

THE BULLETIN

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CONTENTS

An Economical Intra-Site Mapping Technique for Archaeologists Peter P. Pratt	1
Pick-Up Tools and the Anthropology of Work L. A. Brennan	4
Some Thoughts on the Cortland County Archeological Survey Ellis E. McDowell	26
The Spy Rock Rockshelter Nicholas A. Shoumatoff and Howard E. Hobbs	28



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Walter Wait experimentally positions photo-turret at maximum height of 17 feet

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AN ECONOMICAL INTRA-SITE MAPPING TECHNIQUE
FOR ARCHAEOLOGISTS

Peter P. Pratt

William Beauchamp and Chenango Chapters

Just as flotation was discovered independently in the New World and in the Old World (Laming-Emperaire 1963, Struever 1968) the development of photo turrets has come about independently as well with, once again the Europeans, with their long standing interest in technology in archaeology, in the lead.

We all know the difficulties of trying to accurately plot a single excavation unit such as a 5 foot or 2 meter square. Depending on who does the measuring of the features within that square, the measurements will be different! Even the same person measuring the same feature for the second time is likely to find discrepancies with his first measurements, whether he is using a gridder, customary triangulation or rectangulation procedures, or whatever. To overcome intra-site mapping problems of this character, a series of overhead vertical photography techniques have been developed.

Techniques to avoid distortion in mapping through the use of vertical photography have included cameras mounted by way of balloons (Capper 1907), kites, (Bascom 1941) ladders held together by planks (Hume 1969:203) bipods (cf. Hume 1969:205), tripods (Nylen 1964) and tetra pods (Whittlesey 1966:273-6) as well as other methods ranging from bucket trucks ("cherry pickers") to one light-weight student armed with camera and precariously standing on the shoulders of a "mesomorph."

Certain of these approaches such as the use of kites, balloons and bucket trucks are especially well suited to photographing the site as a whole along with its immediate environs, whereas other techniques such as the use of unipods, bipods, tripods and tetrapods are more suited to photographing portions of the site. Our present concern, of course, is with the latter.

If a continuous record of the excavation of a *series of adjacent plots* is desired, as when large areas are being exposed or when feature superimposing feature is the case as in superimposed burials, hearths houses etc., then the Swedish tripod turret devised by Erik Nylen and Bjorn Ambrosiani (Nylen 1964) may serve the purpose admirably. By means of this unit, a tripod is set up that reaches a height of some 30 ft. A normal lens camera affixed to the apex of this tripod can cover an area of approximately 16 sq. ft. Then, by extending one of the legs to which the camera is affixed at the apex of the triangle, the camera can be elevated to an additional $20\pm$ ft., thereby giving a picture area of some 30 sq. ft. Using such a device one can take shots as the excavation progresses to give an "archaeological strip-tease" effect as one sees features gradually exposed. By using this technique, valuable information which might otherwise have escaped the notice of the investigators is recorded on film. Furthermore, the mapping is far more accurate than the excavators might have done by hand. A series of shots at this height per level per excavation area can provide a composite map of the site as a whole. A decided disadvantage to the Swedish unit is that it requires a level area of 60 sq. ft. to set it up! Then, once it is extended to maximum height, it is exceedingly difficult to take down without damaging it. Furthermore, the cost of the unit is fairly high, some \$800 to build (cf. Hume 1969 and Eugene L. Sterud, personal conversation).

Another unit which can serve the purpose of getting overhead shots at considerable height with a modicum of difficulty (as contrasted with kites and balloons, for example) is the bipod unit which was developed for the Harvard-Cornell expedition to Sardis. This unit, of course, cannot be left in place for a continuous record though it can be moved about quite readily to photograph different parts of the site (Whittlesey 1969).

A device which serves admirably in photographing smaller excavation units such as individual 5 foot or 2 meter squares without distortion is the tetrapod. Philip Mayes of Leeds

COVER ILLUSTRATION: Walter Wait experimentally positions photo-turret at maximum height of 17 feet.

University (cf. Hume 1969) and, independently, the writer working with Grayson Mitchell, have developed similar but not identical tetrapod turrets. Mayes' turret is 25 ft. high, with non-adjustable legs and, therefore, must be used on level terrain. Its height makes possible photographing without distortion at least a 4 meter square. The camera mount area at the top of the Mayes' turret is very small, making it necessary to position the entire tetrapod almost exactly center over the excavation unit, a four man task, and a real problem if the terrain is at all uneven, with earth piles in the way, etc.

Providing somewhat greater flexibility than the Mayes turret for photographing small excavation units, the Pratt-Mitchell turret (Cover Illustration) has telescoping legs, can be carried by two people and, because of the nature of its camera mount, the entire tetrapod need not be positioned plumb center over the excavation unit. Additional basics about the rig are that it extends to a maximum height of 17 ft. and is fitted with a unipod to which a camera may be attached. Ascending one side of the structure by means of a ladder (such as an aluminum 8 ft. extension ladder which extends to c. 16 ft.), the photographer can shoot directly above the excavation unit. Using a 35 mm. single lens reflex camera fitted with a 35 mm. wide angle lens or, using Polaroid Models 101, 102 or equivalent, the photographer can shoot from directly above a 5 ft. square and have no photographic distortion of the square at a height of 11 ft. At 17 ft. altitude it is somewhat easier to adjust the camera to avoid distortion. Furthermore, one can shoot a 2 meter square nicely at this elevation.

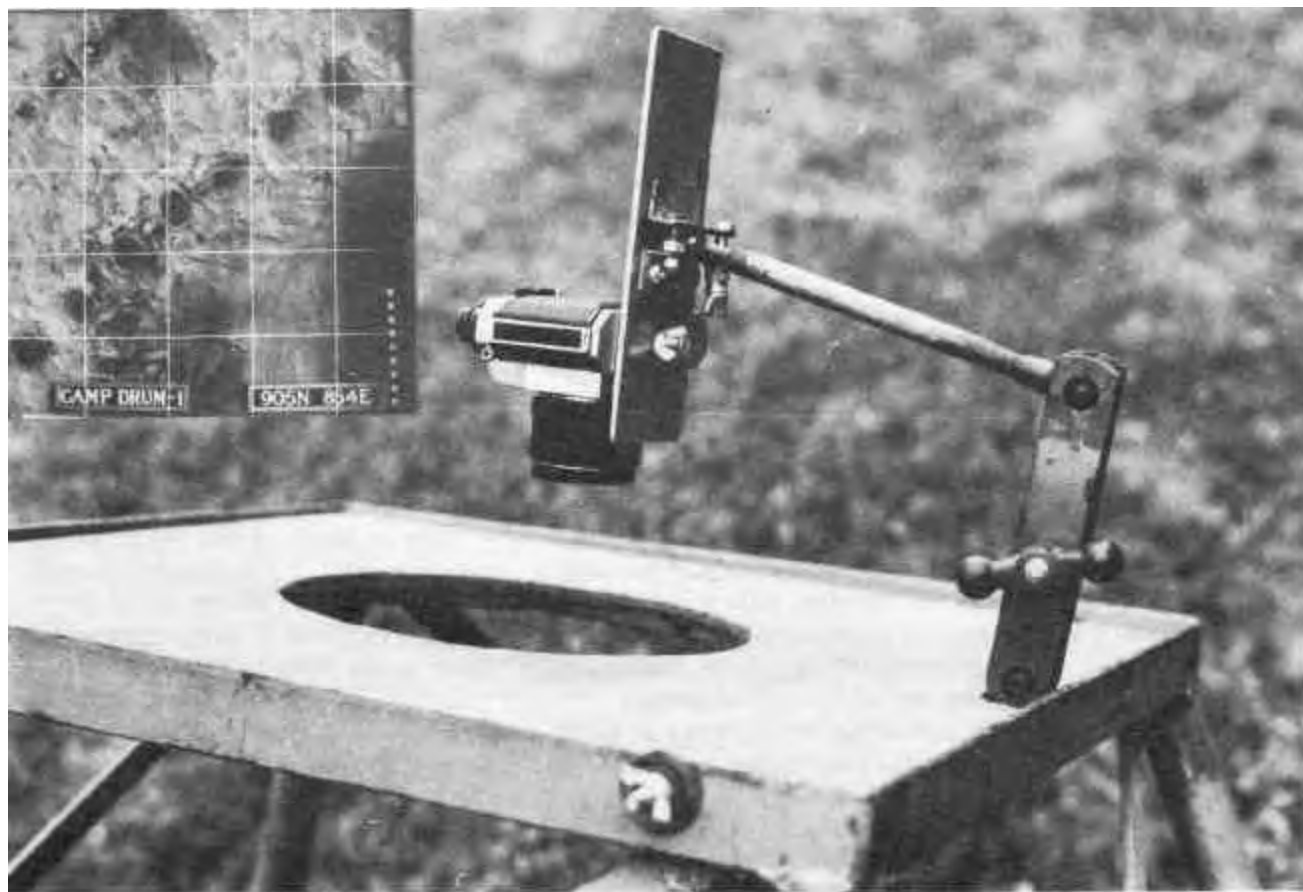


PLATE 1. Close-up showing relationship of unipod assembly to the camera positioning on photo-turret. Inset: example of photo turret photograph taken of two post mold lines at Camp Drum, Watertown, New York.

It is not absolutely necessary to use the unipod camera mount (Plate 1). Once the photographer gets the knack of centering the camera directly above the square, the results can be the same as when using the unipod, and the operation is speedier certainly. . . . *If the photographer is not experienced*, however, the camera angle and slope in relation to the subject square angle and slope can be nicely matched, using a clinometer, or, (if it is a large camera such as a 4 x 5 or 8 x 10 or flat backed Polaroid) preferably, a pair of clinometers set at right angles to each other and simply laid flush to the camera back once the camera is positioned on the unipod directly over the square. If the subject squares are horizontally level, the clinometer(s) may of course be substituted for by less expensive devices, such as line levels (preferably of the multi-faceted side variety) or by small carpenter's levels, or *better yet*, a circular level. The photographer may also want to use a gridder for checking squareness of the shots, for providing greater ease in taking measurements from the finished prints and, for facilitating the matching up of the finished prints for the site excavation montage.

Fortunately, it is not necessary to have the camera always positioned at the same height for each shot in order to effect a montage. In the laboratory one can simply project the 35 mm. negative via the enlarger, or the polaroid print via a *small* opaque projector in the darkroom and come up with almost any scale desirable. (For polaroid though, greater flexibility is achieved by copying the prints on 35 mm. film and then projecting the 35 mm. via the enlarger to the desired scale.)

As an overall recommendation: unless photographing is being done in shade or under an overcast sky, draping some black plastic tarp or other opaque material about the tetrapod in such a way as to "kill" shadows has been found useful. On the other hand, flash may be used though it can be rather costly if the camera does not take a strobe unit and the area being excavated is extensive, or, for whatever reason, many shots are expected to be taken.

Fortunately, the turret is quite portable. It can be dismantled easily and set (along with a ladder) on a car roof rack for transportation to destination. Once there, the rig assembles on location in about 10 to 15 minutes. Once assembled it can be left up-it's too heavy to be blown over, yet it's not so heavy that it can't be carried as needed (using two wood crossbars), from square to square by two sturdy people. (We'd advise against moving the turret while a Polaroid camera is mounted on it since one or two film sheets may be spoiled by the jostling.)

Plans for the unit may be got by writing to: Dr. Grayson B. Mitchell 124 Smith Avenue Kingston, New York 12401

Dr. Mitchell did the detailed designing and constructed the rig. The cost of the plans plus the cost of constructing the turret should run well under \$100. The clinometer (by the manufacturer called a "Level and Angle Finder," Pro Products Co., Rockford, Illinois) can be purchased from: Edmund Scientific Corp., 623 Edscorp Building, Barrington, NJ 08007. Refer to their September 1973 Catalogue, 741, p. 127, No. 60870. Clinometer. \$8.95 Ppd.

Acknowledgments

My thanks go especially to Dr. Grayson B. Mitchell for "translating" our early evening through dawn "brainstorming" sessions to the drawing board and to actually constructing this photo turret and working out the "bugs" in it.

It is a pleasure also to thank Dr. Eugene L. Sterud of the Department of Anthropology at SUNY Binghamton for his helpful criticisms and suggestions relating to both the field applications of this turret and to the laboratory photo processing. Dr. Sterud recommends a laboratory photo-print bleaching technique both for features and artifacts and will describe this technique in a forthcoming article in the *NYSAA Bulletin*.

To my wife Marjorie of the Department of Anthropology at Ithaca College, my thanks are very much due too, for her painstaking efforts of many days in the field and laboratory in helping us see to it that this piece of equipment proves itself a worthwhile scientific instrument.

References

- Bascom, William R.
1941 Possible Application of Kite Photography to Archaeology and Ethnology. *Illinois State Academy of Science, Transactions Vol. 34, No. 2*, pp. 62-63.
- Capper, J. E.
1907 Photographs of Stonehenge as seen from a War Balloon. *Archaeologia Vol. LX*.
- Hume, Ivor Noel
1969 *Historical Archaeology*, Alfred A. Knopf, New York.
- Laming-Emperaire, A.
1963 *L'Archeologie Prehistorique*, Le Rayon de la Science, L'Imprimerie Tardy a Bourges.
- Nylen, Erik
1964 A Turret for Vertical Photography. *Antikvariskt Arkiv 24*, Swedish Academy of History and Antiquities, Stockholm.
- Struever, S.
1968 Flotation Techniques for the Recovery of Small-Scale Archaeological Remains, *American Antiquity, Vol. 33, No. 3*, pp. 353-362.
- Whittlesey, Julian
1966 Photogrammetry for the Excavator, *Archaeology, Vol. 19, No. 4*, pp. 273-6.

PICK-UP TOOLS AND THE ANTHROPOLOGY OF WORK

L. A. Brennan

Metropolitan Chapter

Observations of mine over the past 25 years, which I was too preoccupied or obtuse to test until the summer of 1974, have led me to a singular conclusion: as much of the work done by Amerinds with chipped stone tools was done with "pick-up" tools-flakes, rejects, unfinished pieces, fragments-as with tools of formal, completed design.

This conclusion, being clearly beyond empiric proof, may appear to be frivolous, but the intent is heuristic: what was the real chipped stone tool kit of Amerind hunter-gatherers? Was it the list of formal, designed tools traditionally recognized in report inventories, with a smattering of "utilized flakes" as casual, in-a-pinch substitutes? Or was it a kit of the standard tools complemented by an array of unshaped tools consisting of pieces of the lithic litter to be found at chipping loci and selected for use because of attributes of edge and acuity?

The latter seems distinctly more plausible. Not as much has been made as might be, in the analysis of chipped stone tools, of the fact that the manufacture of bifacial tools generates chips profusely and these chips have instantly usable edges and configurations of edge angles and point features. Which is to say that the by-products of the manufacture of formal chipped stone tools-rejects, cores and broken pieces as well as flakes-are potential tools, requiring only to be picked up and used to acquire the artifactual status of tools.

To put this statement down as mere truism is to overlook that it is actually a challenge to explore the subject of the anthropology of work beyond the technology of tool manufacture. The struck flake was man's first knife-edged tool; its concomitant was the core from which the flake was detached, which simultaneously took on a sharp edge of its own from the detachment. That this primitive, rudimentary flake-core or chopper-flake technology is the stone industry the first comers from Asia brought to America is becoming more certain from excavations like that of Flea Cave, Ayacucho Valley, Peru (MacNeish 1971).

