Traces of Early Man in the Northeast

By
William A. Ritchie
State Archeologist
New York State Museum
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During some as yet undetermined period prior to about 10,000 years ago, hunters equipped with the heavy fluted points of the Clovis industry roved about in the well-watered and partly wooded areas of the southern plains, adjacent Rocky Mountain foothills, Colorado Plateau and portions of the now desert basin area of New Mexico and Arizona. Especially graphic records of this epoch have been revealed at Clovis, N. Mex.; Lubbock, Tex., and at Naco and Hereford, Ariz. At these places occur "kill sites" of mammoth, horse, camel, bison and other late Pleistocene fauna, in lacustrine or fluvial deposits indicative of moist and probably cool climatic conditions.[1]

At Clovis and Lubbock there is geologic record of a succeeding long span of extreme aridity which current comprehension finds incongruous, temporally or stratigraphically, with the postglacial dry cycle, or Altithermal phase of Antevs, estimated to have occurred between approximately 7,000 and 4,000 years ago.[2] The earlier arid interval would seem rather to be referable to the Cary-Mankato or Two Creeks Interstadial episode, radiocarbon dated between 13,500 and 11,000 years ago.[3] Conceivably during this long stage of relative dryness, some of the early hunters and the large beasts upon which they primarily depended for subsistence temporarily abandoned parts of the area for more propitious regions, perhaps in the distant and less arid eastern United States.

Both geologic and archeologic data in the southern High Plains attest to a subsequent period of moist, cool climate responsible for accumulations in various parts of Texas and New Mexico of diatomaceous earth or humic soils, productive of the generally smaller and more finely chipped fluted points of the Folsom category, associated with the bones of the principal quarry at this period, *Bison antiquus*.

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[1]Howard, 1935, pp. 79–100; Cotter, 1937; Wormington, 1949, pp. 33–45; Sellards, 1952, pp. 17–46; Haury, 1953, pp. 1–24; Krieger, 1956, p. 452.
[2]Wendorf, Krieger, Albritton and Stewart, 1955, pp. 69–99; Antevs, 1953*a*.
[3]Suess, 1956, p. 356.

A radiocarbon date of 9,883 ± 350 years on carbonized bison bones from the Lubbock locality, suggests that this pluvial or relatively wet episode was related to the Mankato and/or Valders advance in the north.[1]

In the Northeast, this advancing glacier was impounding in various portions of the Huron, Erie and Ontario basins, the deep icy waters of Lake Warren, one of a succession of glacial lake stages in this region, and still farther east Lake Vermont was being created in the Champlain Lowland.[2] There seem neither actual nor theoretical grounds to support the belief that any human being had up to this time, about 11,000 years ago,[3] penetrated into the bleak northeastern forests, predominantly of spruce and fir,[4] and still the probable habitat of the mastodon.[5]

In the southeastern United States, however, well beyond the range of the glaciers, conditions within the deciduous forests and possible grassland extensions from the west may long have been favorable for early hunters. The widespread occurrence of points generally conforming to the Clovis pattern suggests this possibility, but unfortunately without affording the supporting testimony of faunal remains or the discovery of radiocarbon datable material.

In the Northeast area, geologic evidence suggests the post-Valders maximum age of the fluted points, which in the main fall within the established range of the Clovis type, and the probability that the first hunters entered this section of the country, perhaps from a southerly or southwesterly direction, after relatively modern conditions of topography, climate and presumably flora and fauna had become established here, following the disappearance, estimated at around 7,000 years ago, of the final glacial bodies of water, Lakes Iroquois and Vermont.[6]

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[1]Sellards, 1952, pp. 47–60; Wendorf, Krieger, Albritton and Stewart, 1955, pp. 68–69, 71–76, 98; Forbis, 1956; Suess, 1956, p. 356; Libby, 1955, p. 107.

Alex D. Krieger, who visited me on October 5, 1956, and was kind enough to read the manuscript of this paper and offer constructive criticism, suggests *Bison taylori* as the preferred nomenclature, since *B. antiquus* has not been established as a distinct species.

[2]Fairchild, 1909, 1919; Chapman, 1937; Hough, 1953.

[3]Suess, 1956, p. 356; Flint, 1956, p. 272.

[4]By conversation with Paul B. Sears, April 8, 1954.

[5]The latest direct evidence bearing on this association comes from the Colgan farm, near King Ferry, Cayuga Co., N. Y., where a mastodon skeleton occurred embedded in clay beneath a layer of peat and muck. Needles of black spruce and balsam fir, together with wood and cones of the spruce were recovered (August 1955) *in situ* from the clay near the bones by Dr. Clair A. Brown, professor of botany, Louisiana State University. A fragment of this wood supplied by Dr. Brown has recently been sent by the writer to Dr. Edward S. Deevey for radiocarbon analysis at the Geochronometric Laboratory of Yale University.

[6]Flint, 1953, plate 3; 1956, p. 272.

Until recently the sole basis for the assumption of a paleo-Indian horizon in the eastern United States comprised the random surface distribution from Alabama to New Brunswick of fluted points of somewhat variable form, but exhibiting certain consistent features of construction and such details of treatment as smoothed lower edges and base. Actual campsites have now been identified and have produced, in addition to fluted points, a small complex of relatively simple, mainly uniface, flake implements, consisting principally of end and side scrapers, knives and gravers. Yet even within the limited range of this complex, as manifested at the Quad site, northern Alabama;[1] Parrish site, northwestern Kentucky;[2] Williamson site, southeastern Virginia;[3] Shoop site, eastern Pennsylvania;[4] Reagen site, northwestern Vermont,[5] and Bull Brook site, northeastern Massachusetts,[6] there is a sufficient variation in formal detail and quantitative distribution to suggest still uninterpretable spatial and/or temporal differences.[7]

In New York State we continue to seek an assemblage of this kind, marking a favored camping spot. Helpful leads emerge from the distributional plotting of fluted points, shown on figures 1, 2, since certain loci are revealed as potential centers of concentration. Unhappily, the exact provenience of the majority of the specimens seen in museums and private collections is unknown, because they were collected prior to 1926, when the temporal significance of the fluted form of point was first recognized.[8] As "one of the rarest" of the "distinct varieties of the triangular arrows," Beauchamp had long before remarked upon this form, but since an example was found within a prehistoric, earth-walled town site on the Seneca River in central New York, he postulated an Iroquoian origin.[9] In the writer's study it has been possible in most cases to localize the finds to townships, while in a few instances the farm, field or even, rarely, a more precise find-spot is ascertainable (see table 1). Considerable pains and effort have been expended to collect, check and verify these data and to determine from the finders, wherever possible, information regarding

[1]Soday, 1954, pp. 1–20.
[2]Webb, 1951, pp. 432–450.
[3]McCary, 1951, pp. 9–17.
[4]Witthoft, 1952, pp. 464–495.
[5]Ritchie, 1953, pp. 249–258.
[6]Byers, 1954, pp. 343–351.
[7]Witthoft (1952, p. 492) has suggested a division of the eastern sites into two industries, an earlier or Enterline (Shoop, Williamson, St. 4) and a later or Parrish (Parrish, Wilhelm, Reagen). Almost certainly this is an oversimplification of the facts.
[8]Cook, 1927; Figgins, 1927.
[9]Beauchamp, 1897, p. 21. The specimen shown in his figure 13 is illustrated in plates 2A, B, figures D, d.

terrain and associations with other artifacts. The results of this first distributional study seem, therefore, to admit of certain provisional deductions with respect to probable derivation, affinity and relative age in the cultural succession in the Northeast.

They also serve to emphasize the absolute rarity in this area of traces of the earliest hunters, although in this respect the disparity with regions immediately to the south and west does not seem especially marked. There is, however, in the eastern United States, a progressive diminution in incidence of fluted points both to the north and south of a zone of relative concentration extending eastward through the Ohio and Tennessee valleys into Virginia.[1] This pattern of distribution, as later mentioned, suggests the existence at some former time of a favorable migration corridor into the east.

This scarcity of fluted points and especially of fluted point stations is in striking contrast to the prevalence over the whole eastern United States of surface-strewn artifacts and components of various Archaic manifestations, with which, in the Northeast, no continuity or only a tenuous linkage with the fluted point industries can be demonstrated.[2] Such a continuity, through a succession of nonfluted point forms, is to date best indicated in the Middle and Far West.[3]

The distributional evidence leads to the conclusion that the fluted point users in the Northeast, as probably elsewhere, comprised a wide scattering of tiny bands, in all likelihood limited to a few families, of great mobility and primarily dependent for sustenance on large game mammals.[4] Whether these animals included now extinct species surviving from the late Pleistocene or a modern fauna including the Virginia deer, black bear, elk and moose, the principal big game of the succeeding Archaic hunters is still to be determined. The discovery at Bull Brook, Massachusetts, of charcoal granules and calcined bone fragments suggesting deer remains about a hearth augurs well for an

[1]Shetrone, 1936; Crozier, 1939; McCary, 1947, 1948; Miller, 1950, pp. 273–275; Wittlioft, 1950; Fowler, 1954; Mahan, 1954; Mayer-Oakes, 1955, pp. 44–50, 72–74, 89–90, 130; Krieger (by conversation).

[2]Ritchie, 1953, p. 257.

[3]Mayer-Oakes, 1951, pp. 321–322; 1955, pp. 18–20; Willey and Phillips, 1955, pp. 731–732.

[4]The broad range of diet of the Clovis hunters is illustrated by the notable discovery, beginning in February 1956, of a series of buried hearths near Lewisville, Denton County, Texas. Members of the Dallas Archeological Society found in association with a Clovis point and charcoal, remains of "two tortoises, a large bison, a large wolf (?), rabbits, split bones suggestive of small deer or antelope, birds, three small mussel shells, and a snail shell, all burned and *in situ* in the hearth pits" (Krieger, 1956, p. 106).

ultimate solution of this problem.[1] While nothing in the surviving chipped stone inventory can be construed as fishing gear or equipment for the preparation of wild vegetal foods, it is difficult to conceive of a primitive food-gathering society which would totally ignore these dietary supplements to a hunter's fare. Willey and Phillips point out that large portions of the New World were pioneered on this level of culture,[2] and archeological investigations in the Northeast, and throughout the eastern United States in fact, have adduced evidence of fluted point dissemination supporting the assumption that paleo-Indian hunters enjoyed as nearly a condition of free wandering in search of food in an unoccupied country as has ever existed in the history of man.

Despite the wide latitude of fluted points indicative of extensive exploration and open territory, the distributional pattern signifies preference for certain kinds of terrain, as well as for particular locales. Thus a predilection for well-elevated situations is attested by a majority (26 or 31.7 percent) of the determinable find-spots of fluted points in New York and by the locations of all known paleo-Indian components in the East. In central and southwestern New York, however, a total of 10 (12.1 percent) fluted points have been found on and about the margins of low swampy ground formerly occupied by shallow lakes and, in subsequent times strongly attractive to Archaic and other cultural groups.[3] For six additional specimens the locus may be described as only slightly or moderately elevated (a few to about 10 feet) above the general surrounding level, while for nearly half (40 or 48.7 percent) data of this kind are unobtainable. (See table 1.)

The paleo-Indian also shared with a majority of his successors a decided choice for main waterways. The thin scatter of fluted points in the Northeast follows the principal river systems, and it would appear that the primary movements had originated to the south and southwest of the area. Thus a trail of fluted point users seems to ascend along the Ohio and Allegheny Rivers into southwestern New York; another to follow the Susquehanna and Delaware systems from Pennsylvania into central New York; while yet another to lead northward through the Hudson Valley. The Long Island Sound coastline of southern New England, continuous with the Atlantic Coastal Plain, appears to have provided a fourth route from which entry was

[1]Byers, 1955, pp. 274–275.
[2]Willey and Phillips, 1955, p. 731.
[3]Archaic components are also recorded at the Parrish, Quad and Williamson sites.

effected into river valleys like the Connecticut, and as far north along the coast as Mount Desert Island, Maine[1] and Quaco Head, St. John, New Brunswick.[2] It is of interest to observe that the Shoop site is located on a small tributary of the Susquehanna; the Reagen site on the Missisquoi River, flowing into the northern end of Lake Champlain, closely related by the Lake George connection to the Hudson Valley route; while the Bull Brook component is readily accessible from the postulated coastal approach. (See figures 1, 2.)

Large, fertile valleys, their environs and the Coastal Plain supported the heaviest populations of food animals and the aboriginal men who fed upon them in later prehistoric and early historic times, and there is little doubt of a similar ecological relationship in a still more ancient period. The absence or extreme scarcity of fluted points and subsequent cultural remains from large regions like the Adirondack and Catskill Mountains and the rugged, folded mountain and ridge country separating New England from New York east of the Hudson-Champlain Lowland, is probably thus best explained.

It is, however, obvious that the early hunters penetrated inland from the major river valleys, following smaller tributary streams into the rough uplands seldom used by Archaic peoples. While the occasional discovery of a fluted point in a remote mountain valley or terrace may connote only the place of death of a large game mammal, struck many miles away and lost to the hunter, enough instances of this kind in Pennsylvania and New York lead rather to the suppositions outlined.

As a minor digression, the possible knowledge of water travel at this early time is raised by the finding of two examples of fluted points on eastern Long Island, one near Greenport on the northern fork (figures 1, 2 and plates 10A, B, figures E,e), the second near Bridgehampton on the south fork (plates 10A, B, figures D,d). I am informed by Roy Latham[3] of Orient, Long Island, that there are no records of the freezing over of Long Island Sound to complete a land bridge from the Connecticut coast, but a winter crossing of the Hudson from the New York mainland to the western end of the Island is entirely plausible. The total absence from all paleo-Indian complexes in the country of ground stone, wood working tools (adzes, celts and gouges) probably essential to the felling and shaping of tree trunks into dugout boats, leaves us only with the possibility that on occasion a frail bark craft, or a rude driftwood raft may have

[1]Fowler, 1954, pp. 4–6.
[2]Cotter, 1937*a*, p. 36, f.n.
[3]By letter of January 20, 1956.

been employed in the crossing of streams. Along the broad and deep Hudson River, however, all recorded fluted points have come from the west side (figures 1, 2). The Susquehanna, Delaware and Allegheny Rivers, on the contrary, are and have been in historic times, fordable at many places.

As already implied, the distributional evidence suggests that the immediate source of the fluted point hunters lay to the south and southwest of our area, rather than to the north. Adjacent Ontario, Canada, has provided only 11 recorded finds beyond the example of western New York Onondaga flint, from Point Jarvis about 60 miles west of Buffalo, on the north shore of Lake Erie.[1]

Witthoft has expressed a contrary view, deriving the occupants of the Shoop site from western New York State on the basis of the predominance of western New York Onondaga flint as tool material.[2] He apparently holds to the hypothesis of the progressive south-southeastward drift across Canada from an Alaskan bridgehead of a primary influx of Asiatic hunters in late Pleistocene times, bringing, more or less directly, an offshoot of early New World immigrants into New York and Pennsylvania.[3]

I am not aware that evidence for such a postulated spread of fluted point people can be demonstrated over large sections of the implied route, nor do the data of distribution already adduced for the New York area, and the correlation with geological features, still to be discussed, appear to support this view. Moreover, as Krieger has pointed out, the technique of fluting points may well be an American invention.[4]

Witthoft stresses the probable significance for a study of paleo-Indian group movements of source identification of the lithic materials utilized in tool manufacture. He mentions the extensive employment for fluted points in eastern Pennsylvania of the distinctive local jasper and indicates the dissemination of jasper points into New York State.[5] In plotting the distribution of the recorded fluted points shown in figures 1, 2, I included in the original draft, wherever possible, symbolic references to lithic composition, insofar as it could be identified with the aid of the microscope and the assistance of geologists.[6] One

[1]Kidd, 1951, p. 260. I am indebted to Richard L. McCarthy, Lockport, N. Y., for data on the Point Jarvis specimen.
[2]Witthoft, 1952, pp. 470–471, 493.
[3]Ibid., pp. 493–494.
[4]Krieger, 1954, pp. 274–275.
[5]Witthoft, 1950, p. 50.
[6]Flint samples collected by the writer and others on New York, Pennsylvania and Vermont quarry sites and at flint exposures in New York proved very helpful, as did the study of New York flints by Wray, 1948. I am especially indebted to Dr. John Prucha, formerly of the New York State Museum and Science Service, Geological Survey, for helpful assistance.

source of difficulty lay in the variable degrees of weathering of some of the specimens, while another arose from the fact that after abstracting the points of jasper, Onondaga, Deepkill, Normanskill, Little Falls, Leray and other more or less readily identifiable local flints, there was a residue of unfamiliar exotic flint materials of indeterminate provenience. These provoked the conclusion, shared with Witthoft,[1] that a knowledge of the derivation of such materials might well clarify the direction of earliest movements into the area of the bearers of the fluted points.

In brief, the writer's analysis of the lithic constituents of fluted points available for examination may be summarized as follows: Identifiable Pennsylvania jasper (yellow, brown and red) points occur sporadically to the north of the chief quarry centers in Lehigh, Bucks and Berks Counties, Pennsylvania, appearing most commonly along the courses of the Delaware, Susquehanna, Hudson and Wallkill Rivers. A thinner line leads eastward, following the New England coast, terminating apparently at Bull Brook.[2] There is also a sprinkling of such points along the Genesee, Seneca and Oneida Rivers, while a single point from the shore of the St. Lawrence at Cedar Point, Jefferson County, is of this material. The native eastern New York gray, greenish gray, and green Deepkill flint, and green, red, black and gray, sometimes color-banded Normanskill flint comprise the majority of points from the Hudson, eastern Mohawk, Lake George and lower Champlain Valleys, and have been recognized at Shoop and probably at Bull Brook.[3] Fluted points from central, western and southwestern New York and adjacent Pennsylvania are predominantly fashioned from gray, blue-gray and mottled gray and tan, high quality Onondaga flint. This is obtainable, with local variation in color and markings, which provide useful clues to the approximate district of derivation, in a broad band of outcrops across central New York, from the Niagara Peninsula of Ontario to near the Hudson Valley, thence ranging south-southwestward into New Jersey and Pennsylvania at the Tri-States district.[4] The majority of the Shoop site artifacts are described by Witthoft as of deeply weathered

[1]Witthoft, 1952, pp. 470–471.
[2]Byers, 1954, p. 345. Maroon colored jasper outcrops are said to occur in eastern Massachusetts. Megascopically, the New England and Pennsylvania jaspers seem to be distinctive, the latter being more lustrous and frequently carrying small quartz veins and crystal clusters. In thin section, according to Witthoft (personal communication), Pennsylvania jasper shows a clear matrix of cryptocrystalline quartz, with scattered quartz crystals and fine, flocculent iron dust, while many additional gross impurities occur in New England jasper.
[3]Witthoft, 1952, p. 470; Byers, 1954, p. 345.
[4]Wray, 1948, pp. 40–41.

mottled Onondaga flint, characteristic of western New York and southern Ontario exposures.[1] Minor representations of Little Falls whitish flint, Leray black flint and other New York varieties have been definitely or tentatively recognized in fluted points usually found not far from potential sources of supply.

A consideration of these and other pertinent facts[2] leads to the provisional assumption that fluted point people entered various regions of the Northeast by following major river courses. They seem to have been equipped with hunting points and other flaked tools of more simple character, identified as yet on only a few sites (Shoop, Reagen and Bull Brook; see plates 12-18; cf.11), which were fashioned from high grade flints (or other lithic materials) foreign, insofar as known, either to the area as a whole,[3] or to the particular region of occurrence. The subsequent explorations of these hunters revealed local supplies of good quality flints on which they then came to depend. The relatively considerable amount of Pennsylvania jasper, together with the pattern of its distribution, leads one to suspect that paleo-Indian people may have been resident in eastern Pennsylvania until climatic and other conditions to the north in New York State and New England became more favorable. Since points made of eastern and western varieties of New York flints appear in some numbers in Pennsylvania, one might hypothesize seasonal movements back and forth along the stream valleys.[4] (Perhaps the exclusively west bank distribution of fluted points in the Hudson Valley is to be explained by summer migrants, whose cultural equipment was unequal to the crossing of this wide and deep river.)

