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BRONSON MUSEUM
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This, the Society Museum, is located on the 5th Floor of the Attleboro Trust Co.
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The museum has extensive exhibits of stone implements, obtained for the most
part from central Massachusetts areas. They have been arranged in the four culture
periods identified in the Northeast that extended over the past 10,000 years;
diagnostic artifacts are shown in the culture to which they belong.

Beside seven large dioramas depicting scenes of aboriginal activities, many large
wall-case displays have been added. These contain impressive ceremonial remains of
cremated burials that exhibit probable mortuary rites of Late Archaic peoples,
who lived 4,200 to 4,700 years ago on the shores of Assawompsett Lake. The
museum has been developed so as to aid archaeological research for those interested
in gaining comprehensive information about the cultural development that took
place in New England throughout its four culture periods; Paleo, Early Archaic,
Late Archaic, and Ceramic-Woodland.
THE DIAGNOSTIC STONE BOWL INDUSTRY

WILLIAM S. FOWLER

During the last hundred years many researchers, both amateurs and professionals, have uncovered and studied aboriginal workings at numerous steatite (soapstone) quarries from New England to the Potomac Valley and further south. The soft workable stone of these deposits, because of its heavy talc content, provided the quarriers with a material that readily lent itself to the making of many useful products. Another talc-softened stone, chlorite, outcropped at many of the quarries along with steatite, and together these two stones provided the incentive for the development of an extensive creative enterprise. We now know from recent studies of quarry evidence that this industrial activity was carried out by people of the Late Archaic Age, which, in the New England area, had a probable span of about 3,000 years, extending from approximately 5,000 years ago down to about A.D. 300.

One of the earlier scientists to provide an intimate account of what went on at the quarries was W. H. Holmes of the Smithsonian. Writing in 1894, after research carried on in some 8 or more quarries in the Potomac region of Virginia, and Maryland, he furnished a comprehensive account of steatite quarrying activity, as published in the 15th Annual Report of the Bureau of Ethnology. That is, among other things he stressed what the stone tools of the quarriers were like, and how they were probably used to peck out and shape the stone products of man’s ingenuity, evidence of which filled the quarries. And while most, if not all of the worked steatite found strewn about and in the quarry dumps, was broken and semifinished, much of it was far enough along toward its finished state to furnish a reliable idea of the diversification of the stone bowls and other products that were being made.

Many quarries in New England and as far south as Alabama have now been uncovered and excavated with more or less like results, so far as their basic large stone bowl products are concerned. These appear to follow similar lines concerning their shapes. However, their production may have differed somewhat between northerly located quarries and those to the south, in the way in which they were cut out of the steatite outcrops or boulder deposits and pecked into shape. Beside large bowls, large stone tools used at all quarries, consisting of End picks, some with narrow chisel-like blades in place of pointed bits, have proved to be the same. When it comes to other kinds of small specialized tools there is a marked difference, as shown by Holme’s report, which is accompanied by illustrations; to be referred to more at length in their proper context.

In passing, it it worth noting that quarries in Connecticut have been explored in Bristol by M. H. Saville for the Peabody Museum in 1892, several in the vicinity of New Hartford in later days by Rogers of the Connecticut Archaeological Society, several more in Bakerville by Neshko of the Massachusetts Archaeological Society, and the Ragged Mountain quarry in the Peoples State Forest by the writer for the Peabody Museum. Also, six more quarries in Rhode Island and Massachusetts, beside the Christiana quarry in eastern Pennsylvania have been excavated and studied by him over a period of nine or ten years with what seem to have been significant results. Discoveries were made that will be discussed further along, which tend to shed new light on the possible origin of the industry. In recent years fully illustrated reports on six of these quarry excavations have appeared in the Society Bulletin, in which some of the postulations expressed in this paper were made. However, this repetition is used not for emphasis, but rather for the purpose of consolidating interpretative leads into a more meaningful conclusion. This effort has been prompted by a recent published statement of a radiocarbon date of a charcoal sample from a hearth at the Harlin Hill quarry in Delaware, which reflects an ignorance of what has been previously reported by this society.

In reviewing the subject more carefully, Holmes furnishes information of a kind that has enabled a more complete understanding of the industry as a whole. It has made possible a comparative analysis, as found in this paper, in which illustrations of some of his tool recoveries play an important part. However, Holmes is not the only Smithsonian authority to offer opinions regarding stone bowl making. In 1939 David I. Bushnell, Jr. of the same Institution made a report on the subject covering an extensive area from New England southerly throughout the steatite-producing states of Pennsylvania, Maryland, Virginia, North Carolina, Georgia, and Alabama. Reference is made in the conclusion of this paper to the arguments he uses, based upon certain excavated evidence from eastern Tennessee, which strongly support our postulation as to the probable provenience of the stone bowl industry. For, beside a study of the actual techniques used in the quarries to produce stone vessels in various sizes and shapes with what may seem to some the crudest of stone tools, it is of equal importance to assess the impact of this industrial effort upon the life of the people. And further, to evaluate the evidence with the intent of learning how and where the industry originated, for the purpose of locating the probable culture center involved. All of which should impress one with the driving force back of this enterprise that would have caused it to spread over such an extensive area.
Bushnell says: "The extent of the country in which the quarries occur precludes the possibility of all having been worked by a single group . . . nor is there reason to believe that all had been opened contemporaneously." And Holmes, emphasizing the significance of this stone bowl-making undertaking, comments: "Generally these tools [quarry tools] were made by skilled hands and are developed into such highly individualized shapes that we are compelled to allow that the industry in which they were employed was one of importance and long standing." And he goes on to say: "The progress toward its [steatite] extensive utilization was no doubt very slow, and unless previous knowledge of such stone had been gained elsewhere, [not likely] must have continued for centuries."

Considering what has been said so far, does this sound like the 500 year period—called the Transitional—that many have allotted for the duration of this stone bowl industry? Would it be reasonable to think that a quarry enterprise that could only have supported hand labor during the warm months could be squeezed into so few years? Especially is this so, considering the extended time that would have been required for, first, the invention of and making of tools—which no doubt was a continuing process down to the closing of the quarries; then the long period of experimentation in the efficient use of them before suitable bowl products would have been possible; and finally, the centuries of skilled manual production that in the end mined untold tons of steatite and fashioned it laboriously into bowl utensils for the welfare of the family. No one who has actually worked steatite in the pecking out and shaping of bowls with the quarriers' stone tools during the many long hours of labor required will ever agree that 500 years would cover more than perhaps the first period of tooling. And as will be seen from the presentation of evidence that follows, there seems now no good reason to support such a short time span for the industry.

**SMALL QUARRY TOOLS**

A significant part of the conclusion depends upon a study of small stone tools used by the quarriers. But first, it is important to consider that large tools consisting of relatively long End picks with sometimes chisel-like blades, beside shorter rudely chipped End picks are common to all quarries whether in the north or south. Some of these show care used in symmetrical shaping, with honed sharpened bits appearing occasionally. However, a great many consist simply of quickly chipped-out blocks of stone with rudely pointed bits. Holmes describes those found at the Connecticut Avenue quarries in the District of Columbia this way: "They are, as a rule, quite rude, and were derived from quartz veins and boulder beds in the vicinity of the quarry. Specimens collected approach as nearly a paleolithic type as any tools found in the Potomac region. Nothing more primitive is possible. Some were already well adapted to use, while others were slightly trimmed to give them better points and edges." Apparently all such roughly made tools served as End picks for hand use, with none found identified as a scraper of any kind. For Holmes goes on to say: "It is not considered necessary to take further notice of specimens showing no decided evidence of design or use, or that do not by their natural conformation show especial adaptation to use. The objects of quartz that show evidence of shaping by percussion are all of one type. They are thick, angular masses, weighing a pound or more; one end is brought to a short, sharp point, and the other is somewhat rounded, as if to be held in the hand or hands for striking."

However, the conclusion advanced in this paper is partly dependent upon a comparative study of small quarry tools. Therefore, a review of those identified by Holmes from Potomac Valley quarries is necessary that a comparison may be made between them and those found in New England. All of these diminutive tools from Virginia are End picks with often a chisel-like bit in evidence. The description of one by Holmes seems in general to speak for them all, although some are double-bitted, and one is celt-like; several are illustrated (Fig. 1, #4-13). "The smaller specimen [Exhibit #6] has a neatly sharpened point and is wide at the opposite end . . . obscurely notched near the top . . . was probably set in an antler handle for use as a chisel. Many specimens of this class are too minute to be utilized in any other way." He believes this hafted tool would have been used by indirect percussion, a mallet of stone or wood being used to strike the top of the handle. In this manner it is conceivable that these small tools might have proved sufficient for executing the more sensitive operations in the preliminary shaping of bowls.

Whether or not Holmes overlooked other kinds of small tools among the quartz rubble of the quarries is debatable, when he reports: "A number of angular masses of quartz were discovered that were not apparently adapted to any use and that showed no signs of having been used. They may be fragments of larger masses broken in use." However, it seems unlikely that a skilled archaeologist such as Holmes would have failed to identify other tool types if they actually had been present. He tends to explain their absence when he says: "The rude vessels are all of usual types . . . oblong or circular basins with ear-like projections or handles at the ends . . . and no example was seen that approaches at all near a finish." As though in answer to this observation, he opines that all finishing was done at village sites.

Be this as it may, the writer's discoveries and those
of others in New England stone bowl quarries suggest that the finishing was commenced at the quarry, thus reducing the weight of partly finished bowls, and thereby facilitating their removal to home sites. In these northern quarry workshops techniques may have advanced to a higher state, as indicated by the presence
Fig. 2. 9 SMALL SPECIALIZED QUARRY TOOLS, New England quarries. Stone materials consist of White Quartz, Crystalline Marble, Pegmatite, Rhyolite, and Basalt.
of highly specialized small tools. They may have been used, not only in working large bowls, but also in shaping small bowls and drinking cups. The latter product is mentioned by Holmes as appearing occasionally in roughed-out forms. On the other hand, cups broken while being finished and well-shaped cup-forms comprise a sizable portion of quarry waste in the north.

And now to provide a better understanding of the small tools found frequently in northern quarries, illustrations of nine specialized types are shown (Fig. 2). They comprise the following: Abrading-scraper; Chisel-scraper; Scoop chisel; Shaver; Hand gouge; Abrading-stone; Corner-pick; Bowl reamer—found lying on the top level at the Westfield, Massachusetts tool works of the quarry, representing a probable late invention toward the close of operations; and miniature End pick—probably used for delicate operations, where great care was required to prevent breakage. All but one of these were first recognized at the Westfield site; subsequently most were found in other New England quarries. Obviously, here is an array of small tools not reported from Virginia, although otherwise the quarries and their remains both north and south are similar. The marked contrast in the matter of small tools between the two regions is an important factor in the postulation suggested in the conclusion.

However, one more piece of evidence that bears upon this comparison of small tools deals with discoveries made by the writer at the Christiana quarry in eastern Pennsylvania. Part of his time there was spent examining a large collection of artifacts recovered from the quarry site over the past twenty-five years. In it he observed no small tools, only the usual large ones as elsewhere. However, the collector had accumulated three large piles of broken quarry waste in his back yard, and at our suggestion subsequently carefully searched through them for any small tools that might be there. As a result 3 well-defined specimens were found, representing 2 small tool types, resembling those from New England as illustrated (Fig. 1, #1-3). They consist of 2 specimens of the Abrading-scraper, and a small bitted Hand gouge; a conspicuously small showing, it would seem, for the three immense piles of worked quarry waste. This might suggest a minimal use of, and lack of dependence upon small tools for reasons that will be advanced further along.

