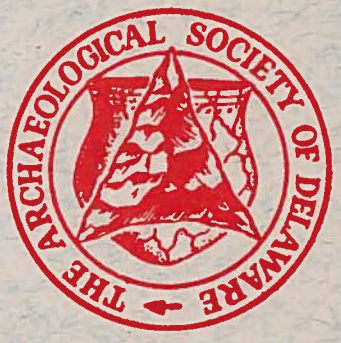
Delaware Archaeological Board

Bulletin of the Archaeological Society of Delaware



Number Two, New Series *Fall, 1962*

DELAWARE ARCHAEOLOGICAL BOARD
Kirk Building, 17 The Green
Dover, Delaware 19901

Bulletin of the Archaeological Society of Delaware

Number Two, New Series *Fall, 1962*

Officers Of The

Archaeological Society Of Delaware

1962 - 1964

President	John L. Ludlow
First Vice-President	John Swientochowski
Second Vice-President	Allen G. Schiek
Third Vice-President	James B. Akerman
Recording Secretary	Norman Nielsen
Corresponding Secretary	Charles F. Kier, Jr.
Treasurer	Francis O'Shaughnessy
Eastern States Archeological Federation Representative	Elwood S. Wilkins, Jr.
Editor	Richard C. Quick

Directors

L. T. Alexander	Adrian L. Olivier
Harry A. Diehl	Herbert T. Pratt

The Archaeological Society of Delaware
Wilmington, Delaware

P. O. Box 301

Affiliated With The Eastern States Archaeological Federation

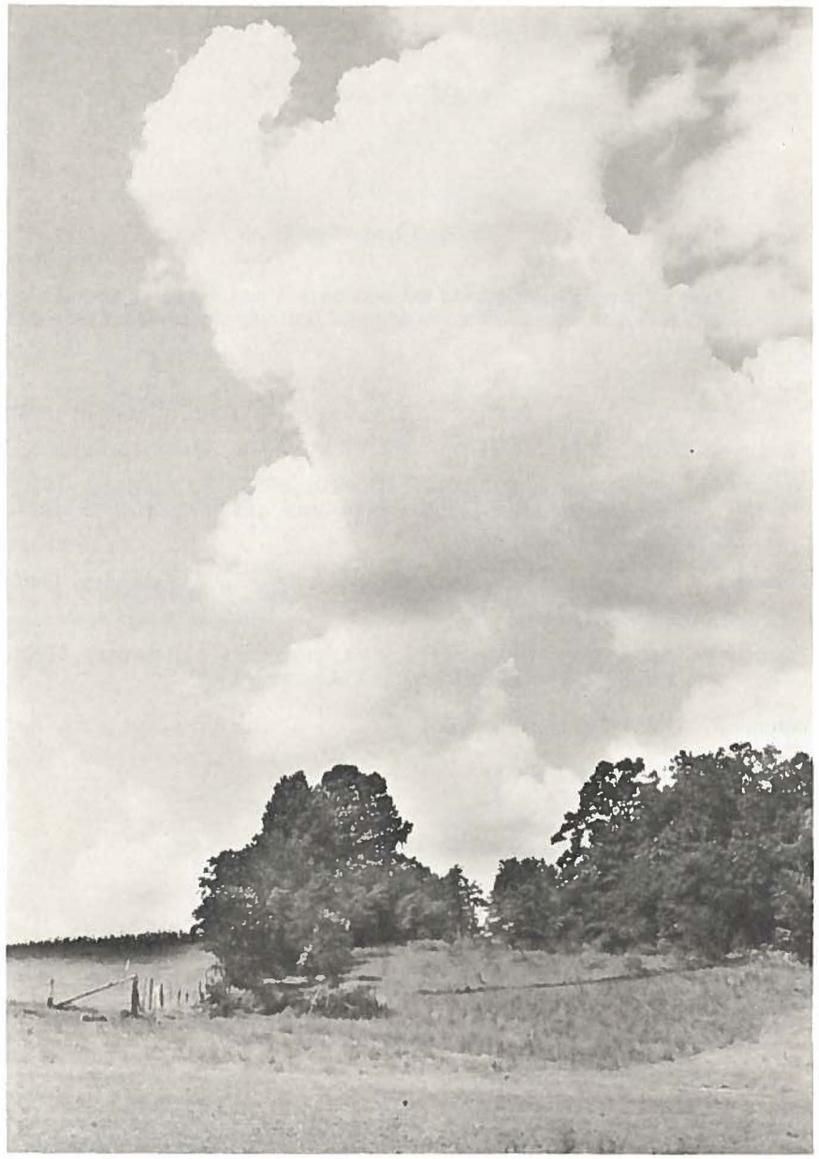
Bibliographic Note

This issue of the ASD Bulletin is the second in a new series of regular but unscheduled numbers, supplanting the original Bulletin series which included:

Volume 1.	No. 1 (May, 1933); No. 2 (January, 1934); No. 3 (March, 1934); No. 4 (May, 1934); No. 5 (October, 1934).
Volume 2.	No. 1 (March, 1935); No. 2 (October, 1935); No. 3 (March, 1936): No. 4 (October, 1936); No. 5 (October, 1937); No. 6 (June, 1938); No. 7 (October, 1938).
Volume 3.	No. 1 (May, 1939); No. 2 (October, 1939); No. 3 (February, 1940); No. 4 (February, 1941); No. 5 (May, 1942).
Volume 4.	No. 1 (May, 1943); No. 2 (May, 1945); No. 3 (February, 1946); No. 4 (November, 1947); No. 5 (January, 1949).
Volume 5.	No. 1 (December, 1952).
Volume 6.	No. 1 (April, 1954).
Volume 7.	No. 1 (December, 1955).
Volume 8.	No. 1 (November, 1957).
Volume 9.	No. 1 (March, 1958).

Bulletin No. 1 of the New Series (Spring, 1962) contained H. Geiger Omwake's "The Mispillion Site, 7-S-A1."

Richard C. Quick
Editor
November, 1962



The Harlan Mill Steatite Quarry Site

A PRELIMINARY REPORT ON THE HARLAN MILL STEATITE QUARRY

(18 Ce 5)

by Elwood S. Wilkins, Jr.

Introduction

The discovery of the adaptability of steatite to the manufacture of stone vessels was an important feature of the Transitional Period. Indian cultures had advanced sufficiently that people could settle into a more or less permanent abode. A truly nomadic people could not have bothered to carry heavy and fragile objects, nor have spared the time required to quarry the stone and to carve and finish such vessels. The development of a more affluent and leisurely life meant that they did have the time to spare.

According to the literature of steatite (1,2,3,4,5) material was obtained by cutting the stone into the rough shape of the desired object, undercutting until it resembled a mushroom and then prying it loose from the massive steatite bedrock. This procedure was apparently used in the quarries in New England, the area in and around Washington, D. C. and south as far as Alabama. It was carried on in a grand scale requiring a tremendous amount of labor with rather crude tools. Excavation at the Harlan Mill site has demonstrated a previously unrecognized quarrying technique.

The geographical distribution of manufactured steatite objects is of interest. There is a relative rarity of steatite objects at a distance to the west of its natural occurence paralleling the eastern seaboard. In contrast, they are found in much greater abundance in the country to the east and north. Here transportation of heavy material would have been much easier due to the possibility of water transport in canoes. Although steatite bowls were mainly transported by water, it is equally certain that some must have travelled overland. The main concentrations of steatite artifacts are found on sites in the main watersheds to the north and east of the known outcroppings. According to published reports (1,2,4,) as well as our own limited observations, the bowls would have been transported in a roughed out condition and then finished at leisure in the people's village shelter and food supply. This roughed-out condition would have added greatly to the weight of the bowl, making water transportation more attractive.

The Occurrence of Steatite

Steatite or soapstone occurs as outcrops in the Piedmont Upland in a relatively thin line stretching from Maine to Alabama. In this part of the country it usually occurs in isolated outcroppings in the Serpentine Belt stretching from Chestnut Hill, Pennsylvania through Delaware and Chester Counties, Pennsylvania. It then passes into Cecil County, Maryland and Lancaster County, Pennsylvania, along the Pennsylvania-Maryland border from, roughly, the Big Elk Creek to the Susquehanna River. This area includes the lower part of Chester and Lancaster Counties in Pennsylvania and the upper part of Cecil County in Maryland, known as the State Line Serpentine Barrens. This is an area of characteristic appearance. Its usual components are briers, cedars, rocks and a very thin, poor soil which can be recognized from a distance and in aerial photographs. Scattered sparingly through this area are the out-

croppings of steatite, mostly of too poor a grade for the making of stone vessels. There are a few notable exceptions; some steatite outcrops are not in the serpentine zone as usually considered, but occur a few miles outside it. The aboriginal quarries west of Christiana and those west of Georgetown, Lancaster County, Pennsylvania, are examples of such outliers. Although most steatite is part of the serpentine belt, relatively few serpentine exposures contain any steatite.

Although there are several known steatite quarries within a thirty mile radius of the junction of Pennsylvania, Maryland, and Delaware, we are quite certain that others await discovery. There is one small, previously unreported, source at Lewisville, Pennsylvania, and bowl fragments have been collected from the site. Delaware does offer one good possibility in its single known serpentine outcropping. Only careful searching in that area will decide whether there is an associated steatite quarry or outcropping that was used for the manufacture of bowls. From the knowledge gained during several years observation, any steatite that is located in Delaware should be of the poorer grade, probably like that near Lewisville.

The Discovery of the Quarry Site at Harlan Mill

The Harlan Mill Steatite Quarry (18 Ce 5) at New Leeds, Cecil County, Maryland, is on a knoll immediately overlooking the Little Elk Creek and is about four and one-half miles from the Delaware border. It is situated on property formerly known as the Harlan Mill.* The property is now owned by Mr. and Mrs. Chas. W. Howell.

After following false leads as to the location of a steatite quarry mentioned in early historical accounts, a lead, though not to the one being sought, was offered by Mr. Wm. T. Mahoney, then President of the Cecil County Historical Society and a native of the area. The site was located on Memorial Day, 1959. The entire top of the knoll was strewn with slabs of steatite of a poor grade and a few fragments of roughed-out steatite bowls were found.