Certain typological disparities occur in the fluted point series in the Northeast which find parallels elsewhere in the United States. Since on the few components recognized in our area there are accompanying variations in frequency and form among the scraping, cutting and graving tools, the differences may depend upon time distinctions more than areal specializations. Witthoft has argued for an underlying early Enterline Industry at the Shoop and Williamson components.[5] Byers sees Enterline and possibly Folsom elements at

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[1]Witthoft, 1952, p. 471.

[2]See discussion of the Reagen site stone sources in Ritchie, 1953, pp. 250–251.

[3]Three points from western New York (plates 5A, B, figures E,e and plates 10A, B, figures A,a), and one from Tioga County (plate 9, figure B), are made of dark bluish flint with lighter markings; two others (plates 1A, B, figures I,i, and plates 2A, B, figures G,g) from central and northern New York, respectively, are chipped from a mottled light gray flint. The material of all is believed to be Upper Mercer flint from eastern or southeastern Ohio (Shetrone, 1936, p. 255).

[4]The conditions reported for the Shoop site seem at variance with this postulation.

[5]Witthoft, 1952, pp. 485–487.

Bull Brook.[1] The Reagen complex, the most aberrant fluted point site in the Northeast, suggests a still later level of assimilation. Its traits, however, include a small number of scrapers with possible graving spur (plate 12, figures A, EE; plate 13, figure X), characteristic of the Enterline Industry, the pentagonal fluted point of the Williamson complex (plate 15, figures I, J), and the multipointed fine graver of the Bull Brook assemblage (plate 13, figures HH; plate 17, figure Q).[2] Moreover, certain of the unfluted points suggest the "unfluted Folsom" points of the Scharbauer site in Texas.[3]

Of the more randomly distributed points, differences in size are the most conspicuous, the length range extending from 1 to $4\frac{3}{16}$ inches. The majority, however, are between 2 and 3 inches long. In outline configuration the nearly parallel-sided form greatly predominates (plates 1A, B, figures F,f, G,g). Especially in the larger sizes, this point closely conforms with the established Clovis Fluted type, the most widely dispersed and perhaps the most ancient of the fluted point varieties.[4]

A generally congruent variant, described in table 1, as having slightly incurvate lower edges (plates 3A, B, figures E,e, F,f) may fall within the normal shape range of the Clovis type, as the product of deeper edge grinding,[5] or constitute an intermediate developmental form between the Clovis and Cumberland fluted category, best represented in the Southeast, but also found in Ohio and elsewhere.[6] The modified form of New York (plates 4A, B, figures D,d) and Ohio occurs at the Quad site,[7] where it seems indeed to be transitional into the exaggerated Cumberland form, with the latter's marked constriction of the lower edges and prominent, obliquely lateral "ears."

Finally, there is the pentagonal style (plates 1A, B, figures C,c, D,d) which, with parallel or insloping lower lateral edges, is a major form on such widely separated sites as Williamson in southeastern Virginia[8] and Reagen in northwestern Vermont (plate 15, figures I, J).

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[1]Byers, 1954, pp. 349–351.
[2]Ritchie, 1953, pp. 255–257.
[3]Wendorf, Krieger, Albritton and Stewart, 1955, pp. 48–49. Compare their illustration No. 19 on plate 16 with my plate 15, figures F, G, 7.
[4]Krieger, 1947, pp. 10–11. It is of interest to compare New York specimens shown on plates 1-3, for example, with the points accompanying the Naco, Ariz., mammoth, illustrated by Haury (1953) as figures 6 and 7.
[5]See, for example, figures 6, 7 f of Haury, 1953.
[6]Lewis, 1954; 1954*a*; Soday, 1954, nos. 42, 43; Shetrone, 1936, figure 1 (first 3 examples).
[7]Compare, for example, plates 3A, B, figures F,f and 4A, B, figures D,d, with figures 5-8 of Soday, 1954.
[8]McCary, 1951, figures 8, 2, 3, 12, 19–22.

In the present state of knowledge, distinctions of this kind cannot be interpreted on a functional, temporal or spatial basis. Nor can the antecedents or derivatives of the sundry forms be demonstrated with any degree of conviction. It has been suggested, as earlier mentioned, that people responsible for the Clovis Fluted type were primarily elephant hunters in the High Plains area during the maximum episode of Wisconsin time (Cary Subage?). Desiccation brought about by the progressive warmth and dryness of an interstadial period (Two Creeks?) may have provided the stimulus for their movement, following the big game, through a prairie corridor into the better watered eastern United States.[1] In the western area bison, better adapted to the increasing prairie conditions, furnished subsistence for the hunters who remained, and the smaller and lighter Folsom Fluted point seems to have been developed from a Clovis prototype (during the Mankato and/or Valders Subage?) as a more suitable weapon.

Adding to this speculation, the Clovis point users invaded first the more southerly regions of the eastern United States, via the aforementioned prairie corridor, avoiding the less salubrious climatic environment of the Northeast. Thinly spread and mobile in the new setting, the small groups responded to local ecological variations with innovations which apparently affected particularly the more critical elements of the cultural equipment, viz., the weapons of the basic hunting activity. Thus the more general uniformity of simple domestic tools—end and side scrapers, flake knives, gravers etc.—presumably derived from traditional Clovis prototypes, contrasts with range of point styles, some of which have already been described, and all of which are generically linked together in still undecipherable stylistic sequences by adherence to such cultural compulsives as fluting, basal edge grinding and certain pressure chipping techniques.

To conclude our assumptions, the Northeast became, in due course, included within the hunting range of the paleo-Indians, but whether before or after the fundamental Clovis industry had undergone various modifications in point styling it is impossible to say. The Shoop site seems to furnish the most satisfactory known evidence in the eastern United States for an occupation on or about the Clovis level in the Great Plains. If this assumption is correct, we still do not know what changes the Clovis industry may have undergone, both in the modification of fluted points and in associated artifacts, during east-

[1]Lewis, 1953, pp. 39–40; 1954. This author, however, postulates a movement in Altithermal times (ca. 5000–2000 B.C.), apparently too late, as shown above, to fit the newer evidence.

ward diffusion from the supposed center in the Great Plains. High traditional reserve is, however, indicated by the striking similarity of Clovis points throughout their known range from coast to coast.

The pre-Archaic age of the fluted point industries in the eastern United States is primarily based on comparative radiocarbon dates between Archaic components in the Northeast and Southeast, and a Folsom component in the Southwest.[1] Meager stratigraphic support came from the Carlson Annis site in Kentucky.[2] In New York[3] and Kentucky[4] Archaic cultures[5] were well established around 3500 B.C. and probably several centuries earlier. Groups of fishermen were building fish weirs on the Massachusetts coast at about the same time.[6] In all probability, most regions of the country were more or less sparsely peopled by 3500 B.C. with seminomadic hunting-fishing-gathering bands having cultural traditions partly derived in some cases from paleo-Indian antecedents, partly through later migrations from Asia. If confirmed by additional findings, the 7922 B.C. ± 392 years dating for Zone 1 at Modoc Rock Shelter, southwestern Illinois,[7] closes the temporal gap between paleo-Indian and Archaic manifestations,[8] and serves to support probable genetic relationships already alluded to. Moreover, non-fluted point, paleo-Indian assemblages of generally comparable antiquity, from Gypsum Cave, Nevada,[9] and Danger Cave, Utah,[10] suggest that important elements of Archaic lineages are to be sought elsewhere than in the Clovis-Folsom fluted point tradition. Notwithstanding these considerations, present evidence from the Northeast fails to connect typologically, recognized paleo-Indian with Early Archaic assemblages, thus creating a probable hiatus of unascertained magnitude, prior to the established 3500 B.C. radiocarbon date for the latter. It seems, there-

[1]Sample C 558, burned bison bone, 9,883 ± 350 years B.P. (Libby, 1955, p. 107). A more recently collected and measured sample of fresh-water snail shells from a higher level of the Folsom stratum at the same Lubbock, Texas site, yielded an age of 9300 ± 200 years, at the Lamont Laboratory (Krieger, 1956a, p. 107).
[2]Webb, 1950, pp. 307–310. The little known and unpublished St. 4 site in North Carolina is said to yield evidence of this kind (Witthoft, 1952, pp. 486–487).
[3]Libby, 1955, p. 93; Ritchie, 1951, p. 31.
[4]Libby, 1955, pp. 98–99, 105; Webb, 1951, p. 30.
[5]That is, preceramic and preagricultural assemblages containing polished stone artifacts, in addition to those of chipped stone, ground stone, bone, antler and sometimes shell.
[6]Libby, 1955, p. 90; Johnson, 1951, samples 417, 418, pp. 11–12.
[7]Fowler and Winters, 1956, pp. 31–32.
[8]I am not in agreement with the trend in some quarters to employ the term "Early Archaic" in reference to nonfluted point assemblages which may contain ground stone, shaped through use, as milling stones and manos, but which lack polished stone artifacts, which I regard as a primary criterion of the Archaic stage of culture.
[9]Libby, 1955, pp. 117–118; Harrington, 1933.
[10]Jennings, 1953.

fore, logical to project the paleo-Indian vestiges of this area to a chronological horizon sometime prior to 3500 B.C. Here the findings of Pleistocene geology, in furnishing certain still debatable details of late glacial and postglacial paleogeography, seem of some importance in suggesting at least a minimum time limitation for the paleo-Indian occupation of this area.

Thus, in plotting the beach line of the closing stage of Lake Iroquois, the most recent glacial body of water known to have existed in New York, against the principal district of concentration of fluted points in the State, it is readily seen that those portions of the Seneca River valley in Onondaga, Cayuga and Wayne Counties where fluted points have been found with highest frequency were uninhabitable at this stage, being submerged beneath the lake waters.[1] Similarly, the minor cluster of points at the foot of Lake George and about Ticonderoga on Lake Champlain occurs in a section inundated by the Fort Ann stage of glacial Lake Vermont,[2] which is believed to have coexisted with Lake Iroquois.[3] Moreover, the localities of many of the Ontario fluted points were then probably under either Lake Iroquois waters or the ice sheet which created it.[4] (See figure 1.)

Assuming the reliability of the geological data, it must be concluded that man's presence at these places was subsequent to the termination of the Lake Iroquois-Lake Vermont phase, provisionally inferred from radiocarbon dating of geological events at approximately 7,000 years age.[5]

By this time, it is believed, progressive amelioration of the climate had resulted in the stagnation and decay of the ice lobe partially overlying the Ontario basin and St. Lawrence Lowland to the extent of uncovering the northern slope of the Adirondack Mountains. A new low outlet channel for Lake Iroquois opened south of Covey Hill, just north of the International Boundary line, draining through the St. Lawrence Valley to the Champlain Lowland. The old drainage route through the Mohawk-Hudson channel was abandoned. Long enduring Lake Iroquois, with its prominent beach lines, came rather rapidly to an end.

Its considerably shrunken successor, known as Lake Frontenac, appears to have been short-lived, as indicated by feeble strand lines. With continuation of ice recession north of Covey Hill, the impounded Ontario basin waters dropped still lower, resulting in the

[1]Fairchild, 1919, pp. 61–62, plate 1; 1928, pp. 152–157, figure 147.
[2]Chapman, 1937, pp. 103–113, figure 4.
[3]Flint, 1953, plate 3; 1956, plate 1.
[4]Hough, 1953, figure 23.
[5]Flint, 1956, plate 1.

body of water named by Fairchild the Gilbert Gulf.[1] (See figure 2.) In the Watertown, N. Y., district, recent studies have established the present beach line elevations of these three successive lakes at approximately 745, 655 and 400 feet, respectively.[2]

Lake Frontenac was apparently coalescent with the closing phase of Lake Vermont in the Champlain Lowland.[3] When progressive deglaciation had freed the local ice cap damming the St. Lawrence Valley in the Parc des Laurentides district of Quebec, an entry for marine waters was created, since the glacially depressed crust over the St. Lawrence-Champlain area lay far below the rising sea level. The invasion of salt water which followed created the Champlain Sea, reaching south to Whitehall in the Champlain Lowland and southwestward in the St. Lawrence Lowland to about Ogdensburg.[4]

In naming Gilbert Gulf, Fairchild had assumed that this marine incursion had extended into the Ontario basin. More recently it has been concluded that the volume of outflow from the Ontario basin sufficed to prevent the marine transgression west of Ogdensburg.[5]

The sands and clays attributed to the Champlain Sea stage yield cold water Mollusca, although it might appear that the climate at this time, estimated at around 6,000 to 7,000 years ago,[6] was approaching the Altithermal climax of warmth and dryness.[7] Champlain Sea strand lines are very imperfectly known and there is no general agreement on the subject (figure 2).[8] It does seem, however, that most fluted point finds in New York occur in places above the probable reach of these sea waters, the only exceptions being at Cedar Point, Jefferson County; possibly near De Peyster, St. Lawrence County and the

[1]Fairchild, 1928, pp. 159–164.

[2]Stewart, n.d.

[3]Flint, 1956, plate 1.

[4]Flint, 1947, p. 263; 1953, pp. 909–10, 915, plate 3; Chapman, 1937, pp. 113–16, figure 5; Woodworth, 1905, pp. 206–45; Leverett and Taylor, 1915, p. 333.

[5]Stewart, n.d.

[6]Flint, 1953, p. 910, plate 3; 1956, pp. 272, 278–279. There is much uncertainty about the date of the Champlain Sea. Three C^{14} measurements on *Saxicava, Macoma* and *Balanus* fossil pelecypod shells range from 10,630 ± 330 to 11,370 ± 360 years old, which would approximately equate this marine submergence with the Two Creek interval, just prior to the Mankato and/or Valders advance (Preston, Person and Deevey, 1955, p. 56). These results have been questioned on the grounds that the animals, living in calcareous waters carrying carbon from Ordovician, Cambrian and Precambrian formations, could build into their shells not only contemporaneous carbon but also ancient carbon "and until we can find out the proportion of ancient carbon to contemporaneous carbon, the dating of buried shells by radiocarbon has no meaning." (Personal communication of February 23, 1956, from Professor Paul MacClintock, Princeton University. Cf. discussion in Flint, 1956, p. 278.)

[7]Antevs, 1953, p. 204, and figure 1; 1953*a*, p. 11.

[8]Hough, 1953, figure 25.

locale about Ticonderoga and the northern end of Lake George (figure 2 and table 1). Moreover, the artifacts of the Reagen site occur in dunes of sand attributed to the maximum stage of the Champlain Sea.[1] The peculiar location of this station, on the flank of a hill, overlooking the Missisquoi River in Franklin County, Vermont, from an elevation of some 300 feet, a situation wholly at variance with later Indian cultures of the area, suggests the possibility of a near-shore camping place, repeatedly visited, during a waning stage of the Champlain Sea.

Let us suppose that the 5000 B.C. date for the early existence of the Champlain Sea approximates reality. The paleo-Indian hunters whose meager vestiges are found within the probable extreme confines of this sea—in the St. Lawrence-Champlain Lowland and at the Reagen site—must have been still more recent. Moreover, by the same tentatively established chronology, only a few additional centuries separate the early Champlain Sea from the period of late Lake Iroquois and the Fort Ann stage of Lake Vermont, within whose basins have been found some 41 percent of the fluted points from New York State. These data argue strongly for the recency of paleo-Indian hunters in the Northeast, although current evidence does not prejudice the possibility of greater antiquity for similar remains immediately south of these barriers.

Much more reliable lower time estimates from radiocarbon dated components place the Early Archaic Lamoka culture in southcentral New York at around, 3500 B.C. and the contact of Lamoka and Laurentian groups in central New York about 500 years later.[2] As already mentioned, indications of continuity or contact between Archaic and paleo-Indian groups in this area are negligible. It would therefore seem that our conclusions, based upon quantitative considerations and geologic factors, point in the direction of a scanty occupation by paleo-Indian hunters in the Northeast during a relatively brief and recent interval falling somewhere between approximately 3500 and 5000 B.C.

[1]Lougee, 1953, p. 275.
[2]Libby, 1955, pp. 92–93; Ritchie, 1951, p. 31.

LITERATURE CITED

Antevs, Ernst

1953 Geochronology of the deglacial and neothermal ages. The Journal of Geology, v. 61, No. 3, pp. 195–230. Chicago

1953*a* The postpluvial or neothermal. Paper 23, *in,* Papers on California Archaeology: 21–26. Reports of the University of California Archaeological Survey, No. 22, pp. 9–23. Berkeley

Beauchamp, William M.

1897 Aboriginal chipped stone implements. New York State Museum Bulletin, v. 4, No. 16. Albany

Byers, Douglas S.

1954 Bull Brook—a fluted point site in Ipswich, Massachusetts. American Antiquity, v. XIX, No. 4, pp. 343–351. Salt Lake City

1955 Additional information on the Bull Brook site, Massachusetts. American Antiquity, v. XX, No. 3, pp. 274–276. Salt Lake City

Chapman, Donald H.

1937 Late-glacial and postglacial history of the Champlain Valley. American Journal of Science, v. XXXIV, No. 200, pp. 89–124. New Haven

Cook, Harold J.

1927 New geological and paleontological evidence bearing on the antiquity of mankind in America. Natural History, v. 7, No. 3, American Museum of Natural History, pp. 240–247. New York

Cotter, John Lambert

1937 The occurrence of flints and extinct animals in pluvial deposits near Clovis, New Mexico, part IV. Report on excavation at the gravel pit, 1936. Proceedings of the Academy of Natural Sciences of Philadelphia, v. LXXXIX, pp. 1–16. Philadelphia

1937*a* The significance of Folsom and Yuma artifact occurrences in the light of typology and distribution. Philadelphia Anthropological Society, 25th Anniversary Studies, Publication v. 1. Philadelphia

Crozier, Archibald

1939 Delaware Folsom points. Bulletin of the Archaeological Society of Delaware, v. 3, No. 1, pp. 8–10. Wilmington

Fairchild, H. L.

1909 Glacial waters in central New York. New York State Museum Bulletin 127. Albany

1919 Pleistocene marine submergence of the Hudson, Champlain and St. Lawrence Valleys. New York State Museum Bulletins 209, 210. Albany

1928 Geologic story of the Genesee Valley and western New York. Published by the author. Rochester

Figgins, J. D.

1927 The antiquity of man in America. Natural History, v. 7, No. 3. American Museum of Natural History, pp. 229–239. New York

Flint, Richard Foster

1947 Glacial geology and the Pleistocene epoch. John Wiley & Sons, New York

1953 Probable Wisconsin substages and late-Wisconsin events in northeastern United States and southeastern Canada. Bulletin of the Geological Society of America, v. 64, pp. 897–919. Baltimore

1956 New radiocarbon dates and late-Pleistocene stratigraphy. American Journal of Science, v. 254, pp. 265–287. New Haven

Forbis, Richard G.

1956 Early man and fossil bison. Science, v. 123, No. 3191, pp. 327–328. Lancaster

Fowler, Melvin L. and Winters, Howard

1956 Modoc rock shelter, a preliminary report. Illinois State Museum Report of Investigations No. 4. Springfield

Fowler, William S.

1954 Massachusetts fluted points. Bulletin of the Massachusetts Archaeological Society, v. XVI, No. 1, pp. 2–8. Ann Arbor

Harrington, Mark Raymond

1933 Gypsum Cave, Nevada. Southwest Museum Papers No. 8. Los Angeles

Haury, Emil W. et al

1953 Artifacts with mammoth remains, Naco, Arizona. American Antiquity, v. XIX, No. 1, pp. 1–24. Salt Lake City

Hough, Jack L.

1953 Final report on the project pleistocene chronology of the Great Lakes Region. Office of Naval Research, Contract No. N6ori–07133, Project NR–018–122. Univ. of Illinois. Urbana

Howard, Edgar B.

1935 Evidence of early man in North America. The Museum Journal, v. XXIV, Nos. 2–3. Museum of the University of Pennsylvania. Philadelphia

Jennings, Jesse D.

1953 Danger Cave: a progress summary. El Palacio, v. 60, No. 5, pp. 179–213. Santa Fe

Johnson, Frederick (Assembler)

1951 Radiocarbon dating. Memoirs of the Society for American Archaeology, No. 8. Salt Lake City

Kidd, Kenneth E.

