CONTENTS

Some Thoughts on the Historic Art of the Indians of Northeastern North America. Ernest S. Dodge .............................. 1

A Preliminary Report on the Nunkatusset Site
Roland E. Engstrom ................................................. 5

Some Notes on the Winslow Site
Ripley P. Bullen ...................................................... 10

The Trail of the Indian
Chauncey C. Ferguson .............................................. 11

Pipes and Rare Products of the Stone Bowl Industry
William S. Fowler ................................................... 13

PUBLISHED BY THE
MASSACHUSETTS ARCHAEOLOGICAL SOCIETY, INC.

Maurice Robbins, Editor, 23 Steere Street, Attleboro, Mass.
Mrs. Henry F. Howe, Secretary, 11 North Main Street, Cohasset, Mass.
Roy E. Morse, Treasurer, 50 Avon Street, Mansfield, Mass.
SOME THOUGHTS ON THE HISTORIC ART OF THE INDIANS OF NORTHEASTERN NORTH AMERICA

Ernest S. Dodge

Knowledge of the Indian art of Northeastern North America, from an ethnological viewpoint, has been largely confined to the writings of those two eminent Americanists, Dr. Frank G. Speck and Dr. Marius Barbeau, with a scattering of articles by a few others. Nothing could be wider apart than the conclusions of these two men on this subject. They are at opposite poles. And I pose the question: How is it that two men of such eminence and learning, both distinguished scholars, blessed with ability such as with which few are gifted, could arrive at views so divergent on a subject, that, at first glance, does not appear to be unduly complicated.

Frank Speck, I knew for fifteen years until his recent death. We were good friends and I admired his great knowledge of the Indians. He knew the eastern Indians as few scholars have known them and probably as none will ever know them again. Speck lived a good part of his life with the Indians. His field trips were usually short, but they were frequent. When he went in the field he did not live at a hotel or boarding house and commute to the reservation; he moved in with the Indians, slept in their beds and partook of their frugal meals. I have been with him in the field and have seen him accepted as one of them, oftentimes by old hard shells who would have nothing to do with other whites. He knew the Indian mind and how it worked. How misunderstood it was by most white men. And he knew the philosophy of our eastern woodland folk, particularly their attitude toward nature. His information on art was what was told him by the Indians themselves. If they said they got a pattern for curlicues from fiddle head ferns he so reported it, and if a certain silver brooch pattern was an owl in their minds so it was, even though it might also obviously be a Scotch Heart or Sacred Heart of Jesus. Speck believed that the art of these Indians was basically aboriginal and he has argued the case fluently on numerous occasions largely offering as proof the results of his own field work and interviews with aged Indian folk artists.1 He did concede that certain designs and the more elaborate floral work were French influenced.

Now let us turn to Barbeau and his theories. He, too, is a friend of mine and has put an energetic lifetime into thinking on these things as well as many others, and he, too, is a scholar of great ability and intellectual curiosity. He has arrived at the conclusion that the Indians had extremely little, if any, decorative art in pre-white times. He derives all of the floral and double curve motifs from French renaissance folk art as brought into Canada by the early French immigrants.2 He has perused the archives and libraries of the Church and the Provinces, and he has studied old material which was sent back to France in the early 18th century as a present to the Dauphin. One of his great discoveries was made at the Ursuline Convent in Quebec.3 Down in their basement, packed away where it had lain for many years, he found quantities of porcupine quill boxes of a type very similar to those we now call Micmac together with great quantities of prepared porcupine needles, spruce root, and birch bark; and with all this cache of supplies were the tools which the nuns used to make these boxes. He also found documentation proving that the Ursulines derived considerable income, in fact their principal income for maintaining the convent, by manufacturing these boxes and other trinkets in the "manner sauvage" as they called it, for sale in France. They gave it up in the mid 18th century because in that year they opened a girl's school which gave them a better and more dependable income. We will discuss this a little more when we take up some of the problems concerning Micmac quill boxes. Barbeau maintains that all the double curve art of the northeast was derived from the elaborate double curves of renaissance crosses on altar cloths and similar embroideries. He also points out that the old Naskapi decorated leather work is tooled as well as painted and the tooling is similar to that on 17th century French decorated leather. We will also see later how this compares with Plains Indian work of a similar kind. When the experts disagree so completely, what are the rest of us to believe? I venture to say that the last word on the subject will not be written for a long time for I intend to point out that the problem is considerably more complicated than has

been supposed and there are a number of aspects yet to be studied which will take time and perserverance.

What are the historic arts of our Indians? We all know, but it might be well to mention that those of which examples exist in the most prolific quantities in our museums are: Skin painting, bark engraving, porcupine quill work, moose hair embroidery, splint basket decoration, wood carving, bead work, and ribbon appliqué. All the designs used in all of these varying techniques fall for the most part into three or four particular schools, linear designs, that is decoration made by parallel lines which are elaborated with small triangles, lozenges, linked ovoids, scallops, and other elaborations. With the linear designs we might also include dot decoration which is sometimes used by itself. The so-called double curve in all its variant forms; and another type of geometrical decoration which might be called rectilinear and which superficially in many of its details seems to resemble some of the older geometrical art of the Plains. Next we have the elaborate eastern floral art in all its various manifestations and finally, a naturalistic school in which men and animals are depicted.

Now it is obvious that all of the techniques and all of the schools of design are not uniformly spread throughout northeastern North America. They are combined in an almost infinite number of ways by the different tribal or reservation groups of the region. Some people specialize in particular things, for example, a certain type of wood carving may be confined to one tribe. Splint basketry is done by many of the tribes but not all of them, for here ecological factors enter, and no basketry is made north of the range of the brown ash. The same applies to bark engraving which falls only within the range of the white birch. Bark vessels and splint basketry overlap in the areas where the two trees they depend on both grow. Certain varieties of beadwork can be allocated with confidence to a particular reservation while on another reservation of the same tribe quite different looking work is done. In other words the already complicated picture, which probably originally showed tribal difference in art techniques and designs, is further complicated by what we may term the rise of "reservation culture." Without for the moment trying to settle what part of this diverse and complicated art is aboriginal and what is not, let us look at some of the influencing factors which have impinged themselves on the natives’ culture from earliest contact to 1900. If we accept the Norse visitations there is the possibility of some eleventh and twelfth century influence from Scandinavia on our eastern seaboard. I would not, however, entertain any notion as to what the influence might be. More imaginative people than I have speculated on this romantic subject. Next we have the influence of western European fishermen who maintained fishing stations from Nova Scotia to southern Maine. The greatest foreign influences are undoubtedly French and English with the French apparently much the stronger particularly through Canada and Arcadia. The Scotch have also left their mark and there is the impression that a certain amount of Dutch influence is evident. Both the early Dutch of New York and up the Hudson, where they had trading posts for dealing with the Iroquois before the English took them over, and also the later so-called "Pennsylvania Dutch" seem to have influenced art, particularly of the Iroquois. It sometimes takes but little contact to influence an art style, especially if that art style is purely ornamental and has no religious or symbolical meaning. From my own experiences with Indian bead and quill workers and bark engravers I know that they are constantly on the watch for new patterns. In our Museum collection there is an engraved bark box made at Maniwaki at the time of the last English royal coronation and the ceremonial articles used on that occasion are copied for decoration. In the Naskapi area the bandana handkerchief has influenced the art in recent years. Mrs. George Green, an aged and kindly Cayuga lady at Six Nations, and Mrs. Howard Skye, an even more aged Onondaga of the same place, not only walk the woods and fields picking blossoms and collecting leaves to copy but assiduously peruse Sears Roebuck catalogues for designs to supplement their repertoire.

In a small community it often takes only one person to start a new fad or notion. I have seen this work out in the small rural region where I was brought up, and where we were isolated for much of the year. A man started making small schooner models with wooden sails. Others followed him. A woman discovered a new knack or design in hooking a rug or making a quilt. All the other women had to try it and if it was good it became a part of the craft. So it is with the Indians. Shortly I will point out what I believe to be a specific example of influence of this kind.

Another motivating and energizing force is the example of the great artist. All people are not equally skilled in art work and this applies to Indians as well as whites. Occasionally there arose such a person as Tomah Joseph, the great chief of the Passamaquoddy and informant for Charles Leland. He was not educated beyond his brethren but he was a man of great simple wisdom, and he was an artist. He was particularly adept at bark engraving. He must have made hundreds if not thousands of bark boxes. I know of at least two full sized birch bark canoes skillfully decorated with his work and I am told that in the woods near Dennisville in a humble dwelling is a full sized grand piano covered with birch bark by Tomah. He was an exceptional man and someday I should like to do an article about him as a personality and an artist. The point for us, however, is that he established a style which has been copied by many other Quoddy bark workers ever since, and his influence has even penetrated among the Maliseet groups up the St. John River and to Old Town.