The Harlan Mill excavation represents the culmination of a project by several people in which a conscious effort was made, beginning in 1955, to find the sources of the materials from which artifacts being excavated at Minguannan (36 Ch 3) were made. Up to this time no serious effort at such correlations had been made in this part of the country. It was considered imperative that this research be carried out so that a better understanding of the cultures that were being uncovered could be effected. Earlier results of this search were reported to the ESAF in 1957 (6). In this report the occurrences of Newark Jasper and of a previously unreported material were described and the sources located. This material, which was named Cecil Black Flint, is an extremely important material at Minguannan and occurs with the Newark Jasper in at least two locations. One of them, the Heath Farm Site, is only about two and one-half miles east of the steatite quarry.

*According to Mr. Ernest A. Howard, of the Cecil County Historical Society, the mill was built about 1812 and was the second one built by the Reverend John Wilson. Originally built as a cotton mill, it later became a paper mill under the ownership of Benj. Peterman and finally about 1872 it became Harlan and Bro. Paper Mill under the ownership of George and John Harlan. They manufactured binder boards (book covers) here and the business continued after their deaths until the mill burned on January 14, 1911.

After the formation of the Minguannan Chapter in 1957 this search became a natural project for the Chapter as those engaged in the search all became members of the Chapter.

The Geology of the Area

The quarry, according to Bascom (7), is in a zone of granite-gneiss and adjacent to and east of a gabbro area. In a later work, Bascom (8) re-interprets the area and considers the rock formerly called gabbro to be a metadacite and the granite-gneiss to be a granodiorite. However, the geology of the area is presently under re-study and specimens of the rocks, including the steatite, have been sent to Dr. Richard F. Ward of Wayne State University for this purpose.

This outcropping of steatite has not been mapped in any of the geologic reports put out by the State of Maryland with which I am familiar, or in the U. S. Geologic Survey Bulletin 1082K "Chromite and Other Mineral Deposits in the Serpentine Rocks of the Piedmont Upland Maryland, Pennsylvania and Delaware." (9). Although Bascom (7, 8) mapped the area the outcropping apparently went unnoticed probably because of its small size. This outcropping is located outside of and southeast of the area that has been mapped as the serpentine belt. Three prospect pits were sunk into the deposit many years ago in the search for asbestos. Residents of the area were aware that asbestos was present, for the local name for the hill is "Asbestos Hill." It is interesting that these same people were unaware that the Indians had worked there. I have been unable to find one person who did know it, and all express surprise when told. The Indians had worked practically the whole hill-top to obtain material for their bowls, etc., and left much evidence on the suface of the ground for seeing eyes to read. A search to the north of the quarry and on both sides of the creek failed to uncover the least trace of additional steatite outcroppings. It is not anticipated that a search to the south along the line of the two zones reported by Bascom, in which the quarry occurs, will uncover any further outcrop of the steatite.

Excavation Technique Used, and Appearance of the Quarry Backfill

In preparation for our work and after several test pits had been made, a place was chosen for excavation. Excavation began on March 12, 1961 at the north end of what appeared to be the vestige of a long and curving trench. It was supposed that this represented an elongated quarry trench or pit. Using prying tools, an opening about eight feet in length was made into the ground surface. In the upper part of the soil mantle pieces of steatite as much as three feet in length were encountered and removed. As little soil was present the material removed had the appearance of a pile of rocks. The excavation was widened uphill so that it was broad enough to work in while deepening the hole. Once the first two or three feet had been penetrated the excavators were able to make better progress, pulling blocks of steatite out of the vertical wall in such a way as to disentangle the intertwined mass. The excavation was widened uphill beyond the trench and the bottom carried to a level of between three and four feet. We were fortunate enought to dig in the right spot to obtain what may be considered a sufficiently complete story of the quarrying method and tools used at this site.

The deeper the excavation was carried, the more the character of the backfill changed. Whereas the top eighteen to twenty-four inches contained the bulk of the worked pieces and bowl fragments, the zone beneath contained mainly slabs of steatite that had been broken off, and an increasing proportion of very coarsely

crushed and pulverized steatite grading into impalpably powdered steatite. In some places it was possible to pick this up by the handful. There were fewer bowl fragments but more tools in the lower part of the excavation. Excavation was continued to the bedrock working-floor of the Indian quarry.

The sides were then cleaned and straightened. After this began the job of cleaning the irregular floor using trowel, brush, broom and a most handy tool for this difficult and tedious job, a dust pan. After cleaning, the floor was washed with water, using a spray tank, in order to prepare it for photographing.

The wet floor of the opening was photographed from the top of a sixteen foot ladder placed upon the refuse heaps from the excavation. The top of the ladder was lashed to a tree in order to insure safety and to allow manuevering by the photographer. Much shifting was necessary to obtain the best angles to illustrate the appearance of the outcropping as it was left by the Indians. Before photographing, the area was laid out in a one meter grid with the lines run in an East-West and North-South direction. The grid lines were formed by tying heavy white twine to spikes driven into the walls of the excavation at the proper points. These lines showed up very well in both the black and white and the color photographs (Plate IB).

The Hearth Area

While cleaning the floor of the excavation for the photographs there appeared, in the eastern end, scattered pieces of charcoal and a higher concentration of tools than had been found previously. These were mostly broken. This operation uncovered the beginning of an Indian cut into the steatite stratum, as shown in the illustration of the quarrying method (Plate IIA). The excavation was enlarged at this point to permit maximum observation of this feature. A greater concentration of charcoal was found. It soon became apparent that it was mostly on the rock stratum into which the cut was being made. Further work, after a thaw and rain, led to the discovery of a hearth and the recovery of considerable charcoal which should yield a dating for this part of the quarry.

The total hearth (Plate X A) was about twenty inches in diameter, with the area of the fire covering only about ten inches. A depression in the center formed a basin about two inches deep, resting on ancient backfill about four or five inches above the rock stratum. The hearth was composed of small flat pieces of steatite so thoroughly broken down by the heat that they are very red and crumbly. It is interesting to note that those pieces of charcoal which retained their original form were all of twigs not more than one inch in diameter. All of the stones from the hearth area have been saved. There were recovered here a total of nine complete and broken quarrying tools, a rather high concentration. In this same area two argillite flake scrapers were also found (Plate X B). The deeply-weathered argillite of which one of these tools is made resembles that of the deeply-weathered argillite flakes from the lower levels at Minguannan. The other specimen also resembles an argillite found in local collections. This general area will be further explored with the hope that objects of more clear-cut cultural association will be found, thus greatly enhancing the valuable information gained so far.

The Indians Quarrying Technique

One of the features making this quarry distinctive is the aboriginal quarrying method demonstrated. A considerable search of the literature does not reveal anything comparable. The classic quarrying technique as illustrated by Holmes (1) is the method usually described in earlier reports. In another short paragraph by Holmes (1) and a very brief paragraph by Bushnell (2) are cited an additional method that was not characteristic.

The classic method consisted of shaping the rough outline of the bowl with stone tools and undercutting this to form a mushroom-like shape which was then pried off. This method was suited to the massive steatite that ancient people were working at other locations.

At Harlan Mill, workers were confronted with a different type of outcropping. Instead of being massive, the schist-like steatite here is present in nearly vertical strata up to about sixteen inches in thickness. The Indians were resourceful and altered their techniques to meet the situation. With stone tools they cut and pulverized a groove, usually in the form of an X (Plate II B), so as to obtain an opening wide enough to cut deeply into the stratum. Having cut one groove to the desired depth, they cut another one at a distance to obtain the length of steatite slab desired. Next, using a heavy boulder, like that illustrated (Plate IV A, found alongside the knob illustrated in Plate III A), they struck a blow near the base of the isolated knob. The knob being free-standing on three sides was sledged off and was now ready for further shaping into the desired form. The presence of such sledges was reported in Rhode Island by H. N. Angell in 1878 (3). He reports finding sledges weighing from fifty to one-hundred pounds. The sledge excavated at Harlan Mill weighs forty-four and one-half pounds and is quite capable of being operated by one man to detach the isolated knob of steatite. Several spots on the rock floor of the quarry had been struck a hard blow with a heavy object, causing shatter lines (Plate III B) to radiate from a central scar. These scars represent the impact-points of sledge-blows which had struck knobs off from the bed-rock.

Some of the grooves mentioned above were found to be filled with finely powdered steatite, no doubt just as the workmen left them. In fact the backfill removed from the quarry was probably composed of such dust together with larger fragments from the quarrying and shaping of bowls and other objects, with little if any original soil overburden. At times at least, the Indians must have worked rapidly enough that a hollow formed in the backfill at a point where a discarded block of steatite bridged an open space. These spaces, still hollow at the time of this excavation, indicate either that the Indians had worked during a dry spell or that work was so rapid that the rain had not had sufficient time to wash fine backfill into them. The latter explanation seems more plausable.

The soil samples that were collected, beginning at the floor (four and one-half feet deep) and taken at every six inches to the present ground level, may yield, by pollen analysis, information on the type of climate that existed at the time that this Indian backfill was formed. They may also show just how quickly the backfill was built up and the season of the year when quarrying was carried out at this particular spot.

Technique Used at Harlan Mill in Shaping Bowls

In contrast to the usual procedure (1,2,3,4,5,10,11) of roughly shaping the outside of the vessel while the steatite was still attached to the bedrock, the stone at Harlan Mill was first removed from the strata as previously described and lifted to the surface of the workings. Next, a selected portion was cut off with picks (Plate IV B) and chisels to provide a piece of steatite larger than the object to be made. Finally, the shaping of the object took place. Piecing the story together from the fragments of the bowls that were excavated as well as from the tools recovered, the usual sequence in the manufacture of bowls seemed to be as follows: the general outline of the bowl (Plate V A), including the lugs, was first formed using broad-bitted chisels, probably hafted as adzes. The inside was then outlined by cutting a groove at the desired distance from the periphery of the bowl (Plate V B). The majority of bowls, judging from the tool marks, seem to have been hollowed out with hafted narrow-bitted chisels. Broad-bitted chisels were used on the very large bowls. The lugs were usually shaped by means of the narrow-bitted chisel and the balance of the final quarry shaping was carried out with the broad-bitted chisel. It is believed that all of these chisel-shaped tools were actually hafted and used as adze blades. The inside of the bowl was, in most cases, given its final quarry shaping with the same narrow-bitted chisel used in the roughing-out operation. It (Plate VI C) was then rubbed down somewhat with an abrader or scraper which might well have been another piece of steatite. Experiment has shown that steatite makes a fine finishing tool for steatite bowls. The hornblende gneiss would, however, make a superior abrader.