1951 Fluted points in Ontario. American Antiquity, v. XVI, No. 3, p. 260. Salt Lake City

Krieger, Alex D.

1947 Certain projectile points of the early American hunters. Texas Archaeological and Paleontological Society Bulletin, v. 18, pp. 7–27. Lubbock

1953 New world culture history: Anglo-America. *In,* Anthropology Today (A. L. Kroeber, chairman). University of Chicago, pp. 238–264. Chicago

1954 A comment on "fluted point relationships" by John Witthoft. American Antiquity, v. XIX, No. 3, pp. 273–275. Salt Lake City

1956 Early man. *In,* Notes and News, American Antiquity, v. XXI, No. 4, pp. 449–452. Salt Lake City

1956*a* Early man. *In,* Notes and News, American Antiquity, v. XXII, No. 1, pp. 105–107. Salt Lake City

Leverett, Frank and Taylor, Frank B.

1915 The Pleistocene of Indiana and Michigan and the history of the Great Lakes. Monographs of the U. S. Geological Survey, v. LIII. Washington

Lewis, T. M. N.

1953 The paleo-Indian problem in Tennessee. Tennessee Archaeologist, v. IX, No. 2, pp. 38–40. Knoxville

1954 A suggested basis for paleo-Indian chronology in Tennessee and the eastern United States. Southern Indian Studies, v. VI. Chapel Hill

1954*a* The Cumberland point. Bulletin of the Oklahoma Anthropological Society, v. II, pp. 7–8

Libby, Willard F.

1955 Radiocarbon dating. 2d ed. Univ. of Chicago Press. Chicago

Lougee, Richard J.

1953 A chronology of postglacial time in eastern North America. Scientific Monthly, v. LXXVI, No. 5, pp. 259–276. Lancaster

Mahan, E. C.

1954 A survey of paleo-Indian and other early flint artifacts from sites in northern, western and central Alabama, pt. 1. Tennessee Archaeologist, v. X, No. 2, pp. 37–58. Knoxville

Mayer-Oakes, William J.

1951 Starved Rock Archaic, a prepottery horizon from northern Illinois. American Antiquity, v. XVI, No. 4, pp. 313–324. Salt Lake City

1955 Prehistory of the upper Ohio Valley; an introductory archeological study. Annals of the Carnegie Museum, v. 34. (Anthropological series, No. 2). Pittsburgh

1955*a* Excavations at the Globe Hill Shell Heap (46 Hk 34–1) Hancock County, W. Va. West Virginia Archeological Society, Inc., Publication Series No. 3. Moundsville

McCary, B. C.

1947 A survey and study of Folsom-like points found in Virginia. Quarterly Bull., Archeological Society of Virginia, v. II, No. 1. Richmond

1948 A report on Folsom-like points found in Granville County, N. C. Quarterly Bull., Archaeological Society of Virginia, v. III, No. 1. Richmond

1951 A workshop site of early man in Dinwiddie County, Virginia. American Antiquity, v. XVII, No. 1, pt. 1, pp. 9–17. Salt Lake City

Miller, Carl F.

1950 Early cultural horizons in the southeastern United States. American Antiquity, v. XV, No. 4, pp. 273–288. Salt Lake City

Preston, R. S., Person, E., and Deevey, E. S.

1955 Yale natural radiocarbon measurements II. Science, v. 122, No. 3177, pp. 954–960. Lancaster

Ritchie, William A.

1951 Radiocarbon dates on samples from New York State. *In,* Radiocarbon Dating (assembled by Frederick Johnson). Memoirs of the Society for American Archaeology, No. 8, pp. 31–32. Salt Lake City

1953 A probable paleo-Indian site in Vermont. American Antiquity, v. XVIII, No. 3, pp. 249–258. Salt Lake City

Sellards, E. H.

1952 Early man in America, a study in prehistory. A publication of the Texas Memorial Museum. University of Texas Press. Austin

Shetrone, Henry Clyde

1936 The Folsom phenomena as seen from Ohio. Ohio Archaeological and Historical Quarterly, v. 45, No. 3, pp. 240–256. Columbus

Soday, Frank J.

1954 The Quad site, a paleo-Indian village in northern Alabama. Tennessee Archaeologist, v. X, No. 1, pp. 1–20. Knoxville

Stewart, David P.

n.d. Surface deposits of the western St. Lawrence Lowland, New York. (A report of progress, 1954. Ms. in office of Geological Survey, N. Y. State Museum and Science Service. Albany)

Suess, Hans E.

1956 Absolute chronology of the last glaciation. Science, v. 123, No. 3192, pp. 355–357. Lancaster

Webb, William S.

1950 The Carlson Annis mound, site 5, Butler County, Kentucky. University of Kentucky, Reports in Anthropology, v. VII, No. 4. Lexington

1951 The Parrish village site, site 45, Hopkins County, Kentucky. University of Kentucky, Reports in Anthropology, v. VII, No. 6, Lexington

1951*a* Radiocarbon dating on samples from the Southeast. *in,* Radiocarbon Dating (assembled by Frederick Johnson). Memoirs of the Society for American Archaeology, No. 8, p. 30. Salt Lake City

Wendorf, Fred, Krieger, Alex D., Albritton, Claude C. and Stewart, T. D.

1955 The Midland discovery. University of Texas Press. Austin

Willey, Gordon R. and Phillips, Philip

1955 Method and theory in American archeology II: Historical-developmental interpretation. American Anthropologist, v. 57, No. 4, pp. 723–819. Menasha

Witthoft, John

1950 Notes on Pennsylvania fluted points. Pennsylvania Archaeologist, v. XX, Nos. 3–4, pp. 49–54. Milton

1952 A paleo-Indian site in eastern Pennsylvania: an early hunting culture. Proceedings of the American Philosophical Society, v. 96, No. 4, pp. 464–495. Philadelphia

Woodworth, Jay Backus

1905 Ancient water levels of the Champlain and Hudson Valleys. New York State Museum Bulletin 84, Albany

Wormington, H. M.

1949 Ancient man in North America. Denver Museum of Natural History, Popular Series, No. 4; 3d. ed. Denver

Wray, Charles Foster

1948 Varieties and sources of flint found in New York State. Pennsylvania Archaeologist, v. XVIII, Nos. 1–2, pp. 25–45. Milton

PLATES

PLATES 1A and 1B

Fluted points from New York

A, a(1)*, Onondaga County
B, b(2), Seneca River
C, c(3), Seneca River
D, d(4), Seneca River
E, e(5), Onondaga County
F, f(6), Coxsackie, Greene County
G, g(7), Colliersville, Otsego County
H, h(8), Coxsackie, Greene County
I, i(9), Cross Lake, Onondaga County

* Numeral designations throughout plate captions refer to numbers in first column of table 1, which presents other available data on the specimens.

PLATE 1A

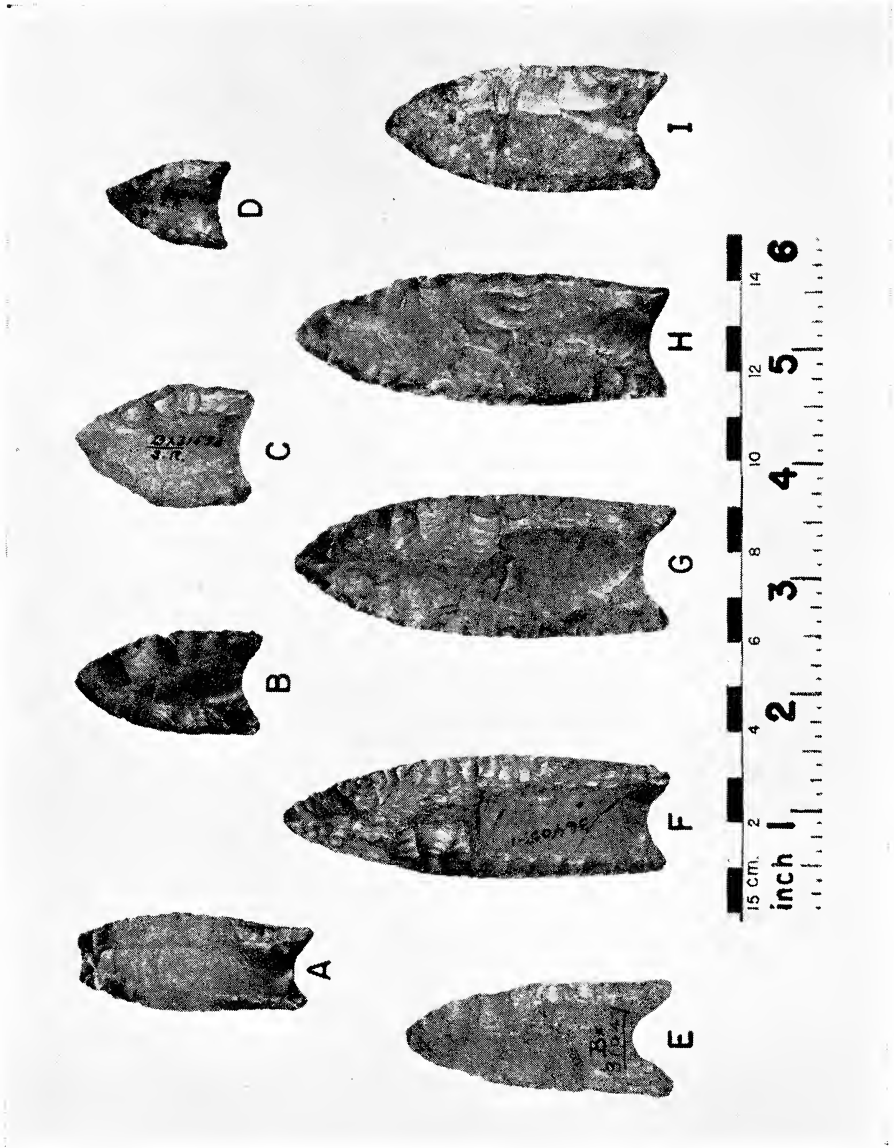
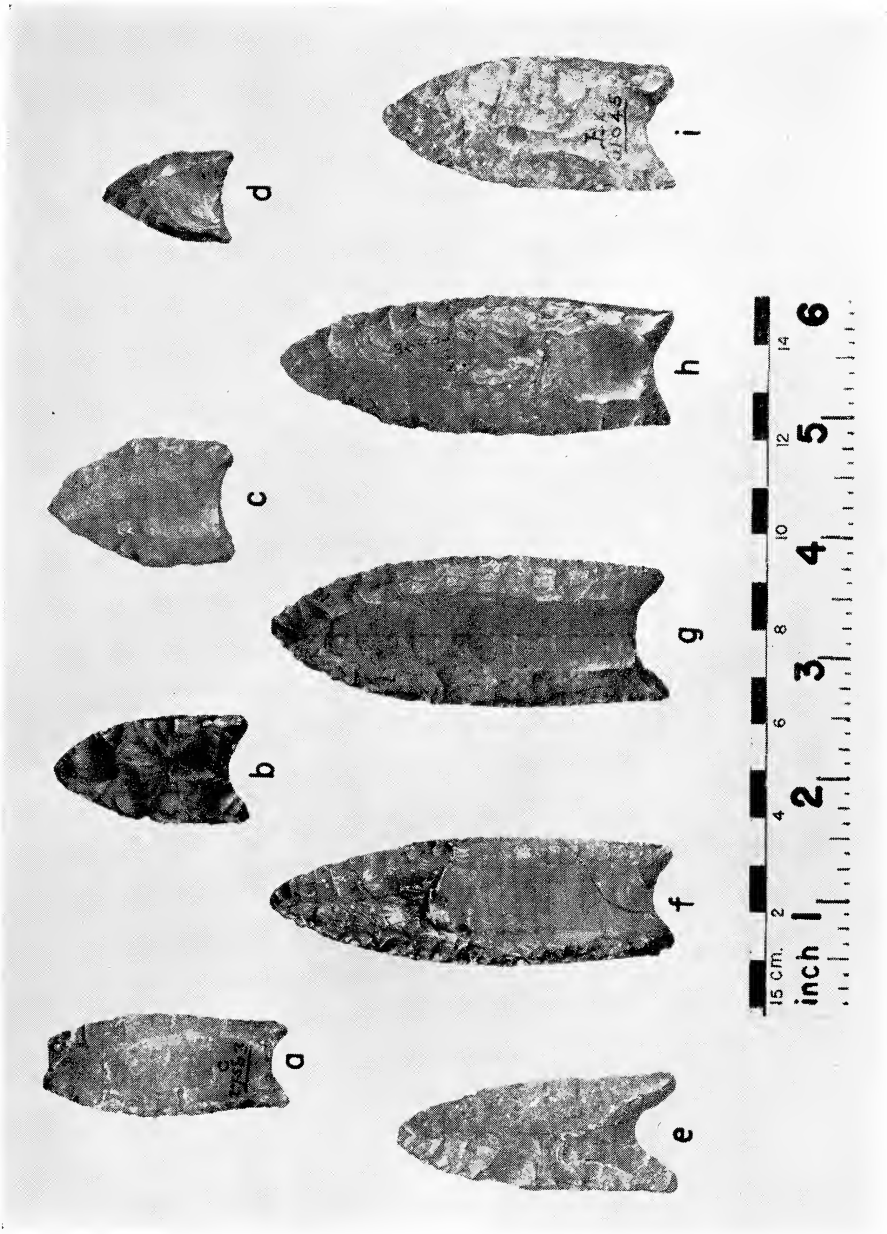


PLATE 1B



PLATES 2A and 2B

Fluted points from New York

A, a(10), Nichols Pond, Madison County
B, b(11), West Albany, Albany County
C, c(12), Deer River, Lewis County
D, d(13), Onondaga County
E, e(14), middle Genesee Valley
F, f(15), Onondaga County
G, g(16), Jefferson County

PLATE 2A

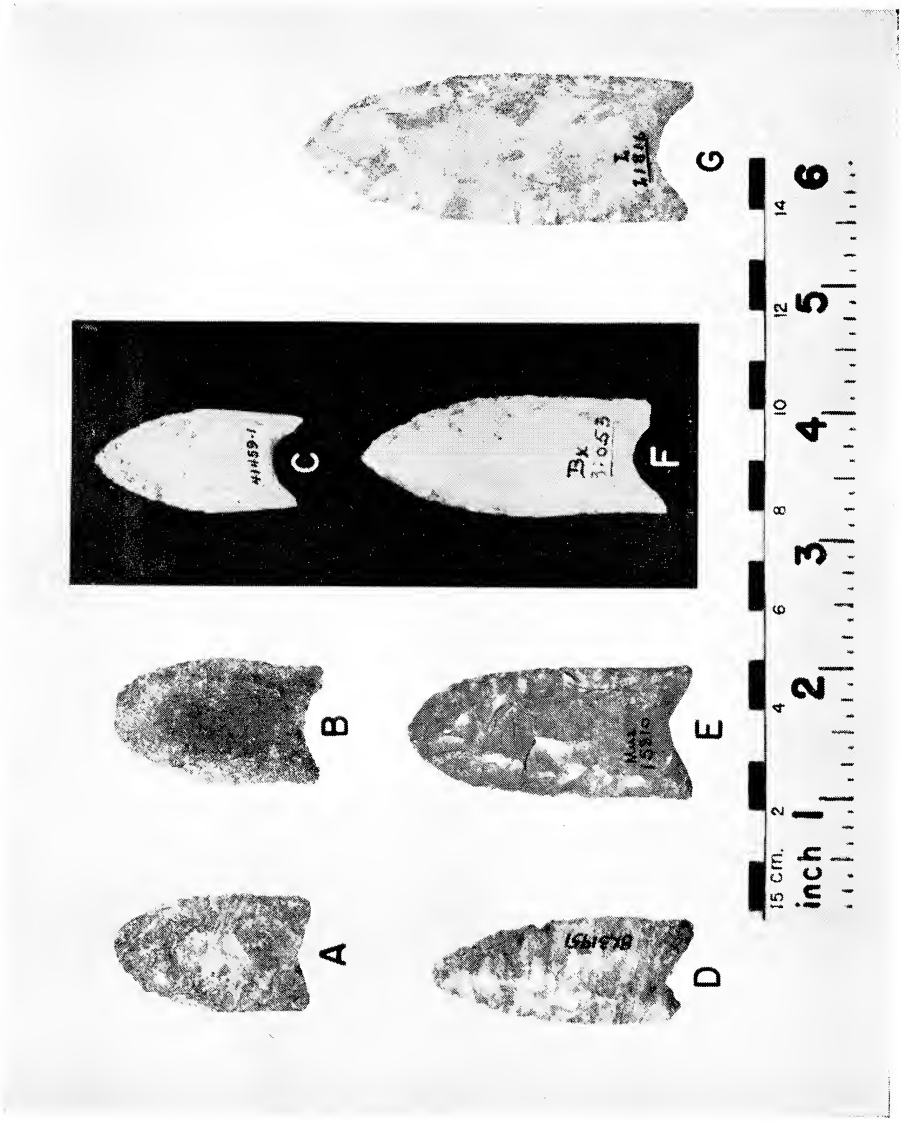
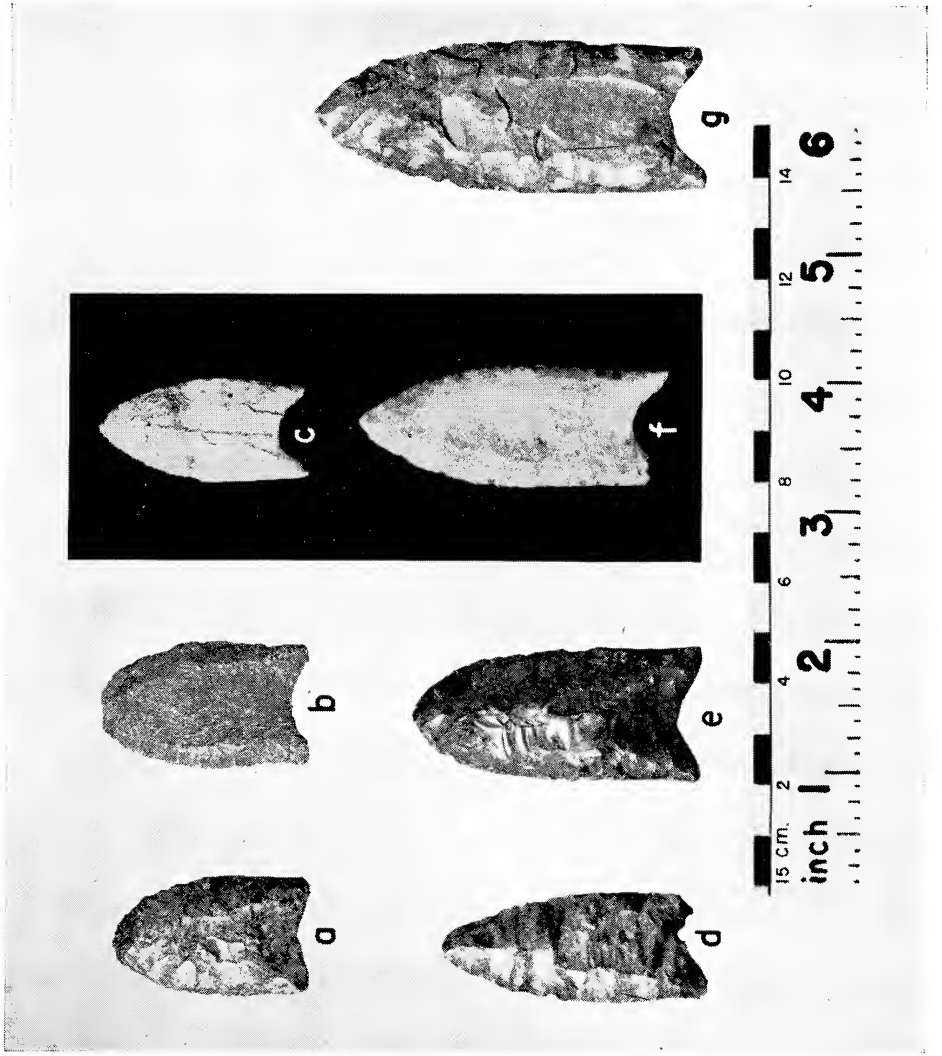