Development beyond the chopper-flake level will follow either (sometimes both) of two courses: refinement of the core, resulting in a biface industry; or improvement in the control of flake making, resulting in a uniface, usually a lamellar flake-blade industry. It would have

to be said that the inventories of formal chipped stone tools of all Amerind cultures within the present continental United States (except Alaska) beginning with the Paleo-hunter are decisively bifacial in character, despite a strong Mousterian flake element in the Paleo-hunter and an authentic flake-blade element in Poverty Point, Hopewell and some Northwest cultures. This emphatic development of the bifacial element serves, I believe, to divert attention from what happened to the flake partner or congener in the core-flake duality.

In fact, little happened; it did not need to. The chippage from the production of biface was of greater quantity and the same quality as the chips generated in the basic chopper-flake industry. Whatever had been the customary uses of flakes, the tasks for which they were used and the circumstances under which they were used, there was no reason not to continue the habits begun in primal antiquity. "Improvement," that is, further development of the flake, was simply not needed to continue ancient habits and customs.

On any Amerind chipped-stone-using site where the full round of living activities was pursued through a period of residential occupation the chipping locus must have been an important facility, a kind of hardware store which supplied men, women and children with ready-made tools for the daily tasks of production and repair. Nor is it stretching the imagination too far to suppose that the flint knapper himself, after a stint of work, chose for his own use, the best of the off-flakes. To a gathering-habituated people the lithic scrap pile would have been an exploitable resource and the reliance on it cultural second nature, dating from *Australopithecus*, the first flake-maker.

In as much as bifacial tools were manufactured to perform the same tasks that flake-spoil pieces could perform as well (while requiring less effort in their production) the anthropology-of-work question that naturally arises is: why were bifaces made at all and why is the bifacial element so pronounced in Amerind chipped stone technology? Amerind technology did not have to develop as it did; it is like no other in the world. We can, perhaps, plot what happened. Something, a perceived food exploiting opportunity, a change in the environment that rewarded the use of a sturdier form of tool, caused the attention of tool makers to focus on the core-chopper element of the chopper-flake concomitancy, to make it thinner for faster and deeper cutting while retaining the durability of the thicker element and attaining the potential of re-sharpening. These efficiencies were self-discovering, but not so much for any special new task as for topical circumstances of work.

To be more specific, it seems quite likely that bifacial tools were thought of as the tools to be carried on trips away from camp, since they could be re-sharpened, repaired or even reshaped; a bifacial tool is, after all, usually a preform for another tool. The manufacture of bifacial tools is a natural progression of steps related to thinning, followed by a realization of the versatility of the product of the thinning as a blank or preform for more specialized forms. There is nothing in the evolution of bifaciality that would have caused the discontinuance of the traditional use of flake-spoils as pick-up tools; more flakes, rather than fewer, were produced and more of them were probably of tool shape and size. What happened is merely that interest was foreclosed in developing a unifacial tool industry. For purposes that flake tools were wanted, fresh-minted flakes were serviceable enough. In effect, bifaciality nourished the pick-up tool tradition, and pick-up tools complemented the bifacial tool kit. Two propositions now suggest themselves:

1. Bifacial tools were made by men for men's work and were primarily to be carried on the person for tasks to be done away from camp; which would not, certainly preclude their use anywhere.

2. Most pick-up tools were used by women and children for in-camp tasks; their random distribution on sites suggests that they were discarded in non-specific task locations. The use by men for in-camp tasks is, certainly, not precluded.

Data Gathering

In order to assemble some data on the incidence of pick-up tools as evidence of their importance in Amerind chipped stone tool industries, I made, this past summer, three

collections of surface materials from riverbank sites in the middle Ohio valley just below Portsmouth, and reviewed the collection of debitage and spoil from an excavated riverbank site on the Lower Hudson, just above Croton. The three Ohio collections totaled 1411 pieces of industrial scrap, and the Lower Hudson (Parham Ridge) collection totaled 1106 pieces. In the tallies of tool-use and unused pieces shown in the accompanying tables, however, only the 590 pieces of flint, chert, jasper and chalcedony were included in the Parham Ridge count. The other lithics are quartz, quartzite, argillite, siltstone and slate, the edges of which do not clearly show attrition by tool use. Since all the Ohio material is good flint or chert, which breaks with crisp edges that reveal tool wear distinctly under magnification, the inclusion in the tally of only flint class stone from Parham Ridge made for a fairer comparison of Ohio and New York tool use practices. But there is no reason to believe that the Parham Ridge residents favored flint class stone only for pick-up tools and the ratio of use to non-use in non-flint class pieces is probably the same as for flint class pieces.

A comparison of Ohio and Lower Hudson pick-up tool practices was within the problem objectives of my data gathering. It is an assumption to be tested by the comparison that the basic pattern of chipped stone tool manufacture and the associated anthropology of work of all chipped stone using Amerinds fall within one continent-wide paradigm, having derived from the primal core-chopper-flake technology despite theme variations in artifact types.

The Ohio terrace sites and the Lower Hudson riverbank sites, exemplified by Parham Ridge, are different where they should be and alike where they must be, for purposes of my comparison. The first major difference is that they are 700 miles apart, with the Appalachian upland and divide between. The second is that, while the site locations are both on riverbanks, the Ohio is a freshwater, wholly inland river, and the Lower Hudson is estuarial; during the period of occupation of the Parham Ridge site it was a near-marine embayment supporting the saltwater oyster. The third major difference is in the settlement pattern; the Lower Hudson sites were seasonally occupied, the longer occupation being in the spring, during the upriver runs of anadromous fish and the migration north of birds using the valley as a flyway, with the shorter period being in the fall during the bird migration to the south. But the almost continuous evidence of occupation spatially along the Ohio terraces-definable sites are to be found as close to each other as 25 yds. and they are seldom more than 100 yds. apart--and the intensity of the evidence forces the conclusion that the terrace sites were occupied for most of the year. It is true that the Ohio floods--with flooding possible anytime between January and May--but inundation of the terraces may not have occurred as often or may not have been as severe before the U.S. Corps of Engineers began to dam the stream every 30 miles or so. In any event, floods would have been only a passing inconvenience to dwellers in mobile or lightly constructed residences.

But the food resources available for hunting and gathering in the Middle Ohio and Lower Hudson were remarkably alike, requiring much the same kind of work and tools for their exploitation. River mussels, which even now grow in the Ohio as large and meaty as oysters or clams, were the equivalent of the Lower Hudson's oysters. Though no shell middens still exist in the terraces, having been washed away by floods, shells are occasionally found on sites and the mussel pearls gathered by Hopewellians attest to the probable abundance of mussels. There were no runs of anadromous fish up the Ohio, of course, but there is every reason to think that it was well stocked with indigenous species. A flyway for migratory waterfowl the Middle Ohio may not have been, yet in modern times ducks and geese on the move settle on the river in season and undoubtedly settled down at favored spots in tempting numbers in aboriginal times. The forests of the Ohio valley ran heavily to oak and hickory, as do those of the Hudson valley, though there were once broad stands of black walnut, chestnut and beech in the Ohio woodlands. Both the Middle Ohio and the Lower Hudson valleys are of the kind of hilly, well-watered, wooded terrain very favorable for deer, the game staple in north regions. All in all the milieu of the Lower Hudson and the Middle Ohio people would have been very acceptable to each had they visited each other.

Of final and critical importance to the Middle Ohio- Lower Hudson comparison is that the source of stone for chipping was, in both areas, river pebbles. The beach gravels of the Ohio (before they were submerged beneath the waters of high dam pools) were full of pebbles of excellent quality flint and similar stones. While Flint Ridge and Kanawha flints are present the range of materials is considerably wider and the sources are not known. The sources for the quartzes and quartzites, flints and cherts used in the Lower Hudson must have been the beds of tributary streams. There are no gravel beaches along the Lower Hudson now and there probably have not been since shortly after the estuary reached its present water level, apparently about 2500-2000 years ago. While the famous Deepkill flint from the Cocksackie area, about 60 miles upstream, was commonly used in artifacts, the source of the stone was glacially transported pebbles; these are found distributed throughout the till and are often found on sites whole or partially flaked. The quartzites must have come principally from the Croton River bed, transported by the spate when the Croton was a melt-water stream. The Annsville quartzite found in the area is quite different from the variety used and is seldom found in artifacts.

Two of the Ohio collections came from the opposite ends of an 1800 ft. terrace (of four terraces) site, the principal and very intensive occupation of which was by the Friendship tradition makers of heavy stemmed points (Brennan 1967) probably related to the Indian Knoll Archaic of 5500-4500 years ago. While there is a sprinkling of both earlier and later material on this site, it yields no pottery. The "methodology" of collecting was simplicity itself. The site was in a late August stand of corn and I crawled on hands and knees, for three hours in making each collection, between the corn rows picking up every scrap of worked stone that fell under my eye, from flecks of trimming flakes to pebbles with one chip removed. It may be no more than a wild guess but I estimate that I covered and scanned 12,000 to 15,000 sq. ft., about one-third of an acre, during each three hour session.

The third Ohio collection came from a first terrace (about 40 yds. from the river bank location in a recently cut tobacco patch). Only badly fragmented pottery has been found here. (It does not seem to be Middle Woodland and the site is not the kind occupied by Fort Ancient people; from what I have seen it may be Early Woodland.) Since the surface was relatively clear I was able to cover perhaps 30,000 sq. ft., but the yield of stone scrap was appreciably less than at the Friendship site so that considerably less intensive occupation is suggested. But there was no difference from the Friendship site in the kinds of stone worked or in the "look" of the lithic litter.

All the Ohio sites have been surface hunted for over a decade by Roger Cunningham, owner of the 600 acre farm where the two sites (and several others) occur. He has recorded all finds, and more than 2000 artifacts have been recorded for the Friendship site, named for a nearby community. The whole and broken artifacts I collected, 17 in number, have been excluded from the tally, as not being relevant. The only use they would have had would have been to calculate the ratio of design tools to pick-up tools and unused debitage but the design tools have been too thoroughly gleaned for their count to be meaningful. I believe, however, that my collection of "scrap" is truly representative of the kinds and amount of scrap on and beneath the site surface, since it was never collected as such before.

The Parham Ridge site is a small, ridgy knoll about 25 ft. by 60 ft. in occupied area and, about 40 ft. above the present Hudson water level. Almost a bluff on the side facing the Hudson, it is a kind of point lying between two small inlets. The easiest, and most probable, approach was from the rear, where the two inlets penetrated deepest into the shore. The earliest occupants laid down on the crest a midden of oyster shell with which no diagnostic artifact could be associated. But the composition of the midden led me to believe that it was contemporary with the oyster midden at Croton Point, two miles to the south, dated at 5850 ± 200 C-14 yrs. (Y-1315), 6490 B.P. or 4540 B.C. (MASCA) or the midden at Dogan Point, 1.5 miles to the north, dated 5650 ± 200 C-14 yrs. (L-1036E) 6350 B.P. or 4400 B.C. (MASCA). The final occupation was in the steatite bowl era, about 3 500 C-14 yrs. ago; there was no ceramic pottery on the ridge, though some Vinette I occurred in a midden at the base of the bluff. The site was excavated in 1961-62 and all material retained. It has since been destroyed by road construction

Parham Ridge was chosen for the tally because the amount of material was manageable, because the total of scrap pieces approximated the total from the three Ohio sites and because the amount of countable flint class scrap was comparable to that of each of the two Friendship sites of the same time span. The one Early Woodland site gives the comparisons another dimension.

Clastic Classification

The collections were divided into three classes of clastics, as follows:

- Class 1: rough cores and chunks; these are pebbles or parent blocks from which flakes have been removed without the achievement of any discernible shape; they are cast-off lumps.
- Class 2: bifaces and fragments; only rough bifaces, abandoned about Stage 2 in development, appeared in the collections; fragments of broken bifaces are included in this class.
- Class 3: flakes: these are cortex flakes or unifacial flakes. A subclass in the New York material has been labeled "splits"; these are large split-off s from a pebble or block that were probably intended for further work but which proved to be too rough or flawed. Such splits were absent from the Ohio collections.

All edges of each piece were examined for signs of wear under 3 power magnification, with resort when necessary to 5 or 10 power. Perhaps 60 per cent of the edges showing use show it under 2 or 3 power magnification, but there are degrees of use grading down to that detectible by a 10 power glass. Kinsey (private communication) has informed me that a group of his students experimentally butchered a mature raccoon with a flint flake about 1 sq. in. in size without any marring of the edge. Any possessor of a supply of flint flakes can satisfy himself as to what happens to an edge when used. The slicing or cutting of soft stuff like flesh or fiber or pliable leather leaves no trace, even after many repeats. But the first stroke or drawing of the edge, with enough pressure to do work, against a hard material, such as wood, bone or antler, will detach tiny flakes and leave a pattern of scars. My guess is that the pieces in my collections which do not show use scars but which were actually used would be about 10 per cent.

Classification by Use

Standards of tool use derived by Semenov in his "Prehistoric Technology" (1964) are not applicable to this study. Semenov's analysis was of tools from the Old World of established design, usually with prepared edges. However much light the Semenov analysis throws on the actual use of tools, the patterns of edge wear described by him are not the same as on the pick-up tools of America which had, originally, fresh, keen edges. The classification which was derived for purposes of tabulation after considerable examination and trial is as follows:

Scraper Use: Those pieces were judged to have had scraper use which showed the use pattern of a row of flake scars, from pinpoint to pinhead size, *along* an even though not necessarily a straight edge. This row pattern looks like and has almost certainly, in some instances, been mistaken for pressure retouch. The pattern can easily be reproduced by dragging a flake edge along the rounded edge of a hardwood table, if you don't mind what happens to the table. A broomstick will do. Once this row of flake scars has been established the flake edge is stabilized and does not easily break down further. It can then be used indefinitely as a scraper.

