

The Bulletin

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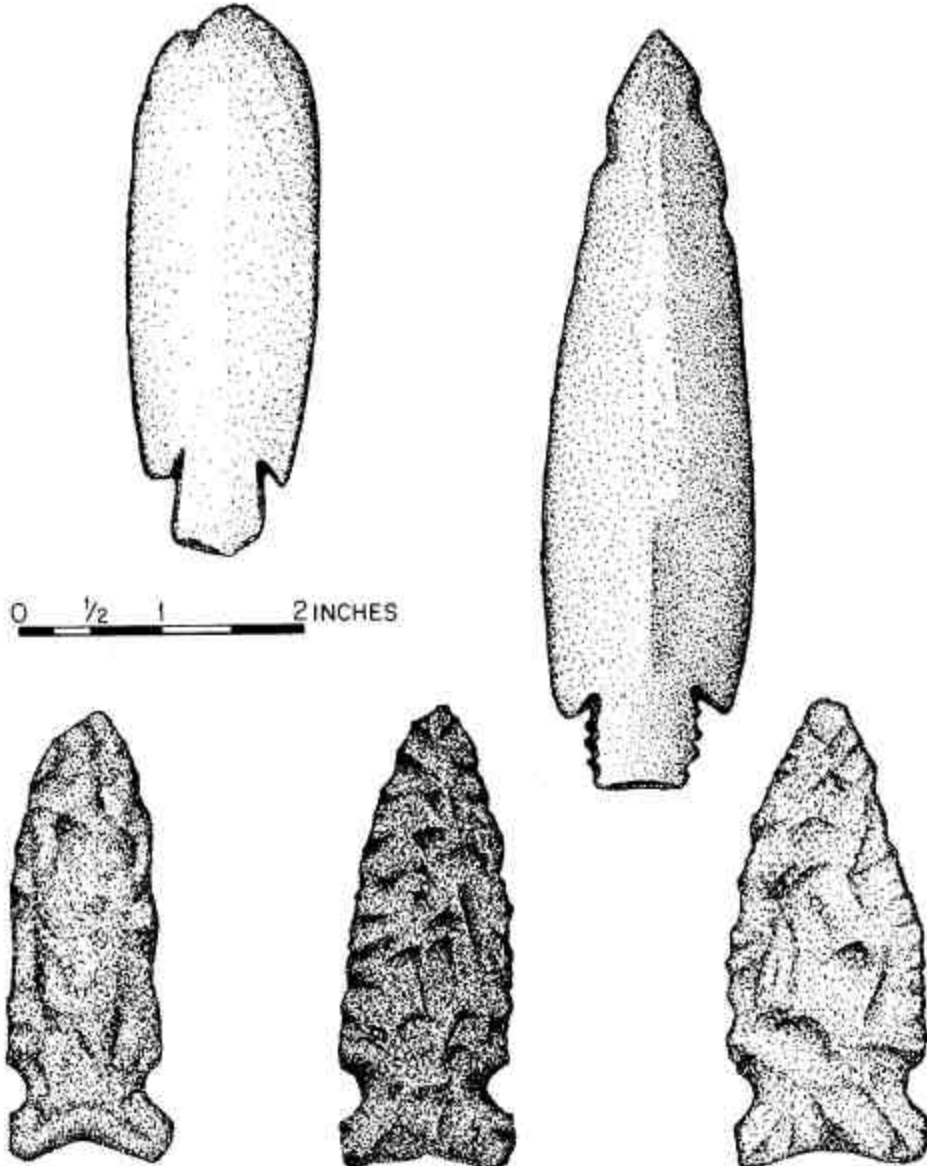
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THE BULLETIN

NUMBER 42

MARCH 1968



G. GILLETTE '67

KI Site - Vergennes Phase

THE KI SITE, THE VERGENNES PHASE AND THE
LAURENTIAN TRADITION

William A. Ritchie

Van Epps-Hartley Chapter

When this article was written for presentation at the annual meeting of the New York State Archeological Association in April, 1967, the KI site in Vermont was unique as a large and apparently single component station of the Vergennes phase of the Archaic Laurentian tradition in the Northeast, as I have recently redefined it (Ritchie 1965: 84-7). In the brief intervening time, the delineation of the Vergennes phase has been confirmed and clarified by a major site discovery in northern New York State, of which I learned during the course of an archeological reconnaissance of the eastern Adirondack area conducted in August of the same year. The new component, the Bridge site, appears to have been even richer than KI, as judged from the surviving material in two private collections, and its destruction by sand digging operations, with consequent loss of a large part of its content, is another cross which the dedicated prehistorian is compelled to bear. Further reference will be made to this site, and the data from it will be utilized in the interpretations which follow.

The KI site occupies a rocky island of about three acres, situated in an extensive swamp along Otter Creek in Rutland County, Vermont. The maximum elevation is approximately 20 feet above swamp level, and the whole surface is very irregular, appearing roughly terraced in three planes. While chipping debris and an occasional artifact occur at several places, the occupation was definitely concentrated on the highest part which encompasses about one acre of such uneven terrain that a level section 25 feet in diameter is difficult to find. The adulatory nature of the surface derives primarily from the bedrock configuration, a glacially worn, deeply weathered and fissured Chazy marble. Mantling the surface of this rock is a thin soil cover ranging from a mere trace to 36 inches thick, through which the naked white or light gray stone protrudes in many places.

The partly wooded surface seems never to have been cultivated or seriously molested in historic times, although burrowing animals, chiefly woodchucks, have disturbed some portions of the soil cover.

The site was discovered in 1955 by Thomas E. Daniels, chief game warden, of Orwell, Vermont, who sporadically carried on excavations there, with the aid of Mrs. Kathleen Rowlands of Poultney, Vermont, until his death in 1962. In 1959 and the following year, I was invited to visit the site with the excavators and to participate briefly in the work. The data and collections of Mr. Daniels and Mrs. Rowlands were also generously lent me for study and reporting and formed the basis of my original report, already referred to, published in 1965.

Since Mr. Daniels' death, the site has lain undisturbed, under the protection of its owner, who kindly granted me permission to excavate in still unexplored areas in June, 1966. This work was aided by a National Science Foundation grant (G22101) for settlement pattern studies, and was carried on for eight days with the assistance of Mrs. Rowlands, Robert E. Funk, James A. Tuck, Richard M. Gramly and John Forstenzer. R. Arthur Johnson and Thomas Weinman aided us for a couple of days.

Tom Daniels' original base line was re-established as nearly as possible and 21 five-foot sections (525 square feet) were excavated to bedrock. Two soil zones were distinguished, an A zone, called Stratum 1, consisting of a dark brown humus, topped by sod or duff, measuring about 3 1/2 inches in thickness, and underlain by a gray podzol up to an inch thick; and a B soil, composed of two intergrading horizons, referred to for convenience as strata 2 and 3. The B soil was a fine-textured, sandy-clay, alluvium-like material, containing many water-worn pebbles and an occasional small cobble. It seems to have

been water-laid at some period when Otter Creek flowed at a much higher level than at present, which I suspect was in late Pleistocene times.

Stratum 2 was prevailingly yellowish or reddish brown, varied from approximately two to eight inches, with a usual thickness range of four to six inches. Stratum 3, resting upon bedrock, was tan to cocoa brown to light olive brown in its deepest parts, seemed to contain more clay than Stratum 2, and ranged from one inch to one foot, or rarely more, in thickness, with three to seven inches as the usual depth.

Artifacts, chipping debris, burned stones and bits of calcined bone were found in all three strata, from the lower part of Stratum 1 to bedrock. They were, however, four times as numerous in Stratum 2, the yellow-brown or red-brown layer, as in the two other strata. The presence near the base of the humus layer, Stratum 1, of two Otter Creek points, one small stemmed point and a ground slate fragment, may have resulted from rodent or root disturbances of the top of Stratum 2. Mr. Daniels had reported no discoveries from the humus zone in the areas explored by him, and I am inclined to consider this a sterile horizon laid down after the occupation of the site.

In the main, artifacts and debitage had an apparent random horizontal distribution. No habitation zones or floors could be distinguished, but some clustering in areas a few feet in diameter was noted, possibly indicative of lodge floors. Daniels reported, and I have published, a possible circular lodge floor, outlined by postmolds, containing a stone-covered burial lightly sprinkled with red ocher.

Although a pH of 6.5 was consistently obtained by soil testing with the Helige-Truog kit, no unaltered bone survived this only mildly acid environment, suggesting a considerable antiquity for the site. Carbonized and calcined bone fragments were occasionally encountered, recognizable in some cases as pertaining to the deer and bear.

Four small features, interpreted as hearths, were uncovered. No detailed descriptions need be given here. In brief, they consisted of shallow, basin-shaped areas containing burned earth, burned stones and scanty charcoal which were most carefully collected for C-14 assay. The combined small sample from adjacent features 1 and 2 yielded the disappointing date of A.D. 120 ± 80 (Y-1815). As some concrete evidence of forest fires was uncovered, I was inclined to suspect contamination of the sample by some of this later charcoal through the mechanics of root channels or small rodent burrows. Another sample, from Feature 3, was then submitted to the Yale laboratory and the equally unacceptable date of 370 B.C. ± 100 (Y-1855) was obtained. The age of the KI component, consequently, remains unknown.

The artifacts from the KI site have been described and in large part illustrated in my 1965 publication (Ritchie 1965: 85-7 and Plates 26-8). Our work last June added no new traits, but it provided important confirmation of the assemblage resulting from the earlier excavations. It now seems virtually certain that the artifacts found at the KI site, nearly all of them made from local or regional materials, chiefly quartzite, slate, phyllite, flint, siltstone and sandstone, belong to a single culture phase and probably resulted from successive occupations of the site, perhaps as a winter camp, by the same small group of hunting, fishing and foraging people.

Elsewhere I have presented my reasons for retaining the late John Bailey's term, Vergennes, for this essentially new culture complex (Ritchie 1965: 84-5). In a word, the Vergennes focus, as applied to the material from the Donovan site on Dead Creek, near Vergennes, Vermont, by Bailey in 1937 (Bailey 1939: 26) following his careful excavations there, has since been shown to be far too inclusive. In some still obscure manner, probably as the result of cultivation, pit intrusions and soil creep from an adjacent slope, a number of components of different ages, from Archaic to Late Woodland, became inextricably intermixed.

In the KI site we may recognize the core items of the Archaic component at Donovan's, and on the basis of the considerable assemblage from the large, apparently closed, KI site, I have redefined the Vergennes phase which I regard as probably the oldest and

best delineated Laurentian manifestation so far known to us. In fact, as I originally defined the Laurentian, the Vergennes complex as now recognized, may be regarded as the classic expression, containing all of the diagnostic traits, viz., the ground slate point and stemmed knife and ulu, the gouge and adz, the plummet, chopper, large and heavy projectile points, the atlatl weight, and some copper implements.

The Vergennes phase was centered in the St. Lawrence and Lake Champlain valleys, on the evidence of distribution of the Otter Creek points and ground slates. Peripherally, it had a weak extension southward through the Lake George and Hudson River valleys, at least as far south as Greene County, New York. It is represented by minor components in the lowest level at the Weinman site on Lake George and at the bottom of Fish Club Cave in Albany County (Funk 1965: 148). Otter Creek points, specific markers for the culture, occur still more widely. I have found them in the basal level of the Robinson site at Brewerton in central New York, a key station of the Brewerton phase of Laurentian (Ritchie 1940); in the basal horizon at the Lotus Point site in the middle Hudson Valley (Ritchie 1958: 33-4); and eastward to Martha's Vineyard, Massachusetts, where they also occupy the deepest level on two sites (Ritchie 1968).