PLATE 2B



PLATES 3A and 3B

Fluted points from New York

A, a(17), Onondaga County
B, b(18), Jefferson County
C, c(19), Coxsackie, Greene County
D, d(20), Onondaga County
E, e(21), Bacon Hill, Saratoga County
F, f(22), Kingston Point, Ulster County

PLATE 3A

PLATE 3B

PLATES 4A and 4B

Fluted points from New York

A, a(23), near Wallkill, Ulster County
B, b(24), near Allard's Corners, Orange County
C, c(25), near Allard's Corners, Orange County
D, d(26), Canadarago Lake, Otsego County
E, e(27), Oaks Creek, Otsego County
F, f(28), Mud Lake, St. Lawrence County

PLATE 4A

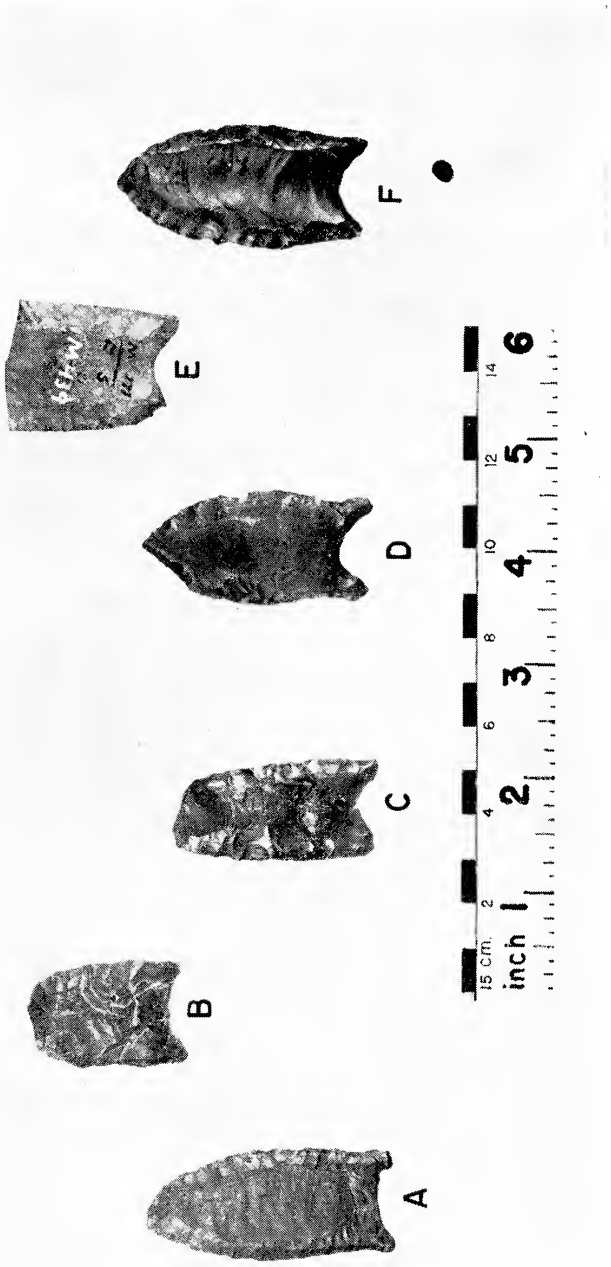
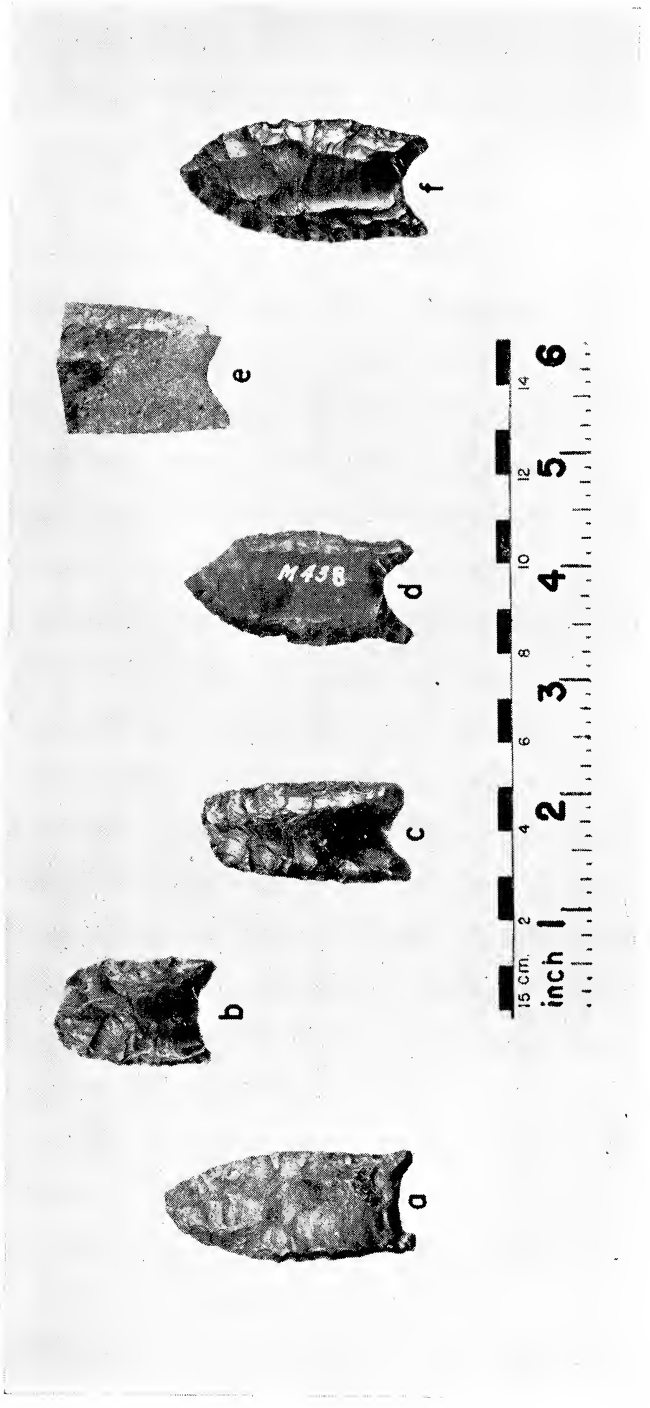


PLATE 4B



PLATES 5A and 5B

Fluted points from New York

A, a(29), near Pittsford, Monroe County
B, b(30), near Macedon, Wayne County
C, c(31), lower Genesee Valley
D, d(32), near Baldwinsville, Onondaga County
E, e(33), Canandaigua Lake, Yates County

PLATE 5A

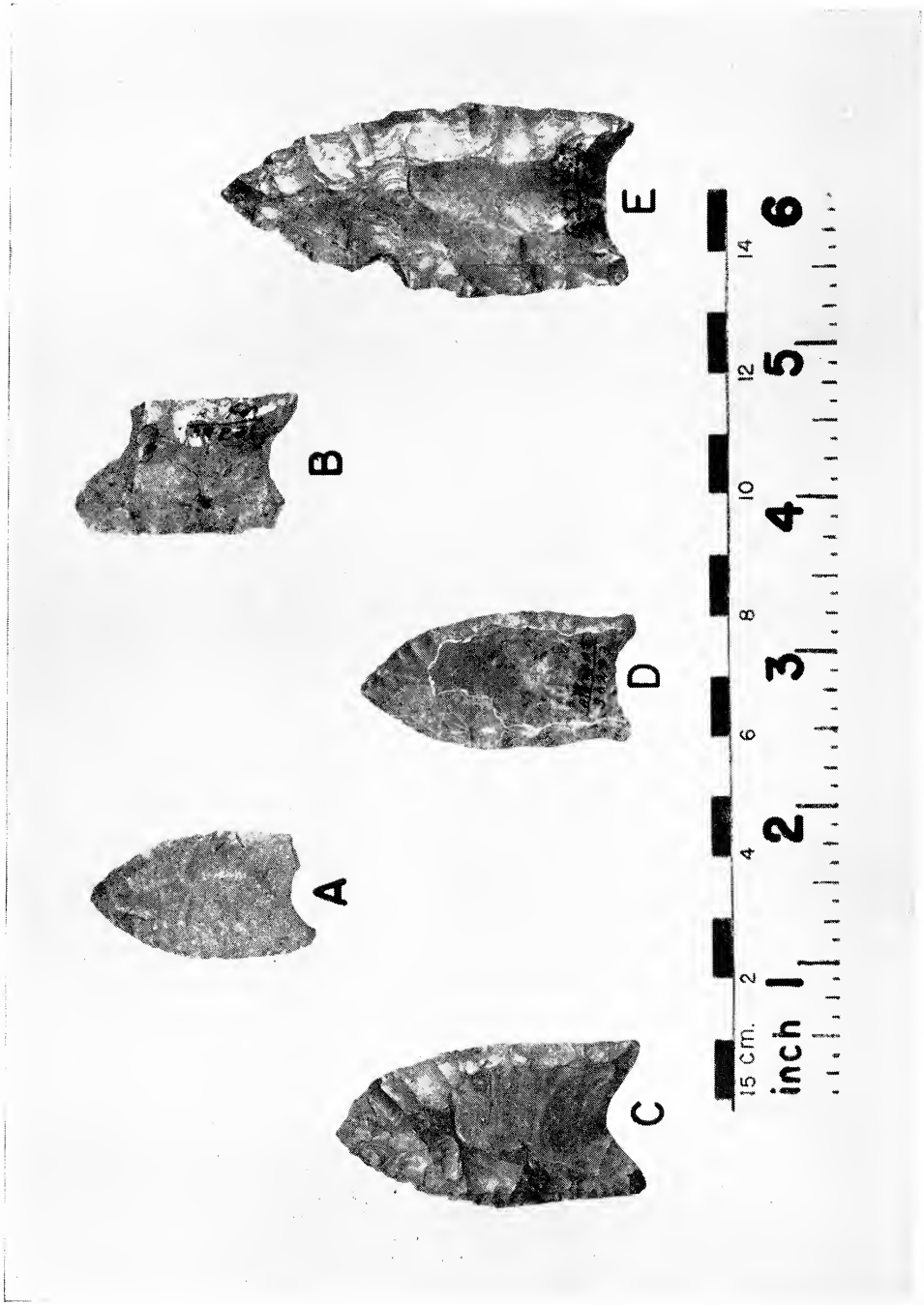


PLATE 5B

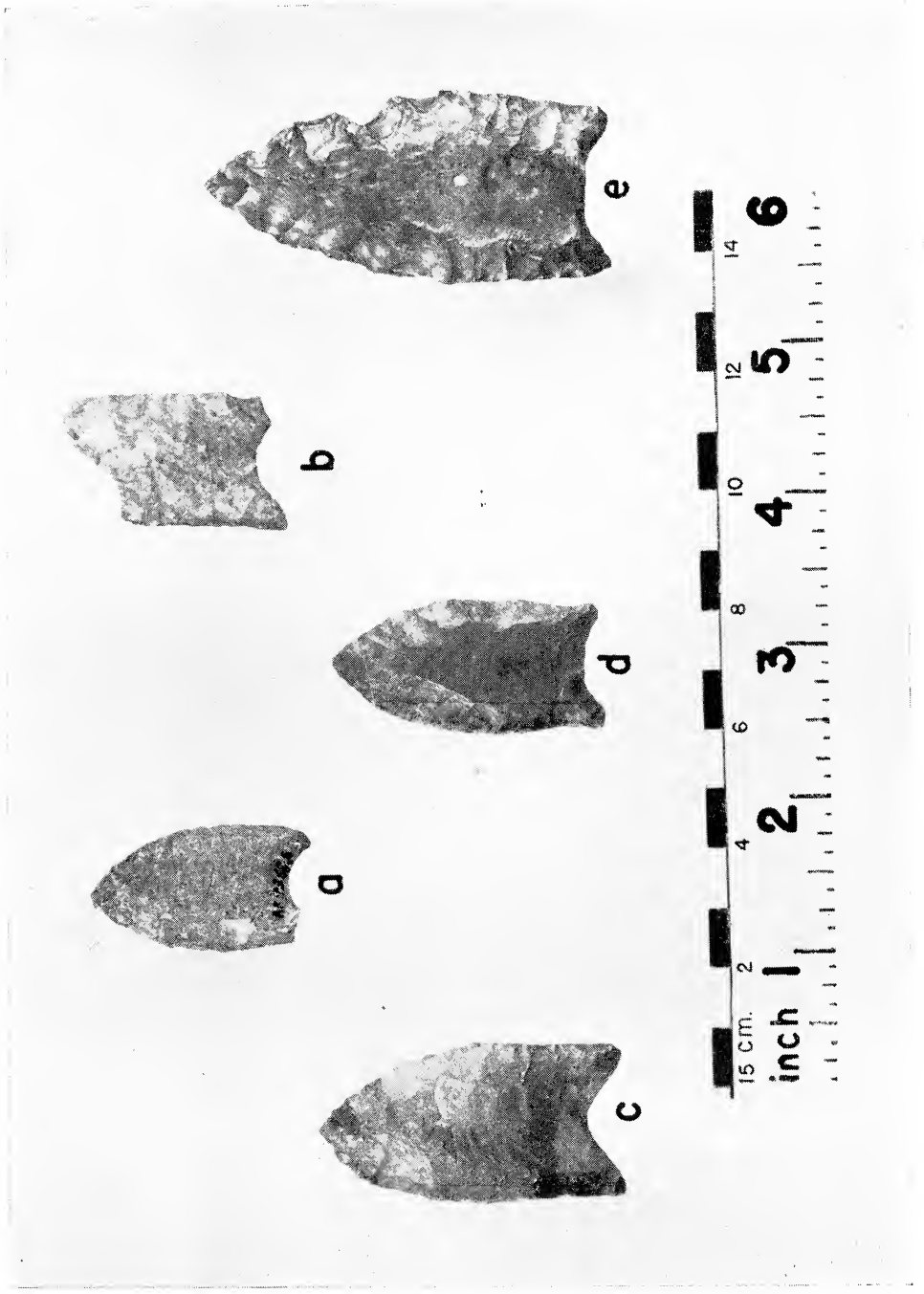


PLATE 6

Fluted points from New York

A (34), Onondaga County
B (35), near Greece, Monroe County
C (36), Onondaga County
D (37), Onondaga County

PLATE 6

PLATE 7

Fluted points from New York

A, a(38), near Walcott, Wayne County
B (39), near Montezuma, Cayuga County
C, c(40), near North Rose, Wayne County
D, d(41), near North Rose, Wayne County
E, e(42), near Horseheads, Chemung County

PLATE 7

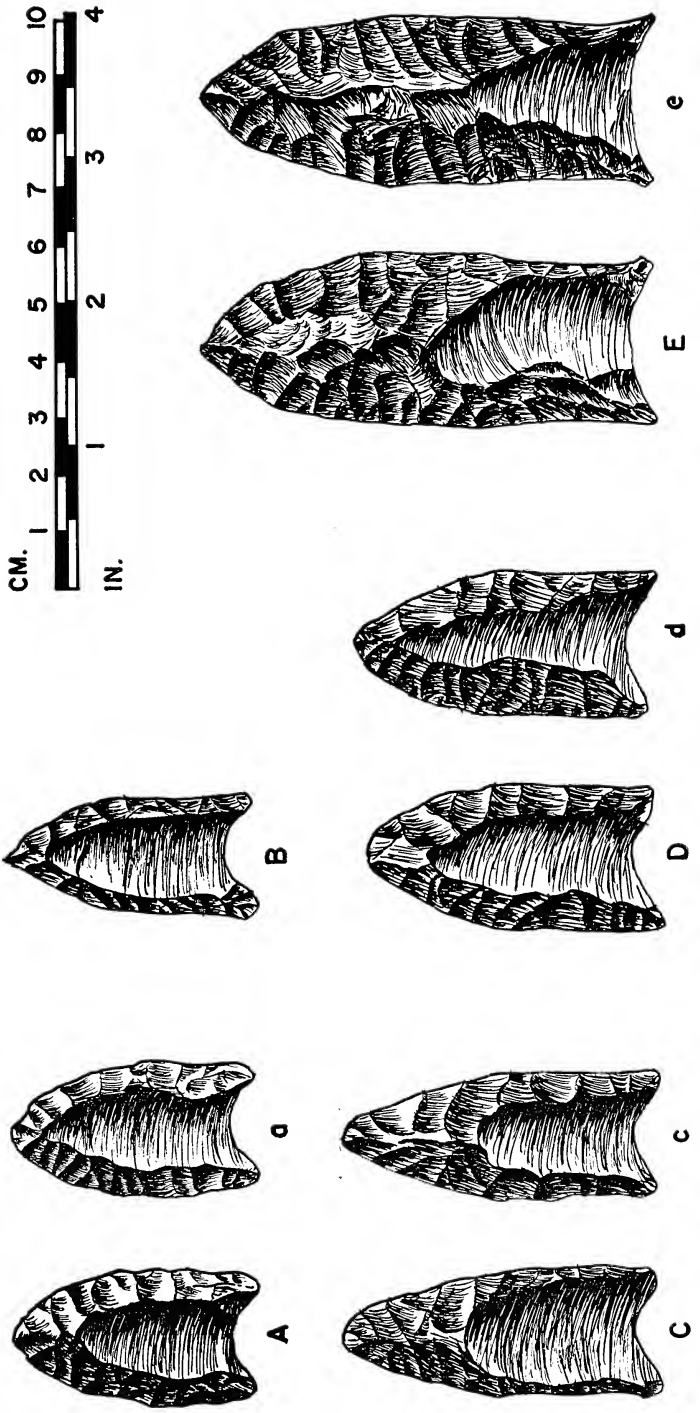


PLATE 8

Fluted points from Cornell University campus, Tompkins County

A, a(43), length is 2¼ inches B, b(44)

Photograph by courtesy of Smithsonian Institution.

