General description: Medium to large, finely flaked, symmetrical points, having quite slender isosceles triangular blades. Shoulders are rounded and the constricted stem tapers toward a narrow rounded base.

Size: They range from 1.8 inches to 3.4 inches with the average length slightly over 2 inches. In cross section they are usually oval with some examples rather thin and flat.

Proportions: Generally they are more slender than Bare Island points. Blade width in comparison to length is narrow except where some specimens have rechipped blades.

Shape: Blade exhibits considerable symmetry in the form of a slender isosceles triangle. Edges are nearly straight with only a slight trace of convexity. Tips and edges are crisp and the tip is always on center with the stem. There is no medial ridge.

Shoulder area always rounded and on some specimens the shoulder is not clearly defined. Usually it is a graceful curve and some pieces lack distinct shoulders.

The nonparallel sides of the stem taper toward the base which is the narrowest part of the stem. The lobate base is always convex and sometimes it is nearly pointed. Basal corners are always round and never sharp. Edge grinding is frequently present.

Age and cultural affiliations: This is the second most popular point type excavated at the Kent-Hally site on Bare Island. It occurs with an overall frequency of 20 percent and its distribution was remarkably uniform in all levels. At Kent-Hally two of this type were found in intimate association with stone pots. One was inside a broken steatite bowl and the other was lying against the outside wall of the vessel (Kinsey 1959, pp. 128-129). The writer therefore suggested that this was a Late Archaic type contemporaneous with the utilization of steatite bowls, and also that the use of steatite might have been early in the lower Susquehanna since the quarries are nearby. Witthoft, to the contrary, places these points earlier in the Archaic since they are found in deeper levels on Duncan's Island. He believes the Poplar Island and Bare Island points are close contemporaries. Probably their antecedents lie in the Virginia and Carolina Piedmont and on the Savannah River in Georgia.

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Distribution: The type is found in the same general area as the Bare Island point but with a lower frequency. It is particularly conspicuous on Poplar Island and Duncan's Island in the lower Susquehanna River. It also occurs along the Chesapeake and at the Accokeek Creek site.

[It has a sporadic distribution northward across Delaware and New Jersey into southern and eastern New York. (See plate 25.) W.A.R.]

References: Kinsey, 1959, p. 115, where it is referred to as "tapered or lobate-stemmed, Type C;" Witthoft, 1959, p. 83.

Remarks: At the Kent-Hally site 37.7 percent of these points are of siltstone, 24.5 percent of argillite, and 20 percent of quartz. Others are made of quartzite, rhyolite and flint. At Poplar Island and Duncan's Island the use of siltstone and argillite is also conspicuous.

ROSSVILLE POINTS (plate 26)



General description: Thick, lozenge-shaped points of medium size.

Size: Length range approximately $1\frac{1}{4}$ to $2\frac{1}{2}$ inches; majority fall between $1\frac{3}{4}$ to 2 inches. Maximum thickness varies from $\frac{1}{4}$ to $\frac{7}{16}$ of an inch in a sample of 72 from New York, with most of the specimens measuring $\frac{5}{16}$ of an inch.

Proportions: About twice as long as wide.

Shape: Roughly rhomboidal or lozenge-shaped. Some examples have weak, oblique shoulders which merge with a contracting stem terminating in a blunt point. Edges are straight or slightly excurvate.

Age and cultural affiliations: Very late Archaic, Transitional and Early Woodland periods. They occur in the lower levels of certain coastal New York shell heaps, apparently without pottery associations, and continue into the North Beach and Clearview ceramic foci. It is probable that they constitute a point type of other foci as well.

Distribution: From the Chesapeake Bay area, where it may have originated, northward through southern and southeastern New York and southern New England.

References: Skinner, 1915, p. 57; 1919, p. 70; Smith, 1950, pp. 134, 135; Holland, 1955, p. 170 (termed "Type K-Contracting Stem"); Ritchie, 1958, p. 74, figures 25, 26 (termed "lozenge-shaped points").

Remarks: Named from an early reference by Skinner to their predominance at the Rossville site on Staten Island, N. Y. (Skinner, 1915, p. 57). There seem to be no data to sustain the high antiquity accorded to this form by Skinner.

Materials are chiefly quartz and argillite in the southern part of their range, quartz and felsite in Connecticut and Massachusetts, and flint in the Hudson Valley. These points display some overlap in shape with the Poplar Island type, and a genetic relationship seems probable.

SNOOK KILL POINTS (plate 27)

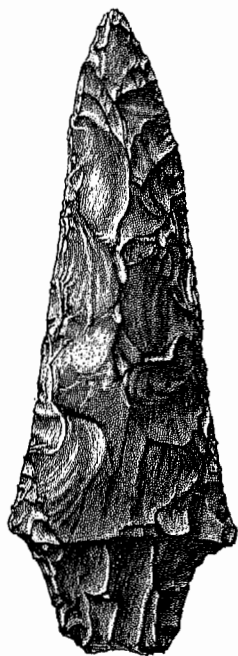


General description: Very broad, large, thick, contracted stemmed points.

Size: Length range is from about 2 to 4 inches, with the majority falling between $2\frac{1}{4}$ and $3\frac{1}{2}$ inches. Thickness ranges from $\frac{1}{4}$ to $\frac{9}{16}$ of an inch; most points measure between $\frac{5}{16}$ and $\frac{7}{16}$ of an inch.

Proportions: Typically about one and one-half times as long as broad.

Shape: Blade trianguloid in outline, bi-convex or plano-convex in cross section; edges straight, slightly to moderately excurvate, or slightly incurvate. Stem contracted or straight. Shoulders pronounced and often asymmetric. No true barbs. Base straight or slightly lobate. A very small percentage have slight to moderate basal grinding.



Age and cultural affiliations: The type overlaps with the Lehigh Broad Spear-point of Witthoft (1953, pp. 21-22), and is probably of comparable age. The author believes the Snook Kill complex will prove to be related to the even less well understood Late Archaic complex in eastern Pennsylvania to which the Lehigh point belongs. There is also enough general similarity between Snook Kill and Savannah River points to suggest a genetic relationship.

Distribution: Eastern New York, especially the Hudson Valley between Albany and Glens Falls and the lower Hoosic Valley.

References: Ritchie, 1958, pp. 91-98.

Remarks: Nearly every specimen is made of eastern New York flints, Normanskill,

Deepkill, Fort Ann; a few are of Onondaga or Oriskany flint, or of weathered argillite, probably from the Delaware Valley in New Jersey or eastern Pennsylvania, from which area the author suspects this complex entered New York.

The points exhibit broad, shallow flaking scars indicative of percussion chipping. In a fair number of cases retouching from both sides has resulted in relatively thin, sharp, straight or slightly sinuous edges.

Snook Kill points were probably employed on darts and spears. Some with markedly convex edges (plate 27, figures 2 and 3), and especially the variant with asymmetric edges and almost lozenge-shaped base, were doubtless knives.

SNYDERS POINTS (plate 28)

The following description is based upon Scully (1951) and Bell (1958).

General description: A large, broad, ovate point with deep corner notches.

Size: The length range is from about 2 to 6 inches, the majority falling between $2\frac{1}{2}$ and 3 inches.

Proportions: About four-fifths as wide as it is long.

Shape: Blade broad and ovate in outline, relatively thin and nearly flat in cross section, edges excurvate. Stem short, deeply and usually broadly corner-notched, and basally expanding. Base markedly convex.

Age and cultural affiliations: It is a characteristic form of the Hopewellian culture of Middle Woodland age (approximately 500 B.C. to A.D. 500).

Distribution: Central and northern Illinois, southwestern Michigan, eastern Missouri, northeastern Oklahoma, the central Mississippi Valley, the middle and upper Ohio Valley, and elsewhere, including western New York.

References: Scully, 1951, p. 12; Bell, 1958, pp. 88-89.

Remarks: Of rare occurrence in New York, where its distribution coincides with that of Hopewellian burial mounds. Most New York examples are made of Harrison County, Indiana or Flint Ridge, Ohio materials.

STEUBENVILLE LANCEOLATE POINTS (plate 29)



General description: Rather broad, lanceolate points, of medium to large size, with slightly concave bases.

Size: Length range from about 1 to $3\frac{3}{16}$ inches; the majority measuring between 2 and 3 inches. Thickness (of the small sample from New York State) $\frac{5}{16}$ to $\frac{3}{8}$ of an inch.

Proportions: These points are two to two and one-half times as long as wide.

Shape: Lanceolate, with excurve or slightly recurvate edges. Biconvex in cross section. Base usually mildly to moderately constricted and slightly concave.

No smoothing, but occasional thinning present in the New York sample.

Age and cultural affiliations: Problematical in the New York area. Found in the Panhandle Archaic of West Virginia in association with the Steubenville Stemmed type.

In eastern and southern New York State, where a similar point association occurs, early pottery styles are evidently also present.

See fuller data under Steubenville Stemmed type, pp. 51, 52.

Distribution: The West Virginia Panhandle area and elsewhere in the upper Ohio Valley; central New York, especially in the upper Susquehanna Valley region; eastern New York, particularly in the Hudson Valley south from Greene and Columbia Counties; Staten Island, Long Island, and the upper Delaware Valley in New Jersey, Pennsylvania and New York.

References: The Steubenville Lanceolate and Stemmed points were named, but not defined or formally described, by Mayer-Oakes, 1955, pp. 130-142; 1955a, pp. 8, 17-20; Ritchie, 1958, p. 99.

Remarks: These points are generally made of regional flints. In the lower Hudson and upper Delaware River regions, however, a purple or gray-weathering black argillite predominates.

STEUBENVILLE STEMMED POINTS (plate 30)



General description: Broad, heavy points of medium to large size, with wide stems and very weak shoulders.

Size: In the sample of about 50 New York points studied, the length ranged from $1\frac{3}{4}$ to $3\frac{1}{2}$ inches, with the majority measuring between 2 and $2\frac{1}{2}$ inches. The thickness varied from $\frac{1}{4}$ to $\frac{7}{16}$ of an inch, most examples falling into the narrow range between $\frac{5}{16}$ and $\frac{3}{8}$ of an inch.

Proportions: From about one and one-fourth to two and one-half times as long as wide, with most of the points closer to the former proportions, giving them a short, wide, "stubby" appearance.

Shape: Blade outline ovate, lanceolate or trianguloid in descending order of frequency; mildly biconvex in cross section; edges excurvate. Stem wide, with very small, right angular or sloping (obtuse angular) shoulders. In many cases the shoulders are so weakly developed as to be almost nonexistent, and such intergrades link the stemmed and lanceolate forms. Base concave or less often straight. Very slight smoothing of the basal and/or stem edges, apparently more from use than design, occurs on a small proportion of the specimens. In a few of the specimens the base has been thinned by the removal from one side of the stem of one or more shallow vertical channel flakes.

Age and cultural affiliations: Currently unknown in the New York area. Part of the Panhandle Archaic of West Virginia. Mayer-Oakes regards this and the culturally related Steubenville Lanceolate form as very early Archaic in the upper Ohio Valley. He makes the assumption that "They were derived from the late Paleo-Indian 'Scottsbluff' and 'Starved Rock Lanceolate' types, which came into the area from the west at about the time of the post-glacial climatic maximum." (Mayer-Oakes, 1955a, p. 20.) Dragoo, on the other hand, would place the Steubenville types in the Late Archaic complexes of the upper Ohio Valley (Dragoo, 1959, pp. 202-206, 210, 213).

In eastern and southern New York State there is some evidence that these types have ceramic associations. On the Ford site (Ct1. 16-2),

Columbia County, they have been found on the same level with net-impressed, grit-tempered, or shell-tempered and leached pottery.

"At Pelham Boulder [Har. 4-4, Bronx County], the Steubenvilles were in or near sherd clusters in the bottom third of the midden; collectively the types are Vinette 1, Modified Vinette 1, Fabric Impressed, Net Impressed, Exterior Cord marked (like Vinette 1 and Modified Vinette 1 except that there are no interior cordmarks) and Abbott Zoned Dentate." (Julius Lopez, letter of January 3, 1960; cf. Lopez, 1956, p. 15.)

Distribution: The upper Ohio Valley, especially the West Virginia Panhandle area; central New York, particularly the Susquehanna Valley around Colliersville, Otsego County, and sporadically down river at least to Susquehanna, Pennsylvania; eastern New York, chiefly the Hudson Valley from Greene and Columbia Counties southward to the mouth of the river; Staten Island; western Long Island; the upper Delaware Valley in New Jersey, Pennsylvania and New York.

No doubt, as this point type becomes more generally recognized, the range will be considerably extended, at least to include some of the intervening areas.

References: The Steubenville Stemmed and Lanceolate types were named, but not defined or formally described, by Mayer-Oakes, 1955, pp. 130-142; 1955a, pp. 8, 17-20; Ritchie, 1958, p. 99.

Remarks: In most areas, local materials seem to predominate in the composition of these points. In central and eastern New York, however, a small percentage is comprised of purple- or gray-weathering argillite, presumably derived from the Delaware Valley of New Jersey. The incidence of argillite as a material rises sharply in the lower Hudson and Delaware Valleys.

SUSQUEHANNA BROAD POINTS (plate 31)



This point type has been described by John Witthoft of the Pennsylvania State Museum as the Susquehanna Broad Spearpoint. The following discussion is taken very largely from his work, cited below, as it applies with equal validity to the New York material in my sample of several hundred points.

General description: "Broad, boldly flaked spearpoints of roughly semi-lozenge to rough corner-notched shape, with certain characteristic contour details."

Size: "Most specimens are between an inch and a half and four inches long; rare examples are as short as an inch and as long as eight inches."

The thickness of a representative sample of New York points varied between $\frac{3}{16}$ and $\frac{3}{8}$ of an inch.

Proportions: "Generally half as broad as long, or less. Rarely quite narrow."

Shape: "Blade: Triangular, usually with some portion of the edges convex, especially near tip. Edge often somewhat concave near base. Frequently not symmetrical. In cross section, the faces of the blade are evenly rounded rather than keeled or flat. Retouching of the edge to final contour was usually from one face of the blade."

"Ears [Shoulders]: Not barbed, but jutting in a characteristic fashion. The ears are usually angular, forming an obtuse angle, and are sometimes somewhat rounded. In either case, they are always thin and sharp, carefully retouched to thin, straight edges."

"Tang [Stem]: Always constricted and almost always with a concave base; base is rarely straight or extremely concave. Base of the tang narrower than the ears, with tang corners generally acute and prominent. All edges of the tang are always ground smooth, including the basal corners of the tang."

Age and cultural affiliations: Transitional period linking Late Archaic and Early Woodland periods. Probably between approximately 1200 and 700 B.C. The culture complex (or complexes) to which

these points belong is poorly known, and with one exception, comes from surface sites. They form part of a widely spread steatite or soapstone pot-using culture which, in the Susquehanna Valley, has a very limited associated complex mainly comprising distinctive forms of chipped drills and scrapers, netsinkers, and crude ornaments of steatite.

Distribution: The Susquehanna Valley in Pennsylvania and New York and its principal tributaries; the Delaware drainage system north of the Water Gap; the Hudson and Mohawk Valleys; the Finger Lakes region and the Seneca River and its affluent sources, including Oneida Lake. The center of distribution seems to have been the Susquehanna Valley in Pennsylvania.

References: Witthoft, 1953, pp. 7-16.

Remarks: In Pennsylvania, nearly all points of this type are said to be made of purplish rhyolite derived from outcrops of this metamorphosed volcanic rock in Franklin and Adams Counties, near Gettysburg, Pennsylvania. This material also composes a large number of the New York specimens and, together with the frequently associated steatite, proves the intrusive nature of these artifacts, and almost certainly of the complex to which they pertain. However, a much larger proportion of the New York specimens, contrary to Witthoft's statement (op. cit. pp. 8, 12) are of the local flints, for the most part Onondaga, and constitute local copies of the introduced points.

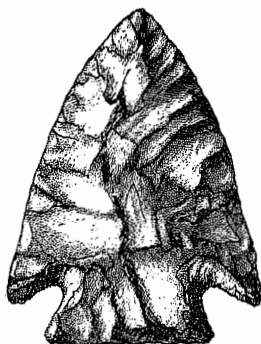
Susquehanna Broad points of rhyolite and flint, associated with steatite pot fragments, were excavated from the upper level of the Frontenac Island site, Cayuga County, N.Y., above deeper deposits of Archaic age (Ritchie, 1945).

Witthoft has classified these points as "spearpoints" but has not defined the term. The author has distinguished between spearpoints and dartpoints earlier in this study (see pages 5-6).

He suspects that the shorter examples were dartpoints. Some of the very thin and fragile specimens may well have served as knives.