The recently reported Bridge site, previously referred to, was situated on a sand terrace some 25 feet above the level of the Little Ausable River, along its south bank, one-half mile from its debauchment into Lake Champlain, in Peru Township, Clinton County, New York. The river, to somewhat above this point, is a dead water stream, largely surrounded by marsh, and the environmental setting of the Bridge site corresponded closely to that of the Vermont stations, KI on Otter Creek and Donovan on Dead Creek.

According to my informants, Richard Passino of Keeseville, who showed me the site, and Noah Carte of Peru, the two persons who have collected from this component, the artifacts occurred in reddish sand under the pine forested black duff layer, and came to light as the sand loaders, during construction of a causeway for the state campsite at Ausable Point, exposed new areas of the site which, by about 1965, had been completely destroyed. No bones, hearths or other features were noted, but burned stones and chipping debris were present.

The combined collection, which represents only a part of the site contents, since Passino and Carte were unable to be constantly on hand during the sand removal, is rich in artifacts of ground slate, comprising at least 15 ulus, six with ridged top, and fragments of several others; 30 ground slate points or stemmed knives and many fragments, of several forms, but chiefly barbed with serrated tang. I also counted 12 plummets, some very well made, with plain, grooved or knobbed top; four gouges, representing two styles, a shallow, short form and a long, narrow, deeply grooved variety; four large, rather crude, mostly thin celts; two unfinished plano-convex adzes; three choppers; numerous pebble hammerstones; whetstones; and rough rod-shaped stone artifacts of unknown use, like those from the KI site. Of much importance are two atlatl weights, a lunate specimen completely pecked out and partially perforated from both sides of the centrum by means of a solid core drill, and half of a finished specimen of trapezoidal form.

Projectile points predominate, as usual, with the Otter Creek type constituting the great majority. As at KI, most of these are of gray quartzite, with smaller representations of flint and argillite. Again, as at KI, the Otter Creek type point had a minor association with other recognized Laurentian forms, including the Vosburg type and wide side-notched and stemmed forms. Other chipped implements from the Bridge site comprised ovate and trianguloid knives and drills with Otter Creek type base. The total series constitutes an impressive confirmation of the known or suspected Vergennes complex and virtually duplicates, although far richer in ground slates and plummets, the KI series, both in typology and materials.

The Vergennes culture is apparently present on a major, undated site on Alumette Island in the Ottawa River, Province of Quebec, excavated by Clyde Kennedy, who in 1966 showed me his material in Ottawa. The large series of artifacts includes Otter Creek

points, most of them smaller than Vermont and New York specimens; ground slate ulus, some with ridged back; holed bannerstones of trapezoidal or short-winged form; stone gouges; and many copper tools, such as socketed spears, toggle spears, spears with tangs and spurs, spuds, fishhooks, gorges, awls and knives. Bone work was fortunately preserved on this site and included multiple unilaterally barbed points with angular barbs, eyed needles and ground beaver incisors.

The Alumette Island site is located not far from another large and very important, radiocarbon dated Laurentian site on Morrison's Island in the Ottawa River. Kennedy also excavated this site, which he has described in a brief report as a habitation and burial component of the Brewerton phase, an opinion in which I concur after studying the actual finds (Kennedy 1966).

Much native copper was also present in this station, but here ornaments, such as bracelets and a pendant, occurred in addition to many of the same tool types found on the presumably older Alumette Island site.

It seems now fairly certain that the Ottawa Valley was a very important, if not the major route of dissemination, for the elements of the Old Copper industry of the Upper Great Lakes area which have been found in Laurentian contexts in the Northeast (Ritchie 1940: 44-6, 78-9; 1965: 100-2).

The Laurentian, as I originally conceived and published it in 1938 and 40, following our discoveries on the large Brewerton sites in 1937 and 38, was regarded as an aspect, in the sense of the Midwestern Taxonomic system (Ritchie 1938: 106-7; 1940: 1-2, 93-8; 1944: 235, 264 ff.). I have since then, successively considered it in ever broader taxonomic terms, viz., a phase, a tradition and an elaborating tradition, under which concept the Laurentian has emerged as a series of regionally elaborated cultural manifestations, based upon an extensive and little known Archaic continuum widely spread throughout northeastern North America, which underwent additions from time to time and place to place, of various traits or attributes.

The cultural substratum, which is evident chiefly in projectile point morphology, is not properly to be referred to as Laurentian, as has often been done. To do so is to render the term Laurentian meaningless.

The most diagnostic traits of Laurentian, most of which occur with considerable morphological variation, comprise the gouge of stone, bone and copper; the adz; plummet; ground slate point and stemmed knife and semi lunar knife or ulu, which is also present in chipped stone; simple forms of the perforated atlatl weight; projectile points covering a fair range of styles, mainly broad-bladed and side-notched, but also corner-notched, stemmed, and triangular, the latter often eared; chopper; barbed-bone point; and native copper cutting, boring and fishing implements.

Most of these traits were apparently present in the Vergennes phase, which I consider the classic Laurentian manifestation. Most components of the other recognized phases, Brewerton and Vosburg, have yielded, so far as known, only a part of this spectrum, and wide quantitative variations are the rule. Moreover, closed sites are extremely rare, hence the obvious difficulty of elucidating definite complexes (Ritchie 1965: 83-90; Funk 1965: 140-3).

The Laurentian is ecologically related to the Lake Forest belt of eastern Canada and northern New England, and to apply to it the term "Boreal Archaic," as has recently been done (Byers 1959: 254-5), is in my opinion, a misnomer (Ritchie 1965: 82-3).

Few radiocarbon dates have so far been obtained for Laurentian components. They span an unrealistically brief 750 years, and are as follows: Morrison's Island-6 site in the Ottawa River, 2750 B.C. \pm 150 (GSC-162); Sylvan Lake 2, 2780 B.C. \pm 80 (Y-1535) and Bannerman, 2524 B.C. \pm 300 (M-287), both sites being in the lower Hudson Valley; Wapanucket #6, Massachusetts, 2300 B.C. \pm 300 (M-764) for a hearth and 2350 B.C. \pm 250 (M-969) for a secondary cremation burial with Laurentian grave goods; Hornblower II site, Stratum 4, Martha's Vineyard, Massachusetts, 2270 B.C. \pm 160 (Y-1530); Frontenac Island,

2013 B.C. \pm 80 (Y-459) and O'Neil, 2050 B.C. \pm 220 (I-424) and 2010 B.C. \pm 100 (Y-1273), both sites being in central New York.

The Vergennes phase will very likely predate these to an estimated 3000 to 3500 B.C., but will overlap the Brewerton and Vosburg phases, and the period of Laurentian development and coexistence with other Archaic cultures in the Northeast can hardly have been less than some 2000 years.

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ESAF Meeting

The annual meeting of the Eastern States Archaeological Federation will be held at The University of Michigan, Ann Arbor on November 1-3. Hotel accommodations have been arranged at the Ann Arbor Sheraton and meetings will be at the Rackham Building on The University campus. Program Chairman Dr. James E. Fitting has issued a call for two lengths of papers, a 15 minute site report paper and a 25-minute interpretive paper. The deadline for paper titles and abstracts is July 15.

Friday afternoon, November 1, will be devoted to an informal workshop on projectile point typology. This is open to all members, who are invited to bring type specimens for comparison. Site and fieldwork reports will be given on Saturday morning and the Saturday afternoon program will consist of an "all-star" symposium in the Adena culture. Dr. James B. Griffin will deliver the Saturday evening banquet address on archaeology of Eastern United States. On Sunday morning there will be a round-table discussion of member society publications by the editors. On Sunday afternoon there will be another program of contributed papers.

MINUTES OF THE 50th ANNUAL MEETING

New York State Archeological Association
 Holiday Inn, Saratoga Springs, New York
 April 28 - 29 - 30, 1967

EXECUTIVE COMMITTEE

The meeting of the executive committee was held on Friday, April 28. President Marian E. White called the meeting to order at 7:45 p.m. The following voting members including: officers, chapter presidents and trustees were present:

Marian E. White (Houghton and Morgan Chapters)
 Henry Wemple (Van Epps-Hartley Chapter)
 Michael J. Ripton (Morgan Chapter)
 F. Newton Miller (Metropolitan Chapter)
 Mr. and Mrs. William H. Rice (Auringer-Seelye Chapter)
 John Stillman (Chenango Chapter)
 Theodore Whitney (Chenango Chapter)
 Charles F. Hayes, III (Morgan Chapter)
 Earl Casler (Van Epps-Hartley Chapter)

Others:

Louis A. Brennan, Editor, THE BULLETIN

1. Roll call was taken.
2. Minutes were not read but were distributed to all present.

OLD BUSINESS

3. Committee Reports were called for by President White from the following:

- a. Mrs. William H. Rice -- Finance Committee
- b. Mr. Earl Casler -- Chapters and Membership
 A vote was taken at this point to accept the petitions for membership from the Upper Susquehanna and the Triple Cities Chapters.
- c. Mr. Charles F. Hayes III -- Publications Committee
 A vote was taken to raise the budget for The Bulletin to \$1,000, 100 pages and 3 issues per year. Braun- Brumfield, Inc. as the printer.
- d. Dr. Robert E. Funk -- Fellowship and Achievement Awards Committee
 It was voted to give award to only senior or sole authors of meritorious publications, not co-authors or junior authors. "Published," a term used in the award document will mean "available for research", i.e., in print or published. The motion for "Awards of Merit" and "Awards of Meritorious Service" was defeated.
- e. Arthur Glamm, Jr. -- Nominating Committee
 It was agreed that two candidates be nominated for each office, and that the secretary of each chapter be automatically on the nominating committee.

NEW BUSINESS

- 4. A discussion of the need for a State Association promotional/educational brochure was held. It was agreed that a brochure be worked up by the state secretary and that an inquiry of costs be made. The target set for this publication was 2000 copies at \$200. Arthur Glamm said he would assist when material was ready.
- 5. A lengthy discussion of New York State highway salvage work ensued with informal reports from Dr. Funk, Dr. White, Mr. Hayes and others on progress and lack of progress in highway archeological site salvage.

It was agreed to discuss this lengthy question in an "ad hoc" committee meeting on Sunday, April 30, 1967, from which the following resolution was written, published and disseminated.

RESOLUTION

Whereas the New York State Archeological Association currently expresses deep concern over the continuing destruction of archeological sites as a result of highway construction: Therefore be it

RESOLVED, that the New York State Archeological Association take steps to contact as many individuals and institutions as possible for the purpose of gaining information and cooperation which will help alleviate this problem.

Prepared by Charles F. Hayes, III
President, N.Y.S.A.A.
April 30, 1967

- 6. A discussion of Association finances followed and Louis A. Brennan suggested that before a finance committee or budget-study committee can be effective, a budget should be established for each NYSAA function annually, so that the auditors appointed at the end of the year have something to study and audit. No action was taken.
- 7. Chapter annual reports were read in very abbreviated form.
- 8. Meeting adjourned at 9:40 p.m.

-----15 minute recess-----

BUSINESS MEETING

Under the new procedure adopted by the executive committee meeting of April 1966, the business meeting of the Association will follow the executive committee meeting instead of being held on the Sunday following, as was the practice in former years.

- 1. The meeting commenced at 9:55 p.m.
- 2. The minutes were not read since copies had been distributed to voting participants.
- 3. The secretary gave a brief report of association activities: minutes reproduced, ballots and preliminary meeting and hotel reservations mailed, chapter annual reports mailed and membership reports received.
- 4. The Treasurers' Report was read and accepted by unanimous vote.
- 5. Chapter Annual Reports were received from nine chapters. The two new chapters had no formal report.
- 6. Committee Reports were read.