In common with identified steatite quarrying practices elsewhere, it appears that vessels were carried home in a semi-finished condition and completed there. The highly polished and thin-walled bowls found on village sites are missing in the quarries and in surrounding workshops, where such exist.

The shaping technique for the inner part of the bowl, starting with the groove delineating the area (Plate V B), was also practiced at Christiana (Plate V C). Unfinished bowls showing this method in process at both places are in our possession. This technique was probably used elsewhere, although no statement has been found in the literature regarding this.

The Tools and the Materials from Which They Were Made

The total tool complex from our excavation is of particular interest since it is composed mainly of very crude tools. Some have the appearance of having been formed by striking off a flake from a larger mass to form a sharp-edged tool (Plate VIII A, B, and D). These flakes were probably discarded after they became too dull for effective use. Others have the appearance of having been crudely shaped into a rough form and used as battering and pulverizing tools, bearing marks of such use (Plate IX D). A number of tools have well-formed and definite points adapted to cutting. Most of these tools have had their points broken in such a manner that the use of considerable force is indicated. Some of these picks (Plate VII A) could have been hafted but others weighing as much as thirteen pounds certainly would have been too heavy and unwieldy to use in this manner and must have been hand tools. Four chisels with polished narrow tips were found. One is rather well made and is polished all over. It has a dark stain on one side that appears to be grease resulting from the use of a fatty skin-binding for hafting (Plate VIII C). This chisel was most certainly hafted. Nearby was excavated a fragment of

a bowl on which the tool marks are very plainly visible (Plate VI A and B). This piece shows very well the method of forming the lug and the inside and outside of the bowl. The tool marks on the inside of the bowl and on the lug are of such a size that the chisel described above could very well have been the one used. In order to apply the necessary force at the very acute angle at which the blows were struck, only a hafted tool could have been used. The other chisels are only polished at the bit; the rest of their surfaces were roughly formed by percussion flaking (Plate VII B).

The tools were made of several materials. These include the two types of country rock that surround and adjoin the steatite outcropping, pegmatite quartz bearing beautiful black tourmaline crystals, Cecil Black Flint, Newark Jasper, and, of all things, the harder grade of the steatite and chlorite schist. These latter tools have the rounded appearance that one would expect to result from digging in soil. Certainly they were not used to work steatite since experiments showed that they crumbled immediately upon striking another piece of steatite.

The flake tools and sledges were usually made of quartz while the picks are mainly made of the two native rocks of the surrounding area. One chisel is made of a dark fine-grained shale that probably came from a river cobble. The other and cruder chisels are made of Cecil Black Flint and the local hornblende gneiss. The only tool found that appears to have been a broad-bitted chisel, (Plate VII D), had also been used as an abrader. The bit of this tool flares slightly so that the tip is slightly wider than the body. This specimen, made from rock of the surrounding area, is badly in need of sharpening. And this chisel, if that is what it is, does not resemble those found at Christiana which have bits narrower than the body and which are made of a superior material that holds a sharp edge very well. Use of broad-bitted chisels is shown by broad chisel marks on most of the bowl fragments mentioned above. Broad chisel marks are very common on the outside of bowl fragments.

A number of whetstones, apparently used to sharpen chisels were found, several were made of what appears to be a local hornblende gneiss (Plate VII C). One of the tools found in the hearth area appears to have been a chisel of the same material (Plate IX C). It had been broken and then used as a hone or whetstone. There are two flat faces that had been used in this manner. The sloping portion of one side of the working edge had been used to sharpen tools, but not in the usual manner which involved rubbing the hone lengthwise across the tool to be sharpened. Instead, it has the appearance of having been held still while the tip of the tool to be sharpened was rubbed forward and backward in short strokes. The rounded grooves are all on one side and are such that they could have been made with the point of a narrow-bitted chisel.

Another unusual hand tool found is the hoe (Plate IX A and B), no doubt used to move the debris while cutting the isolating grooves in the steatite. Several of these were found. Essentially, they are unifacial tools with three convex edges sharpened by percussion flaking, and one unmodified straight edge. They are trapezoidal in cross-section.

The total tool complex identified at Harlan Mill yields an entirely different story than that presented by tools found on the surface at such places as Christiana. In fact, many of the tools found through excavation are so crude that they would be passed over and not recognized if seen on the surface of the ground. Accounts in the literature of steatite quarrying investigations give somewhat the same impression as that obtained from the study of surface collections. In the past such crude

tools were not believed to be worth saving. Although note was often made by past excavators of the presence of crude picks, hammerstones, axes, and even hammers of steatite, scant attention was paid to them and it is difficult to determine from the literature precisely how crude they were. Holmes (1) does show some of his cruder tools but these have more the appearance of the better tools found at Harlan Mill. One suspects that if the tools were not very well made and highly polished they were not recognized, or were considered crude and discarded by most excavators.

We firmly believe that if one is to have a full story of the method of quarrying, every tool or suspected tool is important to that story and a selection should not be made as to what is and what is not important. Fowler (10, 11) working in New England has apparently identified and preserved the total tool complex, although it is difficult to agree with his interpretations concerning the identification and use of the tools.

Characteristics of the Steatite

The steatite at Harlan Mill is of a low grade, being harder than most steatite due to the presence of greater amounts of minerals other than talc. It is of a schist-like nature and heavily foliated, with veins of quartz or amphibole asbestos. These veins caused points of weakness as evidenced by the quantity of rejectage with breaks occurring very often at such a vein. These veins, however, did afford a convenient weak spot to strike with the sledge in breaking a slab of steatite off the bedrock. Whole 'logs' of asbestos were found in the backfill where they had been thrown by the Indians. This material was only a nuisance to them.

Geological Associations of the Harlan Mill Steatite

The geology of the steatite and the surrounding area being still under study, only a preliminary tentative discussion is offered here. The area surrounding the steatite is composed of a white or cream-colored sand formed by the weathering of the rock that surrounds it. Between the steatite and the sand, and in contact with the sand, is a rotten material having the appearance of a weathered chlorite schist. It is expected as work progresses in outlining the area that a zone of un-weathered chlorite schist will also be found. During excavation, a bowl fragment and tools of chlorite schist were found. One test pit (T.P. 1) produced a broken and discarded object of chlorite schist that has the general outline of a gorget with two partially drilled holes, the break occurring at one of these holes. The end and the two sides have notches ground into them on a slant. On the surface of the ground large pieces of chlorite schist occur. These had been quarried in a manner identical to the steatite. One such piece is approximately 5x14x28 inches and weighs one hundred four and one-half pounds. It is quite possible that this quarry was an important source of chlorite schist of which many of the local banner-stones, pendants, gorgets, pipes, etc., were made.

The Distribution of Artifacts Made of the Harlan Mill Steatite

Knowledge of the distribution of bowls and other objects that may have been made of steatite from Harlan Mill is limited at the present time. Some of the steatite sherds in collections obtained from Cecil County sites no doubt came from here, because of the similarity of the material from which they were made and that from Harlan Mill. An unfinished large-winged bannerstone of steatite is in the possession of a farmer on an adjoining property. This bannerstone belonged to

his father, but its further history is not known. The appearance of the material of which it is made is exactly that of the material that we have found during our work.

It is difficult to understand the relative scarcity of objects made of steatite. The period in which steatite was used extensively has been considered to be a relatively short one. Witthoft (12) places it between 1500 and 1000 B. C. Yet it would seem that much more should be found. The amount of steatite that the Indians quarried is enormous. This quarry is a relatively small one, yet it covers an area almost one-half acre in extent. Most, if not all, of this area must have been worked down from the original surface to a depth of between three and five feet. The quarries at Christiana are many times larger than the Harlan Mill Quarry. There are other (13) known quarries in this part of the country, and we are sure that others remain to be uncovered. There is one minor source as close as the western outskirts of Lewisville, Pennsylvania.*

The Importance of the Excavation

The discovery and the partial excavation of a significant source of steatite is of more than local importance. It certainly points to the fact that all these sources are not known at present and await diligent search by competent and interested persons. It has been a common-place statement that the steatite we find in Delaware came from Christiana (15, 16). The fact is that we are not certain of the source of the bulk of the material that we find on our sites. A recent discovery, however, of steatite having a very close resemblance to our most abundant material was made at Corundum Hill in East Marlborough Township, Chester County, Pennsylvania. Along with this occurs a steatite greatly resembling that from Christiana and Georgetown. Both Corundum Hill and a site near Embreeville, only about two miles from Corundum Hill, have been cited as sources of steatite for many years (17). It is expected that further field work will provide an answer as to whether this area furnished the Indians of this region with the bulk of their material. Corundum Hill is only six miles from the Delaware border. A minority of the steatite potsherds found in the northern part of Delaware and the surrounding area are steatite probably derived from Christiana, Corundum Hill or the other outcroppings in that general area. However, it is certain that the source for most Delaware steatite is not Christiana, Georgetown or Harlan Mill. The differences among the materials are obvious to those acquainted with them, their quality and structure being quite different. It is important, however, that the source of the most abundant material be found. It was due to intensive search for this outcrop that the quarry at Harlan Mill was located. Harlan Mill, however, is not the source for which we had been searching.

Summary

Our work has demonstrated an hitherto unreported quarrying method and procedure used in making bowls. All artifacts were saved, and a preliminary report on the total tool complex is offered. No attempt has been made at selection or judgment, as to what is important enough to save and what is not.

Geological and mineralogical studies will be reported on in a later article and should be of considerable value to those interested in the whole problem. The use of chemical and physical methods will be explored with the view of identifying

*It is interesting to note that the quarries at Christiana were known and the information regarding them published (5) at least ten years before Harry Wilson's first notation of April 1892 (14) of his first visit to the place.

sources. No attempt is made in this preliminary report to present a detailed analysis of the tools and materials excavated. The identification of the materials used will await mineralogical reports. Nothing would be gained in forcing names on materials at this time. In cases where a name is used it is a commonly accepted name for that material and is used tentatively so as to more readily describe that particular item.

Witthoft (16) states that the bowls in his Pennsylvania Transitional had flat bottoms. While this seems to be the case with the majority of the unfinished bowls collected at Christiana, the reverse seems to hold for the Harlan Mill Quarry. It may be because of the limiting width of the strata at Harlan Mill, since fragments that have the general appearance of flat-bottomed bowls seem to be the largest ones. Bowl fragments from Christiana with rounded bottoms appear to be, in the main, small bowls and dishes. The one-half of a bowl excavated at Minguannan is melon-shaped with a round bottom.