**QUARRY PRODUCTS**

As the title of this paper implies, stone bowls undoubtedly were the chief products of steatite quarries throughout the Appalachians. Bowls of all sizes, usually with a lug at each end for handles, were made up to about 25" in length. Also, in New England, and according to Holmes to a lesser extent in southern quarries, one handled 6" drinking cups held high priority, made apparently to facilitate the consumption of liquid foods cooked in the bowls. However, beside these eating utensils, evidence shows that plates, platters, and sometimes spoons were made—the latter evidence found only at the Wilbraham quarry in Massachusetts. But a significant similarity both north and south is the accepted fact that bowls, when finished, were relatively smooth inside, and usually outside as well. Bushnell says: "The finishing of the surface was accomplished at the village, after the return from the quarry." This smoothing is displayed by photo illustrations of bowls appearing with Bushnell's reports. They represent vessels from Massachusetts to Alabama and are in the United States National Museum. Also, a number of bowls on display in the Bronson Museum show relatively smooth finished walls inside and out. To assume that a bowl left with a roughly pecked outside surface was finished and could have been utilized successfully seems a questionable assumption, although one that is used by some in support of their theories. Illustrated is a small cooking bowl without lugs, but with a pouring spout. It is from a Connecticut camp site at Rocky Hill, evidently of a size suitable for travel convenience. It displays a uniform smooth inside and a smoothed-over outside, typical of most northern finished bowls (Fig. 3, #1).

However, bowls were not the only commodity from the quarries. With the discovery and successful use of steatite for bowl products, further utilization of this soft stone, including chlorite, was undertaken in the making of innumerable other products. No doubt one accomplishment led to another until a varied assortment of manufactured goods began to appear, inspired by the cultural uplift of the day.

Illustrated are a number of these goods including a steatite nut mortar (Fig. 3, #5). Beside this, other exhibits display a large hexagonal gorget in the process of manufacture from the Bakerville quarry in Connecticut; 2 small gorgets with deep grooves between the holes of each, indicating some special use involving attachment to something with a heavy thong; small pendant with an engraved figure of the thunderbird; effigies of a bear's head and a miniature platform pipe; 2 Clumsy plummetts, diagnostic of the age; Wing annat weight (restored), drilled to repair a fracture by lashing—not shown; Boatstone with a unique snake-like decoration; and 3 Platform pipes—small one is semifinished although with stem completely drilled; and an Elbow pipe (Figs. 3 and 4). Stone pipes were made during the final days of quarrying; probably were introduced by Adena migrants. After the quarries closed down, pipes continued to be made at selected quarries through at least the first half of the Ceramic Age; prominently in evidence at the Oaklawn quarry in Rhode Island.
Fig. 4. DOMESTIC STEATITE AND CHLORITE PRODUCTS. 1, Wing Atlal Weight - drilled for repairing fracture—not shown; 2, Boatstone, with rare decoration; 3, 4, Clumsy Plummot; 5, 6, Gorget; 7, Semifinished Platform Pipe; 8, 9, Platform Pipe; 10, Elbow Pipe; 11, Semifinished Hexagonal Gorget; (1-10, Mass., 11, Conn.).
CONCLUSION

The age of the Late Archaic was a period in which enterprising skills were advanced far beyond those of the preceding, highly nomadic Early Archaic hunting-fishing culture. A new people were moving into New England from western regions. They brought with them a relatively advanced culture, motivated by spiritual beliefs, indicative of advanced creative thinking. Commencing about 5,000 years ago, the first millennium of the age doubtless consisted of a slow population growth, as a result of arrival from time to time over the intervening centuries of a limited number of small wandering bands. However, some time around the close of the first thousand years a discovery was made that would greatly change the cultural habits of the people. In some way, for the first time, soft workable steatite was recognized as a stone that could be fashioned into bowls in which to cook liquid foods—and an industry was born. From then on, as will be explained further along, for about 2,000 years in the New England Northeast, at least, stone bowl artisans labored at the steatite quarries, ever on the lookout for new steatite outcrops to work as the industry continued to expand.

But was the first steatite strike made here in New England, or further south along the Appalachians, where steatite frequently occurs? To answer this question, we must turn to archaeological recoveries and try to develop a logical interpretation of them. In this way only may something more than a hypothetical guess be made. For this reason, evidence recovered from various quarries has been presented in the hope that it may be the means of arriving at an acceptable answer. There are three lines of reasoning we would like to pursue, all of which tend to arrive at the same conclusion: that the stone bowl industry probably had its start in New England, from where it spread to other steatite-bearing regions to the south.

First, consider the presented evidence dealing with small tools found in the quarries of New England, as compared to those from Pennsylvania, and then again to those from the Potomac Valley of Virginia and the surrounding region. Only a casual examination is needed to realize that a marked difference exists between those from the north and those from the south. Further, that evidence from the Christiana quarry of Pennsylvania, although the same in part as that from New England, is decidedly minimal in comparison. And looking further south, Virginia's small tools lack the functional diversification of those in the north. Instead, they consist of End picks with an occasional narrow to wide chisel-like bit. Their function apparently was one of pecking, probably by indirect percussion when hafted in horn handles, or so Holmes believed. On the other hand, New England small tools consist not only of tiny End picks, but of 8 other kinds of tools, involving pecking, scraping, pushing, sawing, twisting, and rubbing functions. Holmes, of course, may have overlooked similar tools, which might have been a part of the broken quartz waste he rejected as meaningless. But this seems unlikely. Then, too, similar tools may have been in existence at home sites, where the finishing of bowls took place. However, if this was so, it seems strange that at least a few of such tools would not have appeared at the quarries, where presumably they would have originated as a part of the quarry tools developed for the making of stone bowl products.

This reasoning leads to the belief that New England quarries had been in operation much longer than those to the south, which allowed more time at the northern quarries for development and use of the specialized small tools as illustrated. Further, that Pennsylvania quarries close by to the south—as shown by evidence at the Christiana quarry—apparently had just begun to make and use a few copies of New England small tools. From these observations it seems logical to conclude that stone bowl-making was in operation in New England years before the industry reached Virginia and points further south, while nearer quarries, such as the Christiana works, were beginning to add a few small tools to their equipment before the industry ceased operations.

Second, attention is directed to the matter of bowl finishing, which in New England is generally well-done. Here in the north have appeared at camp sites bowls with uniform smooth surfaced interiors, and with smoothed-over exteriors, often as uniform as inside surfaces. Then, at some quarries have appeared broken bowl sections with equally as good surface smoothing as found on finished bowls from home sites. This demonstrates that the finishing operation sometimes took place at the quarry. Evidently, when examination is made of finished vessels from areas to the south, as shown by Bushnell's illustrations, surface smoothing does not display the same refined uniformity as found in New England, and as displayed by bowls at the Bronson Museum from Lakeville, Massachusetts. One of these is outstanding. It has oval dimensions of about 11 x 18"; is 9" deep with uniform 1/2" walls from top to bottom that are smoothly finished both sides. In fact its walls are so evenly shaped, one gets the impression that the bowl is molded from clay.

Here again is reason to believe that, as New England bowl products for the most part show unusual refinement and care in their construction, a more sophisticated industry was responsible, which had been in operation much longer than bowl-making to the south, thus allowing more time for the improvement of manual skills in the finishing of bowls.

Finally, Bushnell presents evidence of another kind,
which tends to confirm the priority of stone bowl-making in New England. Referring to research by M. R. Harrington made in the Upper Tennessee Valley in about 1919, in which cylindrically shaped graves were exhumed, he states: “The name “Round Grave” was given to this culture by reason of the distinctive form of burial. Many fragments of soapstone vessels were found associated with material which belonged to the “Round Grave people”—the earliest recognized culture in the Upper Tennessee Valley—but no soapstone was encountered on sites attributed to the later inhabitants of the region.” Then he concludes: “Certain types of objects which belonged to the “Round Grave people” connect them with [quoting Harrington] 'the Algonkian culture of the middle Atlantic seaboard and point to decided influence if not to actual relationship.' This suggests that the knowledge of soapstone was carried southward by early Algonquian tribes who entered the region centuries ago and from whom other groups would have acquired the art of making soapstone vessels.” He then reasons: “...if the hypothesis is correct, the stone [soapstone] was used in the North long before it was quarried in the South. Consequently, some of the utensils found in New England may be much older than similar pieces discovered in the valley of the Savannah.”

From these three lines of reasoning, derived from archaeological research, there seems good grounds to believe that the industry had its inception in New England, from where in time its customs and practices would have been transmitted to other steatite-bearing areas to the south. The outward flow of industrial ideas must have touched off inspired activity, as groups here and there entered into the making of the new stone cooking vessels. But, as mastering a new undertaking then must have proceeded at a much slower pace than as of today, generations doubtless would have been required for the spread of the industry from its probable culture center in New England. And, as measured by the immense amount of labor required to mine the steatite throughout the industrialized area from north to south, a dynamic enterprise must have developed that would have had much to do with molding the customs of the day.

This seems even more apparent from knowledge gained through a study of New England’s tailing removal tools. It reveals that women indubitably assisted at the quarries. Their work appears to have been the digging up and conveyance of quarry waste to work dumps. This is derived by extrapolation from a study of the stone tailing-breakers and hand spades at the quarries, which proved similar to, and probably the source from which agricultural tools evolved in the following Ceramic-Woodland Age. Consequently, with these revelations a better appreciation may be had of how the stone bowl enterprise influenced changes in living conditions. This becomes clear with the realization that the entire family probably journeyed to, and lived at or near the quarry works, as they became participants in the industry along with the men.

So far as industrial activity is concerned, its vitality is evident from the numerous other products beside bowls that were fashioned out of the newly discovered soft workable steatite. Probably never before had anything happened that inspired manual labor to attain such heights of economic accomplishment. A cultural uplift must have resulted that, as will be shown, probably extended over a prolonged period of industrial activity.

**Time Span of the Industry.** In the year 1939 when Bushnell wrote his report little was known as to just who the quarriers were, as noted from his comments: “The age of soapstone vessels, or rather the period to which they belonged, has not been definitely determined.” To try to fill in this gap, research after his day attempted to connect domestic stone artifacts, when found in quarry workings—of rare occurrence—with known culture periods then being extensively studied. Of all artifacts, projectile points were desired most, since they had been found on camp sites in abundance, where they were associated with various culture levels. For this reason, the writer’s anticipation was keen, when the Ragged Mountain quarry in Connecticut was excavated in 1948. It proved to be a quarry and rock shelter all in one. Never before nor since has such a combination of domestic living and industrial activity occurred. And, as the writer excavated the site, projectile points were of frequent appearance in the tailings of the quarry living area; a most welcome sight, never before seen at other quarries. Here were found points, diagnostic of the Late Archaic, including Eared, Small Triangular#4, Corner-removed#7, and Side-notched#1 types, which at least revealed who the quarriers were.

But with the related culture identified, knowledge of where the bowl-making enterprise fitted into the period and how long it lasted was still lacking.