Local arrangements Committee - Dorothy Taylor
Nominating Committee - Arthur Glamm
Finance Committee -- Beulah Rice
Chapters and Membership Committee - Earl Casler

Awards and Fellowship Committee -- Robert E. Funk

Program Committee -- Beulah Rice

Publications Committee -- Charles F. Hayes III

7. President Marian White made a resolution thanking Dorothy Taylor, chairman of the local arrangements committee, and Beulah Rice, chairman of the program committee, as well as all members of the Auringer-Seeley Chapter for developing such a smooth program and providing such a hospitable welcome in Saratoga Springs.
8. The Tellers Report. In the annual election of officers, the following were elected:

President	Charles F. Hayes III
Vice President	Richard L. McCarthy
Secretary	Michael J. Ripton
Treasurer	F. Newton Miller
ESAF Representative	Louis A. Brennan
9. President White turned the meeting over to the new President, Charles F. Hayes III.
10. President Hayes set the Highway Salvage Committee Meeting for Sunday, April 30, 1967, at 11:00 a.m.
11. The meeting was adjourned at 11:00 p.m.

Michael J. Ripton
Secretary

MINUTES OF THE EXECUTIVE COMMITTEE

New York State Archeological Association

Holiday Inn, Utica, New York

December 3, 1966*

President Marian E. White called the meeting to order at 1:35 p. m. The following Officers, Chapter's presidents and trustees were present:

- Marian E. White (Houghton and Morgan Chapters)
- Henry Wemple (Van Epps-Hartley Chapter)
- Michael J. Ripton (Morgan Chapter)
- F. Newton Miller (Metropolitan Chapter)
- a Gottlieb Sporrer (Auringer-Seelye Chapter)
- Beulah M. Rice (Auringer-Seelye Chapter)
- Theodore Whitney (Chenango Chapter)
- John Stillman (Chenango Chapter)
- Kenneth Robinson (Mid Hudson Chapter)
- Edmond Drake (Mid Hudson Chapter)
- Charles F. Hayes III (Morgan Chapter)
- a Evelyn Forney (Morgan Chapter)
- a William E. Forney (Morgan Chapter)
- Larry Brennan (Orange County Chapter)
- Harold Zoch (Van Epps-Hartley Chapter)
- Earl Casler (Van Epps-Hartley Chapter)

a=alternates

*Note: Due to the increasing load of business to be handled by the N.Y.S.A.A, during the current year, this second executive committee was authorized at the Annual Meeting of the Association April 22, 1966.

1. F. Newton Miller made the motion that the minutes of the April 22, 1966 Executive Committee meeting be approved as published in Bulletin 37. Seconded by Henry Wemple.

Motion carried.

OLD BUSINESS

2. Clerical changes were made in the proposed Association Constitution by President White to make it conform to the present constitution.

The changes proposed by the Cornwell Committee regarding article II of the Constitution Objects; and the By Laws, Chapter IV, Number 4, Executive Committee, and Chapter V, Standing Committees, Numbers 1 and 2, and Chapter VIII Publications, were discussed. (Copy attached.) Mr. Casler made a motion that by the authority of the last executive committee, we include the recommended actions of the Cornwell Committee into the proposed constitution for the NYSAA.

Seconded by Charles Hayes, III.

Motion carried.

Mr. Hayes questioned the spelling of the word "archaeological" for association purposes. Since New York State Regents granted the Charter to the "New York State Archeological Association," this will be the spelling for all official association purposes.

The proposed constitution will be published and sent to all association members and a provision will be included in the next ballot for the approval of the same.

3. The subject of Chapter constitutions was discussed and all constitutions with the exception of Van Epps-Hartley and Long Island have been approved. Henry Wemple will head a constitution committee to help prepare these two constitutions.
4. The Kraus Reprint firm has agreed to changes in the original contract to reprint the *Researches and Transactions* with the following provisions:

Since the Lewis H. Morgan Chapter, N.Y.S.A.A. underwrote the costs of Vols. 1-12 of the *Researches and Transactions*, they will be paid for their interests. Vols. 13-15 belong to the Association outright and receipts resulting from their sale will revert to the N.Y.S.A.A. Treasury. The Morgan Chapter executive committee has agreed to the terms of the contract and it will be signed at a near future date. The *Occasional Papers* will not be reprinted at this time.

A motion was made by Mr. Miller that the contract be signed by the association president. Seconded by T. Whitney.

Motion carried.

5. Committee Reports

Local arrangements. Mrs. Rice reported for Mrs. Taylor, Chairman, that the 1967 Annual Meeting will be held April 28 to 30 at the Holiday Inn, Saratoga Springs, with a registration fee of \$2.00 and dinner cost at \$6.00. The executive committee and business meetings will be held Friday evening. One meeting will follow the other to avoid duplication. Program Committee Report was given by Chairman Mrs. Rice. Papers by Thomas Weinman, Louis Brennan, William Ritchie and Charles Hayes, III have been promised to date. (Report attached)

Nominating Committee

Each Chapter shall have one representative on this committee. To date, the following chapters are represented: Auringer-Seeley, Mid-Hudson, Morgan, Metropolitan and Orange County. (Representatives list attached.)

Fellowship Committee

President White appointed Robert Funk chairman, and a sub-committee of Edward Kaiser, Art Johnson and Stanley Vanderlaan to help seek nominations for awards of fellowships.

Charles Hayes suggested that the nominating fellows be notified before hand

so that they can plan to attend the annual meeting to accept the award in person. Since the executive committee must approve all nominees, it was suggested that the vote be done by mail so that this courtesy would be possible.

Chapters and Membership

Chairman Casler reported that a group in Otego, New York is petitioning for membership. Discussion followed.

Mr. Miller motioned that the Otego organization be contacted by the association secretary and be invited to the Annual Meeting in 1967. Preparation of application and formal papers should be prepared between now and next April.

John Stillman seconded.

Motion carried.

Mr. Casler will continue to assist the Harpur College group interested in the eventual application.

President White urged all chapters to contact local libraries for possible institutional membership in the N.Y.S.A.A.

Publication Committee

Chairman Hayes read a prepared statement (copy attached) and expressed interest in preparing the Stewart Papers for publication.

Mr. Hayes has been appointed editor of the *Researches and Transactions* as a paper forthcoming from Marian White will be the next publication issued in this series. Assistant editor is Charles F. Wray. A motion by Henry Wemple, seconded by Earl Casler, asked for approval of the editorial and assistant editorial appointments.

Motion carried.

Mr. Hayes pointed out that hundreds of books in the NYSAA Library received through institutional exchanges do not pertain to archeology. Also the copper plates from past published NYSAA publications are no longer needed and take up valuable space.

Mr. Whitney made a motion, seconded by Mrs. Rice that Charles Hayes dispose of the said NYSAA library books in a way most beneficial to the Association treasury and deposit the money therein.

Motion carried.

Mr. Wemple made a similar motion, seconded by Mr. Casler, authorizing Charles Hayes to dispose of the aforementioned copper plates under the same conditions.

Motion carried.

Treasurer's report, Mr. Miller (Copy attached)

Finance committee

Chairman Beulah Rice recommended the possibilities of:

1. Financial aid to the NYSAA by a state agency.
2. Subsidization by a governmental group.
3. Poll of chapters for a change in dues' structure.
4. Publish two Bulletins per year.
5. Publish an educational handbook for teachers, scout groups, etc., relating to archeology.
6. Sell bits of flint samples, etc.
7. Membership drives for children and adults.

Mrs. Forney, (alternate for William Cornwell, Trustee of Morgan Chapter) made a motion to introduce the Cornwell letter (copy attached) as a solution of the dues problem. Seconded by William Forney. Basically, the proposal calls for a separation in the dues of the association, and the chapters may collect additional dues as its members may authorize, and that a committee be appointed by the executive committee of the association to study budget needs and report concerning a possible increase in dues.

Motion defeated.

6. President White directed that Treasurer Miller deposit \$500.00 from the Publication Fund into the savings account to draw interest. It was advised to keep annual meeting speaker's expenses at a minimum.

Finance Committee was directed to report on the above suggestions (see Finance Committee report) regarding areas other than those affecting other committees.

NEW BUSINESS

7. The problem of all Chapter Newsletters not being available under a single NYSAA membership was discussed and no immediate solution was available.
8. Mr. Miller motioned for adjournment at 4:50 p.m. Seconded by Mr. Wemple.

Motion carried.

Michael J. Ripton
Secretary

THE TWOMBLY LANDING SITE

Louis A. Brennan

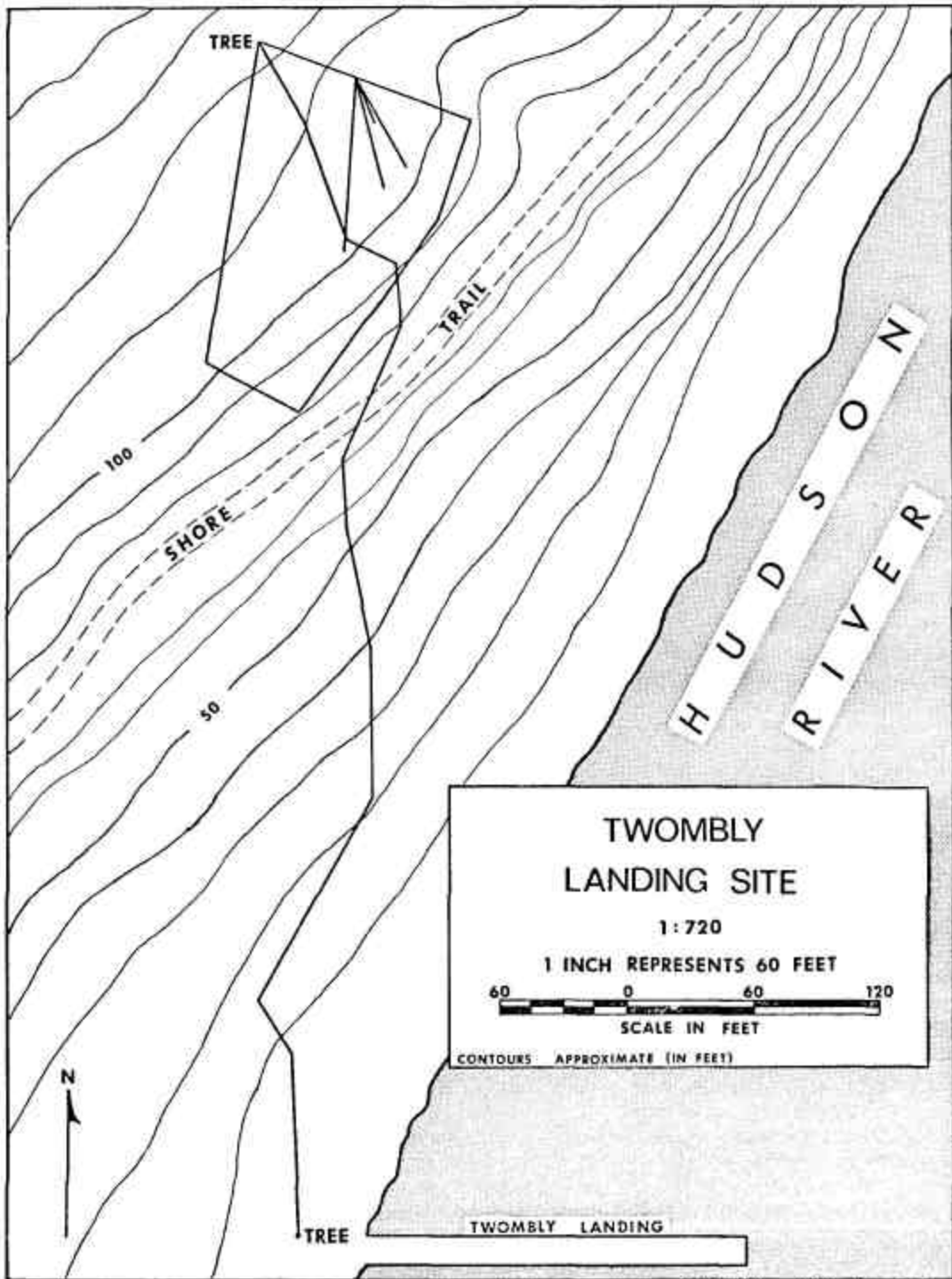
Metropolitan Chapter

The Twombly Landing site is a marine shell midden and associated habitation area situated between the 90 and 110 ft. contour levels on a bench above the Hudson River uphill from the abandoned but still existent dock shown on the Nyack Quadrangle, USGS, as Twombly Landing. It is located in Palisades Park, New Jersey, directly opposite Yonkers, New York. Excavation began in September, 1965, and has continued since, the work being done by the Center for Hudson Valley Archaeology and Prehistory based at Briarcliff College. Financial assistance for C14 dating and other expense has been provided by a grant by the Ottinger Foundation, through the offices of Congressman Richard L. Ottinger, a trustee of the center.