The Transitional Period for this part of the country (16) has not been established as yet. The seemingly limited distribution of the steatite from Harlan Mill; the tool complex not including tools of the same materials as in the Susquehanna, Perkiomen and Lehigh Transitional Periods; the scrapers of argillite that we found: these traits may well indicate a separate and local Transitional Culture. This may have existed before or concurrently with the Perkiomen Transitional Complex, as the broad spearpoints of Pennsylvania Jasper indicative of this culture are found in many local collections.

Probably the most important information of all will come from the Carbon 14 results that are to be obtained on the charcoal from the hearth and on the floor of the quarry. This will give for the first time, we believe, (18) a date for the quarrying of steatite. While the date will be that for one portion of this quarry only, it will be without a doubt a time marker for this type of steatite technology and for a Transitional Culture. The presence of a deeply-weathered argillite flake scraper, and its similarity to the scrapers from the lower levels at Minguannan, which are considered to be Early Archaic, raises some important questions as to the age of this Transitional Culture. While it does not imply that the quarrying was carried on during the period of the lowest habitation levels at Minguannan, it is most suggestive of some relationship.

While dating this quarry is of great importance, it is of even more importance that more excavations be carried out, not necessarily here, but preferably at other locations so that the time period can be set from as many like excavations as possible. This means hard work and perseverance on the part of interested persons in surveying, and it means the plain hard physical labor demanded especially by this kind of an excavation. The interpretation and reporting of the results of such work are of importance to all interested in the study of the beginning of settled village life and of agriculture by the Indians.

Acknowledgements

As is usual in reports of this kind, acknowledgement is made of the contributions of others. Besides the members of the Chapter that have assisted in the excavation, some of the other members of the Archaeological Society of Delaware have helped from time to time. The advice and criticism of Richard F. Ward, Richard C. Quick and John Witthoft in the preparation of this manuscript were invaluable. This is particularly strenuous work and the fairer sex could hardly be expected to participate fully. However, there is one person who has sustained me through this and other projects with more than the usual understanding or plain tolerance that many expect; my Wife. It can truly be said that without her active support and encouragement this and other projects would never have begun.

1. W. H. Holmes. Stone Implements of the Potomac-Chesapeake Tidewater Province, 15th. Ann. Report Bur. Amer. Ethnology, Washington, D. C., 1897, pp. 105-145.

2. David I. Bushnell, Jr. The Use of Soapstone by the Indians of the Eastern United States. Ann. Report of the Smithsonian Institution, Washington, D.C., 1939, pp. 471-489.

3. E. A. Barber, General Notes. Discovery of steatite quarry at Providence, R.I. by Mr. H. N. Angell. American Naturalist, June 1878, p. 403.

4. Anon. Report of Work of Cushing in Amelia County, Va., and E. R. Reynolds at Soapstone Run, Rock Creek Park, Washington, D. C. Smithsonian Institution Ann. Report for 1878 (1879). pp. 44-46.

5. Charles H. Stubbs. Papers relating to anthropology. Ann. Report of the Board of Regents of the Smithsonian Institution 1882, p. 829.

6. Elwood S. Wilkins, Jr. Some Lithic Sources in Cecil County, Md. Eastern States Archeological Federation, Bulletin No. 17, January 1958, p. 15.

7. F. Bascom. Cecil County Atlas Map of Cecil County Showing Geological Formations. Maryland Geological Survey. 1902.

8. F. Bascom and B. L. Miller. Elkton-Wilmington Geologic Folio, No. 211, 1920. Department of the Interior, U. S. Geologic Survey.

9. N. C. Pearre and A. V. Heyl, Jr. Chromite and Other Mineral Deposits in the Serpentine Rocks of the Piedmont Upland Maryland, Pennsylvania and Delaware. Geological Survey Bulletin 1082K. U. S. Department of Interior, U. S. Geologic Survey. 1960.

10. William S. Fowler. Ten Thousand Years in America. Vantage Press., N.Y. 1957.

11. William S. Fowler. Personal Communication.

12. John Witthoft. A Brief History of the Indian Hunter. Pennsylvania Game News, Vol. XXV, No. 9, Sept. 1954, p. 44. Reprints in Anthropology No. 7, Pennsylvania Historical and Museum Commission.

13. Elmer A. Jones. The Broad Creek Steatite Quarry. Oral Presentation Semi-Annual Meeting, The Archaeological Society of Maryland, May 1960.

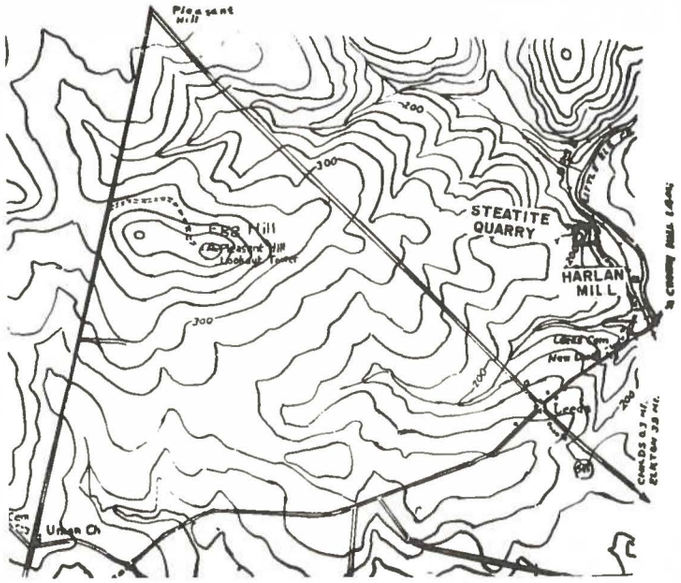
14. Harry Wilson. Notebook in possession of the Chester County Historical Society, West Chester, Pa.

15. Archibald Crozier. The Steatite Quarry near Christiana, Lancaster County, Pa. Bulletin, Archaeological Society of Delaware, Vol. 3, No. 2, Oct. 1939, pp. 13-15.

16. John Witthoft. Broad Spearpoints and the Transitional Period Cultures in Pennsylvania. Pennsylvania Archaeologist, Vol. 23, No. 1, May 1953, pp. 4-31.

17. F. Bascom and G. W. Stose. Coatesville-West Chester Folio No. 223, 1932, Department of the Interior, U. S. Geologic Survey.

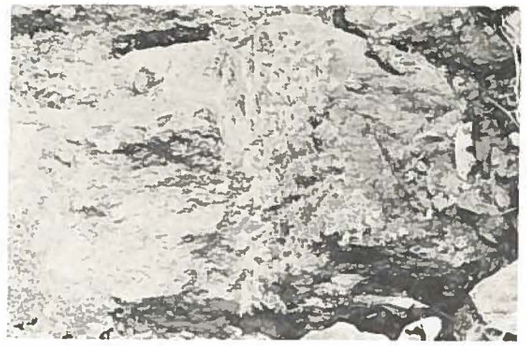
18. John Witthoft. Personal Communication.



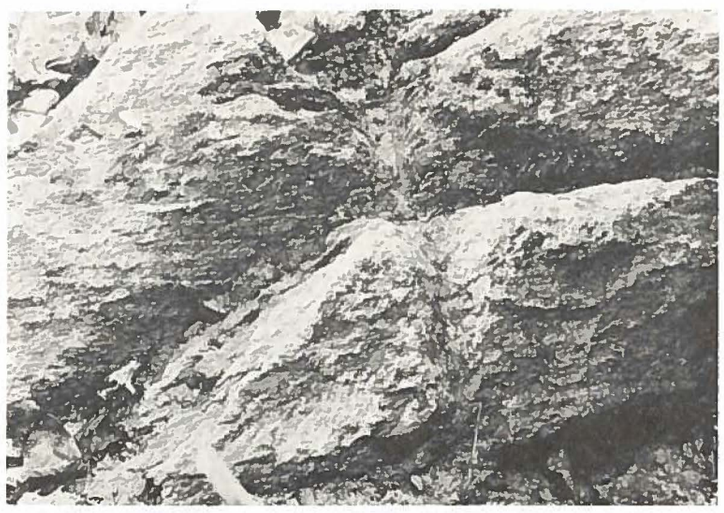
A. Location Map

B. Quarry Floor

PLATE I



A. Beginning of groove showing tool marks.



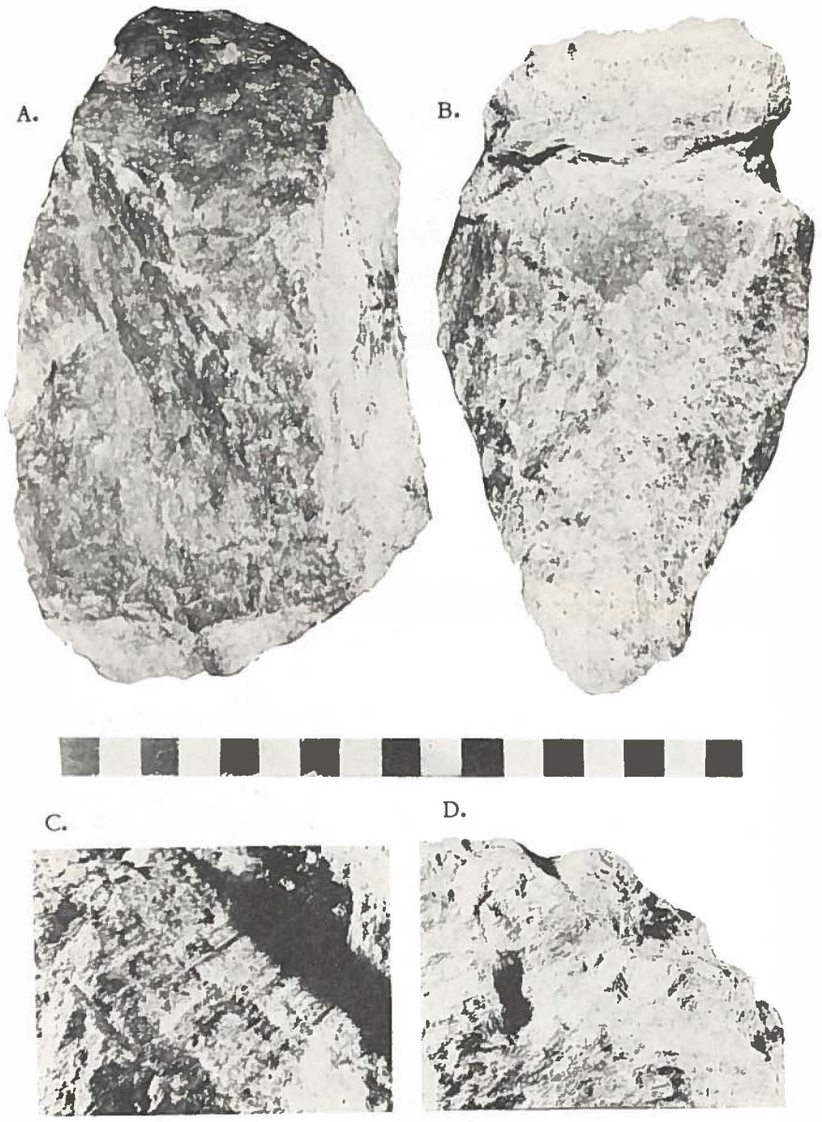
B. Well–developed grooves forming an X.