By now radiocarbon tests of charcoal samples from this culture occupation were coming in from camp site excavations, but not one was closely associated with the bowl-making industry. At last in 1957 at the Horne Hill quarry near Millbury, Massachusetts, as reported in the Society Bulletin, Vol.27, #2, a radiocarbon date of 2,730±120 yrs. ago was obtained of a charcoal sample from a stone hearth, buried 7 feet deep in quarry tailings. This was the first authentic carbon-14 date from a steatite quarry to appear, which preceded by 14 years a recent radiocarbon date announced in Bulletin No. 30, 1971, of the Eastern States Archaeological Federation. As reported, at the Harlan Mill quarry in
Delaware charcoal from a hearth yielded a date of 3,380±160 yrs. ago. In evaluating this evidence, attention is called to the fact that each date represents but one moment at either site in quarry operations, from which to estimate the total life span of bowlmaking. However, circumstances connected with the Horne Hill date are such that by extrapolation an estimate of the extent of quarrying at this site is possible.

Consider first that the hearth lay buried by 7 feet of tailings, which suggests that to reach this level tons of steatite had first to be laboriously and very slowly pecked away. How long did this take? To answer this question, it may be assumed that the hearth represents approximately the middle of the quarry's life span, as the total depth mined at this point was only a foot lower than the hearth. Now, applying the estimated date for arrival of ceramics in New England and termination of the industry of A.D.300—extrapolated from a radiocarbon date of a ceramic grave complex at Sweet-Meadow Brook site in Rhode Island—about a 1,000 year span is represented between the laying down of the hearth and the probable closing of the quarry. But to this must be added the time required to mine the 7 feet of steatite that presumably covered the spot, later occupied by the hearth. For this, an estimated 1,000 more years seems reasonable, if our theory is correct that the hearth represents the probable half-way point of operations. This would represent a work span for the quarry of about 2,000 years with a starting date of 3,700 years ago.

And now, as though in confirmation of this, the radiocarbon date at the Harlan Mill quarry of 3,380 years ago—presumably not the exact date of the opening of the quarry, which might conceivably have been years earlier—gives us reason to believe in a date somewhere between 3,380, or earlier, and 3,700 years ago for the start of the industry. And if the same A.D.300 measure of the termination of bowl-making is applied at the Harlan Mill site, as used for the Horne Hill works, a span of operations at the Delaware quarry would equal at least 1,680 years. Therefore, there seems ample reason now to believe in a life span far longer than the 500 year Transitional period generally attributed to the industry by many. Further, to allot only 500 years to such an important undertaking out of a possible 3,000 years, the probable duration of the Late Archaic in New England seems inappropriate. For, granted that the quarries were opened and in operation by the 3,380 date at Harlan Mill, to use the 500 year limitation would have us believe that the industry was abruptly ended by 2,880 years ago, long before the Late Archaic came to a close in this corner of the Northeast. That is to say, it would have been at a time before ceramics arrived in this area to replace stone bowls with clay pottery, thereby leaving a wide unlikely hiatus of 1,180 years between the close of stone bowl-making and the coming of ceramics.

If the stone bowl-making culture center was in New England, as the evidence seems to indicate, it is conversely probable that knowledge of ceramics, as it diffused eastward, reached this area sometime after it passed through westerly located culture centers. In this event, New England peoples would have been the last to adopt ceramic pots as replacements for those of stone. With this reversal in the flow of cultural ideas, it appears self evident that with arrival of ceramics in the Northeast, New England ceased being the culture center of former stone-bowl days. With this in mind, ceramic advent dates somewhat earlier than A.D.300 in regions to the west and southwest such as Pennsylvania and New York, would be understandable.

Bronson Museum, January 5, 1972

MAGIC STONES AND SHAMANS
WILLIAM S. FOWLER

In archaeological research no stone with unusual traits, uncovered in the course of a site excavation, should be discarded as inconsequential. For to do so might destroy the link between two known pieces of evidence, that if preserved would complete an important phase of aboriginal life. During the past 30 years
are considered by some as mere pebbles, only to be tossed aside as worthy of no further notice. Perhaps such casual treatment might be excused in most instances because of the usual dirt-covered condition that makes them seem like ordinary stones in the eyes of the often impatient digger, on the look-out for well-defined man-chipped artifacts. However, to those who care to brush off the dirt, what first appeared as a common pebble, now emerges as a striking specimen of a unique stone. Something of great attraction either in color, odd surface effects, reflective qualities, high finished surfaces, or on occasion, skillfully incised work denoting human esteem, serve to set these stones apart as perhaps highly valued fetishes of some primitive religion because of their appearance always in, or closely associated with burials.

For want of a better name, and without much constructive thinking as to the meaning of these fancy stones, they have been called Lucky stones, or more descriptively, Good-luck stones. And probably this is all they mean to most collectors. However, an exacting study of the subject seems to present them as Magic stones with spiritual values, far beyond what the word lucky implies. In order to obtain a better idea of their meaning it is necessary to consider how they were used, by whom, and under what circumstances they may have been originally recovered and prepared. But first a review of several of these Magic stones is necessary in order to reveal different attractive qualities of these striking stones of bygone days. That they probably served an important function in the life of those times is quite evident, or they would not be found always in one location, associated closely with burial interments. Our thoughts in this matter, covering an inquiry into the spiritual ceremonial life of this area in prehistoric times, will be exposed for general discussion in the conclusion, following illustrations and descriptions of a number of these Magic stones and of the burial features where they were found.

**BURIAL RECOVERIES**

A number of excavations over the years in Massachusetts have produced burials—mostly cremation deposits—which have yielded Magic stones. These have been carefully studied, and because of their outstanding colorful traits have now been illustrated (Fig. 5). While it has been possible to expose certain of their unique characteristics, black-and-white illustrating unfortunately is unable to bring out the various color effects that in many instances make them unusually attractive when compared with other ordinary stones. In describing each burial excavation, Magic stone recoveries will be described and referred to by exhibit numbers as appearing in the group of illustrations.

**Burial #1.** In about 1940 in a gravel pit near Wickabaug Pond, West Brookfield, as reported by C. C. Ferguson in Society Bulletin, Vol. 9, #1, this burial appeared as a dark colored 3 foot discoloration in the side of a gravel bank. It doubtless was a secondary cremation burial, since it contained no skeletal remains. Instead it was filled with black residue—probably crushed charcoal mixed with sand. Out of this blackened fill came extensive grave offerings, of which the more important items were: a quart of fragments from a steatite bowl, evidently "killed;" a copper pin, possibly a nose pin decoration, 1 7/8 x 1/8"—apparently it had been incased in what looked like a grass-like sheath partially preserved by cuprous salts from the pin; 3 Side-notched#5 points; 3 Eared#3 points; 2 Stem knives—projectiles and knives were mostly of flint finely chipped; and finally a Magic stone in the form of a chipped out **thick disc of crystalline iridescent quartz** (Exhibit #3). These grave goods were imbedded in about a quart of red ocher located within the blackened fill. From a study in recent years of similar burial deposits with like projectile point recoveries, there seems good reason to believe that this one, like the others, belonged to the Late Archaic period, when cremating the dead was the preferred method of burial. If so, then the copper pin probably was made of Lake Superior copper, an import.

**Burial #2.** In 1969 W. B. Taylor reported burial recoveries at the Seaver Farm in Society Bulletin, Vol. 31, #3&4. All were secondary cremation burials of the Late Archaic, except in the case of one, Seaver Site burial #6, that belonged to the early part of the following Ceramic-Woodland period. Recoveries in this burial are pertinent to this report and consist of: a slate Rubbingstone; a long 6 1/2" Leaf blade of probable Ohio flint—doubtless an Adena importation; 2 Platform pipes expertly worked of steatite and of chlorite; a ladle made from a large Conch shell; a small Scallop shell dish; and finally a Magic stone consisting of a **rose quartz pebble** (Exhibit #1). It lay in a pocket of red ocher at the bottom of the pit.

Recovered from an area between this burial and others that were excavated on this occasion was another Magic stone, which probably came unobserved from one of these burials. It consists of a **rose quartz white banded pebble** (Exhibit #2). This Seaver Farm burial as described above, because of its furnishings of pipes, shell ladle and dish, together with its Leaf flint blade of probable Adena provenience, is thought to belong to a period extending into the early days of the Ceramic-Woodland, estimated to be about A.D. 500.

**Burial #3.** The Cohannet Chapter of this Society, excavating at Wapanucket #8 on the north shore of Assawompset Lake, in about 1966, located an extensive burial pit approximately 24 feet in diameter. In it were 11 secondary burials containing light deposits of red
ocher and furnished principally with Plain gouges. In burials A and B appeared a disc-shaped clay concretion and 2 other concretions in hourglass form, one of which is illustrated (Exhibit #5). These evidently were deliberately placed in the burials, and so should doubtless be classed as Magic stones.

Another recovery, probably a Magic stone, lay on the floor of the main burial pit, between burials H and I, and is thought, originally, to have been a part of the grave goods in one of these secondary burials. It is a polished oval pebble, ferrous clouded (Exhibit #4). A radiocarbon date of the complex, about 4,290 years ago, suggests that its burials belong to the early years of the Late Archaic: An Archaic Ceremonial Complex At Assawompsett, 1968, by Maurice Robbins.

Burial #4. During the years between 1935 and 1940 Harold Curtis and his wife carried out excavations on four separate occasions at different locations on Cape Cod. This was before research of this kind had become established in the area with knowledge of how to proceed in recording deposits. However, Curtis's work was quite well documented, although recorded on detached pieces of paper, two of which came from kraft lunch bags. These, as handed to the writer, show approximate size and position of the pits in each case, as related to top of the ground and level of origin below the loam overburden. The reports indicate pit layers of charcoal and red ocher whenever present, and include lists of grave goods taken from each pit. However, as projectile points at that time had not been classified as to types and culture associations, any reference to them must of necessity be derived from memory when possible. However incomplete they may be, we are fortunate to have these records, made at a time when indiscriminate digging without recording was the order of the day in many instances.

Excavation by the Curtises of this burial took place in 1935 in Eastham, at the foot of Hemenway Road. J. Howard Nickerson participated in the work, which occurred in a dune bank at the ocean edge. Exposed by erosion, a streak of red ocher first attracted their attention. It appeared on the face of the bank about 2 1/2 feet below the surface of a shell-filled overburden. Between this shell layer and the pit's top was a deposit of loam, and then one of sand. Excavation was made from the exposed face of a darkened disturbance, which proved to be a burial pit without skeletal remains, probably a secondary cremation burial of the Late Archaic. Out of it came a Grooved ax of the period, and from a deposit of red ocher a Magic stone. It is a small dark red pebble, probably jasper, with an extremely high polish (Exhibit #14). Doubtless it is a gastrolith from a dinosauric marine reptile, or a Tertiary seal. Such a stone could be an inch or two across and acquired its high polish in the stomach of these extinct creatures, where it served to help digest food. Dr. J.A. Moore of the American Museum of Natural History reports that certain species of seals, today, eat stones just before fasting, perhaps to reduce hunger pangs. Ref.: These Fragile Outposts, by Barbara B. Chamberlain.

Glossy gastroliths have been recovered from excavations 20” deep on Marthas Vineyard by Col. E.S. Clark, Jr., where he found them among the fossilized bones of dinosauric marine reptiles.

