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BULLETIN OF THE
MASSACHUSETTS ARCHAEOLOGICAL
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BRONSON MUSEUM

Tel. 222-5470

This is the Society’s museum, 5th Floor of the 8 North Main Street Building, Attleboro, Mass. — Museum hours are from 9:30 to 4:30, Mondays, Tuesdays, and Thursdays. For special arrangements to visit on other days, contact the Director, Maurice Robbins, or the Curator, William S. Fowler at the Society Office, Bronson Museum, Attleboro, Mass.

The Museum includes exhibits of artifacts and seven dioramas portraying man’s prehistoric occupation of New England. The displays are arranged so as to show man’s development through four culture stages, from early post glacial times.

The most recent diorama extends 15 feet across the front of the museum. It depicts an Archaic village of seven large and unique wigwams as indicated by their foundations, excavated at Assowampsett Lake by the Cohannet Chapter. Human figures to scale make the scene come alive and help create what unquestionably is an outstanding addition to our ever growing museum displays.
In April of 1969 the Seaver Farm in Bridgewater, Massachusetts, was sold to a builder, Richard J. Fruz­
zetti, for a housing development. The first stage of
operations on this thirty-two acre tract of land in­
volved the erection of 17 houses along Beach and
Vernon Streets. However, because the land was quite
low, and therefore usually wet, it was decided to
obtain the necessary fill for it from a three acre alfalfa
field on the west side of the farm. This piece of land
borders the upper reaches of the Taunton River at a
sharp bend in the stream, and at its westernmost end
adjoins the area known as the Titicut site. This was
excavated by the Warren K. Moorehead Chapter of
the Society in 1947 and reported in Bulletin, Vol. 28,
#3 & 4. Here much valuable evidence of several early
occupations was uncovered, and over the years before
and since, literally thousands of fine artifacts have
been recovered by surface hunting, after each year's
plowing, from the Seaver Farm alfalfa field.

Commencing in early May and over the next
four months, removal of soil from this field for build­
ing house fill continued periodically with the use of
heavy digging machinery. The loam, with a depth of
12 to 15", was first scraped off by bulldozer and
pushed up into a long high pile extending toward the
river. After this, approximately 5 feet of yellow sub­
soil and underlying white sand was gouged out and
trucked away to fill in around the bases of several
new houses, which were in the process of construc­
tion. This left a large vacancy over much of the field,
exposing a white sand floor, which rapidly dried in
the sun and became a fine powdery dust. During this
upheaval few artifacts appeared because of the
machine-driven relentless removal of soil, which de­
feated any careful search that might have occurred.

All the while I watched with concern this un­
scrupulous destruction of a well-known aboriginal
village site in hopes of rescuing something worth­
while before it was completely obliterated. For I had
recovered many fine specimens from the area over the
years in association with other members of the Massa­
chusetts Archaeological Society, and felt sure that
further important evidence was still to be found if
discovered before the bulldozer reached it. On August
22, 1969, upon visiting the site again to see if any
part of the field was still untouched by the heavy
soil-removing machines, I noticed far to the west end
a strip of land. This 10 foot wide strip extended to the
boundary line of the property, and stretched from the
Beach Street side down toward the river. In scooping
out the field up to this point a 6 foot high bank had
been left along the exposed side of this undisturbed
land, which seemed to offer a good opportunity for
inspection (Fig. 1).

Upon approaching the bank I noticed a charcoal
blackened area of about 15 feet in length midway to

![Fig. 1. SEAVER FARM SITE, showing red paint burials in relation to
areas previously excavated, and to the Taunton River.](image-url)
the river, which I believed represented the disturbed backfill of an old excavated area about 12 x 15 feet in size. I knew that about in this location had been an excavation in 1937 by Gerald Dunn of a large pit with good results. From it were taken over 400 artifacts of the Late Archaic era, associated I believe with deposits of red ocher, although no report of it exists. With the Titicut site extending just beyond this spot and the boundary line, it seemed that here would be a good place to examine the exposed bank. Almost at once traces of red ocher were noticed, and at the southern extremity of Dunn’s disturbance they appeared near the top of the bank. Here, with the help of my two young sons, David and Billy, we suddenly came upon ceremonial Pit #1. At its bottom occurred 3 pockets of red ocher, each about 12” in diameter. In one of the deposits appeared a handful of small pieces of calcined human bone, indicative of a secondary burial. During excavation of the Pit, 3 small artifacts and several quartz chips appeared, but scattered here and there as though they were not intentional deposits belonging to the burial. Instead, they seemed intrusive, as though they had found their way into the pit, possibly from back fill when it was finally closed. They consist of a Small Stem point, a Corner-removed #8 point, and a Steepedge scraper of quartz. Added to this group is a Side-notched#5 point that was recovered as the pit was being opened near the top. All of these recoveries appear as inconclusive evidence due to their probable intrusion, and therefore are not illustrated. Scattered throughout were small pieces of charcoal, which probably had relevance. The pit measured about 30 x 40” in size and reached a depth of 24” below top of the ground.

After this, our exploring continued, and only about 2 feet distant toward the river we came upon red paint Pit #2. At its bottom appeared a 3” mixed layer of yellow sand and red ocher, in which was found, lying in a flat position, a 5” Stem knife blade of felsite—probably Kineo felsite, as it contains sparkling phenocrysts (Fig.2,#1). The pit had a size of about 30 x 36” and reached a 24” depth the same as the first.

Digging from here into the bank and skirting the previously dug excavated area of Dunn, we discovered Pit #3 about 2 feet distant from the last. This proved to be somewhat larger having a size of about 40 x 40” and a depth of 27”. Again red ocher was present in 3 solid pockets, each measuring 8” in diameter. While neither bone nor charcoal was present, a broad-stemmed Cache blade and an Eared#3 point, both of local felsite, were lying at the bottom, the point in one of the pockets of ocher, and the cache blade just outside tipped up on edge (Fig.2,#2,3).

Adjoining this pit in a westerly direction appeared Pit #4. It had a size similar to the others, about 36 x 40”, and reached a depth of 27” from top of the ground. Although no bone or artifacts occurred, the pit contained 2 pockets of red ocher, each 12” in diameter. Also, pieces of charcoal were scattered throughout.

Still skirting Dunn’s disturbed blackened area and extending our digging in a northeasterly direction, we uncovered Pit #5. It had a size of 22 x 46” and a depth from the top of the ground of 25”; was more or less similar to the other 4 pits. Its contents consisted of a mixture of sand and powdered charcoal, while at the bottom were 2 pockets of red ocher, each 8” in diameter. With these were 3 small pieces of calcined human cranium, but no artifacts were present.

As these 5 red paint burials skirted the previously dug large deposit of Dunn, it seems probable that they may have been associated with it, possibly as secondary burials. As no report was ever written concerning the Dunn recoveries, it is impossible to say at this late date just what they represent, whether a crematory, secondary burials, or both; and if the latter, the number involved.

My pit discoveries seemed to give promise of more to come, but no more traces of red ocher could be found, although I tested all along the exposed 6 foot bank in a northerly direction. However, a streak of good luck attended my efforts, when on August 25th about 62 feet away from the former pits I accidentally broke into another disturbance, hidden 3” inside of the bank’s face. At this point my sons again joined me, and cutting through the bank at this location, Pit #6 was finally excavated, which proved to be the most important red paint burial of all. Its outline, although scarcely discernible in the upper part of the subsoil, became clearer toward the bottom, where a faint grayish outline seemed to suggest the possibility of a lining of bark or some other material. Its size measured about 22 x 40” and its depth reached 46” down to the white sand (Fig. 3). No charcoal was present, but a fragment of a jawbone with one tooth — possibly that of a young person — appeared and seemed to suggest the presence of an interment of some kind. Probably this too was a secondary burial of a cremation, from which incinerated bone material had been intentionally omitted, all but for the jawbone fragment, which for some unknown reason failed to become burned, and accidentally became interred along with grave goods, now to be described (Fig.2, #4-10).

At a level of 12” above the pit’s bottom the first artifact to appear was a Rubbingstone of slate. One side has been rubbed smooth, and along its edge
Fig. 2. RED PAINT GRAVE GOODS, Seaver Farm Site. 1, Stem Knife (Pit #2); 2, Stem Cache Blade; 3, Eared Point (Pit #3); 4, Leaf-shaped Blade; 5, Rubbingstone; 6, 7, Platform Pipes — 6 of steatite, 7 of chlorite; 8, Good Luck Stone — of rose quartz; 9, Scallop Shell Dish; 10, Channeled Pear Conch Drinking Cup (Pit #6).
occur 8 small cuts, which seem to be tally marks (Exhibit #5).

Near the pit's bottom at the northerly end a prized recovery was made of 2 perfect Platform pipes. They had been carefully placed in the grave so that their platform bases rested one on top of the other, with their bowls pointing in opposite directions as illustrated (Fig. 3). The smaller pipe is fashioned out of a fine grained dark greenish chlorite, highly polished, with expertly worked thin walls of the bowl, and a small evenly drilled hole ½" in diameter that perforates the stem for 2" into the bowl (Exhibit #7). This pipe had the top position with its bowl standing upright. Directly underneath with its bowl pointing down was the larger pipe. It is made of a good grade of steatite, skillfully worked with a 1¾" broad platform base, and is carefully finished and polished over all. This pipe is unique in that its perforated stem is only about ¾" long with two deep notches either side of the stem ½" in from its perforated end. Here there is a shallow reamed-out opening (Exhibit #6). It seems likely that a reed stem may have been fitted into this enlarged opening and then bound in place with thongs wound through the two notches and around the reed.

Toward the center of the pit's bottom was uncovered a 6½" long Leaf blade made of banded tan flint, a stone not indigenous to New England, probably an importation from some outside region (Exhibit #4).

Still another important find was made just beyond the leaf blade in a solid pocket of red ocher, which measured about 9 x 12" in size. At one end of it resting upright in the ocher appeared a 7" long Channeled Pear Conch shell, Busycon canaliculatum, sometimes referred to by certain authorities as a Channeled Whelk. This shell is found from Cape Cod, south to warmer climes. Part of its upper shell casing had been sheared off to open it for use as a drinking cup, while its narrow twisted end had been shortened to facilitate the pouring of liquids (Exhibit #10). Only 6" removed from it in the deposit of red ocher was a clam shell, which was filled with red ocher (Exhibit #9). This probably is a scallop shell, which has its identifying features badly damaged due to decay, with the wings at the hinge missing and the ribs barely discernible. Both shells were cleaned and sprayed with clear plastic at the Bronson Museum to preserve them from further disintegration.

One last recovery occurred beside the red ocher deposit. It is a rose quartz pebble, and although it seems to have less significance, may have had an important bearing upon the ceremonial rites of this burial as a good luck stone (Exhibit #8).

Thinking back over the circumstances surrounding the uncovering of this impressive burial, discovery of it appears to have been just pure luck; the frontend loader of the mechanical soil remover had stopped just 3" short of hitting the edge of the pit. One more scoop and the grave would have been completely destroyed with all of its valuable contents lost forever. Then too, several other collectors had searched fruitlessly the exposed bank before I arrived, and had found nothing but a few small charcoal pits of no consequence, which makes my discovery seem all the more like an unusual piece of good fortune.

Because of the apparent uniqueness of my finds I have asked the Editor to add a comparative analysis of the evidence for the conclusion that follows.

**CONCLUSION**

Several reports of ceremonial burial recoveries from central New England have been made, mostly by members of this Society. In Society Bulletin, Vol.
28, #2, eight cremation burial remains at different sites are described in detail, and are evaluated as to their probable meaning. Since then three more have been uncovered and reported in separate issues of the Bulletin. A brief review of these should suffice to impress the reader with the apparent importance of cremation burial rites to the celebrants and the followers in aboriginal days.