The writer has attempted to show the existence, chiefly in eastern and southern New York, of intergrades connecting the Susquehanna Broad point with the Orient Fishtail point (Ritchie, 1959, pp. 90-91, 169).

VOSBURG POINTS (plate 32)



General description: Medium sized, broad, relatively thin points, with small to medium corner notches on a prevailing short stem which is basally ground smooth.

Size: The length range is from about one to $2\frac{3}{4}$ inches, the majority falling between $1\frac{1}{2}$ and 2 inches, with a maximum thickness of $\frac{3}{16}$ to $\frac{1}{4}$ of an inch. Longer points, probably spearheads, do occur, the largest seen measuring $4\frac{1}{2}$ inches long, $1\frac{1}{2}$ inches wide, and $\frac{3}{8}$ of an inch thick (plate 32, figure 11).

Proportions: Length averages about one-quarter greater than breadth in most specimens. The larger points are two to two and one-half times as long as wide.

Shape: The blade is trianguloid in outline, slightly biconvex or nearly flat in cross section; the edges are straight, mildly excurvate, or rarely incurvate. A slight degree of serration is not uncommon. The stem is corner-notched, usually with small notches forming rather weak barbs, expanded, and usually very short. The base is straight or slightly concave, and nearly always ground smooth.

Age and cultural affiliations: An important point form of the Vosburg complex, Laurentian tradition, occurring in varying proportions on nearly all sites of this manifestation. Examples were present in Level 4, or near the base of the stratified Lotus Point site in the Hudson Valley, hence they seem to have appeared rather early in the Archaic horizon of this area.

Distribution: Primarily an eastern New York form, especially in the Hudson, Mohawk and Hoosic Valleys. Of sporadic occurrence in peripheral regions. A few examples were excavated at the Robinson site of the Brewerton complex, Laurentian tradition.

References: Ritchie, 1940, p. 29; 1944, pp. 257-259; 1958, pp. 19, 32, 59, 69, 80. In the last reference the type is referred to as "Vosburg Corner-Notched."

Remarks: Generally made of eastern New York Normanskill and Deepkill flints, apparently by pressure flaking techniques.

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REFERENCES

- Arnold, J. R. & Libby, W. F.
1951. Radiocarbon dates. *Science*, Vol. 113, No. 2927, pp. 111-120. Lancaster.
- Bailey, John H.
1939. A ground slate producing site near Vergennes, Vermont. *Bull. Champlain Valley Archaeological Society*, Vol. I, No. 2. Fort Ticonderoga.
- Bell, Robert E.
1958. Guide to the identification of certain American Indian projectile points. *Oklahoma Anthropological Society, Special Bull. No. 1*. Oklahoma City.
- Boas, Franz
1927. *Primitive art*. Harvard University Press. Cambridge.
- Byers, Douglas S.
1959. Radiocarbon dates from Bull Brook. *Bull. Mass. Archaeological Society*, Vol. XX, No. 3, p. 33. Attleboro.
- Crane, H. R.
1956. University of Michigan radiocarbon dates I. *Science*, Vol. 124, No. 3224, pp. 664-672. Lancaster.
- & Griffin, J. B.
1958. University of Michigan radiocarbon dates II. *Science*, Vol. 127, No. 3306, pp. 1098-1105. Lancaster.
1959. University of Michigan radiocarbon dates IV. *American Journal of Science Radiocarbon Supplement*, Vol. I. New Haven.
- Dragoo, Don W.
1959. Archaic hunters of the upper Ohio Valley. *Carnegie Museum, Anthropological Series*, No. 3. Pittsburgh.
- Haury, Emil W., Sayles, E. B. & Wasley, William W.
1959. The Lechner mammoth site. *American Antiquity*, Vol. 25, No. 1, pp. 2-30. Salt Lake City.
- Holland, C. G.
1955. An analysis of projectile points and large blades. In Evans, Clifford. *A ceramic study of Virginia archeology*. Smithsonian Institution, Bur. Amer. Ethnology, Bull. 160, pp. 165-191. Washington.
- Kinsey, W. Fred, III
1959. Recent excavations on Bare Island in Pennsylvania: the Kent-Hally site. *Pennsylvania Archaeologist*, Vol. XXIX, Nos. 3-4. Gettysburg.
- Kluback, William
1956. Wilhelm Dilthey's philosophy of history. Columbia University Press. New York.
- Kneberg, Madeline
1956. Some important projectile point types found in the Tennessee area. *Tennessee Archaeologist*, Vol. XII, No. 1, pp. 17-28. Knoxville.
- Krieger, Alex D.
1944. The typological concept. *American Antiquity*, Vol. IX, No. 3, pp. 271-288. Menasha.

NEW YORK STATE MUSEUM AND SCIENCE SERVICE

Libby, W. F.

1954. Chicago radiocarbon dates, IV. *Science*, Vol. 119, No. 3083, pp. 135-140. Lancaster.

Logan, Wilfred D.

1952. Graham Cave, an Archaic site in Montgomery County, Missouri. *Missouri Archaeological Society, Memoir No. 2*, Columbia.

Lopez, Julius

1956. The Pelham Boulder site, Bronx County, New York. *Eastern States Archaeological Federation, Bulletin No. 15*, p. 15. Trenton.

MacNeish, Richard S.

1952. Iroquois pottery types. *National Museum of Canada, Bull. No. 124*. Ottawa.

Mayer-Oakes, William J.

1955. Prehistory of the upper Ohio Valley; an introductory archeological study. *Annals Carnegie Museum*, Vol. 34. Pittsburgh.
1955a. Excavations at the Globe Hill shell heap. *West Virginia Archeological Society, Publication Series No. 3*. Moundsville.

Mills, William C.

1922. Exploration of the Mound City group. *Ohio Archaeological and Historical Quarterly*, Vol. XXXI, No. 4, pp. 422-584. Columbus.

Redfield, Robert

1953. *The primitive world and its transformations*. Cornell University Press. Ithaca.

Ritchie, William A.

1928. An Algonkian village site near Levanna, N. Y. *Research Records of Rochester Municipal Museum*, No. 1. Rochester.
1932. The Lamoka Lake site. *Researches and Transactions of the New York State Archeological Assn.*, Vol. VII, No. 4. Rochester.
1936. New evidence relating to the Archaic occupation of New York. *Researches and Transactions of the New York State Archeological Assn.*, Vol. VIII, No. 1. Rochester.
1940. Two prehistoric village sites at Brewerton, New York. *Rochester Mus. Arts and Sciences, Research Records No. 5*. Rochester.
1944. The pre-Iroquoian occupations of New York State. *Rochester Mus. Arts and Sciences, Memoir No. 1*. Rochester.
1945. An early site in Cayuga County, New York. *Rochester Mus. Arts and Sciences, Research Records No. 7*. Rochester.
1946. A stratified prehistoric site at Brewerton, New York. *Rochester Mus. Arts and Sciences, Research Records, No. 8*. Rochester.
1955. Recent discoveries suggesting an Early Woodland burial cult in the Northeast. *N. Y. State Mus. and Sci. Serv. Circular 40*. Albany.
1957. Traces of early man in the Northeast. *N. Y. State Mus. and Sci. Serv. Bull. 358*. Albany.
1958. An introduction to Hudson Valley prehistory. *N. Y. State Mus. and Sci. Serv. Bull. 367*. Albany.
1959. The Stony Brook site and its relation to Archaic and transitional cultures on Long Island. *N. Y. State Mus. and Sci. Serv. Bull. 372*. Albany.

— & Dragoo, Don W.

1959. The eastern dispersal of Adena. *American Antiquity*, Vol. 25, No. 1, pp. 43-50. Salt Lake City.
1960. The eastern dispersal of Adena. *N. Y. State Mus. and Sci. Serv. Bull. 379*. Albany.

NEW YORK PROJECTILE POINTS

——— & MacNeish, Richard S.

1949. The pre-Iroquoian pottery of New York State. *American Antiquity*, Vol. 15, No. 2, pp. 97-124. Menasha.

Ritzenthaler, Robert

1946. The Osceola site—an "Old Copper" site near Porosi, Wis. *The Wisconsin Archeologist*, Vol. 27, No. 3, pp. 53-70. Milwaukee.

Rouse, Irving

1939. Prehistory in Haiti, a study in method. *Yale Univ. Publications in Anthropology*, No. 21. New Haven.
1960. The classification of artifacts in archaeology. *American Antiquity*, Vol. 25, No. 3, pp. 313-329. Salt Lake City.

Scully, Edward G.

1951. Some central Mississippi Valley projectile point types. *Mus. of Anthropology, Univ. of Michigan*. Ann Arbor. (mimeo.)

Sellards, E. H.

1952. *Early man in America*. Univ. of Texas Press. Austin.

Skinner, Alanson

1915. Chronological relations of coastal Algonquian culture. *Nineteenth International Congress of Americanists, Proceedings*, pp. 52-58. Washington.
1919. Exploration of aboriginal sites at Throgs Neck and Clasons Point, New York City. *Contributions from Museum of the American Indian, Heye Foundation*, Vol. V, No. 4. New York.

Smith, Carlyle S.

1950. The archaeology of coastal New York. *Anthropological Papers of Amer. Mus. of Natural History*, Vol. 43, Part 2. New York.

Suhm, Dee Ann, Krieger, Alex D. & Jelks, Edward B.

1954. An introductory handbook of Texas archeology. *Bull. Texas Archeological Society*, Vol. 25. Austin.

Titterton, P. F.

1950. Some non-pottery sites in the St. Louis area. *Jour. Illinois State Archaeological Society*, Vol. 1, No. 1, pp. 19-31. Springfield.

Webb, William S.

1946. Indian Knoll, site Oh 2, Ohio County, Kentucky. *Univ. of Kentucky, Reports in Anthropology and Archaeology*, Vol. IV, No. 3, Pt. 1. Lexington.

Witthoft, John

1953. Broad spearpoints and the transitional period cultures in Pennsylvania. *Pennsylvania Archaeologist*, Vol. XXIII, No. 1, pp. 4-31. Lancaster.
1959. Notes on the Archaic of the Appalachian region. *American Antiquity*, Vol. 25, No. 1, pp. 79-85. Salt Lake City.

Wormington, H. M.

1957. Ancient man in North America. *Denver Mus. Natural History, Popular Series* No. 4. Denver.

PLATE 1—ADENA POINTS

1-3, 5, 6, Van Orden site, Greene County, N. Y.; 4, 8, 9, Onondaga County, N. Y.; 7, Cattaraugus County, N. Y.

1-3, 5, 6, Carl S. Sundler collection; others N. Y. S. Mus. collection.

Material: 1, 2, Normanskill flint; 3, 5, 6, Fort Ann flint; 4, 8, Onondaga flint; 7, Harrison County, Ind. flint; 9, exotic flint.

NEW YORK PROJECTILE POINTS

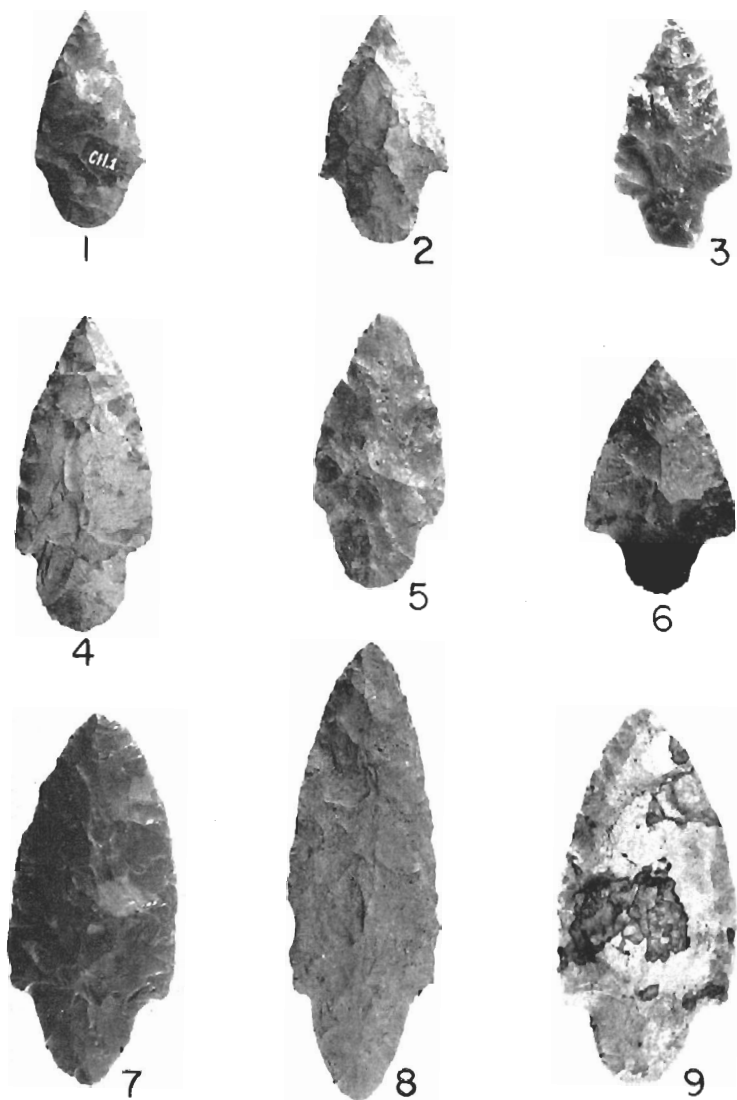


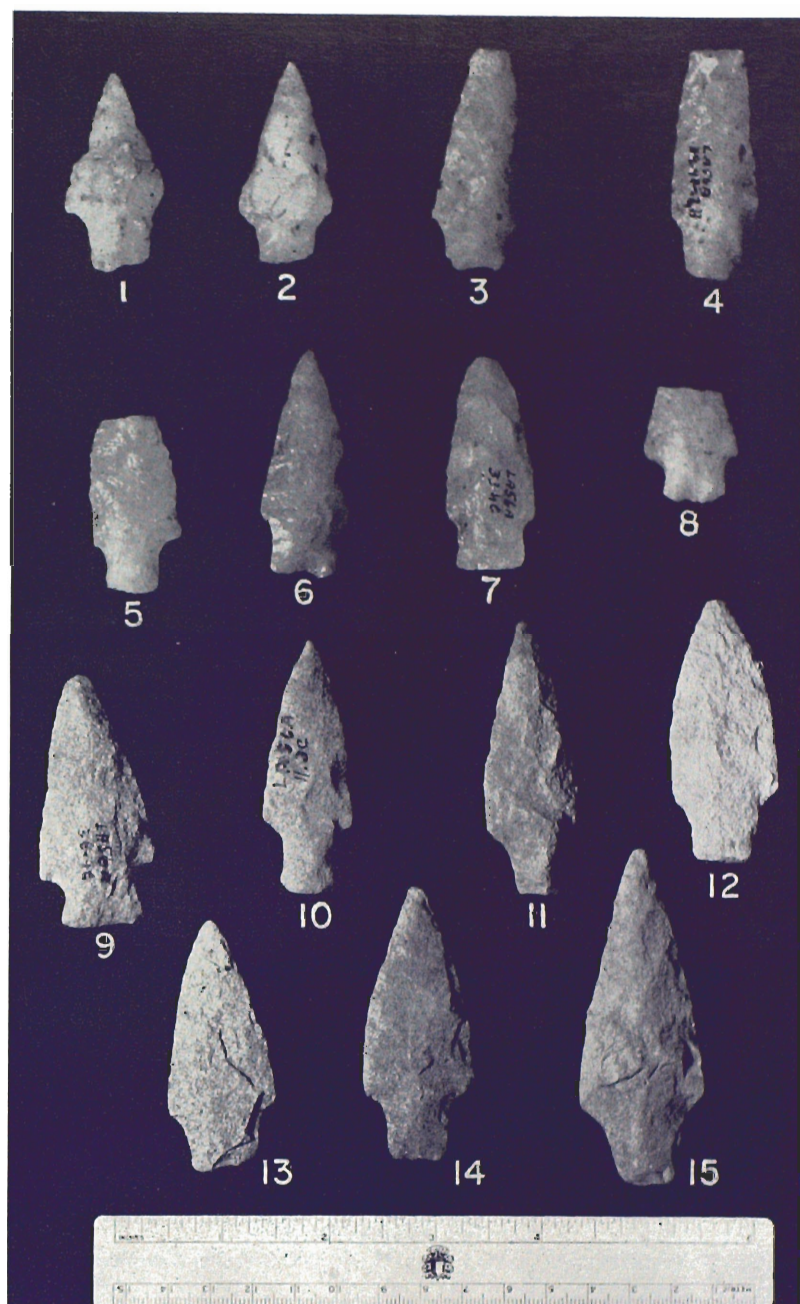
PLATE 2--BARE ISLAND POINTS

Kent-Hally site, Bare Island, Lancaster County, Pa.