PLATE II

A. Isolated knob of steatite.

B. Fracture lines resulting from the removal of a knob of steatite.

PLATE III



A. Sledge for removing knobs of steatite.

B. Slab of steatite from which a piece has been removed from the right end and showing the marks made by a rounded blunt–end tool. Preparations were in progress for the removal of a second piece using a broad–bitted chisel.

C. Mark of broad–bitted chisel on left hand side of top of groove. (Magnified).

D. Mark of blunt–end tool on top of right end. (Magnified).

PLATE IV

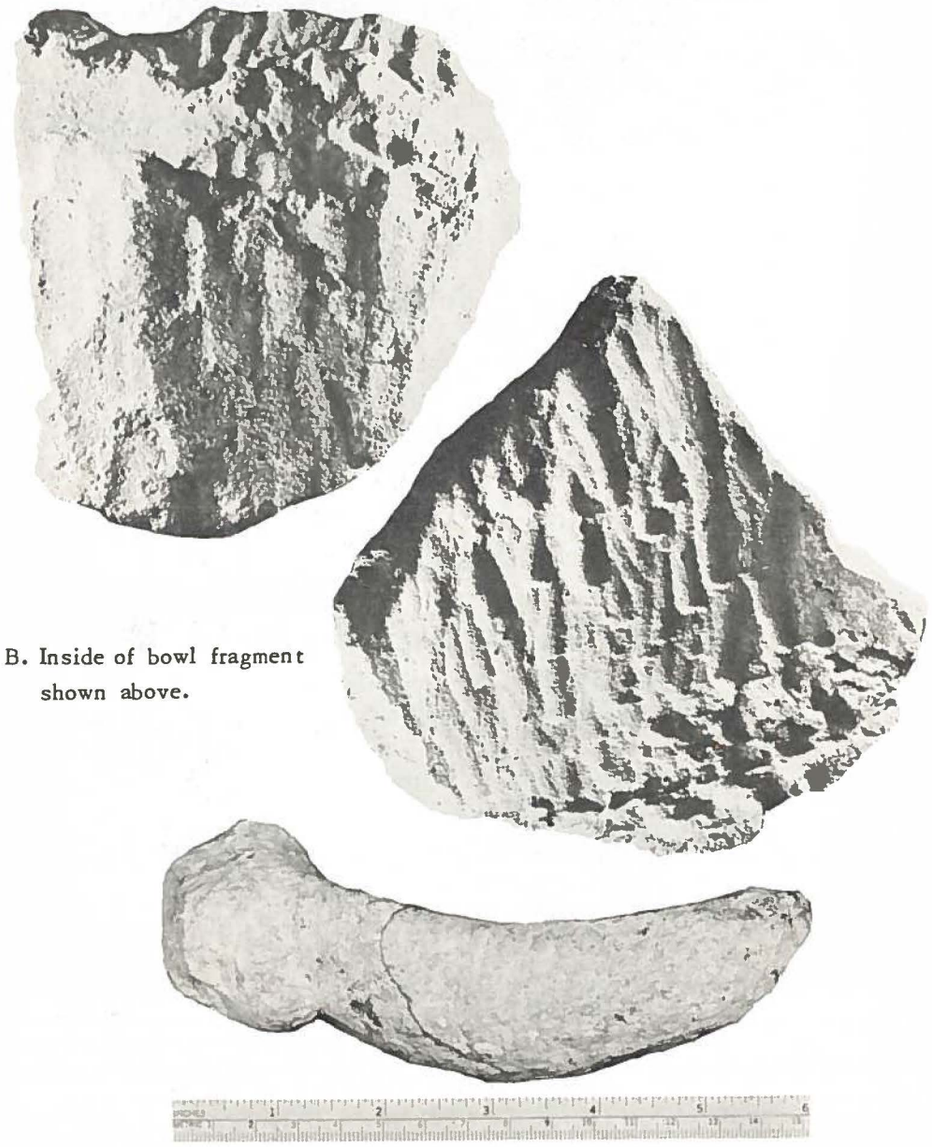
A. Incomplete bowl from Christiana, Pennsylvania, showing delineating groove. Not to scale.

B. Second stage of the shaping of a bowl showing remains of groove delineating the inside of the bowl. Not to scale.

C. First stage of the shaping of a large bowl. Note tool marks on top and bottom.

PLATE V

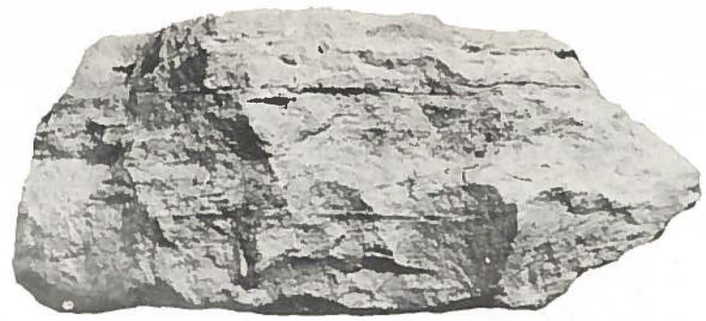
A. Third stage of the shaping of a bowl showing tool marks on the outside of fragment and also the lug.



B. Inside of bowl fragment shown above.

C. Bowl fragment with tool marks removed by abrasion.

PLATE VI



A. Pick

B. Chisel, Narrow–bitted

C. Abrader or whetstone

D. Chisel, Broad–bitted

Plate VII

A. Flake tool, Cecil Black Flint

B. Unaltered flake tool, quartz

C. Polished chisel, Narrow-bitted

D. Flake tool, quartz

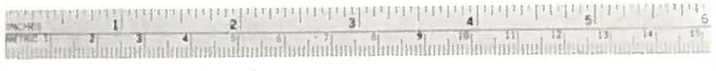
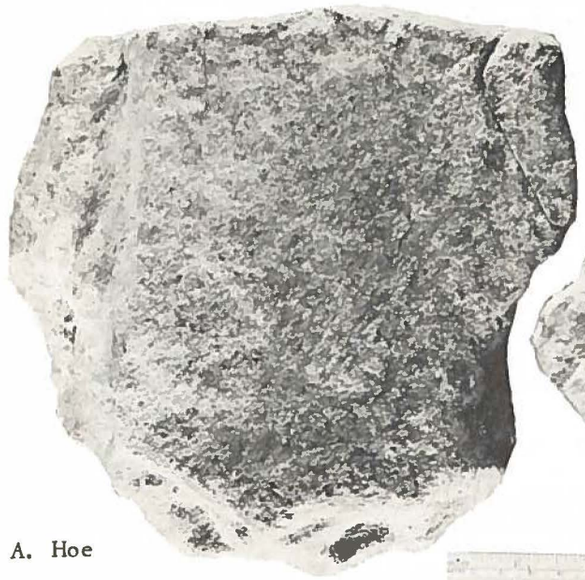


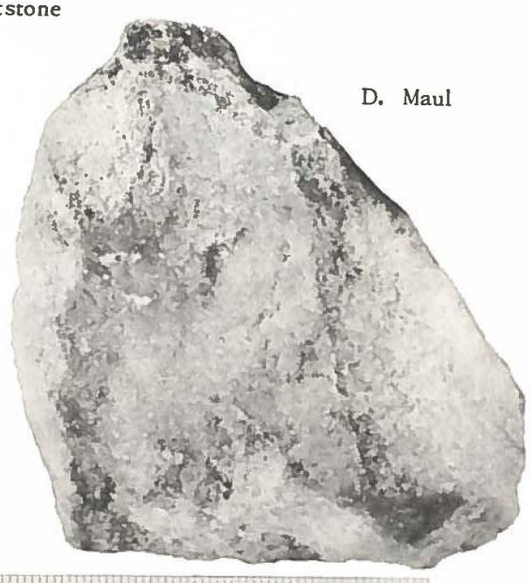
PLATE VIII



A. Hoe

B. Notched hoe

C. Broken chisel used as a whetstone



D. Maul

Plate IX.

A. Hearth

B. Argillite flake scrapers from hearth

PLATE X

EXCERPTS FROM WORKS

of

HENRY DAVID THOREAU

A selection of excerpts from the writings of Henry David Thoreau, on the amenities of collecting Indian relics, arranged and edited by Arthur G. Volkman.

PREFACE

In New York City there was held at the Pierpont Morgan Library, on May 5 of this year, a Centennial Commemoration, marking the death of Henry David Thoreau. This ceremony honored Thoreau principally as an American Man of Letters. But though it is not generally known, Thoreau was also what might be termed a pioneer in the study of the American Indian. The breadth of his interest in this subject may be inferred from the following: In October 1853, Thoreau was sent a questionnaire by the Association for the Advancement of Science, requesting information pertaining to his scientific activities. Among the other questions was one reading, "Branches of science in which especial interest is felt," to which Thoreau replied, The"Manners & Customs of the Indians of the Algonquin Group previous to contact with civilized man." Its depth is evidenced by some one-half million words of MS in the Morgan Library.

Independently, and perhaps unaware, of the Morgan Library's intention to pay tribute to Thoreau's memory, the Officers of the Archaeological Society of Delaware had decided to re-publish Paper No. 5, EXCERPTS FROM THE WORKS OF HENRY DAVID THOREAU, dated November 1, 1943, to signalize the 100th year of Thoreau's passing. Further, inasmuch as I had compiled these EXCERPTS I was kindly invited to write a short introduction.