I should now like to point out a few specific problems as examples of the kind of puzzles that have yet to be solved. To begin with a simple one, we are all familiar with the chip wood carving so skillfully and profusely made by the Penobscot for the past fifty to seventy-five years and for the most part confined to them. I have
recently acquired a book which contains, among other things, a good description of Scandinavian wood carving. The Penobscot wood carving is obviously so exactly like the Scandinavian that there must have been some connection. It is not similar, it is identical. However, I do not ascribe this connection to contact of the Penobscot ancestors with far roving Vikings. It so chances that the Penobscots since before the Civil War have worked in the woods lumbering along with white men. In fact, they were particularly desired and sought out for drives down the west and east branches of the Penobscot. Their superlative skill as canoe men made them valuable for handling the loggers bateau on the drives and some individuals, like Big Sebbat and Black Sebbat, became quite famous for this skill.

Now, there also came to Maine along in 1870 a large colony of Swedes and Norwegians who settled two communities in the west central part of the state. These men, too, were great woodsmen and worked all winter as lumberjacks. It would only require but one Penobscot Indian and one Swedish whittler spending a winter together in a lumber camp to introduce Swedish wood carving to Indian Island. This is my theory but it is not proved.

To return for a few minutes to the Micmac porcupine quill decorated boxes: They must have been made in perfectly enormous quantities as they are common in museum collections and one can always turn up a few examples in every eastern historical society. There are several problems to be solved concerning them. It might be noted in passing that the designs are usually geometrical and look very much like Plains designs. Only occasionally is there one with double curves. This is partly due to the nature of the material and the technique used. It is very difficult to lay on porcupine quills in anything but angular designs. There is no question, it appears that these boxes were confined to Nova Scotia and particularly Shubenacadie and Bear River. There is also a possibility that some were done on Cape Breton Island at Wycogoma and Eskasoni. At Richibucto they know about them but say they were made in Nova Scotia. Steve Barlow of that place said there was one in his family but it was brought by his grandmother from Shubenacadie.

All this, however, is a matter requiring considerable research work before it is definitely settled.

Here is another remarkable coincidence. Three or four years ago, my friend, Frederic Douglas, journeyed to Scandinavia. In touring the museums and historical societies of Sweden he was astonished to see many boxes which he thought at first glance were Micmac. He then discovered that the decoration was in straw not quills, but the same technique was used and the designs very similar. I have since obtained photographs of some of these boxes and the similarity is, to say the least, remarkable. However, the Swedish museum people tell us that these boxes were not made in Sweden but in southwestern Germany and sold in the Scandinavian countries in great quantities in the 19th century. I also had an entirely independent appraisal of their similarity to Micmac boxes. Our photographer who is Swedish came in to take pictures of some of the Micmac boxes for me. He had never seen any of them before and his greeting was "I see you have some Swedish straw boxes." There appears to be another Scandinavian in our eastern Indian wood pile.

Now, I would also like to point out that aside from decoration the form and construction of the Micmac and Swedish boxes are similar to ditty boxes made by whale men and some of the Shaker boxes. It seems to me that we probably have here a box form which is at least of general western European distribution and is a part of the folk craft of many different people in different times and places. I think we have dwelt long enough on Micmac boxes for I expect to do a detailed study of the problem but there are other and lesser problems concerning them. For instance, there seems to be some possibility that the various little designs around the cover rims may have some relationship to the Micmac hieroglyphics.

Many of the Naskapi painted designs are similar to painted designs of the Plains. The difference is largely one of degree in size—where certain types of triangles and scallops may be six inches to a foot in length on a Cheyenne buffalo robe or parfleche they will be only an inch or two long on a Naskapi caribou skin. But aside from the size they will be identical. The painted circular designs of women's caribou head shawls have more than a little resemblance to the circular designs on buffalo robes. The possibility of both Naskapi and Plain skin painting being a part of a common old northern skin painting culture should be investigated and a comparative study of the two arts made.

Another problem is that of moosehair embroidery; was it done at all in pre-white times and if so what was its distribution? Was it an invention of the Ursulines who simply substituted a native hair product easily obtainable for thread which was no doubt difficult to get in the late 17th century? What we know from existing specimens is that great quantities of birch bark embroidered with moosehair exist in our museums, usually

5. The Penobscot Man by Fannie Hardy Eckstorm, Boston, 1904, pp. 3-22.
labeled Tuscarora. Much of it was purchased at Niagara Falls where hosts of honeymooners of the gay 90's and later stared enamored at that great natural phenomenon as well as at each other; and they trafficked with the Indians. The Indians were Tuscarora from their reservation nearby and they found business good—so good that they were unable to manufacture enough souvenirs to meet the demand. So they became middle men buying the beaded pouches, moccasins, baskets, etc., from the Mohawks of Caughnawaga, St. Regis, and Lake of Two Mountains, from the Senecas on their neighboring reservations in New York State, from the Iroquois at Six Nations, from the Ottowa, the Algonquin at River Desert (Maniwaki), and others; and they bought moosehair embroidered birch bark boxes, trays, hot mats, and cigar cases from the Huron of Lorette. It has been maintained that nearly all surviving moosehair work was the product of the Lorette people, but probably it was formerly done by other groups. Willoughby figured a moosehair embroidered pouch made by some Maine Indians.7 Speck once collected a moosehair embroidered box from a Malecite family on the St. John River in New Brunswick and on the basis of it ascribed the technique to that tribe; but it turned out that the Malecite’s wife was a Huron from Lorette and so the art went back to that place. However, another eastern Indian group has done moosehair embroidery in recent times and it can be distinguished from that of the Huron. A group of Micmac have for many years been coming to Riviere du Loup during the summer months where they sell souvenirs to tourists at the steam boat wharf. Their work is characterized by human, animal and bird figures and often shows Indians in different employments—gathering maple syrup, picking berries, hunting, fishing, and smoking. The Lorette work on the contrary is largely floral, often with several different blossoms combined on one set of tendrils. All this moosehair work is done with French knots and other French embroidery stitches.

Recently I had occasion to look over the large collection of sailor’s scrimshaw work which we have at the museum in Salem. It so happened that a week or two previously I had been looking at a large collection of Iroquois silver work in the Buffalo Historical Society. I was astonished to find the identical designs in the whalebone of the sailors as were in the silver ornaments of the Indians. These must obviously go back to the same European tradition for the Indians of southern New England particularly Cape Cod, Connecticut and Gay Head went awahling with the whites and they were particularly sought after because of their skill as harpooners. It seems doubtful if many of the Iroquois could have done this and yet by coincidence I was told of a collection of scrimshaw work at Cattaraugus reservation in western New York State owned by a Seneca whose father had for many years shipped out of New Bedford and who made these scrimshaw articles. I had noted previously that the clenched fist and other terminal ornaments carved on the ends of Iroquois wooden spoons were the same as those so frequently found on whalers’ scrimshaw work but supposed it to be merely coincidence. Perhaps it is, and yet it remains something that ought to be investigated. Did many of the New York Iroquois go whaling? Who knows?

Bead work is widely distributed, in fact, I should say universal to all the eastern Indian groups. Some of it is of a generalized nature and cannot be ascribed easily to any particular tribe or reservation. There are other kinds, however, that we can say with assurance are Micmac, or Penobscot, or Caughnawaga, Mohawk, or St. Regis, or New York State Seneca. No definitive studies of this kind of thing have been made. Nevertheless, I have looked over enough of the material to note certain puzzling things. I shall mention but one. There is a certain type of bead work that is typically mid to late 19th century Micmac. It is apparently also typical of the same period Iroquois but was not, so far as I can make out, made in the intervening area. Now this would be easily resolved if the Iroquois involved were the French Mohawk near Montreal for at Caughnawaga they carried on an extension of the political form of the Six Nations, and the Micmac, Penobscot, Malecite, Passamaquoddy, St. Francis Abenaki and Huron all belonged to it. They sent chiefs there as delegates once a year to sit in council.8 When this political council disintegrated the Micmac sent delegates there after the other groups had dropped out and so maintained contact with the Mohawk later than the others. But the dilemma is that the kind of beadwork involved was to my knowledge never made at Caughnawaga but only by the Seneca, and possibly Onondaga, of New York State.