At Wapanucket 8 on Assowampsett Lake the Cohannet Chapter of the Society spent a whole season excavating a ceremonial complex that covered a large area of about 65 feet in diameter. Reported in 1968 in a publication of the Chapter, repeated burial ceremonies appear to have been performed within an enclosure of some kind. This was outlined by an accumulation of post molds that indicated the former presence of posts, which may have been used to form some kind of a stockade, or may even have been used as supports for rafters, which supported a roof over the area. Many slabs of stone, some with faces showing wear from rubbing, appeared with eleven burial deposits within the enclosure. In nearly every case these stone slabs had rectangular shapes with coarsely chipped edges. Eleven Plain gouges, some small but most relatively long, all representing a type of the Late Archaic, were recovered from the burials. Most of the deposits had been sprinkled with red powdered ocher. Many broken chunks of hematite with prominently rubbed facets, some cracked from exposure in a fire, were scattered about and are thought to have been used to produce the powdered ocher when ground against the stone slabs. A good charcoal sample taken from one of the burials yielded a radiocarbon date of about 4,400 years ago. Deposited in many of the burials were quantities of burned human bone, broken up into small pieces. Here, then is extensive evidence of impressive cremation burial ceremonies carried out presumably with established rituals, probably under the direction of shamans.

Again, at Flat River in Rhode Island, additional evidence of cremation burial rites was discovered in the form of 5 pits, 4 of them showing evidence of having been crematory pits in which the cadaver was actually incinerated. Society Bulletin, Vol. 29, #2, of January, 1968, carried the full account of this unique recovery. For the first time there appeared grave goods in 2 of the pits that suggested they had been made expressly for the ceremony as symbolic stone tools, for use by the deceased in the next world. However, red powdered ocher, probably used to symbolize blood for revitalizing the dead, was absent for reasons that can only be guessed at. Found in the other 2 large pits were functional implements, representing contemporary spear points and a knife of those times. These grave goods, as found in the 4 pits, heavily burned and in a state of disintegration, suggest that the pits may have served two purposes, both as crematories and as interments of incinerated remains of the dead in place of secondary burials. Evidently, at least two separate burial rituals are represented at this site, probably performed at different times years apart, one using symbolic tool offerings, the other functional implements. A radiocarbon date of a charcoal sample from the latter gave an age of about 3,500 years ago, while the projectile points and tool types represented in the grave goods of all 4 pits belong to the Late Archaic culture. The fifth pit was a relatively small one containing nothing but pulverized charcoal mixed with sand, probably a secondary deposit having some unknown significance.

A recent third account of burial recoveries was made in Bulletin, Vol. 30, #3 & 4. It concerns the uncovering at the Bear Swamp site of 20 large and small pits, most of which contained varying amounts of charcoal. A few yielded small deposits of calcined human bone, and almost all gave up Small stem and Small Triangular#4 points of the Late Archaic, as well as small Oval scrapers. In one small pit was found a Wing atlatl weight of the same age along with Small stem and Corner-removed#3 points. These were associated with several patches of red ocher. None of the artifacts from any of the pits showed the results of burning from exposure to fire. Therefore, they may represent depositions other than those connected with cremations. However, the small pit with the Wing atlatl weight and solid patches of red ocher could well be a secondary burial of a cremation. Charcoal from this pit yielded a radiocarbon date of about 4,700 years ago.

Along with this evidence of ceremonial burials may now be added those at the Seaver Farm, which display the use of red ocher to a considerable extent. The 5 pits surrounding Dunn's blackened previously excavated area suggest a ritualistic pattern similar to that found at Wapanucket 6 and at the Mansion Inn site in Wayland. At both of these locations a number of pits — presumably secondary burials — encircled a central crematory with a concentration of charcoal, calcined human bone, and burned stone implements. Faced with this similarity, it seems quite likely that within Dunn's excavation a crematory probably existed.

The artifact contents of pits #2 and 3 are of interest as they exhibit similarities to ceremonial recoveries elsewhere. The 5" Stem knife resembles one of the blades at Wapanucket 8, which are thought to be knives. The Stem cache blade is like several from the Mansion Inn burials, and from a cache of 6 blades uncovered at the Swan Hold site in Carver. A most convincing element of Pit #3 is the Eared #3
point, which is an accepted diagnostic of the Late Archaic, thus dating — as it would seem — this entire group of pits as belonging to this age.

Of course the most exciting burial is Pit #6, because of its varied artifacts, all of which are out of the ordinary. For example, to start with, the 6½" long Leaf blade is unique for this New England region, since the handed tan flint from which it is made — not indigenous to New England — resembles Ohio Flint Ridge flint, and the type of blade matches certain of the Adena leaf-shaped blades, as illustrated, page 108, in Mounds For The Dead, by D. W. Dragoon. These blades are from the Cresap Mound in the Ohio Valley. Therefore, Seaver Farm Pit #6 seems to have some sort of association with Adena migrants, who are known to have moved east, and finally to have found their way into New England from their Ohio homeland. This migration appears to have taken place toward the close of the Late Archaic and extended on into the following Ceramic era.

But the most valued recoveries of all are the 2 Platform pipes, a rare find, especially as they are undamaged. The workmanship exhibited in their manufacture and the plain undecorated styling of their bowls with wide flat platforms, all is typical of Platform pipes of this region. Many local pipes together with the Pit #6 specimens may have had their origin in the Oaklawn quarry of Rhode Island, as suggested by quantities of pipe-forms recovered from that manufacturing pipe center. As referred to by the author of this paper in his descriptive presentation of the evidence, the larger of the 2 pipes has an unusual short stem with side notches and reamed-out hole at the end. If this, as it would seem, was for attachment of a reed stem bound on with thongs, it suggests that this pipe may be a modification of a Platform pipe and represents the beginning of a new style, called the Bowl type, because of its lack of a stone stem. This then might place its approximate date of manufacture in the early days of the Ceramic, possibly just before the development of Stage 2 pottery. This reasoning is based upon recovery of a Bowl type specimen at Sweet-Meadow Brook site in the Stage 2 pottery level or about A.D. 1100. Combine this with the assumption that the Pit #6 pipe probably would represent a somewhat earlier date, transitional between the platform type and introduction of the reed stem, and a pre-Stage 2 pottery position seems justified.

While the conch shell ladle is a rare recovery in this area, it has appeared elsewhere and has been referred to at times as a drinking cup. Whatever use it was put to, when it is considered together with the scallop shell dish of this burial, a working knowledge of shellfish is indicated. Therefore, it seems probable that presence of these shells may indirectly suggest the eating of shellfish. If this is so, then it should follow that the age of the deposit would probably fall somewhere during the early days of the Ceramic, when shellfish were gaining in popularity as a food staple — not during the Late Archaic, when site evidence of shellfish eating is absent. Putting these temporal pieces of evidence together: the Adena-like blade — of the Adena diffusion that lasted through the first part of the Ceramic; the modified Platform pipe with Bowl type characteristics — probably just prior to Stage 2 pottery-making; and finally presence of the shell drinking cup and dish — indirectly connected with shellfish eating of the Ceramic, all seem to suggest a date for Pit #6 as late as about A.D. 800.

If this reasoning is valid, then it might be assumed that the first 5 burial pits were associated with Dunn's recoveries and represent a Late Archaic period before arrival of the Ceramic. Further, that Burial #6, at some distance removed, represents a somewhat later deposit, possibly by Adena settlers, whose arrivals extended into the Ceramic Age. And if one were to carry this reasoning a step further, it might be argued that these Adena people, who are believed to have brought the art of stone pipe-making with them, probably made the Pit #6 pipes after they arrived and may have sponsored and directed the making of chlorite and steatite pipes at the Oaklawn quarry. Certainly, unskilled local artisans must have had some kind of experienced supervision in pipe-making to produce the great quantity of pipes indicated by the extensive unfinished remains uncovered at Oaklawn. A radiocarbon date obtained from charcoal at the quarry associated with pipe-making activities reveals that this industry took place during the early part of the Ceramic Age. This tends to support a contemporary date for Pit #6, as already predicted.

Concentrating attention upon the whole aspect of cremation burials, furnished by evidence from the eleven previously reported sites together with that now made available from the Seaver Farm, certain conclusions may be drawn. As a result of definite radiocarbon dates obtained at four of these sites, it appears certain that ritualistic cremation ceremonies, in which red ochre played an important role for many, covered a long period extending from 4,700 down to 3,500 years ago. And now with evaluation of the Seaver Farm Pit #6 it seems probable that burial rites associated with cremations, which also probably pertain for this pit as previously suggested, extended on into the Age of Ceramics. With this thought in mind, it seems probable that arrival of the Adena influence may have been the factor that prolonged ritualistic burial observance beyond that of the Late
Archaic. Whatever the exact circumstances may have been concerning the use of red ocher and re-interment of incinerated bone in some cases, it is impressive to realize that the act of cremation for disposal of the dead apparently extended over a long span of more than a thousand years, commencing shortly after the start of the Late Archaic, and continuing probably throughout the age and possibly on into the Early Ceramic under pressure from Adena migrants, whose burial practices included ritualized cremations.

All of this implies a continuing firm and lasting belief by the people in a life after death with elaborate burial rites in evidence at the sites referred to in this review. These rites were abetted and supervised by shamans, who were the recognized spiritual leaders throughout aboriginal times, and apparently were a strong influence in the development and maintenance of the social mores of their day.

North Middleboro, Mass.
October 5, 1969

APPENDIX

Subsequent to the aforementioned burial recoveries, the bulldozing continued along the exposed 6 foot bank at the southerly end. Here, land removal extended a short way into the swamp, separating the river from the field, and toward the west, where it scooped off about a foot more from the exposed bank—fortunately no more. On November 2, 1969, I searched along this newly disturbed bank and located a large darkened area. This discoloration at once suggested the possible presence of more burials, and, with the help of my two sons, we commenced a thorough excavation of it.

At its northern end was found Burial #7, which had a diameter of about 24". It extended about 66" down to the white sand, and contained the fragmen-

![Fig. 4. GRAVE GOODS, Burials Nos. 7 and 8, Seaver Farm Site. 1-4, Sharks Teeth; 5, 8, Cache Blades; 6, Small Stem Point; 7, Flake Knife.](image-url)
ted remains of a body badly disintegrated. In fact, only a few small pieces of bone matter remained. The skull had completely disappeared, and only several fragmented teeth survived to prove its former existence. At the pit's bottom appeared 10" of a black powdery charcoal, and from this substance was recovered not only the few fragmented teeth, but 4 sharks teeth, presumably used as arrow points (Fig. 4,#1-4). In fact, one seemed to have the darkened rotted wood outlines of an arrow shaft within its hollowed end. Also, it is important to note that 3 sizeable flakes of a dark greenish-gray, white-spotted porphyritic felsite — one was retouched along two edges, probably for use as a Flake knife (Fig.4,#7) — appeared in the area where the skull once must have lain. A deposit of some 18 more of these striking flakes was found a short distance away toward the center of the discolored area, while several smaller flakes of the same stone were nearby, scattered about the southerly side of it.