Knife Use: evidence of use of an edge for cutting was considered to be a pattern, more or less irregular, of nicks *in* the edge itself, instead of along it, as in scrapers. Edge attrition from knife use varies from low-profile serration to random jaggedness, depending on the pressure used and the hardness of the material the edge was used on. The angle at which the blade was held during use sometimes causes flakes to be displaced from along the edge but the pattern is not that of scraper use. Semenov makes much of the polish imparted to an edge by

LOT 1-427 pieces Friendship East Ohio	Number in Class	% of Lot	Number with Points	% of Class	Number with Retouch	% of Class	# with Scraper Use	% of Class	# with Knife Use	% of Class	# with Other Use	% of Class	Total Tools	% of Class	Total Non Tools	% of Class
Class 1-rough cores and chunks	11	7.2	5	46			8	25.8	2	6.5	1 Hammer stone	3.2	16	51.5	15	38.5
Class 2-bifaces whale and broken	16	3.8	3	18.8	1 Serrated	6.4	4	25	3	18.8			11	72.7	5	31.3
Class 3-flakes	380	89	32	8.4			106	27.9	32	8.4			170	44.7	210	55.3

TOOLS 197, 46.1% NONTOOLS 238, 53.9%

LOT 2-645 pieces Friendship West Ohio	Total Class	% of Lot	Number with Points	% of Class	Number with Retouch	% of Class	# with Scraper Use	% of Class	# with Knife Use	% of Class	# with Other Use	% of Class	Total Tools	% of Class	Non Tools Total	% of Class
Class 1-rough cores and chunks	32	8.1	1	1.6			7	13.4	3	5.8	3 Chopper	1.9	12	23	40	77
Class 2-bifaces & biface fragments	28	4.4	1	3.7			8	28.6	8	28.6			15	60.9	12	31.9
Class 3-flakes	565	87.5	79	5.1			116	20.5	69	7.8			189		376	66.6

TOTAL TOOLS 218, 33.8% TOTAL NONTOOLS 427, 66.2%

LOT 3-336 pieces Terrace One Ohio	Total	% of Lot	Number with Points	% of Class	Number with Retouch	% of Class	# with Scraper Use	% of Class	# with Knife Use	% of Class	# with Other Use	% of Class	Total Tools	% of Class	Total Non Tools	% of Class
Class 1-rough cores, chunks	23	8.8	5	22			6	26					11	48	12	52
Class 2-bifaces, fragments	3	1.2					1						3	100		
Class 3-flakes	310	92	11	3.5			59	19	25	8			95	30.5	215	69.5

TOTAL TOOLS 109, 30.5% NONTOOLS 227, 69.5%

LOT 4-590 pieces Parhan Ridge New York	Count	% of Lot	Number with Points	% of Class	# with Scraper Use	% of Class	# with Knife Use	% of Class	# with Other Use	% of Class	Number with Retouch	% of Class	Total Tools	% of Class	Total Non Tools	% of Class
Class 1-rough cores and chunks	53	9.1	2	3.7	37	22.6	1	1.9					35	28.1	38	71.7
Class 2-bifaces, fragments	79	8.8	3	7.8	16	36	8	2.6					25	64	18	36
Class 3-flakes	485	82.2	36	7.4	112	23.1	41	8.5					189	39	296	61
Class 4-epitaxial	13	2.2	1	7.7	3	2.3	3	23					7	53.8	6	46.2

NUMBER OF TOOLS 236, 40% NONTOOLS 354, 60%

cutting meat but I did not find similar evidence, possibly because my examination was not at sufficient magnification or because pick-up tools were not used so assiduously as to achieve a polish. (Scraper and cutting use Plates 1 - 4, 11, 12)

Point Use: gathered under the class of point use is a wide variety of projections, acute angles and corners the employment of which is easier to imagine than to prove. Among the projections called "noses" are two classes: in one class are flat, rather broad and rounded juts; in the other the noses are blunted and stubby. Both kinds seem to have been pushed or jabbed into the material worked on. Some points are thin and sharp, pricking or piercing tips. Others are short, sharp pointed, but show wear on the side rather than on the tip, like graver spurs. The apexes of some triangular flakes have been constricted by use below the point, obviously reamers or augers. Finally there are the flakes with "snags" at the end of edges which have been used as knives, the edge and the "snag" both showing use from, probably, the same tool motion. These suggest rotary knives, that is, knife edges that have been used on cylindrical material, branches or bone, or antler. The snag may have been the deep cutting or slitting edge, with the long edge used as a sort of guide, scoring the material ahead of the slitter. On the other hand, the "snag" may simply be a remnant of the edge left intact at the end by the kind of stroke employed by the workman; that is, it is not a tool feature at all, but the evidence of a certain kind of tool use. (Plates 7 - 10)

This point use class is one of the most unprobed aspects of tool technology. A thorough analysis of pick-up tools with used "points" would undoubtedly reveal some surprising results since many of them were probably combination tools rather than dual use tools, which is to say that they were not merely tools with more than one kind of use but single tools with which were executed several steps-cutting, scraping, perforation in the manufacture of an artifact.

Patterns of Use

The study of pick-up tools is far from advanced enough for the definition and segregation of types, though certain clustering of attributes suggest that it may eventually be possible to recognize and categorize classes of tools that differ by function from conventional knives, scrapers and drills. It is the premise of the pick-up tool concept that the flakes, rejects, spoiled pieces and fragments recovered for use were those which intrinsically had some attribute which could be put to immediate use. In most instances this was the edge. But there are to be found in debitage and waste flakes regularly recurring combinations of edge-and-point that may well constitute a tool type apart from anything so far identified. Such a combination has already been described under the "Point Use" heading, consisting of those flakes with knife use on the long edge but with a "snag" at the end of the knife edge. In some instances this snag seems to have been created by use, with the cutting stroke being shorter than the length of the edge.

But in many instances it is obvious that the snag was present in the original shape of the flake. It would have been easy enough to snap off the snag if it had not been wanted, on the one hand and, on the other, the snag is within the run of the edge even though it changes the angle of that run and it may have made little difference in the use of the edge that it was curvilinear or slightly angled. (Plates 5 and 6)

But these uncertainties about what I think of as an "edge-stopped knife" were quieted somewhat by the discovery in a collection from Scioto County, Ohio, where the Ohio collections were made, of a bifacial edge-stopped knife. It is a prize piece, of pure white chalcedony, probably Flint Ridge, and seems almost to exemplify what an edge-stopped knife is supposed to be. The bifacial form is rare, it can be conjectured, because pick-up flakes and spoiled pieces supplied the needed specifications without effort. (Plate 14)

There is a gray area of decision about whether some of the flake scars found on pick-up tools were induced by use or deliberately struck, as touching up, to give a useful feature increased utility. In the case of scrapers and knives a minor flake or two were removed in many instances for hafting. But points in particular seem, often enough, to have been ever so slightly touched up, either to isolate them better or, perhaps, to re-sharpen or re-point them.

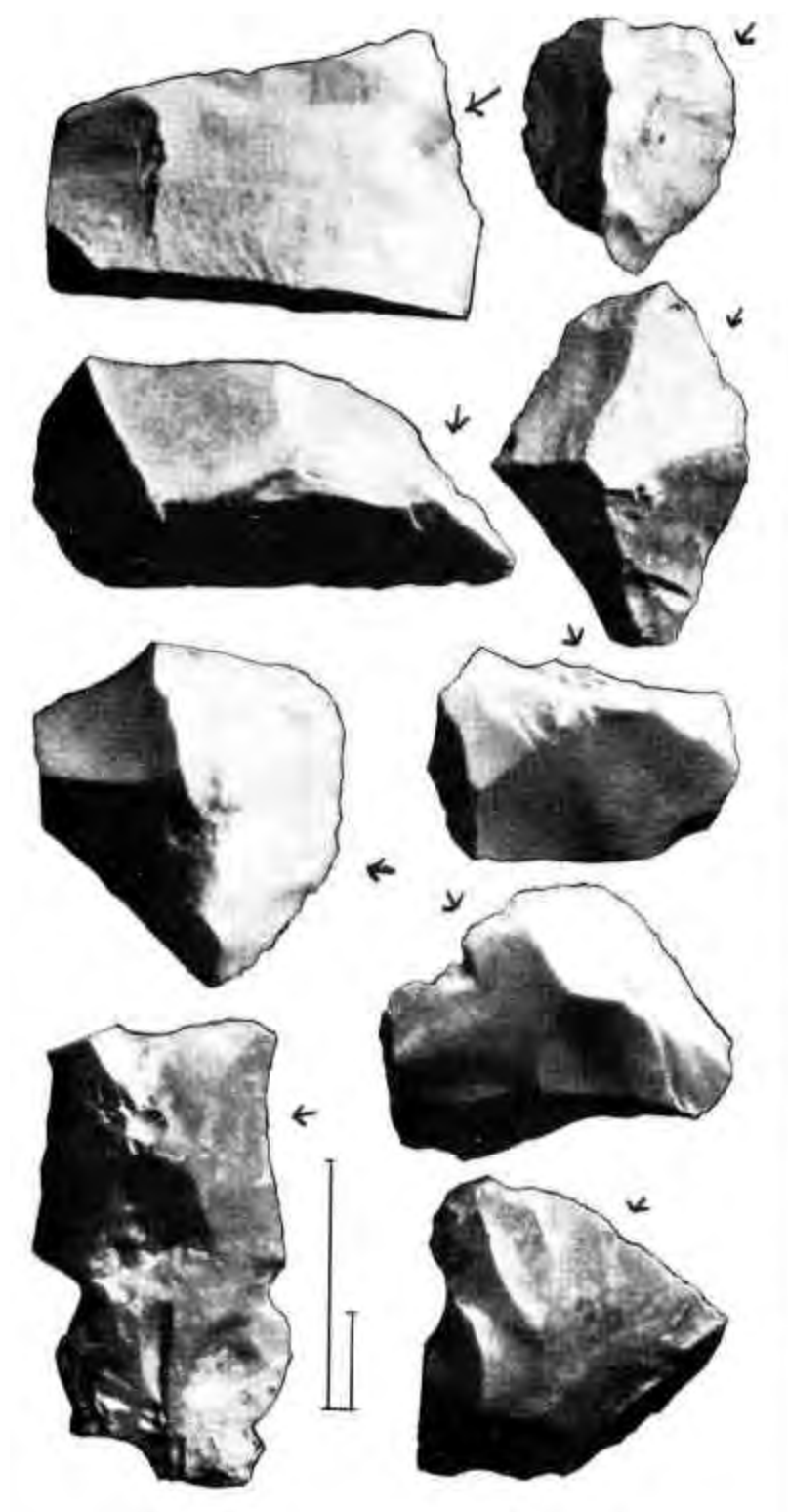


PLATE 1. Examples of flakes with pick-up tool edge use as scrapers or cutters. From the Ohio sites. Long line of scale is 1 in.; short line is 1 cm.



PLATE 2. Examples of flakes with pick-up tool edge use as scrapers or cutters. From Parham Ridge.

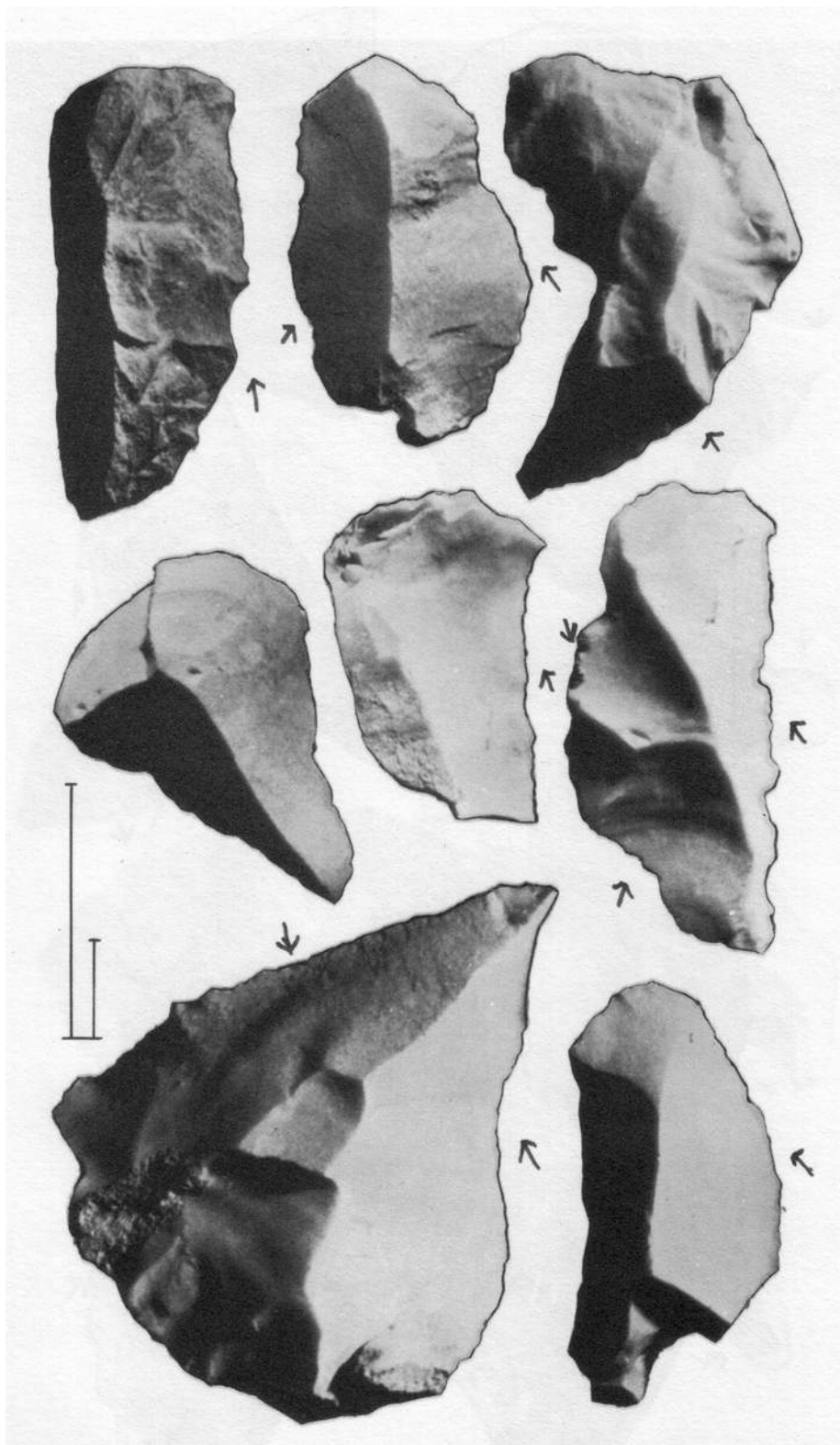


PLATE 3. Flakes showing knife edge use. From the Ohio sites.

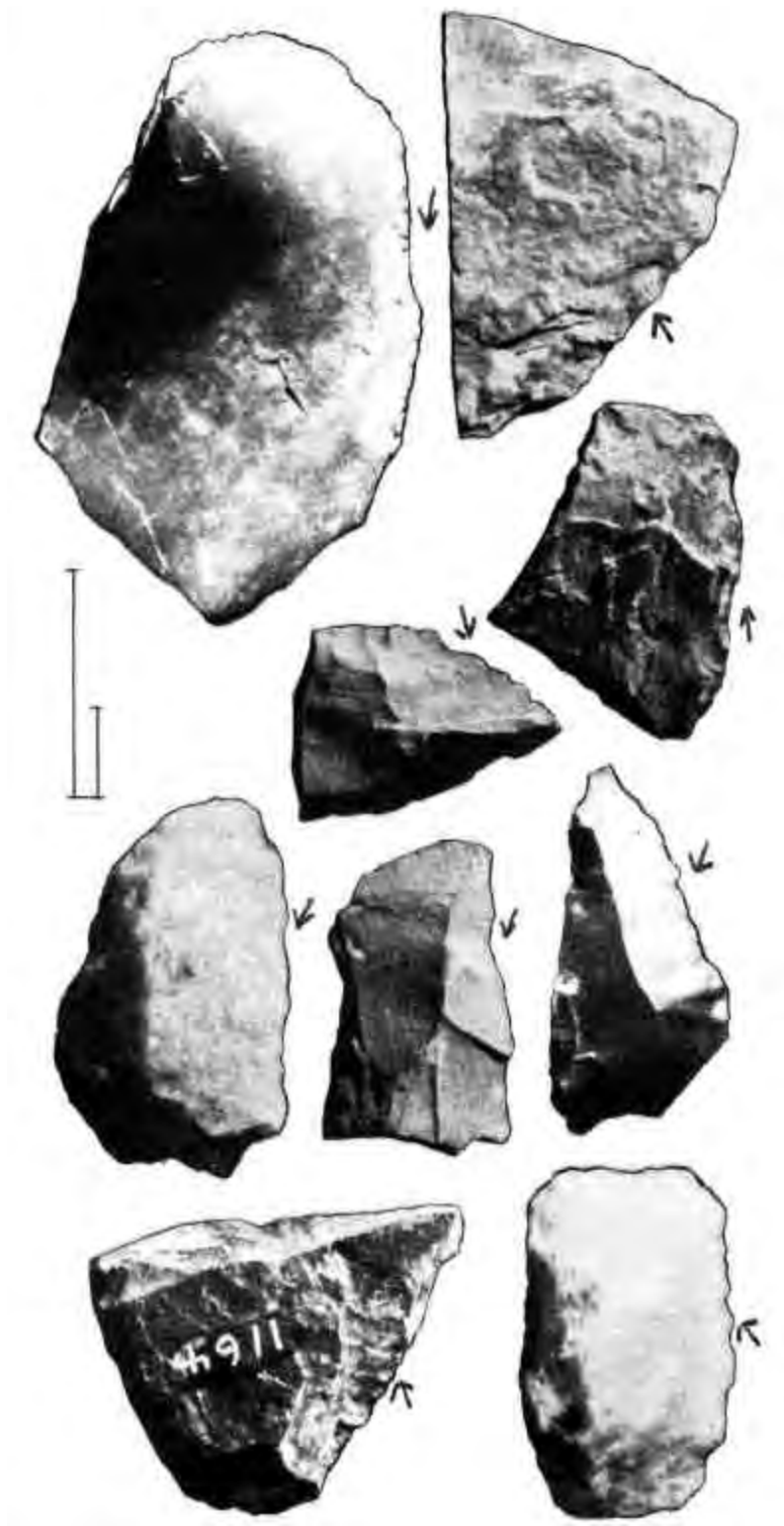


PLATE 4. Flakes showing knife edge use. From Parham Ridge.