Burial #5. The Curtises continued excavating, and in 1937, assisted by J. Howard Nickerson, located the first of two secondary burials at Crow Point, North Chatham. The area was covered with shell refuse of an aboriginal latter-day deposit. Digging through the shell-mixed-with-sand overburden to a depth of 9”, the bottom of the deposit was reached. Here there appeared the top of a dark colored oval pit about 20 x 38” in size. Its 17” of fill seemed to be sand without shell, darkened by crushed charcoal, evidently a cremation burial. From it came 3 spear points—type unknown—and 2 Magic stones. One is a large quartz crystal (Exhibit #12). The other is an egg-shaped pebble, possibly moss agate (Exhibit #16). It is 1 1/2” long with the same extreme polish all over as that of the red jasper pebble (Exhibit #14). Here again, it is probable that this egg-shaped pebble is a gastrolith.

Burial #6. At Crow Point a second burial was uncovered on the same occasion as that of the first. Its burial pit had a more or less round shape at its top, about 34” in diameter. It appeared at the bottom of the shell overburden, which was 11” deep at this spot. At the pit’s top a thick layer of charcoal occurred, followed by a mixed sand and charcoal fill to a depth of about 19”. Here at the bottom was a pocket of red ocher that spread over its saucer-shaped base. This secondary cremation burial was furnished with a flint Fire striker, a Grooved adz, and 7 spear points, identified probably as the Tapered Stem type. They were made of black porphyry and were found lying together as though they had once been enclosed in some sort of pouch. But what bears directly upon this report was the appearance in the pit of 3 Magic stones. One is a large quartz crystal with a worked base (Exhibit #10). Another consists of a small pebble, possible cloudy agate, with a high polish all over, doubtless a gastrolith like the others (Exhibit #15). The third specimen is an attractively grained piece of pink feldspar, with natural shiny parallel faces (Exhibit #9). Its edges are chipped as though it had been intentionally worked into shape.

Burial #7. In 1939 Ross Moffett joined the Curtises in an excavation carried out at Pilgrim Spring in North Truro. Here a burial pit was discovered about 36” in diameter. Its circular top lay below the loam a few
inches down in the yellow subsoil. It was covered with a thick layer of charcoal, below which came a dark fill consisting of crushed charcoal mixed with sand. Throughout this fill appeared bits of crushed shell. Evidently a secondary cremation burial like the rest, its 20" burial pit yielded a Grooved ax and a long yellow jasper projectile point—said to be of the Tapered Stem type. Beside these goods a Magic stone appeared. It is a three faced variegated red-brown pebble, with considerable polish, possibly another gastrolith (Exhibit #18). With appearance of a small amount of crushed shell in the pit’s fill, it seems likely that this burial, like Burial


Burial #8. In 1940 Ross Moffett again assisted the Curtises in recoveries made at the Rich site in North Truro. This time they excavated on an elevated bank above Small’s Swamp next to an old cart path. Here they exposed 2 burials, the first of which had an oval shape, 26 x 39” in size. Its top appeared several inches below the loam in yellow subsoil. First a top layer of charcoal was removed, and then just below a thinner layer of red ocher. Under this came a fill of sand, darkened with crushed charcoal, and finally a layer of red ocher covered a saucer-shaped bottom. This burial pit, 28” in depth, contained the following grave goods: a Chipped ax, 1 large projectile point—probably of the Corner-removed #1 type, and 3 Magic stones. One of them is a reddish veined pebble, with high polish (Exhibit #17). This stone doubtless is another gastro-lith, making 5 all told from the Cape. Another Magic stone is an amethyst crystal (Exhibit #8). The third recovery is a striking ferrous stained quartz crystal (Exhibit #7). This grave also seems to have a Late Archaic position as a secondary cremation burial.

Burial #9. The second burial pit of the Curtis dig uncovered in 1940 at the Rich site was perhaps the most interesting, because of a startling divergence in one of its Magic stones. Its oval top, 22 x 43” in size, started several inches down in the yellow subsoil. It was filled with a dark sand-covered mix having a depth of about 24”, at the bottom of which appeared a layer of red ocher. The grave yielded furnishings consisting of 2 spear points—type unknown, 1 Chipped ax, 2 Oval scrapers, and 2 Magic stones. The first is a circular flat-faced green spotted-on-black pebble about 2’” in diameter and with a smooth surface (Exhibit #13). When it comes to describing the other specimen, its appearance is uniquely different, in that it seems to be an effigy that may have been intended for a salamander (Exhibit #11). Evidently, the long shiny pebble of which it is made, may have suggested to the engraver this sort of a reptile, since it is reported to be able to live in fire—a potent magic agent, it would seem, with lasting powers in a fiery cremation. This may have inspired the making of this effigy with its prominent incised mouth and two beady eyes, as a fit magic spirit for this cremation.

Burial #10. During excavation of the Titicut site in Bridgewater on the upper reaches of the Taunton River by the W. K. Moorehead Chapter of this Society, a number of osseous burials were exhumed. It was in the year 1947 on a tree-covered knoll that these burials were discovered and excavated as reported in Society Bulletin Vol. 28, #3&4. The one that relates to this report was Titicut burial #6 of the Contact period. It was a flexed multiple burial of an adult female, child, and 2 bark-wrapped bundles, each containing half of a new-born infant. In one bundle, wrapped around the remains were strings of rolled copper beads, from which cuprous salts had oozed to preserve the pouch and its contents.

At the feet of the adult lay a birch bark envelope container, preserved likewise by cuprous salts from its copper contents. Inside appeared a long copper pendant; 4 small square-shaped copper pendants; several hundred tiny shell and bone beads, some black and some white—a small section of the string was preserved, showing the beads to have been strung in an alternating black and white order; 3 or 4 tubular bone beads; and what is pertinent to this report, a Magic stone consisting of a beautiful cluster of 8 small quartz crystals (Exhibit #6).

CONCLUSION

From descriptions and illustrations of the various Magic stones appearing as evidence in this report, it is obvious that these objects differ from man-made stone implements, because of their nature-formed colorful appearance. There is something about each to attract the eye either in an interesting shape, attractive coloration, high polish, odd color marking, crystal formation, iridescent reflection, or even when a pebble is worked to form an effigy. Except in the case of the last mentioned, the attraction stems from nature-created qualities, and their use in burials as a part of grave furnishings implies the high regard in which they were held. But why should man, who throughout the ages has placed priority emphasis in respect to grave goods upon hand-made products of his ingenuity, be lead to include stones that appear only as fanciful objects of nature? True, they appear to our sophisticated eye as aesthetic natural gems that excite our sense of beauty. But beyond this, their primitive mundane use associated with man-made useful implements in ceremonial burials at once provokes further inquiry into this subject. What possible significance could they have, when used in this way? For, whereas interred stone tools conceivably could have been buried with the idea of providing the dead one with the means for survival in a materialistic hereafter, what benefit could be derived from common stones with nothing to commend them but their fanciful traits?

To take this investigation somewhat out of the realm of conjecture, it seems necessary to go beyond the attractive appearance of these stones in order to place them in their rightful context. That is to say, if we stop here and speculate as to their purpose in the life of the people who used them, we will end up with nothing more than a wild guess, much the same as that which already has labeled them Good-luck stones. Therefore it seems necessary, as always in research of this kind, to
give consideration to the primitive society involved. This would be for the purpose of trying to understand from this vantage point, what the beliefs of the day had to do with the disposal of such cherished objects.

As indicated by the burials referred to in this paper, established burial ceremonial practices extend from the early days of the Late Archaic down through the ages into the first part of the Ceramic-Woodland. This seems to suggest that new settlers, who were arriving in New England from points west during a slow population advance throughout the first millenium of the Late Archaic—from about 5,000 to 4,000 years ago—brought with them well-developed burial rites. And while there is no way of determining what they actually were and how they were performed, it has been possible to derive some idea in general of what may have taken place through a study of burial remains like those reported herein.

But first it is important to try to understand something about the way primitive peoples, living today in different parts of the globe, look upon their relationship to nature. For their attitudes should be quite similar to those of earlier peoples including those of prehistoric New England, since civilization has not yet crowded out primitive customs in backward areas of the world. Lacking advanced scientific knowledge, these primitives of today regard life as a great mystery, which they cannot explain. Earth and nature with all its startling phenomena of lightning, thunder, hail, earthquakes, etc., mystify them to a point where they conceive them to be spiritually motivated. Also, today's primitives, believe that all objects of nature, stones, trees, mountains, and all else including man-made objects have spirits, since they conceive that man, himself, is likewise invested with a spirit. Beside these spirits there were others, some good that brought success, and others evil that caused trouble. These facts have been studied by anthropologists for many years in their work among the living, such as the aboriginaes of Tasmania, who used to cremate their dead—reported in Society Bulletin, Vol.29, #2, p. 33; the Ona and Yaghans of Patagonia; Akoa Pygmies of Africa; and the Ainu of Japan. In most primitive societies usually skillful and well-trained men, called shamans or medicine men, watch over the peoples' welfare by controlling the spirits, or so they believe. In effect they are thought to be in touch with the spirits, and so can act as mediators between them and the common people. And from this we are confident that burial rites of aboriginal New England were performed by shamans, about whom and their practices information can come only through research. However, before we examine the probable rites of prehistoric New England as performed by its early shamans, a further study of today's primitives should be helpful.

The mental state of these living peoples seems to include fear of evil spirits to a considerable extent, which is adroitly used to advantage by the shaman. We see this clearly revealed by his actions when curing the sick, such as in his performance in driving the evil spirit out of the one in pain. These sometimes consist of masked acts or other equally frightening ones used to cast spells in order to accomplish a cure. This sort of acting, although it appears absurd to us, is a benefit to the people, as it induces them to place their faith in the shaman as their spiritual leader. In fact, the shaman seems to be dutifully respected and even feared by the people he serves, since he has the power to cure them when sick, and among other things in the event of death, to be their only chance of an assured journey to the next world.

This discussion, derived from studies of today's primitives, concerning the probable social relationship that exists between the shaman and his followers, should now prepare us for a further look into the prehistoric past. We should consider man's basic attitudes, as related to religious practices surrounding aboriginal burials, especially those resulting from cremations. Above all else, man is a religious being, inspired spiritually from earliest times, and spirit worship is his way of venting spiritual impulses as they continually seek expression. Some of the ritualistic acts of the shaman served to appease or obtain sanctions from the spirits. And so man was lead to respect objects of nature through fear that if he failed to do so the spirit or spirits involved would become offended and cause him harm. While such dependence upon fear appears hypocritical to us today, it served a good purpose in aboriginal times in teaching man the importance of respect. This is revealed again in his submission to the authority of his leaders including the shaman. (These thoughts are derived from The Hunting People, by Carleton S. Coon).

Throughout the centuries, shamans without doubt have conducted the ceremonies attending cremation burials of the dead, as is evident in this northeastern area, to judge from the careful manner in which interments were made. The meticulous work in preparing the burial pits, often with layers of charcoal and red ochre appearing in secondary burials, seems to imply shaman-controlled direction. Also, the more or less similarity among such graves adds strength to this belief.

As has been practiced by primitive peoples, the placing of usable domestic articles in graves probably had the objective of providing goods for use by the spirit of the dead. Included among them at times were some objects thought to aid the released spirit in its journey to the netherworld. But above all else, stone tools invariably recovered from burial pits, probably represent useful survival gifts to insure a good life for
the dead in the hereafter. Red powdered ocher, a
symbolic blood offering, doubtless was used to revitalize
the dead man's spirit; bring it to life again in the next
world.

