BULLETIN OF THE MASSACHUSETTS ARCHAEOLOGICAL SOCIETY, INC.

VOL. 22 NO. 1

OCTOBER, 1960

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PUBLISHED BY THE MASSACHUSETTS ARCHAEOLOGICAL SOCIETY, INC.

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MASSACHUSETTS ARCHAEOLOGICAL SOCIETY BULLETIN published in four Numbers of one Volume each year, commencing in October.

Price this issue: 75¢

(Subscription by membership in the Society: $3.00)

Note: Address all requests concerning membership, and the purchase of back Bulletin numbers to the Secretary, Mabel A. Robbins . . . Mail Society dues to the Treasurer, Arthur C. Staples.

BRONSON MUSEUM

This is the Society’s museum, Fifth Floor of the Bronson Bldg., 8 No. Main Street, 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 by mail at the Museum address.

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 last diorama recently completed, extending 15 feet across the front of the museum, depicts an Archaic village of seven large and unique wigwams, the foundations of which were excavated at Assowampsett Lake by the Cohannet Chapter, the only settlement of those early days ever discovered. Human figures to scale make the scene come alive and help create what unquestionably is an outstanding addition to our ever growing museum displays.
Fragments of several pipes were found by W. S. Rodiman in the Northampton meadows (Fig. 6). Of these, the decorated sherds indicate that design work covered most of the bowl. Motifs consist of dentate platted, and chevrons with a linear incised band of fine stylus cut lines surmounting the dentate treatment on one. The rim of #3 appears to have been pentagonal in shape, which became rounded toward the base of the bowl. A complete stem of one pipe #1 is unusually long, whose cross section shows a flat base extending some distance from the bowl. The pipe stem hole is off center, which suggests an elbow, rather than a straight type of pipe.

Elbow pipes embellished with simple design motifs probably indicate an advance from plain finished specimens; were made, no doubt, toward the close of Stage 2 and through Stage 3 ceramics. Two notable examples are illustrated (Fig. 7). Specimen #1 is from South Hadley Falls, Mass., and is in the Museum of Natural History, Springfield, Mass., catalogue #2510. Specimen #2 is from South Windsor, Conn.; a part of the C. W. Vibert collection.

Effigy ceramic pipes are probably not of New England manufacture. They are frequently found in New York State associated with remains of various Iroquoian tribal groups, as shown by (Fig. 8), and are presumed to be of their invention—Ed. A remarkable recovery of an effigy pipe was made in New England (Fig. 9), elaborately decorated. It was found in 1936 by William Lamb between the Connecticut River and old Hoccanum.
Algonquian Types of Pottery Pipes.

FIG. 1
Peabody Museum "Bales" Collection
Harvard University

Stem End       No. 1.        Bowl End

Stem End       No. 2.        Bowl End

Algonquian Pottery Pipes.
From the Maine Coast Shell Heaps.

FIG. 2
Road in Hadley, Mass. Seemingly, it is of Iroquoian-Mohawk production (Otstungo site, as has been suggested by a reliable source). Mohawk raids were made upon the River Indian settlements in the Connecticut Valley before and after the coming of the Pilgrims, and it is believed that entire Mohawk families encamped in the Valley for short periods of time. Therefore, it seems probable that this pipe was of Mohawk source, either imported, or made at the Hadley site on some raiding sojourn. The workmanship of the pipe is executed with extreme skill and patient care, so that all indentations and stylus markings are of uniform width meticulously separated from each other. Only a proficient artist having a proper sense of proportion could have produced such a piece.

Holyoke, Mass.
October 1942

APPENDIX

Editor's Notes: In May 1959, an unusual recovery was made at the Nook site in Plymouth, Mass. Edward Bielski, a member of the Massachusetts Archaeological Society, while excavating a refuse pit in which appeared many broken and some whole shells along with other refuse material, uncovered two pipes lying close together,
Pottery Pipe Bowl and Stem Fragments. Found on the Meadows at Northampton.