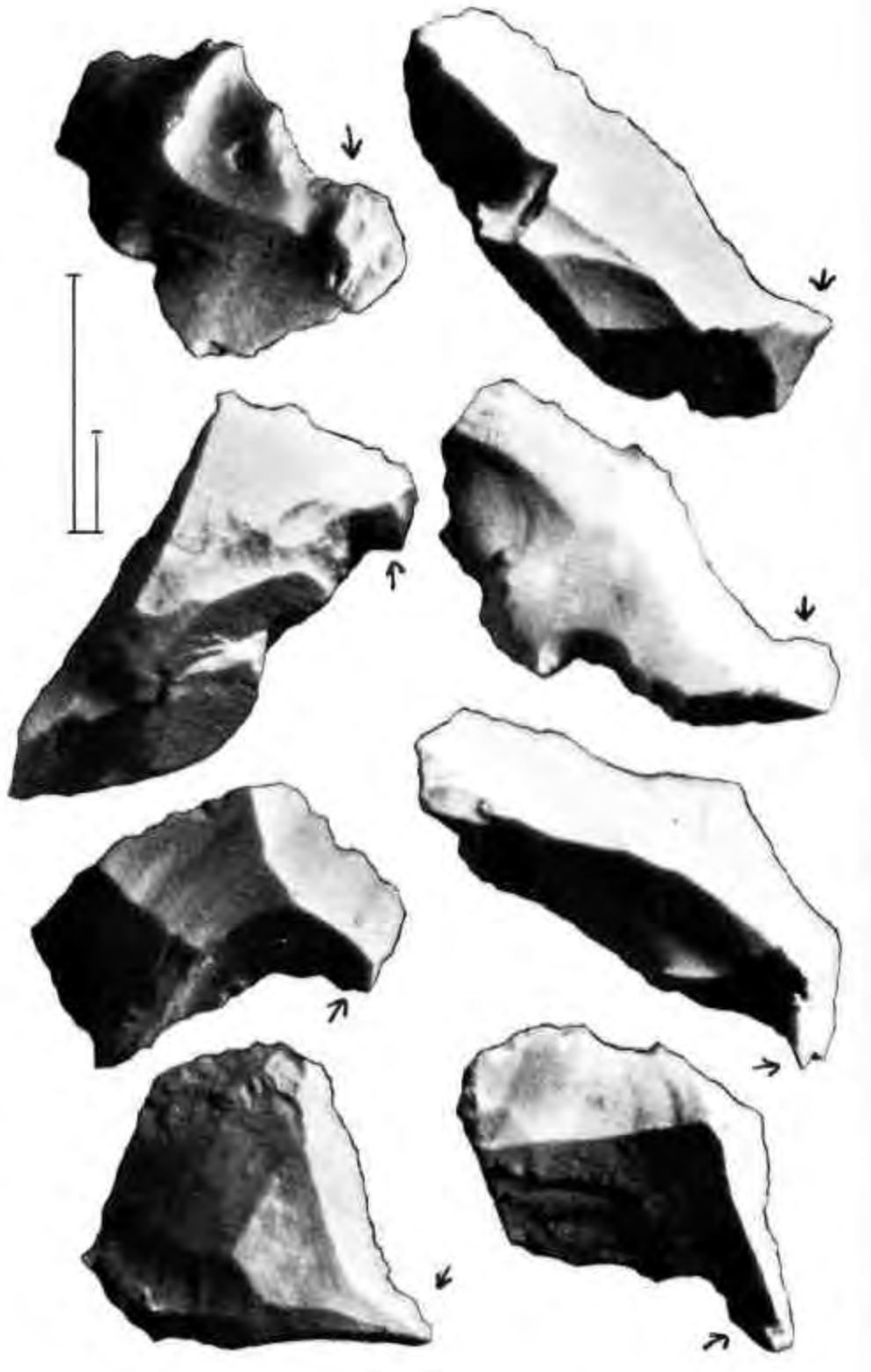


PLATE 5. "Edge-stopped" knives. Arrows designate the "stop" at the end of the run of the edge showing cutting use. From the Ohio sites.

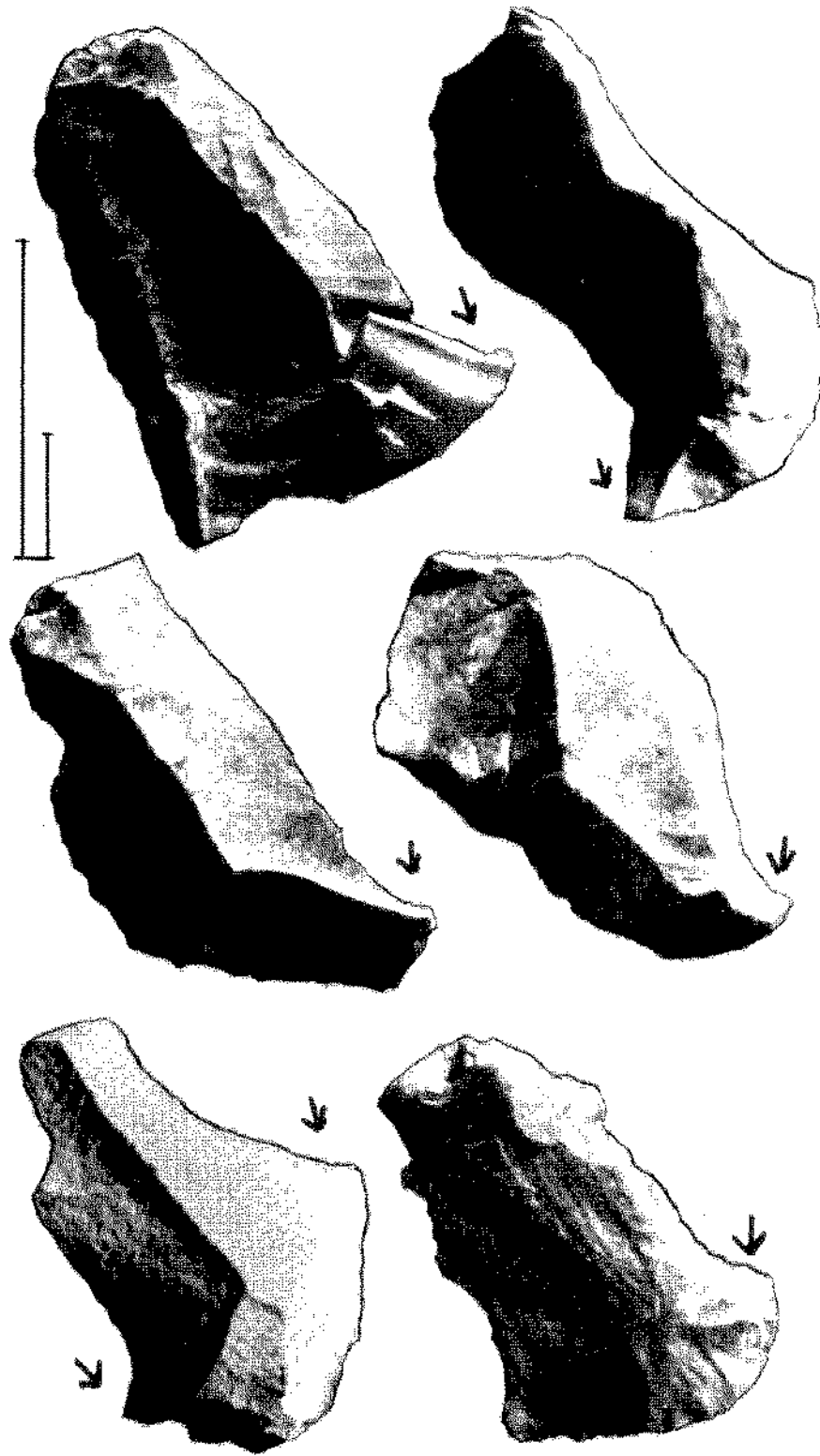


PLATE 6. "Edge-stopped" knives from Parham Ridge.

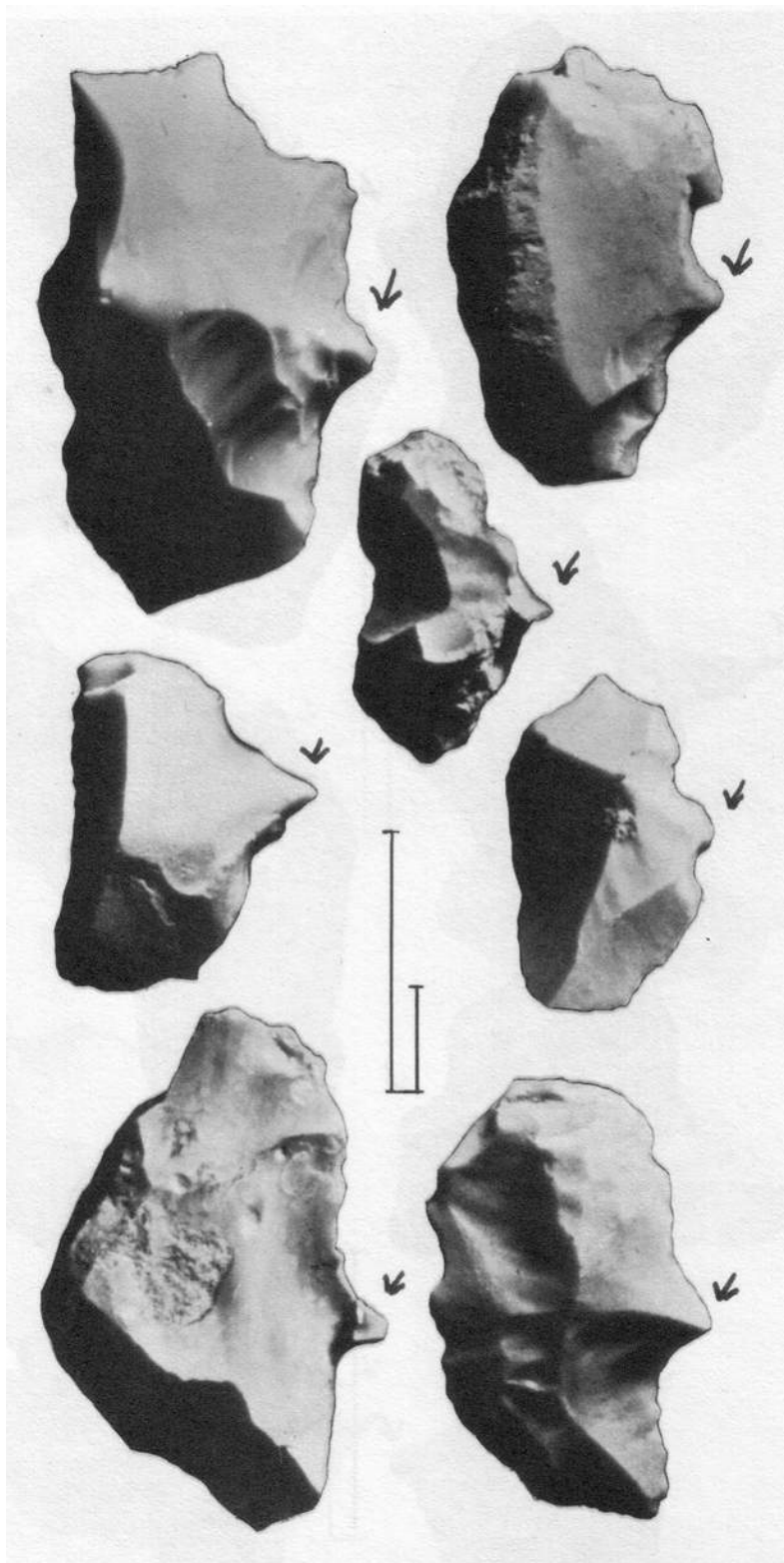


PLATE 7. "Mid-blade" tips, noses and points. All show use. From the Ohio sites.

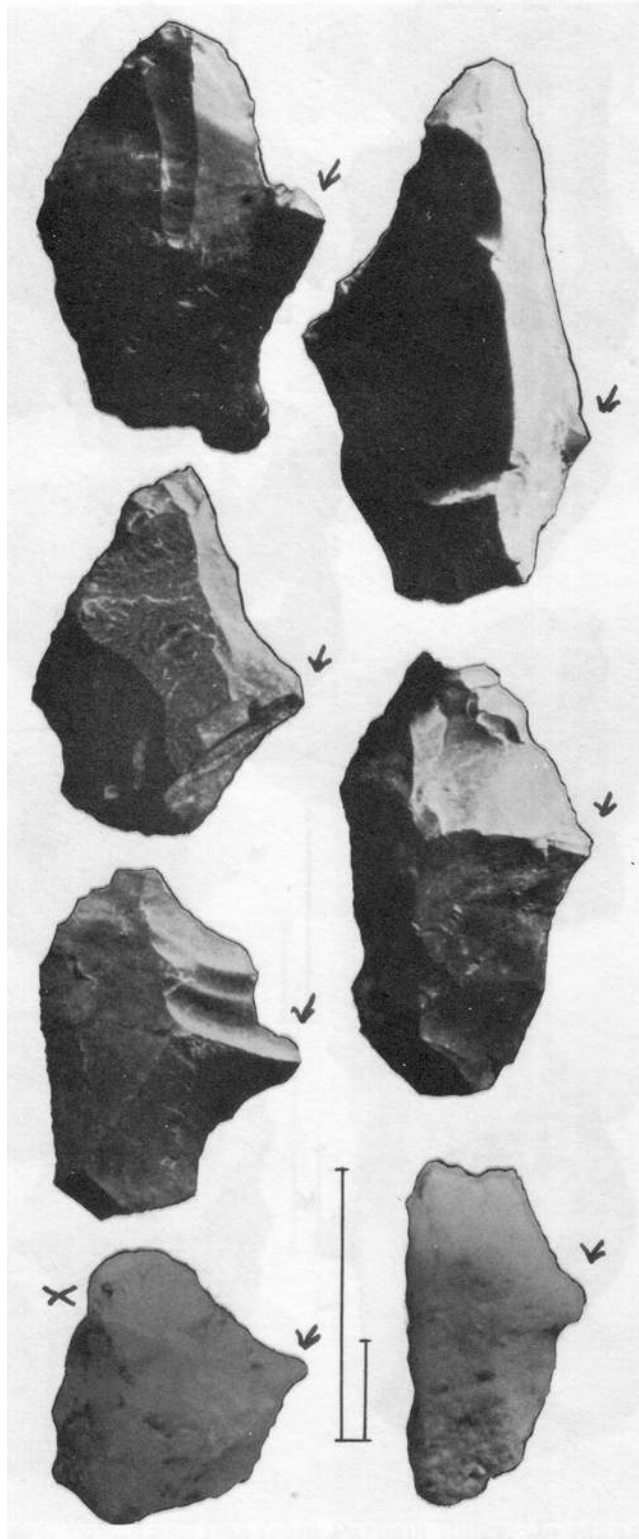


PLATE 8. "Mid-blade" noses, tips and points. From Parham Ridge.