In reviewing this Paper for the purpose mentioned, I can find nothing in it that could be advantageously changed, as far as its purpose is concerned, notwithstanding the fact it was written nearly twenty years ago during which interval my knowledge of Thoreau's writings has broadened considerably. On reading, it will be observed the Paper was primarily written for the amateur archaeologist. If anyone wishes to pursue the academic aspect of the subject no better material can be found than the scholarly articles by Dr. Lawrence Willson of the University of California. Unfortunately, however, they are not readily available. I might add that Dr. Willson has written me to the effect that he hopes to work his way through Thoreau's Indian Notebook once more and then expects to be able to publish an annotated bibliography of Thoreau's reading about the Indians.

Wilmington, Delaware
October, 1962

INTRODUCTION

On the shore of Walden Lake, near the town of Concord, Massachusetts, is a cairn composed of stones gathered from the beach by the admirers of Henry David Thoreau. Thus fittingly perpetuated by an ever increasing agglomeration of native rocks, is the memory of an innate lover of nature, born in the village July 12, 1817, who lived there all his life, and died there May 6, 1862.

Ornithologist, botanist, entomologist, dendrologist, --so varied and intense were Thoreau's interests that an enumeration of them would include some branch of practically all the natural sciences. Almost daily during his life, Thoreau rambled on foot within a radius of ten miles of his home, making keen observations of natural phenomena. Amounting to no less than a religious rite, not confined to daytime alone but by night as well, every season of the year regardless of weather or temperature, he tramped thru the vicinity intent on his object. Under these circumstances it was inevitable in an area that had once been densely populated by the aborigines, Thoreau would sooner or later discover the Indian relics that were so abundantly scattered about the ground.

But the fruits of these interminable walks would never have been appreciated were it not for the fact that Thoreau was also imbued with an insatiable impulse to transfer his impressions to paper, and kept a day-by-day record of them. These notes have come down to us in a form known as Thoreau's JOURNALS. They cover the period from 1837 to 1861--practically his entire adult life. It is on these JOURNALS, published posthumously, together with two or three other books which were printed while he was still living, that rests Thoreau's fame as one of America's outstanding men of letters. Succinctly, it may be said, Thoreau cultivated an instinctive knowledge of natural history, and blending this wisdom with the spirit of the universe, incomparably interpreted his material and spiritual experiences.

However, this paper deals with Thoreau neither as a naturalist or author, but more exclusively as a student of Indian lore. His first remark on the Indian is found in a college essay entitled "Barbarism and Civilization" which he wrote in 1837 at the age of twenty. In it he said, "....Our Indian is more of a man than the inhabitant of a city."* Thoreau's last reference to Indians was in his dying words asserted to have been "moose" and "Indian."* During the intervening years the American Indian also received his share of Thoreau's attention. His Journals are liberally interspersed with allusions to the life and customs of the Red Men. Indeed so great was Thoreau's enthusiasm for the Indians--"indigenous men of America" he called them--that he accumulated a wealth of material for an Indian history, a project that unfortunately was never completed.* Thoreau made three visits to the Maine Woods, described in a book bearing that title, where he made a number of memorandums on the Indians in general, and one in particular, Joe Polis, his Algonkian guide on the last trip. And it has been said that when wandering bands of Indians occasionally camped on the banks of the Concord River, Thoreau was always a constant visitor. If his intelligent curiosity in Indian culture had been shared by more of his contemporaries, doubtless some of the many problems in archaeology that now vex us would have already been solved.

Aside from the scholar's attitude, Thoreau's sympathy with the Indians and their troubles, was deep and humane. In a day when it was popular for the white man to despise the Red Man, Thoreau penned in his Journal on February 3, 1859, (the date his father died), a most bitter and denunciatory attack on their enemies--the outpouring of a soul to assuage its grief.

Hence it was from the works of Thoreau that I culled the most representative excerpts pertaining to the hobby of collecting Indian relics, the purpose of which is sometimes questioned by one's friends. In my opinion these abstracts most fascinatingly reflect the gratifications that make this pastime worth while. They do not purport in any way to be a complete account of all that Thoreau wrote about the Indians, or on the subject of collecting Indian relics, but rather a condensation of the latter to exemplify the pleasure and profit that may be derived from this diversion. The idea of assembling them was suggested by an entry in Thoreau's Journal wherein he states that he "has not decided whether I had better publish my experiences in searching for arrow heads in three volumes with plates, or try to compress them into one." Similarly the plan of composition is also that of Thoreau's. It was his practice to enter "disconnected fragments" in the Journal, at intervals, and later use them in an essay or lecture, without regard to their chronological order.

In these excerpts, I believe, one will sense the spirit of adventure in discovering old Indian sites, the thrill of finding arrow heads and other stone weapons, the appeal to the imagination in the mystery and romance of the Red Man as revealed by his tools and implements, as well as the satisfaction of inexpensively and independently acquiring the proof of one's enterprise. The esthetic properties involved in the hobby, it will also be noted, have likewise not been overlooked by Thoreau.

It might be remarked that in addition to the other benefits enjoyed in collecting Indian relics, the importance of having an avocation that takes one out of doors, is not to be undervalued, an inducement which a man of Thoreau's habits naturally took for granted and therefore does not mention.

Arthur G. Volkman

Wilmington, Delaware
November 1, 1943

‡ The cairn was erected in 1872 upon the supposed site of Thoreau's cabin, the original building having disappeared. The cairn's location, however, did not agree with Thoreau's description in Walden. In 1945, two years after Mr. Volkman's original "Introduction" was written, Mr. Roland Robbins made a thorough search of the hillside and succeeded in locating and excavating not only the cabin's hearth, but three of the structure's cornerposts and a centerpost. The site was found to be some twelve rods further up the hillside than tradition had placed it. See: R. W. Robbins Discovery at Walden (The Author, Concord, Mass.) 1947.

___ Editor's note

*Henry S. Canby, THOREAU: A BIOGRAPHY. Houghton Mifflin Co., Boston, 1939.

THOREAU, HENRY DAVID - EXCERPTS FROM THE WORKS OF

The birds are singing in the rain about the small pond in front, the inquisitive chickadee that has flown at once to the alders to reconnoitre us, the blackbirds, the song sparrow, telling of expanding buds. But above all the robin sings here too, I know not at what distance in the wood. 'Did he sing thus in Indian days?' I ask myself; for I have always associated this sound with the village and the clearing, but now I do detect the aboriginal wildness in his strain, and can imagine him a woodland bird, and that he sang thus when there was no civilized ear to hear him, a pure forest melody even like the wood thrush. Every genuine thing retains this wild tone, which no true culture displaces. I heard him even as he might have sounded to the Indian, singing at evening upon the elm above his wigwam, with which was associated in the red man's mind the events of an Indian's life, his childhood. Formerly I had heard in it only those strains which tell of the white man's village life; now I heard those strains which remembered the red man's life, such as fell on the ears of Indian children, --as he sang when these arrowheads, which the rain had made shine so on the lean stubble-field, were fastened to their shaft. (1)

There is a time to watch the ripples on Ripple Lake, to look for arrowheads, to study the rocks and lichens, a time to walk on sandy deserts, and the observer of nature must improve these seasons as much as the farmer his. (2)

It is surprising how thickly strewn our soil is with arrowheads. I never see the surface broken in sandy places but I think of them. I find them on all sides, not only in corn, grain, potato, and bean fields, but in pastures and woods, by woodchucks' holes and pigeon beds, and, as tonight, in a pasture where a restless cow has pawed the ground. (3)

P.M. Paddle to the Bedford line. It is now high time to look for arrowheads, etc. I spend many hours every spring gathering the crop which the melting snow and rain have washed bare. When at length some island in the meadow or some sandy field elsewhere has been plowed, perhaps for rye, in the fall, I take note of it, and do not fail to repair thither as soon as the earth begins to be dry in the spring. If the spot chances never to have been cultivated before, I am the first to gather a crop from it. The farmer little thinks that another reaps a harvest which is the fruit of his toil. As much ground is turned over in a day by the plow as Indian implements could not have turned up in a month, and my eyes rest on the evidences of an aboriginal life which passed here a thousand years ago perchance. Especially if the knolls in the meadows are washed by a freshet where they have been plowed the previous fall, the soil will be taken away lower down and the stones left, the arrowheads, etc., and soapstone pottery amid them, somewhat as gold is washed in a dish or tom. I landed on two spots this P.M. and picked up a dozen arrowheads. It is one of the regular pursuits of spring. As sportsmen go in pursuit of ducks and musquask, and scholars of rare books, and travelers of adventures, and poets of ideas, and all men of money, I go in search of arrowheads when the season comes round again. So I help myself to live worthily, loving my life as I should.

It is good collyrium to look on the bare earth, to pore over it so much, getting strength to all your senses, like Antaeus. You can hardly name a more innocent or wholesome entertainment...I have not decided whether I had better publish my experiences in searching for arrowheads in three volumes with plates, or try to

compress it into one. These durable implements seem to have been suggested to the Indian mechanic with a view of my entertainment in a succeeding period. After all the labor expended on it, the bolt may have been shot but once, perchance, and the shaft, once attached to it decayed, and there lay the arrowhead, sinking into the ground, awaiting me. They lie all over the hills with like expectation, and in due time the husbandman is sent, and tempted by the promise of corn or rye, he plows the land and turns them up to my view. Many as I have found, methinks the last one gave me about the same delight that the first did. Some time or other, you would say, it had rained arrowheads, for they lie all over the surface of America. You may have your peculiar tastes, certain localities in your town may seem from association unattractive and uninhabitable to you, you may wonder that the land bears any money value there, and pity some poor fellow who is said to survive in that neighborhood, but plow up a new field there, and you will find the omnipresent arrow point strewn over it, and it will appear that the red man with other tastes and associations lived there too. No matter how far from the modern road or meeting-house, no matter how near. They lie in the meeting-house cellar, and they lie in the distant cow pasture. Some collections which were made a century ago by the curious like myself have been dispersed again, and they are still as good as new. You cannot tell the third-hand one (for they are all second-hand) from the others, such is their persistent out-of-doors durability. They were chiefly made to be lost. They are sown like a grain that is slow to germinate, broadcast over the earth. As the dragon's teeth bore a crop of soldiers, so these bear crops of philosophers and poets again. It is a stone fruit. Each one yields me a thought. I come nearer to the maker of it than if I found his bones...They would not prove any art that wielded them such as this work of his bones does. It is humanity inscribed on the face of the earth, patent to my eyes as soon as the snow is off, not hidden away in some crypt or grave, or under a pyramid. No disgusting mummy, but a clean stone, the best symbol or letter that could have transmitted to me. The red man, his mark! <> At every step I see it...It is no single inscription on a particular rock, but a footprint or rather a mindprint left everywhere and altogether illegible.