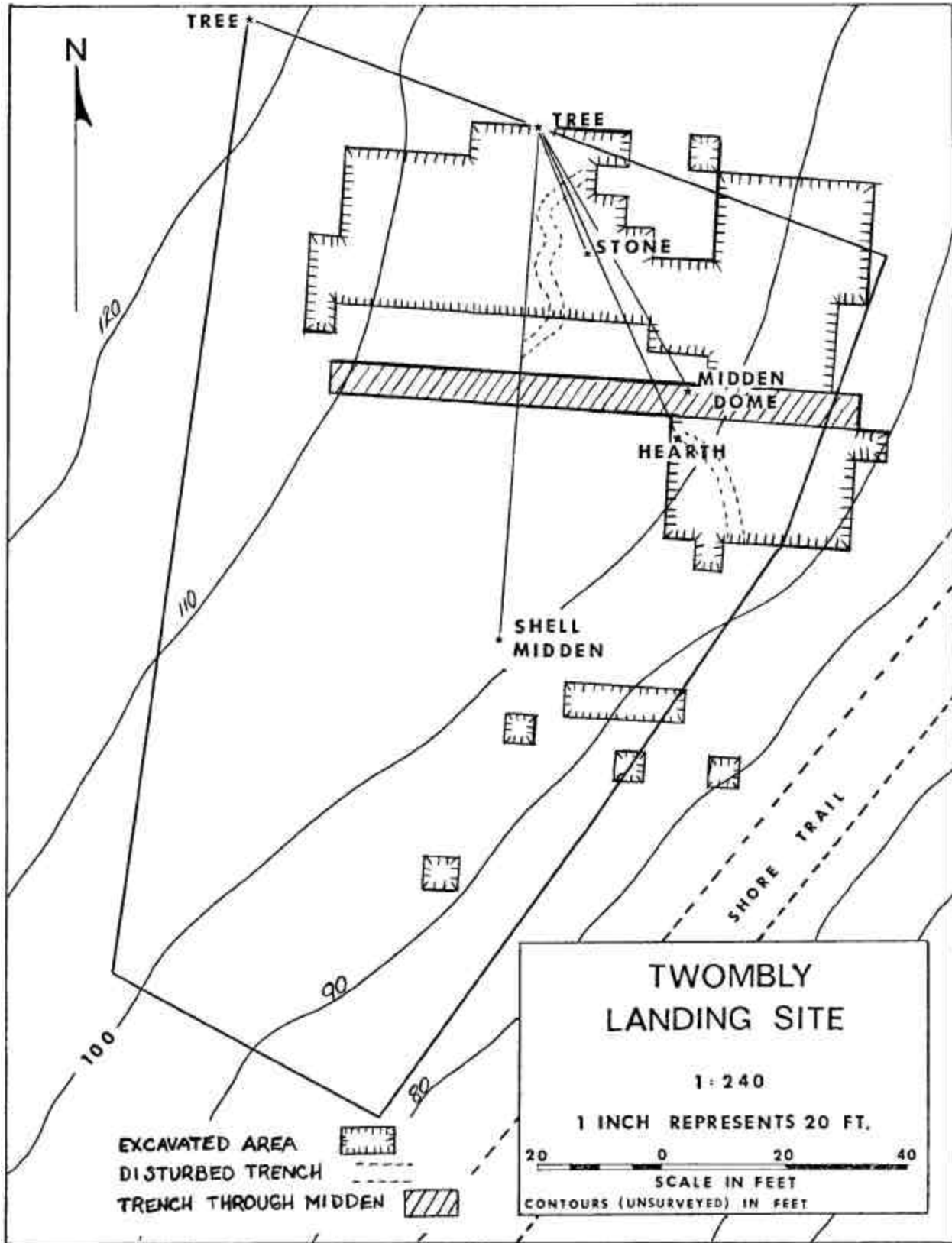
Archaeology – Ecology

The site is the seventh in a series of shell (predominantly oyster) midden sites investigated by us to determine the succession of aboriginal peoples who camped on the banks of the Hudson and made use of its food resources. Previously dug were Crawbuck Beach, Croton Point, Parham Ridge and Oscawana Island (Brennan 1962, 1963, 1963a) and Montrose Point (Wolcott and Dogan Loc. 1) and the Towbin site (not published). Twombly Landing is the third Lower Hudson shell midden for which we have obtained a C14 age, but the first C14 dated site where the age applied to associated diagnostic cultural materials. The first C14 dated site was the Kettle Rock Locus at Croton Point, with an age of 5863 ± 200 (Y 1315) or 3900 B.C. on a soil-contact level midden statum called by us the GO horizon (Giant Oyster) containing very large, by Lower Hudson standards, valves of the oyster (*Crassostrea virginica*, Gmelin) 6" to 8" long, up to 30 yrs. old, with some occurrence of the ribbed mussel (*Modiolus demissus*). In this GO midden thus dated, truncated by erosion, a pebble chopper, flake oyster knives and a probable siltstone pestle, all non-diagnostic, and a small flint ovoid biface were the sparse finds. Two small (1 in.) possible blanks for points, of good flint, were inclusions, but since no points were found these pieces, very much alike, very different from typical flakes and spalls, must remain unspecified.

The validity of the GO horizon was confirmed by a date released by Lamont Laboratory in the summer of 1967 on an oyster valve from the lower, soil-contact level of an oyster shell midden on Montrose Point (the Dogan Locus) which consists of two horizons of



RAFFERTY MAY 24, 1966



RWG 2/15/68

RSW 6/21/66

shell separated by a humus horizon. The date first reported by Dr. Walter E. Newman (Newman, 1967) who submitted the shell to Lamont, was said to be "coming in at about 5100 yrs. B.P." The age was subsequently determined as 5650 ± 200 (L-1038-E) or 3700 B.C.

It should be noted here that Lamont prefers to date shell directly thus obviating any possible error in association of charcoal with it, or the possibility of contamination of the charcoal by leached-in carbonates. When Croton Point was tested by Yale in 1963, Minze Stuiver, director of the Yale C14 Laboratory, would accept only charcoal for the assay. He has since revised his views and in a personal communication to this author, wrote "We have done a lot of research on the reliability of shell dates (Stuiver, 1967). As a result I am convinced that under normal circumstances shells are reliable for C14 dating up to the 20,000 year range."

The reference cited is a paper by Stuiver and Harold W. Borns of the University Of Maine Department Of Geology. The relevant paragraph, from the abstract, reads "The marine deposits (along coastal Maine) yielded shells that were generally extremely reliable for C14 dating. This is indicated by the very small range of a large number of samples and also by the limited range of differing shell fractions. In two instances the shells were associated with seaweed; both materials yielded the same C14 age."

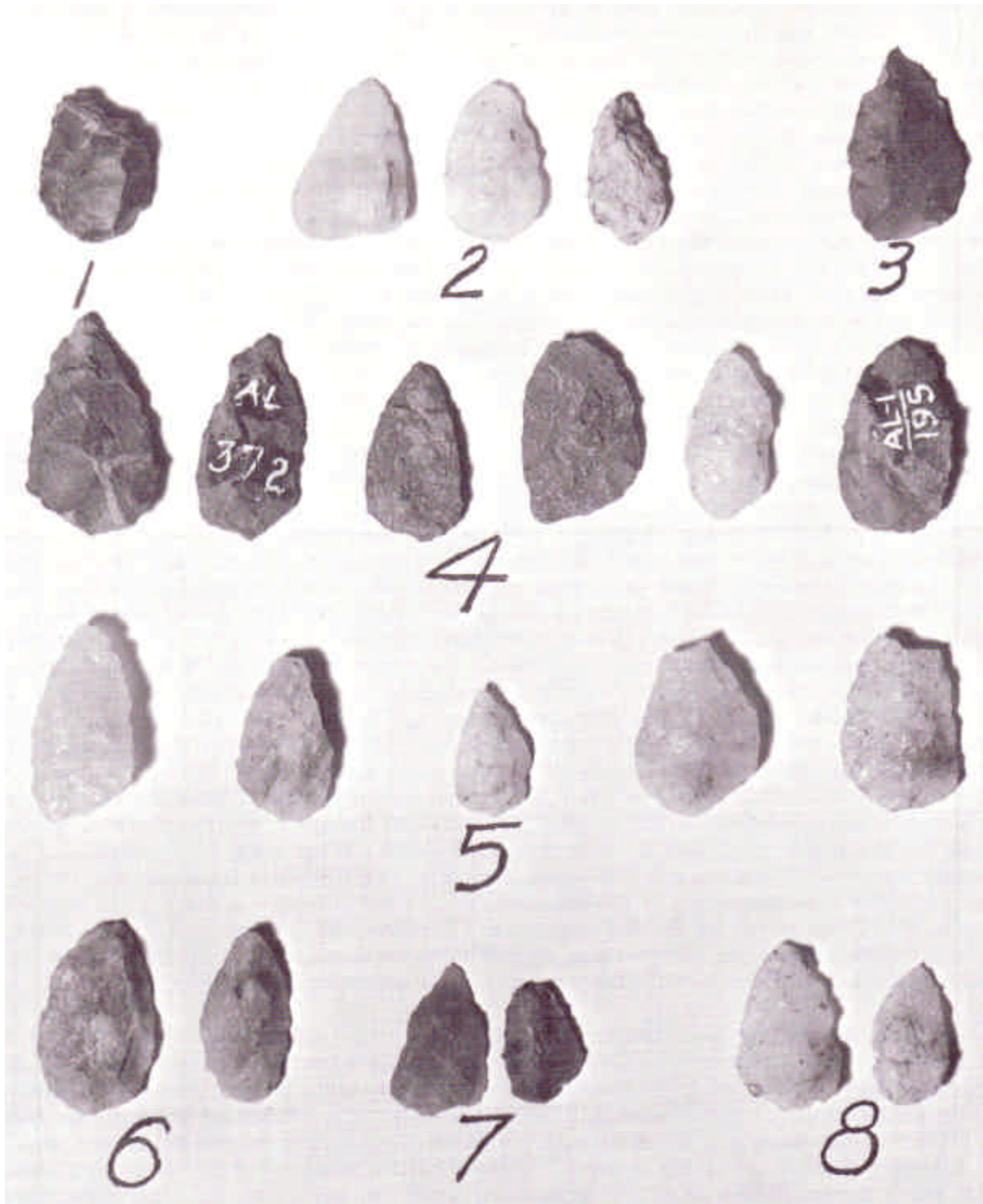
The corroborative dates on the lowest shell horizons at Croton Point and Montrose Point by two different laboratories testing two different materials some four years apart is strong evidence of the existence of a salinity of the lower Hudson in the 5600-6000 era (GO horizon) much more favorable to the growth of oysters than at present or within at least the last 3000 years. This reading is further supported by the investigations of Newman (1966, 1967) in the peat deposits of Ring and Salisbury Meadows, almost directly across Haverstraw Bay from Montrose Point. A culmination of marine Foraminifera was found in the peat cores at the 40 ft. level, which interpolates, on the C14 series of dates obtained by Lamont, at about 5800 B.P. Thereafter, the prominence of marine Foraminifera drops off sharply.