As a final problem we might note the distribution and decoration of splint basketry. This is familiar to everyone and was, and still is, made in enormous quantities by the Indians but no one knows whether it is an aboriginal craft or one introduced by white men. It was decorated in two ways, by free hand painting and potato stamp decoration. A considerable amount has been written ascribing certain types of this basketry to particular tribes and groups and I think a certain number of such identifications are correct. However, as a note of caution, I would point out that in the late 19th century there was a group of about a score of Indians drawn from some half dozen eastern tribes ranging from Micmac to Mohogan who ran what amounted to a factory manufacturing these baskets. Their first location was in Connecticut. From there they moved up on the Hudson River in New York State and from there to New Hampshire for two or three years more. Finally the business apparently dropped off and petered out. Something akin to this is related in the "Life of John W. Johnson, who was stolen by the Indians when three years of age and identified by his father twenty years afterwards and related by himself" published at Biddeford, Maine in 1861. He was born in Hollis, Maine in 1829 and when a small child was captured by the Micmac and brought up by them near

A PRELIMINARY REPORT ON THE NUNKATUSSET SITE

Roland E. Engstrom

The Nunkatusset site is located on an island-like strip of high land, completely surrounded by meadow and swamp, in the Hockamock meadows in West Bridgewater, Plymouth county, Massachusetts. The Nunkatusset River, which has its origin in Lake Nippenicket, flows past the site, and at a point opposite the site, the waters of the Cowessett River flows into it.

The site can be reached dry shod only in extremely dry weather in the summer, but in periods of high water, in the spring and fall, a canoe must be used. When the meadow is flooded, the surface of the site is only about three or four feet above the water level.

Even at this late date the site appears much as it was when the Indians occupied it. The nearest habitation is a mile or so distant and the road a half mile to the northeast. Last year a great horned owl nested in a large pine on the site. In the spring and fall great flocks of wild fowl feed and nest in the great swamp about it.

9. This is described in a paper "A Seventeenth Century Pennacook Quilled Pouch" which will appear in a forthcoming publication of The Colonial Society of Massachusetts.

* This paper was read at the dinner of the semi-annual meeting of the Massachusetts Archaeological Society at Plymouth, Massachusetts, October, 1950.
The river is well stocked with fish; turtles, frogs, muskrat, and mink live along its banks, and deer, raccoon, and skunks frequent the meadow. Berries, nuts, and acorns are plentiful, and clumps of meadow hay, which have been found, partially carbonized, in the hearths of the site, still covers the meadows. A good supply of clay for pottery still may be found at the banks of the river or, by removing a foot or so of surface soil, anywhere in the meadow itself. No doubt these features played an important role in attracting the Indians to this site.

Starting at the extreme end of the narrow island we have troweled in horizontal cuts, carefully recording the position and profiles of hearths and refuse pits, and locating all implements by vertical measurements and recording their position relative to the several horizons.

The loam or overburden is very black in color and, in certain areas, contains quantities of charcoal. Chips are found at an average depth of eight to ten inches from the surface. There are very few naturally included stones in the top soil but white oak roots are plentiful and bothersome. The subsoil seems to have been water deposited and is heavily stained with yellow. It becomes lighter in color as the depth increases. This sandy subsoil is also quite free from naturally deposited stones but contains numerous hearths, pits, chips and fire-cracked stone.

The site was discovered some years ago by Richard Staples while trapping along the river. Mr. Staples and the writer, who are members of the Massachusetts Archaeological Society, have been excavating the site during the past two seasons.
There has apparently been no disturbance by colonial cultivation there being no signs of plowing or other breaking up of the natural soil profiles. This is probably due to the isolated position of the site surrounded by low lying meadow and swamp. During colonial days the edge of the swamp was trenched for drainage so that the meadow hay could be harvested. We also found one hole that was probably dug in colonial times in search of bog iron.

The writer agrees with a theory advanced by William S. Fowler as to the probable geological history of the site. After the final retreat of the Wisconsin Ice a large body of water occupied the area now taken up by Hockamock swamp and Nipinicket Lake. The swift current of the Cowesett River carried and deposited a large amount of sand and silt which formed sand bars at various points. As the water receded, these bars became low islands, and after some time had elapsed, these bars acquired a top soil sufficient to support vegetation. Since the lowest artifact bearing layer at the site is quite deep in the underlying sand it seems logical to assume that the first Indians to occupy the site arrived at a time when it was nothing but an exposed sand bar, thereafter it was occupied only during seasons of low water. The yearly deposits of silt and sand brought down by the flood waters gradually increased the elevation of the site and buried the artifacts left by the occupants.

The artifacts recovered, according to vertical position, are as follows:

**UPPER HORIZON.** (Surface or turf to junction of subsoil)
(a) Clay potsherds
(b) Oval pendant.
(c) Winged Bannerstone
(g) Small and large triangular points; side notched points; small corner-removed points.

**INTERMEDIATE HORIZON.** (Junction to two inches below junction.)
(a) Steatite and chlorite bowl fragments.
(b) Gouge (probably grooved type.)
(c) Grooved axe.
(d) Drills, (eared, broad based, T based, cross based, baseless.)
(e) Oval seasons (chopper)
(f) Corner-removed, sometimes serrated points; small triangular points; eared, broad based points (small); taper to straight based points.

**LOWER HORIZON.** (From two inches below junction to eleven inches below junction.)
(a) Ulu, (ground and chipped)
(b) Oval knife
(c) Plummets
(d) Ground slate stick
(e) Oval bannerstone, (atl-atl weight)
(f) Drill (expanded base)
(g) Ground slate stick (notched)
(h) Oval scraper (chopper)

(i) Corner-removed, rounded base points; corner-removed, triangular points; long eared, broad based points; bifurcated points, (sharp barbs.)

Large numbers of broken fire-burned stones were found scattered about in the loam and at the junction of loam and sub-soil; these stones were found grouped together as hearths or paved fireplaces. The hearths vary in size and depth. Some were built of large flat slabs of stone while others were merely collections of smaller pebbles. For example:

**HEARTH #1.** Sixteen by fourteen inches, constructed of large stones. Surrounded by red burned sand and containing considerable charcoal. The stones of this hearth were first noted at about three inches below the junction of loam and sub-soil and extended downward fourteen inches.

**HEARTH #2.** Twelve by eight inches, constructed of medium sized stones laid in rectangular shape, starting at eight inches from the surface and extending downward eight inches.

**HEARTH #3.** A round fireplace about twelve inches in diameter. It started at six inches below the surface and the stone extended down about ten inches. Beneath the stone was a four inch layer of charcoal. Between the stone and the charcoal a hand wrought spike about six inches in length was found.

**CLAY POTTERY.**

Clay pot sherds were fairly numerous in the Upper Zone in all parts of the site. They are plain, undecorated sherds, grit tempered, reddish-orange in color, and from one quarter to one half inches in thickness.

The sherds of one large undecorated pot were found at a depth of twenty four inches from the surface in a disturbance which measured fifty by fifty four inches in horizontal dimensions and was thirty six inches deep. The sides of the pot had been crushed and pushed outward, probably by frost action and the pressure of the superimposed earth. The lower portion of the pot, which had a conoidal base, was still in shape. The earth was carefully brushed away so as to expose this base and to allow it to partially dry out. It was then impregnated with an amberoid solution and allowed to stiffen so that it could be removed as a single piece. The sherds were about one-half inch in thickness and were grit tempered with cord maleations on both sides. The inside of each sherd was deeply charred, and it is probable that the pot belongs to the Early ceramic period.

Approximately fifty feet from the point where we started our excavations we came upon a line of refuse pits which seemed to extend across the site laterally. They are from four to five feet in depth and circular in plan. They contain black, greasy feeling earth, mixed with charcoal and ash. Broken, fire-burned stone, pot sherds and other refuse is found in them.

For example:
REFUSE PIT #1.
Diameter thirty-two by twenty-eight inches, total depth fifty-four inches.

REFUSE PIT #2.
Diameter thirty-six by thirty inches. Total depth forty-eight inches.

BURIALS.
During the season of 1948 Dick Staples found an oval shaped disturbance just beneath the loam. This oval measured sixty by thirty-two inches and was gray, ash colored soil except for a very black burned area at one end. Twenty-four inches from the top of the disturbance the flexed skeleton of an adolescent female was found. The crania, which lay to the west, was crushed, and the rest of the skeleton was in very poor condition, the smaller bones being in an advanced stage of decomposition. In a small disturbed area a short distance from the skeleton were found a plummet and two eared, side-notched, projectile points. These may have been intended as grave goods but this point is uncertain.