Time will soon destroy the works of famous painters and sculpters, but the Indian arrowhead will balk his efforts and eternity will have to come to his aid. No vandals, however vandalic in their disposition, can be so industrious as to destroy them. They are not fossil bones, but as it were fossil thoughts, forever reminding me of the mind that shaped them. I would fain know that I am treading in the tracks of human game, that I am on the trail of mind....When I see these signs I know that the subtle spirits that made them are not far off, into whatever form transmuted. What if you do plow and hoe amid them, and swear that not one stone shall be left upon another, they are only the less likely to break in that case. When you turn up one layer you bury another so much the more securely. They are at peace with rust. This arrowheaded character promises to outlast all others. The larger pestles and axes may perchance be broken and grow scarce, but the arrowhead shall perhaps never cease to wing its way through the ages to eternity. When some Vandal chieftain has razed to earth the British Museum, and perchance, the winged bulls of Nineveh shall have lost most, if not all, of their features, the arrowheads which the Museum contains may find themselves at home again in familiar dust and resume their shining in new springs upon the bared surface of the earth, to be picked up for the thousandth time by the shepherd or savage, that may be wandering there, and once more suggest their story to him....They cannot be said to be lost or found. Surely their use was not so much to bear its fate to some bird or quadruped, or man, as it was to lie near the surface of the earth for a perpetual reminder to the generations that come after....As for museums, I think it is better to let nature take care of our antiquities.

These are our antiquities, and they are cleaner to think of than the rubbish in the Tower of London, and they are a more ancient armour than is there. It is a recommendation that they are so inobvious that they occur only to the eye and thought that chances to be directed toward them.

When you pick up an arrowhead and put it in your pocket, it may say, "Eh, you think you have got me, do you? But I shall wear a hole in your pocket at last, or if you put me in your cabinet, your heir or great-grandson will forget me, or throw me out of the window directly, or when the house falls, I shall drop into the cellar, and then I shall be quite at home again, ready to be found again. Perhaps some new red man, that is to come, will fit me to a shaft and make me do his bidding for a bow shot; what reck I?" (4)

Again I saw today half a mile off in Sudbury, a sandy spot on the top of a hill, where I prophesied that I should find traces of the Indians. When within a dozen rods, I distinguished the foundation of a lodge, and merely passing over it, I saw many fragments of the arrowhead stone. I have frequently distinguished these localities half a mile off, gone forward, and picked up arrowheads. (5)

We saw near the river Merrimack, where the sand was blown off down to some ancient surface, the foundation of an Indian wigwam exposed, a perfect circle of burnt stones, four or five feet in diameter, mingled with fine charcoal, and the bones of small animals which had been preserved in the sand. The surrounding sand was sprinkled with other burnt stones on which their fires had been built, as well as with flakes of arrowhead stone, and we found one perfect arrow-head. In one place we noted where an Indian had sat to manufacture arrow-heads out of quartz, and the sand was sprinkled with a quart of small glass-like chips about as big as a fourpence, which he had broken off in his work. Here, then the Indians must have fished before the whites arrived. There was another similar sandy tract about half a mile above this. (6)

Every rain exposes new arrowheads. We stop at Clamshell, and dabble for a moment in the relics of a departed race. (7)

A clear air, with a north-westerly March-like wind, as yesterday....The wind is rapidly drying up the earth, and the elevated sands already begin to look whitish. How much light there is in the sky and on the surface of the russet earth! It is reflected in a flood from all cleansed surfaces which rain and snow have washed, from the railroad rails, the mica on the rocks and silvery latebrae of insects there, and I never saw the white houses of the village more brightly white. Now look for an early crop of arrowheads, for they will shine. (8)

A dictionary of the Indian language reveals another and wholly new life to us. Look at the wood canoe, and see what a story it tells of outdoor life, with the names of all its parts and of the modes of driving it, as our words describe the different parts of a coach; or at the word wigwam, and see how close it brings you to the ground; or at Indian corn, and see which race has been most familiar with it. It reveals to me a life within a life, or rather a life without a life, as it were threading the woods between our towns, and yet we can never tread on its trail. The Indian's life was as far from us as heaven is. (9)

It is remarkable that the spots where I find most arrowheads, etc., being light, dry soil (as the Great Fields, Clamshell Hill, etc.), are among the first to be bare of snow and free from frost. It is very curiously and particularly true, for the only parts of the northeast section of the Great Fields which are so dry that I do not

slump there, are those, small in area, where perfectly bare patches of sand occur, and there, singularly enough, the arrow-heads are particularly common. Indeed, in some cases, I find them only on such bare spots, a rod or two in extent, where a single wigwam might have stood, and not half a dozen rods off in any direction. Yet the difference of level may not be more than a foot, if there is any. It is as if the Indians had selected precisely the driest spots on the whole plain with a view to their advantage at this season. If you were going to pitch a tent to-night on the Great Fields, you would inevitably pitch on one of those spots, or else lie down in water or mud, or on ice. It is as if they had chosen the site of their wigwams at this very season of the year. (10)

On Lupine Knoll picked up a dark-colored spear head three and a half inches long, lying on the bare sand, so hot that I could not long hold it tight in my hand. (11)

When I walk in the fields of Concord (Mass.), and meditate on the destiny of this prosperous slip of the Saxon family, unexhausted energies of this new country, I forget that this which is now Concord was once Musketaquid, and that the American Race has had its destiny also. Everywhere in the fields, in the corn and grain land, the earth is strewn with the relics of a race which has vanished as completely as if trodden in with the earth. Is it not good to remember the eternity behind me as well as the eternity before? Wherever I go I tread in the tracks of the Indian. I pick up the bolt which has but just dropped at my feet. And if I consider destiny I am on his trail. I scatter his hearth-stones with my feet, and pick out of the embers of his fire the simple but enduring implements of the wigwam and the chase. In planting my corn in the same furrow which yielded its increase to his support so long, I displace some memorial of him. I have been walking this afternoon over a pleasant field planted with winter rye in a region where this strange people once had their dwelling place. Another species of mortal men but little less wild to me than the musquask they hunted. Strange spirits, demons, whose eye could never meet mine. With another nature, and another fate than mine. The crows flew over the edge of the woods, and wheeling over my head, seemed to rebuke, as dark-winged spirits more akin to the Indian than I. Perhaps only the present disguise of the Indian. If the new has a meaning, so has the old. (12)

Found four perfect arrowheads, and one imperfect, in the potato field just plowed up for the first time that I remember, at the Hubbard bathing place. (13)

The delicious, soft, spring-suggesting air, how it fills my veins with life. Life becomes again credible to me. A certain dormant life awakes in me, and I begin to love nature again. Here is my Italy, my heaven, my New England. I understand why the Indians hereabouts placed heaven in the South-West. The soft south. On the slopes, the ground is laid bare, and radical leaves revealed, shepherd's purse, clover, etc., a fresh green, and, in the meadow, the skunk cabbage buds with a bluish bloom, and the red leaves of the meadow saxifrage. These and the many withered plants laid bare remind me of spring and of botany. -On the same bare sand is revealed a new crop of arrowheads. Pick up two perfect ones of quartz, sharp as if just from the hand of the maker. (14)

A curious incident happened some four or six weeks ago which I think it worth the while to record. John [his brother] and I had been searching for Indian relics, and been successful enough to find two arrowheads and a pestle, when of a Sunday evening, with our heads full of the past and its remains, we strolled to the mouth of Swamp Bridge Brook. As we neared the brow of the hill forming the bank of the river, inspired by my theme, I broke forth into an extravagant eulogy on those

savage times, using most violent gesticulations by way of illustration. 'There on Nawshawtuct,' said I, 'was their lodge, the rendezvous of the tribe, and yonder, on Clamshell Hill, their feasting ground. This was, no doubt, a favorite haunt; here on this brow was an eligible lookout post. How often have they stood on this very spot, at this very hour, when the sun was sinking behind yonder woods and gilding with his last rays the waters of the Musketaquid, and pondered the day's success and the morrow's prospects, or communed with the spirit of their fathers gone before them to the land of shades! "Here," I exclaimed, "stood Tahatawan; and there" (to complete the period) " is Tahatawan's arrowhead."

We instantly proceeded to sit down on the spot I had pointed to, and I, to carry out the joke, to lay bare an ordinary stone which my whim had selected, when lo! the first I laid hands on, the grubbing stone that was to be, proved a most perfect arrow-head, as sharp as if just from the hands of the Indian fabricator!!! (15)

There is scarcely a square rod of sand exposed, in this neighborhood, but you may find on it the stone arrowheads of an extinct race. Far back as that time seems when men went armed with bows and pointed stones here, yet so numerous are the signs of it. The finer particles of sand are blown away and the arrow-points remain. The race is clean gone - from here - as this sand is clean swept by the wind. Such are our antiquities. These were our predecessors. Why, then, make so great ado about the Roman and the Greek, and neglect the Indian? We need not wander off with bovs in our imaginations to Juan Fernandez, to wonder at footprints in the sands there. Here is a print more significant at our doors, the print of a race that has preceded us, and this the little symbol that Nature has transmitted to us. Yes, this arrow-headed character is probably more ancient than any other, and to my mind it has not been deciphered. Men should not go to New Zealand to write or think of Greece and Rome, nor more to New England. New earths, new themes expect us. Celebrate not the Garden of Eden, but your own. (16)

To the Marlboro road. Picked up an Indian gouge on Dennis's Hill....An arrowhead at the desert. Filled my pockets with acorns. Found another gouge on Dennis's Hill. To have found two Indian gouges and tasted sweet acorns, is it not enough for one afternoon? (17)