Collection of Pennsylvania Historical and Museum Commission by whose courtesy they are reproduced.

Material: 1-8, quartz; 9, quartzite; 10-12, 14, 15, siltstone; 13, rhyolite.

NEW YORK PROJECTILE POINTS



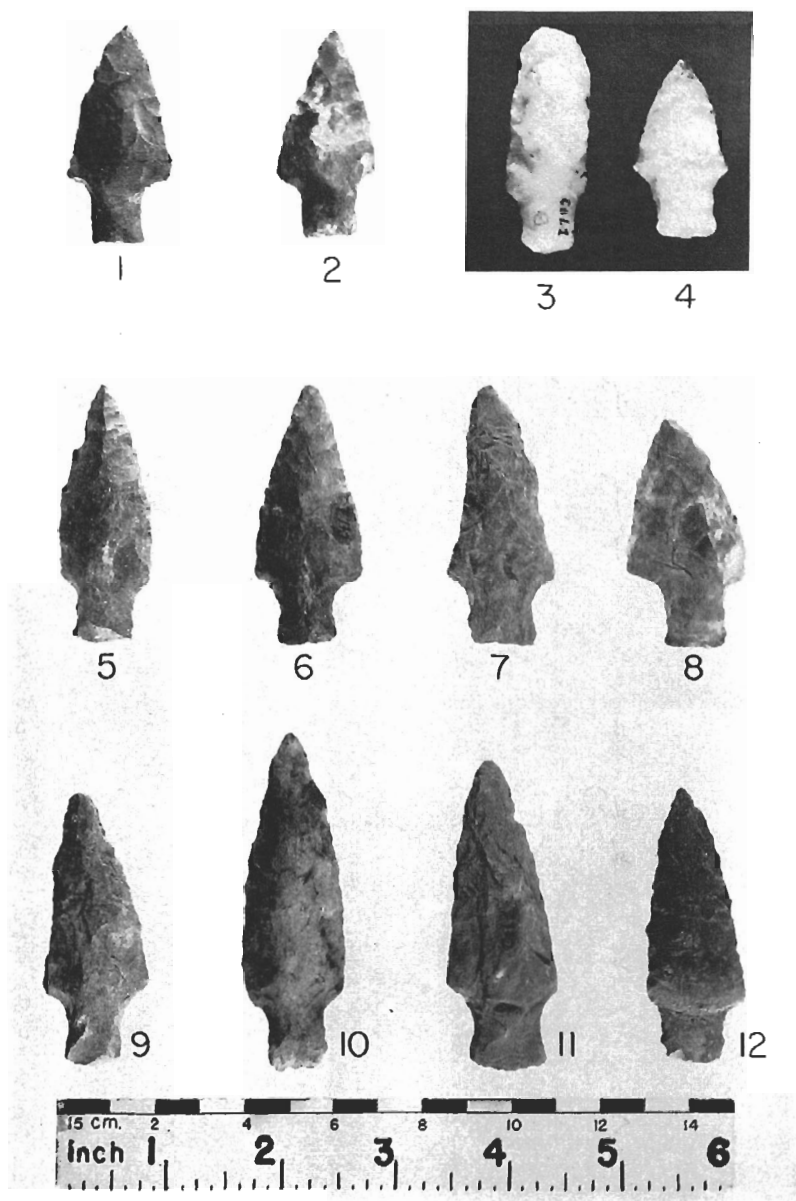


PLATE 3—BARE ISLAND POINTS

1-9, 11, 12, Van Orden site, Greene County, N. Y.; 10, Coh. 9 site, Rensselaer County, N. Y.

Collection Carl S. Sundler.

Material: 1, 2, 5, 6, 12, Deepkill flint; 3, 4, quartz; others Normanskill flint.

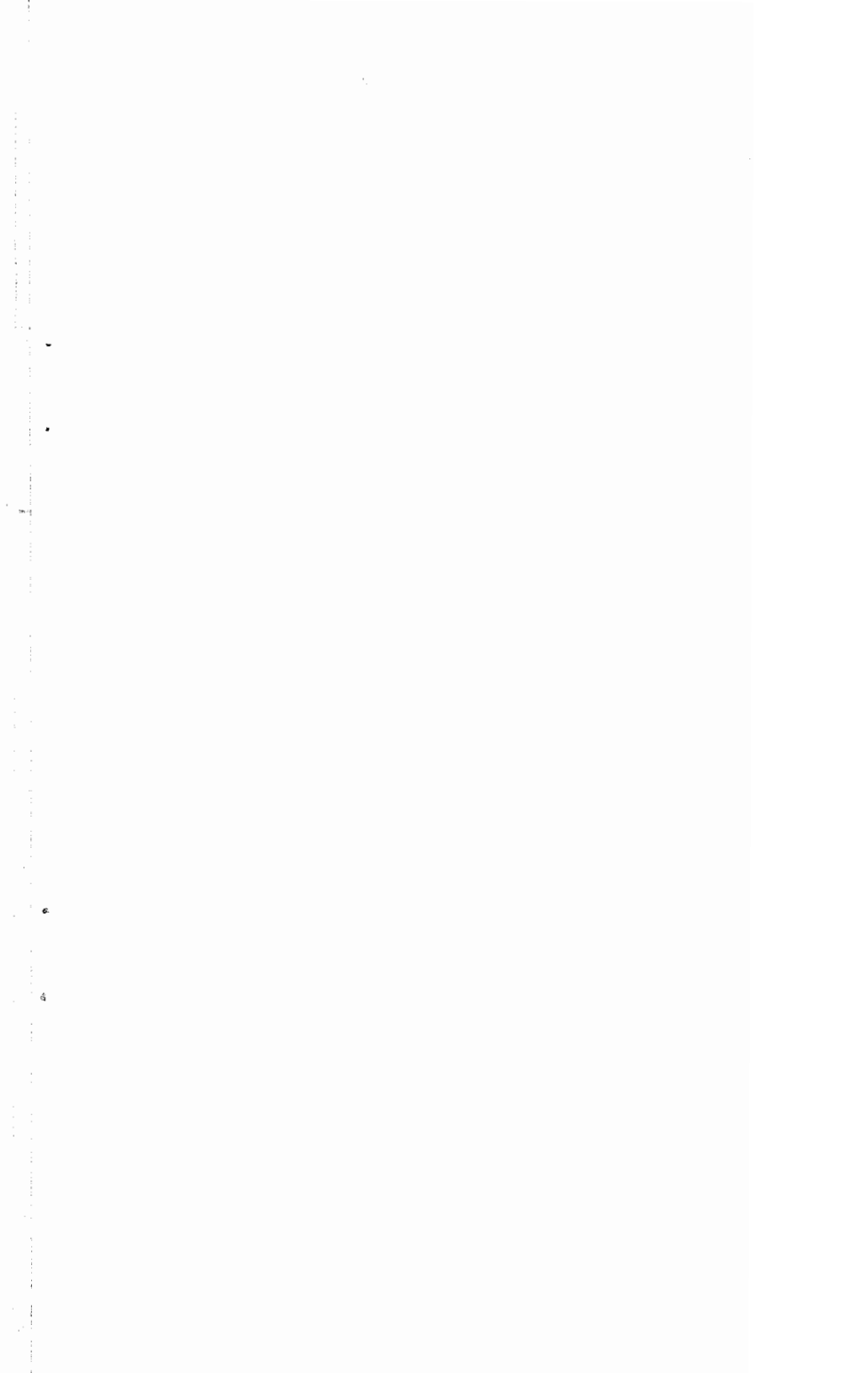


PLATE 4—BREWERTON CORNER-NOTCHED POINTS

1, 4, 5, 9, Oberlander No. 1 site, Brewerton, Oswego County, N. Y.; 2, 6, 10, 12, Robinson site, Brewerton, Onondaga County, N. Y.; 3, 7, 8, 11, Onondaga County, N. Y.

1, 2, 4-6, 9, 10, 12, collection of Rochester Museum of Arts and Sciences; others collection of N. Y. State Museum.

Material: All Onondaga flint.

NEW YORK PROJECTILE POINTS

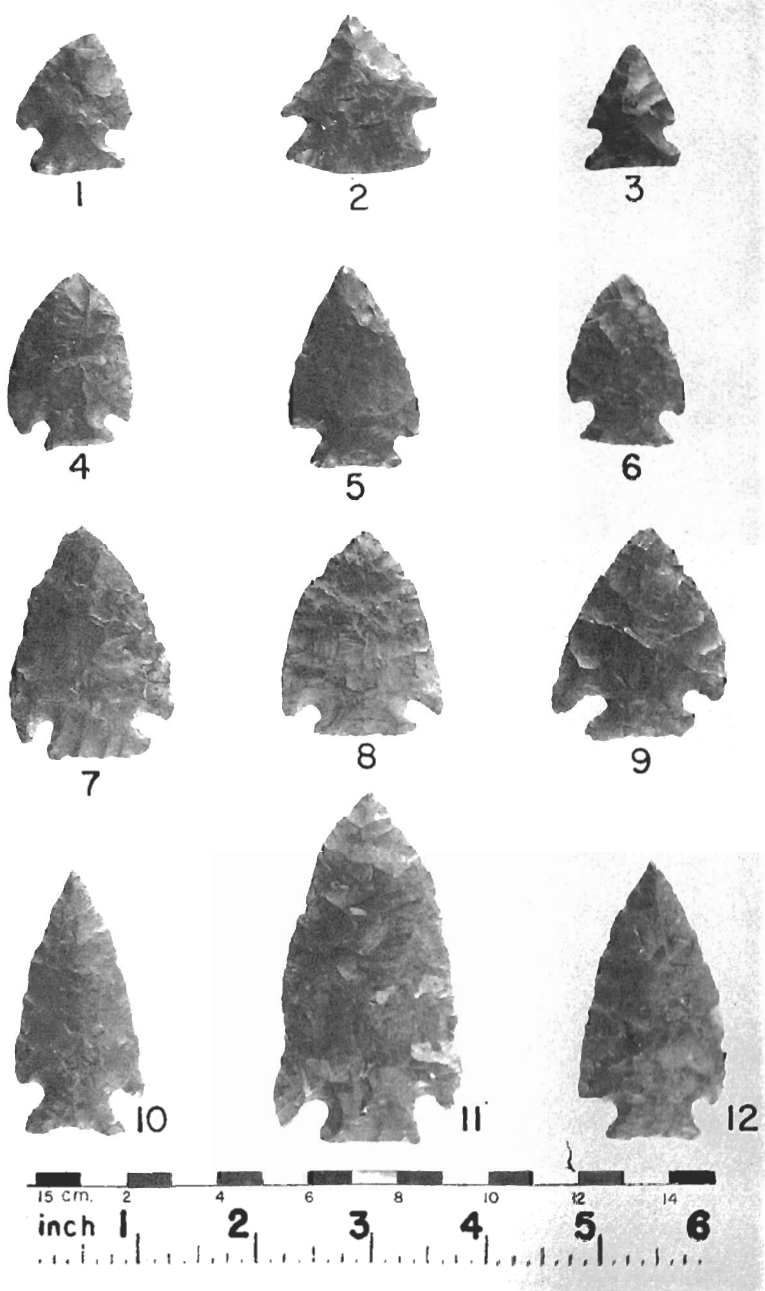


PLATE 5—BREWERTON EARED-NOTCHED POINTS

1-3, 7, 8, Onondaga County, N. Y.; 4, Coh. 9 site, Rensselaer County, N. Y.; 5, 6, Robinson site, Brewerton, Onondaga County, N. Y.; 9, Van Orden site, Greene County, N. Y.

4, 9, Carl S. Sundler collection; 5, 6, collection of Rochester Museum of Arts and Sciences; others N. Y. State Museum collection.

Material: 1-3, 5-8, Onondaga flint; 4, 9, Normanskill flint.

NEW YORK PROJECTILE POINTS

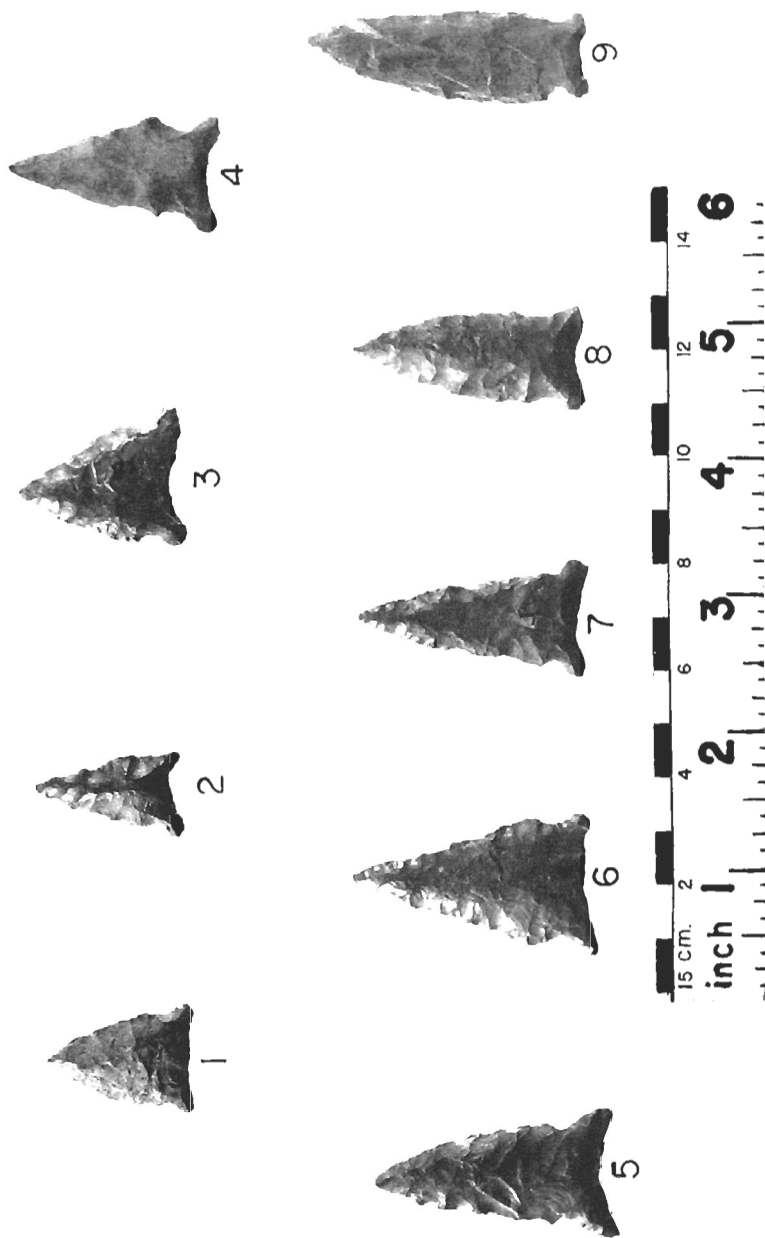


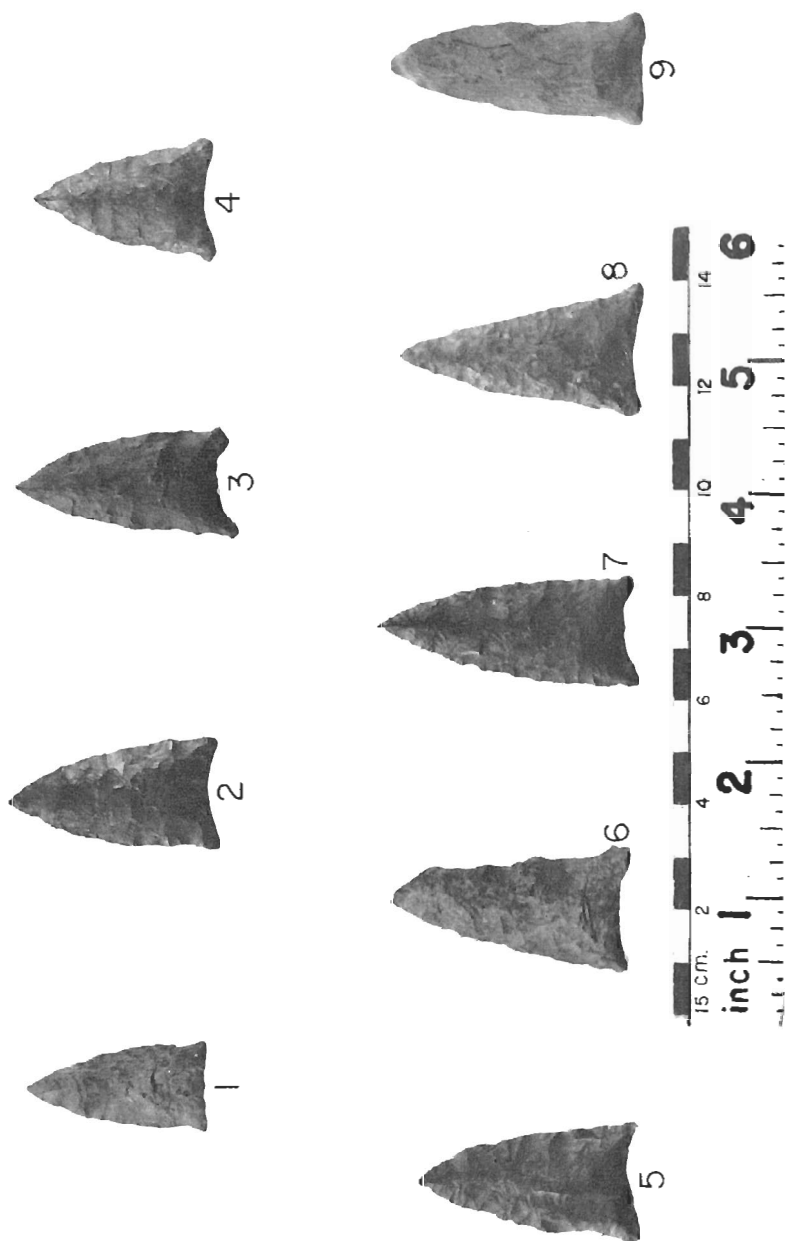
PLATE 6—BREWERTON EARED-TRIANGLE POINTS

1, 9, Coh. 9 site, Rensselaer County, N. Y.; 2-5, 7, Robinson site, Brewerton, Onondaga County, N. Y.; 6, Barren Island site, Albany County, N. Y.; 8, Onondaga County, N. Y.