From the Collection of W. S. Rodiman—Northampton, Mass.

FIG. 6
The ceramic specimen is not decorated and is rudely constructed. Its paste has shell temper for a binder. Its thick stem is perforated for 1" with a uniform $\frac{3}{8}$" square hole with no taper, an unusual feature, as stem holes of ceramic pipes are usually round. The pipe bowl has a 1" diameter opening, and a cavity about $\frac{1}{2}$" deep.

The stone elbow specimen has a 1$\frac{3}{8}$" stem through which is drilled a $\frac{3}{16}$" diameter hole. This tapers to about $\frac{3}{32}$" diameter where it perforates the bowl, which has a 1" diameter opening at its mouth. The bowl's interior has been ground with vertical strokes to reduce walls to a $\frac{1}{8}$" uniform thickness.

A possible conclusion to be reached, as a result of this discovery, would seem to confirm Howe's statement that the straight pipe was the first ceramic type to be constructed. For instance, it is known that elbow stone chlorite pipes with stem and bowl as one unit were being made at the end of stone bowl quarrying; continued to be made
that the drilling was done with a small stick drill of suitable dimensions oscillated between the hands with fine sand used as an abrasive. This method of stick-and-sand drilling has been tried experimentally by the writer in perforating a stone pipe stem with excellent results, closely resembling that of the Plymouth pipe.

The presence of a square perforation in the stem of the ceramic straight pipe is somewhat more difficult to explain; customarily, the hole is round. It may well be that this strange phenomenon offers evidence to show that in the case of a ceramic pipe the stem perforation was not made by drilling, but rather by molding. That is, a small stick may have been inserted in the wet clay, while the stem was shaped around it. When the pipe was fired, the stick was consumed and reduced to ashes, which could then easily have been pushed out after cooling. In this Plymouth pipe, obviously, a square stick must have been employed as the mold; and there is no mark to indicate it was drawn out before firing.

Attention should also be called to the frequent occurrence of relatively small pipes, both of stone as well as of clay (Fig. 11). While only elbow specimens are illustrated, platform pipes, also, were made in small sizes. The length of these pipes usually measures only 2" or a little more, and the bowl aperture is relatively constricted, so that consumption of the smoking weed — whatever it was — must have been limited.

During the advent of pottery making, and on into ceramic Stage 2, (Sweet-Meadow Brook Site, Rhode Island). It is also known from evidence uncovered at this site that shell for pottery temper was not successfully utilized until the beginning of Stage 2 manufacture. Before this at the end of Stage 1 it was used only experimentally. Therefore, it may be deduced that this Plymouth straight pipe represents one of the first successful ceramic pipe accomplishments of Stage 2 potters, at the beginning of the period when shell began to be employed for temper. It must have happened at a time when the earlier traditional stone elbow pipe was being replaced less frequently than when soapstone quarries were in full operation, and when men no doubt were clamoring for a substitute made from clay.

It is worth noting that the stem perforation of the stone pipe tapers toward the bowl and is uniformly smooth throughout. There is nothing to indicate that drilling was accomplished with a stone drill, which would most certainly have left drill marks from its uneven chipped edges. Therefore, this seems to present the best evidence possible
In making stone pipes of small proportions, greater care was required than for larger ones in the final abrading of pipe-form to desired shapes. However, bowl reaming and stem drilling was no more difficult. In the case of specimen #1 of soapstone, all traces of circular reaming of the bowl have apparently been eliminated by vertical abrasion. In effect, there appear vertical ridges as though caused by some tool having been worked with an up-and-down movement. The stem drilling is smooth and uniform with a slight taper toward the bowl: additional evidence to support the stick-and-sand method of stem perforation by abrasion. This pipe was excavated at Titicut, West Bridgewater, Mass., from subsoil at junction of loam, in the Stone Bowl horizon; is now in the Bronson Museum.