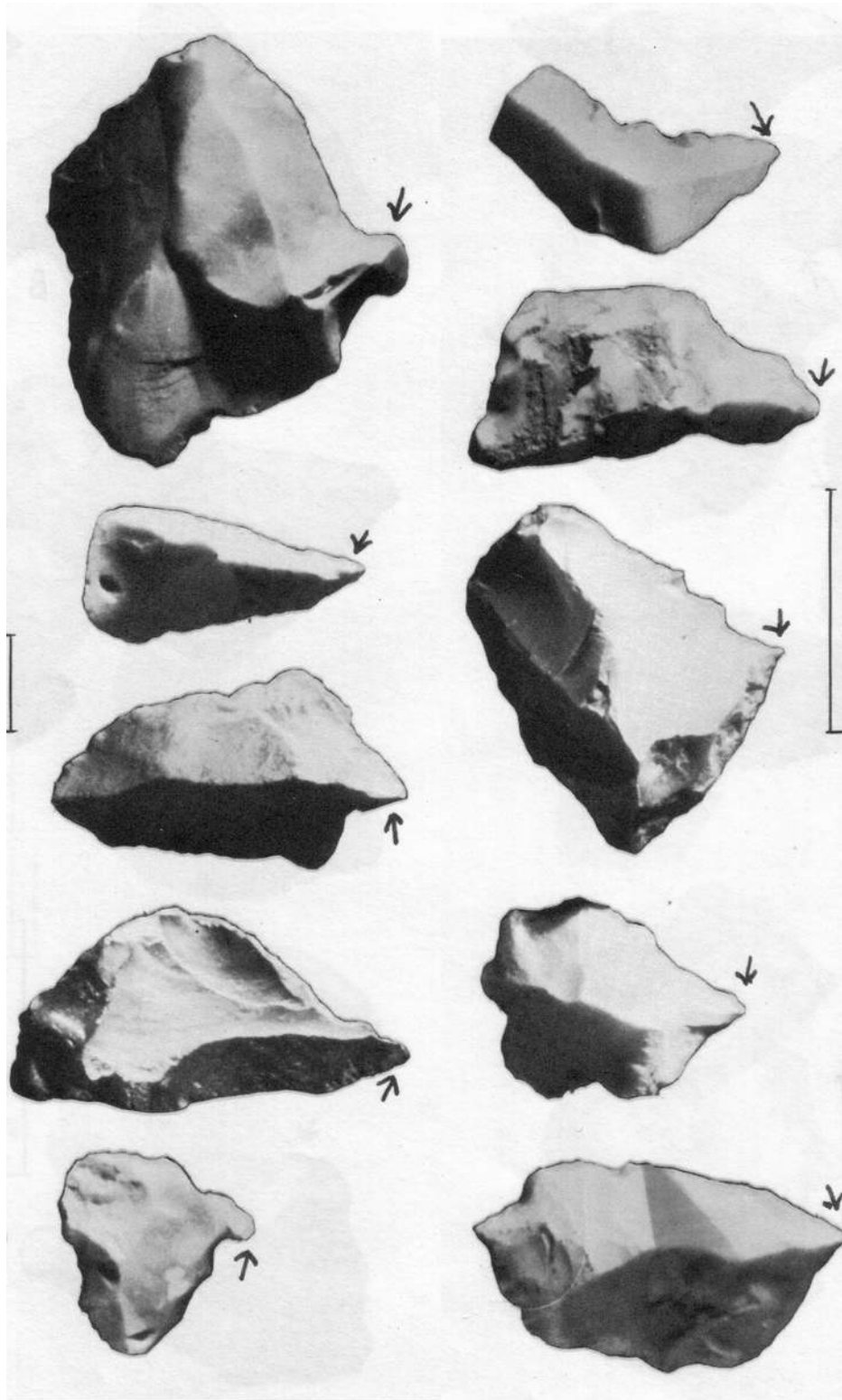


PLATE 9. Various noses, points and tips. All show evidence of use. From the Ohio sites.

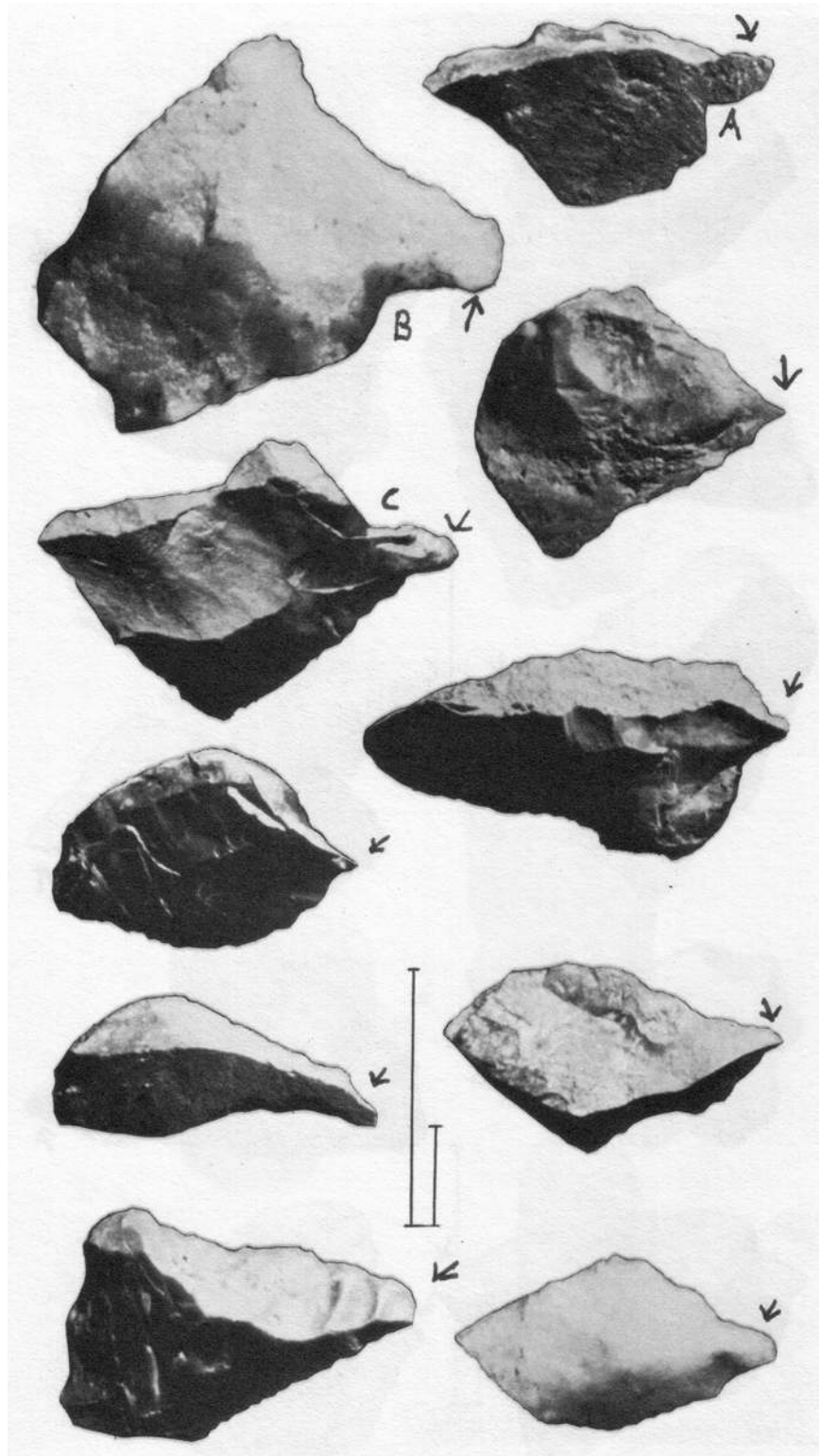


PLATE 10. Various noses, points and tips from Parham Ridge. In examples A, B and C flakes have been deliberately removed or snapped out to create the tip.

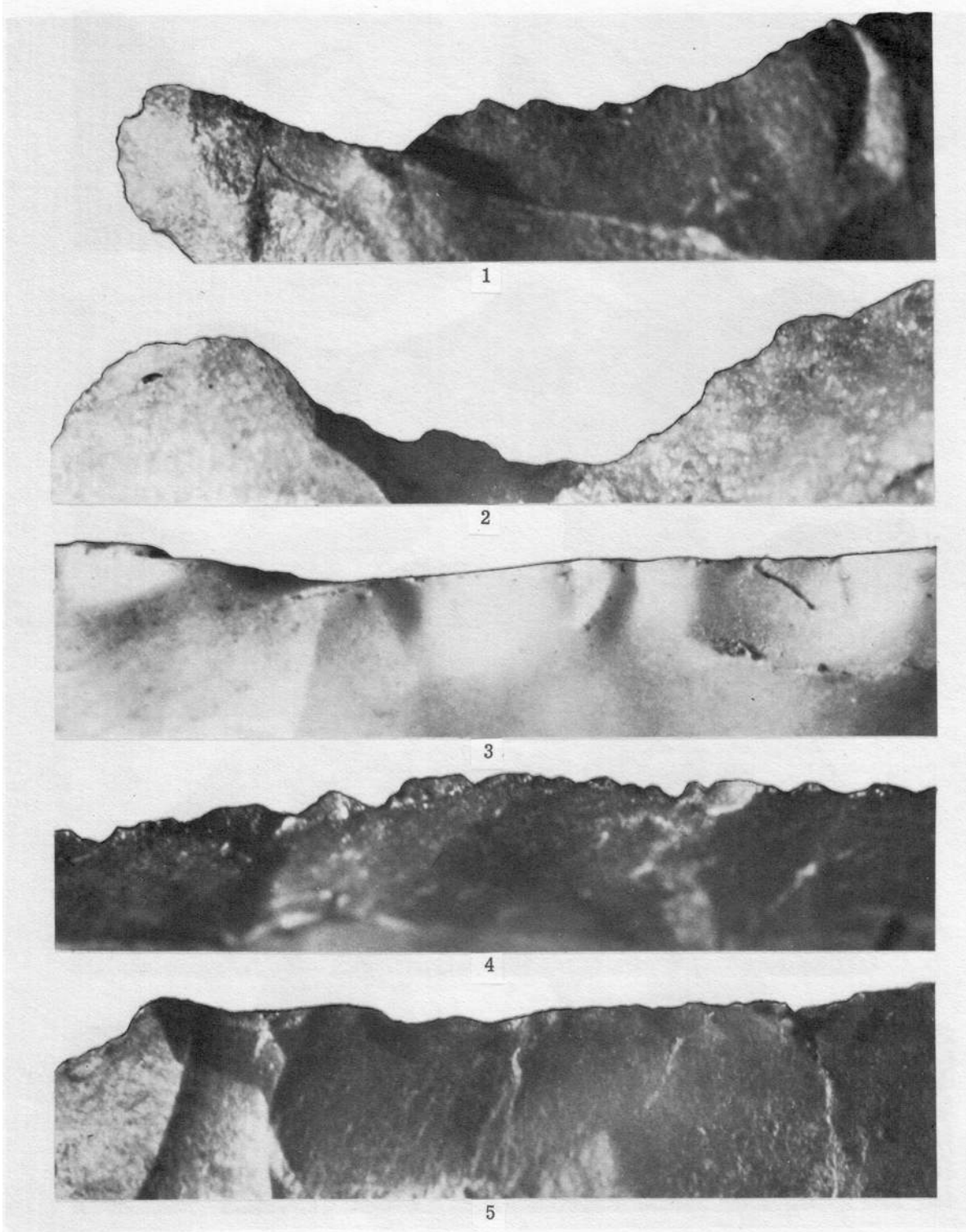


PLATE 11. Edge use on pick-up tools. Examples 1 and 2 show edges at the "stop" of edge-stopped knives. Example 3 is a scraper edge. Examples 4 and 5 are straight edge knives. Magnification about x10. From Ohio sites.

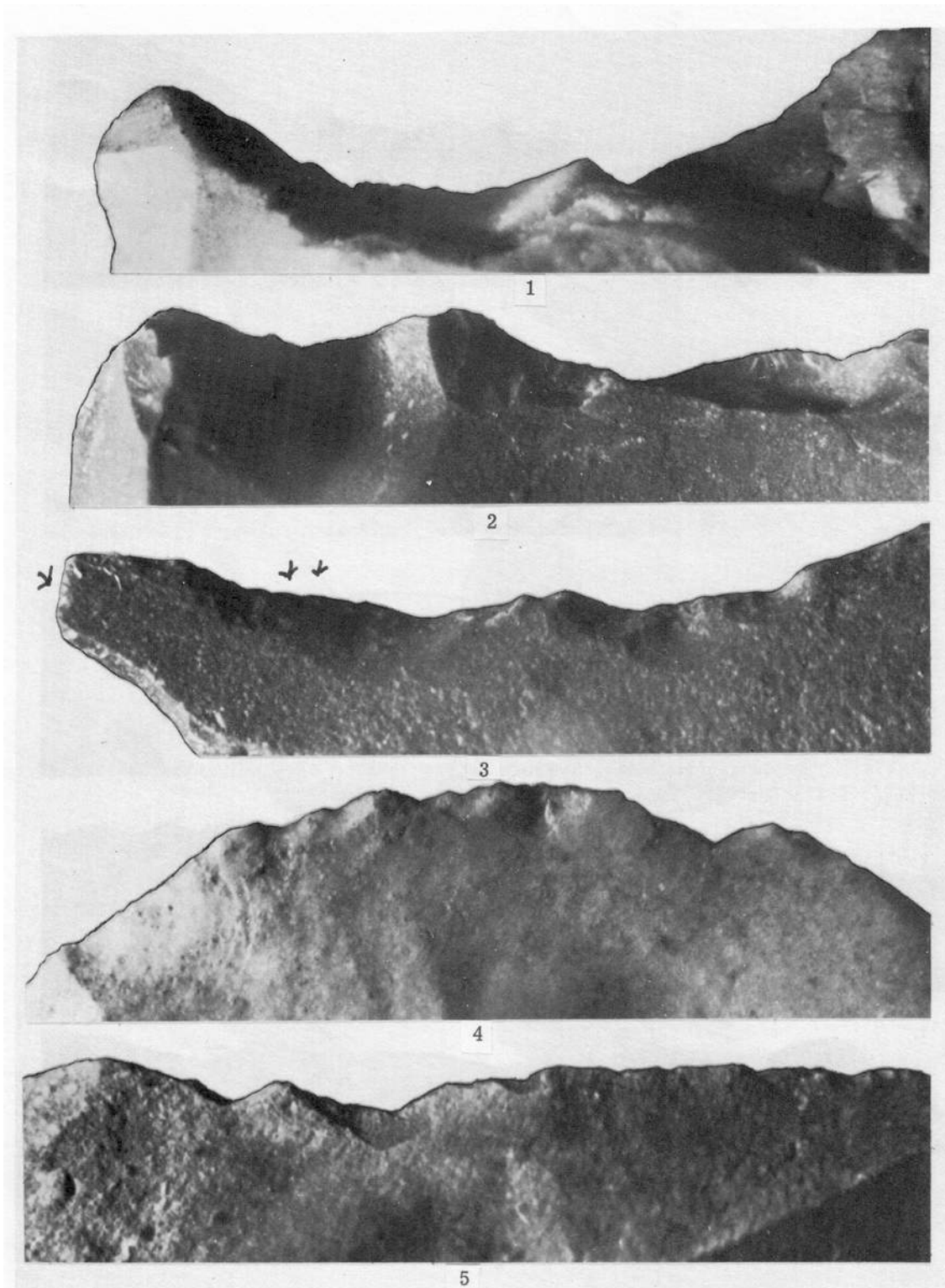


PLATE 12. Various edge uses on flakes from Parham Ridge. No. 1, a short nose at end of knife edge. No. 2, flake scarring from heavy use. No. 3, a blunt nose with scraper use on edge leading up to it. No. 4, a convex scraper. No. 5, typical straight edge knife flake scarring. Magnification about x10.