1, 9, Carl S. Sundler collection; 2-5, 7, collection of Rochester Museum of Arts and Sciences; 6, R. Arthur Johnson collection; 8, N. Y. State Museum collection.

Material: 1, Deepkill flint; 2-5, 7, 8, Onondaga flint; 6, 9, Normanskill flint.

NEW YORK PROJECTILE POINTS



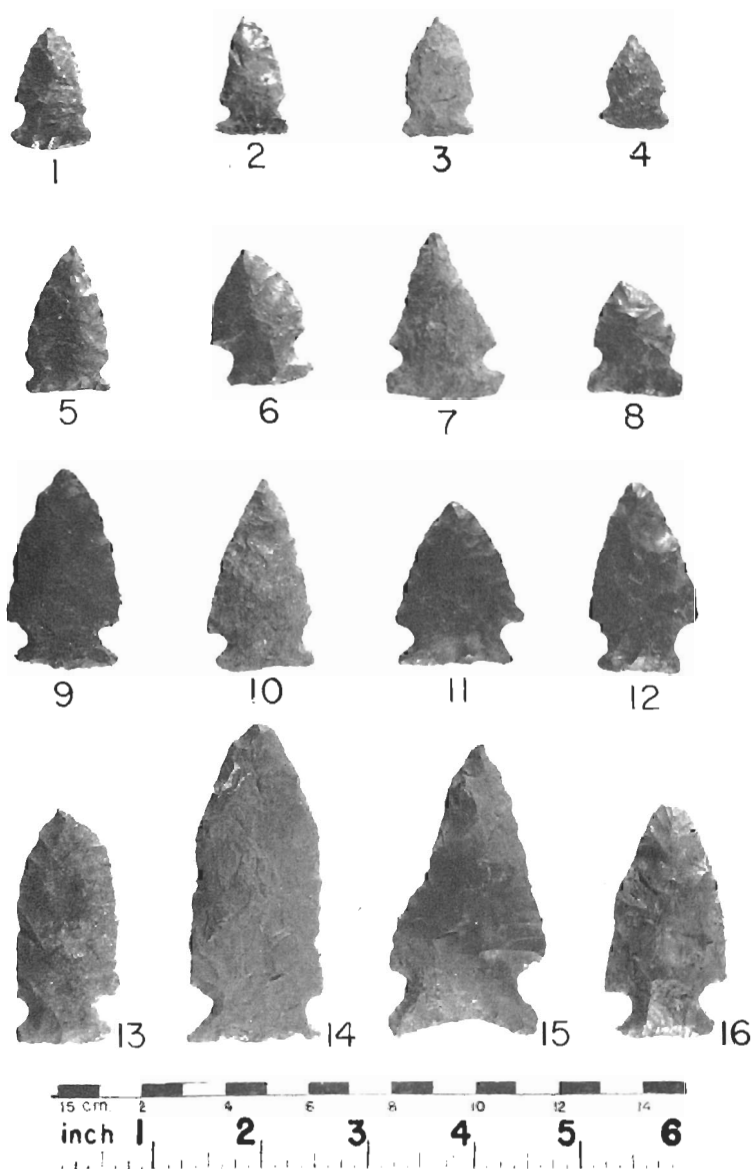
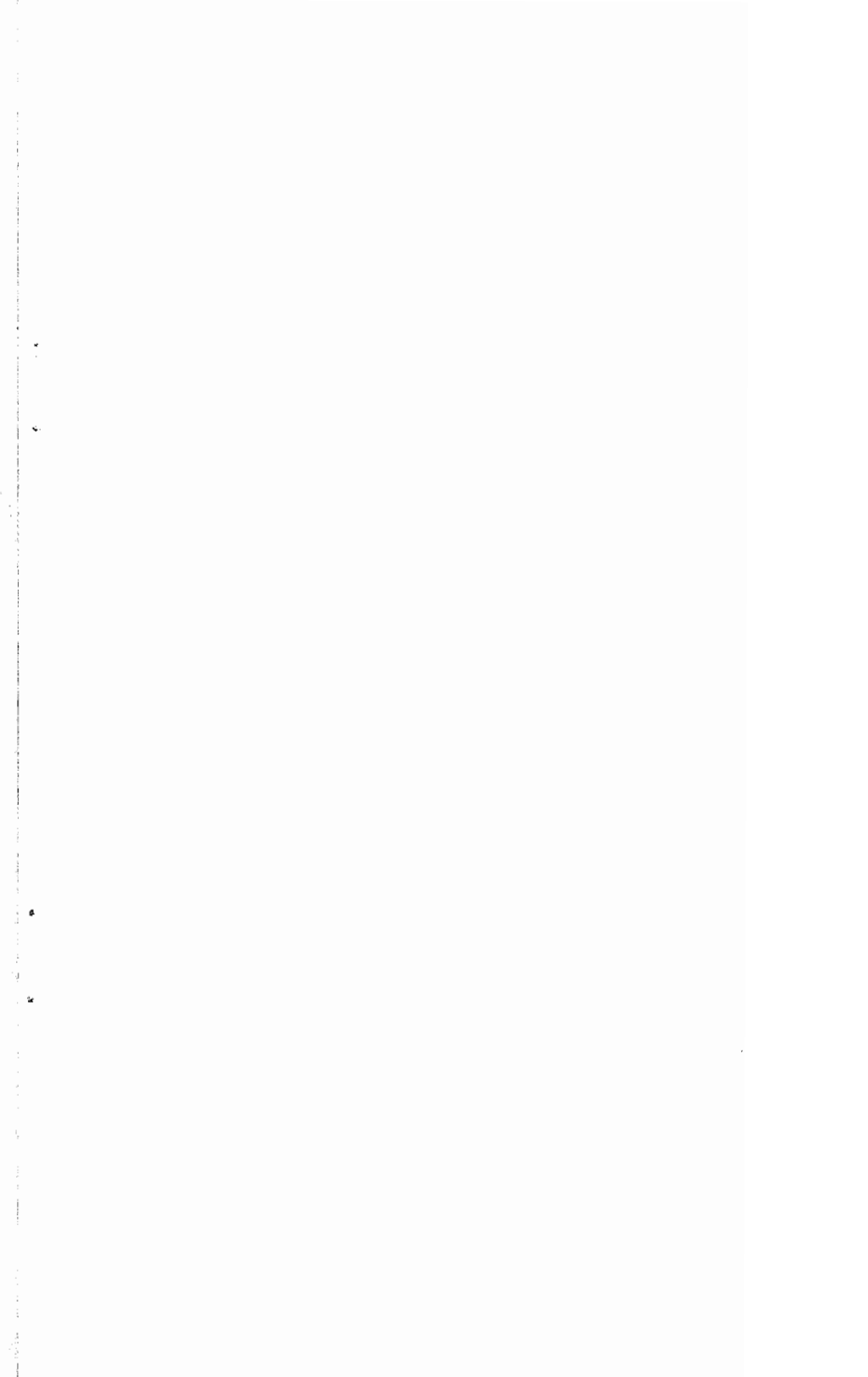


PLATE 7-- BREWERTON SIDE-NOTCHED POINTS

1-5, 7-8, 13-16, Robinson site, Brewerton, Onondaga County, N. Y.; others Oberlander No. 1 site, Brewerton, Oswego County, N. Y.

All in collection of Rochester Museum of Arts and Sciences.

Material: All Onondaga flint.



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PLATE 8—CLOVIS POINTS

1, Cte. 1-2 site, Deer River, Lewis County, N. Y.; 2, Onondaga County, N. Y.; 3, Kingston site No. 2, Ulster County, N. Y.; 4, 7, 8, Cocksackie, Greene County, N. Y.; 5, Livingston County, N. Y.; 6, Lot 12, Van Buren, Onondaga County, N. Y.

All in collection of N. Y. State Museum.

Material: 1, Little Falls dolomite flint; 2, 3, 5, 8, jasper; 4, Deepkill flint; 6, 7, Onondaga flint.

NEW YORK PROJECTILE POINTS



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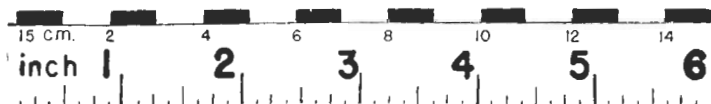
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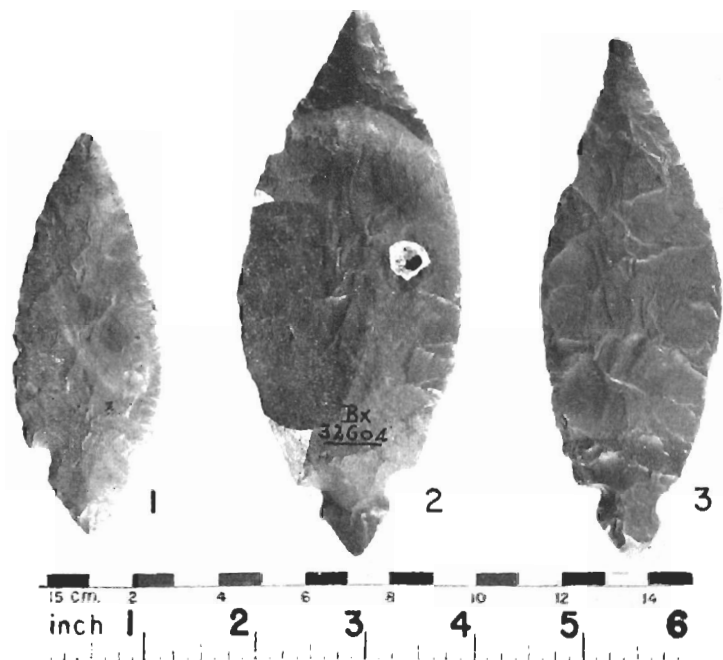


PLATE 9—FULTON TURKEY TAIL POINTS

1, Seneca River, Onondaga County, N. Y.; 2, 3, Brewerton, Onondaga County, N. Y.
All in collection of N. Y. State Museum.
Material: All of Harrison County, Ind. flint.

NEW YORK PROJECTILE POINTS

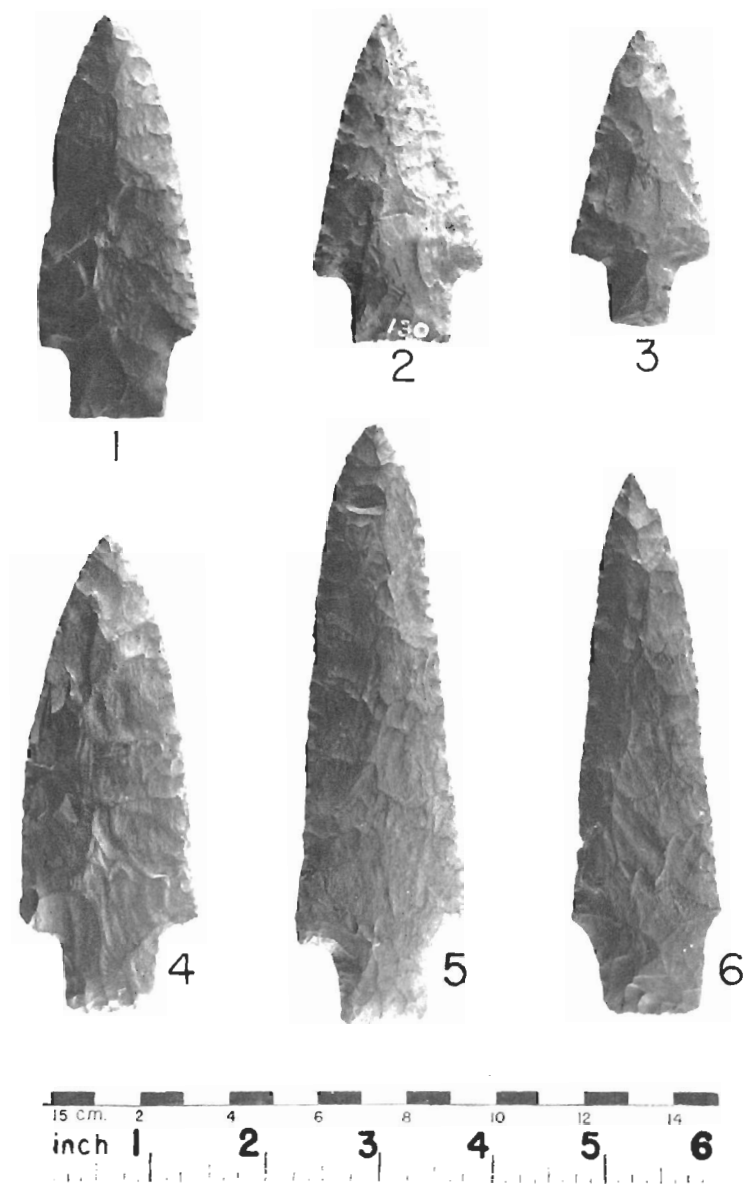


PLATE 10. GENESSEE POINTS

1, 3, 6, Lysander, Onondaga County, N. Y.; 2, Gucker site, Charlotte, Monroe County, N. Y.; 4, Wyoming County, N. Y.; 5, Onondaga County, N. Y. (?).

All in collection of N. Y. State Museum.

Material: All of Onondaga flint.

PLATE 11—JACK'S REEF CORNER-NOTCHED POINTS

1-3, 7, Van Buren, Onondaga County, N. Y.; 4, Coh. 9 site, Rensselaer County, N. Y.; 5, 8, 10, 11, Onondaga County, N. Y.; 6, Van Orden site, Greene County, N. Y.; 9, Afton, Chenango County, N. Y.; 12, Lysander, Onondaga County, N. Y.; 13, Onondaga County, N. Y. (?).

4, 6, Carl S. Sundler collection; others N. Y. State Museum collection.

Material: 1, 2, 13, jasper; 5, Flint Ridge, Ohio chalcedony; others Onondaga flint.