Still another example of stone pipe making is shown by a semi-finished platform pipe made of chlorite. Its greenish shade and degree of impurity content seem to indicate its source as being the Oaklawn steatite quarry of Rhode Island. It was found years ago, about 1900, lying in frost-heaved soil at the base of a large chestnut tree on the high south bank of the Pawtuxet River, Centerdale, R. I. This is not far from the Oaklawn quarry from which it probably came. It is now a part of the Hudson collection, Phoenix, R. I., and is illustrated (Fig. 12), by courtesy of John B. Hudson.

Several features of this pipe are worth noting, as they contribute to our growing knowledge concerning the manufacture of stone pipes. First, note that the drilling of bowl and stem is completed, and the pipe is in the process of being pecked into a platform shape: stem has been successfully formed, while the opposite handle end has just been started. Second, observe the drilling used in perforating the stem. This tapers evenly from \( \frac{3}{8} \) to \( \frac{3}{4} \) with smooth walls, indicating again the stick-and-sand method of drilling by abrasion — a stone drill would have left circular ridges, and taper would have been less pronounced with uneven walls. Third, the bowl appears to have been reamed out with the same stick-and-sand ‘drilling as for the stem: the diameter at its base is the same as that of the stem. However, after drilling, it was made wider at its mouth by vertical abrasion with some suitable implement, indicated by vertical striations on interior walls of the bowl. It seems unlikely that a reed was intended to be inserted in the stem’s large aperture, since the end is not truncated, but has its edges worked down, instead. This seems to indicate that all pipe makers were not careful, perhaps for lack of skill, to reduce stem drilling to small proportions, even though insertion of reed stems was not contemplated.

![FIG. 12. CHLORITE PLATFORM PIPE (semi-finished). 1, Partly pecked-out shape, drilled, but not scraped smooth: 2, Cross section view, showing character of drilling.](image)

Of the two ceramic illustrations (Fig. 11), #2 was recovered at the Ford site on Lake Winnecunnet, Norton, Mass. Its exact stratigraphic location, however, is unknown, since it appeared in the excavation of a cottage. It is now in the Bronson Museum. As it displays aesthetic contours not ordinarily found in most pipes, the result of skill acquired over years of pottery experience, it should doubtless represent latter day ceramic effort. Ceramic pipe #3 was recovered from a rock shelter, East Greenwich, R. I., and is now in the collection of David H. Straight, East Greenwich, R. I. It appeared deep in loam accumulation inside the shelter on about the same level with an eared #2 broad blade point. Further, the broken remains of an undecorated cord-marked outside, smooth inside pot of Stage 2 was found just outside the shelter. Therefore, it is probable that the pipe belongs to the beginning of Stage 2 pottery making. Since it has been suggested by the Plymouth recovery, already referred to, that straight ceramic pipes came first, it may be concluded that ceramic pipe #3 belongs to the middle period of clay pipe-making by New England potters, before plain lines were modified by decorative treatments.
CERAMIC DEVELOPMENT STAGES WITH SOME CONTEMPORANEOUS LITHIC TRAITS

WILLIAM S. FOWLER

Much effort has gone into careful excavation of New England habitation sites of early man over the past twenty years by members of the Massachusetts Archaeological Society and others. Various culture levels have been laboriously scraped down by trowel or other similar implements. As a result of this work, a great deal has been learned about the goings and comings of aboriginal peoples in the area, and many scientific accounts of them have been written and published. Knowledge so far gained has developed mostly as a result of analytical study of recovered artifacts as to their appearance, stratigraphic position of deposition in the ground, and in some cases as to their occurrence on similar levels suggesting coeval relationship. Ceramic remains during the last cultural period of about 1300 years, when pots were made from clay, have furnished valuable seriated data for the age. The deepest excavated pottery type denotes the earliest ceramic stage, while three others appearing in upper strata indicate later stages of development.