We have not been able to dig the Montrose Point midden as yet. The property is in the process of being acquired by Westchester County as open space park and Charles E. Pound, Commissioner of Parks, has assured us that permission to dig will be forthcoming when title is taken by the County. The present owner and resident resists intrusions on his privacy though the midden is not within sight or hearing of his house.

We have, however, inspected the Dogan Locus midden several times and last fall (1967) discovered a chert biface ovoid point in the talus of shell eroded from the midden face. It is, of course, impossible to say whether this point came from the older, lower horizon below the humus zone, or from the shell midden horizon above the humus.

Ovoid points occur in the Twombly midden in apparent association with the Taconic tradition of stemmed points (Brennan 1967) and these have been dated at 4737 B. P., the average of two C14 dates on in situ hearth charcoal, 4750 ± 120 yrs. (Y 1761) and 4725 ± 60 (Gx 0762). In addition to a dozen ovoid points, a distinctive kind of pre-form or blank for them was discovered. The pre-form (5 were found) is an ovate spall knocked off the outside of a pebble and, by shape, near the ovoid point in outline and size.

But an ovoid point of chalcedony was the lowest artifact recovered from the Parham Ridge site, a complex shell midden on a bluff 35-40 ft. above present water level on Haverstraw Bay, about halfway between Montrose Point and Croton Point. At the time we dug at Parham Ridge we had no suspicion that the province of large oysters had any chronological meaning, but we did notice that the lower midden did contain an unusual number of unusually large valves. After we had dug the Kettle Rock Locus at Croton Point and discovered that large shell was indeed earlier, we inclined to correlate the ovoid-bearing lowest level at Parham Ridge with the 5800 yrs old GO horizon but were unable to check this because the Parham site had been destroyed in road building. It should be noted that also found at Parham in the lowest midden level was a rather shapeless stemmed point with a lenticular or pod-shaped blade which I have assumed is the earliest phase of the Taconic tradition.



Ovid bi-faces from Lower Hudson Valley sites: 1, Croton Point, Kettle Rock locus, GO horizon; 2, Parham Ridge, lower horizon; 3, Montrose Point, Dogan locus. from talus; 4, Twombly Landing site; 5, Crawbuckie Beach site; 6, Hanotak Rockshelter; 7, Winterich site; 8, Swartz site. Length of (1) is 1 5/16in. or 33 m.m.

In the summer of 1967 we knew the situation to be this: the 5900 yr. old GO horizon existed at Kettle Rock, with one ovoid biface that may be an ovoid point; it may have existed at Parham Ridge, with an ovoid and a first-phase Taconic; it existed at the Dogan Locus, Montrose Point, with a distinct humus horizon on top of it and another shell horizon on top of that and an ovoid point in the slump that may have come from either horizon. The Twombly main midden had by this time been dated at 4737 B.P. and we had no hesitance in correlating it with the upper horizon at the Dogan Locus. But was there also, as the Twombly ovoids hinted, a GO horizon manifestation at Twombly?

It seemed possible because the ovoids were always low, though not geologically separable from the Taconics, which occurred low as well as high. We investigated carefully. In the yellow subsoil under the main midden were streaks of fragmented shell, mixed with a little charcoal, and an occasional bone scrap and flint chip. It seemed possible that these were trace or shadow middens from a millenium before, weathered down, covered over by slope wash and now almost completely disintegrated. It was also possible that they were ancient animal burrows partially obliterated. Shell fragments with a little charcoal were sent to Yale, now willing to date shell, and the age proved to be 4120 ± 120 (Y 1957), confirming that the streaks were animal burrows. The ovoids are, therefore, certainly dated at 4737 yrs. only and there is no 5800 yr. GO horizon at Twombly.

The Twombly date of 4737 B. P. must indicate, however, a period of oyster-favoring salinity in the Hudson nearly comparable to the 5800 B.P. GO horizon. It produces some quite large shell, but not as many large specimens as Kettle Rock or the lower Montrose horizon. But, though Twombly Landing is only 14-15 miles downriver from Croton Point, the midden contents, while still about 98% oyster by volume, are coastal marine. In addition to the ribbed mussel, found in clumps as though dumped out of cooking vessels, there occur in sufficient numbers to indicate gathering for eating, the hard clam (*Venus mercenaria*) and the bay scallop (*Acquiptecten irradians*); further, three specimens of the channeled whelk (*Busycon canaliculatum*) were found. We can say positively that clams, scallops and whelk do not occur archaeologically in middens north of Scarborough, about 4 miles south of Kettle Rock. Apparently the border line between coastal and estuarine conditions has never, or at least not during the past 5800 yrs, been farther north than Twombly Landing, itself about 22 miles north of Coney Island and the open sea.

Because ovoid points occur at the 4737 yr. old Twombly site it seems most reasonable to relate the eroded-out ovoid at Montrose Point to its upper horizon midden, which consists of good-sized shell and is quite extensive, rather than to the lower horizon. The difference between the contents of the upper Montrose Point shell horizon and the lower seems to consist, on inspection of the exposed face, of the absence of the ribbed mussel and of large oyster valves in the 6-8 inch size. Thus the 5800 yr. old GO horizon and the 4700 yr. old Twombly-Montrose horizon appear to show climates of oyster-favorable salinity in the Lower Hudson, with the earlier period somewhat the stronger or, perhaps, longer.

It should be obvious from the foregoing that any dubiety about the development of shell middens in the Northeast, or indeed along the whole eastern seaboard, well back into the Archaic may be dropped from the literature. Though some of this data was published as early as 1963, the impression is still being conveyed in authoritative publications that it is a truism that there are no shell middens in the East dating to pre-ceramic times.

Emery and Edwards (1966) in their "Archaeological Potential of the Atlantic Coastal Shelf," citing James Griffin in a 1952 statement, write "to our knowledge, the oldest dated shell midden on the Atlantic coast is on Sapelo Island, Georgia. The midden contains the earliest pottery and is about 3800 yrs. old."

In his latest statement on the subject, in a survey of Eastern archaeology for Science Magazine Griffin (1967) writes "sea level reached its present height about 2000 B.C. and most of the coastal middens are not earlier than that date." Recent studies (Stuiver and Daddario, 1963) have shown that sea level was on the order of 20 ft. below present level

at that time and Newman's date (1966) of 4080 ± 220 yrs. (L-10386) for peat at a depth of 21 ft. at Ring Meadow is exactly applicable. If by "coastal middens" is meant middens on the seashore, they are now under considerable depth of water. If the term applies to middens of marine shell fish, as it should, Griffin overlooked Salwen's note in *American Antiquity*, current research department, April, 1964, on Kettle Rock.

There is no reason to believe that the use of marine shell fish was not as early on the Atlantic Coast as in the Pacific Coast, where ages in the order of 7000 yrs. have been obtained on shell middens, unless one chooses to believe the Atlantic continental shelf was uninhabited at that time.

Archaeology - Geology

The Twombly Landing midden is a 50 ft. long ridge of shell compost (a mixture of shell, shell fragments and humus) on top of stumps of shell heaps, a stump being that part of a heap not weathered or decayed away and still in place in shell-on-shell condition. The ridge runs north and south, parallel to the river and at right angles to the slope. The shell rests on fine yellow clay considered by us to be water laid as silt on the bottom of a pro-glacial lake which formed between the Wisconsin ice front and a dam created by the terminal moraine across Long Island as the Wisconsin retreated. Glacial cobbles and boulders are buried in the clay, evidence that some of it is probably a glacial till. The effect of the deposit of shell on the slope surface has been to create a dam against slope wash, soil creep and probably, solifluction, so that a relatively flat area has been built up behind the midden ridge, convenient for camp sites.

Down slope of the midden, toward the river, the land slopes steeply and much of the slump or talus from the ridge would have been scattered all the way to the river's edge had not a line of stones about 18 inches high been placed, by an agency unknown, parallel to the ridge and about 10 feet down slope from its base. Since this stone-line is the exact length of the shell ridge it may have had a midden-conserving purpose, which is not to say the stone line or wall is Indian. We have been told that the locale has long been known as an Indian campsite and formerly drew many sightseers. In the "New York Walk Book" of 1923, the site was shown as a public camp ground, and until a few years ago was used for Boy Scout camping. The stone line may have been placed in the 1930's by WPA, which did a great deal of stone work in Palisades Park, to preserve both the camp grounds and the "Indian Village."

This stone-line is at about the 90 ft. elevation level and from there to about the 70 ft. level the angle of slope is near 45 degrees. From 70 ft. elevation the land drops in almost a bluff to the water's edge and is not surmountable by pedestrians with or without burden. The only access to the site from the river now negotiable is by a small rill running along the northern boundary, the bouldered bed of which constitutes a kind of rough stairway. All the shells on the Twombly Landing midden had to be carried at least 100 ft. up this stairway, at an angle of about 45 degrees.

The geologic question raised by the placement of the midden has to do with the post-Wisconsin rise in sea-level. A sample of peat taken by Newman (Newman, 1966) from 27ft. below present mean high water at Ring Meadow (adjacent to Salisbury Meadow) about 20 miles upstream from Twombly Landing and a mile south of Bear Mountain Bridge C14 tested at 4630 ± 470 yrs. This means that at about the time the Twombly Landing hearth, dated at 4737 B.P., was in use the level of the Tappan Zee, or lower Hudson embayment, was 27 ft. lower than it is now.

Given the present shallowness of the Tappan Zee a sudden drop of 27 ft. would reduce the river to the width of its channel trench. Under such a condition, oyster-harvesting Indians would have had to carry their take over a stretch of beach or flat about a third of a mile wide before beginning the 100 ft. climb to the midden locus. But it is not reasonable to suppose they would have done this had there actually been a flat or dry place to camp on much nearer to the oyster beds.

All known and now visible shell middens in the Haverstraw Bay section of the lower Hudson (that section between Bear Mountain Bridge and Croton Point) and the Tappan Zee area (that section from Croton Point to about Yonkers) present the same anomaly. They exist in locations convenient or relevant to a water level of present height. Given the present bed of the Hudson any lowering of water level by 20 ft. or more would leave the Kettle Rock midden about a mile and a half from salt water and the Parham Ridge midden and Montrose Point midden even farther.

Yet Newman's (1966) column of dates at Ring Meadow shows a steady rise of sea level from 94 ft. below present level at 12,500 yrs. ago to 9 ft. below present level at 2500 yrs. ago. According to Newman (1967) at least 75% of the post glacial rebound of the earth's crust had already occurred before 12,500 B.P. By 6000 B.P. it was probably no longer a factor in the relation of water level to present land elevation. Only one explanation suffices to explain the placement of shell middens as though the shore line had always been where it is now, while the river level was much lower: the Hudson was a steep sided fjord, always as wide as it is now and the middens were as near the shellfish beds as camping convenience afforded.

The foraminiferal count and the marine diatoms at 5000 to 6000 B.P. in the Salisbury Meadow core, and the fact that the oyster shell in the dated Kettle Rock and Montrose Point middens support each other combine to prove a distinctly higher salinity in the lower Hudson for this millenium. This can have occurred only because a relatively sharp rise in sea level rapidly increased the depth of the river and by increasing the depth increased the salinity, since the increased depth would be entirely sea water.

On the record we now have, the Kettle Rock and Montrose Point GO middens mark the horizon of the first appearance of oysters in Haverstraw Bay and they were then largest and most abundant, as the extent of the Montrose Point midden shows. Though they remained abundant for some time thereafter, by about 4000 B.P. at the latest they show a decline in size and, it would seem from the size of individual heaps, were less plentiful. This decline we attribute to a gradual shallowing of the lower Hudson through silting. By Vinette I times the oysters were so small that they could have constituted no more than a very minor item of diet, possibly an ingredient in stews. Subsequently oysters seem to recur only sporadically, though it would take a very detailed study of the entire lower Hudson littoral, with some of the evidence missing, to prove this.