PLATE 8

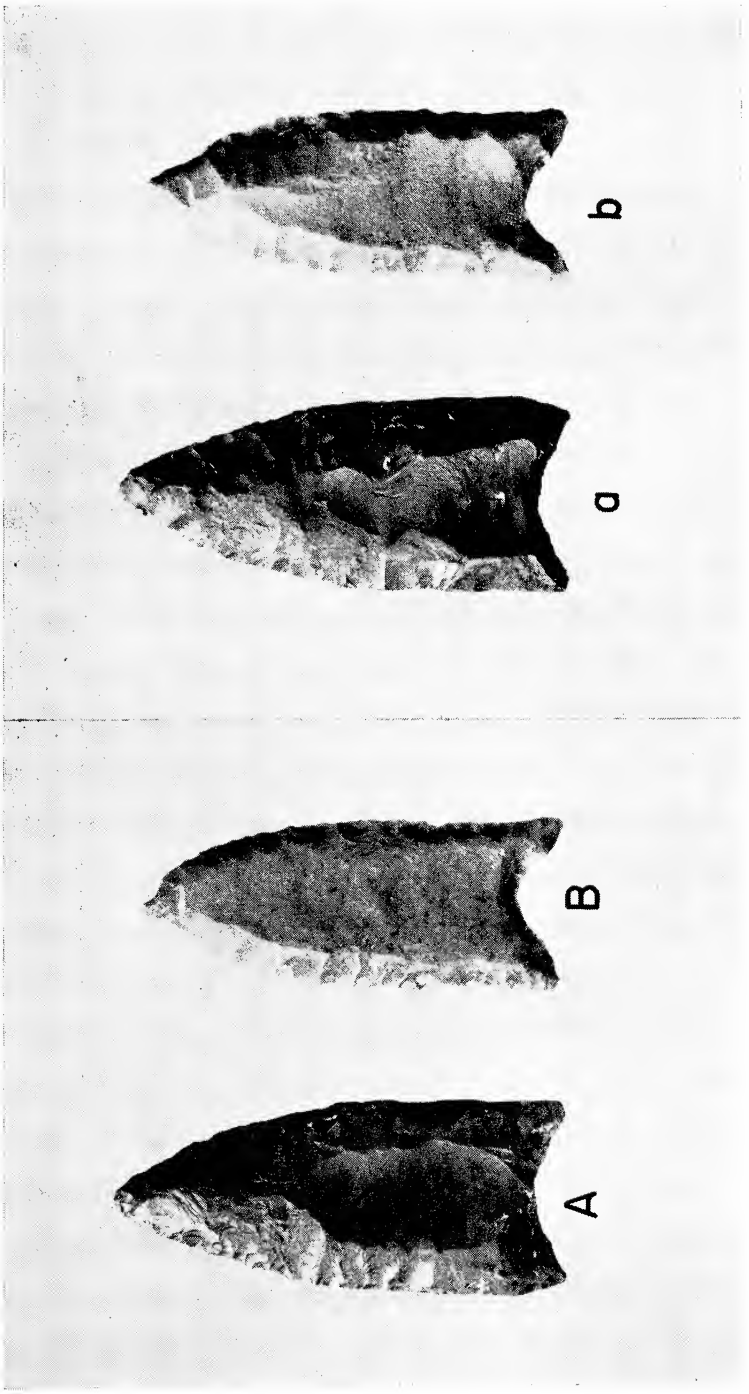


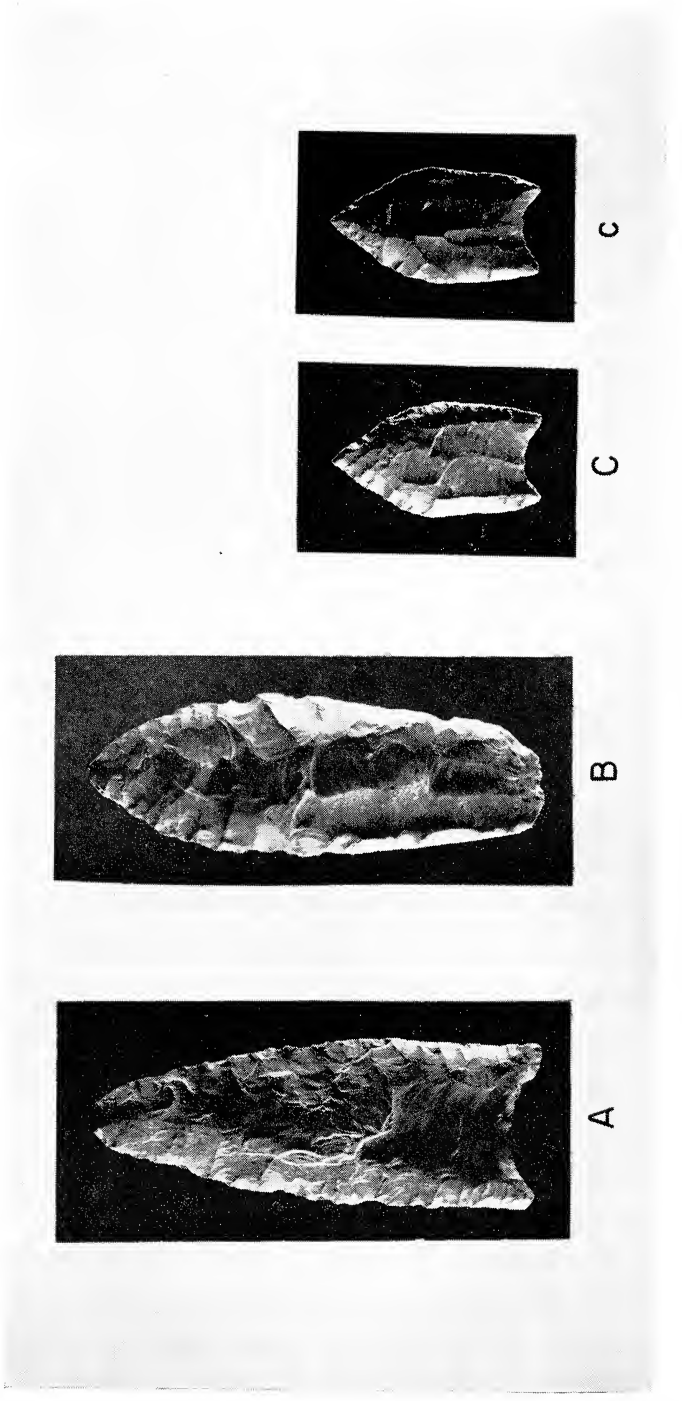
PLATE 9

Fluted points from New York

A (45), near Nichols, Tioga County B (46), near Nichols, Tioga County
C, c(47), Binghamton, Broome County

Length of A is 2⅝ inches; of B, 3⅜ inches; of C, 1½ inches.

PLATE 9



PLATES 10A and 10B

Fluted points from New York

A, a(48), near Lawtons, Erie County
B, b(49), near Gowanda, Erie County
C, c(50), near Busti, Chautauqua County
D, d(51), near Bridgehampton, Suffolk County
E, e(52), Greenport, Suffolk County

PLATE 10A

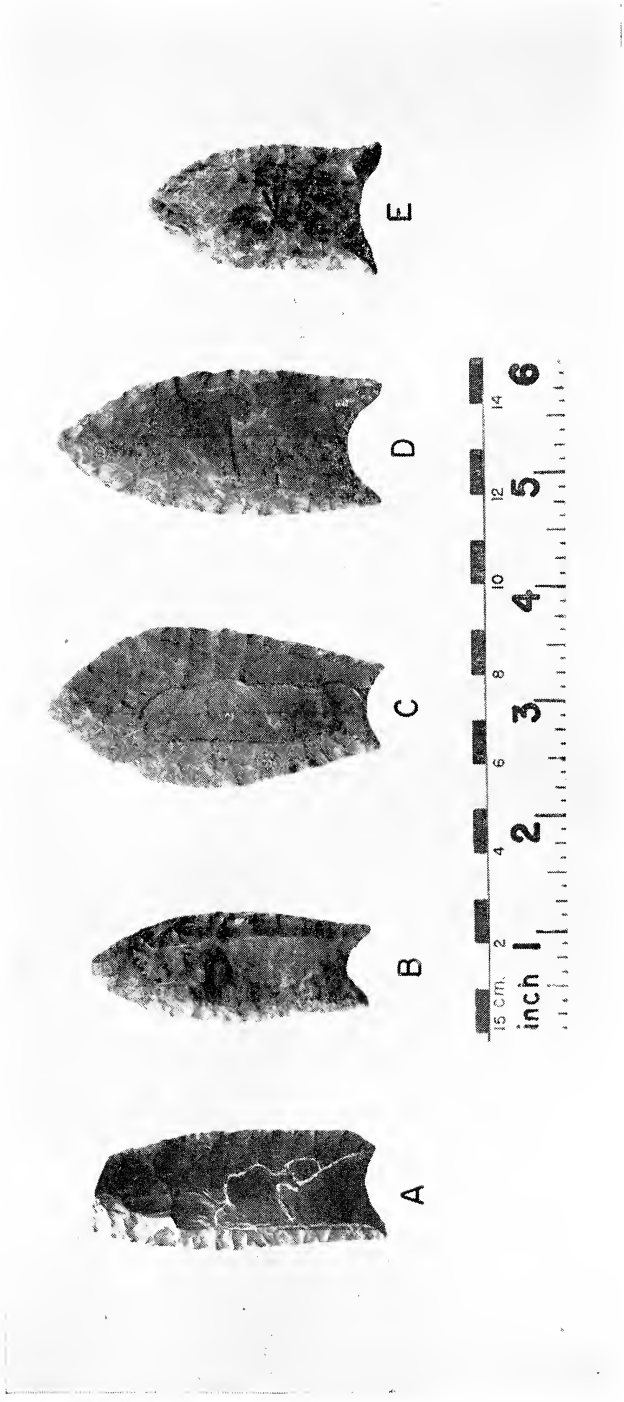


PLATE 10B

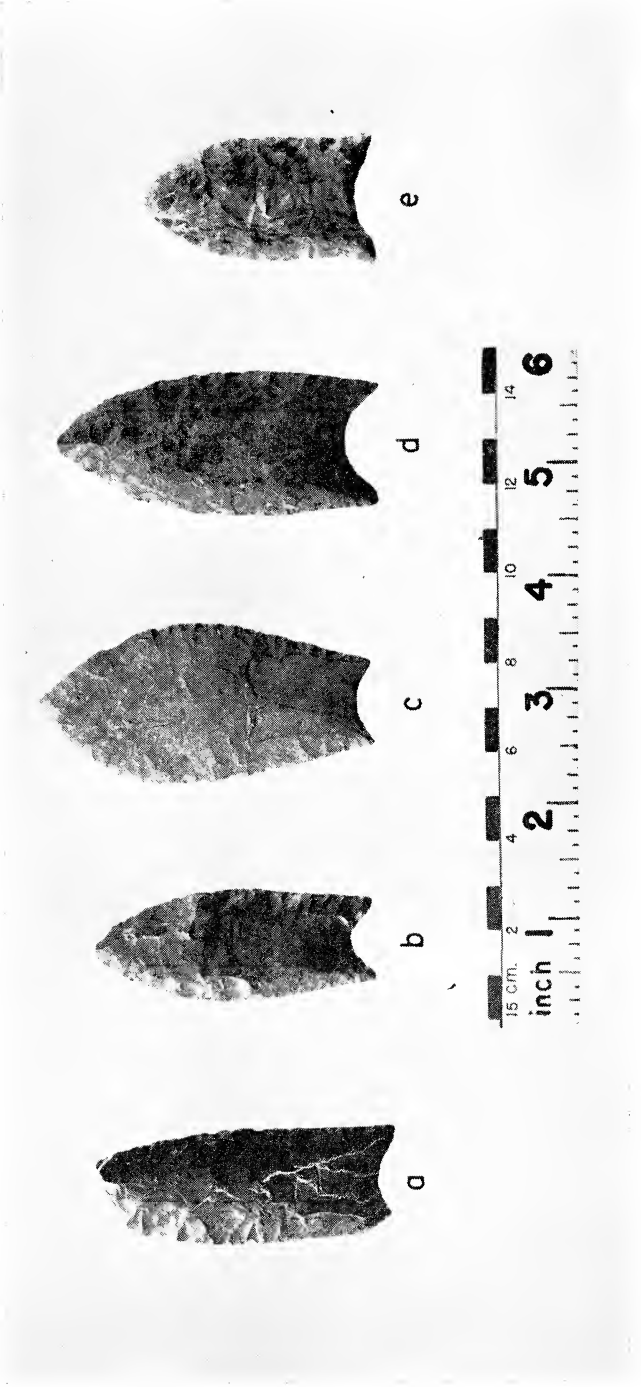


PLATE 11

Artifacts of red jasper from West Albany

A, combined spokeshave scraper and graver from uniface flake
B, knife or side scraper from thick uniface flake
C, small side scraper from uniface flake. Upper end (arrow) blunted as from use for fire-striker.

All were found within small blowout on sand ridge along brook comprising upper south feeder of Sand Creek, about 3½ miles west of Hudson River, Albany County, by Carl Sundler, West Albany. Fluted point shown in plates 2A, B, figures B,b, were found by Mr. Sundler under similar conditions, about three-quarters of a mile northeast.

PLATE 11

PLATE 12

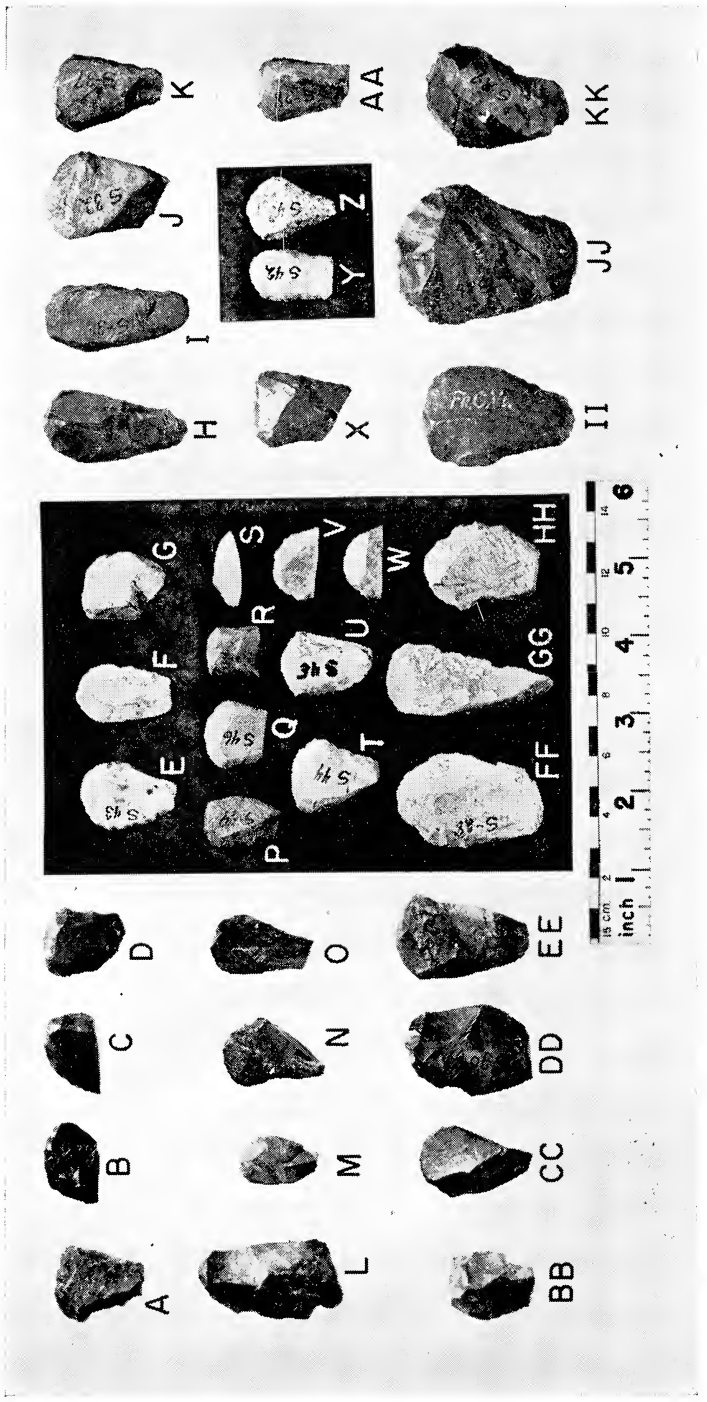
Artifacts from the Reagen component, Franklin County, Vermont

Simple end scrapers (A-G, L-W, BB-HH) and stemmed end scrapers (H-K, X-AA, II-KK).

Materials: A, C, D, gray flint; E-G, P-R, T, U, W, Y, Z, FF, HH, rhyolite; H-K, L, N, O, AA, CC-EE, JJ, KK, banded black and grayish brown flint; B, black flint; M, X, BB, II, gray Onondaga (?) flint; S, V, GG, quartzite.

Collections of William A. Ross and Benjamin W. Fisher, St. Albans, Vermont.

PLATE 12


A
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O
P
Q
R
S
T
U
V
W
X
Y
Z
AA
BB
CC
DD
EE
FF
GG
HH
II
JJ
KK
15 cm
inch

PLATE 13

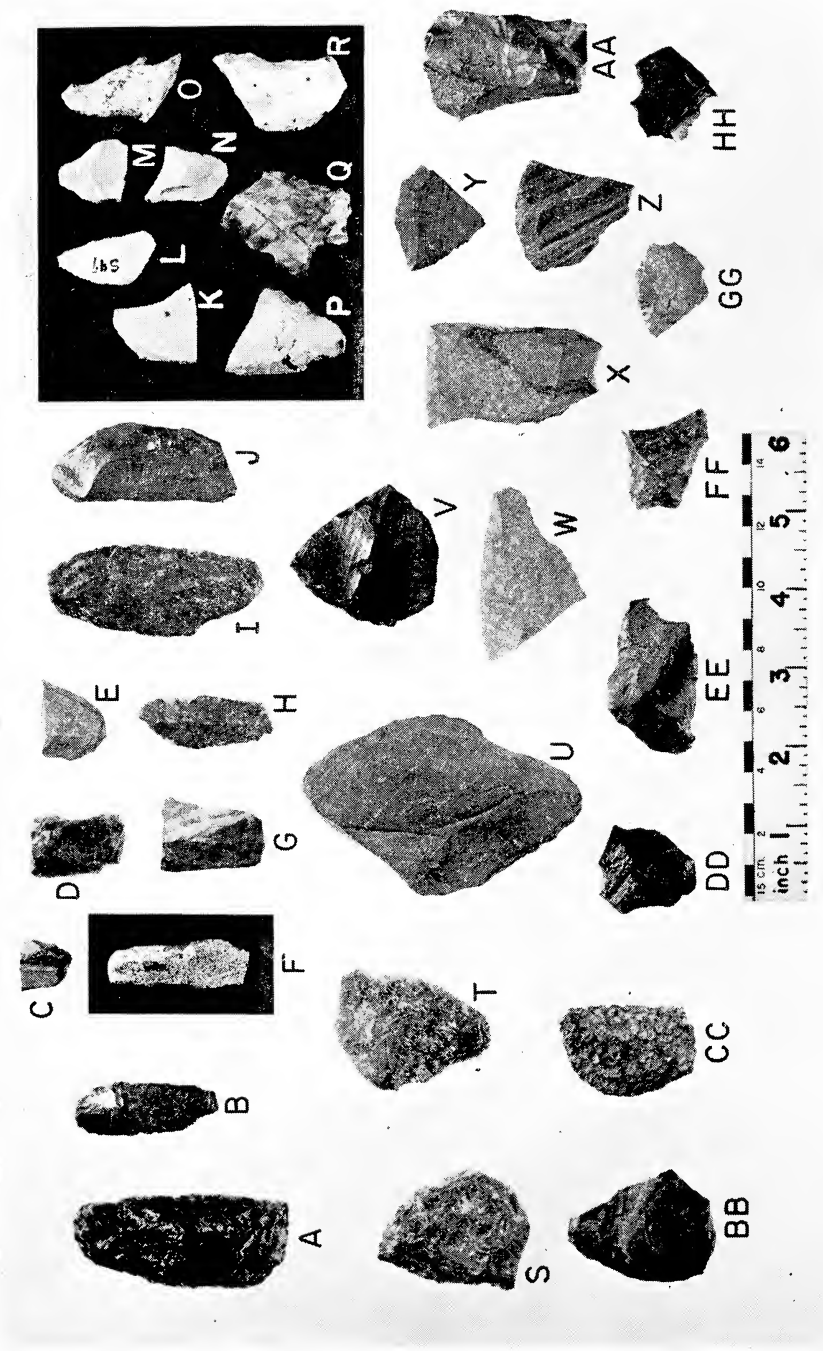
Artifacts from the Reagen component, Franklin County, Vermont

Simple end scrapers (A, B), side scrapers (C-Z, AA-GG), combined multiple graver (2 points) and spokeshave scraper (HH).

Materials: A, B, FF, gray flint; F, K-P, R, rhyolite; C, E, G, J, W-BB, EE, GG, banded black and grayish brown flint; V, DD, HH, black flint; U, CC, trap rock; Q, yellow jasper.

Collections of William A. Ross and Benjamin W. Fisher, St. Albans, Vermont.

PLATE 13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U
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W
X
Y
Z
AA
BB
CC
DD
EE
FF
GG
HH
15 cm.
inch

PLATE 14

Retouched flake knives from the Reagen component, Franklin County, Vermont

Materials: C, gray flint; all others banded black and grayish brown flint.

Collections of William A. Ross and Benjamin W. Fisher, St. Albans, Vermont.