It is this last culture period of ceramics with which this paper is concerned. More specifically, it attempts to show the chronological position in the period of certain lithic traits, as related to the four ceramic stages. Evidence of these has been carefully recorded at various excavated sites, as noted in the following section. We are presenting this evidence as brought to our attention over the past number of years, and do not claim to have it all. It is, of course, possible that subsequent discoveries may alter or add to the knowledge already acquired. For the present, at least, the attached chart will serve to establish trends, which can only approximate the truth; can never reveal exact areas of coeval existence due to much overlapping of traits.

However, it is possible to denote with some degree of accuracy those lithic traits having a Stone Bowl (Late Archaic) provenience. And by comparing these with all others originating during the evolution of ceramics, it is possible to make certain postulations as presented in the Conclusion.

EVIDENCE FOR POSITION OF LITHIC TRAITS IN CERAMIC TIMES

The position and duration in the Ceramic Age (Woodland) of the lithic traits as herein listed and appearing in the accompanying chart is based on excavated evidence and logical reasoning. Sites referred to are: Potter Pond, South Kingston, R. I.; Green Point, Saunderstown, R. I.; Sweet-Meadow Brook, Apponaug, R. I.; Twin Rivers, Lincoln, R. I.; Wapamucket 6, Middleboro, Mass.; Titicut, West Bridgewater, Mass.; and Oaklawn Quarry, Oaklawn, R. I.; Ragged Mountain Quarry, Peoples’ State Forest, Conn.; Millbury Quarry, Millbury, Mass.; aboriginal steatite (soapstone) quarries.

At all these sites except the quarries, a ceramic horizon appeared, separated from and just above that of the Stone Bowl horizon. At Twin Rivers, it was identifiable by ceramic lithic traits similar to those at pottery sites, and at the remaining three pottery camp sites, by potsherds and quantities of shellfish remains. At the three quarry sites, no ceramic evidence appeared in association with quarry remains. Here, certain projectile points were recovered in situ connected with quarry workings, which indicate a pre-ceramic position for this industrial culture. Over the past number of years, reports of these sites have been published in either American Antiquity, or Bulletins of the Massachusetts and Connecticut Archaeological Societies. Therefore, mention of certain evidence from them as presented in this report should be considered as well established without further explanation.

Evidence in this section has been charted in graph form with vertical marks showing duration of trait incidences through one or more ceramic evolutionary stages (Fig. 13). Of course, it is impossible to be sure in any one instance of the exact duration of trait incidence in a ceramic stage. To attempt such a hairline analysis would produce nothing but confusion, because peoples in all localities, even of such a relatively small area as New England, could not possibly have acted simultaneously in acquiring new traits, or discontinuing old ones. Therefore, a trait has been charted as occupying an entire ceramic stage with which it has been found to be associated. While this study is admittedly lacking in time refinement, it should serve in a broad way, at least, to indicate relative positions of the various traits analyzed, as to the order of their use in any one of the four different ceramic stages.

EARED POINT #2 (broad blade). This trait first appears in the Stone Bowl horizon at all excavated camp sites, and at Ragged Mountain; apparently continued in use during advent of ceramics, for it occurs in a Stage 1 refuse pit at Green Point and in Stage 1 horizon at Sweet-Meadow Brook.
LARGE TRIANGULAR POINT. This point, 1½" or more in width, appears first associated with the start of Stage 2 horizon at Sweet-Meadow Brook and continues throughout Stage 3 at that site. Also, it is present in a refuse pit with Stage 2 pot, corner-notched point, and a decorated elbow ceramic pipe off Barrington Pkwy., East Providence, R. I.

SMALL TRIANGULAR POINT. This trait, 1¾" in width or less, has its origin at all sites in the Stone Bowl horizon and is found at Wapanucket 6; also is at Ragged Mountain and Oaklawn. It continues throughout ceramic times; is in Stages 1, 2, and 3 at Sweet-Meadow Brook, and through the four ceramic stages at Green Point and Potter Pond.