Continuing in this direction we came upon Burial #8, which measured about 24 x 50" in size, and extended to the white sand. It lay in the southern extremity of the large darkened area, which proved to have an oval shape of about 6 x 7 feet in size. It seemed to be an over-all grave shaft, containing the two burials, which probably were performed at the same time. The skeletal remains of Burial #8 were fragmented nearly to the vanishing point, much the same as those in Burial #7. Disintegration had left the skull in one or two small balls of fibrous matter, while a few short pieces of porous bone were all that remained of the leg bones — the rest of the skeleton had completely disappeared. Where the feet would have lain occurred a Small Stem point of white quartz (Fig.4,#6). It was lying about 6" above the black powdery charcoal layer, which covered the pit's bottom, the same as that found in Burial #7. Directly under the skull residue appeared a large broad-bladed ceremonial cache blade of brownish-gray porphyritic felsite, imbedded in the black powdered base (Fig.4,#5). And separated from it on the further side of the skull remains was a similar shaped blade slightly smaller (Fig. 4,#8). This was made of the same dark greenish-gray, white-spotted porphyritic felsite, as that of the more than 20 flakes already alluded to. Both blades were lying flat on their faces apparently as originally placed at the head of the skeleton.

It may be concluded, as I am led to believe from the felsite flakes in and without Burial #7, that the smaller cache blade made of this same stone material may have been chipped into shape at the time of interment, and in this way became a part of the ceremony involving both burials.

CONCLUSION

As to the age of these burials, the Editor's guess is that something short of a thousand years might be about right. The disintegrated condition of the bones — they powdered when touched with a brush — would seem to indicate a long interment, but not long enough for the bones to have turned into powder. Also, contributing evidence to an old age, of about A.D. 1200, is found in the absence of red ocher, and the abandonment of cremation as a means of disposal. In other words, these interments probably were made several hundred years after that of Burial #6. Presumably they came at a time of change, when cremating the dead had become a discarded ceremonial practice, and when powdered ocher was finding less favor as a necessary element.

DEERFIELD ARCHAEOLOGICAL DISPLAY

Richard W. Hatch

Every informed collector and student of American antiques knows about Deerfield, Massachusetts, with its beautiful main street of 18th Century houses, its nationally-known Heritage Foundation collection of period furnishings and silver, and its historical museum, Memorial Hall. But I wonder if archaeologists and the many others interested in American Indian lore are aware that there is a room in Deerfield's Memorial Hall that houses an important and in some ways unique exhibit of American Indian artifacts.

That extensive collection, started a hundred years ago, and consisting of artifacts recovered in Deerfield and the immediate vicinity, is arranged sequentially
by culture periods from the Paleo to the Ceramic-Agricultural. At one end of the time spectrum is a replica of a Late Paleo stone hearth on glacial sand; at the other is a complete Indian burial preserved exactly as discovered — unique in the experience of this writer.

In each of the period display cases the artifacts are arranged and identified following the implement and products classification system of the Massachusetts Archaeological Society. This incorporates the latest developments in our knowledge of Indian cultures in New England; and thus the exhibit as a whole, besides being a delight to the eye, literally constitutes a course in education in Indian archaeology.

In addition to its obvious educational value the Deerfield collection offers for even the most experienced collector and student an opportunity to see specimens not found in other museums. These include a superb collection of perfect finely-worked Leaf knives of the Early Archaic period, an unusual display of Hatchets of basalt, and a perfect small Stage 4 ceramic pot, Iroquoian influence, a grave recovery. Implements include Whetstones, Abraders, a fine Shallow Stone mortar with Muller, a wooden bowl from a grave, and two large Log mortars with long stone pestles.

There are both stone and ceramic pipes, including a beautiful effigy pipe that lies, just as it was found, by the head in the complete burial.

The sacking of Deerfield makes one of the most famous and well-recorded episodes in New England frontier history (Fig. 5). The village was burned and sacked by Indians in 1704 and over a hundred of its people taken into captivity. When the survivors of the bloody winter march to Canada were later redeemed and returned to their homes, Eunice Williams, daughter of the Deerfield minister and a child when captured, refused to be ransomed. She remained to grow up with her captors, becoming one of the tribe and marrying an Indian. A unique historic relic in the Memorial Hall exhibit is a stone gorget that belonged to her husband, Amrusa.

Just outside of the Indian room in Memorial Hall stands the door of the Ensign Sheldon house with

Fig. 5. DEERFIELD ATTACK OF 1704. Copy of an old engraving, showing Indians attacking the Sheldon Fort House: an Indian is cutting a hole through the front door with his tomahawk, while another is leading away a child captive at the far right.
its scars and the hole chopped in it by Indian axes in 1704, a unique and famous historic object. In the Indian display are a metal dagger taken from the body of a marauding Indian and a knife dug up at the scene of the Bloody Brook massacre, which occurred a few miles south of the village.

I must mention at least two other notable features of the Memorial Hall collection. One is the unusually extensive exhibit of perfect projectile points of all types, including Fluted points of the Early Paleo and typical points of the Late Paleo to Early Archaic period. The other is the large number of implements of all kinds from finely-made drills and scrapers to gouges, Celts, hoes, and Grooved axes. The Stone-Bowl and Ceramic-Agricultural cultures are exceptionally well represented and placed in separate but adjoining cases so that detailed comparisons can be made. Several characteristic specimens of weapons and tools have been hafted, following what may be presumed to have been the Indian method, the hafts having been shaped and finished with Indian stone woodworking tools.

One could go on at much greater length. Unquestionably the Deerfield Memorial Hall exhibit is outstanding in the field of New England Indian archaeology. Moreover, the painstaking care and skill that have gone into the arrangement and labeling make it an object lesson in combining visual appeal with expert knowledge and sound museum practice. Let the beholder look and learn.

Barnstable, Mass.
June 12, 1969

NEW ENGLAND TOMAHAWKS

WILLIAM S. FOWLER

There has been a continuing demand for information about tomahawks as used by the natives of New England during historic times, and this has prompted the writing of this report. More than a decade ago information concerning tomahawks was presented in three separate issues of the Society Bulletin, Vol.12,#3, Vol. 13,#3, and Vol. 16,#3, and in each case different phases of the subject were dealt with. Since then hundreds of new members have been added to the Society rolls, who have never had a chance to read the earlier accounts. For this reason it has seemed desirable to present at this time a correlation of pertinent parts of what has gone before, to which new evidence will be added together with a more complete review of the subject, refined by research during the intervening years. Some aspects of the changing tomahawk shapes that took place have suggested new thoughts, and perhaps more introspective ideas about the use and provenience of these metal instruments of war, which proved so destructive in Indian hands. In this way it is hoped that this paper may serve to effectively clarify and bring up to date the study of New England tomahawks.

Before proceeding further, it may be well to explore the probable sources of tomahawks. Going back to the days of the explorers in the 1500's, mention is made of the barter of iron axes with the natives of New England. Probably these were, for the most part, just what might be inferred: heavy blades for chopping wood, and evidently did not refer to lighter weight ones, which could have been used as war clubs. The natives had, in their implement equipment for hunting and warfare, stone clubs, which had been accepted weapons for a long time. However, they were made with blunt blades, not intended for cutting but rather for bludgeoning, and it is likely that the term tomahawk did not apply to these former stone clubs, as will be shown further along. It appears to have been created by the natives to describe the small metal axes or hatchets made available by the whites. Just when the first of such blades found their way into the hands of the Indians is not clear, but it could have been shortly prior to the colonizing age, which followed that of the explorers. Champlain, as late as 1604, speaks of worn-out iron axes, which the Hurons used in felling trees to make a fortification during their campaign against the Iroquois, but makes no mention of tomahawks. However, early commentator Strachey, in 1612, lists "tomahick — tomahack — tomoake — and tomahac" as being in use, which presumably are variations of tomahawk. This suggests that the ax was being made in small hatchet sizes in the Old World as early as 1600, or before and was used for barter.
In search for the derivation of the name, tomahawk, the following information was received from the late Warner F. Gookin, Martha's Vineyard, Mass. —a direct descendant of the early commentator, Gookin. He calls attention to references in Trumbull's Natick Dictionary, which were formerly overlooked: "On page 166 appears the word 'tummehtam,' defined as 'he severs [it], cuts it off.' Trumbull gives the suppositive of this as 'tamahlahog,' which he translates, 'when he severs,' but which can also be translated as a relative clause or verbal noun, 'that which cuts off.' The word tomahawk quite probably is derived from this suppositive form wherein '—hog' is changed to '—hulk;' a confusion of the 'g' and 'k' sounds that frequently occurs. The stem, 'tumme—' meaning 'to cut off' is used to form the noun, 'tummunk,' or cleaver signifying 'the cutter,' and also a verb, 'tummiggnoh-whan,' 'to cut off heads.' No other stem is listed from related events. However, this while—a direct descendant of the early commentator, Gookin. He calls attention to references in Trumbull's dictionary, which were formerly overlooked:

De Forest, in his History of the Indians of Connecticut, refers to an event that occurred in 1635. It concerns a speech made by a Pequot envoy to explain a retaliatory act of one of his tribe to settle a grievance on account of the murder of their former sachem by the whites. After mentioning how a ship came into a river bay and anchored, which was under the command of a Captain Stone, the Pequot envoy is reported to have said: "The son of our murdered sachem staid in the cabin with Captain Stone until the captain, having drank more strong water than was good for him, fell asleep. Our sachem then took a little hatchet from under his robe and knocked him in the head." It is interesting to note in this instance that the Pequot uses the term "little hatchet" instead of tomahawk, perhaps because he may have felt that his white audience would better understand the English name. Quite obviously the weapon must have been of metal in order to have qualified as a hatchet.

The second reference is an account by Captain (Major) Church relating his fourth Eastern Expedition to the Penobscot region in 1696. Speaking about white returned captives as being troubled upon seeing — "their cattle, sheep, hogs and dogs lying dead about their houses, chopped and hacked with Hatchets" — he comments further that this was nothing to what the English of frontier towns experienced with their "men, women and children chopped and hacked so, and left half dead, with all their scalps taken off." Again, the word hatchet is used here in place of tomahawk, which seems to suggest that the two names were synonymous.

A third reference concerns the well-known Dustin story, which never grows old from repeated recounting. Exhibiting a case of extreme bravery under most trying circumstances, it seems worth including here. In March, 1697, during the First French and Indian War a band of Indians attacked the little village of Haverhill, Mass. Hannah Dustin was forced to rise from a sick bed, scantily clad, and proceed with her "men, women and children chopped and hacked so, and left half dead, with all their scalps taken off." Again, the word hatchet is used here in place of tomahawk, which seems to suggest that the two names were synonymous.

There are any number of historic accounts in which tomahawks are mentioned as playing a significant part in different related events. However, this report will confine itself to only four, which should be sufficient to emphasize the importance of the tomahawk as a weapon in historic days.

HISTORIC REFERENCES

There are any number of historic accounts in which tomahawks are mentioned as playing a significant part in different related events. However, this report will confine itself to only four, which should be sufficient to emphasize the importance of the tomahawk as a weapon in historic days.
hawk when killing a person. His captor, unsuspectingly, signifies by placing his finger on his temple and said in broken English, “Strike ’em there.” That night, at a given signal, the three captives grabbed their captors’ tomahawks and quickly killed all ten in their sleep. But this was not all, for just as the captives were about to embark in their captor’s canoe, Hannah thought they should have proof of their exploit, and returned to the camp. After scalping her victims, and wrapping the scalps in an old linen cloth she had, they pushed off and finally made their way back to Haverhill. The tomahawk used by Hannah was preserved by her descendants and is illustrated (Fig. 6, #2.). It is important to note its simple style of Hatchet-shaped blade with perforated poll for insertion of the handle, since a definite date is connected with it, as a result of the part it played in this famous event — the Dustin tomahawk, scalping knife, and linen cloth are today on display in the Haverhill Historical Society.