NEW YORK PROJECTILE POINTS



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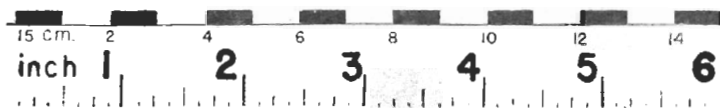
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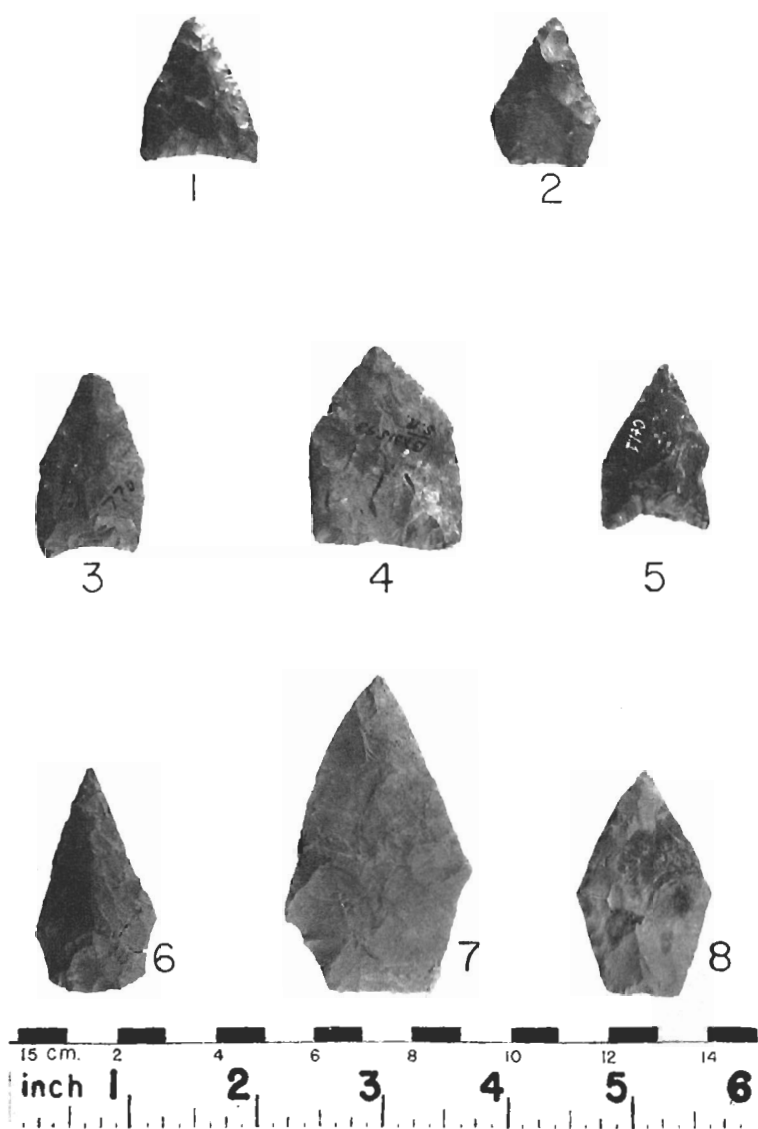


PLATE 12 JACK'S REEF PENTAGONAL POINTS

1, Wickham site, Brewerton, Oswego County, N. Y.; 2, 4, 6, 7, Onondaga County, N. Y.; 3, Clifton Park, Saratoga County, N. Y.; 5, 8, Van Orden site, Greene County, N. Y. 5, 8, collection of Carl S. Sundler; others N. Y. State Museum collection. Material: 7, 8, Deepkill flint; others of Onondaga flint.

PLATE 13—LAMOKA POINTS

1-12, 14-17, 20-24, Frontenac Island site, Cayuga County, N. Y.; others Lamoka Lake site, Schuyler County, N. Y.

All N. Y. State Museum collection.

Material: All of Onondaga flint, except 9, 13, 17, 23, 27, which are of argillaceous quartzite.

NEW YORK PROJECTILE POINTS

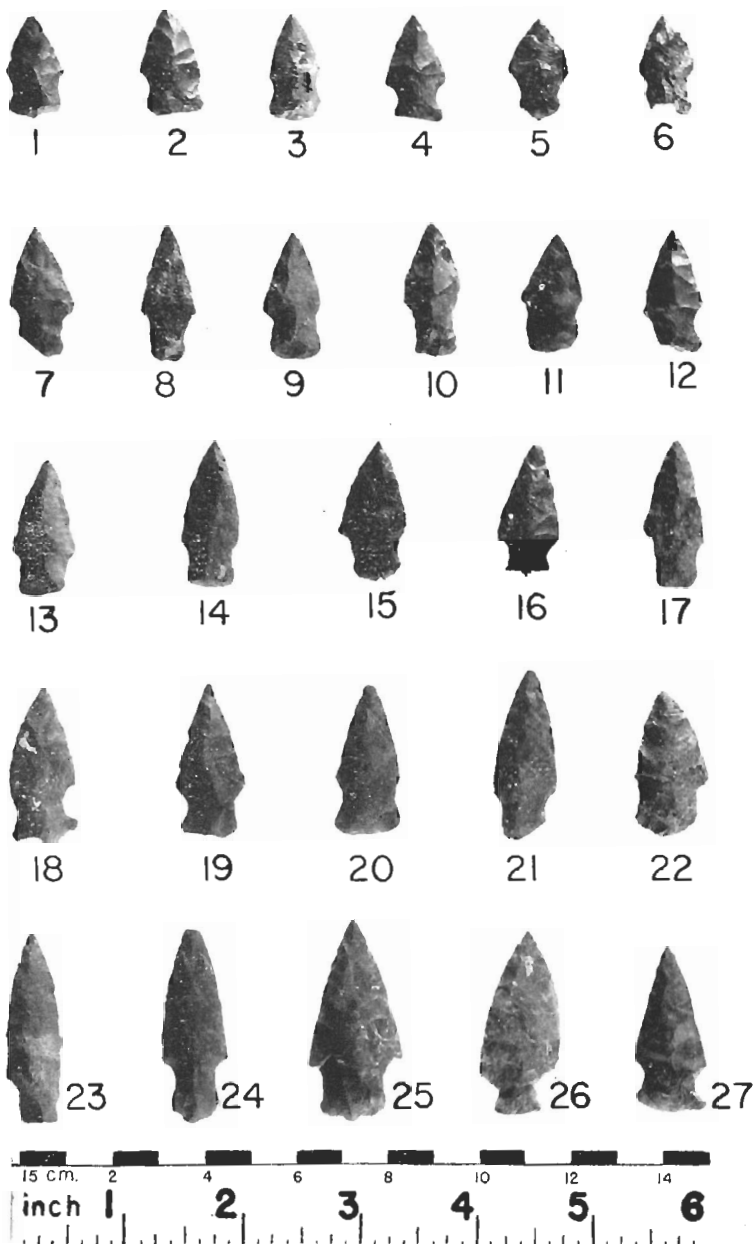


PLATE 14—LAMOKA AND "DUSTIN" POINTS

1-9, "Dustin" points, surface sites in Michigan; others Lamoka Lake site, Schuyler County, N. Y.

1-9, Museum of Anthropology, University of Michigan collection; others collection of Rochester Museum of Arts and Sciences.

Material: 1-9, various flints and jaspers; others Onondaga flint, except 18, which is of argillaceous quartzite.

NEW YORK PROJECTILE POINTS

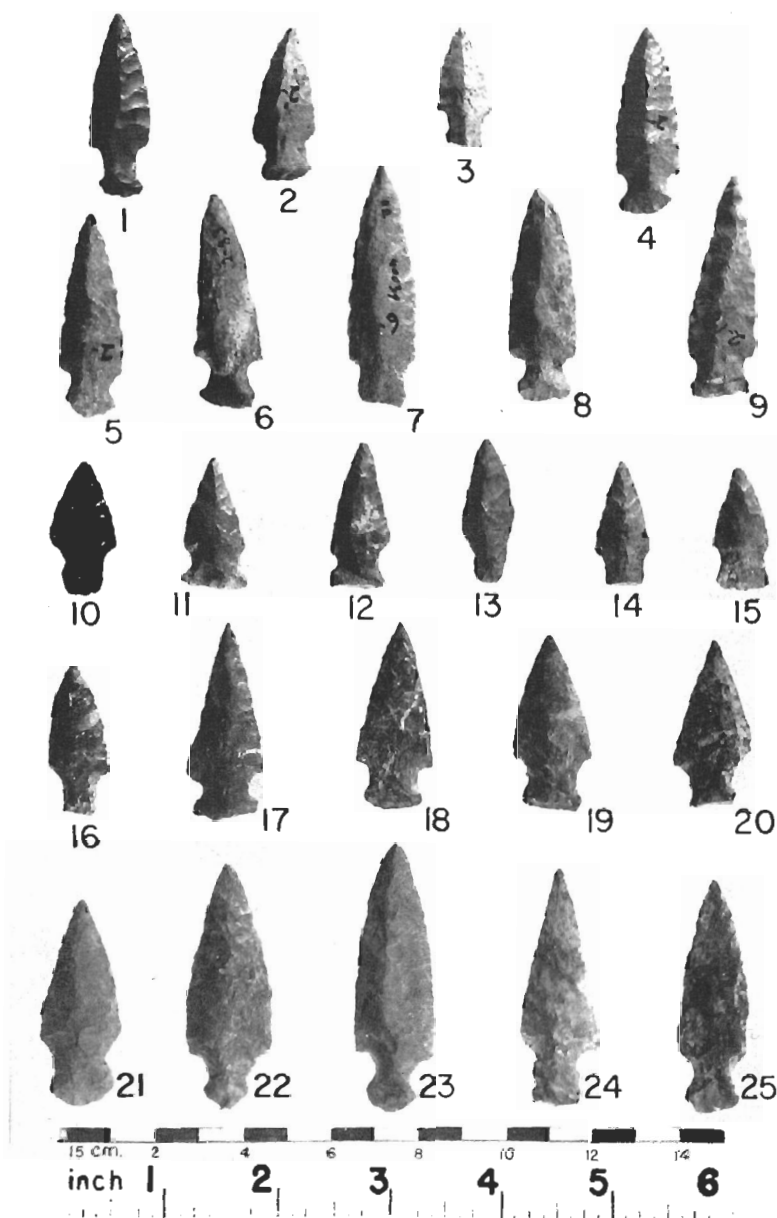


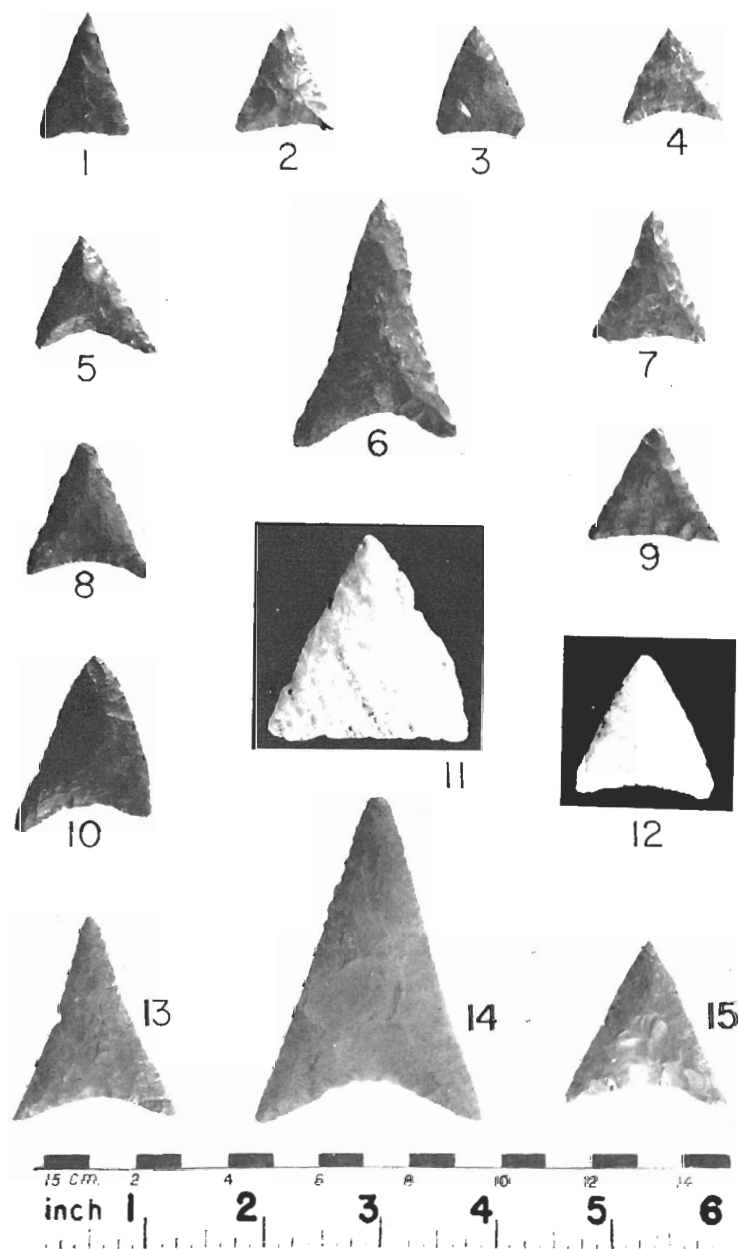
PLATE 15—LEVANNA POINTS

1, 3, 6-9, Wickham site, Brewerton, Oswego County, N. Y.; 2, 4, Sackett site, Canandaigua, Ontario County, N. Y.; 5, Chemung County, N. Y.; 10, South Cruger Island site, Dutchess County, N. Y.; 11, Patchogue, Suffolk County, N. Y.; 12, Schaghticoke, Rensselaer County, N. Y.; 13, Van Orden site, Greene County, N. Y.; 14, Clifton Park, Saratoga County, N. Y.; 15, Bates site, Chenango County, N. Y.

All collection of N. Y. State Museum, except 13, collection of Carl S. Sundler.

Material: All Onondaga flint, except 11, 12, which are of quartz.

NEW YORK PROJECTILE POINTS



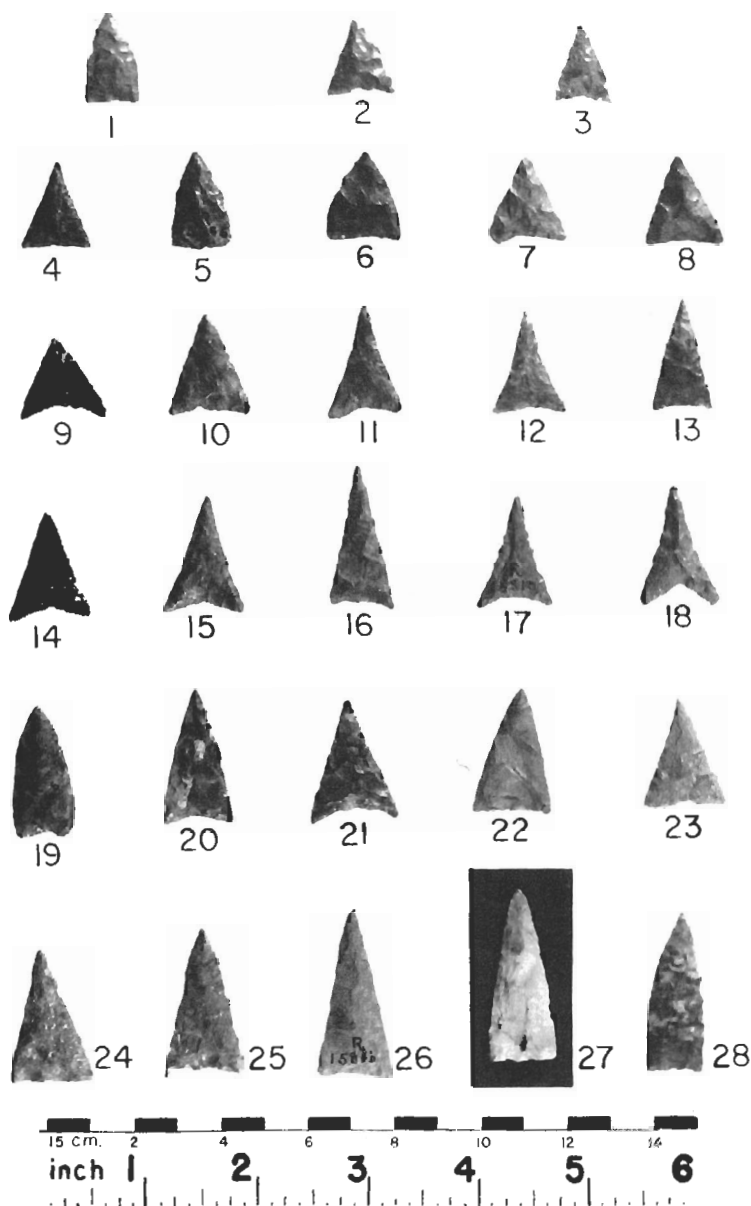


PLATE 16—MADISON POINTS

George Reed site, Richmond Mills, Ontario County, N. Y.

N. Y. State Museum collection.

Material: All Onondaga flint, except 27, which is of Flint Ridge, Ohio chalcidony, a very unusual material for Madison points.