SMALL STEM POINT. With a length of less than 1½", this point occurs first in the Stone Bowl horizon at all site excavations, and at Wapanucket 6; also is at Ragged Mountain, and Millbury. It seems to have been a popular arrow point that remained in use through historic days. Champlain reports an arrow, which pierced his neck in a Huron-Iroquois engagement in 1604, was tipped with a small stone point. It appeared in evidence throughout three ceramic stages at Sweet-Meadow Brook, and all four stages at Twin-Rivers and Potter Pond.

DIAMOND POINT. There is evidence to suggest provenience of this trait, sparingly, in late Stone Bowl days. However, it appears to have been in greater use during the first half of ceramic times. It occurs in Stage 1 and 2 horizons at Sweet-Meadow Brook, and in Stage 2 refuse pits at Green Point.

SIDE-NOTCHED POINT. Projectile points having side-notched bases with wide blades, type #1, appear first with Stone Bowl remains at camp site excavations, and at Oaklawn and Ragged Mountain. Toward the end of stone bowl quarrying an elongated side-notched point is in evidence at Potter Pond and Green Point at junction with the beginning of pottery; also appears at Oaklawn quarry. Other side-notched types appear throughout all four stages of ceramics at Potter Pond, and elsewhere.

CORNER-REMOVED #3 POINT. This style of point, 1½" or more in length with a prominent stem, was continually in use from Early Archaic days down through the entire ceramic period. It appears in Archaic horizons, in Stages 1, 2, and 3 at Sweet-Meadow Brook, and throughout all four stages at Twin-Rivers.

CRESCENT DRILL. This implement type is definitely of ceramic origin. It appears first in Stage 1 horizon at Potter Pond and Sweet-Meadow Brook; continues through Stages 2 and 3 at the latter site. It also appears at Eel Brook site in Plymouth in a refuse pit with bone point and Stage 1 pottery remains.

PESTLE. Once thought to be diagnostic of corn harvesting, this trait now appears to have had its inception in the Stone Bowl Age before introduction of maize. It appears at Wapanucket 6, C-14 dated 4,300 years ago, and in a Stone Bowl hearth at Green Point. It continued in use throughout ceramics as found at Green Point, and down into colonial days, as reported by early historic commentators.

HATCHET CLUB. This weapon seems to have been used in dispatching wounded game, as well as in military engagements. Named for similarity in shape to its modern counterpart, usually with a chipped blade — rarely ever ground sharp — this implement seems to have displaced the pronged club with a more or less pointed blade of the Stone Bowl era. It is found at Twin-Rivers associated with the ceramic horizon, also at Green Point and Potter Pond.

TRIANGULAR HOE. This triangularly shaped implement has a thick oblique base, often with notching below basal points for hafting, which frequently are lopped off. Because of its proven position in the haft, for end attachment at an obtuse angle rather than for side attachment, it displays definite characteristics of a hoe. It first appears with Stage 1 ceramics at Sweet-Meadow Brook, and
NEW ENGLAND CERAMIC TRAITS AND STAGES OF DEVELOPMENT ~ SUGGESTED CHRONOLOGY

Overlapping traits from Stone Bowl Age indicated by *

**STAGE 4 ~ Historic ~ A.D. 1600**
1. Shape - semi-globular, or full globular.
2. Neck - constricted; surmounted by pressed-out collar with castellations; without collar in crested slump.
3. Rim - flat, decorated, at times rounded and scored.
4. Ware - thinned, with good tensile strength.
5. Construction - no colling in evidence.
6. Surface - smooth both sides, often cord-marked outside.
7. Decoration - mostly on collar; chevrons with linear fill-ins; face or corn effigies, rare; incised or dentate-in-line.
8. Temper - fine mineral, shell, sometimes vegetable.