PLATE 14

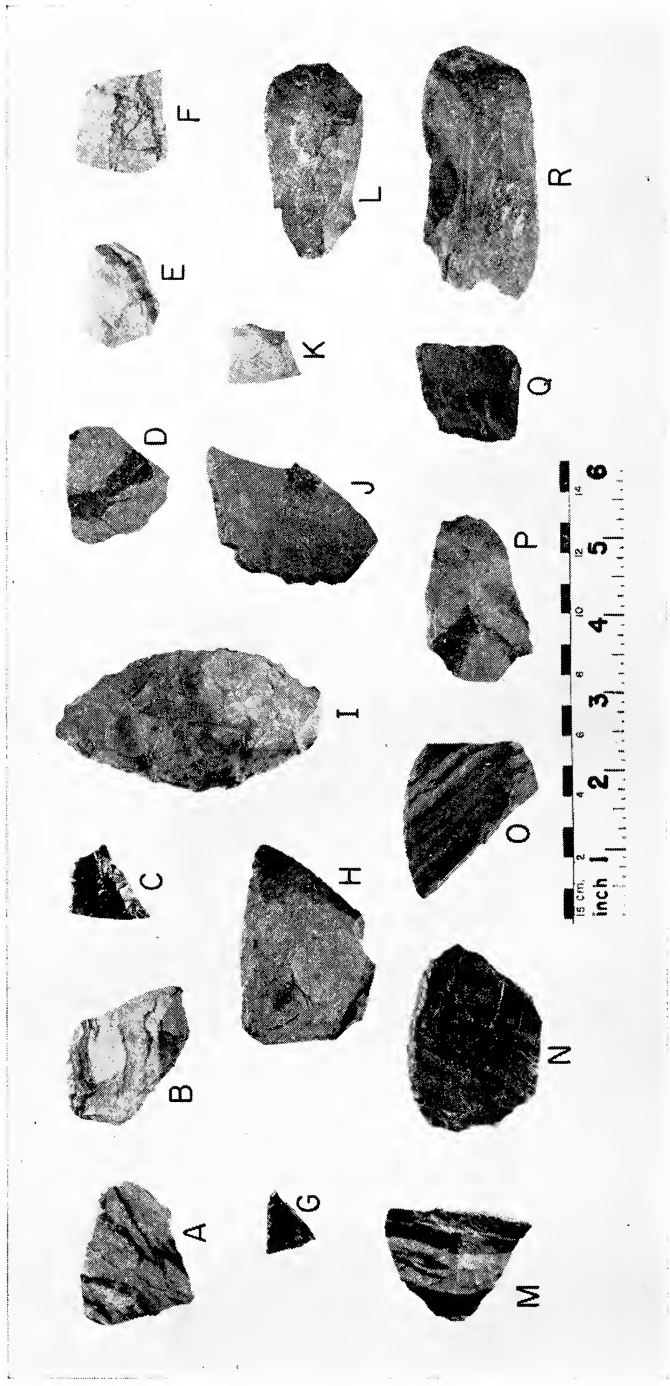


PLATE 15

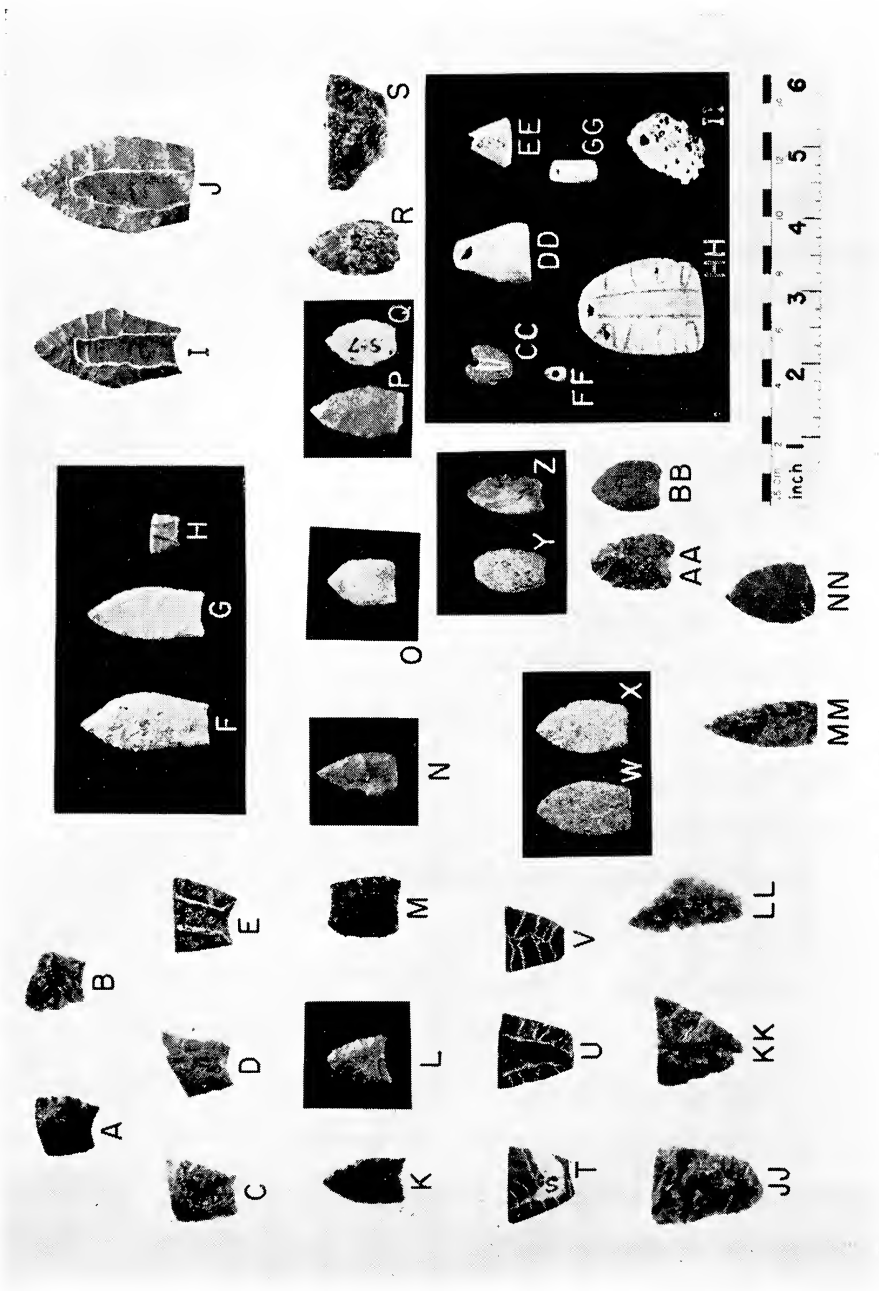
Artifacts from the Reagen component, Franklin County, Vermont

Points of lanceolate pentagonoid form (A-J), E, H, I, J, are fluted; eared triangular points (K, L); trianguloid points (M, N, W-Z, AA, BB); point of pentagonal form (O); basal sections of points probably of lanceolate form (T-V, JJ-LL), U is fluted; points of slightly stemmed form (P-S); fragmentary points, base missing (MM, NN); unique ornaments, probably pendants (CC-II), CC and HH have rubbed channels, suggesting transfer of fluting trait from points.

Materials: B-E, K, R, S, AA, JJ-LL, MM, gray flint; L, N, Q, X-Z, rhyolite; A, M, U, black flint; F, mottled greenish black and white flint; G, brown flint; H, creamy chalcedony; I, V, mottled gray and brown Onondaga (?) flint; J, greenish gray flint; T, banded greenish gray and white flint; O, W, BB, trap rock; P, quartzite; NN, yellow jasper; CC-II, talc.

Collections of William A. Ross and Benjamin W. Fisher, St. Albans, Vermont.

PLATE 15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BB
CC
DD
EE
FF
GG
HH
II
JJ
KK
LL
MM
NN
inch
1
2
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4
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6

PLATE 16

Artifacts from the Reagen component, Franklin County, Vermont

Indeterminate objects (A-E); lanceolate knives (F, H, K); knives with single shoulder (G, I, J, M, N); ovate knife (L).

Materials: A, B, J, M, gray flint; C, F-I, K, N, banded black and grayish brown flint; D, L, black flint; E, rhyolite.

Collections of William A. Ross and Benjamin W. Fisher, St. Albans, Vermont.

PLATE 16

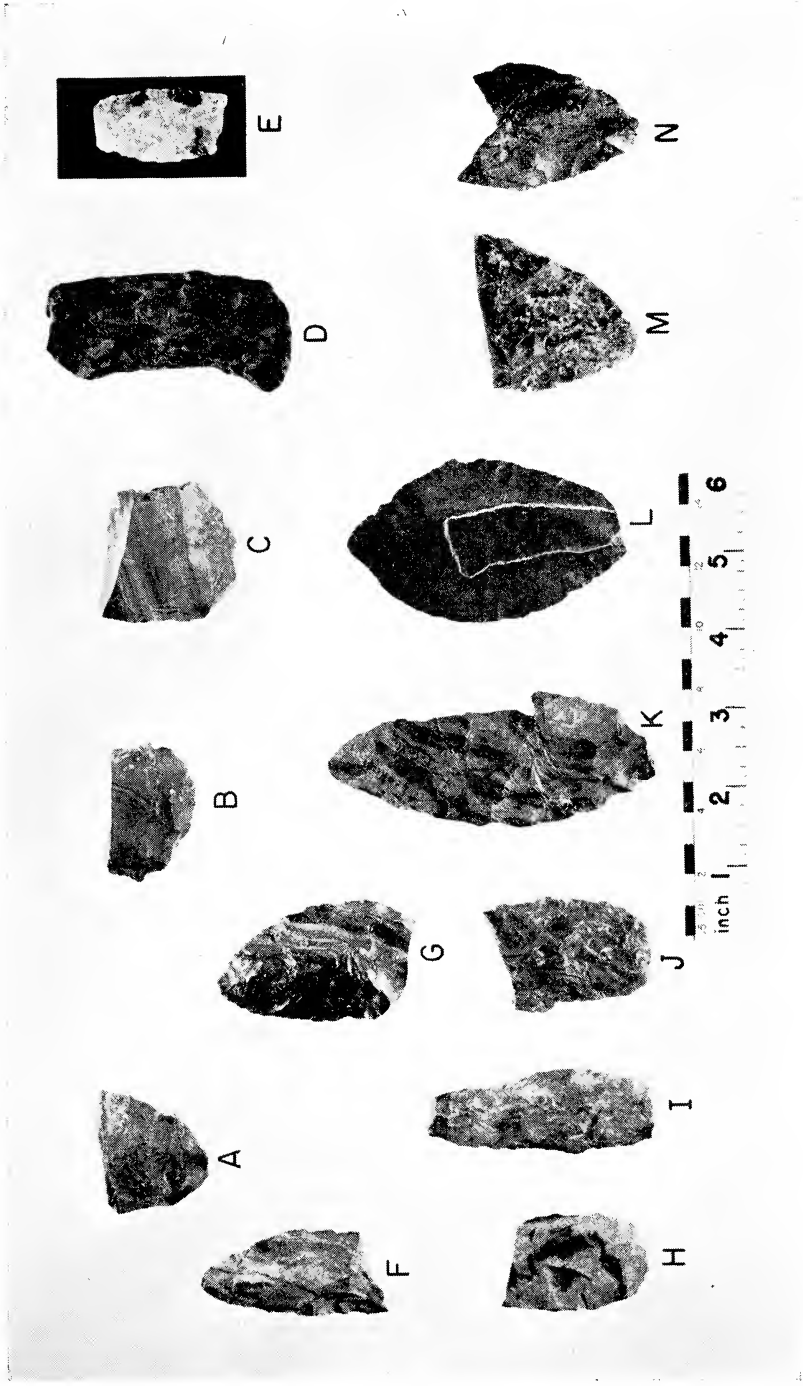


PLATE 17

Artifacts from the Reagen component, Franklin County, Vermont

Simple end scrapers (A, B); stemmed end scrapers (C-G); double spokeshave scraper (H); fragmentary ornaments, probably pendants (I-L); knife of single shoulder form (M); point fragment (N); trianguloid point (O); unretouched prismatic flake knife (P); combined multiple graver (3 points), spokeshave scraper and knife (Q).

Materials: F, O, gray flint; D, E, G, P, banded black and grayish brown flint; A, black flint; H, brownish gray flint; Q, gray Onondaga (?) flint; B, C, N, rhyolite; M, trap rock; I-L, talc.

Collection of Benjamin W. Fisher, St. Albans, Vermont.

PLATE 17

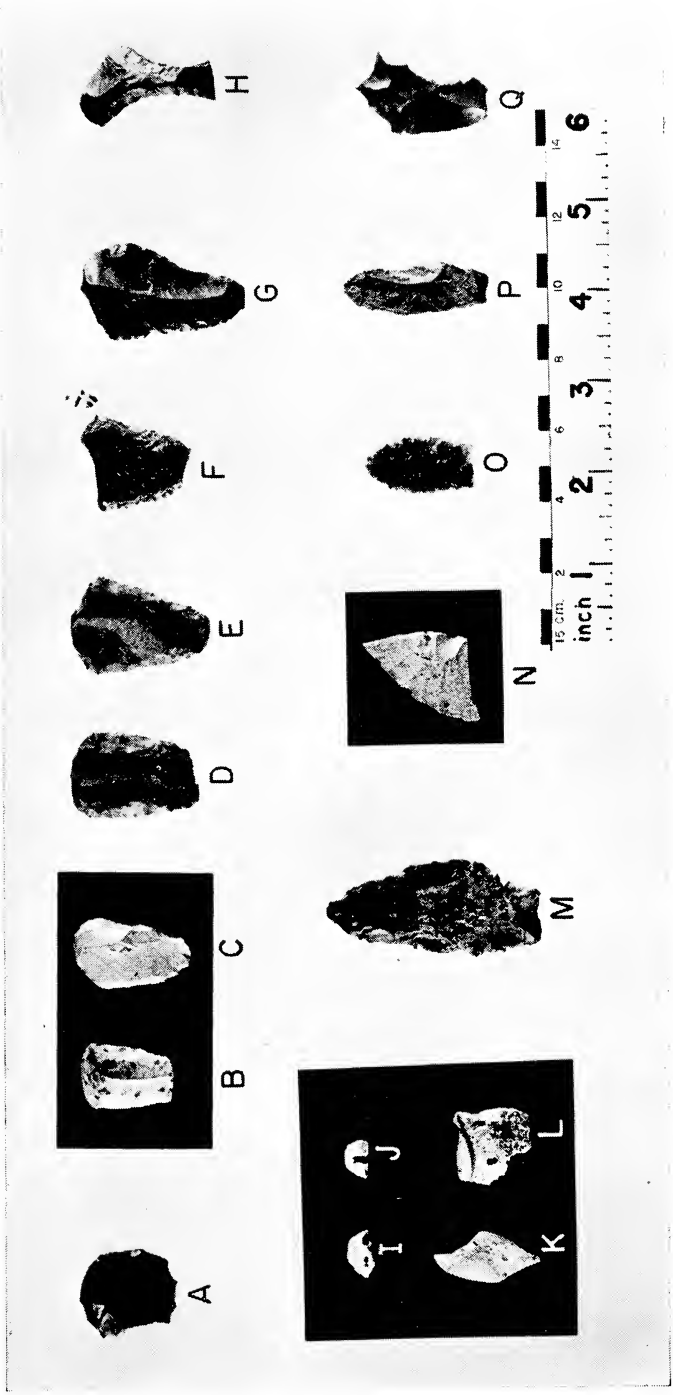


PLATE 18

Artifacts from the Reagen component, Franklin County, Vermont

Basal fragments, probably of lanceolate points (A-D, H-J); lanceolate pentagonoid point (O), and fragments probably of this form (E-G, K-N, P), M and N have fluted bases.

Materials: E, gray flint; C, D, F, black flint; I, O, banded black and grayish brown flint; H, brownish gray flint; B, G, J, gray Onondaga (?) flint; A, L, K, N, rhyolite; M, quartzite; P, trap rock.

Collection of Benjamin W. Fisher, St. Albans, Vermont.

Note: Plates 12-18 illustrate the total series of artifacts from the Reagen component, of which a selection was published in Ritchie, 1953, figure 89. The artifacts shown on plates 17, 18 represent a second lot received from Mr. Fisher after the first group, pictured on plates 12-16, had been typed and photographed. Material from both groups, plus a few specimens found by the writer on the site, figure in the 1953 report, to which the reader is referred for a complete analytical study.

PLATE 18

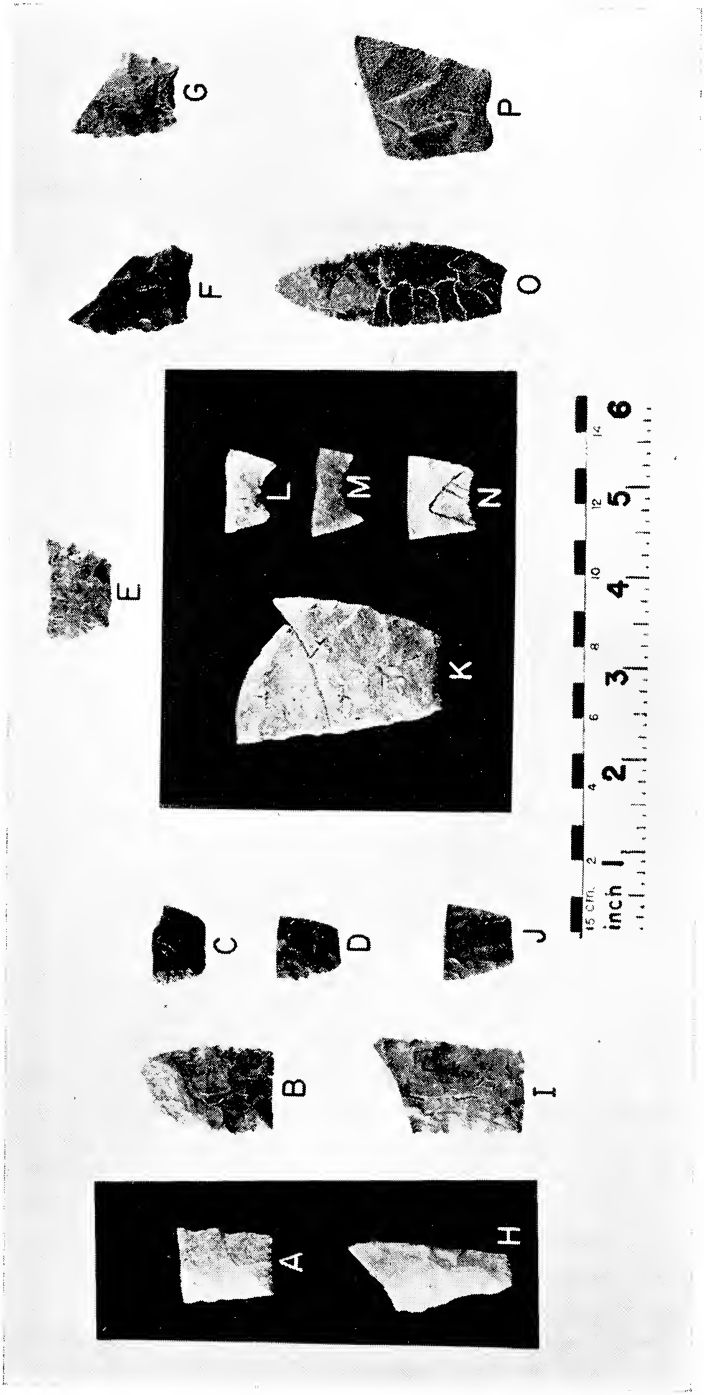


TABLE 1

TABLE

Location, Source and Description of

Plate Caption Numbers	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
	Jefferson	Cape Vincent	Cedar Point	Rocky point, 20–40 feet above St. Lawrence River	—	Fred Cuppernall
16	"	—	—	—	—	N. Y. State Museum #21816
18	"	—	—	—	—	"
28	St. Lawrence	De Peyster	Near Mud Lake (probably north end, between Fish and Beaver Creeks)	—	—	C. B. Olds
12	Lewis	Croghan	CTE 1–2, c. ½ mi. east of mouth of Deer River, east side Black River	Surface find on duff on level spur above intermittent stream bed	None. Core of like material within 500 feet. Scatter of Archaic points in general vicinity	N. Y. State Museum #41459–1
	Essex	Ticonderoga	John Rafferty farm, west side Lake George, near foot	—	Following point found on same farm	Fort Ticonderoga Museum
	"	"	"	—	See last entry	"
	"	"	Fort Ticonderoga grounds	High rocky elevation above Lake Champlain	—	"
	Oswego	Schroeppel	Near Phoenix	—	—	George F. Chesbro
	Onondaga	Cicero	Channing Robinson farm (Syr. 5), Brewerton, south side Oneida River	High level field above river at foot of Oneida Lake	Surface find on extensive Laurentian site	Dr. William Hinsdale, Syracuse, N. Y.