One fact is clear: the lower Hudson is now not saline enough to produce oysters, despite the fact that much of the fresh run-off water is caught in the New York City reservoir system. In Scharf's "History of Westchester County" (Wood, Vol. 1, p. 12, 1886) it is reported that oysters were numerous in the Tappan Zee and Haverstraw Bay at that time but that they were taken elsewhere to grow to marketable size. The reason why they had to be taken elsewhere is explained in the most recent attempt, in 1957, by a Long Island commercial oyster farmer to grow oysters in the Tappan Zee, only three or four miles north of Twombly Landing. The absolute minimum salinity that will support oysters is .011 (water temperature is not a factor in the lower Hudson) and the grower put down a bed of spats in a deep hole just below the Tappan Zee bridge in water testing about this concentration. But a March rain falling on a snow already on the ground, gushed enough fresh water into the river to reduce the salinity below tolerable limits long enough to devastate the entire bed. Though the grower, J. Butler Flower, holds a federal license to grow oysters in the Tappan Zee, he has made no further attempt.

It is clear that this has been happening during the last 2000 years, judging by the size of oyster shell in late middens. During short periods of tolerable salinity oysters would naturally establish themselves, only to be wiped out by some such incident of fresh water spate such as killed the commercially planted bed. An age of oysters can be determined by counting their annual plates of growth. Oysters 20 yrs. or more old are common in the GO middens, and occasional ones are over 30, indicating long periods of satisfactory salinity during these times. No oysters of this age are found after the 4737 B.P. climax.

The succession of geologic events that influenced the oyster environment, and hence the archaeology of oyster middens, appears to be as follows. As the sea began its recovery from its low point of about 123 M. or 400 ft. (Emery and Garrison, 1967) it pushed the oyster environment ahead of it up the Hudson Canyon or trench which begins some 120 miles east of New York City. This advance inland of the oyster environment reached the lower Hudson (that stretch of the Hudson south of Bear Mountain bridge beginning at Haverstraw Bay) about 5800 yrs. ago, or 7100 yrs. ago, if the C14 dating correction suggested by Stuiver and Suess (1967) is applied. But the rise of sea level was irregular and the rise at 5800 was relatively sharp, so that the depth of water over the bottom was greater than it is now. This greater depth, coming as it did from the sea, would have increased the ratio of salt water (the salinity of the ocean is .035) in relation to fresh water, making for favorable oyster growth conditions.

The valley must have been steep-sided or fjord-like, so that when the sea did make a sharp rise at 6000 B.P. it spread to about the present width of the waters of the lower Hudson. This alone can account for the placement of middens on the banks of the Hudson as though it had always been as wide as it is now, even though at 5800 B.P. the water was 40 ft. lower than at present and at 4700 B.P. about 27 ft. lower.

But silt began its inevitable building up, reducing the depth of water and thereby decreasing the amount of sea water-and its ratio to fresh water-hence the salinity. The humus horizon on top of the GO midden at Montrose Point can only mean that silting caught up with the 5800 (or 7000) B.P. rise and extinguished the oysters in Haverstraw Bay for a period before the 4700 climax.

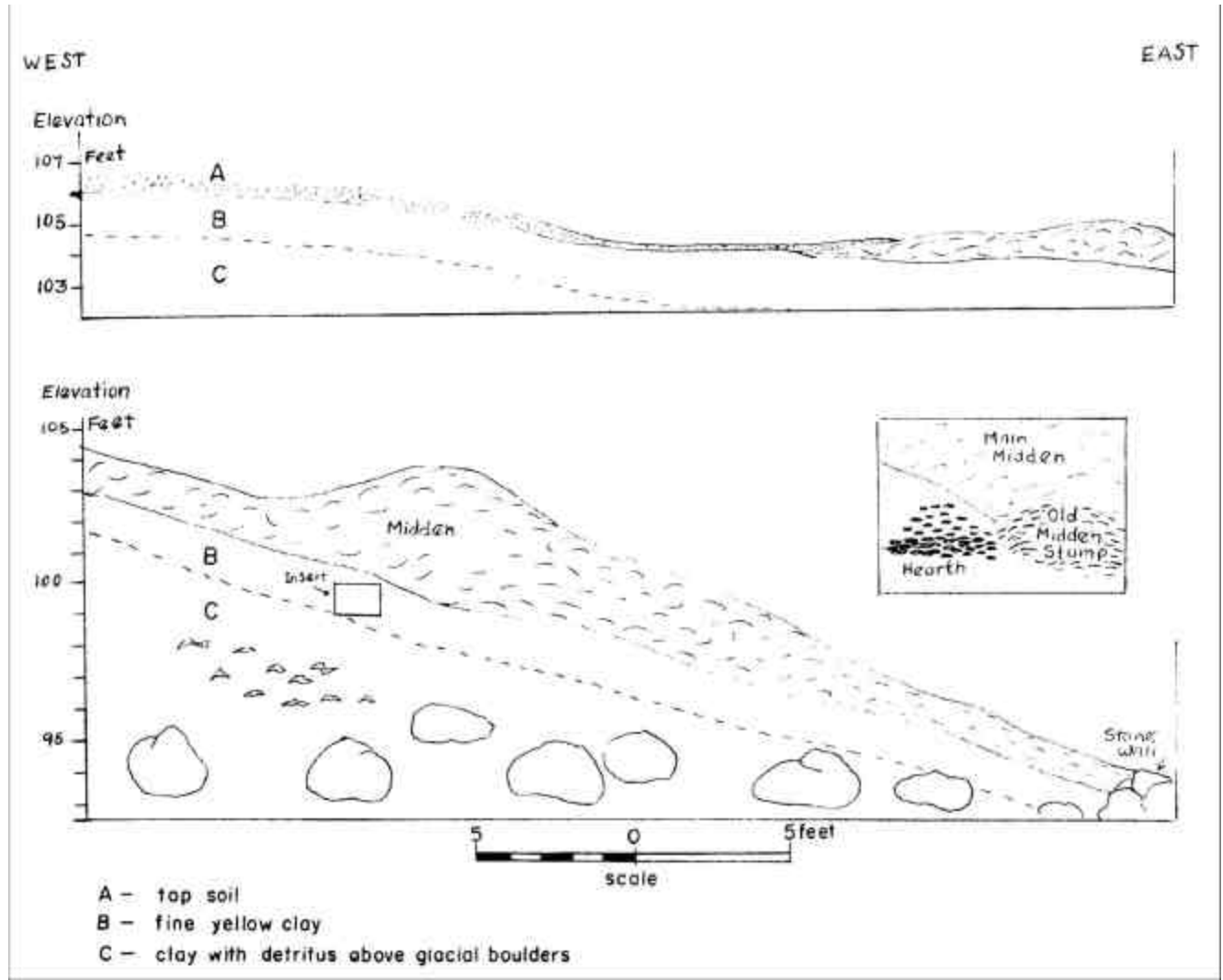
Another sharp rise must have occurred then, at about 4700 B.P. (or about 5900 by the Stuiver-Suess correction) to account for the oyster prosperity shown by the Twombly Landing and Montrose Point upper horizon middens. Silting eventually caught up with this rise, too, in time. Investigations by Redfield (1967) show that sea level rise in the last 3000 years, has been slow and at the eustatic rate. The conclusion to be drawn is that the lower Hudson, and Haverstraw Bay certainly, has afforded an oyster growing environment only intermittently since then.

The archaeology of this geology is obvious. The oyster midden makers moved inland from the coastal shelf as the oyster environment moved in, and the 5800 B.P. middens mark their first habitation of the Haverstraw Bay area.

Site Archaeology

Archaeology at lower Hudson oyster midden sites is not a simple matter of strata digging. Refuse shell was thrown into dome-shaped heaps on which the campers who built up those heaps obviously did not and could not have lived. Their loci of activities were elsewhere and it is seldom, if ever, possible to associate by direct evidence a specific shell heap with a specific habitation locus. What complicates the puzzle is that when a heap weathered down to a "stump" and became infiltrated and surfaced with humus, it was then lived on, probably because it was a well-drained spot, and artifacts from later occupation became mixed with the contents of the original heap. And the final complication is that heaps of shells of later eras were frequently built up alongside earlier heaps, giving an illusion, by depth, of contemporaneity.

Nevertheless, it can be said that the northern 20 ft. of the Twombly midden ridge, the thickest part of the ridge ending in what we called "the dome," the highest part of the heap, was laid down by makers of the stemmed, usually narrow-bladed points of the Taconic Tradition (Brennan, 1967). These points are found throughout the approximately 4 ft. depth of this section and throughout the complications of midden-building mentioned above. A long usage of the site by the Taconic point makers is evidenced by the occurrence of "fire-spots," loci of burned shell, small dabs of charcoal and concentrations of three or four artifacts at different levels in the compost. These spots are only "ghost"



hearths because much of the soft fragmented burned shell and the crumbs of charcoal has migrated downward with water seepage. This usage, we suspect, was over a period of perhaps 500 years, with the order of age, if not a median age, established by the hearth dated, to use the Yale figure, at 4750 B.P.

This hearth was found with its base at about 6 in, down in the yellow clay sub-midden soil, but it had been distorted upward into a kind of column of charcoal through this 6 inches. The down-slope creeping clay had backed up against a "shell heap stump," causing the charcoal to "float" upward.

The "stump" (remains of a weathered heap still in shell-on-shell condition and therefore a semi-feature) that was, in effect, the dam behind which the clay filled in, was in place. In this stump was found a spirate, that is, a narrow triangular point of quartzite about 2 in. long; this is a type not catalogued for this or any nearby area. At the contact line of the stump with the yellow clay, where the clay had infiltrated the bottom of the heap from below and caused decay and scattering of shell fragments, there was found a black flint point, 1 1/2" long, of the Taconic Tradition. This variety has the knobby stem so often found in the tradition, is narrow-bladed and has one sharp-angled and one rounded shoulder. These Asymmetrics or "contrary-shouldered," points are a constantly recurring sub-variety in Taconic Tradition assemblages everywhere in the lower Hudson Valley.

The point was about 22 in. from the hearth, to the right and down slope. Upslope, directly behind the hearth at about 28" away, two Taconic points were found in the clay-compost midden contact line. One of these, though symmetrical, with both shoulders angled and a blunt-based (peg) stem, is of the same phase of the Taconic as the knob-stemmed asymmetric; it is of the local Triassic (Newark series) sandstone. The other point, of white quartz, is of the short-broad-bladed phase, believed by us to be a phase later in the Taconic Tradition. Tree roots in the thin compost zone, about 14" thick, may have caused a mixing, if there was a mixture. But in other places the narrow-bladed phase has been found at or near the contact line, as well as throughout the midden depth.

In short there is every reason to believe that the date of the hearth is the age of one phase or another of the Taconic Tradition, probably a small phase much like Lamoka points. The other type of point occurring with the Taconic Tradition as far as we can ascertain, is the ovoid previously mentioned. These ovoids have been given little recognition by cataloguers though they are illustrated rather widely. Wauchope (1966) presents two pages of these (p. 114-115) in his "Archaeological Survey of Northern Georgia" and places them in the Archaic. MacNeish (1958) has designated an ovoid form found in Manitoba in relationships "too general to state," the Winnipeg Ovoid.