CHIPPED IMPLEMENTS.
Chipped implements found at the Nunkatusset site number four hundred and fifty. Of these two hundred twenty (49%) are of white quartz; felsite, of various textures, is used in the manufacture of one hundred thirty-six implements (30%), and shale of various grades for sixty-nine (15%). Sixteen implements are of quartzite (4%), five are of chert and two of rhyolite. One large perforator is made of black flint and a stemmed knife is of purple jasper. One base was recovered which is made of a material resembling the Labrador quartzite, the material often used in the Maine Cemetery Complex. Several flakes of agate were found and identity has been made of the material used in the manufacture of one implement as chert from a New York State source. The peculiar banded felsite from Hingham, Massachusetts has appeared sparingly in artifacts and more frequently as chips.

The predominant projectile point type seems to be the small triangular, there being one hundred thirty-eight specimens of this type present (31%). Small stemmed points number ninety-eight (22%), corner-removed forty-eight (11%) and thirty-five chipped implements were classed as snub-nosed scrapers (8%). An unusual number of eared points, twenty-five (6%) came to light. Side-notched points and asymmetrical knives were in the minority (4% each), and drills and battered hammer stones made up another 4 percent (2% each). The remaining ten percent consisted of several types, four lance or spear points, two corner-notched points, four oval knives, one of them a particularly fine specimen, and three small fleshers, the latter showing much wear. Of particular interest are a felsite tool which appears to be a chipped ulu, a bifurcated based point, and two rare perforators. The perforators each possess several working points irregular spaced.

Most common among the heavier tools is the stone gouge. Four complete specimens were found, one of which was made from a green schist. Five fragmentary and two incomplete gouges bring the total number of this type of implement to eleven. Two fine plummets were found. One of these, made of diorite, is deeply incised with opposite longitudinal grooves, and was in perfect condition. The second, of rubbed red hematite, is slightly damaged. A butterfly bannerstone of rare workmanship is represented by a portion of one wing and a ceremonial band of steatite was split through, probably in the drilling process.

Other artifacts from the Lower Horizon which, according to C. C. Willoughby's classification are indicative of the presence of his Pre-Algonquin culture, are a perfect, double-pointed ground slate problematical, a semi-lunar knife in which the grinding process is incomplete, and fragments of the whale-tail type of ceremonial object.

Probably the most rare and interesting recovery from the site has been termed an incised talley-stone of ground slate from the Lower Horizon. This artifact, illustrated in Fig. #2 has minute notches, somewhat equally spaced, along its four edges which seem to indicate that it may have been used as a measure. Possibly it may have been intended for use as an awl in weaving baskets, the measuring notches being used to space woven strands.

Completing the site inventory are three medium sized cylindrical pestles (two complete and one a small elongate stone possibly used as a paint grinder), one well made hand spade, two fragments of slate ornaments (perforations missing), a problematical pecked implement which may have been the head of a weapon, more than one hundred sherds of undecorated, grit tempered, clay pottery, various types of stemmed knives, a quantity of small end scrapers (snubnosed type), thirty one pieces of plumbago, three scored fragments of red hematite (red paint) and the poll end of a large but unclassifiable implement made of green serpentine, quite highly polished.

Two objects of iron, a large hand-wrought spike and a wedge for splitting stone and a shark's tooth were also found in the loam.

East Bridgewater, Mass.
FIGURE 2. Nunkatusset Lithic Traits. 1, Potsherd; 2, Gorget; 3-5,18, Side-notched; 6, Triangular Hoe; 7, Bannerstone; 8-10,15,17, Large Triangular; 11-14,16, Small Triangular; 19, Corner-removed; 20, Crescent-based Drill; 21, Grooved Ax; 22, Small Triangular; 23, Cross-based Drill; 24, Gouge (grooved type); 25, Baseless Drill; 26, Steatite Sherd; 27,32, Corner-removed; 28, Taper-to-straight-base; 29, Eared Drill; 30,31, T based Drill; 33, Side-notched; 34-37, Eared; 38, Plummet; 39, Grooved Weight; 40, Expanded-base Drill; 41, Ulu; 42, Ovate Knife; 43, Ground Slate; 44,45,48, Long Eared; 49,50, Stemmed; 46,47,51, Corner-removed Rounded; 52,53, Corner-removed Triangular; 54, Bifurcated.
This article has been written to record stratigraphic data relating to the Indian occupation of the Winslow site in Marshfield, Massachusetts. The 1947 excavations at that site, conducted by Harvard University, uncovered what appeared to be a Colonial dump, circa 1700, situated in the northern or higher end of a small depression, which drained into the marsh to the south. Below this Colonial dump evidences of Indian occupations were found.

The extensive Indian site, upon which the Winslow house was built, was not otherwise tested during the 1947 season. Specimens from these fields or from the 1941 excavations conducted by Henry Hornblower, II, in and adjacent to the cellar holes of the old Winslow house, have not been considered in writing this paper.

The 1947 excavations covered 180 square meters. The top zone consisted of gray-black loam, about 25 cm. thick, which supported a good growth of sod and contained a few Colonial objects, a number of Indian chips, and an occasional Indian artifact. This superior zone was interpreted as representing fill, taken from the adjacent land and used to cover the underlying Colonial dump. This explanation accounts for inclusion in this zone of artifacts of Indian origin. The next zone, 0 to 35 cm. in thickness, comprised the Colonial dump. It contained bricks, mortar, ash, nails, and a great many other Colonial objects but only two or three artifacts of Indian manufacture.

To the east and to the west the Colonial dump lay directly upon the underlying subsoil but otherwise it was separated from the subsoil by a dark brown deposit presumed to represent the old sod or old humic zone. Over about a third of the excavated area, a thin deposit of shells separated the dump from this old humic zone. The shell deposit and the old humic zone supplied Indian artifacts but contained no objects of Colonial or European manufacture. Indian tools but no pottery were also found in the underlying subsoil which was composed, primarily, of sand and small pebbles.

In the shell deposit and in the old humic zone were stone chips, seven broad-based triangular arrow points, one small point with corner notches and another with side notches, one mineral-tempered and a fair number of shell-tempered sherds, four steatite sherds (one drilled), and two fragments of broken celts. Of four pits, which lead down from this zone, two contained shell-tempered sherds, one contained two celts, and the fourth contained five shell-tempered sherds and a large celt, 20 cm. in length.

It is evident this old humus and shell occupational zone is characterized by large triangular arrow points, shell-tempered pottery, celts, and steatite sherds. As the association between steatite and clay sherds may be surprising, it is of interest to note that one steatite sherd was at the junction of the Colonial dump and the top of the shell deposit, one was in the deposit of shells, and two were at the junction between the old humus and the subsoil. Steatite and clay sherds were not in direct contact nor very close together horizontally but they were both found in the same zone.

The upper few centimeters of the subsoil produced a large lanceolate point, a pentagonal point, a narrow triangular point, one sherd decorated with imprints of a cord-wound stick, two plain mineral-tempered sherds, a fragment of a gage, two steatite sherds, and a celt. The latter did not appear to be in a pit. From greater depths in the subsoil came three long spear points or knives (one with a straight and two with excursive bases), an asymmetric trianguloid knife, and four projectile points with wide corner notches. The latter are not of the type which I have called “corner-removed” but are similar to those called “semi-lozenge” shaped in New York State. Under the system in use by the Massachusetts Archaeological Society they would be designated as Medium M side notched 2.

The number of Indian artifacts from the 1947 excavations at the Winslow site is not great although the quantity of celts and steatite sherds is relatively large. In spite of these small quantities, the data suggest certain artifactual associations which have implications of chronology.

Relatively late are large triangular points, shell-tempered pottery, and celts. In part, apparently associated with this complex but also, in part, apparently extending backward in time are fragments of steatite vessels. Whether this overlap of stone and clay vessels can be demonstrated at other sites remains to be seen.

Mineral-tempered pottery, a sherd of cord-wound stick decorated pottery, the narrow triangular point, and the pentagonal point probably represent a relatively early ceramic period, to judge both from their position at the Winslow site and from their provenance at other sites.

The large spear points or knives, the asymmetric trianguloid knife, and the points with wide corner notches appear to belong to a preceramic and probably pre-steatite period although probably relatively late in what is frequently referred to as the Archaic period.

The mineral-tempered pottery and that decorated with a cord-wound stick, I would classify as Early Intermediate. The shell-tempered sherds came from two types of vessels. One was medium thick and undecorated while the other had thin walls and cord-malleated outer surfaces. Rim sherds are not available but I presume this pottery should be classified as Late Intermediate in time. These terms, of course, refer to ceramic periods of eastern Massachusetts.
A few specimens, obviously found out of normal context, should be mentioned for sake of completeness. These include a corner-removed spear point from the grass roots and a plummet from the fill, both found above the Colonial dump. In the Colonial dump were a fragment of a stone pestle and a drilled fragment of a steatite bowl. The nicest specimen, a decorated obtuse-angle steatite pipe was found at the junction of the Colonial dump and the overlying fill.