NEW YORK PROJECTILE POINTS

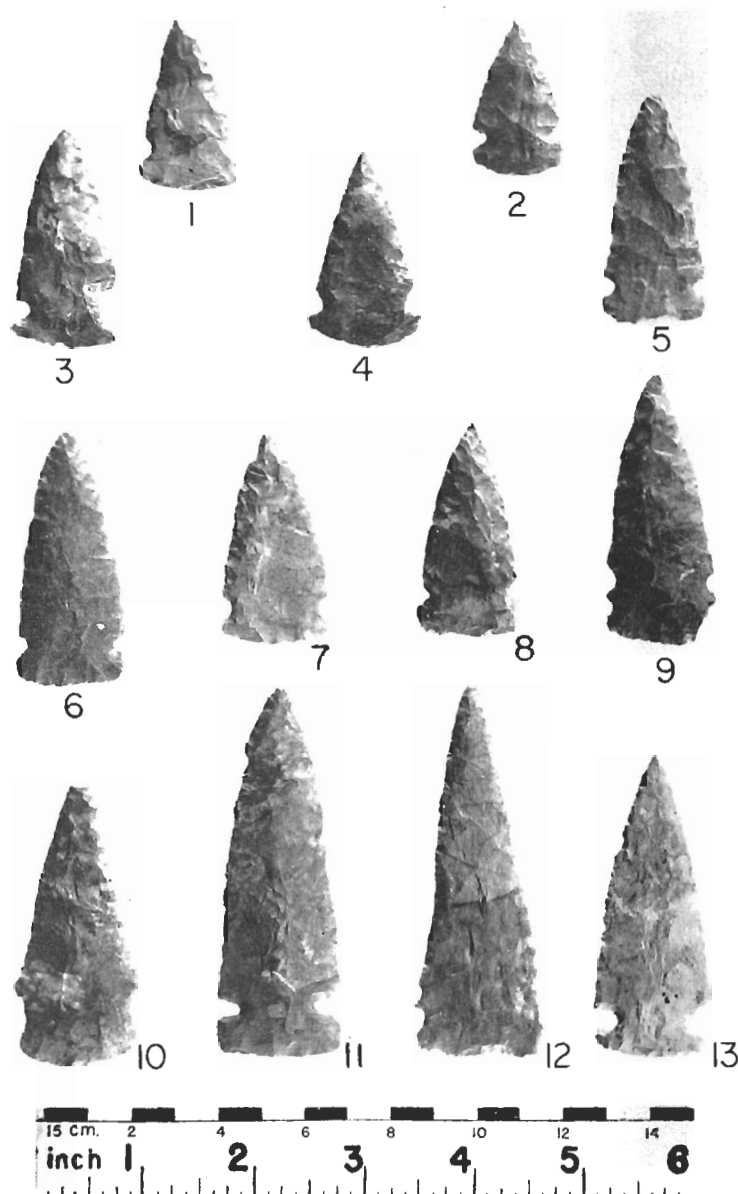


PLATE 17--MEADOWOOD POINTS

1, 2, 4, 5, 7-9, 11, Onondaga County, N. Y.; 3, 6, Elbridge, Onondaga County, N. Y.; 10, 13, Morrow site, Honeoye, Ontario County, N. Y.; 12, Lysander, Onondaga County, N. Y.

Collection of N. Y. State Museum.

Material: All Onondaga flint, chiefly western N. Y. variety.

PLATE 18—NORMANSKILL POINTS

1, 2, 6, 9, 18, Harris site, Saratoga County, N. Y.; 3, 15, Vosburg site, Albany County, N. Y.; 4, 8, 10, 14, 16, 17, River site, Saratoga County, N. Y.; 5, 13, 19, South Cruger Island site, Dutchess County, N. Y.; 7, 12, Coh. 9 site, Rensselaer County, N. Y.; 11, West Albany, Albany County, N. Y.

1, 2, 5, 6, 9, 13, 18, 19, collection of N. Y. State Museum; 3, 15, collection of James H. Zell; 4, 7, 8, 10, 14, 16, 17, collection of William Kirby; 11, 12, collection of Carl S. Sundler.

Material: All eastern N. Y. flints—Deepkill, Normanskill and Fort Ann.

NEW YORK PROJECTILE POINTS

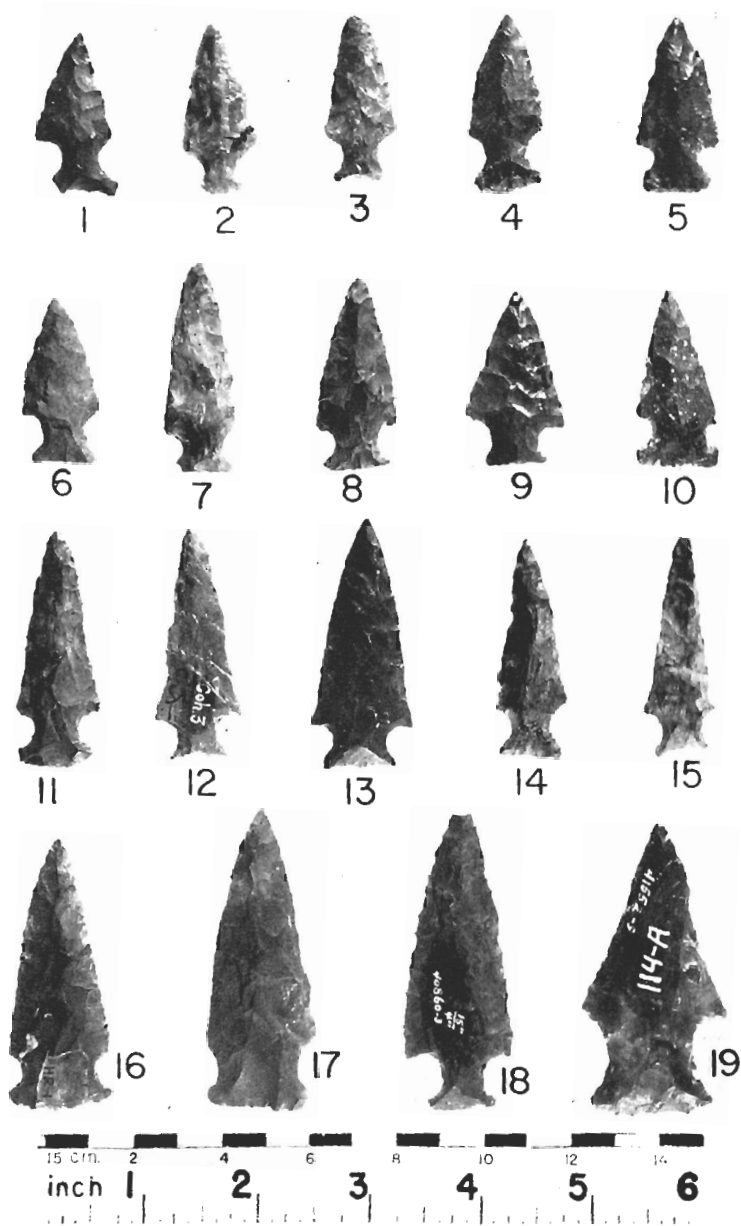


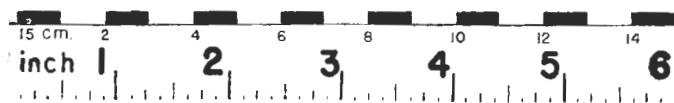
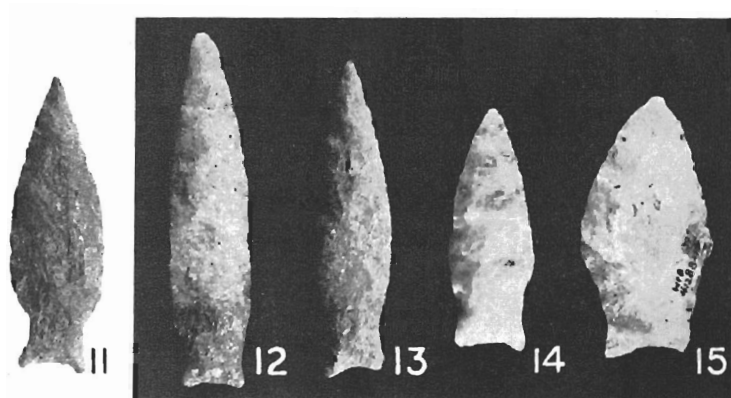
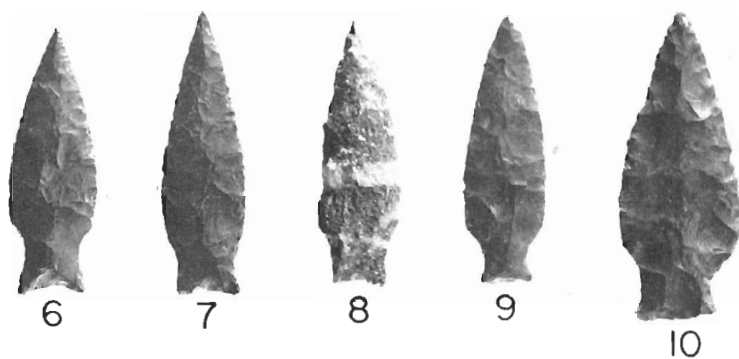
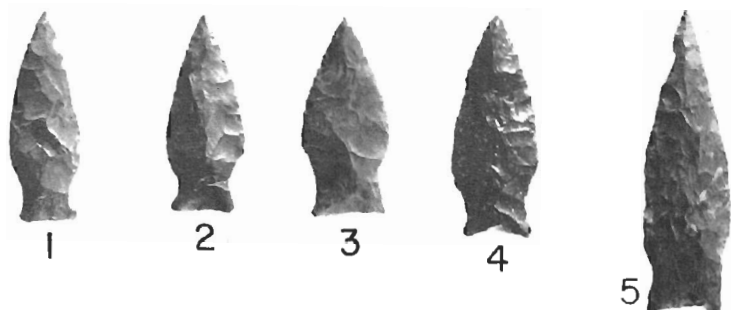
PLATE 19—ORIENT FISHTAIL POINTS

1-4, 6, 7, 9, Van Orden site, Greene County, N. Y.; 5, 8, 13-15, Jamesport site, Suffolk County, N. Y.; 10, Lysander, Onondaga County, N. Y.; 11, 12, Stony Brook site, Suffolk County, N. Y.

1-4, 6, 7, 9, Carl S. Sundler collection; others N. Y. State Museum collection.

Material: 1, Normanskill flint; 2-7, 9, Deepkill flint; 8, 11-13, quartzite; 14, 15, quartz.

NEW YORK PROJECTILE POINTS



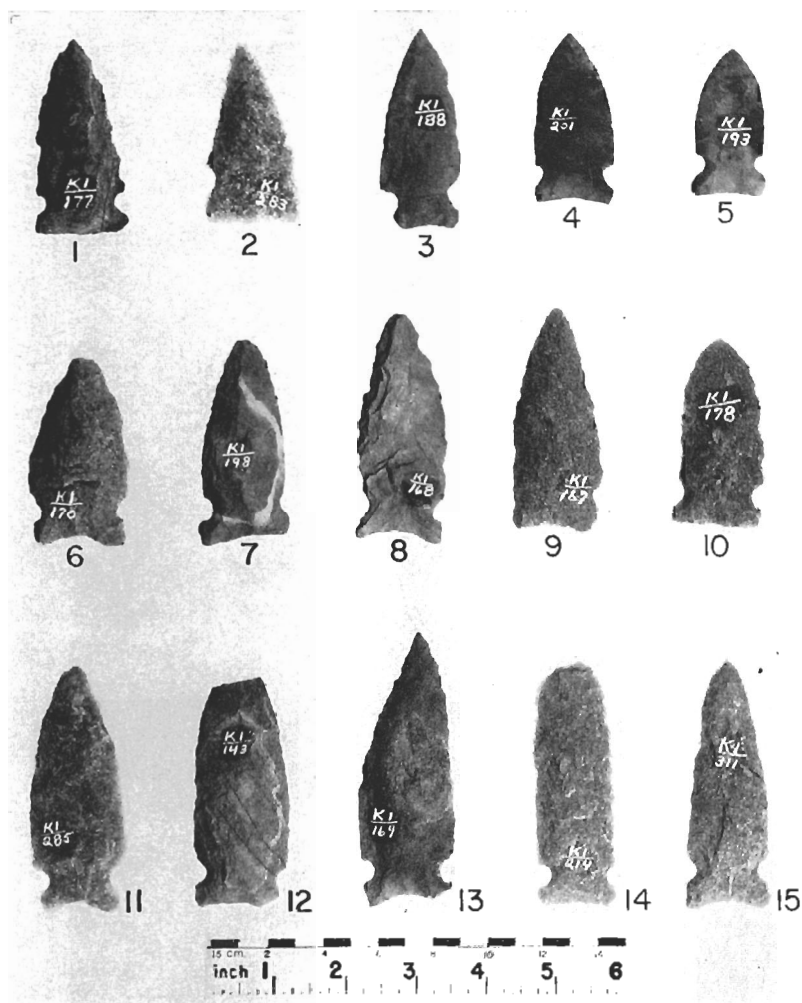


PLATE 20—OTTER CREEK POINTS

KI site, Rurand County, Vt.

2, 4, 6-9, 11, 13-15, collection of Thomas E. Daniels; others collection of Kathleen Rowlands.

Material: 1, 12, 13, metamorphosed siltstone; 2, 6, 9-11, 14, 15, quartzite; 3, 7, 8, Normanskill (?) flint; 4, 5, banded gray flint.

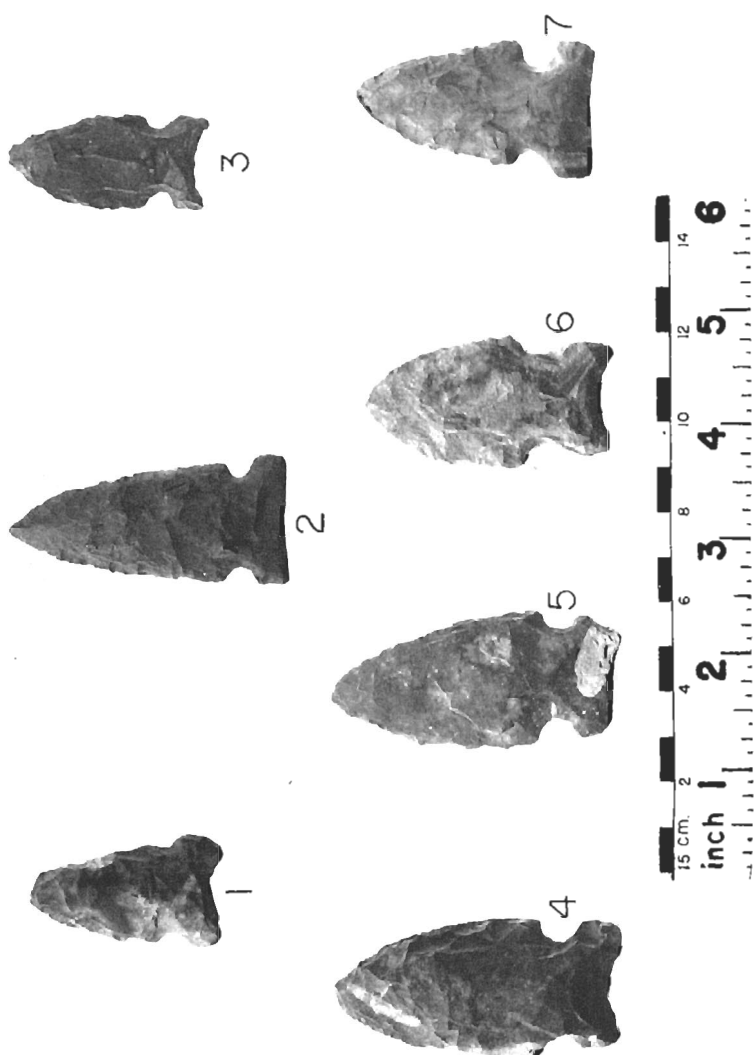
PLATE 21—OTTER CREEK POINTS

1, 4, 5, Van Orden site, Greene County, N. Y.; 2, 6, 7, Malta, Saratoga County, N. Y.;
3, South Cruger Island site, Dutchess County, N. Y.

1, 4, 5, collection of Carl S. Sundler; others N. Y. State Museum collection.

Material: All Normanskill flint.