PLATE 13. Two points, magnification x10. No. 1 shows scraper use along lower edge. From Parham Ridge. No. 2 is from Ohio.

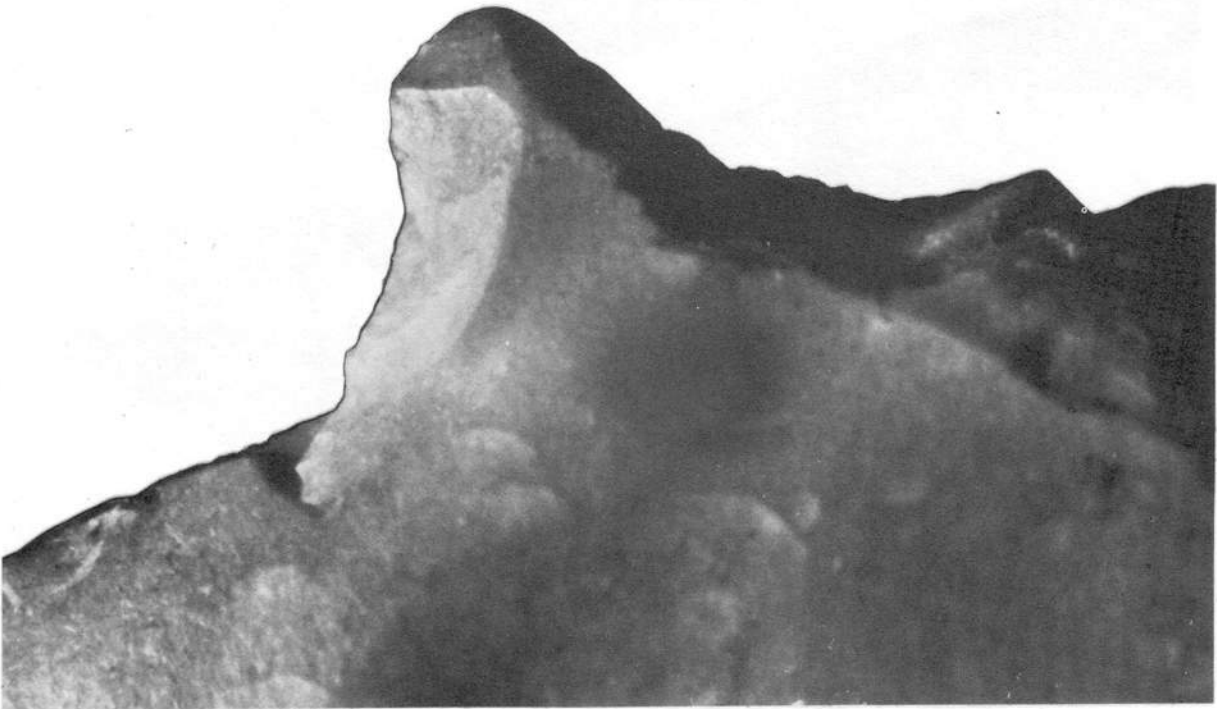
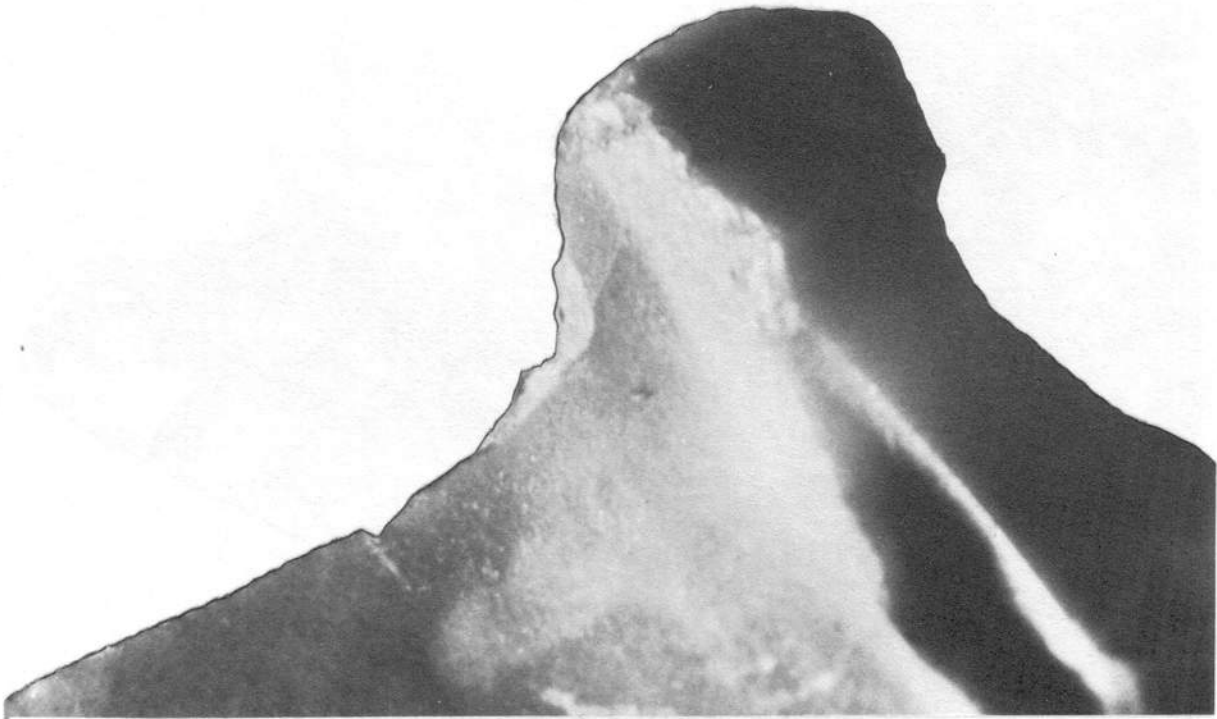


PLATE 14. Two noses, the upper from Parham Ridge, the lower from Ohio. Both have been intentionally isolated by chipping.

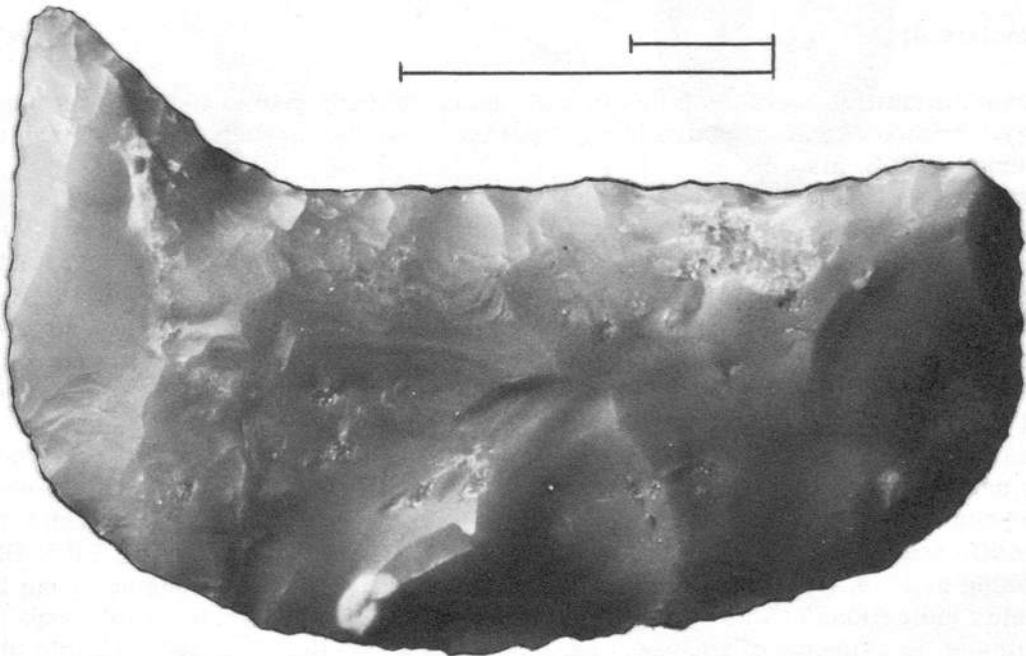


PLATE 15. Bifacial "edge-stopped" knife of white chalcedony. From Ohio.

But the clues are not salient. What a "typology" will probably come down to is the pattern of use, the kind of wear, the length and position of the wear on the edge and the angle of use.

Conclusion

Examination of the lithic scrap from three surface collections from two sites in Ohio and the assemblage from one excavated site on the Lower Hudson corroborate that about *one-third* of the pieces collected had use as tools. These pick-up tools constitute a complementary, not merely a supplementary, element in the Amerind chipped stone tool kit. As such they will require listing as tools in material culture reports, not relegated to a category of "utilized flakes." They open up a whole new area of anthropology; who used these tools, under what circumstances and for what kinds of tasks. It may be safely assumed that they were used mainly for in-camp work, since that is where they are found in abundance and hence they should provide the data for models of how work was organized and where were the activity-specific locations. Once their importance is recognized they will cause to be instigated several lines of cultural inquiry. (All photos by Dr. Harold Simmons, Briarcliff College)

References

- Brennan, L. A.
 1967 The Friendship Tradition of Stemmed Points in the Mid-Ohio Valley. *Bulletin of the Eastern States Archeological Federation* Nos. 27 & 28, Ann Arbor.
- MacNeish, Richard S.
 1970 Early Man in the Andes. *Scientific American*, April, 1971, New York.
- Semenov, S. A.
 1964 *Prehistoric Technology*. Adams & Dart, Bath, England. 1964.

SOME THOUGHTS ON THE CORTLAND COUNTY
ARCHEOLOGICAL SURVEY

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Recent antiquities legislation has brought home to many people the crisis situation in archeology. Archeological sites are being destroyed rapidly—perhaps more so than at any earlier period in U.S. history.

Nowhere has this been demonstrated to this writer more painfully than in the current archeological survey of Cortland County. Hints of the potential problems of site destruction were detected in the historic literature as early as the 1800's (Goodwin 1859; Smith 1885). Descriptions included the numerous European-American quarries in operation for flagstone, limestone, and slate, as well as salt and sand (Smith 1885: 10-13). These projects were directly associated with the blossoming settlements of Cortland, Homer, Truxton, Cuyler, etc., near and within which major tributaries of the Tioughnioga River were being modified with mills and mill races, homes, and factories.

Mention is made by these early writers of the extensive evergreen and hardwood forests, gradually being cleared by settlers for farming, despite the gravelly nature of the soils. In fact, some concern was expressed by the early writers over the rapidity with which environmental modification was occurring at that time period (Goodwin 1859; Smith 1885; Blunt 1910).

Looking at 1974, one finds acceleration of the activity. Travel along any road in the county yields indications of this variety. Highway enlargement, even if merely expanding the road shoulders, is evidence of what occurs; land fill and grading are easily visible in many areas, for example, on Cold Brook Road, north of Cortland and, in several other nearby locations, areas are being leveled for construction of trailer parks with hookups and a gravel base, and for housing developments. County planning publications reflect this activity still more clearly (*Developmental Limitations for Cortland County 1973; Route 13 Alternatives 1973; Route 13: Industrial Location Survey 1973; Matson and Beilby 1973*).

Why are these changes of such significance to the current discussion? The survey of Cortland County logically begins with an inventory of what is known or theorized about the prehistoric inhabitants of this area. A series of seven sites is recorded in the historic records for the county. These were checked out with informants and visited to determine the current condition at these locations.

By far the most impressive—qualitatively and quantitatively—site in the county appears to have been a multi-component site at the confluence of the East and West branches of the Tioughnioga River on the southeast edge of Cortland. Today, this area consists of factories, a motel, filling stations, a shopping center, railroad tracks, a large I-81 highway interchange, restaurants, an apartment complex, a housing development, and an artificial lake (Yaman Park). The latter three are situated directly on the old confluence point and a fresh water spring was diverted. The West Branch was moved; an island of earlier times is now connected with fill to the mainland; an extensive quarry dump and land fill project complete the picture of archeological site destruction.

At Marathon, south along the east shore of the Tioughnioga River, a similar situation is apparent. A large village and burial ground (of Indian origin) were reported, one mile south of Marathon Village, on the east bank of the river and on the land rising eastward from it. Here, a highway was built, shifted to another location, and then supplemented with I-81 upland and eastward. Further, quarrying and landfill projects, as well as creek diversions made necessary by the construction of I-81, and the construction of yet another artificial lake, correspond with the location of this poorly recorded portion of Indian pre-history.

North of Cortland known sites at the confluence of Cold Brook and the Tioughnioga River, the foot of Lower Little York Lake, and the foot of Song Lake, have been virtually destroyed by extensive housing and resort projects, as well as landfill efforts for swampy areas, I-81 construction, and general leveling. Evidence of the way the land once looked and our potential

record of Indian lifeways in these areas, as illustrated by Indian encampments and settlement clues, have been blurred, if not obliterated completely.

Pride in one's heritage is based in part on knowledge of this heritage. In the case of the American Indian past, there are thousands of years of poorly known activities which are tantalizingly scattered or buried, waiting to be found, studied, and endowed with at least partial life, unless they are obliterated by construction projects. If these clues are destroyed, and their contexts rubbed out, the knowledge is lost forever. Much can still be learned from the materials remaining, if these areas and their content are found and studied before they are destroyed. In Cortland County the destruction is well under way, and this has occurred despite the fact that many areas of the county are still forested and are not urbanized extensively. Locations which were desirable to Indian hunters, farmers, and travelers, have turned out to offer advantages over other areas to Euro-American inhabitants as well. Therefore, locations which have a long history since European colonizers arrived have also been those from which, in many cases, the most pre-European information has been lost.

Hopefully, this will eventually prove to be an overstatement of the Cortland County archeological picture. Surely, not all the sites have met the fate of the ones discussed here. The Summer, 1974, research has revealed more than one hundred county residents who know something about Indian prehistoric activities within the county, as well as twenty-five possible Indian site locations, and many interesting bits of Indian and early Euro-American folklore. Two sites, the Dexter Site on the West Branch of the Tioughnioga River, and the Pratt Farm Site, near the Cold Brook-Tioughnioga River confluence, were tested for possible archeological information by the SUNY-Cortland Summer Archeological Field School during the month of June, 1974.