In conclusion it may be pointed out that results of this small excavation at the Winslow site indicate it to have been occupied by Indians during at least three archaeological periods and strongly suggest that extensive work at the site should be very rewarding.

Newton Centre
May 1951

THE TRAIL OF THE INDIAN

Chauncey C. Ferguson

"Some Observations in Regard to Our Earliest Indian Inhabitants"

Following the Indian to his old world background takes us far afield. When there was a land connection between Asia and Alaska, or one between France and Greenland, he may have come across to seek his fortune in a new country. Be that as it may, we can imagine the groups becoming over-crowded, as does a hive of bees, and sending off new swarms or divisions east, west, north, to new lands beyond the horizon never before trodden by man. In the course of centuries these dividing migrating sections kept moving onward until they had penetrated every corner of North and South America, and even the islands of the sea nearby. In the course of these thousands of years, the people came to differ so much in manners, customs, language, appearance and progressiveness, that the now hundreds of tribes had little in common except the use of stone implements and a love of a more or less free and wild life.

Of these tribes, the Algonquins moved eastward into New England, crowding out before them their Pre-Algonquin relatives. The Nipmuck branch of these Algonquins settled in what is now Worcester County. Here the great number of lakes and streams teeming with fish, the forests and hills plentiful with turkey and deer, and the glacial valley plains easily tilled for corn, made an almost ideal location for them. Here they seem to have become a quiet, inoffensive, unwarlike agricultural people under the overlordship of tribes farther east of whom Massasoit, in 1620, was chief.

Friendly at first to the white settlers, many of them were easily converted to Christianity by the preaching of John Eliot, and these established the so-called "Praying Indian" villages. They do not appear to have become hostile until there was danger that all their lands would be overrun and taken from them by the settlers. Then, under the leadership of the ill-fated, ambitious, but patriotic Philip, son of Massasoit, they entered upon a war that was to result in their extermination as a people.

It is like bringing coals to Newcastle to come to West Brookfield to speak of the Indians, for here on the shores of Wickabaug was a principal Quabaug village. Here where we now sit was their "great cornfield." Here they burned over yearly the higher land to facilitate the hunting. Here could be seen the hollows of their old corn pits. Here is the Rock House, used as shelter by hunting parties, where even now can be dug up bones of turkeys, bears, beavers, and the shells of mussels and turtles, the remains from their old-time feasts. Here, also, is the walnut grove in which, tradition says, King Philip hunted. Here John Eliot may have preached to the Indians in the Quabaug village. Here in this same village some have believed that Massasoit died. Here King Philip recruited men for his camp in New Brantree. Here, on your own Foster Hill, by your own ancestors, was fought a battle with the Indians known to every school child. Here on the lands near your lake and your river and brooks thousands of stone implements representing all types of Indian work have been picked up by the Lincoln brothers and other collectors, the only visible evidences we now have of former Indian occupation. Could we go back four hundred years what a strangely interesting and picturesque sight we would see along the southern side of Wickabaug, or perhaps back of the Lincoln place.

There would be the collection of more or less beehive-like houses with their poles covered with mats. Before them would be the gleaming campfires. The Indian women would be busily plying their different occupations — grinding the corn into meal with the stone pestles on the stone mortars; baking the corn cakes on their stone plates, or stewing the meat in the clay bowls, or perhaps even in green corn season making succotash; mixing water, clay and sand and moulding them into nicely shaped bowls to be later hardened in the fire; scraping with stone scrapers the flesh and hair from hides, or rubbing these with a paste of liver and brains to keep them soft, or smoking them in a damp oak bark fire to make them waterproof and not hardened by wet; others, depending upon the season, planting with the crude stone hoes the corn, or cultivating it, or harvesting it in baskets and carrying it to previously dug corn pits to be stored until needed; some braiding mats of reeds for the covering of their wigwams and for use inside them.

These Indian women have been sometimes thought drudges, but they probably were no more so than were the pioneer women who succeeded them. Their work was hard and different, but probably not harder for them than was the pioneer woman's for her.
These women might have been taking down the wigwam preparatory to moving, gathering up the household goods and carrying these to the new camp ground, for there were no domestic beasts of burden to assist them. As the woman owned the household goods, it was naturally her duty to see to their safety. In most Indian tribes the husband must come from another clan to his wife's home where he was the only one of his clan. If he did not provide for her properly, or failed in his duties, he might be sent away, even though there were several children.

The children would be running about shouting at their play, practicing shooting with their blunt headed arrows, living the life of the little Hiawatha and with no clothing to hamper the movements of their little bodies.

The dogs, the only domestic animals, would be barking and running about, perhaps to escape falling into the pot to make dog stew—a favorite Indian dish.

The men would be about a great variety of occupations strange to us. Some would be sitting in council, smoking and discussing matters of moment. The old arrowhead maker would be chipping his stone blanks skillfully into arrowheads, knives and scrapers. Some would be pecking, laboriously and patiently, axes or celts into shape preparatory to polishing and sharpening to a fine edge. Some would be taking out the sinews of deer, shredding these finely, chewing them and twisting them into bowstrings. Some would be shaping, polishing, oiling, or heating the rod of hickory or oak for a bow. Some, after shaping, straightening, feathering and decorating the arrow shaft, would be fastening into its groove or split end with sinew the stone arrow. Some might be returning from the quarry with soapstone for pots, graphite for paint, and blanks of other stone for various implements. Others would be coming home from the hunt bringing deer, turkey, beaver, etc., providing both food and clothing. Some might be returning from a successful foray bringing bount, captives and scalps. These in their war paint and their strange dress, of dark earth is found, a mixture of ashes and decayed vegetation, and not uncommonly a layer of unbroken pot is rarely found and is very valuable. The Indian used his waiting time in making a few more arrowheads from the blanks he carried with him.

Such a camp site will show chips of many kinds—jasper, flint, quartz, quartzite, slate, felsite. A few chips indicate only a temporary stopping place where the Indian used his waiting time in making a few more arrowheads from the blanks he carried with him.

On all these spots, as we follow the trail, we may find a great variety of other evidences of former occupation. These may be fragments of pottery, finished implements, fire stones, cornpits, hammerstones, or even rarely, graves. These give many side lights on Indian life and customs.

If many scrapers are found we assume that here the Indian women worked at preparing the skins for clothing by using these to remove particles of flesh from them. The women did all the work necessary in making the hides of animals suitable for shoe and clothing, and a fine job they did. If the camp was near a cornfield, the collector will usually find the crude stone hoes used by the Indian women in planting and tilling their crop of corn. These are sometimes ground to a fine edge and have a polish that can only come from much use in the soil. The men tended only the crop of tobacco.

At the coming of the white men the Algonquins of New England were only semi-nomadic. They had become well settled in their habits because of depending for food and more upon agriculture. On these old corn fields may still be found the hollowed out stone mortars, too heavy to move, used by the women with their stone pestles to grind the corn. Sometimes, even the hollows of the old corn pits may still be seen. These were used for storing the corn and were usually about three feet deep by two feet in diameter. At their bottoms a layer of dark earth is found, a mixture of ashes and decayed refuse thrown in after the baskets of corn were removed.

Usually pieces of pottery will be found, sometimes artistically decorated and nicely shaped. These were molded by the women out of mixed clay, etc. A whole unbroken pot is rarely found and is very valuable. The only place where they are now likely to be found is in a grave. We may find, with a little digging on one of these sites, the reddened stones of an old fireplace still lying as they were laid hundreds of years ago. Usually they are so reddened and cracked as to indicate that the fireplace had been much used.

Since the Indian used utensils of wood and also dugouts we should expect to find some of the tools used in making these. The Indian hacked and burned down his tree and perhaps also hacked and burned it to proper lengths. Then he started to hollow it out by burning.
To hasten the excavating, he removed the charred wood with the stone gouges, celts and axes. This deeply grooved gouge pecked into shape and ground to a fine grooved edge, was one of the best made implements of earliest Indian inhabitants. It is found more commonly in New England than anywhere else in the world; in fact, it is the commonest larger stone tool found here. A strange thing also about this implement is that it was not made by the later Indians at all, and was not in use among them in historic times. A site where we find it is Pre-Algonquin, and that means Pre-Quabauk. Why their use was discontinued no one knows. On later sites, their place is taken by the stone celt and grooved axe which the Pre-Algonquins did not make. The presence, therefore, of the gouge or axe determines whether Algonquins or Pre-Algonquins lived in the location, and so the oldness of the site.