NEW YORK PROJECTILE POINTS



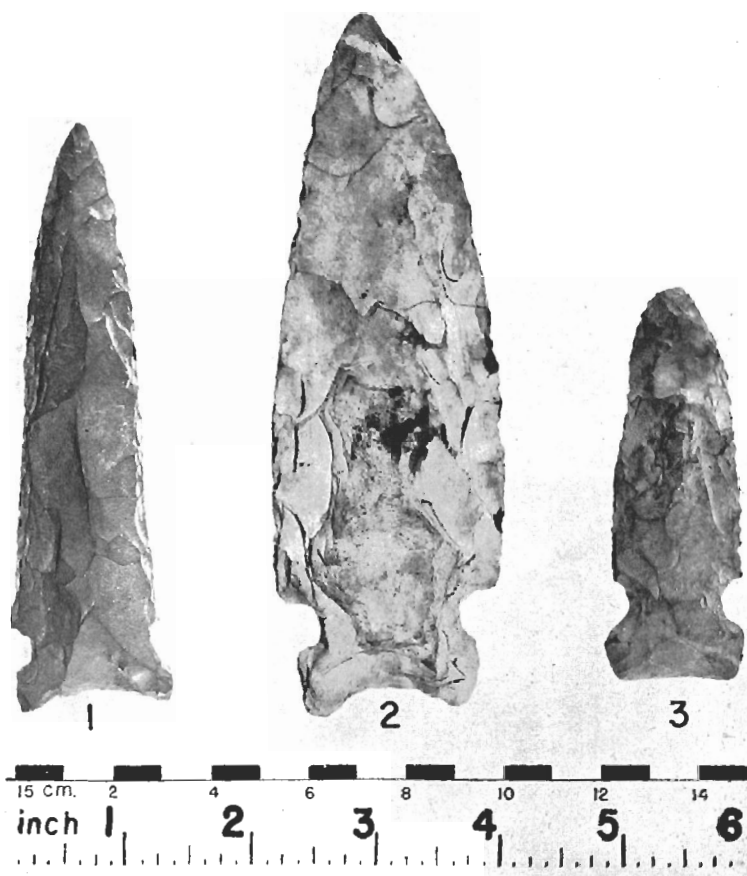


PLATE 22--OTTER CREEK POINTS

1, Stillwater, Saratoga County, N. Y.; 2, Bemis Heights, Saratoga County, N. Y.;
3, Fish Creek, Saratoga County, N. Y.
N. Y. State Museum collection.
Material: All Normanskill flint.

NEW YORK PROJECTILE POINTS

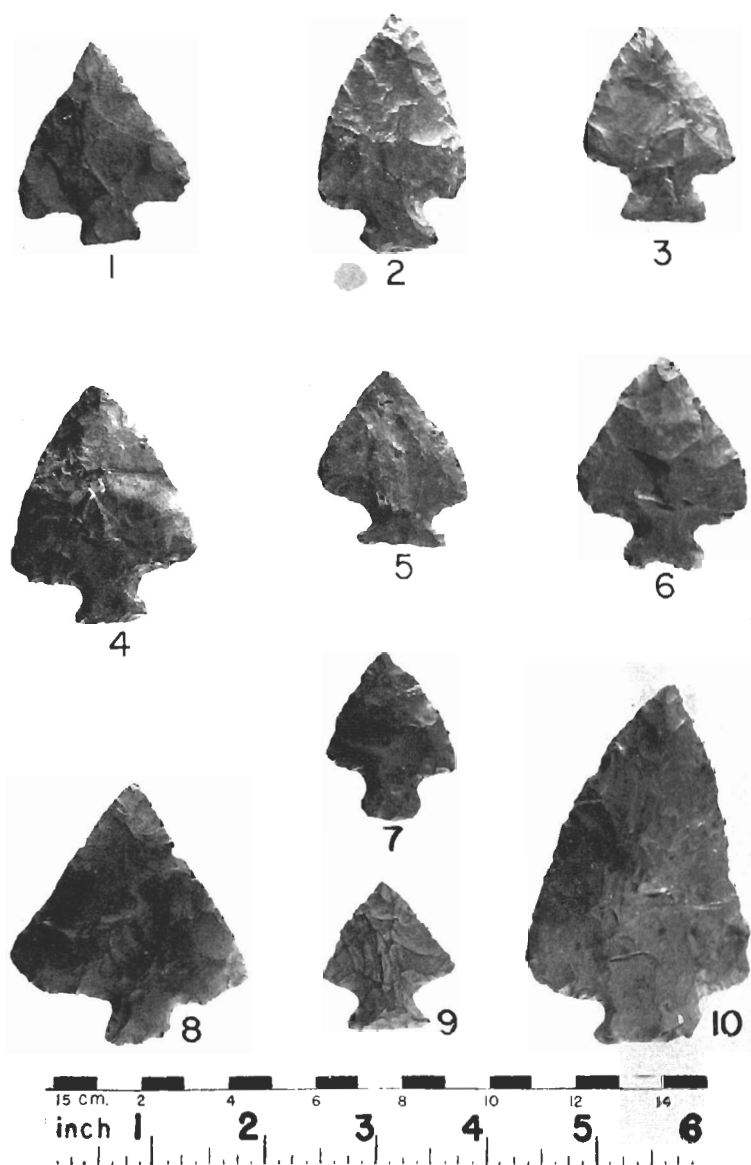


PLATE 23—PERKIOMEN BROAD POINTS

Found along Seneca River, Onondaga County, N. Y.
 N. Y. State Museum collection.
 Material: All Onondaga flint.

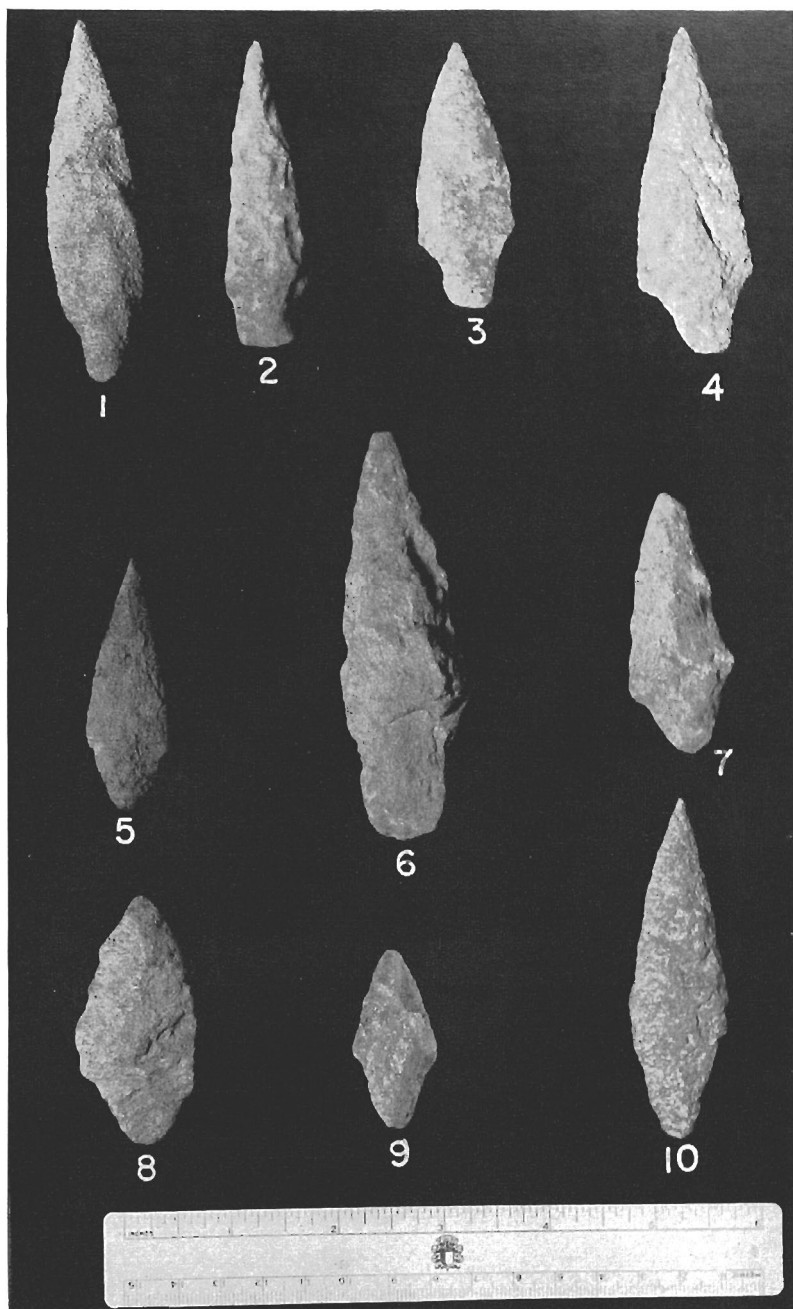
PLATE 24—POPLAR ISLAND POINTS

Kent-Hally site, Bare Island, Lancaster County, Pa.

Collection of Pennsylvania Historical and Museum Commission by whose courtesy they are reproduced.

Material: Argillite and siltstone.

NEW YORK PROJECTILE POINTS



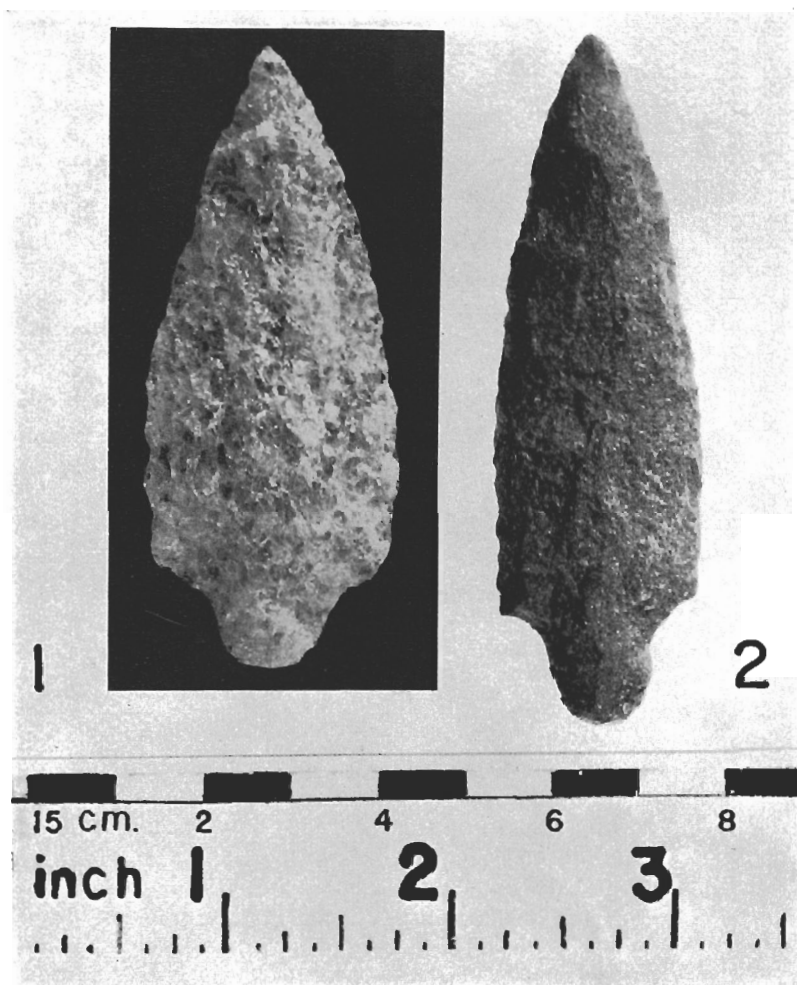


PLATE 25—POPLAR ISLAND POINTS

1, 2, Van Orden site, Greene County, N. Y.

Collection of Carl S. Sundler.

Material: quartzite.

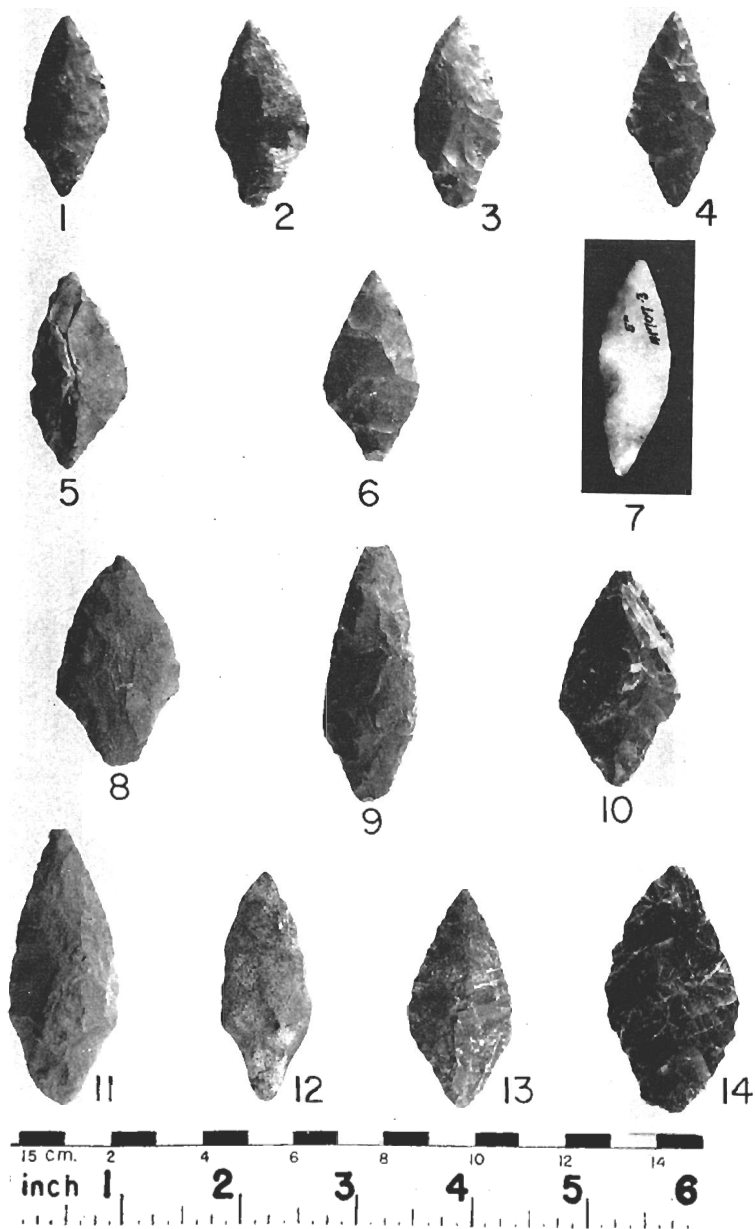


PLATE 26—ROSSVILLE POINTS

1, 5, 12, Bannerman site, Dutchess County, N. Y.; 2-4, 6, 8-11, 13, 14, Van Orden site, Greene County, N. Y.; 7, Stony Brook site, Suffolk County, N. Y.

1, 5, 7, 12, collection of N. Y. State Museum; others Carl S. Sundler collection.

Material: 1, 3, 6, 8-10, 13, 14, Deepkill flint; 2, 4, Fort Ann flint; 7, quartz; 11, 12, argillaceous siltstone.

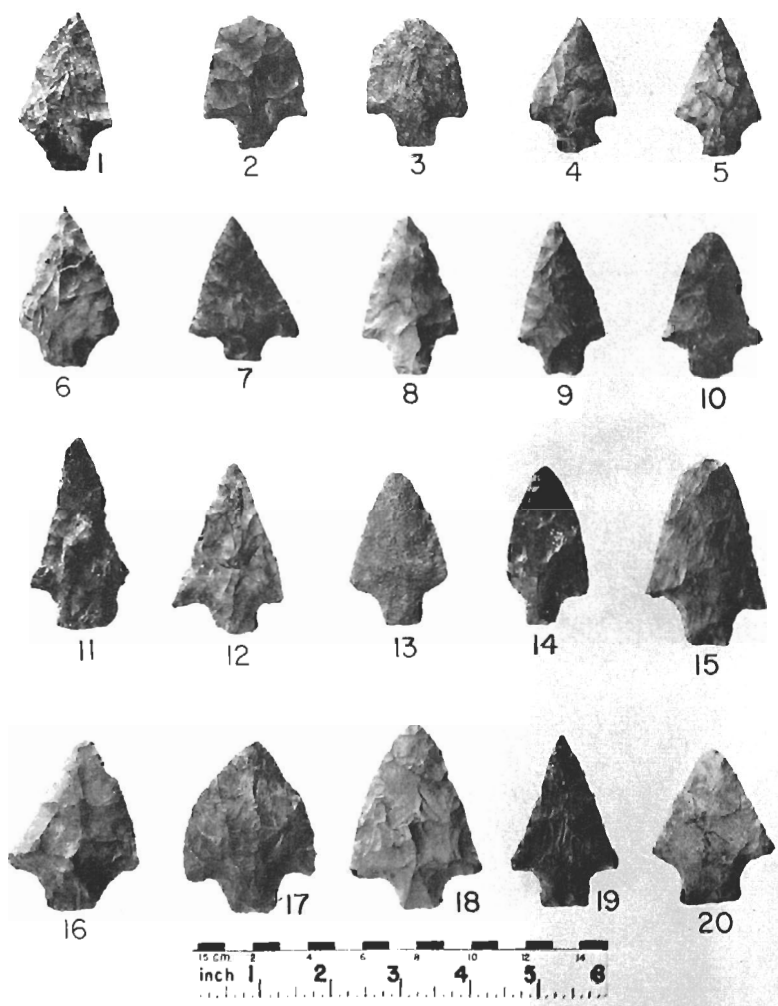


PLATE 27-- SNOOK KILL POINTS

Weir site, Rensselaer County, N. Y.