The Dexter Site, it was hoped, would be located close enough to the site known to have been at the confluence of the East and West Branches of the Tioughnioga River, but in an area not disrupted severely by the vast changes which have occurred there. It turned out to be too far upstream on the West Branch to yield any positive archeological evidence of the site reported in early records, in data from the State Museum and Science Service, and by local collectors.

The Pratt Farm Site borders I-81 between Lower Little York Lake and the Cold Brook-Tioughnioga River confluence. Adjacent to it is an artificial pond excavated by the Department of Transportation to divert the West Branch, keeping it west of I-81. Blodgett (1952: 15-16) and others, have reported extensive deposits of Indian debris just upstream and downstream from this location, and it was hoped that the test excavations would yield an undisturbed record of the Indian use of this area.

Our six test blocks yielded 280 fragments of lithic debitage, mostly from the plow zone, but no diagnostic artifacts. Collectors, including the Pratts who owned the property, working in the cornfields just upstream, inland, and downstream, over the past twenty years, have found flint and quartz projectile points (varieties of triangular and side-notched ones), drills, hammerstones, grinding stones, scrapers, and notched stones which may have been netsinkers. The help and cooperation of all these informants have been most valuable to the project.

During the Summer 1974 excavations at the Pratt Farm Site, a fire-blackened area containing many fire-cracked rocks, approximately a ten-foot area, was visible in the cultivated field between the excavations and the foot of Lower Little York Lake. This feature was pointed out to us by a local collector who visited our excavations and who has been collecting materials from the area for many years. Many flakes and fragments of worked flint had been found both in and near the darkened soil of this apparent fire ring. Hopefully, it will be possible to explore this area.

Although much of the summer's research has been disheartening, sites such as the Pratt Farm Site have archeological potential. Also, there were several sites reported to us which may not have been destroyed yet. Some of these also have crops growing on them and will be tested, where permission from the property owners is forthcoming, after crops are harvested. Others are on the agenda for test excavation soon.

Much more information about Cortland County's Indian history is needed. Perhaps this report will yield some clues to other areas from its readers.

References

- Blodgett, Bertha E.
1952 *Stories of Cortland County*. Cortland County Historical Society. Cortland.
- Blunt, E. L.
1910 *When Folks Was Folks*. Cochrane Publishing Company. New York.
- Cortland County Planning Board
1973 *Environmental Limitations for Cortland County*. Cortland County Planning Board. Cortland.
- Goodwin, Hermann C.
1859 *Pioneer History: or, Cortland County and the Border Wars of New York from the Earliest Period to the Present Time*. A. B. Burdick, Publishers. New York.
- Matson, John and Beilby, Albert
1973 *Critique of the Draft of the Environmental Impact Statement*. Cortland County Planning Board and Citizens Advisory Committee. Cortland.
- Planning/Environmental Research Consultants
1973 *Route 13 Alternatives: An Overview*. Planning/Environmental Research Consultants. Ithaca.
1973a *Route 13: Industrial Location Survey*. Planning/Environmental Research Consultants. Ithaca.

THE SPY ROCK ROCKSHELTER

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The Spy Rock Rockshelter is located on the Ward Pound Ridge Reservation, Cross River, N.Y., in the southeast section of the park, which lies within the borders of the Town of Pound Ridge and can be located on the U.S.G.S. Pound Ridge Quadrangle. The Silva Orienteering Map (1971), available at the Trailside Nature Museum on the park, pinpoints Spy Rock just 2000 ft. southeast of the Fire Tower. The authors are grateful to Charles-E. Pound, former Commissioner of the Westchester County Department of Parks, Recreation, and Conservation, for permission to conduct research at this site. The name Spy Rock refers to the use of the rock by a vedette of Major Shelton's 2nd Regiment of Light Horse during the Revolutionary War, as a view is afforded over the hamlet of Pound Ridge. The site may be the "Sow Cave rock shelter, located about one half mile south of the fire tower" (Case, 1927, manuscript) mentioned by Leslie Verne Case in 1927 in his manuscript, "Aboriginal Westchester," now in the author's possession. Case surveyed the entire area and his sparse notes say that the Sow Cave shelter was "examined by the writer. Traces of occupation found." No verification of Case's excavations was found.

The archaeological excavation at the site was conducted between 1972 and 1973 in two stages, the first with assistance from local N.Y.S.A.A. members Joan Pace and Roberta Wingerson, and the second during an archaeological field school from Western Connecticut State College in Danbury, Conn. The rockshelter is located on the southwest side of Spy Rock, a large outcrop of Pound Ridge gneiss, a Precambrian metamorphic bedrock intruding into a northern finger of Fordham Gneiss which extends into southern Westchester and the Bronx. The summit of this rock

outcrop, accessible by a short trail north of the shelter, contains several veins of white quartz. A woodland pool, containing water until August, is just opposite the shelter. A stream runs all year a quarter of a mile north of the shelter, and a large swamp, which is the main source of the Stone Hill River, is to the east and north of Spy Rock. Chestnut oak, mountain laurel, sassafras, and some tulip trees form the dominant flora, though several white pines grow on the top of Spy Rock above the shelter. The immediate area surrounding the swamp is a remote section of the park noted for its abundant population of white-tailed deer and ruffed grouse.

The known area of aboriginal occupation embraces 18 five-foot squares, some 12 of which fall within the shelter drip line. The shelter is some 30 ft. wide and varies from 3 to 10 ft. in depth, the height being 9' 8" at the highest point. The exposed west-facing aspect of the shelter is protected from prevailing northwest winds by a rock cliff 250 ft. to the west across the woodland pool, and by the dense cover of mountain laurel. The percentage of artifacts found in the squares dwindled considerably as one worked outside the drip line. The underside of the shelter was markedly blackened in locations corresponding to the main hearth features, both of which appeared under a humus level.

Stratigraphy

Several factors make the subject of stratigraphy a difficult one at Spy Rock Shelter, as with many such sites in the Northeast. Two strata were distinguished: Stratum I, a dark humus layer, and Stratum II, a red-orange mineral soil layer. Stratum I varied between 1 and 6 in. in depth and Stratum II varied between 8 and 31 in. in depth. The surface was covered with a 13 to 18 in. layer of leaf litter and duff. Heavy rockfall (numerous rocks were removed during excavation), an uneven bedrock floor and root intrusion from sassafras, laurel and chestnut oak were among the factors complicating a clear stratigraphic profile. Flood action from the woodland pool, pockets of rotting Pound Ridge gneiss fallen from the shelter wall, and small mammal burrows also contributed to a confusing picture. A datum point was established, but its significance often questioned as the stratigraphic profile revealed itself, and artifacts were recorded in relation to their position beneath the surface as well as below datum, though even these below surface readings do not solve the problem of recording a situation of this character, as the surface level varied and the soil profiles were erratic. Pockets of soil in nooks and crannies in different levels of the back wall of the shelter could not be fairly related to the datum point or the general lay of the two strata.

Artifacts

Some 63 artifacts were identified at Spy Rock Shelter of which 40 were made of white quartz, 8 were of flint, 5 were of slate, 7 were of quartzite, 2 of sandstone, and 1 of Pound Ridge gneiss. The inventory included 9 projectile points, 8 scrapers, 7 knives, 6 large quartz choppers, 1 chopper of local gneiss, one abrader of sandstone, 1 plane (Brennan, personal communication), 2 stemmed combination tools (Brennan, personal communication), and 2 hammerstones. Only one tiny incised rimsherd of a pot was found. Included in the debitage are 206 quartz flakes, 12 flint flakes (10 Deepkill and 2 of light grey flint). Small amounts of charcoal and small calcined bone fragments, possibly avian, were recovered. Two heat-cracked pebbles were recovered. Several pieces of glass and wire were found near the surface.

Six styles of projectile points were found. Two Levanna points, one of brown jasper and the other of white quartz were found between 2 and 3 in. beneath the surface in Stratum I. A possible Snook Kill point of quartz was found 3.5 in. in Stratum I. An untyped broad-stemmed point of red slate was found at 4 in. in Stratum II. Two thick Brewerton-type side notched points, one of black chert and the other of quartz, were found between 5 and 6 in. in Stratum II, as were two broad-stemmed points of almost equal size that fall late within Brennan's Taconic Tradition (Brennan, 1967) and within Ritchie's Wading River type (Ritchie, revised 1971). One narrow-bladed stemmed point of black chert, found 1 in. beneath the surface in Stratum II where a thin humus layer existed, may be typologically the oldest point. The provenience of these