The Indians fished both with nets and hook and lines. So we find where they encamped they threw out lines with notched net sinkers and also knotted plummet-like stones that some have thought were sinkers. These latter also belong to an earlier age and their presence indicates a very old site, and because the later Indians did not make them, they had no tradition as to their use.

We sometimes find a class of weapons also little or no longer used when the settlers came. These are called ceremonial stones because they were supposed to have some religious significance. They are beautifully finished in different shapes. Evidently much work had been spent in polishing, shaping and perforating them. They are known variously as gorgets, bannerstones, boatstones and bird stones, and were doubtless carried or worn as symbols. No one knows what their actual uses were. Hammerstones, both crude and nicely polished, are not unusual on these sites. Many of the pitted, nicely shaped, oval ones were doubtless used in various ways.

Paint sticks of graphite and red ochre may still be found. These mixed with grease when powdered in the paint cup, provided some of the paint used in personal decoration and for the adornment of the canoes and weapons.

The greatest find would be an old Indian graveyard, for with the Indian were buried his most prized possessions. On his right hand were placed his weapons, on his left his pipe, on his breast his gorget, at his feet a pot of soapstone or clay. There would be also powdered red ochre, tobacco, dried berries, reed mats, etc. The idea was that the Indian was going to a new world where he would be doing and enjoying the same things as here. So he must have his weapons to protect him, his pipe and tobacco to solace him, his food to help sustain him on the long journey, and his paint to renew his decoration. Pipes have even been found in the graves of babies--the thought being that the child would grow up in the world beyond the same as in this life and that, therefore, the pipe would be a comfort to him. Graves are not common, though doubtless there are thousands of them that have not been located. Much that we know of Indian habits, customs and beliefs has come from knowledge gained from the opening of these graves.

It is a matter to be regretted that the Indian relics which have been found so abundantly in every community have not been retained there. They are becoming more valuable and interesting as time goes on, as the only remains of the earliest inhabitants. Unfortunately, the really fine collections, made not only here, but elsewhere in Worcester County, have been sold to collectors or museums at a distance, and are forever lost to the people to whom they have the most significance. They symbolize the stone age through which our own remote ancestors lived, and from which they emerged only when they had learned the use of iron and bronze--a stage in civilization to which the Indian had not come when he first saw the white men. When we see these artifacts used in that life of perhaps thousands of years ago, going back to a time when even the glaciers had only begun to recede from New England lands, we wish some power the "giffie gie" us to read in them the story that they tell of their first owners and how these had used them to make life more comfortable and endurable.

Most of the evidence for this investigation comes from specimens taken from the Oaklawn steatite quarry located on the farm of Herman Johnson in Cranston, Rhode Island. Through the generous co-operation of Mr. Johnson, who permitted whatever excavations were necessary at the site, quantities of quarry tailings have been removed and carefully examined. The writer is especially indebted to John English, Roland Engstrom, Richard Staples, Perry Brooks and Richard Hatch, all members of the Massachusetts Archaeological Society, who assisted in the work and either donated material or allowed it to be illustrated for this paper. Valued assistance from other interested persons, whose specimens cannot be shown for lack of space or because they more or less duplicate those selected for illustration, is also acknowledged.

Oaklawn quarry has been known to exist for more than half a century, but until recently, excavations carried on at the site appear to have been somewhat superficial. In most cases, they have failed to reach the depth of aboriginal quarrying, which at times extends six or seven feet below the surface where steatite and chlorite veins sometimes appear showing pecked over surfaces.
Here, quarrying had ceased, probably due to the impracticality of deeper operations on account of excessive labor required for tailing removal. In 1943, Gerald C. Dunn and R. O. Bale carried on extensive excavations at the site concluding their work in 1945 by the publication of a report by Mr. Dunn. About this time the writer was conducting excavations at the Westfield and Wilbraham steatite quarries in western Massachusetts. A few years later, he extended his operations to other quarries in New England including Oaklawn, Eight Lots, Dolly Bond, and Ragged Mountain quarry-shelter site.

It now appears that most steatite bowls from New England quarries resemble stone vessels cut from other quarries further south in Pennsylvania and Virginia. However, recent excavations at Oaklawn and elsewhere have brought to light several rare products as well as stone pipe-forms that will be described in detail further on. In general, it may be said that stone cutters of the Stone Bowl age throughout the Atlantic seaboard were intent on making a variety of permanent eating utensils, from cups to kettles, wherever they found suitable steatite outcrops. Smoking pipes were also manufactured out of steatite as well as of chlorite, a fine grained companion stone with some talc content, outcrops of which are often found along steatite veins.

The importance of thorough investigation of stone quarry activities through excavations at quarry sites wherever possible cannot be overemphasized. Such industrial sites were the scene of far reaching independent inventions and also, that which now seems probable, cooperative effort between men and women. It was there that new ideas took shape for modified vessel styles; and it was there that manufacture of them was attempted. Sometimes, results were successful, but frequently, vessels were broken before completion. It is as a result of such hard luck that quarry products, usually fragmentary and in need of restoration, offer the best opportunity for research. No habitation site can possibly display such a varied array of vessel shapes as occur at steatite quarries, since products from the latter are the result of more industrial minds than any one camp or village could supply. It is also worth noting that quarry material has been less exposed to complete destruction over the years from continual hard usage or intrusive forces such as Colonial cultivation. Another advantage of quarry evidence is its culture pureness. That is to say, it is not subject to intermixture with material from later cultural occupations except at one site, so far as is known by the writer. This exception is the Ragged Mountain quarry-shelter site in Connecticut. Hence, for all other sites quarry evidence tends to produce a reliable yardstick with which to estimate duration of industrial activity. Of additional value is the study of industrial tools at the quarry, which enables their detection when found on habitation sites. Association of these tools and domestic traits at such sites when found stratigraphically in the same culture zone is convincing evidence of the Stone Bowl epoch for the horizon, as is displayed at the Potter Pond site.

STONE PIPES

Quarry evidence of pipe manufacture consists of two main classes of worked stone: pipe-blanks and pipe-forms. They are made from either steatite or chlorite, of which the latter has the higher frequency at Oaklawn. There are, of course, intermediate pipe shapes which are not considered significant because they are nondescript. Therefore, it is only necessary to consider the two classes referred to.

1. Pipe-blanks are stone blocks that have been pecked into rough shapes that resemble to a limited extent the pipes to be manufactured. Blocks may be either large or small, for there is ample evidence to show that large pipes as well as small ones were made to meet varying smoking customs of the times.

2. Pipe-forms are blanks that have been carefully reduced by pecking to desired pipe shapes, but not to the final modified proportions to which they were ultimately worked by abrasion and polishing. As pipe-forms, they have reached the stage where they are ready for reaming and drilling. After this, pipe bowls and stems underwent a final modification in which the artisan sought to develop a shape to satisfy his own aesthetic tastes (Fig. 3).

Stone pipes of the Stone Bowl era should be differentiated from those which were subsequently made and used by people of the following Ceramic-Agricultural period. Stone pipes of the latter epoch may be identified by the fact that they are usually made of sandstone or of limestone, and only occasionally of steatite. When made of the latter stone the material is probably derived from large fragments of broken steatite bowls left by former occupants. More often than not, they consist merely of a pipe bowl with perforation for a wooden stem, whereas the former pipes have bowl and stem of stones in one piece. Occasionally, stone pipes of the ceramic era also appear in one piece, but in that case exhibit superior workmanship in the development of minute details, such as effigy carvings. In fact, some of these pipes suggest the use of steel tools of protohistoric days and at times are found as grave goods with burials of those times.

Stone pipes, as represented by Oaklawn quarry pipe-forms—also found occasionally on habitation sites in the vicinity—are composed of four different types: straight or cigar shaped, obtuse elbow, right angled elbow, and platform. In most every case, pipe stems of each type are 2" long or less, although occasionally, there is evidence to suggest the use of longer stems.

1. Straight pipes are represented by one form only, (Fig. 3, #3). It has a cigar shape and seems to suggest a nearly straight contour between bowl and

1. Dunn, 1945.
3. Holmes, 1893.
FIGURE 3. Pipe-Forms from Oaklawn Steatite Quarry.

stem. Apparently, this type was seldom used since evidence of it is limited.

2. Obtuse elbow pipes are indicated by forms that appear frequently, (Fig. 3, #4, 6, 7). They assume all angles up to that of a right angle and presumably were a popular style.