The last reference concerns the burning and pillage of Deerfield, Mass., February 28, 1704, by a band of Canadian Indians during the Second French and Indian War. Aided by deep snow and a sleepy sentry the palisades were overrun in the early hours of this cold winter morning, followed by the burning of many houses, and the taking into captivity of over 100 captives, men, women and children, of whom Eunice Williams was one. Convincing proof of the havoc inflicted upon the surprised settlers is the door from the Old Indian House—the garrison house of the town—preserved and on display at Deerfield, as evidence of tomahawk action. In its heavily nail-cleated construction are to be seen the many gashes made by the attacker's tomahawk, and the resultant hole through which an Indian gun was poked and fired, killing Mrs. Sheldon. Exhibited with the door are iron tomahawks of the Dustin type with perforated poll, representing the probable kind of hatchets used in the attack.

CHRONOLOGY OF CHANGING TOMAHAWK SHAPES

The earliest forms of tomahawks displayed in this report are the three iron specimens from the Jenks’ concession at the Saugus Ironworks, Saugus, Mass. (Fig. 6, #3,4,5). Date of their manufacture is 1646-1655. They vary in size, but all have a flat perforated poll, which seems to emphasize this feature as a mark of the times. It is thought likely that this blade style extends back into the late days of the explorers, when hatchets were made in Europe and were used as barter in trade with the natives, although presumably in those early times, blades assumed heavier proportions and were thought of as small axes. However, by arrival of the 17th century it is likely that blades had become more stylized, resembling those from the Saugus Ironworks. There is no question about the established manufacture of tomahawks at Saugus, made expressly for the Indians, as may be gleaned from the following. An old-time resident of Saugus, always interested in Indian evidence of the area, Fred M. Terrill, wrote the following in 1952: “I once saw a list of objects created for the Indians by the ‘Foundry.’ It was on a sheet of gray, thick — either paper or vellum, written in ink, old fashioned spelling—but what interested me was a notation of ‘28 Hatchets for ye Indians’.” Therefore, it appears most probable that the hatchets made for “ye Indians” resembled those found in the early Jenks’ works, and doubtless should represent those used in Philip’s War of 1675. During the remainder of the century other ironworks sprang up in various parts of New England and probably turned out tomahawks similar in shape to those from Saugus, although no records remain so far as is known. Evidently, the perforated flat-headed poll remained in favor throughout the 17th century and on into the first part of the 1700’s as well, to judge from the Dustin hatchet and those shown at Deerfield. Also, the exhibit from a Churchill Lake site (Fig. 6, #1), while there is no date attached, does carry the mark of a cross. This should indicate, beyond a possible doubt, Jesuit origin of a war hatchet, placed in the hands of an Indian ally during the French and Indian wars and dropped accidentally while on an expedition from Canada to destroy English Protestant settlements in New England. With this probability in mind, it is safe to assume that hatchets of the flat-headed perforated poll type were in use up to and during the First and Second French and Indian wars, or in other words before 1725.

In addition to that which has been said, it is also clear that quite small tomahawks were in existence, probably made by the whites. They are represented by one of the Saugus specimens and by the surface finds from Hatfield and Northampton, Mass. (Fig. 6, #5,6,7). However, while the Saugus blade has a perforated flat-headed poll, the others have solid metal blades, hafted doubtless as if they were of stone. As historic proof of such small blades, the first historic reference previously mentioned is quite informative: “Our sachem then took a little hatchet from under his robe and knocked him in the head.” This would place the presence of small tomahawks, presumably like those illustrated, as early as 1635. Such diminutive hatchets may have included an occasional one made of copper at times, as seems evident by the Northampton recovery.

Up to this point discussion has concentrated on tomahawk shapes present throughout the 17th cen-
Fig. 6. FLAT-HEADED METAL TOMAHAWKS — 17th Century. 1, Iron blade with cross, Churchill Lake site, Me.; 2, Iron blade used by Hannah Dustin, 1697, to kill several of her captors, Haverhill Historical Society; 3-5, Iron blades, Saugus Ironworks, from Jenks' concession, 1646-1655; 6, Small iron blade, surface recovery, Hatfield, Mass.; 7, Small copper blade, surface find, Northampton, Mass.
Fig. 7. SPIKE-HEADED IRON TOMAHAWKS — 18th Century. 1, Moosehead Lake Area, Maine; 2, Lynnfield, Mass.; 3, Maine; 4, Salem, Mass.; 5, Blade carried by William Denison of Stonington, Conn., 4th French and Indian War, 1740-1748; 6, Bronson Museum Collection.
tury and continuing into the 1700's during the Second French and Indian War. Sometime after 1725 New England blacksmiths and ironworks began to alter the style of blade, due perhaps to a demand by colonial militiamen for a more lethal weapon, for by then, as will be shown, some of the whites as well as the Indians were carrying them in battle. While tomahawk recoveries are lacking at old ironwork sites to substantiate this statement, evidence from other sources shows that a new style of tomahawk did exist, which makes this an established fact. Perhaps the best evidence is the tomahawk carried by William Denison of Stonington, Connecticut, during the Fourth French and Indian War of 1740-1748. It has been preserved by his descendants and is today on display in its original haft in the museum of the Rhode Island Historical Society, Providence, R.I. (Fig. 7, #5). It consists of a malleable iron blade, perforated for hafting like earlier tomahawks, but with a long spike extending upward on its poll. It is thought that this might have been added for two purposes, first, to effect better balance in carrying through a stroke so as to prevent the blade from turning in the hand, and second, to furnish an additional destructive feature at the upper end, to be used in case the blade became accidentally twisted in the hand during an active skirmish. This particular specimen exhibits not only a gracefully stylized shape, but also several line bosses as decorations. Here is proof that the deadly tomahawk was not only used by Indians, but during the close of the French and Indian wars was also employed as a weapon by at least some of the whites.

Fig. 8. PIPE-HEADED TOMAHAWKS — 19th Century. American make: 1, Thomas Gordon, maker, Greenbay, Wis.; 2, Winnebago, Neb.; 3, Pass Creek, near U.S. Rosebud Indian Reservation, S. D. (made of brass, said to have belonged to Crazy Horse); 4, Damariscotta, Me.; 5, Quincy, Mass.; 6, Windsor, Conn. . . . English make: 7, Montgomery County, Ind. (made of brass with wrought iron bit inlay); 8, Ohio. . . . French make: 9, Michigan, (displays fleur-de-lis design, the bearing of the royal family of France).
Illustrated are five more spike-headed iron blades recovered from Maine and Massachusetts sources (Fig. 7, #1-4,6). Two of these are perforated like the Denison tomahawk for insertion of handles, while two have extended metal shanks, and one has only a spiked poll for hafting. In the case of Exhibits #2 and 6 with extended shanks, a deep hole was drilled at one end of the haft down into the handle for insertion of the shank. The other blade, Exhibit #3, with a tapered straight spike for its poll, either could have required the handle end to be split and bound around the poll with the spike projecting, or could have had the spike sunk into an enlarged knot at the handle's end. This unusual tomahawk is from Maine. It is made of malleable iron with a relatively thin blade, evidently drawn from a rounded bar of metal, the upper end of which has been hammered into a tapered point. Some ingenious local blacksmith, no doubt, made this blade and for a decoration stamped into it, while hot, the outline of what appears to be the end of a spear.

While these three blades seem to be the work of local blacksmiths, the other three because of their perforated polls, were doubtless cast at some colonial ironworks. It seems likely that tomahawks, spike-headed like these, were used sometime before and during Revolutionary times. When peace finally came to the Colonies the few remaining Indians of New England had ceased to exist as marauding enemies, while many had moved out of the area into Canada, or westward into the Ohio territory. Therefore, the more sophisticated pipe-headed tomahawks (Fig. 8), the last kind to be made, were not a factor among the few remaining Indian groups. However, occasional recoveries of this kind of tomahawk have appeared in this area, sometimes found in contact graves, presumably of the late 1700's—as evidenced by one from an Indian grave in Windsor, Connecticut, although in this case the pipe bowl is missing, evidently broken off intentionally or otherwise (Exhibit #6).

It seems probable that the English and French made some of these pipe-headed tomahawks, and during the Revolution put them into the hands of their Iroquois or Huron allies. From this source a few may have found their way into New England, but they cannot be said to have played a significant part in the peaceful life of this region in post Revolutionary times and on into the 1800's. The locale where they were used extensively was throughout the West. There, many specimens of this attractive blade have come to light, for during the 1800's and until about 1875 this kind of tomahawk is known to have been in universal use by Indians of the Plains and those of the Great Lakes area, as well as southward throughout the Middle West. After the American Revolution iron works in western localities began making this style of tomahawk, doubtless following the lead of British and French makers, who placed such weapons in the hands of their Indian allies in the New World. One well-known American maker was Thomas Gordon of Greenbay, Wisconsin, who was in business from 1780 to 1820. He made some of these pipe-headed tomahawks from old gun barrels, and cast and filed them into mirror brightness. His trade mark was a half moon copper inlay (Exhibit #1). In place of this at other times he is known to have used copper inlays of chevrons, or a star, with two bands extending around the pipe's bowl. However, the writer has no knowledge of the existence of an early manufacturer of this kind of tomahawk in New England.

Bronson Museum
February 1968

AIRCRAFT ROAD ROCK SHELTER

CONSTANTINE ZARIPHES, JR.

In April of 1966, while surveying a section of the Connecticut Valley below Middletown, Connecticut, for rock shelters as future "dig sites" for the Albert Morgan Chapter of the Archaeological Society of Connecticut, we located a series of granitic stone ridges, which looked promising. They lay at a right angle to the Connecticut River, somewhat removed from its west bank. The Aircraft Road runs in front of these ridges beside Hubbard Brook, which empties into the Connecticut through a swamp. The terrain is not of the kind in which caves are found, rather it is where overhanging ledges form shelter areas. In
such places the aborigines of former days appear to have taken refuge against the elements, and used them for shelter lodges. Several of these rock shelters, some being only large enough to allow space for one or two persons to crouch, were test dug, and were found to contain evidence of previous habitation. In test pits we dug in front of a few of them appeared flint and quartz chips, charcoal, and fragments of projectile points, consisting of the Small Triangular and Small Stem types. It was noticed that some of these smaller shelters were several hundred yards distant from available sources of water and precariously located. They seemed to suggest, perhaps, only temporary defensive abodes.

One day, quite by accident, while approaching this area by car along Aircraft Road, a ledge was noticed, which from the road appeared to rise abruptly with a perpendicular front that seemed to offer little or no protection as a shelter. Hubbard Brook runs in front of it, and flowed easterly toward the Connecticut. Upon closer scrutiny the ledge was found to have a moderate overhang of about 10 feet. This extended for a considerable distance of about 45 feet along the front of the ledge, which could have offered shelter for several people. The brook lay about 60 feet in front of it, and flowed easterly toward the Connecticut. At once we realized that it would have provided an abundant water supply, as well as furnishing a natural path to the river. As the shelter faced in a southerly direction, it received sunlight most of the day during all seasons, which seemed to be a favorable factor in making this a likely site.

As we continued our investigation, it was noticed that at some previous time a shallow trench had been dug haphazardly from one end of the ridge to the other. Some debris from the shelter overhang had fallen into the trench and vegetation had somewhat overgrown the remains. This trench that abutted the front wall of the ledge was about 2 feet wide and extended down to bed rock. Excavated earth from the trench had been heaped up in front of it over its entire length (Fig. 9).

As we examined the trench, we wondered what had prompted anyone to dig such a long one through the rock-filled soil that is to be found on the floor of such a granitic shelter. This question was quickly answered when we troweled through the mounds of fill. Here we uncovered quantities of bone and shell waste. However, to judge from the size of the shelter there appeared little sign of any significant occupation. Perhaps it was this condition that discouraged the diggers in their search for artifacts. Several days passed by from the time of this initial investigation. Then we returned to test the site again, but this time our digging was made well in front of the shelter. Here, it was reasoned, there might exist possible middens hidden beneath the mounds of fill from the previous trench digging. As we expected, extensive deep middens were found extending the entire length of the shelter, and they appeared undisturbed and waiting to be excavated.