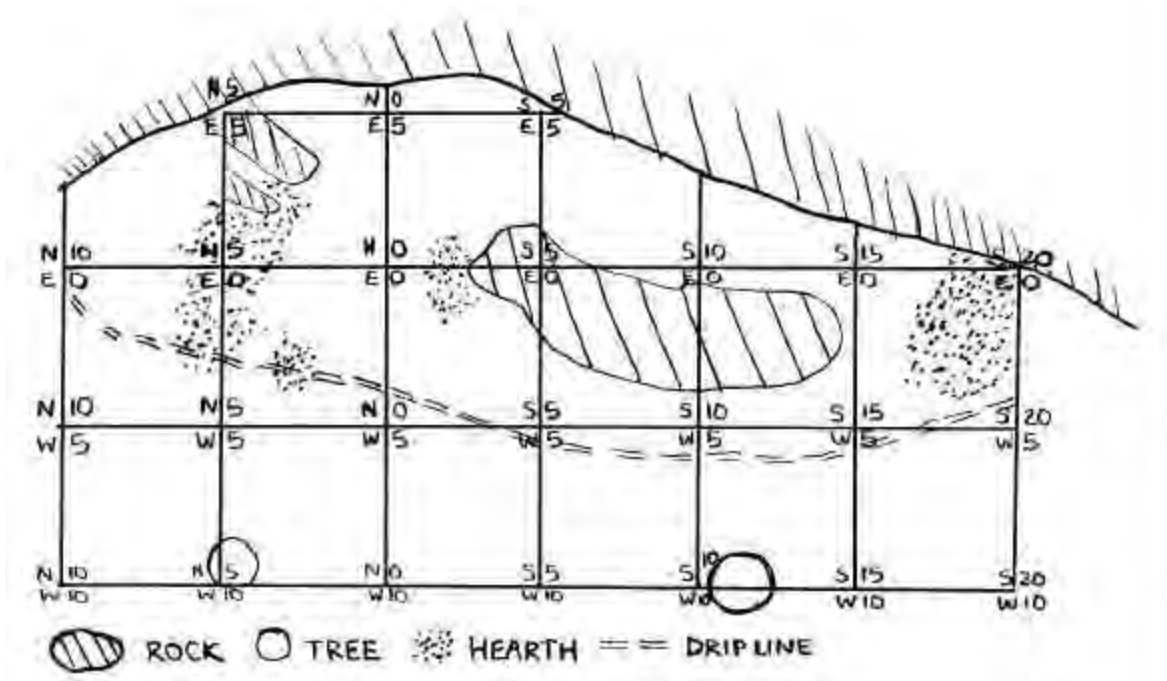


Fig. 1. Spy Rock Grid

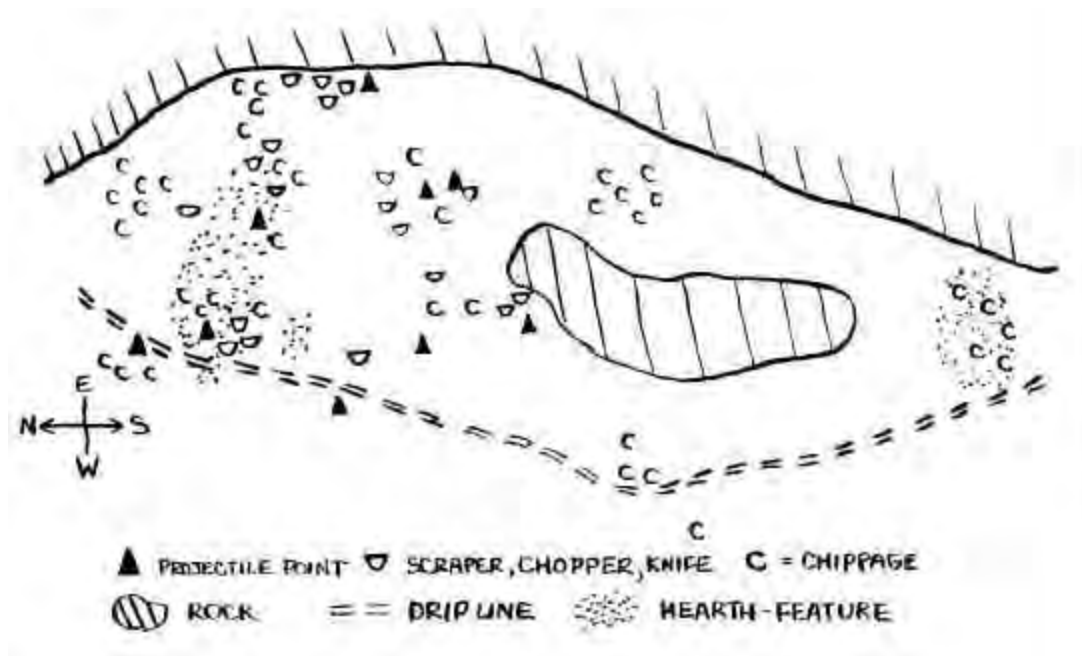


Fig. 2. Artifact distribution

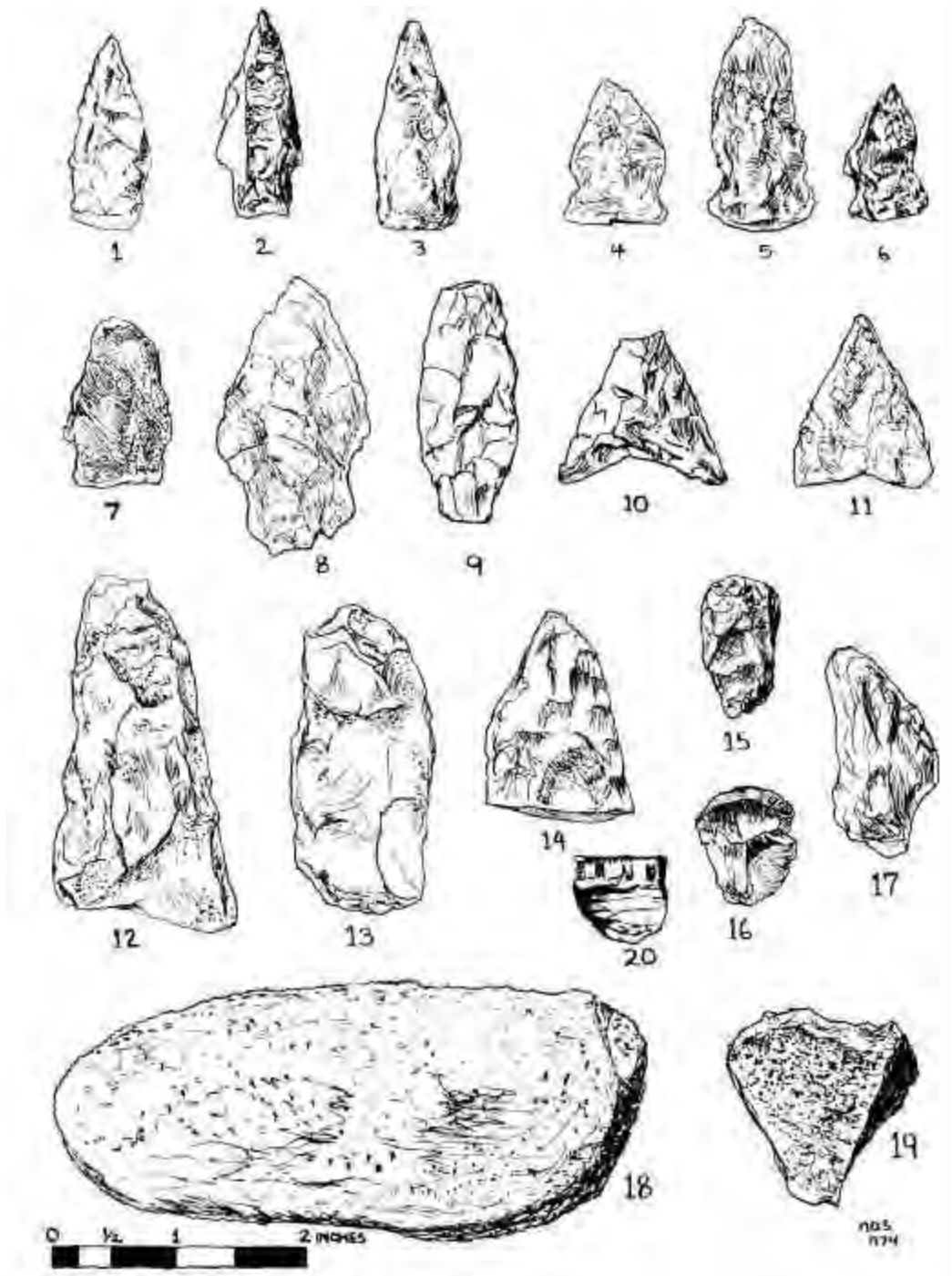


Fig. 3. *Spy Rock Artifacts*: 1 Wading River type point (quartz) point; 2 Narrow stemmed point (chert); 3 Wading River type point (quartzite); 4 Brewerton-type point (quartz); 5 combination tool with base as scraper (quartz); 6 Brewerton-type point (chert); 7 Broad-stemmed point (red slate); 8 possible Snook Kill point (quartz); 9 combination tool; 10 Levanna point (brown jasper); 11 Levanna point (quartz); 12,13 slate knives; 14 scraper (Deepkill flint); 15,16 scrapers (Deepkill); 17 knife (quartz); 18 abrader (sandstone); 19 scraper (quartzite); 20 incised rimsherd.

points is described in detail in order to illustrate that, despite a complicated stratigraphic picture, the sequence of cultures ascertainable from the projectile points is not totally awry. Scrapers were found at all levels and two were found as deep as 17 in. beneath the surface. Knives were found at all levels. Large choppers, distinguished at this site and not common to other known sites in the area, were found in the upper level of Stratum I. An unusual pitted and pecked sandstone artifact, identified as a grooved axe blank, was found at 4 in. in Stratum I.

Features

Two large hearth features were found beneath Stratum I, one at each end of the shelter. Corresponding smoke blackening of the shelter roof was evident over both features. The hearths contained mostly ash with little charcoal, mixed with small fragments of bone, debitage, and several artifacts. Another small ash-charcoal area was also found near the center of the shelter. All hearths were within the drip line. The hearth on the north end of the shelter held the most debitage and was a focal point of artifact distribution. Scattered small sections of charcoal and bone were found throughout the shelter.

Conclusion

The inventory and paucity of artifacts from the Spy Rock Shelter leads to the conclusion that it was an occasional hunting camp within a game-rich area resorted to by a sequence of Archaic and Woodland cultures. Projectile points for killing the game and scrapers, knives, and choppers for processing the hide and flesh dominated the site. Though no deer bones were found, the tool inventory implies that this was the major game animal as well as the fact that this species is still abundant in the area today. The lone rimsherd and paucity of heat-cracked rock imply the roasting of fresh meat at the hearths. The lack of mullers, pestles, and pottery sherds imply a hunters camp without the plant processing activities practiced by females at camps inhabited by larger bands. The quartz and flint debitage imply the manufacture of tools, using mostly local white quartz. Narrow-stemmed points of the small stemmed point tradition abound along the coast, some fifteen miles away, and it is fair to conclude the Spy Rock was an inland hunting camp readily accessible a day's walk from the coast.

A date of 4120 B.P. \pm 190 C-14 years for narrow stemmed points was received this year from Geochron at the Athena site (28SFD1-2) some two miles east on the shores of Lake Kitchawan in Pound Ridge. It is possible that hunting camps were not the only type of site used inland and a further survey of sites relating to this culture in the area may serve to distinguish further the seasonal round of activities. Clearly, the information available from Spy Rock is only one aspect of a broader cultural total.

Quite a number of rock shelters in inland Westchester were excavated in the early part of this century in a manner leaving us little information for comparison (Harrington, 1909. Case, 1927 manuscript). Though several shelters on the Ward Pound Ridge Reservation were vandalized by pothunters in the past, the remoteness of this site preserved it for what the authors hope is a modest but helpful contribution toward our understanding of the early occupation of southern New York.

References

- Brennan, Louis A.
 1967 The Taconic Tradition and the Coe Axiom. *New York State Archaeological Bulletin* No. 39. Rochester.
- Case, Leslie Verne
 1927 *Aboriginal Westchester*, Manuscript.
- Harrington, M. R.
 1908 *Rock Shelters of Armonk, New York. I, The Indians of greater New York and the lower Hudson*, edited by Clark Wissler. Anthropological Papers of the American Museum of Natural History, Vol. III, pp. 125-38. New York.
- Ritchie, William A.
 1971 *A Typology and Nomenclature for New York Projectile Points*. New York State Museum and Science Service, Bulletin No. 384. Albany. 1961.

PROGRAM—ANNUAL MEETING

Welcome and Announcements, O. P. Schuessler,
President Chenango Chapter

Saturday, April 19

Morning Session—Chairman, Dr. Peter Pratt, Beauchamp Chapter,
Chenango Chapter

- 9:00 A.M. *Conservation Archaeology, Problems and Potential*,
Dr. Bert Salwen, Thomas King, New York Archaeological
Council
- 9:30 A.M. *A Pictorial Tradition of the Longhouse—Results of a
Research Project on the Paintings of Ernest Smith—
Seneca Artist*,
Charles F. Hayes III, Morgan Chapter, Rochester
Museum
- 10:00 A.M. *Progress Report on Investigations at Mt. Sinai Harbor,
Suffolk County*,
Edward Johannemann Jr., Inc. Long Island Chapter
- 10:30 A.M. *The Dwindle Stem Declension*,
Louis A. Brennan, Metropolitan Chapter, Editor, NYSAA
- 11:00 A.M. *Some Observations on Iroquois Pottery*,
Dr. Bill Engelbrecht, Houghton Chapter, Buffalo State
College

Afternoon Session—Chairman, Dr. Bruce Rippeteau, Inc., Upper
Susquehanna Chapter

- 1:00 P.M. *Typologies for Pits, An Ethnoarcheological Project*,
Marilyn C. Stewart, Triple Cities Chapter, Chenango
Chapter
- 1:30 P.M. *SUNY Cortland's First Two Archeological Field
Schools: Preservation Archeology in Action*,
Dr. Ellis McDowell, Department of Sociology-
Anthropology, SUNY Cortland
- 2:00 P.M. *The Upper Susquehanna: Project 1974 Field Season*,
Dr. Robert E. Funk, Van Epps-Hartley Chapter, State
Archaeologist
- 2:30 P.M. *Lamoha Hearths, An Analytical Study*,
Helen Gutierrez, Upper Susquehanna Chapter, Inc.

- 2:45 P.M. *Recent Upper-Susquehanna Chapter Inc.
Excavations*,
Pamela Augustine, Upper Susquehanna Chapter,
Inc.
- 3:00 P.M. *The Miller Site, An Amateur Project*,
Theodore Whitney, Chenango Chapter
- 3:30 P.M. *The Mor-Nar Site, A Multicomponent Fishing
Camp*,
Dr. Richard E. Hoshach, Chenango Chapter
- 4:00 P.M. *Summary of Upper Susquehanna Drainage Reports*,
Dr. Bruce Rippeteau, Upper Susquehanna Chapter,
Inc.
- 5:30 P.M. Social Hour—Chenango Inn
- 6:30 P.M. Banquet: Address—*Excavation at Meadowcroft
Rockshelter 1973-1974: A Progress Report*,
Dr. James M. Adovasio, Director, Archaeological
Research Program, University of Pittsburgh

Sunday, April 20

Morning Session—Chairman, Dolores Elliott, Triple Cities
Chapter

- 9:30 A.M. *Progress in Highway Archeology*,
Dr. Marian E. White, Houghton Chapter, SUNY at
Buffalo
- 10:00 A.M. *Wadsworth Fort, an Iroquois Village on the
National Register of Historic Places*,
Neal L. Trubowitz, Houghton Chapter, SUNY at
Buffalo
- 10:30 A.M. *The Stratified Locus at the Zawatski Site*,
Kathleen Miller, Houghton Chapter, SUNY at
Buffalo
- 11:00 A.M. *The Lachawson Occupation in the Upper-
Delaware Valley: A Cross Site Comparison*,
Dr. Elizabeth Dumont, Inc. Orange County
Chapter

AWARDS COMMITTEE-1975

Awards and Fellowship Committee chairman Theodore Whitney announced the following honors and awards at the NYSAA annual meeting in Norwich.

Fellow

BRUCE RIPPETEAU, Upper Susquehanna Chapter, Major publication: "The Principle and Theory of Radiocarbon Chronology and a Radiocarbon Chronology for Lithic Variation in NE United States 3000 to 500 B.C." Twenty published pieces were cited in the nomination submitted to the Committee, including contributions to the NYSAA Bulletin, Man in the Northeast, American Antiquity, Archaeology of Eastern North America and The Pennsylvania Archaeologist.

Certificate of Merit

MONTE BENNETT, Chenango Chapter. Cited in the nomination submission were five papers published in the Chenango Chapter Bulletin between 1968 and 1974. These reported work done on four sites.

ELIZABETH DUMONT, Orange County Chapter Inc., president, NYSAA. Cited in the nomination were reports on the Sugar Loaf mastodon and the Rocklein site.

LEWIS DUMONT, Orange County Chapter Inc. Cited in the nomination was work on the Rocklein site, Harry's Farm, Miller Field, Pine Ridge and the Sugar Loaf mastodon.

DR. RICHARD E. HOSBACH, Chenango Chapter. Cited in the nomination was the report on the Mor-Nor site in the Chenango Chapter Bulletin and a work in manuscript "Iroquois Indian Medicines: An Analysis of the Plants Used."

MARJORIE PRATT, Beauchamp and Chenango Chapters. Cited in the nomination were four papers delivered to NYSAA annual meetings and other miscellaneous reports, including work done on San Salvador, West Indies.

HENRY WEMPLE, Chenango Chapter. Cited in the nomination were three papers which appeared in the Chenango Chapter "Bulletin," and special work on the spectroscopic analysis of Iroquois trade beads.
Meritorious Service

HOWARD CHAMBERLIN, Upper Susquehanna Chapter. Cited for outstanding service to his chapter.

LINDA R. AWLEIGH, Rochester Museum. Cited for service far beyond the call of duty in handling NYSAA publications and other secretarial and administrative chores.

CHLOE ZEMEK, Triple Cities Chapter. Cited for outstanding service in cataloguing thousands of artifacts from the Englebert, Comfort and Winkelman sites.

BOOK NOTES

Within the past five years the Upper Delaware Valley has become one of the best investigated and reported archaeological regions in the East, due to the work of Herbert Kraft of Seton Hall University and W. Fred Kinsey of Franklin and Marshall College in the Tocks Island Reservoir basin. Kraft was first in print with a major report of 1970, *The Miller Field Site, Warren County, N.J., The Archaic and Transitional Stages*. There followed, in 1972, the hard cover, very substantial volume, *Archaeology in the Upper Delaware Valley*, edited by Kinsey and comprised of contributions by him, Kraft, Patricia Marciando and David Werner. Now come, in the first half of 1975, Kraft's *The Archaeology of the Tocks Island Area*, published by The Archaeological Research Center, Seton Hall University, South Orange, New Jersey, Kinsey's doctoral dissertation adapted for monograph publication, as a number of the Pennsylvania Archaeologist, entitled *Faucett and Byram Sites: Chronology and Settlement in the Delaware Valley*; and the hard cover *A Delaware Indian Symposium*, edited by Kraft and published by the Pennsylvania Historical and Museum Commission, Harrisburg, as No. 4 in its Anthropological Series.

The Kraft Tocks Island study is broad-dimensional, summarizing the whole sequence, as now known, of the Upper Delaware from Paleo-hunter times. But two-thirds of the book, about 100 pages, is devoted to the Late Woodland, for which Kraft has done a sort of overhaul of the ceramics, the first such overhaul or re-vamping or re-evaluation, since the establishment of the basic canon by Ritchie and MacNeish more than a generation ago. It is the section on Late Woodland ceramics which is the principal contribution of the study to the advancement of understanding of the Late Woodland horizon as a regional manifestation. Without tampering with the names of types of ceramics already defined, Kraft has re-aligned and re-interpreted them to achieve new and probably permanent effects on the analysis of pottery as a culture-change index. One hesitates to be specific about the innovations Kraft has introduced. Based on a great deal of new material from a 1974 re-excavation of the Bell-Philhower site, excavated by Ritchie and others over the years, his analysis justifies these new ideas which will henceforth have to be taken into account in all reports on the Middle and Late Woodland in the Northeast. The Tocks Island report belongs in the library of every serious student of the Northeast. The price is \$7. Write Prof. Kraft at Seton Hall University.

The title of Kinsey's Pennsylvania Archaeologist monograph speaks for itself. It is an in-depth report and analysis of two productive sites which afforded high yields of materials from the Late Archaic and Early Woodland. (Significantly neither Kinsey nor Kraft found more than traces of Early and Middle Archaic along the Delaware.) Greatly fleshed out are the narrow-bladed stemmed point, the broadspear and the two phases of the fishtail tradition, and the rather amorphous Bushkill complex of Early Woodland times. The report is notable for some new (to most of us) analytic approaches. It deserves careful attention.

A Delaware Indian Symposium is a miscellany, the published papers read at a conference on the Delaware Indians held at Seton Hall and graced by the presence of Nora Thompson Dean, a full-blooded, Delaware-speaking Lenape. It may not have something in it for everybody, but it does initiate a library on the Lenape to which, it is hoped much will be added. The price is \$3 for the paper cover edition, \$4.50 for the hard cover.

A book with direct bearing on New York prehistory, for which the editor has been unsuccessfully seeking a reviewer for some time, is Edward Rutsch's *Smoking Technology of the Aborigines of the Iroquois Area of New York State*, published by the Fairleigh Dickinson University Press, Madison, New Jersey. At \$12, this hard cover may be somewhat over the budget of most of us, but Rutsch does achieve his intention of constructing a "meaningful and analytically useful typology" of pipes. Fully illustrated (though the plate reproductions are not the best, it is a fascinating book. The editor would still like a volunteer to review it.

Those who have been wondering what happened to *Aboriginal Settlement Patterns in the Northeast* by Drs. Ritchie and Funk, former and current state archaeologists, should know that it will be reviewed in a forthcoming issue by Dr. Peter Pratt.

L. A. B.