Collection of James H. Zell.

Material: 1, 2, 4-8, 10-12, 15-20, Normanskill flint; 3, Oriskany flint; 9, 14, Onondaga flint; 13, argillite.

NEW YORK PROJECTILE POINTS

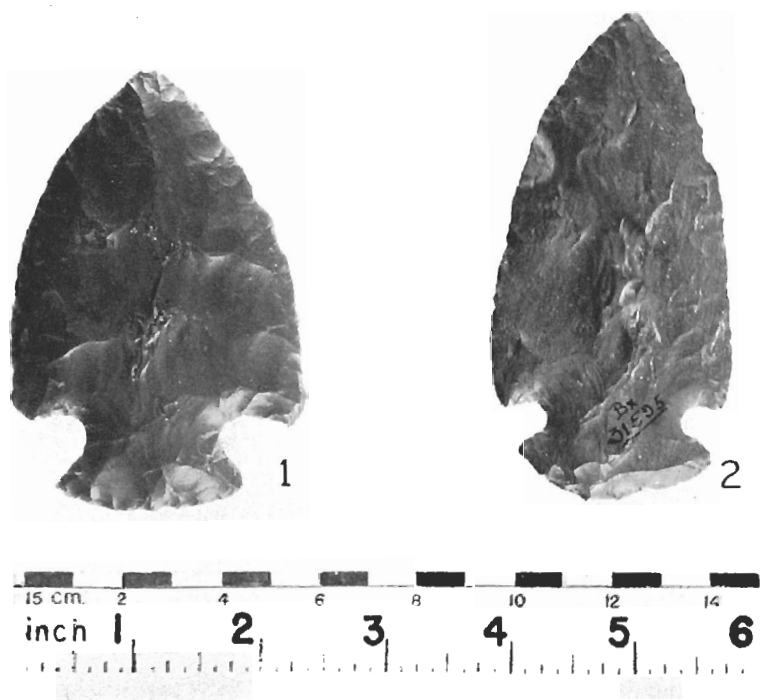


PLATE 28—SNYDERS POINTS

1, Portageville, Livingston County, N. Y.; 2, Seneca River, Onondaga County, N. Y.
Collection of N. Y. State Museum.

Material: 1, Harrison County, Ind. flint; 2, Onondaga flint (?).

PLATE 29—STEBENVILLE LANCEOLATE POINTS

1-3, 5, 6, 8, Ford site, Columbia County, N. Y.; 4, Four Mile Point, Greene County, N. Y.; 7, Van Buren, Onondaga County, N. Y.; 9, Clifton Park, Saratoga County, N. Y.

1-3, 6, collection of Edward B. Christman; 4, 7, 9, N. Y. State Museum collection; 5, 8, collection of R. Arthur Johnson.

Material: 1, 2, 6, Deepkill flint; 3, 5, 9, Norman kill flint; 4, 8, argillite; 7, Oriskany flint.

NEW YORK PROJECTILE POINTS



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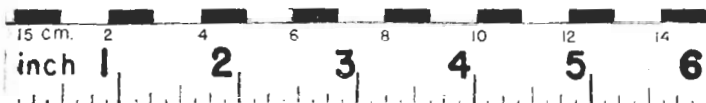


PLATE 30—STEUBENVILLE STEMMED POINTS

1-3, 6, 7, Ford site, Columbia County, N. Y.; 4, Four Mile Point, Greene County, N. Y.; 5, Roger's Island, Columbia County, N. Y.; 8, Coh. 9 site, Rensselaer County, N. Y.; 9, Seneca River, Onondaga County, N. Y.

1, 3, 6, 7, collection of Edward B. Christman; 2, 4, 5, 9, collection of N. Y. State Museum; 8, collection of Carl S. Sundler.

Material: 1, 3, Deepkill flint; 2, 6, argillite; 4, Oriskany flint; 5, 8, Normanskill flint; 7, 9, Onondaga flint.

NEW YORK PROJECTILE POINTS



1



17-8

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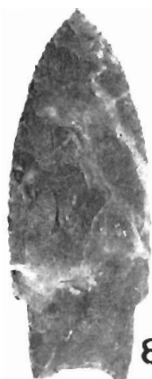
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9



PLATE 31—SUSQUEHANNA BROAD POINTS

1-3, Seneca River, Onondaga County, N. Y.; 4, 6, 10, New Berlin, Chenango County, N. Y.; 5, 7, 8, Chemung County, N. Y.; 9, 11, Lysander, Onondaga County, N. Y.
Collection of N. Y. State Museum.

Material: 1-3, 9, 11, Onondaga flint; others rhyolite.

NEW YORK PROJECTILE POINTS

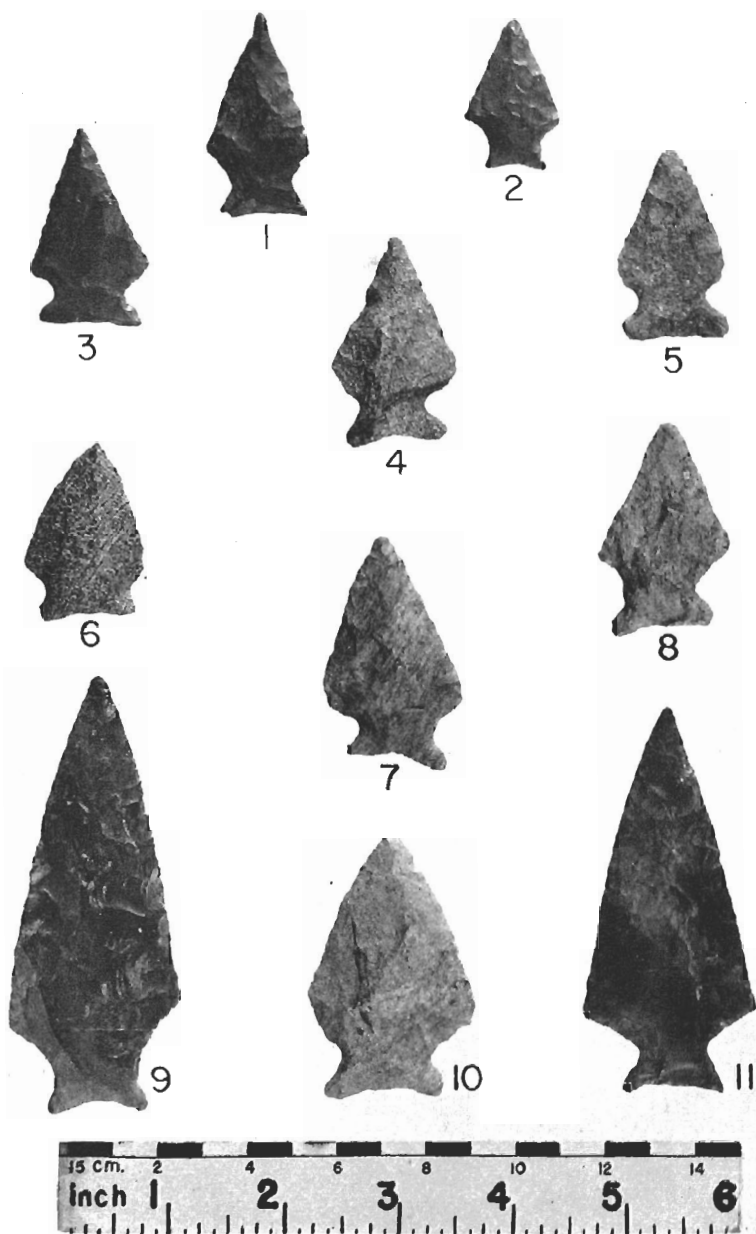


PLATE 32—VOSBURG POINTS

1, Covered Bridge site, Albany County, N. Y.; 2, 5, 10, Dunsbach Ferry site, Albany County, N. Y.; 3, 11, Glens Falls, Warren County, N. Y. 4, 7, 13, Van Orden site, Greene County, N. Y.; 6, Onondaga County, N. Y.; 8, Cocksackie Flint Mine, Greene County, N. Y.; 9, Vosburg site, Albany County, N. Y.; 12, Four Mile Point, Greene County, N. Y.
1, 2, 4, 5, 7, 9, 10, 13, collection of Carl S. Sundler; others N. Y. State Museum collection.
Material: Deepkill and Normanskill flints.

NEW YORK PROJECTILE POINTS



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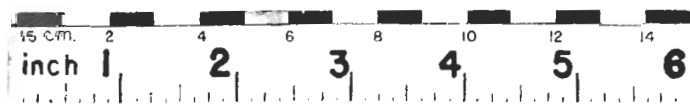
9



10



13



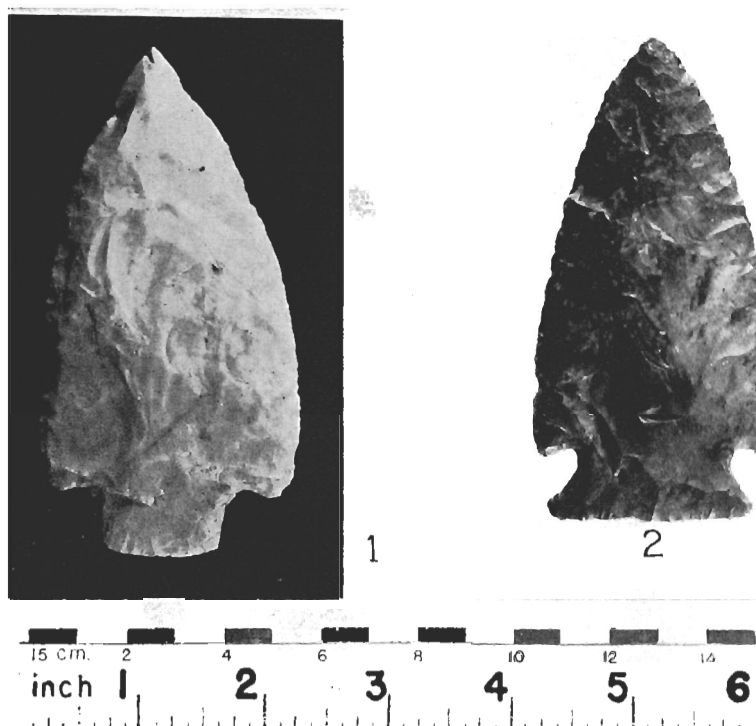


PLATE 33—POINTS OF EXOTIC FLINT

1, broad-bladed, thin, straight stemmed point, from Seneca River, Onondaga County, N. Y. This is apparently an undesignated point form of the Adena culture, which occurs also in the related Middlesex complex of the Northeast (see Ritchie and Dragoo, 1960, plate 8, figures 1, 2, 4, 5).

2, broad-bladed, thin, corner-notched point from the Genesee Valley of western N. Y. It seems to be an unusually large example of the Jack's Reef Corner-Notched type (see plate 11). Similar specimens are found in Hopewell culture sites of Ohio and elsewhere.

Material: Both points are made of Flint Ridge, Licking County, Ohio chalcidony.

NEW YORK PROJECTILE POINTS

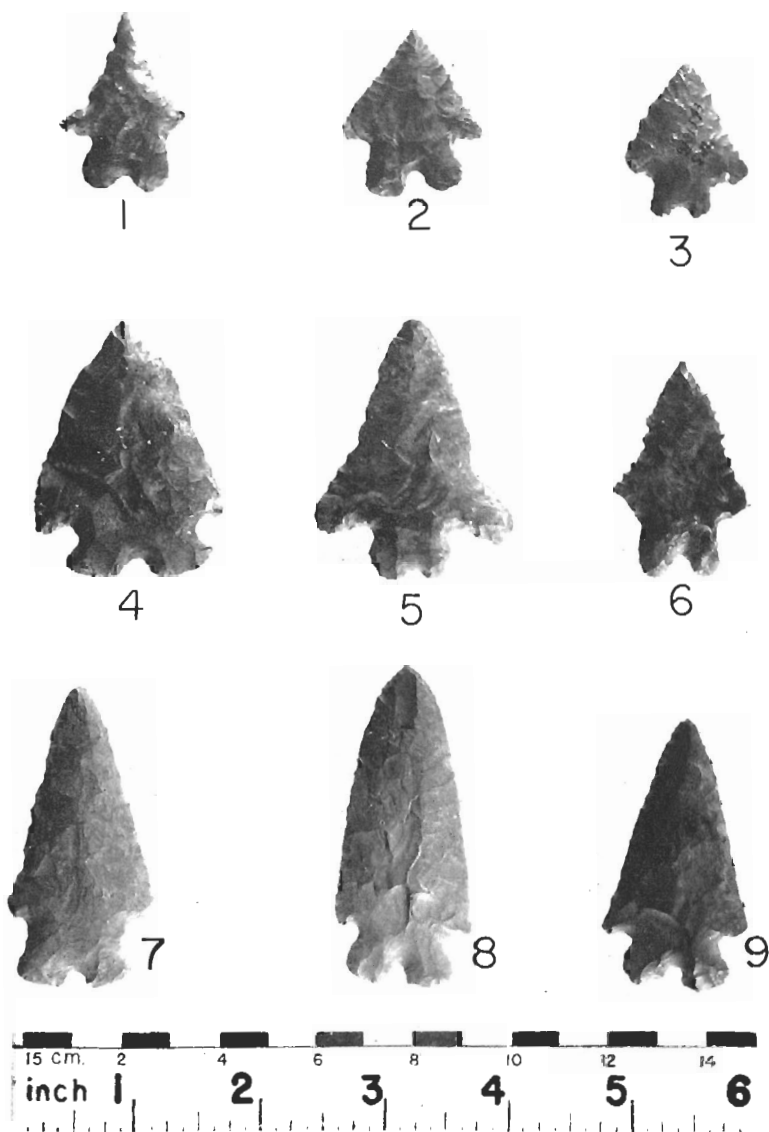


PLATE 34—UNTYPED BITURCATED BASE POINTS

1, 3-5, 7, 9, Onondaga County, N. Y.; 2, Van Orden site, Greene County, N. Y.; 6, Bannerman site, Dutchess County, N. Y.; 8, Lysander, Onondaga County, N. Y.
 2, collection of Carl S. Sundler; others N. Y. State Museum collection.
 Material: 1, Flint Ridge, Ohio chalcedony; 2, 6, Deepkill flint; others Onondaga flint.

PLATE 35—UNTYPED NARROW TRIANGULAR POINTS

1, 6, Coh. 9 site, Rensselaer County, N. Y.; 2, 3, Round Lake, Saratoga County, N. Y.; 4, Clifton Park, Saratoga County, N. Y.; 5, West Albany, Albany County, N. Y.; 7, Elbridge, Onondaga County, N. Y.; 8, Fish Creek, Saratoga County, N. Y.

1, 5, 6, Carl S. Sandler collection; others N. Y. State Museum collection.

Material: 1, 4, Normanskill flint; 2, 3, 5, 8, Deepkill flint; 6, 7, Onondaga flint.

NEW YORK PROJECTILE POINTS



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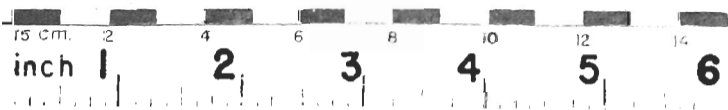


PLATE 36—UNTYPED BROAD-BLADED, STEMMED POINTS

Numbers 1 and 2, especially, resemble Snook Kill points (plate 27), and the group as a whole may represent a variant of this probably Late Archaic type.

1, Fish Creek, Saratoga County, N. Y.; 2, Stillwater, Saratoga County, N. Y.; 3, Clifton park, Saratoga County, N. Y.; 4, Seneca River, Onondaga County, N. Y.; 5, Van Orden site, Greene County, N. Y.

5, collection Carl S. Sundler; others N. Y. State Museum collection.

Material: 1-3, 5, Deepkill flint; 4, Onondaga flint.

NEW YORK PROJECTILE POINTS