ARTIFACT RECOVERIES — Fig. 10.

A large tree had grown out of one of the middens, and while probing directly beneath its roots, we recovered a perfect ceramic Elbow pipe with fine mineral temper (Exhibit #9). After a short time had elapsed, we came upon another fine pipe lying about
2 feet from the first and at the same level. It was a steatite Elbow pipe, well made and with a high finish (Exhibit #10). Also, found in this same midden was a large Stem knife (Exhibit #17), as well as numerous postsherds, which appeared near the bottom of the midden—4 decorated sherds are illustrated (Exhibits #13-16). These appear to include pottery of Stages 3 and 4. The laminated rim of Exhibit #13 and the incised motif of Exhibit #16, both with constricted necks, denote Stage 3 pottery. Exhibit #15 with its trailing design could indicate Stage 3 pottery, also, although it is ill-defined for lack of sufficient ware. Exhibit #14 displays the castellated part of the collar of a Stage 4 pot. This may suggest that the other sherds are of late Stage 3, merging into Stage 4 times.

Also, taken from this same midden, from which all recoveries including the pipes were made, were the following: 3 Small Triangular#5, and 1 Small Triangular#4 points; 1 Crescent drill; 1 Flake scraper; 3 Small Stem, and 1 Corner-removed#3 points; and quartz and flint flakes, indicating on-the-spot manufacture. The midden measured about 3 feet in diameter, with a depth of 24", and the various artifacts came from all parts of it. For instance, the ceramic and steatite Elbow pipes lay 11" below the top of the midden, while the large Stem knife and fragmented ceramic Elbow pipe stem appeared at its bottom. Other implement recoveries were scattered throughout.

Fragmented bone remains, presumably from animals, etc., that had been used for food have been identified, and include: a piece of a turtle shell; quahog shells; deer bones; small mammals and birds; and the claw bones of some large bird. Evidently, the shelter had been used for long enough periods of time to allow for this accumulation of bone and shell refuse.

After exploring this one midden with such satisfactory results, we assumed there might be more artifacts in the other middens lying beneath the mounds of fill from the trench digging. Accordingly we obtained permission to excavate the remainder of the area in front of the shelter, or elsewhere in a systematic manner. Unfortunately, we delayed too long. For early the following spring, when we returned to commence the project, much to our dismay, we found the area largely destroyed by indiscriminate pot hunters.

CONCLUSION

It seems to the writer that, while this report covers only a small excavation, the few recoveries are of sufficient importance to warrant more than just an enumeration of them. More specifically, certain reports from the Massachusetts Archaeological Society by their Editor has focused attention upon the subject of stone pipe-making. They enumerate evidence from a few stone bowl quarries in New England, which leads to the belief that stone pipes of steatite and chlorite were being made at some steatite quarries in New England toward the close of stone bowl-making. Also, at Oaklawn, Rhode Island, evidence tends to show that that quarry, for some unknown reason, was reopened for the manufacture of stone pipes, and continued to turn them out for probably 1,000 years or more, following the termination of stone bowl-making. This would place this activity at a time during the making of ceramic pots. Also, in another report, Fowler refers to the recovery of a ceramic Straight pipe from Plymouth, which exhibits elemental traits attributable to the early days of pottery-making. This find seems to suggest that more sophisticated ceramic pipes of the Elbow type must have come later, and would most likely represent an improvement of the Straight type, as a result of acquired skill in learning how to bend the bowl away from the stem. As explained by Fowler, experimentation would have come during the early days of Stage 1 pottery-making, so that well-made Elbow pipes probably would have come later, and would have appeared in late Stage 2 and on into Stage 3 and Stage 4 ceramic times.

At this shelter site we are fortunate in having 3 pipes appear associated with a number of potsherds, whose approximate cultural position in the development of pottery may be postulated by virtue of their designs and body contours. As previously noted they seem to typify Stage 3 and 4 pottery, which would place them during the latter part of the Ceramic Age. Now, as this site's steatite pipe occurred at the same level and only 2 feet removed from the perfect ceramic pipe, there is every reason to believe that both represent use by the same people, and therefore were contemporaneous. Both are expertly made, so much so that they probably should be considered as products of experienced artisans, whose skill had developed after a long period of pipe-making labor.
Besides being able to place the age of the site's Elbow pipes, it is also significant to find the stone pipe evidently coeval with the ceramic one. This would substantiate Fowler's belief that stone pipes continued to be made throughout most, if not all of the Ceramic Age, with the Elbow type appearing to have been the most popular kind. It is also interesting, noting Fowler's reasoning, to consider the probability that, whereas the ceramic pipes were made by the women, who were the potters, the stone pipes quite certainly were made by the men. For they had learned the use of the required tools from their previous quarry work in the making of stone bowls.

All stone artifacts recovered at the shelter, except possibly Exhibit #2, are diagnostic of the Ceramic Age, which tends to support the pipe and potsherd evidence. And even the one fractured Small Triangular#4 point in question might also belong as an overlapping variation from the earlier Late Archaic. The Stem knife is an especially fine example of a Ceramic period knife, with its well-defined stem and symmetrical blade. The Crescent drill (Exhibit #12) is another implement of the Ceramic Age that confirms the cultural position of this site, as well as the shellfish remains, since the eating of clams and oysters in New England had its inception at the beginning of the Ceramic Age. This has been established from evidence obtained at numerous site excavations in coastal areas.

Southbridge, Mass.
April 8, 1969
FIRE: THE FIRST SCIENTIFIC TOOL OF MAN

ELMER T. ERB

In our racing civilization of today we too often neglect to notice the obvious. This is true in all fields of endeavor and therefore is not without exception in archaeology. Much has been written about bone, wood, pottery and stone tool industries, but one of the earliest tools of man, and certainly the first that played a major part in his advance toward a civilized state is seldom considered. This tool is not an implement of material structure, but an instrument of energy. The aborigines had learned how to conquer and harness this force, and they even found out how to produce it almost at will. We may not wish to call it a tool of science at this early stage, for it has actually only gained this recognition within the last half-century. Since we are dealing with ancient man, let us apply what seems to be a more appropriate term as used for early civilized cultures: "the art of fire."

Without question, this tool played the greatest part in man's development, not only in his climb upward toward a civilized cultural state, but also continuing on up to the present day. Without it there could have been little or no cultural advance, although today it is seldom thought of as a tool, but rather as fire or heat. In this modern age we have improved on the original concept, and have found new ways to produce fire and eliminate some of the undesirables. We have added more uses and closer control of it, which is not necessarily exciting. The one great thing we have contributed is an ability to answer many questions of — why?

When fire is mentioned and we start to use it as a tool, there are two elements to be taken into consideration, consciously or not: heat and temperature. They should never be forgotten and should be thought of collectively and yet separately, as they are not the same. This seems confusing to many people, but it is nevertheless true, as they represent two separate measures. Heat is the measurement of volume, while temperature is that of intensity.

When and how fire made its first appearance among mankind may never be known, but one thing is certain: when it did appear, it was never changed or lost as have many of man's other tools throughout the ages. Man lived daily with this tool of fire, once he had found it. He cherished and guarded its secrets, as it undoubtedly was the first tool that gave him comfort. Can there be any doubt today that the aborigines, through their close and constant contact with this first luxury of life, did not learn of its secrets, many of which may still be undiscovered by us today. For example, two processes that utilized fire or heat, known to the ancient Egyptians, were lost until the 1930's when they were rediscovered from old documents. Had they not been found in these early records, they might still be a mystery.

Beside the warmth fire furnished early man, he found that after his battle with wintry storms it possessed drying qualities as well, which further added to his comfort. Furthermore, his meat no longer had to be eaten raw, and the savory flavor and haunting aroma of roasting meat doubtless led to the discovery of cooking. Although the process is thought to have been by indirect boiling at first, by heating stones and dropping them into water held in skin containers, it was advancement, and at the same time the aborigines were learning more about the power and control of this important tool of fire. Here there may have been a pause, or it may have been a long period of experimentation during which man tried to find products that would withstand this tremendous force, which devoured or destroyed most materials he was accustomed to. Through such experiments reason led him to the making of stone bowls. Then came the great discovery: pottery. During this time man undoubtedly advanced rapidly in the art of cooking, thus adding a larger variety of foodstuffs to his diet. In due time this may have brought about more intensive planting with the increased production of maize and other food products.

Somewhere along this line of events man found that certain foods could be preserved through smoking and drying, which made life a little easier during periods of food shortage. Fire also contained powers to prolong life through use of sweat baths. History tells us this method of body resuscitation was extensively used by the aborigines. Also, they learned that a piece of wood charred lightly by the fire left a core that was harder and tougher than the wood itself, and so this process was used to harden the points of spears and digging sticks. Further, they learned that the blunt end of a piece of wood, such as a post, could be easily reduced in size by charring and worked into a sharp point. Which of these two processes were discovered first is not important. The fact is, man did learn that with some control he could easily work wood with fire, and so water transportation was benefited through the making of dugout canoes. To what extent this burning process was used in woodworking we shall never know. However, we do know that the
process was employed for girdling and felling trees, and in the hollowing and shaping of dugouts and other wooden products such as log mortars. A somewhat related process was that of burning and clearing land of trees and brush, and we are left to wonder how many other uses fire was put to where wood was concerned.

As time went by man progressed in applying the art of fire. Unlike most of his other tools, which were limited to a dual or threefold use, this tool of fire was entirely different. Its uses appeared to be endless—at every bend in the trail another use was waiting for man to grasp and utilize. For instance, he found he could employ the heat from his fire as a means of drying the outer fiber of arrow and spear shafts to hold them rigid; after they had first been straightened by finger manipulation or otherwise. Also, fire was often used in shaping bows.

As mentioned before, with the coming of ceramics firing of pottery had been added to the list of man's accomplishments. No doubt, different methods of pottery firing were utilized, about which we will learn more as our search continues. However, the open fire method of firing by North American aborigines appears to have been quite generally employed, especially in the Northeast, although the records do refer to the evidence of simple kilns having been found in a few instances. From this it appears that the aborigines had not learned to utilize the full heat capability of fire. One of the factors that hindered this may have been their ever-present superstitions, which is not strange, since we know that similar hindrances have protruded into civilized cultures of later days.

In still another way man found a use for heat. He discovered that he could use it to soften and extract bitumen and gum, which were used in connection with various manufacturing activities. Again, early man's occasional burning of refuse, which may have taken place in certain parts of the country—doubtless not a universal custom—has enabled us today to learn much more about his dietary habits than might otherwise have been possible.

Although the records never have given the aborigines of the New World credit for having metallurgical knowledge, they probably did have it to a limited extent in areas where free copper was readily obtainable, such as in the Lake Superior region. True it is that no recognized evidence has been presented supporting their smelting and refining of metals, however, we know they used virgin copper when found in nugget form. Hence, since recovery of minerals is the first step in metallurgy, are we certain, for instance, that metal workers of the Old Copper culture of the Middle West did not possess some knowledge of the action of fire when applied to copper? It seems likely that they used fire to work most of the copper implements they made, as they were hammered into shape either in a hot or cold condition. If cold, they would have required annealing to prevent the metal from cracking. For it is known that copper, when beaten into shape with a hammer while cold, hardens to some extent. That is, it will flow to a point at which the strains built up through reduction are greater than the inner structure of the metal. At this stage tiny cracks will start to develop along the thinner edges and continue to spread rapidly as the pounding continues. The only way to overcome this unfavorable condition is to anneal the copper. Today this is accomplished by heating the metal to 500 degrees F. or higher, and allowing it to cool, when the process of shaping by pounding can be continued. This may then be carried to a point when the flow stresses again build up to the rupture point, at which time the process of annealing must again be repeated, if further shaping is required. Since this process of annealing is a function of metallurgy, it seems likely that early man must have heated his native copper and beat it into shape while still hot. As this is the process of hot working or forging, the early copper worker was employing metallurgical principles. Of course, the use of copper in the New World obviously must have been confined to limited areas where free copper was abundant, such as previously suggested that of the Superior area. Also, while it may be remotely possible, although no evidence has appeared to prove it, there may have occurred an accidental smelting and recovery of metal from copper ore, when it was exposed to heat of a heavy-laden charcoal fire into which it was dropped by chance. If so, probably the events would have been similar to those of the discovery preceding the Chaldeans' art of copper working as early as 4500 B.C. in the Old World.