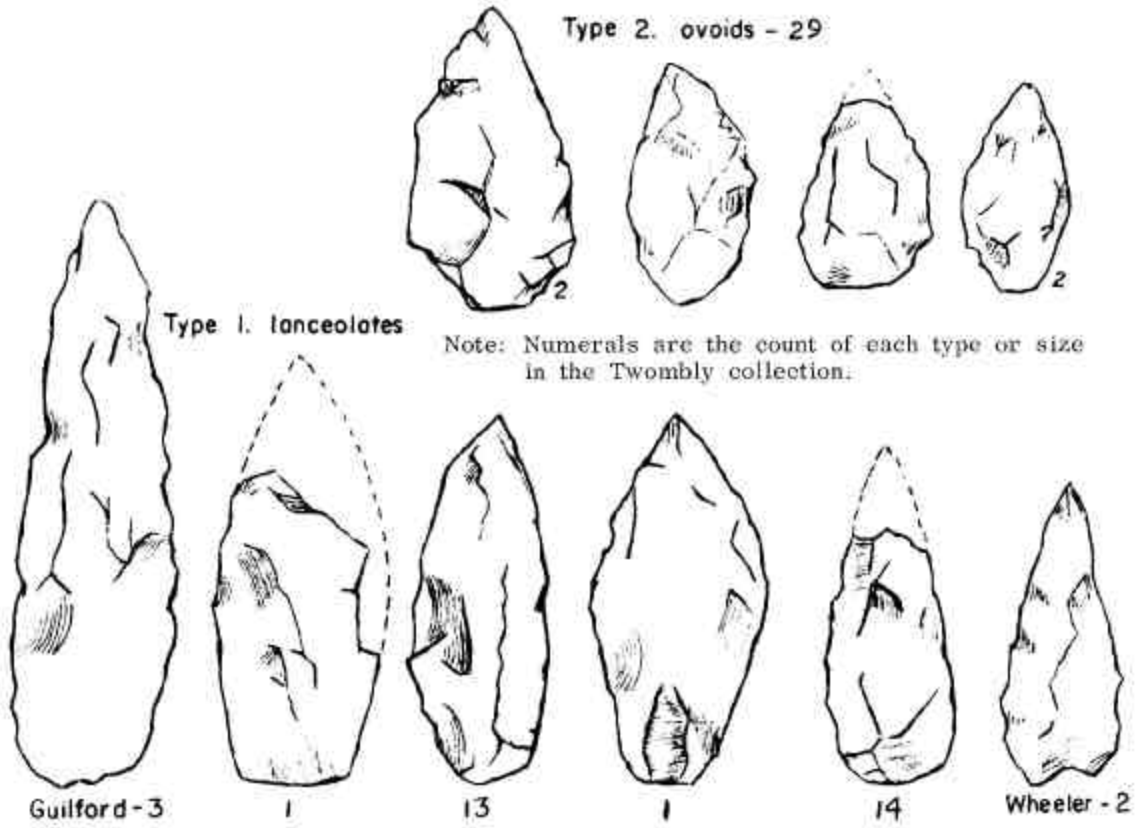
These points are certainly not blanks for the production of Taconic points and they show none of the edge use of knives or scrapers. Industrially they appear to be at variance with Taconic Tradition techniques. For present purposes they are called Alpine ovoids.

About 60% of the more than 500 points (302 out of 511) found at Twombly are the Taconic Tradition stemmed points with another 20-25 stemmed or pinched-stem points referable to the tradition. By length, the narrow blades seem to fall into 4 size groups, from 2 1/2 - 2 in. at one extreme to 1 1/4" at the other. The shorter, broad-blade or cuneiform variety of Taconics range from about 1 1/4" to slightly less than an inch. But the lengths are probably not important in themselves but as indicators of the important ballistic characteristic of weight. The technique by which the earlier forms of the Taconic were made was the "reverse percussion" or "edge-nibbling" tactic I have reported elsewhere (Brennan n.d.). The writer, holding the material in one hand, strikes across its axis toward himself, hitting the edge at a low-about a 30 degree-angle with the corner or the longitudinal edge of the hammerstone. This technique has never been reported elsewhere as far as I can ascertain. The Taconic Tradition is a separate and distinct cultural tradition and grows more significant with each new excavation.

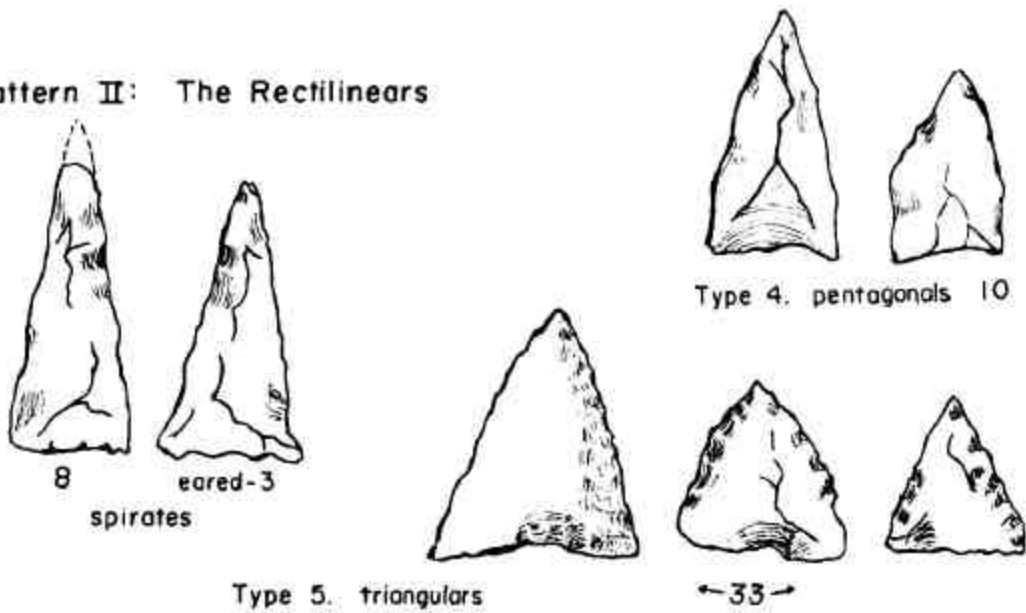
One small group of 6 points which at first might seem to fall into the Taconic Tradition, on closer scrutiny seems referable to the Kirk Stemmed first named by Coe (1964).

CLASS A: THE SHANKLESS

Pattern I: The Arcuates

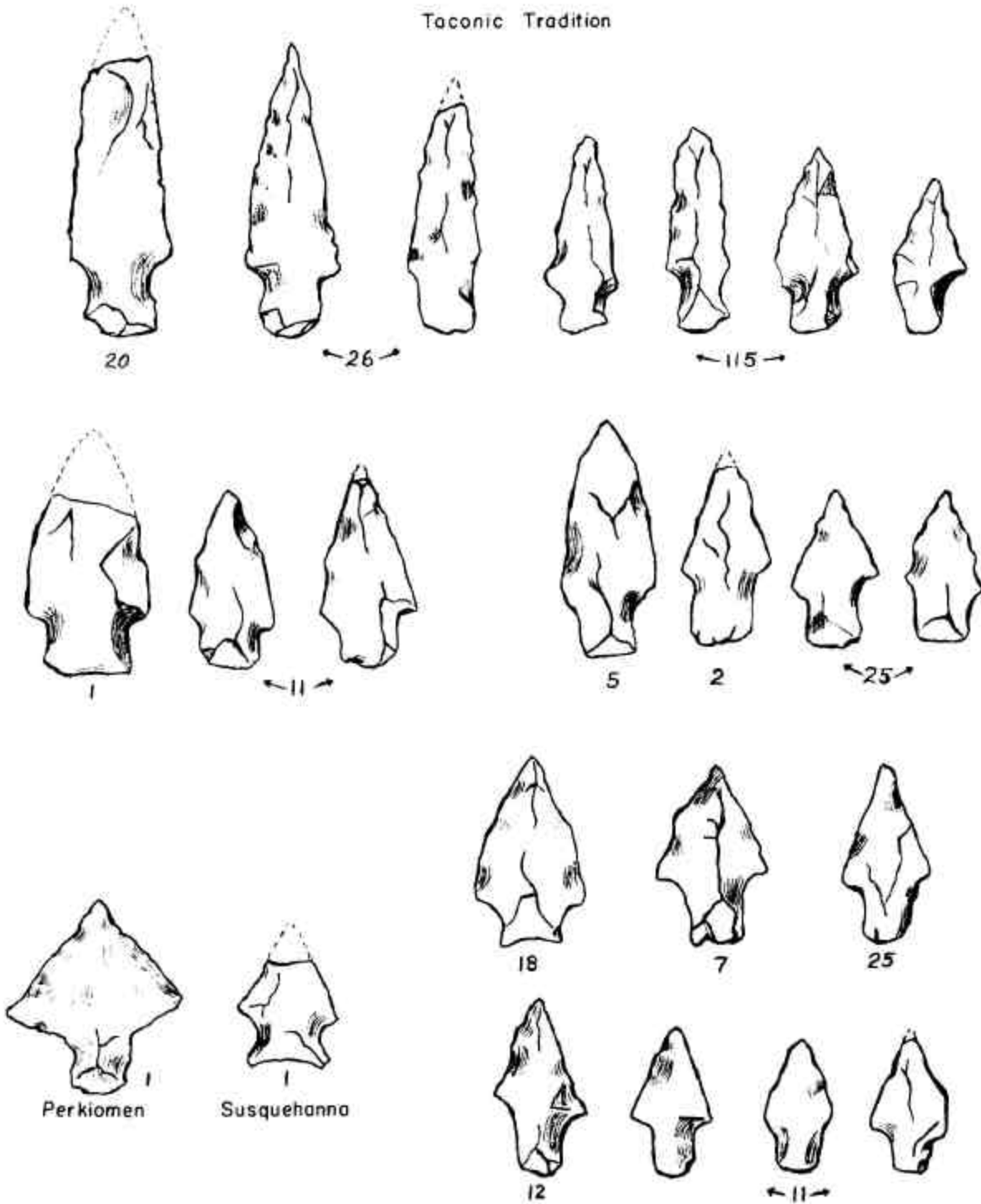


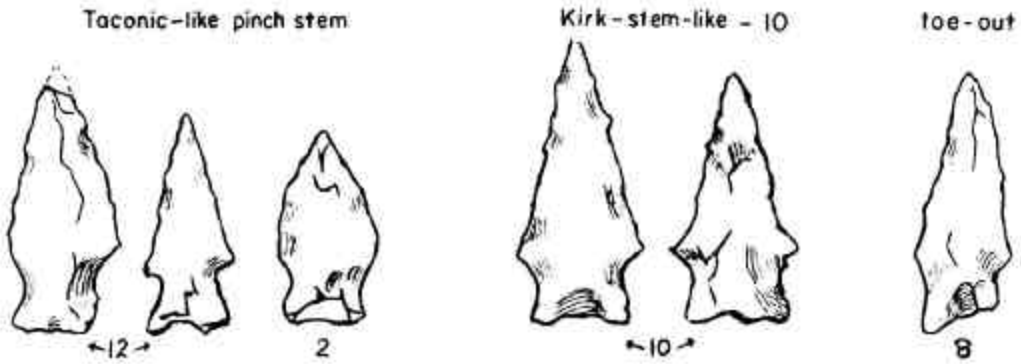
Pattern II: The Rectilinears



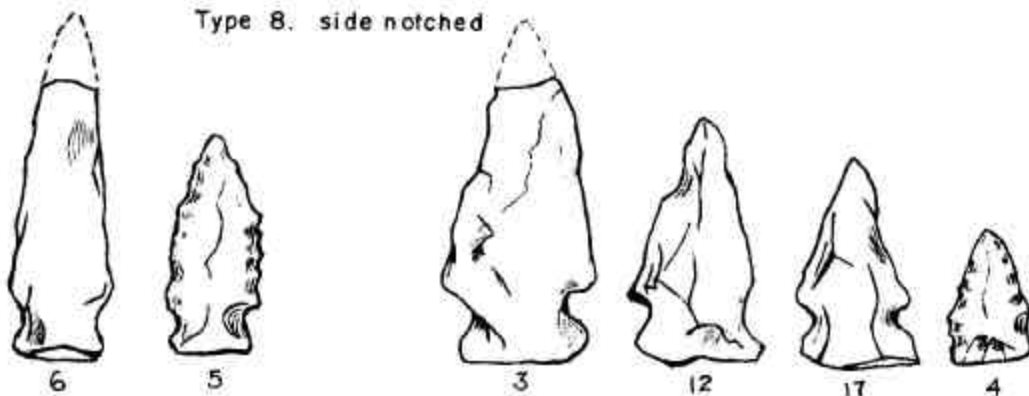
CLASS B: THE SHANKED

Pattern III: The Stemmed Type 7. full stemmed





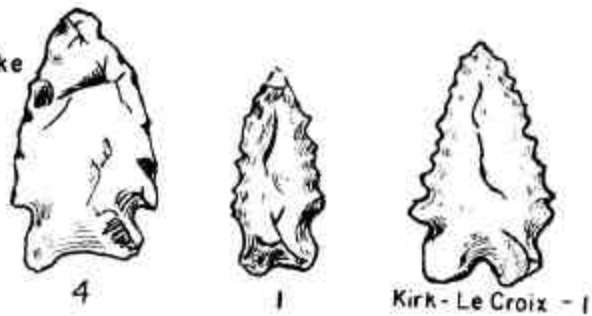
Pattern IV: The Notched Blades



Two-bly Side - Notched



Type 10. neck and yoke



This is not to say I regard these as specimens of the Kirk but that I would look in that direction for the tradition that produced them.