But if this is a probable interpretation of known
evidence, what then can be said to explain the presence
of a rare fancy stone or two placed deliberately among
the tool offerings. First of all, it should be recognized
that there must have been real need that induced a
search for, and recovery of these Magic stones, as this
must have been no easy job, since some probably came
from a distance. For instance—so far as the Cape is
concerned—the nearest known deposit of quartz
crystals is at Bonnet Shores in Rhode Island on Narrag-
ansett Bay, while gastroliths are to be found on
Martha's Vineyard, not on Cape Cod. For on the Cape
Tertiary remains, including gastroliths are buried
beneath tons of sediment from the last glacial advance
in depths up to 400 feet in some places, while
apparently Martha's Vineyard escaped this glacial
sedimentary deluge.

After the aboriginal recovery of these stones, they
appear to have been carefully trimmed by chipping in
some cases, and then probably stored away awaiting a
chance to be used in a burial. However, the idea that
they had any useful function like tools probably should
be discarded as impractical. How then explain their
presence and use?

While no evidence exists, or doubtless ever will, to
provide a clear answer to this question, it would seem to
this writer that a good hypothetical guess might be
attempted. This would be based upon information
already presented about living shamans and the
methods they pursue in serving their followers. The
probability suggested here seems to be that in prehis-
toric times these choice stones, after being found and
prepared, became the property of the shaman and were
added to equipment he used in his ritualistic perform-
ances in the burial of the dead. It is likely that because
of their unusual characteristics, the spirit in each was
thought of as having corresponding unusual occult
powers. Therefore they may have been spiritually
conceived as powerful enough to drive away an evil
spirit. For, it is reported that certain living primitives,
even today, employ methods in burial arrangements to
delude the evil spirit and prevent it from intruding.
Likewise, at the time of burial our aboriginal shaman
would have taken appropriate steps, it seems certain, to
assure the spirit of the dead immunity from an evil
spirit, which in the minds of the people appeared always
to be lurking nearby ready to make trouble.

After consideration of this analysis, does it not seem
probable that the rare stones of this report, so unusual
in their appearance, were thought to have magical
properties in expelling the evil spirit. And because they
are invariably found associated with or in graves, might
it not follow that they were used by shamans as a part of
their performing magic in burial ceremonies. In effect,
they now seem to emerge not in the sense of lucky
stones because of unique aesthetic traits, but rather as
stones having supernatural powers. Therefore, it is
suggested that they be called Magic stones as a more
appropriate title.

And to go one step further, this use to which a
Magic stone might have been put seems reasonable,
when consideration is given to the principal duties of a
shaman. As in the case of a sick man, when his job in
the main was that of driving out the evil spirit, so also,
as it would appear, would have been his task in
performing burial rites, if the mourners were to be
satisfied. For, with their fear of the evil spirit, the
shaman had to try in some way to get rid of it by intro-
ducing into his ritual a clincher, which conceivably
could have been the Magic stone. Of course, in burials
where none appear, some other way of combatting the
evil spirit might have been used. Whatever this was, it
now seems probable that burial rites included the
objective, among others, of preventing an evil spirit
from interfering with the dead one's journey to the other
world.

As the presented evidence shows, the practice of
cremation existed throughout the first millennium of
the Late Archaic, with interments that followed the
cremation being made in secondary burials. These often
included, in addition to man-made implements,
leaves of red powdered ocher and charcoal, while at
times broken-up burned bones of the dead were
included. At this early date and continuing down
through the ages Magic stones were placed in the grave,
singly, or in groups of 2 or more doubtless for added
insurance against the evil one. This evidence would
seem to indicate the presence of shaman-directed cere-
monies. From then down to the end of the Late Archaic
and into the first part of the following Ceramic-
Woodland era secondary cremation burials have been
uncovered and identified.

However, after a long span of more than 2,500 years
during which cremation disposal of the dead persisted
without much change, there came a day when, as it
would seem, cremating the dead gradually went out of
favor. Probably by about A.D. 1000 the change was
made to flexed osseous burials, which persisted down to
the time of the whites. Included with this change, as it
would now appear, was that of the Magic stone. At
some time during this period probably it had lost its
former magic status, for flexed burials of this period are
without Magic stones, so far as is known, although a
grave of the Contact period had one, but under new
conditions as reported for Burial #10. In this Titicut
interment the Magic stone was a cluster of 8 small
quartz crystals. But instead of appearing with the grave goods in the burial pit's fill or in a deposit of red ocher, it was found inside a birch bark envelope container, apparently the personal property of the buried woman at whose feet it lay. This seems to suggest that with the arrival of the whites the Magic stone no longer served as an exclusive powerful agent of the shaman for expelling the evil spirit. By then it appears to have been treasured for its beauty and retained as a prized keepsake by its fortunate owner. However, in spite of its changed status, it seems fitting because of its original magic power as conceived by the shaman, that it should continue to be known as a Magic stone.

Bronson Museum, March 2, 1972

SOUTH BAY QUARTZITE QUARRY
RAYMOND LEMIRE

Late in the fall of 1972, while driving through a wooded section of Boylston, Massachusetts, at a point about a half mile south of Worcester and the Wachusett Reservoir, an abrupt hill beside the road caught my eye. Sparse fall foliage had exposed a large expanse of weathered rock at the hill's summit, which had a reddish-gray color. Upon investigation I found it to be a hard excellent grade of quartzite. Here was a veritable mountain of this stone extending for 600 feet or more in length at its summit, and with a width of about 75 feet. At the mountain's foot was an active spring-fed brook, an ideal setting it seemed to me for a stone quarry. Beside the immense amount of quartzite, occasional veins of white to ruby red quartz were noticeable.

Now with my interest aroused, and after obtaining permission from the owners, Donald F. and Margaret Sydney Williams, I started to thoroughly explore this intriguing mountain of quartzite. Almost at once I turned up what appeared to be quarry tools, apparently for mining the stone. On my visits to the site over the next few months I began to expose one feature after another, until in search for assistance I sought the help of the Society's Editor, whom I knew had had much previous experience excavating quarry remains. He visited the site and examined the excavated recoveries with the aim of identifying them and determining the extent of aboriginal mining of the quartzite bedrock. As a result, he has collaborated in the presentation and descriptions in this paper of artifacts and features, a valued aid that is much appreciated.

The mountaintop is covered with low vegetation with numerous bare spots open to rainwater weathering. In other areas there is only a thin covering of humus with little or no subsoil beneath. Upon peeling back the coating of moss that was quite general over most of the mountaintop a large quantity of quartzite flakes and quarry debris came to view, which reached a depth of a foot in places. Experimental excavating consisted of a 6 foot long trench, where what seemed to be quarry tools appeared, mixed among flakes and large spalls all of the site's hard quartzite bedrock. Some 50 tools were taken from the trench. They are suggestive of End picks with weights up to 4 or 5 pounds apiece. However, identification was difficult, if not questionable, since all had their edges rounded from apparent weathering over the centuries of exposure. This had resulted in elimination to a considerable extent of chipped scars, which are barely discernible. As a result of further exploring, however, other tool types were identified, which are an important part of this report.

QUARRY TOOLS

End Pick. As previously mentioned, this kind of tool—if accepted as such in spite of excessive weathering—consists of a relatively thick block of quartzite that has one end reduced to a blunt point. Usually of a considerable weight, this implement may have served to break into the bedrock through frost-lifted openings. However, no specimen was found that had more than a stubby, apparently battered-down point, which might suggest that this tool was used more as a roughly-pointed Pounder—not illustrated.

Maul. As found in most quarries, a significant tool at this site is a heavy pounding stone. Those specimens that were recovered had a rounded shape, suggesting hand usage without an attached handle. As shown in
the illustration, some seem to have been shaped, either by intent or through hard use, with a shallow blunted point on one side—the latter cause is more probable (Fig. #6). For this specimen a large chunk of quartz, taken from veins of this material that frequently occur in the quartzite bedrock, was used. Other specimens were made of the prevailing quartzite of the quarry. However, in all cases weight was an important consideration with 5 pounds or more usually being the case. Evidently, this tool, more than the End pick, was depended upon for breaking off exposed outcrops of quartzite after the work of mining had progressed far enough to form openings from which the stone had been removed.

Disc. This specialized tool has a thinned, fan-shaped bit formed by percussion chipping, with sometimes a heavy base, as illustrated, to produce a more forceful thrust to the tool. In the case of the illustrated specimen (Fig. 7, #3), the work was enhanced by its approximate 5 pound weight. Smaller Disc tools, as shown by the other two lighter weight exhibits in this figure, also appeared. This seems to suggest that various kinds of manipulation of this tool took place. Doubtless its fan-shaped bit would have been employed to strike into, or under frost-made faults in the bedrock, in order to split the stone off along sedimentary-formed veins. Disc bits were found to measure from 2 to 5” in width, and the tools were always made of the quarry’s tough-grained quartzite.

FEATURES

Quarry Mining. Examination of the edge of the quartzite outcrop on the mountaintop revealed one place where an opening about 3 x 4 feet in size had occurred, apparently as a result of quartzite mining in former days. Here numerous faults in the stone, caused by frost action appeared along the face and edges of the opening, revealing a condition that probably existed during mining operations. At this spot evidence existed that supported a belief that here the workmen had broken loose and removed a quantity of quartzite to a depth of a foot or more. This feature is probably but one of many similar evidences of stone removal that doubtless exist, hidden from view by centuries of vegetational growth.

Table Anvil. Perhaps the most intriguing feature was discovered when I explored along the mountain’s crest in a northeasterly direction. Here the quartzite bedrock extended more than 300 feet from the first area of our investigation. At a spot located on sloping terrain I came upon two large slabs of quartzite, one lying on top of the other. Unlike the mined material they were of
Fig. 7. DISC TOOLS AND A SPALL, South Bay Quartzite Quarry. 1, Quarry Spall; 2-4, Disc Tools (Disc #3 weighs 4 1/2 lbs.).
a poor grade of this stone, and lay on a schisty granite base, as though they had been moved into place by hand labor. Both were of about the same impressive size measuring about 5 x 6 1/2 feet, with the top slab having a varying thickness of 6 or more inches in some places, and an estimated weight of some 200 pounds or more. Apparently, this upper slab had been lifted up at one end to more or less of a horizontal position from its former 30° sloping stance. Several large blocks of quartzite had then been shoved between the slabs at one end to hold the upper one in place. This work must have required the labor of many workmen, apparently with the intent of forming a facility for some important use. A fairly good idea of how this feature now appears may be found from the accompanying photo illustration (Fig. 8), found to be a Table anvil.

Excavation in the form of a small trench about the base of the stone slabs uncovered extensive remains of quartzite spalls, flakes, and lumps of worked stone. These were found to be composed of worked blanks, broken stock, and various sizes of Hammerstones (Fig. 9, #6-8). Evidently, here was the main quarry workshop where the mined stone was worked into small blanks of convenient size from which to make artifacts at home sites. The top slab showed pitted wear of an anvil nature over its extensive surface that had produced a slight concavity toward its center. This in effect appears to be an oblong Table anvil, which shows signs of having had its ends straightened by heavy chipping and thus worked into shape. This condition may be clearly seen

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Fig. 9. ROCK SHELTER AND TABLE ANVIL RECOVERIES, South Bay Quartzite Quarry. 1,Corner-removed#3 Point; 2,Semi-finished Point; 3,Steatite Elbow Pipe; 4,Stemless Knife; 5,Flake Knife; 6,7,Quartzite Blanks; 8,Quartzite Hammerstone.
in the photo. That much of the final labor of working the mined stone into modified blanks was done here is evident, since such blanks have not appeared in other parts of the quarry where excavating has been undertaken.