There is a product used quite extensively and cherished by many aborigines in prehistoric ages, which should come under closer scrutiny. The product is ochre, which, as will be shown, lends itself in some cases to metallurgical application. While there is no doubt that some ochre occurs in a powdered free state, there is evidence found in certain hearth remains to indicate calcination (roasting to make friable) of ochre or hematite when occurring in solid lump form (see Appendix). It seems possible that some aborigines had learned they could use the art of fire to intensify not only the color, but also to alter the structure of this hard stony ore of iron material, so that it could be reduced to a desired powdered condition as required for ceremonial purposes. Is it not possible that through calcination and sublimation...
man had produced other materials, as well, for coloring, which were not in the iron oxide family? There are several minerals, which are often associated with certain stones used in making stone tools, which would readily react in the above manner if thrown into the fire. Doubtless such evidence is rare, but the aim in excavational research should be to scrutinize and question every unnatural phenomenon encountered in and around fire pits and hearths as our search continues, so as not to pass by lightly the unexplainable.

Again, there is a faint inkling in the records concerning the use of this fire-tool of energy. Although challenged by many, some early observers and lingering stories refer to the use of fire in the quarrying and manufacture of stone implements. There is no doubt that a part of this information may be erroneous, still there is enough evidence to show that fire was often used in quarries in the procurement of stone material. Is it possible we have overlooked significant evidence or failed to think intelligently about this matter? We should remember that when the first white man set foot on this continent, his knowledge of fire had not approached the scientific stage of today. Very probably, he was not taken into the Indian's confidence in every detail, due to various reasons, and may have noted certain procedures that were unknown to him, but which were in common use by the natives. If so, is it not possible that the Indians possessed, along with other accomplishments, a method of working stone that had not been observed before? Probably this would not be the first time in history that ancient man had acquired an art only to be lost for centuries, and then rediscovered at some later date.

In conclusion, let us use plain logic and consider the accomplishments that have been observed, and check thoroughly the records on the use of fire. Let us then ask ourselves how much more New World aborigines may have known about this tool of fire than we have believed? Maybe we will be astonished after further research and possibly will be able to add more pages to our present records.

If one studies the art of fire, as used by the Ancients of the Old World, and checks the known records of men like Theophrastus (325 B.C.); Dioscorides (ca. 50 A.D.); Pliny (77 A.D.); Theophilus (ca. 1000 A.D.); Vannoccio Biringuccio (1540 A.D.); Agricola (1546 A.D.); and still others among the early alchemists, one will notice a sequence of events, which forms a pattern involving the use of fire, although many facts are absent. Now, when we study the events concerning early man in North America, we begin to see a similar pattern of the use of fire emerging. True, again there may be parts that are missing, but all the same it seems evident that such a pattern exists. Therefore, let us become more aware of these facts as we work. Let us search for the improbable and not for ever be satisfied with the probable, for such efforts may be surprisingly rewarding.

Lansdale, Pennsylvania
February 10, 1968

APPENDIX

Editor's Notes: In making the connotation about the use of fire to cause hard lump hematite to become more friable from roasting, Elmer Erb has suggested an interesting postulation. As a matter of fact, certain evidence that has recently been uncovered at Wapanucket 8 site on the north shore of Assowampsett Lake in Middleboro, Mass., by the Cohannet Chapter of this Society proves it to be correct. Reference here is made to the LaBrie ceremonial complex, reported in detail with fine photographic illustrations by the site director, Maurice Robbins, in a book just published.

Because of its significance in confirming Erb's theory, it seems worthwhile to add a brief description of the LaBrie discovery to this report. Within a commodious enclosure of approximately 60 x 70 feet — indicated by excavated post molds — that may have been a large ceremonial lodge, appeared the remains of several probable mortuary deposits. They consisted of a few Plain gouges and numerous flat-faced stone slabs — mostly of sandstone — all of a more or less uniform size with carefully worked edges, measuring from about 6 x 12" to 8 x 16". Most of these slabs showed wear from abrasion on one or both faces. Powdered red ochre and broken-up calcined bone fragments — much of it human — appeared among the deposits. But that which applies directly to Erb's theory was recovery of many chunks of hematite with usually one or more flat abraded facets, indicating removal of powdered ochre from these surfaces. Some of the larger hematite chunks (Fig. 11,#1,4), show fire-cracked surfaces caused by exposure to extreme heat, while Exhibit 1, also, has a fire-blackened surface. As proof of a connection between this hematite material and its subjection to fire roasting, one chunk was found in the charcoal remains of an open hearth within the enclosure, broken into several pieces from overheating.

From this it seems probable that lumps of hard hematite were first heated in the fire, and at the proper moment when their consistency had become friable enough, were rubbed against the face of a sandstone
slab to produce powdered ochre. By actual experiment it was discovered that heat, not only conditions hematite for grinding, but intensifies the brilliance of the resultant red powder. All of which seems to support Erb’s postulation.

In connection with the remains from Wapanucket, it is of interest to note the existence of obvious frugality among the celebrants. This is evidenced by many small fragments of hematite that were not wasted, but were ground down to small proportions to a point at which they could no longer be held in the fingers (Exhibits #3,5).

DISCOVERY OF FERTILIZER IN MAIZE CULTIVATION

WILLIAM S. FOWLER

A well-known fact concerning the propagation of maize by Plymouth Indians in about 1620 was their use of fish for fertilizer. The story is often told how the Pilgrims were shown by Squanto how to place a fish or two in every corn hill in order to obtain big yields, and even school children are fully informed about it. However, there seems to be no record of any kind that reveals at what time and under what circumstances fish were first utilized as fertilizer by aboriginal planters of the Northeast. Obviously, such an important fertilizing agent as fish that produced big yields of maize must have been considered an important discovery of major proportions, when the results were fully understood.

But how did this all come about? And especially at what part of the period during which maize was grown in this area was fish fertilizer discovered? These have always been unanswered questions. And today, fertilizer is such a recognized necessity to successful planting that it is taken pretty much for granted, without thought of questioning its discovery. But of course, like everything else, it had to have a beginning at some time in man’s husbandry of grains. Here in the Northeast the grain known as maize had been introduced, probably about A.D. 300, after being defused across the continent from the Southeast, and it is not likely that knowledge of fertilizer accompanied its introduction.
In support of this statement, a discovery was made some years ago in the New Jersey area, as I recall. There a stone was overturned and under it appeared the broken remains of an aboriginal ceramic pot. Unfortunately, at the time its position in the evolutionary development of pottery could not be determined as a temporal guide. However, a most significant feature in the recovery were the remains among the potsherds of several small cobs. They had been miraculously preserved over the years in some unaccountable manner, and when I saw and handled representative specimens, appeared to be thoroughly dried out relics, in which the kernels had disappeared. In fact, they were extremely dehydrated with no appreciable weight, which probably accounts for their survival. However, their small size — 3" or less in length — and the small sockets in which tiny kernels had once lain are features that appear to have particular relevance to the subject of this paper. More specifically, it seems inconceivable that such diminutive cobs could have ever had the advantage of forced growth from fertilizer. While this is only one example of what maize probably looked like at some time during the period when ceramic pots were in use in a region adjacent to New England, it is at least an indicator of conditions, which should be taken into consideration in a discussion of this kind. Unfortunately, the type of pot, in which these cobs presumably had been stored, is not known and cannot be used as a measure of time. Nevertheless, this discovery does suggest at some period during the 1,300 years of ceramic development in the Northeast, that maize apparently was being grown without the use of fertilizer. And this being the case, it appears that knowledge of improved fertilized propagation did not arrive with the introduction of maize, but came about somewhat later.

If this were the only archaeological evidence to throw light on the subject, it would still be important, but fortunately there is another perhaps more convincing piece of evidence. It consists of an excavated large ceramic pot, with New York State Owasco features that have not as yet been discreetly examined. Back in 1947 Walter Franke, a long-time member of this Society, uncovered the remains of a large ceramic urn in a New Jersey plowed field on Minisink Island in the Delaware River, just below Port Jervis, New York. A full account of this remarkable recovery is told by Franke in the Society Bulletin, Vol. 11,#2. After restoration it was placed on display in the Bronson Museum, where it was put in a case made expressly for it, lately removed to the Seton Hall University Museum, So. Orange, New Jersey. The urn measures 27" in depth and its mouth opening has a 17" diameter. For the purpose of a more discriminating examination of its outstanding traits and design embellishments, an illustration has been drawn of sufficient size to adequately reveal that which otherwise might escape the casual observer (Fig. 12).

Over a deeply constricted neck is impressed dentate design work, which reveals first a closed-in herringbone design band just under the rim, followed by a 9 line linear horizontal made with the same dentate marker, and directly below which appears continuous 9 to 10 line dentate-filled chevrons. The lip of a flat rim is bisected all around with an impression that has left a fine herringbone pattern clearly discernible. And extending down about 1" on the inside of the rim is a fine-lined dentate oblique decoration that runs around the aperture of the pot. Finally, completely covering the rest of the body outside is an interrupted impressed marking, which differs from that of a dentate or cord-marked embellishment. A careful study of this surface treatment leaves little doubt as to how it was formed. It seems evident that a small ear of maize was repeatedly rolled around the pot's surface, the minute dentate impressions being formed by the kernels. An attempt has been made in the illustration to create an effect to show this unusual surface treatment, although only an approximation has been possible. Actually, a discreet inspection of the pot's surface reveals that the ear of maize used as a marker could have been no longer than 3" in length, and contained tiny kernels. Here is probable evidence of unfertilized maize being used to decorate a pot that has certain significant period identifiable traits. Apparently, at the time the pot was made, fertilizer was not known and was not being used to increase the size of ears as fertilized yields in later years seem to prove. For it is reported by early commentators after the coming of the whites, that Indian corn, then being grown with the advantage of fish fertilizer, produced long ears much like those of today. Obviously, this represented a vast improvement over the 3" ears of former days, as indicated by the Minisink urn.

All of which suggests that when the large ceramic pot from New Jersey was made, fertilizer was not a recognized adjunct to maize cultivation; may not even have been discovered at that time. Now, in order to find out when that would have been, one has only to study the pot and from its traits determine to what stage of pottery-making it belongs. Reference to the Society classification of Ceremonial and Domestic Products, Vol 27, #384, p.56, reveals that the probable pottery period of the pot is Stage 3, occurring about A.D. 1400.
Fig. 12. MINISINK ISLAND URN (restored). Excavated by Walter Franke in 1947, now on display in the Seton Hall University Museum, So. Orange, New Jersey.

Traits that quite definitely place the urn in this stage of pottery development are: semi-globular base; deeply constricted neck; flat regimented rim lip that is bisected by some kind of a marking tool; decoration that runs a short distance down on the inside of the pot's rim; overall herringbone horizontal band and chevron design motifs meticulously executed; and overall marking of the outside body surface—inside being plain unmarked except near the rim. Therefore, it seems probable that the first-mentioned broken pot found beneath the stone may also have belonged to Stage 3 or earlier pottery times before fertilizer was in use.