1

Fluted Points from New York State

DESCRIPTION

Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Yellow jasper	c. 3½″ long	—	—	—	—	Seen only in frame. Fred Cuppernall, Clayton, N. Y.
Mottled light and medium gray flint (Upper Mercer?)	3 1/32″ 1⅜″ 5/16″ 77 mm. 35 mm. 8 mm.	Parallel sided	Both faces, c. ⅔	Lower edges and base	Good	Plates 2 A, B, figures G, g
Black flint (probably Leray)	2 9/16″ ⅞″ 9/32″ 64.5 mm. 22 mm. 7 mm.	"	One face c. ⅓, other thinned near base	"	Fair	Plates 3 A, B, figures B, b
Shiny black flint (probably Leray)	2 3/16″ 1⅛″ 3/16″ 55 mm. 28 mm. 5 mm.	Lower edges slightly incurvate	Full on both faces	"	Fine	Plates 4 A, B, figures F, f. C. B. Olds, Waddington, N. Y.
Little Falls flint	1 9/16″ 13/16″ 3/16″ 40 mm. 21 mm. 5 mm.	Parallel sided	Both faces, c. ½ and ⅔	"	Good	Plates 2 A, B, figures C, c. Found by State Museum field party (1955)
Dark gray flint	c. 2⅛″ long	Lower edges incurvate, base expanded	Full on both faces	—	Good	
Greenish flint (probably Deepkill)	c. 1⅞″ long	Parallel sided	Both faces, c. ⅔	—	Fair	
Light gray flint	c. 2⅝″ long	Lower edges incurvate, base expanded	Both faces, c. ½	—	Good	
"	Basal section only, 1¾″ long, 1″ wide	Parallel sided	Both faces	—	"	George F. Chesbro, Phoenix, N. Y.
Red jasper	3¼″ long, 1″ wide	Lower edges slightly incurvate	Full on both faces	—	"	Drawing in W. M. Beauchamp, "Antiquities of Onondaga," Vol. X, figure 464, ms. N. Y. State Museum

TABLE

Location, Source and Description of

Plate Caption Numbers	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
1	Onondaga	—	—	—	—	N. Y. State Museum #27593
2	"	—	—	—	—	N. Y. State Museum #31593
3	"	—	—	—	—	" " "
4	"	—	—	—	—	" " "
15	"	Van Buren	—	—	—	N. Y. State Museum #31053
9	"	—	Cross Lake	—	—	N. Y. State Museum #31045
13	"	Lysander	—	—	—	N. Y. State Museum #31951
17	"	Van Buren	—	—	—	N. Y. State Museum #31449
20	"	" Lot 12	—	—	—	N. Y. State Museum #36285
5	"	Lysander	—	—	—	N. Y. State Museum #31047
32	"	—	Near Baldwinsville	—	—	Rochester Museum of Arts and Sciences AR 36293
36	"	—	—	—	—	N .Y. State Museum #31593

1 (*continued*)

Fluted Points from New York State

DESCRIPTION

Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Banded gray and brown flint (Onondaga)	2¼″(est.) ⅞″ 7/32″ 57 mm. 22 mm. 5 mm.	Lower edges slightly incurvate	Full on both faces	Lower edges and base	Good	Tip broken recently. Plates 1 A, B, figures A, a
Red jasper	1 19/32″ 15/16″ ¼″ 40 mm. 23.5 mm. 6 mm.	Parallel sided	Both faces, c. ½ and ⅓	None	Fair	Plates 1 A, B, figures B, b
Gray flint (Onondaga)	1 17/32″ 1 3/32″ 7/32″ 39 mm. 27.5 mm. 5 mm.	Pentagonal	Full on both faces	Lower edges only	"	Plates 1 A, B, figures C, c
"	1 1/16″ ¾″ 3/16″ 27 mm. 18.5 mm. 5 mm.	"	"	Lower edges and base	"	Plates 1 A, B, figures D, d
Little Falls flint	2⅜″ 31/32″ ¼″ 60 mm. 24 mm. 6 mm.	Lower edges slightly incurvate	"	"	Good	Plates 2 A, B, figures F, f
Mottled gray and white flint (Upper Mercer?)	2 7/16″ 1⅛″ ¼″ 61.5 mm. 28 mm. 6 mm.	Parallel sided	Both faces, c. ⅔	Lower edges and base (slight)	Fair	Plates 1 A, B, figures I, i. Illustrated by Beauchamp, 1897, figure 14
Banded and mottled gray and white flint	2 1/32″ ⅞″ 9/32″ 52 mm. 22 mm. 7 mm.	"	Both faces, c. ½ and ⅔	Lower edges and base	"	Plates 2 A, B, figures D, d. Illustrated by Beauchamp, 1897, figure 13
Black flint (probably Leray)	2 7/32″ ⅞″ 5/16″ 56 mm. 22 mm. 8 mm.	"	Both faces, c. ⅓	"	"	Plates 3 A, B, figures A, a
Dark gray flint (Onondaga)	4⅛″ 1 3/16″ 9/32″ 104 mm. 30 mm. 7 mm.	"	Full on both faces	Lower edges and base (slight)	Excellent	Plates 3 A, B, figures D, d
Gray flint (Onondaga)	2 5/16″ 1″ 9/32″ 58 mm. 25.4 mm. 7 mm.	"	Both faces, c. ⅓	Lower edges and base	Fair	Plates 1 A, B, figures E, e
Dark greenish gray flint (Deepkill?)	1 13/16″ 15/16″ 3/16″ 46 mm. 24 mm. 5 mm.	Lower edges slightly incurvate	Nearly full on both faces	"	Good	One face heavily patinated, Plates 5 A, B, figures D, d
Mottled gray flint (Onondaga)	1 3/16″ 13/16″ 3/16″ 30 mm. 21 mm. 5 mm.	Pentagonal	Full on both faces	Slight on lower edges and base	Fair	Plate 6, figure C

TABLE

Location, Source and Description of

PLATE CAPTION NUMBERS	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
37	Onondaga	—	—	—	—	N. Y. State Museum #31593
34	"	—	—	—	—	"
	Cayuga	Conquest	Haiti Island, near Mosquito Point, opposite mouth of Owasco outlet, on Seneca River	Elevated island in marsh	Following points found on same site	William Warder
	"	"	"	"	See last entry	William Warder
	"	"	"	"	"	Earl Mann
39	"	Montezuma	Jacob Snyder gladiola farm site, 1 mi. northwest of Montezuma	Low marshy flat	Much early Pt. Peninsula and Hopewellian material from this site	Arthur J. Seelye
	Wayne	Wolcott	Old Ed Reiley farm (now Teller and Coxmer farms) c. ½ mi. east of North Wolcott	Low ground near marsh	—	Edward T. Brown collection, Wolcott, N. Y.
38	"	Butler	Excavated on Arthur J. Seelye farm, town line Rose and Butler, c. 2 mi. southwest of Wolcott	Dug from roadside bank on rise of c. 8 ft. above small stream. "Ashes and a little charcoal at subsoil level, but no bone." From sand subsoil.	—	Arthur J. Seelye
41	Wayne	Rose	Norman Young farm, c. 2½ mi. east of North Rose (now Doty farm)	On upper waters of Mudge Creek, west side, in high (10–20′ above creek level) cultivated field	Following point found on same field	"

1 (*continued*)

Fluted Points from New York State

DESCRIPTION						
Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Mottled gray flint (Onondaga)	1″ ⅞″ 3/16″ 25.4 mm. 22 mm. 5 mm.	Pentagonal	Nearly full on both faces	Lower edges and base	Fair	Plate 6, figure D. Point broken and crudely rechipped
Light gray chalcedony	1⅝″ 1″ 7/32″ 41 mm. 25.4 mm. 6 mm.	Parallel sided	Both faces, c. ½	Very slight on base	"	Plate 6, figure A. An aberrant form.
Bluish black flint (Upper Mercer?)	1¾″ long	Lower edges slightly incurvate	Both faces, c. ⅔	—	"	William Warder, Geneva, N. Y.
Light grayish flint	Basal fragment 1½″ long	Parallel sided	Both faces	—	"	"
Gray flint (Onondaga)	1⅞″ long	Lower edges slightly incurvate	Both faces, c. ¾	—	"	A strong resemblance to first specimen from same site, except for material. Haiti Island probably a camp site. Earl Mann, Jordan, N. Y.
Gray flint	1 11/16″ ⅞″ — 42.5 mm. 22 mm. —	Parallel sided	Full on both faces	—	Good	Plate 7, figure B. Arthur J. Seelye, Wolcott, N. Y.
Brown flint	2 9/16″ long	"	Both faces, c. ⅓	—	Poor	Data from Carl Jones and Arthur J. Seelye, Wolcott, N. Y.
"	1 11/16″ long	Lower edges slightly incurvate	Full on both faces	—	Good	Plate 7, figures A, a. Excavated point. Arthur J. Seelye, Wolcott, N. Y.
Blue-gray flint	2⅛″ 1″ — 54 mm. 25.4 mm. —	Parallel sided	"	—	"	Plate 7, figures D, d. Arthur J. Seelye, Wolcott, N. Y.

TABLE

Location, Source and Description of

PLATE CAPTION NUMBERS	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
40	Wayne	Rose	Norman Young farm, c. 2½ mi. east of North Rose (now Doty farm)	On upper waters of Mudge Creek, west side, in high (10–20′ above creek level) cultivated field	See last entry	Arthur J. Seelye
30	"	Macedon	Hance farm, near village of Macedon	—	—	Rochester Museum of Arts and Sciences #39281
31	Monroe	—	Genesee Valley, near Rochester(?)	—	—	Rochester Museum of Arts and Sciences #37781
29	"	Brighton	Rowland farm, along Allen's Creek, near Pittsford	—	—	Rochester Museum of Arts and Sciences #43626
35	"	Greece	Bonesteel farm	—	—	N. Y. State Museum #35958
	Ontario	Farmington Lot 86	Kyte farm, west side town	—	—	—
	"	Victor	—	—	—	Buffalo Historical Society (55/1074)
14	Livingston	—	Probably vicinity of Sonyea, Genesee Valley	—	—	N. Y. State Museum #15910
33	Yates	—	Frank Schultz farm, near head of Canandaigua Lake, eastside	—	—	Rochester Museum of Arts and Sciences #36305
43	Tompkins	Ithaca	Cornell University campus	On high ground overlooking foot of Cayuga Lake	Following point from same area	DeWitt Historical Society of Tompkins Co. (Ithaca)

1 (*continued*)

Fluted Points from New York State

DESCRIPTION

Material	Size L. (in. and mm.)	Size B. (in. and mm.)	Size T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Gray-black flint	2¼″ 57 mm.	15/16″ 24 mm.	— —	Parallel sided	Both faces, ⅔	—	Good	Plate 7, figures C, c. Arthur J. Seelye, Wolcott, N. Y.
Mottled gray flint (western Onondaga)	—	—	—	"	Slight on both faces	Slight on lower sides and base	Poor	Fire damaged basal fragment. Plates 5 A, B, figures B, b
Mottled gray and black flint (Deepkill)	2″ 50 mm.	1 1/16″ 27 mm.	¼″ 6 mm.	"	Both faces, c. ⅔	Lower sides and base	Good	Plates 5 A, B, figures C, c
Mottled gray and black flint (western Onondaga)	1 7/16″ 37 mm.	⅞″ 22 mm.	5/32″ 4 mm.	"	Both faces, c. ½ and ⅓	"	Fair	Plates 5 A, B, figures A, a
Mottled gray and tan flint (western Onondaga)	2 13/32″ 61 mm.	1 3/16″ 30 mm.	5/32″ 4 mm.	Lower edges slightly incurvate	Both sides, base thinned only	Lower edges and base	Excellent	Plate 6, figure B. One of thinnest specimens seen. Aberrant form
Black flint	2 3/16″	1″	—	Parallel sided	Both faces, c. ⅓	—	Good	Data from Lewis F. Allen, Macedon, N. Y.
Mottled gray and tan flint (western Onondaga)	— —	15/16″ 24 mm.	⅛″ 3 mm.	"	One face c. ¼. Other face thinned by 3 short flakes	"	Fair	Basal fragment. Data from Richard L. McCarthy, Lockport, N. Y.
Yellow jasper	2¼″ 57 mm.	1 1/16″ 27 mm.	5/16″ 8 mm.	"	Both faces, nearly full	"	Good	Plates 2 A, B, figures E, e
Blue-black flint (Upper Mercer?)	2 11/16″ 68 mm.	1¼″ 32 mm.	¼″ 6 mm.	"	Both faces, c. ½ and ⅔	"	Fair	Plates 5 A, B, figures E, e
Dark gray flint	2¼″ 57 mm.	1″ 25.4 mm.	— —	"	Both faces, c. ⅔	—	"	Plate 8, figures A, a. Photographs from Frank H. H. Roberts, Jr., Smithsonian Inst. Data from W. Glenn Norris, Ithaca, N. Y.

TABLE

Location, Source and Description of

PLATE CAPTION NUMBERS	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
44	Tompkins	Ithaca	Cornell University campus	On high ground overlooking foot of Cayuga Lake	See last entry	DeWitt Historical Society of Tompkins Co. (Ithaca)
42	Chemung	Horseheads	Near Horseheads	—	—	"
45	Tioga	Nichols	Near Nichols	—	—	Foster Disinger
46	"	"	"	—	—	"
47	Broome	Kirkwood	Grounds of Binghamton State Hospital	On high terrace overlooking Susquehanna River	Site has yielded numerous Lamoka type points	"
	"	Union	Between Willow Point and Vestal	—	—	"
	"	Windsor	At or near Windsor on Susquehanna	—	—	Marius Mallery, Windsor
	Chenango	—	Near Bainbridge	—	—	Mortimer C. Howe coll., Colgate University, Hamilton, N. Y.

1 (*continued*)

Fluted Points from New York State

DESCRIPTION

Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Dark gray flint	2⅛″ ⅞″ — 54 mm. 22 mm. —	Parallel sided	Full on both faces	—	Good	Plate 8, figures B, b. Photographs from Frank H. H. Roberts, Jr., Smithsonian Inst. Data from W. Glenn Norris, Ithaca, N. Y.
Yellow jasper	3 1/16″ 1 3/16″ —	Lower edges incurvate	Both faces, c. ⅓, ½	Lower edges and base	"	Plate 7, figures E, e. Data and illustration from W. Glenn Norris, Ithaca, N. Y.
Mottled gray flint (Onondaga)	2⅝″ 1 3/32″ — 66.5 mm. 28 mm. —	Parallel sided	Both faces, c. ⅓ and ⅔	Slight on base	Fair	Plate 9, figure A. Data and illustration from Foster Disinger, Binghamton, N. Y.
Mottled dark blue flint (Upper Mercer?)	3⅜″ 1¼″ —	Lanceolate	Both faces, c. ½ and ⅓	Lower edges	Poor	Plate 9, figure B. Data and illustration from Foster Disinger, Binghamton, N. Y. An aberrant form.
Mottled gray flint (Onondaga)	1½″ 27/32″ — 38 mm. 21 mm. —	Parallel sided	Nearly full on both faces	Lower edges and base	Good	Plate 9, figures C, c. Data and illustration from Foster Disinger, Binghamton, N. Y.
"	— 1 7/16″ — — 36 mm. —	"	Full on both faces	"	"	Basal fragment. Data from Foster Disinger, Binghamton, N. Y.
Gray flint	3 1/16″ 1 3/16″ — 78 mm. 30 mm. —	"	Both faces, c. ⅓	—	Fair	Data from Foster Disinger, Binghamton, N. Y.
Mottled brown and gray flint (Onondaga)	— — —	"	Both faces	Slight on base	"	Basal fragment only. Found by Herbert Bigford, Earlville, N. Y.

TABLE

Location, Source and Description of

PLATE CAPTION NUMBER	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
10	Madison	Fenner	Surface find on Nichols Pond site	Level field above small stream and pond	On prehistoric Iroquoian village	Robert Roberts
7	Otsego	Milford	Townsend Bishop farm, c. ½ mile east of Portlandville	In small valley along brook draining into Susquehanna River on west flank of Crumhorn Mountain	No artifacts nearby	Rowan Spraker
26	"	Richfield	About midway on west shore Canaderago Lake	On low rise in level field elevated c. 25 feet above lake	A second very similar point from same field	Leo N. McLean, Cat. #M438
	"	"	"	"	Scatter of Laurentian artifacts in vicinity	"
27	"	Otsego	East bank Oaks Creek	Low ground near swale	Thin scatter of Laurentian and Point Peninsula material	Leo N. McLean, Cat. #M439
	Delaware	Roxbury	Tyler flat, east side road (R. 30), northern outskirts of Roxbury, near spring, north of pumping station	Flood plain along west bank, East Branch Delaware River	Following very similar point from same field	Ralph S. Ives
	"	"	"	"	Found very close to last entry. Many Laurentian objects on same site	Harry A. Reed, Jr.

1 (*continued*)

Fluted Points from New York State

DESCRIPTION

Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Mottled tan and brown jasper	1½″ 15/16″ ¼″ 38 mm. 24 mm. 6 mm.	Parallel sided	Both faces, nearly full	Slight on base and extreme lower edges	Fair	Plates 2 A, B, figures B, b. Heavily patinated. Tip looks broken and reworked. Robert Roberts, Canastota, N. Y.
Brown jasper	3 5/16″ 1 9/32″ ⅜″ 84 mm. 32.5 mm. 9.5 mm.	"	Both faces, c. ½ and full	Very slight on lower sides and base	Fine	Plates 1 A, B, figures G, g. Rowan Spraker, Cooperstown, N. Y.
Dark gray flint (Onondaga)	2 1/16″ 1 1/16″ ¼″ 52 mm. 27 mm. 6 mm.	Lower edges slightly incurvate	Full on both faces	Very slight on base and lower edges	Fair	Plates 4 A, B, figures D, d. Tip reworked. Data from Leo N. McLean, Richfield Springs, N. Y. An aberrant form.
"	— — —	—	"	—	"	"
Mottled gray and tan flint (western N. Y. Onondaga)	— — —	Parallel sided	—	Lower edges and base	"	Plates 4 A, B, figures E, e. Basal portion only. Data from Leo N. McLean, Richfield Springs, N. Y.
Tan flint	1½″ 1″ — 38 mm. 25.4 mm. —	"	Both faces, c. ½	Base only	Fair	Ralph S. Ives, Roxbury, N. Y.
"	1 1/16″ 13/16″ — 27 mm. 20 mm. —	Triangular	Both faces, nearly full	"	"	Data from Ralph S. Ives and Harry A, Reed, Jr., Sidney, N. Y.