It may as well be said plainly here that parental influences of what was found at Twombly, except for the Taconic Tradition which almost certainly was long established in the lower Hudson estuary before it moved inward into the present valley, will be frankly looked for in the South, not the North. Nothing of the Laurentian Tradition appears there at all, though Vosburg points have been found shatteringly in the Croton River mouth and half a rubbed slate ULU turned up on the Van Cortlandt site on the bank of the Croton at its mouth. Since the hearth at the Twombly site, median date 4737 B.P., is the exact contemporary of the Vosburg level at Sylvan Lake Rock shelter (Funk, 1966) dated 4730 ± 80 (Y 1535), the implication is that this northern tradition played out in the Croton area or was prohibited from coming farther south, at least on the west bank of the river. It is now perfectly clear that a broad highway for the migration of cultures from the south existed along the coastal plain for all the millenia before sea level reached its approximate present height.

One significant find was a serrated blade, bifurcate base point placed by Bettye Broyles, West Virginia State archaeologist, excavator of the St. Albans site in West Virginia where the like were found, and a worker in the Coe Carolina Piedmont sites (Coe, 1964) where they were first identified, as in the Kirk-LeCroix series, with a probable age of about 8000 years. Three other large unserrated bifurcates (2 in. long), two shorter ones (1 1/4 in.) and one small serrate (3/4 in.) were recovered. It is evident that the Twombly location was a useful camping site long before there were oysters in the river below.

The second most important series of points at Twombly in numbers (42) is side-notched. Five of the points are narrow-bladed almost parallel-sided, about 2 in. long, but the rest, in a range of 3 sizes, are in a theme ubiquitous through the Archaic and probably best known in the Big Sandy of Tennessee. There is a tendency toward notching-in of a triangular blank, so that the base below the notch is squared off. In the larger points this feature gives them a fleeting resemblance to Otter Creek points of the Vergennes phase (Ritchie, this issue of the NYSAA Bulletin) and the smaller ones an interesting resemblance to the small Big Sandy's of Alabama; but they have not been ground and some specimens appear to be made by the nibble technique.

This series occurs outside the midden, just down slope from the midden ridge, under the ridge slump. The slump contains Taconic points and the Twombly side-notched series occurs at the yellow soil contact line, the ground surface at the time of deposit, under the slump. No Twombly side-notched has been found under or in in-situ shell and the deduction is that the midden ridge was in place when the side-notched point people camped here. It is suggested that they are of the same variety of side-notched points found by Ritchie at Lamoka Lake with the Lamoka stemmed; many specimens have the same unfinished base, with pebble cortex unaltered. But at Twombly the two styles are clearly not associated, and are not contemporaneous, no matter whether the side-notched form was deposited after or before the stemmed ones. We consider the side-notched points late Archaic.*

A third series of 18 points may be called quasi-pentagonal or para-triangular. They are not triangular, as they have been erroneously typed, nor severely pentagonal, but the five sides can be counted. This series is widespread in the lower Hudson, appearing at the Parham Ridge, Hanotak, Croton Point (not Kettle Rock) and Crawbuckie Beach sites, where about 50 were found, apparently related to the most numerous occurrence of thumbnail snub-nose scrapers, about 30, we have found anywhere. These are usually found very rarely in this area. Three have turned up at Twombly.

This quasi-pentagonal series is almost certainly late Archaic and has nothing to do, temporally at least, with the Levanna and other triangulars, of which there are about 30 at Twombly. The possibility that they may be an Archaic trait out of which later triangulars developed cannot be overlooked and the Twombly quasi-pentagonals deserve more attention than they have drawn to date.

*Within the past month they have been discovered with a steatite pot fragment at Dogen Point.

Other small groupings of points have been noted, as can be seen from the point illustrations accompanying this piece. Instructive are the known types that are scarce; 1 red jasper Perkiomen, 1 small yellow jasper Susquehanna, 2 (possibly 4) Rossvilles, 2 stubby, atypical fish-tails and 1 Madison.

This pattern of point provenience, and the scarce potsherds, all found superficially, give rise to this probability: the Taconic people were the main midden makers, but the Twombly side-notched makers and the quasi-pentagonal point makers, in that order, frequented the site during short periods of oyster productivity subsequent to the 4750-4725 B.P. salinity climax. The scarce point types and the pottery indicate occasional, casual camps at the site, because it is one of the few suitable camping sites along this stretch of the west bank of the river at the base of the Palisades, and their depositors had little or nothing to do with the accumulation of shell. We can see no reason to think that use of the site was either constant or intensive after oysters began to fail. The pottery consists of about 50 random sherds, six of an interior-exterior cord marked pot of which the interior and exterior cord-marking are nearly parallel rather than nearly perpendicular as in conventional Vinette I ware, and a section including rim, of an Abbott Farm Dentate-incised pot.

Intensive use during the oyster period is indicated by the weight of industrial debris, the edges of which usually show some use for cutting and scraping, and the blanks and cores, and rough stone choppers and hammerstones. Few finished items, other than projectile points, were found: the bit of a thin slate, bevelled adze (not Lamoka), a full grooved ax of about 5 lbs, one well done "Guilford Ax" (more likely a grubbing tool, since it has a narrow bit) and two indifferent specimens, and half a two-hole rectangular gorget.

We are not yet prepared to give a full inventory of the miscellaneous artifacts, or an analysis of them, but entirely lacking is any item recognizable as fishing gear. Nor have any fish bones been preserved, if they were ever present. Almost half a bushel of animal bone, mostly deer (there is one elk astragalus) but with turtle or tortoise, ground hog and other small animals in some quantity, has been recovered from the preservative shell and shows a strong hunting bias despite the fact that the base of the Palisades is not good hunting grounds. Haunches of deer and the head, there being no vertebra nor ribs in our collection, must have been packed in from elsewhere. One would suspect that many times this amount of bone has long since dissolved in the acid soil outside the shell and that game constituted half or more of the diet of even the oyster gatherers. One slab metate found at the base of a shell heap suggest a vegetal food element in the oyster-eaters diet.

The picture the site presents is of a recurring short-period use, with nothing suggestive of extended occupancy. The only two features were the dated hearth, without stone encirclement, and a deep round hole of about 10 in. wide and 16 in. deep with much charcoal intermixed with earth as though it had been used over and over for cook fires. It was surrounded by over 100 molds of what appeared to be stick supports for a simple roasting rack. Wickiup supports are also a possible explanation. This feature was at about the place where it was most convenient to the stream bed stairway and to the fresh water the stream provided. One would hazard a guess that a group small enough to require a small shelter only was the normal size of the camping party that repaired here seasonally, probably in the spring, for spring comes 10 days to two weeks earlier in the river bank than it does inland and upland.

To complete the site archaeology it must be reported that a pot hunter trenched through the site, both through the midden and the occupied periphery, some 8 to 10 years ago. Information given us is that he took out 800 points and such items as ground semi-lunar knives, polished bannerstones, etc. We are not likely to be shown these items, if they exist, and we beg to doubt that they do. The trench was a meandering, random open burrow about one shovel wide and we have dug around it and across it in all areas in an attempt to find some evidence of this kind of material; one of the trenches actually exposed the dated hearth, but did not disturb it. But not a single trace of polished or ground tools

was found, except those mentioned. As to the 800 points, this must be a fabrication. We have dug through the bulk of the midden ridge above it, below it and beyond the end of it, about 50 five-foot squares, and our total take of points is about 511, with bits and pieces, a little over 600. This is an average of about 10 points per square; the concentration is not necessarily the average but distribution is nearly uniform. It would be difficult to estimate the area dug by the pot hunter, but five squares (125 sq. ft.) would be generous. No doubt some valuable and interesting material was taken from Twombly, but I doubt that it would change basically the view given here.

SUMMARY

The Twombly Landing shell midden site establishes a second salinity--shellfish productive period in the lower Hudson at 4737 B.P. (corrected to 5661 B.P.), or a millenium later than the first such climax at 5863 (corrected to 7208 B.P.). This second was the last such climax, after which oyster favoring conditions were sporadic and short. The point type characteristic of this second period was the stemmed Taconic Tradition, contemporary with the Vosburg of the upper valley. The probability is that the people of the Taconic Tradition had lived in the oyster-producing environment for a long time and had shifted with it as the sea rose and moved the environment farther into the valley. The pattern of prehistory of Long Island and the lower Hudson is much more likely to have been set by people from the east, pushed in by the rising sea, people who had early Archaic affiliations with the south, than by the hunters from the spruce-birch zone in the north.

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PROGRAM OF PAPERS, NYSAA ANNUAL MEETING, 1967
SATURDAY, APRIL 29

9:15 A.M.--First Session--Beulah M. Rice, Presiding

9:15 A.M.--"The Kings Road Site--A Paleo Indian Component" Thomas P. Weinman, Auringer-Seelye Chapter

9:45 A.M.--"The K I Site, The Vergennes Phase and the Laurentian Tradition" William A. Ritchie, State Museum and Van Epps-Hartley Chapter

10:15 A.M.--"Salvage Excavations in the Binghamton Area" Dr. William D. Lipe, Harpur College

10:45 A.M.--"Archeology Conducted by S.U.N.Y. at Buffalo in 1966" Jack M. Schock, Houghton Chapter, University of Buffalo

11:15 A.M.--"The Twombly Landing Site, Louis A. Brennan, Metropolitan Chapter

2:00 P. M.--Second Session--Thomas P. Weinman, Presiding

2:00 P. M.--"Iroquois Wampum", William W. Fenton, Director: New York State Museum and Science Service

2:30 P.M.--"The Round Top Site, An Early Owasco Horticultural Stage" Michael Laccetti, Chenango Chapter

3:00 P.M.--"Iroquois Development in Central New York". James Tuck, Department of Anthropology, Syracuse University

3:30 P.M.--"Factors in Iroquois Settlement Pattern Change". Dr. Marion E. White, University of Buffalo, Houghton Chapter

4:00 P.M.--"Some Instances of Skeletal Trauma in the Northeast" Audrey Sublett, Co-Author Charles Wray, Co-Author, Morgan Chapter

4:30 P.M.--"The History and Current Status of Settlement Pattern Studies in the Genesee County of Western New York". Charles F. Hayes, III, Rochester Museum and Morgan Chapter

7:00 P.M.-DINNER

"A Fresh Look at the Laurentian Iroquois". Dr. Bruce G. Trigger, Department of Anthropology, McGill University

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