Fig. 8. TABLE ANVIL, South Bay Quartzite Quarry, about 5 x 6 1/2 feet in size.

Rock Shelter. About 200 feet east of the Table anvil more outcrops of quartzite occur that terminate on one side of the mountain in projecting ledges. At one spot I found a rather large overhang, which suggested the possibility of its having been a temporary rock shelter. Large enough to accommodate only two or three people, it seemed to me to present a chance that here might have existed a resting place for a few quarriers. The rock base had a decided slope away from the ledge for about 25 feet, where it fell off to a lower level. However, it probably was covered with enough moss-covered humus, as of now, to have provided a satisfactory shelter.

It was a simple operation to turn over the blanket of thick moss covering to see what lay beneath. Soon appeared occupational evidence in the form of a perfect steatite Elbow pipe that lay in one corner of the shelter. Not far from it I recovered a Corner-removed#3 projectile point of felsite. Subsequent excavation of the remaining shelter area uncovered a fractured projectile point, made of the hard quartzite of the quarry outcrops. And, found among fragmented parts of partly worked pieces of quartzite implements, two more finished blades appeared consisting of a Flake knife, and a Stemless knife, both of quartzite (Fig.9, #1-5). Evidently some quarrier had fashioned these blades to meet a real need, or to pass a few idle moments. Whatever happened, this evidence links the rock shelter to the quarry workings as an important feature of at least one period of mining. As suggested by the stone Elbow pipe, this probably was during the early part of the Ceramic-Woodland occupation. Whether the quarry had been in operation before this, during the previous Late Archaic Age, cannot be determined from evidence so far uncovered at the site.

September 5, 1973

EATING PRACTICES IN ABORIGINAL NEW ENGLAND
WILLIAM S. FOWLER

Archaeological investigations have been concerned with many facets of aboriginal life, such as man's form of abode; method of hunting; his various industries; ceremonial observances; methods of travel; and his planting activities. And now what can be said about his way of eating. But why bother with such a common activity, which is taken pretty much for granted by most? This is a question that might occur to anyone, and yet when certain related evidence is exposed, the answer becomes more evident. How aboriginal man fed himself had as much to do with the availability and variety of foods, as with his inventiveness in devising feeding implements when required. This investigation concerns itself with modifications that may have taken place in eating habits from one culture period to another. And certain changes seem to reflect alterations in communal living that can be detected from excava­tional evidence at selected sites. However, while infor­mation to a limited extent on the subject of food consumption and methods of eating seems partially clarified, there is much that is still obscure and subject to speculation.
During the two earliest culture periods involving Paleo Fluted point users and Early Archaic caribou hunters, evidence points to a highly nomadic form of existence with game hunting the chief source of food. Elephant-like animals such as mammoths may have been one of Paleo man's quarries, hunted with large Fluted points. While no kill sites, as in the West, have been found in the Northeast, some fossilized bone remains of these animals have appeared. Doubtless smaller animals also were hunted to judge from several small Fluted points recovered at the well-known 9,300 year old Bull Brook site and elsewhere. What they were can only be surmised, although there is proof from preserved bone recoveries—radiocarbon dated about 12,000 years ago—in a Fluted point-producing cave in the Hudson Valley that a somewhat smaller animal, the caribou was present. However, this early post glacial caribou might well have had larger proportions than the modern caribou, similar in this respect to the giant bison, found associated with Folsom Fluted points in New Mexico. The bones of this animal were larger than those of today's buffalo. Also, much smaller animals may have been present in this early age, although their identity is not yet known.

By the time the Early Archaics had arrived, herds of present-day caribou must have been here—their bone remains occasionally appear—feeding upon the lichen of the then existent tundra. And it is probable they became man's chief source of food. Also, during this period evidence of fishing occurs in the form of stone Classic plummets, or line sinkers.

In view of these probable conditions, it would seem that the people of these first two occupations, over a period of many millenniums extending down to about 5,000 years ago, were, in the main, solid food eaters; no evidence of permanent bowl containers, indicating consumption of liquid foods, has appeared with their tool remains. However, stone knives in both periods have occurred, which suggest concern over cutting something, probably meat (Fig. #10).

And here is where a first hypothetical evaluation seems possible of what their meat eating practices may have been. Like Eskimos of the far north, when viewed by explorers before civilization had changed their ways, the reported procedure seems simple enough. A piece of meat—probably roasted a little on the end of a stick—was grasped by the teeth, while with a knife a chunk was cut off, chewed a few times and swallowed. And during the Early Archaic fish also were eaten, probably by the aid of one's fingers assisted by a stone knife.

Stop for a moment, if this postulation seems reasonable, and think of what a family meal would have been like, with perhaps the men cutting into the carcass first; an eating practice reported by commentator William Wood, as late as 1634. Following the men's prior self-service the women and children, according to Wood, had to be satisfied with leftover scraps, a condition that doubtless also would have pertained among our early nomadic hunters. And beyond this, it appears probable that this custom of male priority would have persisted throughout intervening culture periods, to have been present in Wood's colonial days.

Following the Early Archaic period, arriving from western areas came wandering family groups of pioneer settlers looking for a new life in this coastal Northeast. Occupying sites formerly lived on by the earlier nomadic hunters, they brought with them a spiritually-oriented...
social life far above the purely caribou-hunting existence of their predecessors, most of whom had moved north into Canada following retreat of ice, tundra, and caribou herds. A new form of cultural existence now began to take shape in New England—probably forestated by this time—about 5,000 years ago.

Nothing is known of the new settlers’ eating practices for perhaps the first 1,000 years, during which they had managed to survive and gradually multiply in number. The assumption may be that their eating habits, developed during this formative stage, probably consisted of the consumption of solid foods, with berries and nuts in season thrown in. No change from this norm is noticed until their discovery of soapstone (steatite) and their making of stone bowls. By this chance find these Late Archaics had unwittingly stumbled onto a new enterprise that in the end would revolutionize their whole way of life. However, during the first millennium of their occupation their eating practices of solid foods probably resembled those of the Early Archaics, with stone knives being their sole utensils, as illustrated (Fig. 11).

Not until they found out how to make bowls of stone did they develop more advanced eating habits. Then, with the opening of stone bowl quarries, and after an extended period of tooling for the industry, stone bowls in time began to appear. Rough and poorly made at first, in the end smoothly finished bowls of all sizes were produced. Also, 5 to 7” long stone cups were made with which to consume the liquid foods that were being cooked in the bowls. Not only these products, but plates began to be used, often fashioned by fitful trimming of flat-faced slabs of available stones, such as limestone schist, sandstone, steatite, and granite. Examples of these various eating utensils have been illustrated for the purpose of exposing these several aids to more advanced eating that now were added to knives in the consumption of foods (Fig. 12). However, while utilization of plates had nothing in common with the function of stone bowls in the preparation of liquid foods, their appearance in this culture period of the Late Archaic indicates a new respect for eating refinements. Exhibit #6 of granite was recovered resting horizontally beside a stone hearth of this period at the Twin River site in Rhode Island. Exhibit #4 also of granite was found at the Connecticut Ragged Mountain shelter quarry in a confined living area with nut-cracking anvils—one of which shores up the plate—lying nearby, while Exhibit #5 of limestone schist was recovered at the Westfield steatite quarry in Massachusetts.

What interpretation should be made of this stone utensil evidence? After many seasons’ work in the quarries of New England uncovering and assessing their littered remains, realization of how stone bowl products were utilized and of what importance they were to the quarriers has become more apparent to the writer.

First he feels sure that they represent a new and important change in the eating customs of the people, who by now had become more sedentary. With arrival of stone cooking bowls liquid foods were added to the diet, probably for the first time. And, concomitantly, people began to find out how to handle stone drinking cups in consuming the cooked liquids of the day. But apparently this was not all. People appear to have become more fastidious in their eating of solid foods, brought about no doubt by a sense of improved dietary customs. For instance, stone plates were used obviously for the purpose of keeping meat or fish portions from touching the ground; a new sense of cleanliness perhaps had emerged.

Finally, the writer believes that such additions to previous solid meat eating practices would have brought
about an advanced outlook in the social life of the times. With no warfare in evidence and people living in large snailshell abodes, as found at the Assawompsett site, it seems to have been an age of creative progress, inspired by a feeling of producing goods for the well-being of family life. A cultural uplift appears to have been set in motion that lasted throughout the age of stone bowl-making. And it should be noted before completing an evaluation of the eating customs of this Late Archaic period that its resourceful people were not satisfied to stop with the use of steatite for bowls. An excavated recovery at the Assawompsett site—on exhibit in the Bronson Museum—proves beyond a doubt that small deep dishes, as early as about 4,300 years ago, were fashioned out of wood. The museum specimen 6 1/2" long, fittingly restored—preserved by virtue of its reduction to a charred condition in a cremation—probably was utilized to hold a food offering in the

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Fig. 12. LATE ARCHAIC STONE EATING UTENSILS. 1, Steatite Bowl (restored); 2,3, Steatite Cups (finished from cup-forms from Oaklawn Quarry); 4, Granite Plate and Nut Mortars; 5, Limestone Schist Plate; 6, Granite Plate.
secondary burial where found. However, it is possible that wooden containers of this kind may also have been used at family meals.

When knowledge arrived—presumably an eastward diffusion from Asia—of how to make ceramic cooking pots from clay, women became the potters. At about the same time, as seems probable from available evidence, maize was introduced. Again women accepted this additional industry and became the planters and producers of corn. With this new food added to the diet, eating practices would again have been altered, it would seem. Early commentators furnish some facts about how maize was prepared, such as the practice of soaking the ears in water until fermentation took place, when the kernels were scraped off and mixed into a mush with berries and sometimes nuts added. Champlain describes another method of utilizing maize in cooking. While living among the Hurons in about 1608 he observed a procedure, which he describes in these words: "They take the pounded Indian Corn without winnowing out the dust and put two or three handfuls of it in an earthen pot [probably ceramic] full of water, set it boiling, stirring it from time to time ... then they add a little fish ... to give it flavor ... they call it migan." Also, there is evidence to show that bones sometimes were ground up in mortars and eaten; might have been another ingredient that was added to mush recipes. Mary Rowlandson in her captivity narrative relates that: "They would pick up old bones and cut them in pieces at the joints, and if they were full of worms and maggots, they would scald them over the fire to make the vermine come out, and then boil them [bones] and drink up the liquor, and then beat the great ends of them in a mortar, and so eat them." Consumption of these mushy foods would have required some kind of spoon-like implement no doubt, following an experimental period. For, in time some sort of receptacle other than one's hands would have been required to serve these soft foods.

Strange as it may seem, after year's of digging up pottery remains of this Ceramic-Woodland culture, no ceramic vessels have been discovered other than pots of all sizes, from tiny burial ones to large cooking pots. No ceramic cups or ladles have appeared, so far as is known, although such products are in evidence in the Mississippi Valley and further west. Evidently local aborigines, if they had and used such utensils, probably made them of impermanent materials such as bark or wood; shells could have been used and probably were by those living near the sea coast. So far as solid meat and fish foods are concerned, it is thought likely, as found throughout all preceding ages, that stone knives would have been utilized similarly as in the past. Illustrations represent types found with this period's remains (Fig. 13).