Furthermore, from the Zeno account in a letter to a brother in Venice, Italy, written in 1394 from the Orkney Islands north of Scotland, Antonio Zeno, a navy officer, relates a story told Prince Sinclair of the Islands on reliable grounds by certain of his fishermen. It seems they had escaped with their lives from an extended captivity in western lands, presumed to have lain south of Newfoundland along the Atlantic coast. The lands to which their fishing boats were blown by "contrary weather" with shipwreck being threatened could well have included New England coastal regions. There a worse fate than shipwreck awaited them . . . "the greater number of them were eaten by the savages, who are cannibals and consider human flesh very savoury meat." However, apparently one fisherman and several others survived, for . . . "But as that fisherman and his remaining companions were able to show them [the natives] the way of taking fish with nets, their lives were saved." (Reference: The Sinclair Expedition To Nova Scotia in 1398, by Frederick J. Pohl).

The Zeno letter goes on to tell how these few saved fishermen were sent from tribe to tribe teaching their method of catching fish in nets. And so, if this account can be believed, it was not until around the close of the 14th Century that the aborigines of the Northeast learned how to make and use fishnets. When this happened, their supply of fish might have increased so rapidly, as to have left rotting remnants lying about beyond their food requirements. In the end, this might well have resulted in the discovery that rotting fish increases plant growth — and so fertilizer was discovered.

Between then and the coming of Columbus, some hundred years later, an advance in the cultivation and development of maize undoubtedly was underway. And after a hundred years following 1492 great strides apparently had been made. For, according to Governor Winthrop of the Massachusetts Bay Colony in his report to London in the 1600's — ref., History of Hadley, by Sylvester Judd, (see foot note) — he says that Indian corn produced stalks, many of which were "6 to 8 feet tall" and ears that were often
"8 to 9 inches long." Also, he goes on to say that maize appeared in numerous color effects including, "yellow, white, red, blue, olive, greenish, black, speckled, striped, etc." From this it seems apparent that aboriginal horticulture in New England had utilized fish fertilizer to good advantage by the time the whites arrived. Over a space of only about 250 years native husbandry had been able to improve the size of ears from the short 3" variety of Minisink Island to Winthrop's 9" lengths, with larger kernels and greater yields.

Judd says: "The squaws planted, hoed, picked, and husked the corn" . . . "the Indians divided the corn on the land, after it was husked, and had half of it" (the whites had the other half).

Bronson Museum
December 19, 1968

AN ARCHAEOLOGICAL SALVAGE ON NORTH RIVER

DONALD G. SCOTHEORNE

In the fall of 1966 I was surface hunting one afternoon at the construction site of a new sewer filtration plant in Scituate, Massachusetts. It was located on the north shore of North River toward the river's outlet into the Atlantic. The filter beds were in an elementary stage of construction, and lay stretched out before me toward the sea. But what attracted my attention most was a large area that had recently been leveled by bulldozers. The top soil had been stripped off completely, uncovering an extensive surface of subsoil. There, to my amazement, lay exposed before me the blackened tops of pit after pit as far as I could see. Whether refuse pits or not, they had the usual circular proportions of discolored soil showing, and I began to count them. As near as I could estimate from a quick count, 65 or 70 pits had been cut off and exposed by the bulldozer. They varied in size from one to three feet in diameter, and were waiting there, as it seemed, for someone to excavate and recover the artifacts that were probably hidden beneath their exposed tops.

I made a hasty retreat to my truck to get a trowel and returned to the intriguing array of pits in short order. Soon I discovered that the pits were amply filled with stone implements, many in good condition, and I began to empty the pits one by one. As the afternoon went by, 29 or 30 pits were slowly explored with good results. Besides stone artifacts, everyone of the pits had clam or quahog shells mixed throughout the fill, but no bone remains appeared. This seems significant, as it has been reported on numerous occasions at other excavated sites in the area, which have shown stratigraphic progression from Late Archaic to the Ceramic horizon, that shellfish eating commenced with the making of pottery. In agreement with this, the pits contained many small potsherds, amounting to about 100 in all, some representing Stage 2 ware.

Besides these pottery remains, I recovered the following goods:

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Triangular Point</td>
<td>6</td>
</tr>
<tr>
<td>Small Triangular #5 Point</td>
<td>6</td>
</tr>
<tr>
<td>Small Stem Point</td>
<td>6</td>
</tr>
<tr>
<td>Leaf Point</td>
<td>2</td>
</tr>
<tr>
<td>Corner-removed#3 Point</td>
<td>2</td>
</tr>
<tr>
<td>Stemless Knife</td>
<td>3</td>
</tr>
<tr>
<td>Circular Knife</td>
<td>8</td>
</tr>
<tr>
<td>Flake Knife</td>
<td>4</td>
</tr>
<tr>
<td>War Club Prong</td>
<td>1</td>
</tr>
<tr>
<td>Sinewstone</td>
<td>2</td>
</tr>
<tr>
<td>Net Sinker (side-notched)</td>
<td>3</td>
</tr>
<tr>
<td>Hammerstone</td>
<td>2</td>
</tr>
<tr>
<td>Shaft Scraper (woodworking)</td>
<td>4</td>
</tr>
<tr>
<td>Stem Scraper</td>
<td>3</td>
</tr>
<tr>
<td>Whelk Shell Bead</td>
<td>1</td>
</tr>
<tr>
<td>Shallow Stone Mortar</td>
<td>1</td>
</tr>
<tr>
<td>Pestle</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
</tr>
</tbody>
</table>

Representative specimens of some of these artifact types have been illustrated (Fig. 13), for which I am indebted to the Editor. This showing serves a double purpose: 1) to exhibit quality, and trait diversification of the pit goods, and 2) to reveal implement types, which seem to be associated with the Ceramic Age, both here as well as elsewhere.

As I completed pit #30 darkness was approaching, so I gathered up my gear together with artifact recoveries and returned home. On the following day after work in the afternoon I returned, prepared to dig the remaining pits. For I realized I had explored...
Fig. 13. SCITUATE SALVAGE RECOVERIES. 1,2,8-10, Small Triangular, 3-7, Large Triangular, 11,12, Leaf, 13-18, Small Stem, 19,20, Corner-removed #3 Projectile Points; 21,22, Triangular Knife; 23, Stemless Knife; 24-27, Flake Knife; 28-30, Stem Scraper; 31, War Club Prong; 32, Whelk Shell Bead; 33,34, Circular Knife.
less than half of them, and I desired to finish the work before anything could interfere. Now, as I walked down the road and surveyed the area where the pits had been exposed everything had changed. Apparently, during the day, bulldozers had been at work; had leveled the area and had pushed the remaining deposits into the tidal marsh.

In spite of such an irreparable loss, the recovered goods clearly exhibit this to be a closed Ceramic Age site, as evidenced by the various kinds of artifacts. Especially diagnostic are the following traits: Large Triangular and Small Triangular points, Sinewstone, War Club prong, Net-sinker, shallow stone Mortar, and Pestle, besides potsherds and shellfish remains - the Pestle, obviously for use in a deep mortar such as the hollowed-end log type.

The shallow Mortar is worthy of description, since it is not illustrated. Made of granite of glacial boulder extraction, it measures 13 x 21 x 6" with a shallow cavity somewhat elliptical in shape. This hollowed depression has a depth of 2" in the center and tapers upward on all sides to nil. The interior is worn smooth to a dark shiny luster, resembling that found on some grave stones.

Pembroke, Massachusetts
March 22, 1967

APPENDIX

About two weeks following my first recoveries at the Scituate filtration plant site I returned to find that a second area had been bulldozed. Loam from it had been dumped on top of a nearby high elevation overlooking the site, and appeared to be composed of a rich black midden mixed with clam shell refuse. Here I found evidence of disturbed burials in the form of human foot and leg bones. However, a thorough search of the surrounding area revealed no more bones. Nevertheless, a further examination of the huge pile of loam at top of the hill brought to light more burial evidence. Here was found a human rib bone smeared with stains of red ocher, which inspired further digging into the pile. But, again, I was unsuccessful in producing additional burial evidence.

In spite of this, my efforts were rewarded by the finding of many Large and Small Triangular points, broken and perfect, as well as triangular and oval-shaped knives, including a few scrapers.

Subsequently, another area was bulldozed. This was a low marshy piece of land, and the resulting pile of loam from it contained similar artifacts to those recovered from the other areas of the site. It is interesting to speculate about these recoveries out of the marsh. They seem to indicate that at the time of their deposition, presumably by occupants of the area, the ocean level must have been somewhat lower than that of today.

During the two years I have searched this site over 200 stone tools and points have been salvaged from this land upheaval. But perhaps the highlight of my finds occurred one day while hunting around the first pile of loam on the hill. Lying only a few feet apart I picked up a strikingly beautiful banded Gorget, and then a well-defined Sinewstone (Fig. 14, #1,3). And I began to wonder if they had once been grave goods that had been torn loose from their burials by the bulldozer. Beside these artifacts, several Small Triangular points were recovered like the one illustrated (Fig. 14, #2). They are of interest, since their basal corners seem to have been deliberately struck off. Perhaps this was done in order to facilitate withdrawal from game, which had been hit.

Fig. 14. SCITUATE SALVAGE RECOVERIES. 1,Gorget; 2,Small Triangular Point; 3,Sinewstone.

In thinking further about the meaning of my discoveries, I concluded that here on this large site of about an acre in size, once had been a fishing settlement. For it faced directly toward the ocean only a stone's throw removed, with a high hill at its back to the west, which gave it protection from strong offshore winds.
Further excavations of two coastal sites in this region have produced similar artifactual evidence, but with certain startling discoveries. One of these concerns Large Triangular points, which appeared in such a way as to suggest what they may have been and how they were used. A later report to follow will attempt to analyze this evidence.

RECENT BOATS SITE EARLY ARCHAIC RECOVERIES

WILLIAM S. FOWLER

In 1965 an illustrated account of Excavation No. 2 at the Boats Site by Edward F. Rose was published in the Society Bulletin, Vol. 26, Nos. 3&4. Since then Rose has continued work at the site, removing his operations to an area toward the Taunton River on a third knoll, not previously investigated. This is close by the knoll of Excavation No. 2, as described in the site report. After three seasons of work a few more important recoveries have been made. They were found lying in the lowest zone, previously established as that of the Early Archaic.

They were brought to the Bronson Museum, and five of them that form the subject of this report have been illustrated (Fig. 15). Because of their diagnostic significance, it seems desirable to offer a few comments about them as comparative analyses may suggest.

The Bifurcated point of quartzite (Exhibit #3) seems amply to confirm writer's former observation about this type of projectile point, in that it has sharp barbs — both absent due to fractures. This trait is a characteristic of this point type when found at low levels, where it is associated with other Early Archaic diagnostics — probably indicates its use as a harpoon point, hafted in a bone harpoon holder. Another projectile point of the Early Archaic (Exhibit #5) of white quartz, Corner-removed#8, also was recovered, and is illustrated. A third projectile point of a rare type was recovered in 1968 from the low Early Archaic horizon (Exhibit #4). With similar traits to other like specimens, as reported and illustrated in A Case For An Early Archaic In New England, Society Bulletin, Vol. 29, #3&4, this point has been named, Parallel Stem. The Boats specimen is of felsite; has a stem with parallel sides, retouched ¾" up on one side.
and \%" up on the other. Both stem edges show slight grinding, a characteristic of this point type. Its slightly concave base is thinned in such a way as to produce a tendency toward fluting. A long flute shows, as illustrated, on one face, while on the opposite face only the start of a flute is present, probably due to refusal of the stone to release a lengthwise chip. Such flutes as found on Parallel Stem points are not thought to be intentionally produced from striking platforms, as found on the Paleo Fluted point. General over-all proportions of this point are true to type with a relatively narrow stem and a long steeple-shaped tip. This point is believed to represent the Early Phase of the Early Archaic, as proven by its low, white sand stratigraphic position, as found at Oak Island site, Society Bulletin, Vol. 29, #3&4, p.41.