P. M. To J. P. Brown's Pond Hole. J. Hosmer showed me a pestle which his son had found this summer, while plowing on the plain between his house and the river. It had a rude bird's head, a hawk's or eagle's, the beak and eyes (the latter a mere prominence) serving for a knob or handle. It is affecting as a work of art by a people who have left so few traces of themselves, a step beyond the common arrow-head and pestle and axe, something more fanciful, a step beyond pure utility. As long as I find traces of works of convenience merely, however much skill they show, I am not so much affected as when I discover works which evince the exercise of fancy and taste, however rude. It is a great step to find a pestle whose handle is ornamented with a bird's-head knob. It brings the maker still nearer to the races which so ornament their umbrellas and cane handles. I have then evidence in stone that men lived here who had fancies to be pleased, and in whom the first steps toward a complete culture was taken. It implies so many more thoughts such as I have. The arrowhead, too, suggests a bird, but a relation to it not in the least godlike. But here an Indian has patiently sat, and fashioned a stone in a likeness of a bird, and added some pure beauty to that pure utility, and so far has begun to leave behind him war and even hunting, -to redeem himself from the savage state. Enough of this would have saved him from extermination. (18)

slump there, are those, small in area, where perfectly bare patches of sand occur, and there, singularly enough, the arrow-heads are particularly common. Indeed, in some cases, I find them only on such bare spots, a rod or two in extent, where a single wigwam might have stood, and not half a dozen rods off in any direction. Yet the difference of level may not be more than a foot, if there is any. It is as if the Indians had selected precisely the driest spots on the whole plain with a view to their advantage at this season. If you were going to pitch a tent to-night on the Great Fields, you would inevitably pitch on one of those spots, or else lie down in water or mud, or on ice. It is as if they had chosen the site of their wigwams at this very season of the year. (10)

On Lupine Knoll picked up a dark-colored spear head three and a half inches long, lying on the bare sand, so hot that I could not long hold it tight in my hand. (11)

When I walk in the fields of Concord (Mass.), and meditate on the destiny of this prosperous slip of the Saxon family, unexhausted energies of this new country, I forget that this which is now Concord was once Musketaquid, and that the American Race has had its destiny also. Everywhere in the fields, in the corn and grain land, the earth is strewn with the relics of a race which has vanished as completely as if trodden in with the earth. Is it not good to remember the eternity behind me as well as the eternity before? Wherever I go I tread in the tracks of the Indian. I pick up the bolt which has but just dropped at my feet. And if I consider destiny I am on his trail. I scatter his hearth-stones with my feet, and pick out of the embers of his fire the simple but enduring implements of the wigwam and the chase. In planting my corn in the same furrow which yielded its increase to his support so long, I displace some memorial of him. I have been walking this afternoon over a pleasant field planted with winter rye in a region where this strange people once had their dwelling place. Another species of mortal men but little less wild to me than the musquask they hunted. Strange spirits, demons, whose eye could never meet mine. With another nature, and another fate than mine. The crows flew over the edge of the woods, and wheeling over my head, seemed to rebuke, as dark-winged spirits more akin to the Indian than I. Perhaps only the present disguise of the Indian. If the new has a meaning, so has the old. (12)

Found four perfect arrowheads, and one imperfect, in the potato field just plowed up for the first time that I remember, at the Hubbard bathing place. (13)

The delicious, soft, spring-suggesting air, how it fills my veins with life. Life becomes again credible to me. A certain dormant life awakes in me, and I begin to love nature again. Here is my Italy, my heaven, my New England. I understand why the Indians hereabouts placed heaven in the South-West. The soft south. On the slopes, the ground is laid bare, and radical leaves revealed, shepherd's purse, clover, etc., a fresh green, and, in the meadow, the skunk cabbage buds with a bluish bloom, and the red leaves of the meadow saxifrage. These and the many withered plants laid bare remind me of spring and of botany. -On the same bare sand is revealed a new crop of arrowheads. Pick up two perfect ones of quartz, sharp as if just from the hand of the maker. (14)

A curious incident happened some four or six weeks ago which I think it worth the while to record. John [his brother] and I had been searching for Indian relics, and been successful enough to find two arrowheads and a pestle, when of a Sunday evening, with our heads full of the past and its remains, we strolled to the mouth of Swamp Bridge Brook. As we neared the brow of the hill forming the bank of the river, inspired by my theme, I broke forth into an extravagant eulogy on those

savage times, using most violent gesticulations by way of illustration. 'There on Nawshawtuct,' said I, 'was their lodge, the rendezvous of the tribe, and yonder, on Clamshell Hill, their feasting ground. This was, no doubt, a favorite haunt; here on this brow was an eligible lookout post. How often have they stood on this very spot, at this very hour, when the sun was sinking behind yonder woods and gilding with his last rays the waters of the Musketaquid, and pondered the day's success and the morrow's prospects, or communed with the spirit of their fathers gone before them to the land of shades! "Here," I exclaimed, "stood Tahatawan; and there" (to complete the period) " is Tahatawan's arrowhead."

We instantly proceeded to sit down on the spot I had pointed to, and I, to carry out the joke, to lay bare an ordinary stone which my whim had selected, when lo! the first I laid hands on, the grubbing stone that was to be, proved a most perfect arrow-head, as sharp as if just from the hands of the Indian fabricator!!! (15)

There is scarcely a square rod of sand exposed, in this neighborhood, but you may find on it the stone arrowheads of an extinct race. Far back as that time seems when men went armed with bows and pointed stones here, yet so numerous are the signs of it. The finer particles of sand are blown away and the arrow-points remain. The race is clean gone - from here - as this sand is clean swept by the wind. Such are our antiquities. These were our predecessors. Why, then, make so great ado about the Roman and the Greek, and neglect the Indian? We need not wander off with bovs in our imaginations to Juan Fernandez, to wonder at footprints in the sands there. Here is a print more significant at our doors, the print of a race that has preceded us, and this the little symbol that Nature has transmitted to us. Yes, this arrow-headed character is probably more ancient than any other, and to my mind it has not been deciphered. Men should not go to New Zealand to write or think of Greece and Rome, nor more to New England. New earths, new themes expect us. Celebrate not the Garden of Eden, but your own. (16)

To the Marlboro road. Picked up an Indian gouge on Dennis's Hill....An arrowhead at the desert. Filled my pockets with acorns. Found another gouge on Dennis's Hill. To have found two Indian gouges and tasted sweet acorns, is it not enough for one afternoon? (17)

P. M. To J. P. Brown's Pond Hole. J. Hosmer showed me a pestle which his son had found this summer, while plowing on the plain between his house and the river. It had a rude bird's head, a hawk's or eagle's, the beak and eyes (the latter a mere prominence) serving for a knob or handle. It is affecting as a work of art by a people who have left so few traces of themselves, a step beyond the common arrow-head and pestle and axe, something more fanciful, a step beyond pure utility. As long as I find traces of works of convenience merely, however much skill they show, I am not so much affected as when I discover works which evince the exercise of fancy and taste, however rude. It is a great step to find a pestle whose handle is ornamented with a bird's-head knob. It brings the maker still nearer to the races which so ornament their umbrellas and cane handles. I have then evidence in stone that men lived here who had fancies to be pleased, and in whom the first steps toward a complete culture was taken. It implies so many more thoughts such as I have. The arrowhead, too, suggests a bird, but a relation to it not in the least godlike. But here an Indian has patiently sat, and fashioned a stone in a likeness of a bird, and added some pure beauty to that pure utility, and so far has begun to leave behind him war and even hunting, -to redeem himself from the savage state. Enough of this would have saved him from extermination. (18)

As I was coming away (from visiting a farm), I took my toll out of the soil in the shape of arrowheads, which may after all be the surest crop, certainly not affected by drought. (20)

The tawny, couchant island! Dry land for the Indian's wigwam in the spring, and still strewn with his arrowpoints. The sight of such land reminds me of the pleasant spring days in which I have walked over such tracts looking for these relics. (21)

I feel no desire to go to California or Pike's Peak, but I often think at night with inexpressible satisfaction and yearning of the arrowheadiferous sands of Concord. (22)

FINIS

NOTES

(1) Thoreau, Henry D. Early Spring in Massachusetts; Journal, April 21, 1852. (ed by Blake-Houghton, Mifflin & Co., Boston, 1883).
(2) Thoreau, Henry D. Journal, date unknown. (William E. Channing. Thoreau. The Poet Naturalist. With Memorial Verses. Boston, Roberts Bros., 1873).
(3) Thoreau, Henry D. Summer; Journal, June 13, 1884. (ed. by Blake-Houghton, Mifflin & Co., Boston, 1884).
(4) Thoreau, Henry D. Early Spring in Massachusetts; Journal, March 28, 1859. (ed. by Blake-Houghton, Mifflin & Co., Boston, 1883).
(5) Ibid. Journal, February 18, 1851.
(6) Thoreau, Henry D. A Week on the Concord and Merrimack Rivers, p. 156. (Houghton, Mifflin & Co., Boston, 1884).
(7) Thoreau, Henry D. Autumn; Journal, October 16, 1859. (ed. by Blake-Houghton Mifflin Co., Boston, 1892).
(8) Thoreau, Henry D. Early Spring in Massachusetts; Journal, February 21, 1855. (ed. by Blake-Houghton Mifflin & Co., Boston, 1883).
(9) Ibid. Journal, March 5, 1858.
(10) Ibid. Journal, March 13, 1859.

(11) Thoreau, Henry D. Summer; Journal, July 5, 1854. (ed. by Blake-Houghton, Mifflin & Co., Boston, 1883).
(12) Thoreau, Henry D. Early Spring in Massachusetts; Journal, March 19, 1842. (ed. by Blake-Houghton, Mifflin & Co., Boston, 1883).
(13) Thoreau, Henry D. Summer; Journal, June 2, 1853. (ed. by Blake-Houghton, Mifflin & CO., Boston 1883).
(14) Thoreau, Henry D. Winter; Journal, January 7, 1885. (ed. by Blake-Houghton, Mifflin & Co., Boston 1887).
(15) Thoreau, Henry D. Autumn; Journal, October 29, 1837. (ed. by Blake-Houghton, Mifflin Co., Boston, 1892).
(16) Ibid. Journal, October 22, 1857
(17) Ibid. Journal, October 8, 1851.
(18) Ibid. Journal, November 29, 1853.
(19) Ibid. Journal, October 17, 1859.
(20) Thoreau, Henry D. Letters to Various Persons. p. 34, (Houghton, Mifflin & Co., Boston, 1884)
(21) Thoreau, Henry D. Early Spring in Massachusetts; Journal, March 23, 1859. (ed. by Blake-Houghton, Mifflin & Co., Boston, 1883).
(22) Thoreau, Henry D. Journal, May 2, 1859. (The Heart of Thoreau's Journals. ed. by Odell Shepard. Houghton, Mifflin Co., Boston and New York, 1927).