TABLE

Location, Source and Description of

Plate Caption Numbers	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
23	Ulster	Shawangunk	Probably on historic Esopus town of New Fort, near Wallkill	On sandy plateau about 75 feet above Shawangunk Kill, a tributary of Wallkill	—	Miss Joyce McHugh, Wallkill, N. Y.
22	"	Esopus	Probably on Kingston Point	On high sand bluff overlooking Hudson and mouth of Rondout Creek. Dug from c. 4 feet below surface (2 feet dark refuse, 2 feet clear sand)	Overlying 2 feet dark refuse contained Laurentian and other artifacts	N. Y. State Museum #41519–1
25	Orange	Montgomery	Twin Fields site, 1½ miles northwest of Allard's Corners	High level fields along Dwaarkill	Sites of several cultures located on these fields	Bear Mountain Trailside Museum, #AA-43/12–0
24	"	"	"	"	"	Bear Mountain Trailside Museum, #AA-42/12–0
	"	"	"	"	"	Coll. Mr. Clark near Allard's Corners
	"	"	Found less than a mile east of Allard's Corners	—	—	"
6	Greene	Coxsackie	Vicinity of Coxsackie	Probably high level fields along Hudson River	Two following points probably from same locality	N. Y. State Museum #36405–1
8	"	"	"	"	See last entry	N. Y. State Museum #36405–2

1 (*continued*)

Fluted Points from New York State

DESCRIPTION

Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Brown jasper	2 7/32″ 1″ 1/4″ 56 mm. 25.4 mm. 6 mm.	Lower edges slightly incurvate	Full on both faces	Lower edge and base	Good	Plates 4, A, B, figures A, a. Tip seems broken and reworked. Data from Stewart H. Stephens, Wallkill, N. Y.
Dark brown jasper	2 13/32″ 1″ 5/16″ 61 mm. 25.4 mm. 8 mm.	Lower edges incurvate	Both faces, c. 1/2 and 1/3	Lower edges and base	"	Plates 3 A, B, figures F, f. Found in presence of James Shafer, Poughkeepsie, N. Y., and presented by him to N. Y. State Museum. Very similar to last entry.
Mottled green, black and marcon flint (Deepkill)	— 15/16″ 1/4″ — 24 mm. 6 mm.	Parallel sided	Both faces, c. 1/3	"	Fair	Plates 4 A, B, figures C, c. Tip broken evidently in use. Data from John C. Orth, Bear Mountain Museum.
Light gray flint (Fort Ann)	— 1″ 1/4″ — 25.4 mm. 6 mm.	"	"	None	Poor	Plates 4 A, B, figures B, b. Tip missing. Data from John C. Orth.
Brown jasper	c. 2 1/2″ long	—	—	—	—	Data from Bear Mountain Museum through Mr. Orth
Olive-green flint (Deepkill?)	c. 1 1/2″ long	—	—	—	—	"
Mottled light and dark brown jasper	3 11/32″ 1 1/8″ 11/32″ 85 mm. 29 mm. 9 mm.	Parallel sided	Both faces, c. 1/2 and 2/3	Lower edges and base	Fine	Plates 1 A, B, figures F, f. Similar to example from Crumhorn Mountain. (See plate 1 A, B, figures G, g)
Mottled gray and greenish flint (Deepkill)	3 7/32″ 1 3/16″ 9/32″ 82 mm. 30 mm. 7 mm.	Lower edges slightly incurvate	Both faces, c. 1/3	Lower edges and base (slightly)	"	Plates 1 A, B, figures H, h

TABLE

Location, Source and Description of

PLATE CAPTION NUMBERS	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
19	Greene	Coxsackie	Vicinity of Coxsackie	Probably high level fields along Hudson River	See two last entries	N. Y. State Museum #36405-3
11	Albany	Colonie	Harold Smith farm, West Albany	Sand ridge along Shaker Road	None	Carl S. Sundler
	"	"	West Albany	Sandy ridge	"	"
21	Saratoga	Northumberland	Henry Peck farm, c. ¼ mile north of Bacon Hill	High level field c. ¾ mile west of Hudson River	"	N. Y. State Museum #39986
	"	Wilton	Near village of Wilton	Probably on headwaters of Little Snook Kill, near eastern flank of Palmertown Range, some 8 miles in air line west of Hudson River	—	Southwest Museum, Los Angeles, Calif. #1018-C-1 (Brill coll.)
52	Suffolk	Southold	Old Wickham farm, Pipes Neck Creek, Greenport, Long Island	From flat cultivated field adjoining tidal creek	Artifacts of several cultures found here	Roy Latham, #37
51	"	Southampton	Near old "Spider Legged Mill," about 3 miles northwest of Bridgehampton	Found about 1942 by J. F. Raynor on newly cleared plowed land, on high ground (Ronkonkoma morainal ridge)	No other artifacts from entire field	Joseph F. Raynor, Hampton Bays, N. Y.
	Cattaraugus	Little Valley	E. E. Mackey farm, near Little Valley	—	—	Walter Tennies, Lakewood, N. Y.

1 (*continued*)

Fluted Points from New York State

Material	Size L. (in. and mm.)	Size B. (in. and mm.)	Size T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
			DESCRIPTION					
Dark gray flint (Onondaga)	4 3/16″ 107 mm.	1 9/16″ 40 mm.	1/4″ 6 mm.	Parallel sided	Both faces, full and c. 2/3	Lower edges and base	Fine	Plates 3 A, B, figures C, c. Largest point in New York series
Quartzite, peculiar in having secondary silica around each grain	1 5/8″ 41 mm.	1″ 25.4 mm.	7/32″ 5 mm.	Lower edges slightly incurvate	Full on both faces	Too badly weathered to determine	Fair	Plates 2 A, B, figures B, b. Most deeply weathered point seen. Tip of point broken. Carl S. Sundler, West Albany, N. Y.
Greenish flint (Normanskill)	—	—	—	—	—	—	—	Fragmentary blade section
Dark gray flint (probably Fort Ann)	2 21/32″ 67 mm.	15/16″ 24 mm.	9/32″ 7 mm.	Lower edges slightly incurvate	Both faces, full and c. 1/2	Lower sides and base (slight)	Poor	Plates 3 A, B, figures E, e. Gift of Louis E. Follette, Schuylerville, N. Y.
Dark greenish flint (probably Normanskill)	2 7/16″ 62 mm.	1″ 25.4 mm.	— —	One lower edge slightly incurved	Both faces, c. 2/3	—	Fair	Weathered flint
Mottled creamy white and chestnut brown flint	2″ 51 mm.	1 3/16″ 30 mm.	5/16″ 8 mm.	Lower edges slightly incurvate	Both faces, c. 1/2 and 2/3	Lower sides and base	Good	Plates 10 A, B, figures E, e. Also illustrated in Fowler, 1954, figure 2, 9. Data from Roy Latham, Orient, N. Y.
Olive green flint (probably Deepkill)	2 13/16″ 71 mm.	1 9/32″ 32.5 mm.	9/32″ 7 mm.	Parallel sided	Both faces, c. 5/6 and 2/3	Lower sides and base	Good	Plates 10 A, B, figures D, d. Moderate degree of weathering.
Dark blue-gray mottled flint (Onondaga?)	2 3/16″ 56 mm.	1″ 25.4 mm.	— —	Broad lanceolate, aberrant form	One face, c. 2/3	Lower sides and base	"	Illustrated in Mayer-Oakes, 1955, plate 1, B (and p. 44)

TABLE

Location, Source and Description of

Plate Caption Numbers	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
	Cattaraugus	Cold Spring	Cold Spring, Allegany Seneca Reservation	—	—	William J. Congdon, Hopewell, Va.
	"	South Valley	Near Onoville	—	—	—
	Chautauqua	Kiantone	At junction of Kiantone and Conewango Creeks (Mayer-Oakes site 30 Ch. 8)	Low, level land	Mixed surface material, Archaic and Late Woodland. Following point from same site	Walter Tennies, Lakewood, N. Y.
	"	"	"	"	See last entry	"
	"	—	Shore of Chautauqua Lake	—	—	W. T. Fenton Coll., U. S. National Museum
	"	—	c. 3 miles south of Jamestown	—	—	—
	"	Ellington	Anderson farm, between Clear Creek and Ellington	Low land along Clear Creek	May have been in refuse pit with crude plain pottery	Eber L. Russell, Perrysburg, N. Y.
50	"	Busti Lot 36	Near Busti	c. 30 feet above edge of Stillwater Creek (south side)	Few small weathered flint flakes nearby in same erosion-loosened soil beneath sod	Waldo P. Stanford Mayville, N. Y.
49	Erie	Collins	Flats on north side Cattaraugus Creek, just west of Gowanda city limits	Low land along Cattaraugus Creek	—	Stuart Spittler, Gowanda, N. Y.

1 (*continued*)

Fluted Points from New York State

DESCRIPTION							
Material	Size (L. B. T. (in. and mm.))	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Gray flint (probably Onondaga)	— — —	Lower edges contracted to form weak stem	One face	—	Good	Illustrated in Mayer-Oakes, 1955, plate 3, C (and page 46)
—	— — —	—	—	—	Fair	Illustrated in Mayer-Oakes, 1955, plate 8, E
Gray flint	1¾″ 11/16″ — 44.5 mm. 17 mm. —	Parallel sided	One face, c. ⅔	None	Poor	Illustrated in Mayer-Oakes, 1955, plate 1, A (and p. 44)
Mottled gray and tan flint (probably Onondaga)	1 13/16″ ¾″ — 46 mm. 19 mm. —	"	Both faces, c. ½	Lower edges and base	"	Illustrated in Mayer-Oakes, 1955, plate 1, C (and p. 44)
Gray-brown flint (Onondaga?)	— — —	"	Both faces, c. ⅔ and full	—	Fair	See Mayer-Oakes, 1955, plate 3, B and p. 46
Brown flint	— — —	—	—	—	—	—
Dull gray flint	3″ 1¼″ — 76 mm. 32 mm.	Parallel sided	Both faces, c. ½	Lower edges and base	Good	See illustration in Russell, 1952, pp. 5–7
Light gray flint (western Onondaga)	2 15/16″ 1 7/16″ 3/16″ 74 mm. 36.5 mm. 5 mm.	Obovate	Both faces, c. ¾ and ⅓	Lower edges and base	Excellent	Plates 10 A, B, figures C, c. Data from W. P. Stanford and W. H. Glover, Buffalo Historical Society. An aberrant form.
Mottled gray and tan flint (western Onondaga)	2 7/16″ 1″ ¼″ 62 mm. 25.4 mm. 6.5 mm.	Lower edges slightly incurvate	Full on both faces	"	"	Plates 10 A, B, figures B, b. Data from Alfred K. Guthe, Rochester Museum of Arts & Sciences and Stuart Spittler.

TABLE

Location, Source and Description of

PLATE CAPTION NUMBERS	LOCATION					SOURCE
	County	Township and Lot	Locus	Terrain	Association	Collection and Catalog Number
48	Erie	North Collins	Alfred J. Musacchio farm, ½ mile north of Lawtons on Gowanda State Rd.	Low, level ground, heavy clay soil, not near waterway	No other artifacts in general vicinity	Alfred J. Musacchio, State Rd., Lawtons, N. Y.

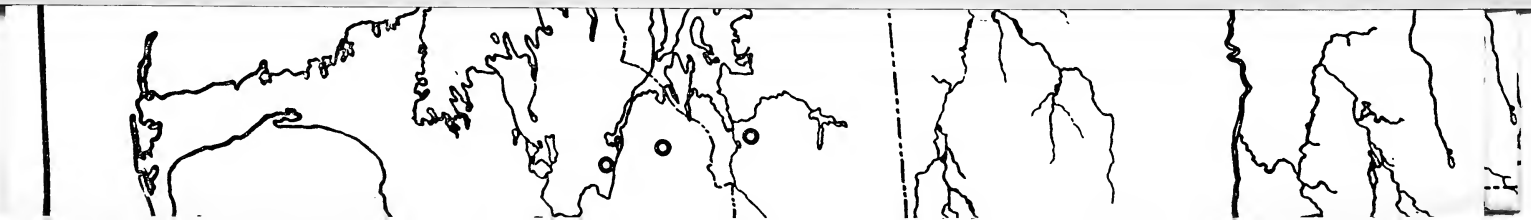
1 (*concluded*)

Fluted Points from New York State

DESCRIPTION						
Material	Size L. B. T. (in. and mm.)	Form	Fluting	Grinding	Workmanship	Addenda and Acknowledgments
Dark blue-black flint (Upper Mercer?)	3 1/16" (est.) 1 1/16" 5/16" 76 mm. 27 mm. 8 mm. (est.)	Parallel sided	Both faces, c. 1/4	Lower edges and base	Fair	Plates 10 A, B, figures A, a. Data from W. H. Glover, Buffalo Hist. Soc., and A. J. Musacchio. Found on surface after tilling ground. Tip may have been broken in digging trench 2–3 1/2 feet deep.

Figure 1. Distribution of fluted points and paleo-Indian components in the Northeast in relation to Lake Iroquois and Lake Vermont, Fort Ann stage

Figure 2. Distribution of fluted points and paleo-Indian components in the Northeast in relation to the Gilbert Gulf and Champlain Sea



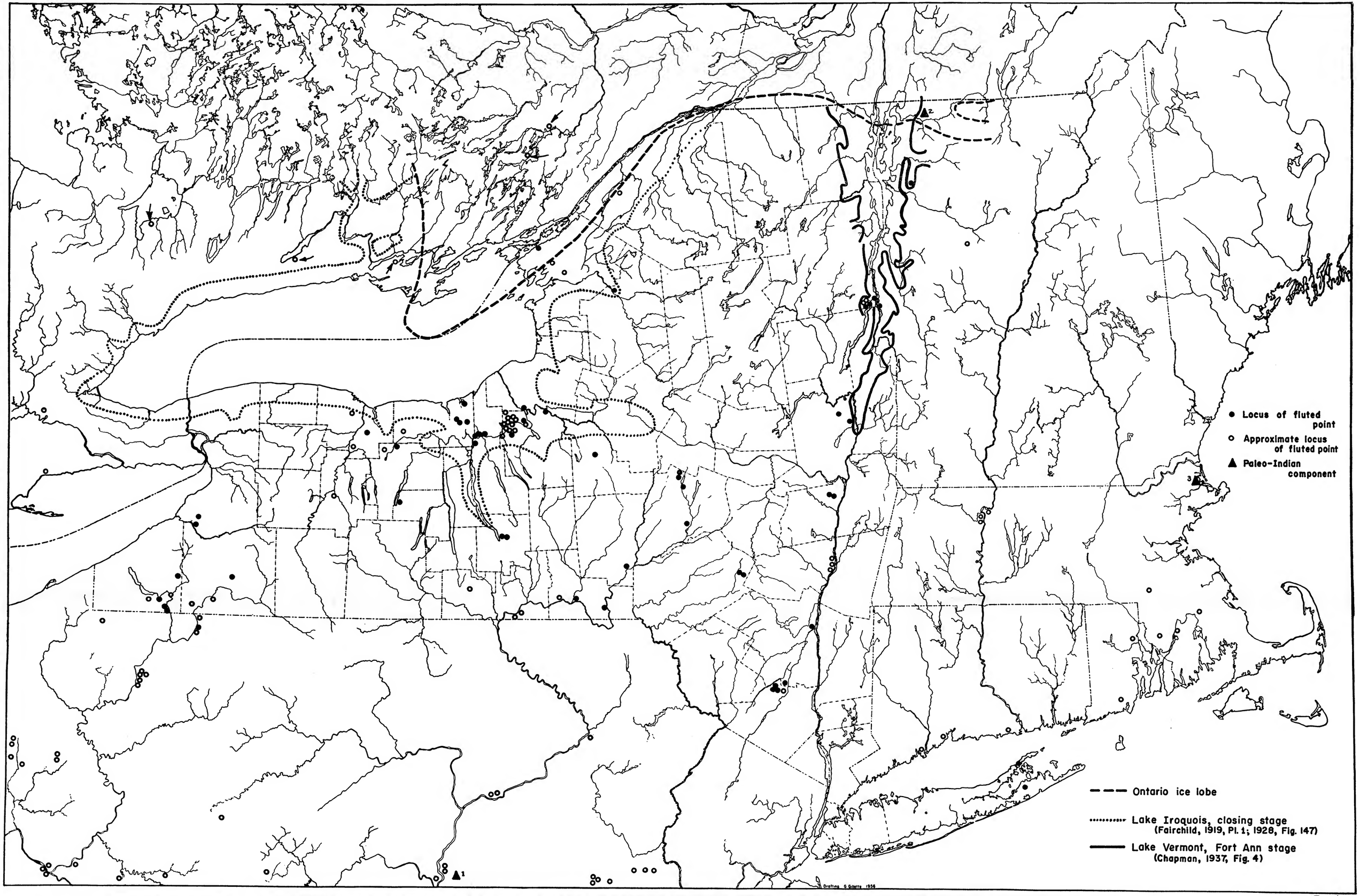

● Locus of fluted point
○ Approximate locus of fluted point
▲ Paleo-Indian component
▲1
▲2
▲3
Ontario ice lobe
Lake Iroquois, closing stage (Fairchild, 1919, Pl. 1; 1928, Fig. 147)
Lake Vermont, Fort Ann stage (Chapman, 1937, Fig. 4)
Drafting G Gillette 1956

Fig. 1

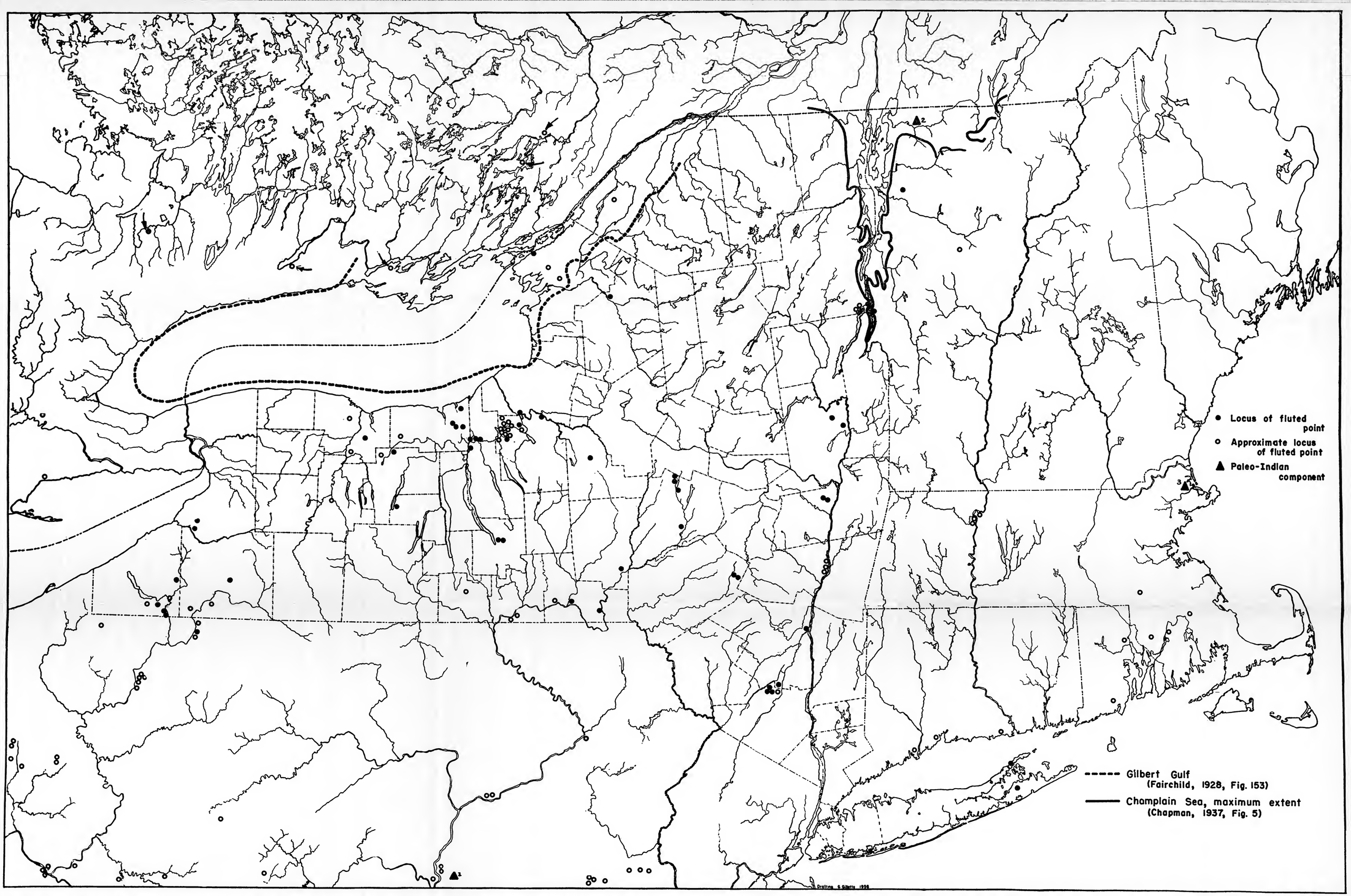

Locus of fluted point
Approximate locus of fluted point
Paleo-Indian component
Gilbert Gulf (Fairchild, 1928, Fig. 153)
Champlain Sea, maximum extent (Chapman, 1937, Fig. 5)
Drafting, G. Gilbette, 1956

Fig. 2