3. Right angled elbow pipes are shown by infrequent forms, which may suggest for this pipe style a more limited use (Fig. 3, #5, 8). However, it is worth noting that this shape sometimes assumes artistic proportions by virtue of an attractive lobe that protrudes gracefully from the base of the pipe bowl as illustrated.

4. Platform pipes are represented by forms that either have a concave or a flat base (Fig. 3, #1, 2). This type has a high frequency and occurs in both large and small sizes, which seems to indicate for it a favored position. Stylistic pipe bowl shapes are sometimes encountered with well defined everted rims that must have required precision workmanship to complete without fracture.

A comparative study of these pipe-forms with corresponding finished pipes, a few of which have been recovered from the New England area, leads to a belief that the smoking pipe was a cherished possession of Stone Bowl man. Certainly, there is ample evidence from all parts of Oaklawn quarry to support this hypothesis and to indicate that over the years long hours of labor went into its manufacture. While those quarries excavated by the author, have similar pipe-blank evidence, it is decidedly limited as compared with Oaklawn. However, there seems sufficient proof from these quarries and others to link the early manufacture of pipes with that of stone bowls of this industrial age.

W. H. Holmes, in 1893 reporting on pipe making in Potomac Valley steatite quarries, says in part: "Pipes...were made by the same people, but mostly no doubt from choice bits of stone carried away for the purpose, or perhaps often from fragments of vessels broken in use."

Contrary to this conception of a rather indefinite method of pipe making, Oaklawn evidence suggests orderly procedure of an established technique that for the most part was carried on at the quarry. Prescribed blocks of steatite, more often of chlorite, were pecked out and shaped into pipe-forms ready for drilling. While evidence suggests that pipes were reamed and drilled at the quarry, it is likely that some forms were conveyed to camp sites for these finishing processes. For example, one Oaklawn chlorite elbow pipe-form was recovered by excavation on a habitation site at Mount Hope, Rhode Island, some twenty water and land miles distant from the quarry. Certain other specimens in which the drilling had been commenced were taken from camp sites that lie closer to the quarry.

PIPE MAKING

Pipe making, as deduced from Oaklawn evidence, commenced with a pipe-blank that had been pecked into shape, somewhat resembling the type of pipe to be manufactured. At times, the pattern of the pipe to be made was transferred to the blank by means of an outline pecked on one face of the blank, (Fig. 4, #1). However,
more often the work was probably done by eye. Nevertheless, similar pecked pattern work has appeared on one cup-blank and could well have been a recognized method of layout, even though limited for both pipes and bowls.

Continuing from this pecked layout design, the pipe-form was then carefully pecked into shape after surplus stone matter had been removed up to the pattern outline. The pipe bowl was next hollowed by means of a reamer usually made of quartzite, (Fig. 4, #3-5), that was held by the fingers and twisted back and forth.

Up to this point, the evidence seems to clearly define manufacturing procedure, but the way in which pipe stems were perforated is still a debatable question. No stone drills of suitable proportions have appeared at quarries that could have been used to produce the small long hole required for most pipe forms. Therefore, it is thought probable that stem drills were made of some perishable material, such as wood or bone. After the stem was perforated, the entire pipe was reduced by abrasion and polishing to artistic proportions in conformity with the individual desires of the maker.

In 1894, J. D. McGuire experimented with primitive methods of drilling stone found in use by Indians of the 19th Century. Included among them is one recognized procedure that is believed to have had an early beginning: that of reed and sand. Oscillating between the hands a solid stick or hollow reed with fine sand introduced at the point of contact with the object being drilled, in conformity with aboriginal methods, it was found possible to abrade a hole slightly larger in diameter than that of the stick. With this previous research to go by, and following the process of pipe manufacture as noted at Oaklawn, the author made a steatite elbow pipe using nothing but aboriginal tools, (Fig. 4, #7). The problems encountered and methods of overcoming them are as follows.

A steatite pipe-blank from Oaklawn like (Fig. 4, #2) was pecked into a pipe-form as in (Fig. 3, #7). This required about two hours to complete. Next, with a quartzite pipe bowl reamer (Fig. 4, #3) held in the fingers and oscillated at an obtuse angle to conform to that of the pipe-form, the pipe bowl was hollowed to a depth of one inch. About three hours were consumed in performing this operation. Then, the cavity was extended still deeper and on into the stem by means of a narrow bitted reamer. After this, the interior surface of the pipe bowl was scraped even by means of a long stone flake worked in a vertical direction; elapsed time about one hour for these two processes. For the perforation of the stem, a drill was made from fine grained wood (Fig. 4, #6), with a short taper at its top to facilitate retention between the hands during its use. Its bit was made about 2-1/2" long and was tapered from 3/16 to 1/16" in diameter. Next, with a pointed stone a hole was worked in the butt end of the pipe stem to make a proper seat for the drill. Now, with the pipe-form held securely between the knees, a pinch of fine wind blown sand was placed in this hole. The sand was engaged by the bit of the wooden drill that was worked between the hands with a swift oscillating motion. Frequently, the drilled hole was freed of sand and steatite dust, new sand introduced, and drilling resumed. After repeating this process a great many times,
the pipe stem was perforated with a hole that measured 2" in length. The hole was 1/16" in diameter where it broke through into the pipe bowl's interior, and 1/4" in diameter at the other end. Drilling progressed at the slow rate of about 3/16" per hour. This was reduced even more to about 1/16" per hour when crystalline impurities were encountered. Achievement of this difficult and controversial process was attended by much satisfaction, as proof had thus been established to show that stone pipe stems could have been perforated in this way in a reasonable length of time by aboriginal labor. The final process of reducing the pipe to artistic proportions was accomplished by abrasion with a rough surfaced flat stone and a smooth pebble. The elapsed time required for this final modification was only about one hour.

RARE STONE VESSELS

As reported from all Atlantic seaboard steatite quarries, most stone bowls have oval shapes with lugs for handles at either end. Some vessels, such as dishes, usually have no lugs at all, while cups, probably used in place of spoons, have a lug at one end only, (Fig. 5, #2). Frequently, these steatite products are found in a fractured condition before modification to their finished forms had been done by abrasion. However, the workman's skill with a pick was so great that many specimens had reached advanced stages in shaping when finally fractured. Stylistic handles as apart from ordinary lugs rarely appear, but enough of these together with other artistic products have now been recovered to justify their recognition.

From Oaklawn quarry has come a valuable recovery that probably belongs to this category. It is a cup fragment with a projecting handle, which has a triangular shape; cup restoration is illustrated, (Fig. 5, #1). The upper side extending into the cup for a thumb hold. On both sides of its base are well defined cup shoulders. As early as 1943, the writer noted and recorded the occurrence of about 24 steatite cup-blanks at the Westfield quarry that had one end squared off, with a triangular projection appearing at the other. At the time, it was thought that these vessel blanks indicated preliminary work in the manufacture of cups with artistic triangular handles. Now, there can be no longer any doubt of it.

Another highly significant recovery is an Oaklawn rim fragment from a small steatite bowl with a deeply constricted neck; restoration is illustrated, (Fig. 5, #3). In describing this vessel segment that exhibits the bowl contour from top to bottom, it should be pointed out that although entirely cut out with a pick, the artisan has succeeded in keeping a fairly uniform thickness of about 1/2" throughout the neck constriction. This is indeed a rare find, and probably should serve to indicate the manufacture of some bowls with this specialized neck structure. Presumably, such bowls had no lugs since the flaring rim might well have served a similar purpose. Whatever idea was back of this bowl construction, it is obviously another artistic departure from the run-of-the-quarry type of ordinary vessel with lugs.

Finally, design embellishment of some steatite bowls seems to set them apart from unadorned containers as rare artistic creations. A few decorated bowl fragments have appeared on habitation sites, two of which are

---

6. Fowler, 1943.
illustrated, (Fig. 6). Although these decorations are composed of simple design elements, nevertheless, they clearly demonstrate the desire of the maker to achieve artistic values. Design #1, from a large bowl, consists of a single horizontal band of pecked marks appearing just below the rim. Design #2, from a small container, has a deeply cut horizontal line over a band of short fine oblique marks apparently made by incision. Contour of this decorated vessel suggests an attractive incipient collar development with a sharply undercut base.

![Decorated Rim Fragments](image)

**FIGURE 6.** Decorated Rim Fragments. 1, Pecked border from a large bowl; 2, Incised border from a small bowl.

**DISCUSSION**

Certain critics of the thesis, that most one piece pipes of steatite and chlorite belong to the Stone Bowl industrial era, argue that men from later cultures may have continued to work the quarries for the purpose of making pipes and other specialty products. They seem to either disbelieve the supporting evidence, or prefer to overlook it completely. Instead, they argue that this stone industry was a part of the ceramic period, and was not separated from it as an independent epoch. While such a theory may satisfy some, others think there is ample evidence to link most steatite and chlorite pipes to the original Stone Bowl industry and not to a later industrial period.