A small ground slate Ulu — one of the smallest known to the writer — was recovered at the low level (Exhibit #2). It measures only 1 by \%", and is well ground to a slender Ulu shape — its surface is disturbed by a natural slate cleavage. Also, fragments from 2 more ground slate Ulus were found in the lower zone. Along with these finds occurred a medium sized Chipped Ulu, which seems to deserve further notice beside the mere mention of its name (Exhibit #1). Blades of this kind have appeared at other sites, but this is the only one reported by Rose from the Boats site. In trying to discover its relationship to the ground slate Ulu, a careful examination of the Boats site specimen seems important. At first glance it appears to be shaped well by two kinds of flaking. There are large primary flakes, which were knocked off the original slab of stone in producing the classic Ulu form. After this came secondary flaking along the semicircular edge to refine the knife's shape. However, this second chipping apparently was not done with the idea of producing a serrated condition, as is usually found on chipped knives in general. Instead, it seems to have been used more as a means of reducing rough primary-flaked edges to uniform curves without regard for serration.

At this stage in the knife's development, examination of its face shows extensive areas of pecking to have taken place, as revealed by the illustration; also found on the opposite face as well. From here on, what else may be said about this knife must be pure speculation, although it may be based upon what seems to be sound reasoning. The pecking, just referred to, apparently had removed high ridges on both faces, but had not covered all primary flaked areas, since they were thin and flat enough to require no further drastic reduction. However, they could have been subject to thinning by grinding to produce a diagnostic ground Ulu. This process of honing, it would seem, would have been the final treatment given the blade to refine its shape and sharpen its cutting edge, since its secondary chipping had left it without a serrated condition. However, no sign of such honing appears on the blade to confirm this speculation.

From this reasoning the writer is of the opinion that the commonly called Chipped Ulu, in some instances at least, may be a semifinished Ulu, which for some unknown reason never received the final grinding process. On the other hand, it is conceivable that it may represent a tool that was acceptable for some purpose, for which a ground edge was not essential. Further evidence is needed before a final decision can be made. Until then, the Chipped Ulu probably should be considered another implement type from that of the diagnostic ground slate Ulu.

Bronson Museum
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GORGETS: ORNAMENTAL OR UTILITARIAN?

William A. Haviland

Editor's Note: As may be gleaned from this article, the function for which Gorgets were made has been a controversial subject for many years. The Gorget used as a wrist guard in archery has been suggested by some, as is now hypothesized in this paper. However, examination of any representative collection of Gorgets, as that illustrated in Society Bulletin, Vol. 27, #3&4, about ceremonial and domestic products, exposes certain Gorget traits, which seem to dispute this theory. For example, excessive lengths of 5 to 7", or longer, would have been a hindrance if strapped crosswise as illustrated (Fig. 16); would have been serviceable only, if strapped lengthwise. However, this would have been impossible as a result of the customary positioning of the two perforations. Furthermore, Peets' Gorget reference is the "spud type," and is not comparable to Gorgets of the Northeast. While the theory of a stone wrist guard is interesting, it would seem more convincing if Gorgets were of frequent occurrence on camp sites, but this is not the case. Instead, their appearance is a rarity, usually confined to ceremonial deposits, suggesting a more restricted ornamental use.
In the excavation of archaeological sites in New England and the Northeast it is not unusual to find a few of the artifacts known as Gorgets. While they occur in a diversity of shapes, all tend to be thin and elongate, and all are perforated near the center, normally by two holes (Fowler, 1966, Fig.3). On page 38 Fowler observes: "There is no clue, so far observed, as to its [the Gorget's] exact function. However, because of its holes, it is presumed to have been attached to a person as a badge of office, or for some other identifying purpose."

I should like to suggest here that we may have a clue as to the Gorget's use, and that this clue suggests a utilitarian function for most, if not all artifacts of this type. The idea presented here grew out of discussions with Louise Basa Anita Haviland and Ralph Roberts in connection with research supported by an institutional grant from the University of Vermont. The function which I have in mind is that of a wrist guard, to protect against recoil of a bowstring. This suggestion has recently been made by Peets (1965), although I was not aware of this initially. What leads me to make this suggestion now is that, in my opinion, there is a rough resemblance between the Gorget and the stone wrist guards used by the so-called Bell Beaker folk, who spread through Europe about 2000 B.C. The latter are thin, elongate objects of ground stone (Piggott, 1965, p.99). They are generally perforated in the four corners, so that they can be lashed to the wrist without the bowstring catching on the lashing material. By contrast, the Gorget has its perforations toward the center, but still can be tied to the wrist without any particular difficulty (Fig. 16). Moreover, in the course of experiments (Peets, 1965, p.114), he determined that they — [the "spud type"] — serve very well as wrist guards. Counter-sunk holes, or a groove between the holes, as are occasionally seen, have the added advantage that a thong for lashing to the wrist does not stick out to be caught by the bowstring.

This interpretation of Gorgets as wrist guards gains some further credence, if we consider another line of evidence that was not considered by Peets. I refer here to the temporal distribution of Gorgets, as related to types of projectile points and to atlatl weights. To take projectiles first, it appears that large forms are typical of Early Archaic times, with smaller forms becoming somewhat more in evidence in the Late Archaic, and most frequent in Ceramic (Woodland) times (Fowler, 1963, pp.1-4). Of course, small size by itself need not necessarily indicate that a projectile point was used on the end of an arrow shaft, as opposed to a spear or dart shaft (Robbins, 1959, p.80). On the other hand, the projectile point types most likely to have been used as arrow points do occur in Late Archaic and Ceramic contexts (Fowler, 1961, p.13; 1963, p.1).

The temporal distribution of atlatl weights suggests the same thing. Obviously, the spear-thrower had no particular utility as against the more efficient bow-and-arrow, once the change became popular, even though spears alone may have continued to be useful for certain purposes. In the Northeast, atlatl weights occur generally in Archaic deposits (Fowler, 1963, pp.15-17). On the basis of this, it is a fair hypothesis that the bow-and-arrow came into use in the Late Archaic because of the presence in this horizon of Small Stem and Small Triangular points.

If we look at the temporal distribution of Gorgets, we find that they appear also in Late Archaic times, were probably on the increase later in that period, and occur in greater variety of forms in Ceramic (Woodland) deposits (Fowler, 1966, p.38). Now, if they were wrist guards, we would expect this to be so, assuming the bow-and-arrow came into use in the Late Archaic and became dominant in later Ceramic times, which in fact, seems to have been the case.

It might be pointed out here that this evidence does not constitute proof positive that Gorgets were, in fact, wrist guards, but it seems highly suggestive. Some few, which are of peculiar shapes, may have had an ornamental function, but they might very well have derived from utilitarian prototypes. And, let us not forget that it was not too many years ago that we were all talking knowledgeably about the ornamental
or ceremonial use of the then-called “bannerstone,” while now this type of artifact is known to be an atlatl weight.

In reply to several queries concerning this wrist guard theory, I would agree that all Gorgets need not have been utilitarian. There is, I think, an analogy here to the case of atlatl weights, not all of which seem to have been used as spear-throwing weights. To speculate a bit, I would not be surprised if utilitarian wrist guards might not have served as prototypes for wrist ornaments. As for those with more than two holes, the additional perforations may have been added because the original ones were not wholly satisfactory for lashing to the wrist.

As for leather wrist guards, such may have existed too, but due to rot have not survived. On the other hand, people may simply have preferred those of stone. Again, perhaps we might draw an analogy with atlatl weights, which often assume fanciful shapes, although a simple perforated stone might have served just as well. Here is a case where cultural values, other than serviceability per se, were involved, and the same might have held true in the case of stone wrist guards.

University of Vermont
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REFERENCES

Fowler, W. S.

Peets, O. H.

Piggott, Stuart

Robbins, Maurice

THE PURPOSE OF EXCAVATING

EDITORIAL

Over the years of work in writing and accumulating manuscripts for Bulletin publication we have attempted to accomplish something more than just a description of the recovered artifacts from any given site being reported. While artifactual evidence is basic for such accounts, it should not be considered the final objective. Too often, outstanding characteristics of artifacts tend to overshadow any other consideration in the minds of writers, to the omission of a relevant interpretation of the evidence. The ultimate interpretive purpose of such recoveries often is shirked, or only superficially treated, either because of a feeling of inadequacy, or for fear of breaching academic procedure, or sometimes from a dread of having to face possible ridicule from uncompromising critics.

However, while such reticence may seem justifiable in the eyes of some, it has been our belief that excuses of this kind should not deny to the reader an opportunity to have presented a logical analysis and interpretation of the evidence that has been uncovered. For to disregard this important portion of a report is to grant the recovered artifacts only half the respect that they deserve. Even if the facts surrounding their deposition seem unclear, this does not rule out a calculated hypothesis based on the little that is known about them and their relationship to evidence elsewhere.

For this reason we have tried to see to it that in site reports presented for publication something more than a casual conclusion is developed, after a thorough study of the excavated evidence is completed. Unfortunately, we have failed to deliver this important ending in a few cases. However, except for these one or two instances, we have in the main worked toward a comprehensive presentation of related aboriginal events that may have taken place at the site in question. To do this, we have assisted those who needed help, have added our interpretation of the recoveries made when requested, and have incor-
incorporated extensive conclusions for personally written reports. In this way we have tried to provide Bulletin readers with more meaningful reports than might otherwise have resulted.

Up to this point a statement of facts has served to open this important subject for further discussion. And there seems to be a call for this, since in some archaeological site reports found in other publications, writers appear to disagree with our point of view. After making a few general observations in a short discussion of the evidence, they may close with some such statement as: We will have to await further work at the site before a more definite conclusion can be reached. We do not mean to say that in some cases an adequate review of the evidence is not presented. Rather, that too often in the conclusion, the writer is willing to resort to a delay, awaiting appearance of further recoveries as an excuse for saying as little as possible.

Looked at as we see it, any site, no matter how insignificant from the standpoint of recovered artifacts, has a story to tell. What is required is a determination to study the evidence that is available with serious intent, and as it may relate to discoveries made at other comparable sites. For, it is the duty of the excavator, alone or in collaboration with experienced assistance, to give the reader an interpretation of the recovered artifacts and features acquired first hand at the site. In this way a start is made that provides an opportunity for further discussion in reaching for the truth. Without this initial interpretation, reader interest is stifled and beneficial results are cut short.

For a writer to avoid comprehensive hypotheses in concluding the report of a site on the excuse of lack of sufficient evidence seems totally inexcusable. An adequate interpretation of the available evidence can, and should be made. To do otherwise is to make the work of excavating and writing of the report appear futile. It seems plain to us that the long man-hours and effort expended on recovery and reporting of the evidence deserves nothing short of a well-conceived conclusion, in which the probable actions of the site occupants and makers of the recovered artifacts are envisioned. Unless we go further than a mere description of the recoveries with no thought as to their human connection, archaeological advance tends to become throttled. For, after all, the purpose of excavating consists not only in recovery of the products of man's ingenuity, but, above all, in learning from them as much as possible about the people who occupied the site, their customs, their migratory movements if any, and all else that may have contributed to their survival.

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