Fig. 13. KNIVES OF THE CERAMIC-WOODLAND AGE. 1-3, Stem; 4, Stemless.

For serving the various kinds of corn mush, including succotash, and probably liquid foods as well, the making and use of wooden containers doubtless took place. Reference has already been cited of deep dishes of wood, made by the Late Archaics as early as about 4,300 years ago, and it seems only logical to assume that manufacture of them would have continued, carried on by their descendents. Not only deep dishes, but in time other containers such as bowls, cups, and ladles would doubtless have been made. For once the method of shaping was discovered, this woodcraft enterprise would have been passed on from generation to generation. In fact, its continuation seems to have persisted over a very long period, even down to the coming of the whites. As evidence, C.C. Willoughby reports, in his Antiquities of the New England Indians, after an extensive search, locating six or seven wooden bowls in the possession of individuals or museums. Some are said to have been preserved as heirlooms in Indian families, while the source of others goes no further than museum records. However, they appear to show the ravages of time, and are believed to represent aboriginal craftsmanship before colonial intrusion occurred.
Further evidence of wooden utensils was reported in 1905 in a publication by the New York State Museum under the title, *Aboriginal Use Of Wood in New York* by W. M. Beauchamp. This well-documented account of research carried on among the Iroquois, includes reference to several archaeological recoveries of wooden spoons from presumably prehistoric Indian burials. As a visual aid to the report, they are appropriately illustrated to display their unique traits. Three will be referred to with drawings in the discussion that follows, in order to show how they differ in shape from modern spoons.

**DISCUSSION**

Supporting evidence of aboriginal manufacture and use of wooden eating utensils in the 1600-1700's, as observed and recorded by early commentators, gives further proof of their presence. At a time when Indian corn, prepared in mushy mixtures, served as an important part of the diet, such utensils were useful as an aid to eating. Also, according to three commentators, dishes made of bark were being used. Morton says: "They have dainty wooden bowls amongst them; and these are disposed by bartering one with the other and are but in certain parts of the country made, where the several trades are appreciated to the inhabitants of these parts only." Josselyn comments in 1675: "... dishes, spoons and trays wrought very smooth and neatly out of the knots of wood." And Gookin in 1674 has this to say: "Their dishes, and spoons, and ladles are made of wood, very smooth and artificial and of a sort of wood not subject to split." Gookin's further remarks are significant: "The baskets and mats are always made by the women; the dishes, pots, and spoons [all presumably of wood] are the manufacture of the men." In 1794 Loskiel reports concerning the New York Iroquois: "They make their own spoons, and large, round dishes of hard wood with great neatness. In eating, many make use of the same spoon, but they commonly sup their victuals out of the dish." Relations des Jesuites in 1626 recounts: "... at these feasts they give to each one his share in the dishes or porringers of bark." Champlain, in 1608, tells of an experience he had on one occasion when he was invited to eat with the Hurons at a mountain camp. He refers to it in these words: "Indians came to feast each bringing his wooden bowl and his spoon." Much later in 1810, De Witt Clinton visited an Indian by the name of Skenandoah and reported as follows: "... a large kettle of corn was boiling, which was the only breakfast the family appeared to have. It was occasionally dipped out from the pot into a basket, from which the children ate." It seems likely that this "basket" might have been made of bark, or of some fine interwoven material. And with further reference to bark from which dishes at times were made, Relations des Jesuites relates in 1626 that when the Indians sang, their accompaniment was: "... striking with their spoons or with their sticks on their bark dishes."

After reading these fascinating comments about wood and bark eating utensils, one may wonder what they looked like. While early bark containers are nonexistent today, a few aboriginal native-made wooden bowls have survived the deteriorating effects of time. Doubtless the most reliable specimens are those taken from Indian burials, indicating probable precolonial deposits. Most appear to have been carefully carved from burls, found as exterior knotty growths on some large trees, from which they could have been conveniently cut loose. Such bowls are slightly oval in shape, the larger ones doubtless were used as containers from...
which to serve mushy foods. When made in smaller sizes of 6 to 7" in length, they might well have supplied the needs for individual servings of such foods; might also have been used as drinking cups for liquids. These various size bowls invariably have at least one upright flat handle at one end—occasionally on large bowls two appear, one at either end. The walls of these bowls, as well as all other wooden ware are meticulously scraped and rubbed thin, probably after hot coals had first been applied to char the wood and so facilitate hollowing.

The writer was privileged to have an opportunity to examine one of these bowls first hand, at a time when he had been engaged to arrange exhibits in the Indian Room at the Memorial Hall Museum in Old Deerfield. In their collection appeared a small wooden bowl about 7" long, showing noticeable marks of age. It had several cracks, one of which had at some time been repaired in the aboriginal way by binding two drilled holes together, while part of its upright handle was missing. It could have been used as either an individual porrage bowl, or a drinking cup. Its walls appeared darkened and somewhat pitted with age. They were evenly shaped with circular graining, suggestive of what might be expected if made from a burl. At one place on its darkened walls occurred an ash-like whitened area, possibly from some substance in the Indian grave, reported by museum records as its source. Whatever the substance, it appeared to have acted as a preservative that had tended to allay deterioration from rot. All of which seems to suggest for it an ancient origin. An illustration of it—restored—furnishes a better idea of how it appears than words alone can convey (Fig. 14, #1).

Having described what wooden bowls were like, one may wonder about the shape of Indian spoons that are mentioned so often by early commentators. While there are some examples with elaborately carved figured handles, as made in about 1900 by Iroquois descend­ants at the Onondaga reservation, probably those most to be relied upon as evidence of work of the prehistoric period have come from Indian graves. The New York State Museum publication, previously referred to, cites several examples recovered from Indian graves in Ontario county. These wood spoons have slightly oval shaped bowls; are quite shallow, with a simple unadorned flat upright handle at one end, and in small sizes measure about 3" in width by 4 1/2" in length. Doubtless these small sized spoons were used as individual feeding utensils. Larger ones may have been ladles, used in serving from a central container. In general these spoons are carefully worked with thin walls, and with handles that stick up at nearly a right angle, although in the case of one there appears only a knob at one end. Illustrations are copies of Ontario county Indian grave recoveries as pictured in the New York State publication (Fig. #2-4).

These examples of wood spoons with unadorned handles probably represent styling of an aboriginal prehistoric period. Their simplicty differs from those spoons of recent Onondaga make, as shown in Beauchamp’s publication. These spoons have larger, but narrower shaped bowls with elaborately carved figures at the end of their handles. Made on the reservation in 1900, they were carved with steel curved knife blades; have deeper bowls than the grave specimens, and have ends approaching a point. Such features together with their obliquely sloping handles resemble modern spoons, which probably influenced their styling.

When it comes to the eating customs of this final Ceramic-Woodland Age, as suggested by early writings, it seems probable that Indians at times ate from a common dish with spoons or fingers. At other times portions appear to have been served in separate wooden bowls or dishes. But above all else, early reports indicate that an individual wood spoon was owned by most. Use of wooden spoons would have followed, no doubt, the original practice of eating with one’s fingers. When consideration is given to the wooden eating utensils of the pilgrims, there seems but a small gap between them and those of the aboriginal natives.

Bronson Museum,
October 1, 1972
As frequently happens, valuable information was brought to our attention, this time by Walter Swanson, a Society member of long standing, when he recently visited the Bronson Museum. In the course of his excavating that occurs in spare moments, he had come across what seemed an interesting stone hearth, and it occurred to him that it might have an important bearing upon our archaeological research in this area of the Northeast. The significance of Swanson’s find was such that it has impelled this comparative review of stone hearths of the type involved that have appeared at several excavated sites in Massachusetts and Rhode Island over the past number of years.

The Hockamock discovery occurred in the summer of 1968 at a site located on the west bank of Hockamock Swamp in Easton, Massachusetts. The Nunkatusset stream flows through this marshy land, as it becomes one of the tributaries of the Taunton River. Permission to excavate was obtained from the Easton Rod and Gun Club, owners of the land. They became much interested, when advised that the chances of uncovering worthwhile archaeological remains were considered good because of previous recoveries in the area. For instance, a Classic plummet, heavy with patina, was recovered a half mile distant, where the stream had washed away the soil to uncover it. Also it is worth noting that Nunkatusset Island, an elongated and relatively small piece of land that lies well above the swamp, has been extensively excavated with good results; reported in Society Bulletin, Vol.13, #1. Here, occupational evidence of the last three culture periods was uncovered, including ample remains of the Early Archaic,—including a Classic plummet, reported elsewhere in this Bulletin—the earliest of the three. Artifacts from this lowest-lying occupation occurred in a zone extending from 4 to 11" below Junction, the line of demarcation between loam and subsoil, which consisted of yellow sand. This is thought to have been deposited by frequent flooding from the lake’s overflow that occurred in early post glacial times. And, because of the proximity of the west bank, it is believed likely that soil conditions there from lake flooding are similar to those at the island site.

About 50 feet back from the bank’s edge Swanson uncovered the stone hearth of this report (Fig. 15). It consisted of many stones including some cobbles, the largest of which measured roughly 6 x 6 x 8”. Three of these lay along one side of the hearth’s wall with prominent flat faces upturned, as if intended for a work base of some kind. Instead of the usual indiscriminate mass of stones frequently found with most hearths, in this one there seemed to be an intentional arrangement of stones around a central fire pit. While this had become somewhat obscured by stones from the hearth’s walls that had become dislodged doubtless by frost action and had fallen into it, still its outlines could be followed. However, this disturbance, which had also spread the walls outward, had not been enough to prevent recognition of the hearth’s original form and its probable construction. It had an irregular circular shape with an over-all diameter of about 39”. Its central fire pit, recognizable in spite of the stone disturbance, had a diameter of about 20”, and displayed a sparse deposit of charcoal. But that which lifts this report
above a solitary description of a hearth was the discovery of a Corner-removed#8 point of hard argillite in the hearth. This type of point is believed to be of the Early Archaic period, as a result of excavated evidence at numerous other sites. The recovered point appeared in the charcoal of the hearth's fire pit, and has been illustrated (Fig. 16).

Add to this close association of point and hearth, suggesting an Early Archaic provenience for the hearth, the relatively deep stratigraphic level on which it lay of 10" below Junction, and this correlation becomes more convincing. For this low level falls well within that of the Early Archaic as revealed on Nunkatusset Island.

Note: A remarkable fact is that under the watchful eyes of the members of the Easton Rod and Gun Club, this hearth, after excavation, was preserved intact for more than three years from the wanton destruction that frequently damages a site. This made it possible for hundreds of persons to view it.