As has been stated, W. H. Holmes is of the opinion that pipes were contemporary products with steatite vessels in quarries of the Potomac-Chesapeake Tidewater Province. Since the days of Holmes' research, quarry excavations in New England have produced additional pipe making evidence. Gerald C. Dunn, in reporting his activities at the Oaklawn site in 1945, records the recovery of 26 chlorite and 22 steatite pipe-blanks and forms. The author's work at the same site during the 1950 season discovered pipe evidence in about the same relative proportion. Pipe-blanks and forms were at all levels from a depth of seven feet to the surface, and were mixed indiscriminately with fractured vessels of every kind. Hence, they seem to be an integral part of quarry activity from the start.

Furthermore, C. C. Willoughby places most steatite one piece pipes in his Old Algonquian Group to which he also attaches steatite bowl industrial activity. Moreover, mortuary recovery reported by W. H. Howes provides additional evidence to support this culture trait association. In 1868, graves in Holyoke, Massachusetts containing burial goods and quantities of red ochre were exhumed. Of the recovered artifacts, mention will be made of those articles most pertinent to this discussion. Included was a steatite bowl with lugs at either end, and "steatite pipes skilfully and curiously wrought...also "four stone tubes." Howes also records recoveries from a South Hadley grave consisting in part of stone tubes and four eared broad-based-projectile points. Now, in these trait associations, since stone tubes are associated with steatite pipes and a steatite bowl on the one hand, and with eared broad-based points on the other--the latter a diagnostic Stone Bowl trait at the Potter Pond site--affiliation of such pipes and tubes with the Stone Bowl era seems probable.

Other related evidence should be mentioned from the Brewer red ochre cache at Plymouth, Massachusetts. Buried in red ochre were two platform steatite pipes and among other things taper to-straight-base spear points--the latter also held to be diagnostic of the Stone Bowl era at the Potter Pond site. Again occurs confirming evidence from Ferguson's red ochre cache at Brookfield, Massachusetts in which a steatite bowl appeared. From this evidence, the use of red ochre for caching or burial purposes seems to be another trait of the period. However, similar use of red ochre is known to have occurred frequently in earlier ages, so that its use cannot be held to be too significant as a diagnostic culture trait.

Stratigraphic evidence of the culture position for stone pipes is furnished at the Potter Pond site. There, in the lower zone that embraces the Stone Bowl age appears a pipe bowl fragment from a highly polished well shaped black chlorite pipe (probably platform). The stone material from which it is made is reminiscent of black chlorite from an aboriginal quarry in Stafford Springs, Connecticut, which may have been its source. Further-

more, beautifully wrought platform pipes have been reported taken from burials in Beverly\textsuperscript{13} and Essex, Massachusetts,\textsuperscript{13} all of which seems to support the belief that pipe making of the period under discussion had reached a high level of development. In view of this, the question may well be asked, whether the knowledge of pipe making originated in the quarries as an independent invention or diffused from elsewhere.

That pipe making was probably introduced to northeastern coastal regions by the Stone Bowl era is now believed tenable, since stratigraphically, pipes do not occur in earlier archeological culture horizons. Supposing then, for the sake of argument, that steatite quarries were mother to the invention, it should follow that inferior, elementary pipe-forms from earlier stages of manufacture should occur at the quarries. However, this is not the case. Instead, there appears consistently well made pipe-forms, for example at Oaklawn where pipe making is well defined. Therefore, it may be assumed that the know-how had been brought to the Northeast as a part of a culture migration coming from an area where pipe making was already an accomplished fact.

The middle western Moundbuilders of probably a later age are known to have been inveterate smokers. Their pipes consisted for the most part of platform, elbow, straight one piece styles, and separate bowls. But archaeological evidence places the origin of the pipe with the Basketmakers of the Southwest sometime before the start of the Christian era. Therefore, the author proposes the following hypothesis. Certain offshoots of southwestern migrants with smoking customs, who at a later date became the Moundbuilders, may have kept on moving eastward from the Great Lakes area in the early stage of their migration until they overran the eastern part of New York State and all of New England. These people, then, could have become the Stone Bowl industrialists of the eastern seaboard. Whether or not nomadic people with smoking customs came into this region in just this way may never be known. However, it is probable that pipe making stone cutters of this age were migrants from the west and not racial descendants from former occupants of the area. The new comers probably intermixed with the indigenous people and continued a few of their local traits in modified form, although they evidently abandoned most of them in favor of new ones that they brought with them. This author fails to find evidence to support the thesis advanced by some that Stone Bowl man may have had affinities with the Dorset Eskimo because both manufactured steatite stone bowls. While at first glance, this industrial similarity seems significant, when analyzed more carefully it appears unrelated. The Eskimo environment made different demands upon its people than did that of New England, accordingly steatite bowls from the two localities have different shapes. Therefore, Eskimo and New England bowls have little or no resemblance except in the material from which they are made. It is true that occasionally, New England vessels appear with slightly square shaped corners somewhat resembling those of the Eskimo, but invariably they have lugs, whereas the latter usually do not. Such resemblances are thought by most to be fortuitous. Generally speaking, local steatite bowls have oval shapes that cannot be said to resemble even remotely those of the far north. Furthermore, excavations of steatite quarries on the Atlantic seaboard and of Stone Bowl horizons on habitation sites in this area have failed to produce contemporary domestic lithic traits with Eskimo affinities, such as ulu and ground slate projectile points. Therefore, it seems probably that the making of steatite stone bowls by both peoples represents parallel invention, rather than racial affinity or diffusion as a result of social contacts.

CONCLUSION

After weighing all available evidence, the pipe making Stone Bowl era of New England is believed by the author to have commenced about the beginning of the Christian era and to have lasted for five or eight hundred years. Certain it is that it preceded the introduction of ceramics, and is now thought by some to have sowed cultural seeds that flowered into ceramic creations of the following age.

Stone Bowl man, probably a migrant from western regions, brought with him creative ability beyond and above the savage urge for survival. His industrial inventions, at least, evidently were of a higher order that stemmed from a desire to produce values for social progress instead of for survival of destruction. Bringing with him, as is postulated, the ability to manufacture pipes from stone, it was only natural, with the discovery of soft workable steatite, that he should have determined to extend his activities beyond pipes to include permanent eating utensils as well. Swiftly but surely steatite industrial progress went forward until it reached all eastern areas where outcrops of the stone occurred. Thus new opportunities resulted that opened the way for individual creations, often seen to embrace forms of artistic beauty far beyond the ordinary shapes customarily manufactured. There is good reason to believe that this virile economic upsurge was attended by a widespread spiritual development of which the production of manufactured goods with aesthetic values was only one of several expressions.

Among various stone products with artistic proportions that are attributed to the work of men, smoking pipes should probably come first. No doubt, they were greatly prized as seems evident from the extreme care displayed in their manufacture, and from the graceful shapes into which they were ultimately worked.

In the category of bowl making, the Oaklawn fragment with a constricted neck, previously described, is noteworthy of attention. It represents a marked departure from the insloping irregular walls of most of the prevailing bowl forms with lugs. Furthermore, it displays a knowledge of the constricted neck technique that was to be used so effectively in the construction of clay pots during the succeeding age. Since it is known that woman

became the potter of ceramic vessels, it is tempting to surmise that it may have been she who suggested the Oaklawn bowl with constricted neck. This discovery should serve to show stylistic continuity between stone bowl and clay pot manufacture; an industrial link that formerly has been absent. Also by inference, this disclosure should suggest racial continuity between the two epochs.

Belief is gaining ground that woman assisted in the manufacture of stone bowls in numerous ways. One indication of her influence may be detected from design embellishments found on some vessels. It seems likely that such design work was accomplished on habitation sites for the purpose of beautification, since evidence of it comes from habitations and not from quarries. Now, since stone bowls served household economies that were under woman’s direction, it seems possible to recognize her hand and artistic impulse in this early stone bowl decoration.

Archaeological research in steatite quarries during the close of the 19th Century advanced the belief that this industry was a man’s world of invention and production. However, during the last decade, investigation by the author in six New England steatite quarries and elsewhere has brought to light new evidence that seems to refute this thesis. Active industrial participation by women now seems probable. In fact, it may not be too much to say that this was the first industrial activity in prehistoric New England that achieved a distribution of labor between men and women, and to which each sex contributed specialized effort toward their social advancement.

Attleboro, Mass.
February 15, 1950