In order to better appreciate the Hockamock hearth, the writer believes a review of the history of this Early Archaic hearth type would be of value. It was first discovered and identified at the Titicut site in 1947; reported in Society Bulletin, Vol.28, #3&4. Here at this extensive site on the upper reaches of the Taunton River occurred a white sand underlying deposit of an early post glacial origin. It consisted of dunes of fine silty white sand that apparently had been created by high winds over tundra wastes, with up to a 2 foot differential between dune troughs and crests. It was on this low white sand level that the first stone hearth of the Hockamock type was uncovered—one of eight of these so-called white sand hearths found at the site. It lay at about a 5 foot depth from the top of the ground in a dune trough, and was the largest of the eight. It was composed for the most part of small cobbles that were arranged in a lopsided circular wall around a fire pit. This had a diameter of about 15", while the hearth's outside diameter measured about 30". An opening on one side apparently was to provide a space for feeding stick fuel, derived from tundra surroundings. Several flat-faced stones formed the floor of the fire pit, while the remaining seven hearths of this type had sand floors only. The fire pit of hearth #1 was filled solid with 6 to 8" of charcoal accumulation that may have helped hold its stone structure in place. This was contrary to the other hearths of this type, which had many dislodged stones in their fire pits similar to the Hockamock hearth. When hearth #1 was exposed to view and cleared of charcoal, a photo was taken of it, as shown in the accompanying illustration (Fig.17).

The writer's good fortune in making this discovery started a search for further evidence on the white sand level that eventually uncovered seven more of these unique hearths. White sand hearth #2 was found on the crest of a dune about 3 feet down from the ground level. Its stones—all but one—were fire-cracked and relatively small in size, probably taken from a demolished contemporaneous hearth that had outlasted its usefulness. A number of stones had fallen into its small 10" diameter fire pit, but otherwise it was well preserved, with the usual opening in its circular walls. In support of the belief that the fuel for these hearths consisted of sticks, it is worth noting that nothing larger than this was found among the charred remains that frequently were encountered. While no projectile points were found in any of these Titicut hearths, specimens of four types were recovered at the white sand level—Corner-removed#2,5,9, and Bifurcated—since found elsewhere to have an Early Archaic provenience.

By the time white sand hearth #2 was uncovered, the importance of this type of hearth was realized, since it...
differed from the jumbled masses of stones that constituted later hearths at higher levels. Consequently, preservation of hearth #2 seemed essential for museum display, resulting in its removal to the Bronson Museum, but only after each stone had been numbered with its place indicated in a carefully drawn diagram of the hearth. Today it may be seen as the central feature of a large diorama. Here it is shown in its original form, the center of a wind storm that appears to have blown the drifting white silty sand against the hearth’s walls. It emerges from this scene as a sand hearth with reinforced stone walls, rather than simply as a stone hearth.

Subsequent to the Titicut recoveries, this early type of hearth was uncovered at the Twin Rivers site in Rhode Island; reported in Society Bulletin, Vol.14, #1. At this location this early hearth was resting on gravel of a glacial kame about 20" below ground level. Its size was quite small with a fire pit of 5 x 9" only, and with overall dimensions of about 15 x 18" (Fig. 18). Found in the fire pit was a small Channeled gouge, since proven to be a valid diagnostic of the Early Archaic. At a low level associated with the hearth appeared a Parallel Stem point of quartzite, subsequently found to be of the Early Phase of the Early Archaic. Several more of these small hearths were uncovered at a low level in yellow subsoil at Oak Island site on North River, Massachusetts; reported in Society Bulletin, Vol.29, #3&4. Also one was found at the Bluff site on Flat River, Rhode Island; reported in Society Bulletin, Vol.33, #1&2. At both of these locations Corner-removed#5 and 8 points occurred in the same zone with that of these Early Archaic hearths. And now with a Corner-removed#8 point appearing in the fire pit of still another one of these hearths at Hockamock Swamp, close relationship appears complete between points and hearths.

Beyond this, what more can be said as to what part of the 2,000 year span of the Early Archaic—from about 7,000 down to 5,000 years ago—would these distinctive hearths belong. Without a radiocarbon date from each, of which there is none, some other time measure is needed. For want of a better one, consider the inference, as previously mentioned, that sticks—not logs—were being used for fuel. This should mean a scarcity of trees; more precisely a dependence upon bushy fuel as might be expected in a tundra environment. Not necessarily a full tundra is envisioned, such as would have pertained during the earlier Paleo-hunting era, but rather a partial tundra. More explicitly, during the 2,000 year span evidence suggests there was a gradual movement out of New England of the Early Archaic hunters in pursuit of caribou, as they followed the retreat into Canada of lichen-producing tundra. During this time tree growth would have been on the increase, creeping up gradually from the Sound to the south, until forests would have covered all of this coastal region of the Northeast.

Accepting this premise as a probable measure. Early Archaic hearths, comparatively small like the one at Twin Rivers, might represent an earlier position in the period than larger ones like that at Hockamock Swamp. Such later ones would doubtless have accommodated larger fuel, as might have been gathered from sparse wind-pruned tree growth. In apparent confirmation of this reasoning, using points as indicators, the Parallel Stem point at Twin Rivers of the Early Phase of the Early Archaic found in close association with the site’s small gravel kame hearth would seem to represent the beginning of the age. Conversely, the Corner-removed#8 point of a probable evolving Early Archaic found in the larger Hockamock hearth might then represent the latter part of the period.

Bronson Museum
May 29, 1974
SIGNIFICANT PLUMMET RECOVERIES

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An archaeological postulation is only as good as it is able to withstand the confrontation of new evidence. That is to say, an established belief involving the repeated recovery of a certain artifact at a more or less uniform level of deposition at excavated sites is always open to refutation or confirmation as a result of new recoveries of the type of artifact involved. And it is with this thought in mind that the writer has taken this opportunity to describe an artifact recovery, which seems to him to have important implications in support of a previous generally accepted theory.

Recently, Roland Engstrom, an experienced Society digger of long standing brought to the museum an exceptionally well-made and skillfully designed stone artifact. He reported that it had been excavated by William Asack under his directions. The writer was so impressed, not only with the well-defined styling of this artifact as belonging to a certain implement type, but with the accompanying details as to its level of deposition where found, that he considered it worthwhile to report its recovery in the pages of this publication. For, as most readers will doubtless admit, when the facts are exposed, a find of this kind is of rare occurrence and has value as providing validity for previously held beliefs involving a similar type of artifact.

The recovery occurred at Nunkatusset site in West Bridgewater, where a previous well-documented excavation, took place in about 1948. Reported in the Society Bulletin, Vol.13, #1, 1951, it is an island site located in the Hockamock swamp near the outlet of Nippinicket Lake, where the Nunkatusset stream flows by one side of the island, as it becomes one of the tributaries of the Taunton River. Briefly, an important aspect of the excavation that extended over a part of the island, as related to this present report, was the recognition of three culture levels of occupation. The earliest zone at the site, the Early Archaic, had a maximum depth of 11" below a leaf-formed humus overburden in a yellow sandy subsoil. It was in this lowest occupational level that artifacts of the Early Archaic appeared, as found subsequently at numerous other sites in Massachusetts and Rhode Island, including, Corner-removed and Bifurcated projectile points, as well as a Classic plummet.

Attention now centers on the Classic plummet, last mentioned recovery, for it is this particular artifact that is the subject of this report. To present it in its right context, as found here and at five other sites, it had a relatively low stratigraphic depth, attributed in each case to the Early Archaic. And at several of these sites the Clumsy plummet—presumed to be a modification of

the Classic type—appeared in the following zone just above, associated with projectile points of the Late Archaic. Therefore, it has been assumed, and with what appears to be good reason, that the Classic plummet is the earlier of the two, of which the Clumsy type is a poor copy, perhaps a product of new arrivals, who, in shaping it, failed to make it conform in symmetry, since they were not its inventors. Be this as it may, the fact remains that the Classic plummet has been recovered repeatedly below the Clumsy type, which has appeared sometimes made of steatite and chlorite, stones used only by the Late Archaic stone bowl makers. These, then, are the basic reasons why a belief has developed that the Classic plummet represents the type source, an important artifact of the Early Archaic tradition.

It is gratifying now to announce that the recovery reported in this paper seems to confirm this plummet theory. The recovery happened on a day in mid-May of 1973. Excavations at the Nunkatusset island site had been extended to include much of the eastern end of the area not formerly excavated. Evidence continued to appear with satisfying frequency, and on this occasion William Asack had joined in the digging for the first time. He scraped away the dirt with a short handled hoe, a method of excavation that has become an accepted procedure. Well down in the yellow subsoil he came upon the subject of this report: a symmetrically shaped Classic plummet (Fig. 19). A measurement was taken that placed it at a depth of 8" below Junction, well within the Early Archaic zone at the site. It appeared to be there as a result of a normal occupational deposition, with no evidence of a refuse pit to
explain its position at the low level.

As may be seen from the illustration, the specimen has exceptionally well-formed proportions that conform to the Classic type. Symmetrical in shape with a small knob at its top, its body has been carefully ground to a pointed base that has left several marked facets around its surface. While the reason for this grinding can be no better than a guess, if this implement was a line sinker used in fishing, as thought by many, an evenly formed taper to a basal point may have served an important function. For instance, consider what happens when an unevenly shaped stone is dropped into a pool of water, how it zigzags from side to side in its descent. With this in mind, the importance of trimming the body of the plummet so as to form a pointed base—in this case by grinding—may be better understood. For by this treatment the plummet with hooks attached, as it was bobbed up and down, would have been assured a quick and even passage through the water without being deflected from side to side. And it seems probable that the Early Archaic creators of this implement would have been the ones to have realized the importance and need for conformity to this principal, more than the Late Archaics, who followed with their Clumsy type.

Here then is another instance of an outstanding recovery, in which the artifact and its stratigraphic position in the soil tends to confirm a previously held evidence-supported assumption.

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APPENDIX

Subsequent to the Nunkatusset Island recovery, another extremely fine example of a Classic Plummet was found by a Society member, Thaddeus Draszek, in West Brookfield, Massachusetts. Unlike the Nunkatusset plummet, it was a surface find on a plowed field, but under conditions worth noting.

When the Brookfield specimen was brought into the museum, its beautiful symmetry and excellent finishing were so impressive that we felt it should be illustrated and included in the report dealing with the Nunkatusset recovery. While our illustration gives a reasonably good idea of its shape and finish, its high polish was beyond the illustrator's skill to adequately reproduce (Fig. 20). An important trait of this Classic plummet to note—over and above its symmetrical classic proportions—is its relatively large knob. In this plummet class of the Early Archaic the top knob is usually quite small, although at times it appears somewhat enlarged; the Oak Island recovery is one good example. Society Bulletin, Vol. 29, #3 & 4, p. 42. However, this Brookfield specimen's knob is even larger, which perhaps displays the maximum that is probable.

But beside the description of this case specimen as representing typologically its classification as a Classic plummet, the circumstances surrounding its recovery tend to support it. In June of 1973 Draszek picked it up on a deeply plowed field in West Brookfield. Coy Brook runs along one side of the site and eventually empties into the Quaboag River. At one place in the field the ground rises to form an elevated knoll, and it was here on this higher plowed ground that the plummet was found. As everyone knows, who has studied such conditions, elevations like this have a reduced loam covering due to erosion. This often causes the plowshare to dig below the loam and so bring to the surface sometimes as much as 6” of the yellow subsoil in which Early Archaic deposits are normally found. Consequently, when the recounting of this find included mention that yellow subsoil was noted on the knoll, the plummet's source as being that of the Early Archaic seemed amply supported.

As further evidence of the Early Archaic at the site, it seems worth noting that over the past number of years Corner-removed #5 and 9 points, considered as diagnostics of this age, have been picked up on this field. And so it seems worthwhile to record this additional fine plummet recovery as a fitting climax to this report.