**STAGE 3 ~ Late Prehistoric ~ A.D. 1400-1600**
1. Shape - conoidal, somewhat rounded at times.
2. Neck - constricted, rarely straight; surmounted, occasionally, by a narrow collar formed by applique, rarely ever is pressed out.
3. Rim - flat and evenly constructed; everted lip at times; scored decoration outside and sometimes inside as well; top of rim often is bisected all around by same tool used for neck embellishment.
4. Ware - various thicknesses with improved tensile strength.
5. Construction - coiled, near perfection in joining of coils.
6. Surface - smooth or stick-wiped inside; cord-marked, often partially smoothed over outside.
7. Decoration - more elaboration; incised, dentate, corded-stick.
8. Temper - fine mineral, shell, sometimes vegetable.

**STAGE 2 ~ Intermediate ~ A.D. 1000-1400**
1. Shape - conoidal pointed base, undercut at times.
2. Neck - straight, somewhat constricted occasionally.
3. Rim - usually flat, everted lip, often scored outside.
4. Ware - thick or thin for large or small pots respectively.
5. Construction - coiled, improved joining of coils.
6. Surface - stick-wiped or smooth inside; cord-marked, or smooth, slightly stick-wiped outside.
7. Decoration - simple motifs on neck; techniques include punctate, fingernail jars, dentate, trailing push-and-pull, rocker-stamp, and cord-wrapped-stick.
8. Temper - medium mineral or shell.

**STAGE 1 ~ Earliest ~ A.D. 300-1000**
1. Shape - conoidal, prominent pointed base.
3. Rim - irregularly rounded.
4. Ware - relatively thick.
5. Construction - coiled, coils often weakly joined together.
6. Surface - cord-marked inside and outside.
7. No decoration - elemental attempts, end of period.
8. Temper - coarse mineral, shell experimental-rare.

**FIG. 13. CERAMIC DEVELOPMENT STAGES AND CONTEMPORANEOUS LITHIC TRAIT INCIDENCES.**
again in Stage 2 refuse pits at Green Point. Since it never occurs in Archaic horizons, it is thought to indicate the advent of maize during the early years of pottery making before the close of Stage 1 ceramics.

There is now conclusive evidence to show that triangular stone hoe blades continued in use down through historic days. In 1679 Jasper Dankers and Peter Sluyter, who visited the Nyack plantation situated at the southwestern end of Long Island near the present site of Fort Hamilton, (from their journal), report seeing "a stone hoe with a sharp point" in one of the lodges. Then again, in 1724, J. F. Laftau in his book, Moeurs des Sauvages Americains, Vol. 2, p. 155, Paris, illustrates triangular bladed hoes in use by Huron women planting corn in the St. Lawrence Valley, probably on the Richelieu.

CORN-PLANTER. This implement is usually made from easily worked stone, such as sandstone, shale, etc. It averages 6 to 7" in length and has one end chipped to a dull point, while the other end is either notched for hafting or shaped for a handle. Specimens first occur at excavated sites associated with the early development of ceramics, similar to triangular hoes, and are thought to be contemporaneous. One of Lafitau’s women planters is using a hand dibble in making holes into which to drop kernels of maize. This dibble has every appearance of being one of the archaeological cornplanters of the type intended for hand use. With this historic evidence the corn-planter becomes a companion agricultural tool to the triangular hoe in use throughout the entire ceramic development.

CERAMIC PIPE. Usually in elbow form, occasionally straight, pipes of clay began to be made by the beginning of Stage 2 ceramics. Early experimental attempts, probably, took place at the end of Stage 1 with the straight form. This is indicated by a Plymouth recovery of a straight ceramic crudely made pipe along side an elbow chert pipe in a refuse pit containing shell and potsherds. The plain elbow type appears as transitional between Stages 1 and 2 at a rock shelter in East Greenwich, R. I. Also, it appears with Stage 2 pottery remains in a refuse pit off Barrington Pkwy., East Providence, R. I. Apparently, it continued to be made in various shapes down to historic days, as it appears in contact graves of those times.

STONE PIPE. Invariably made of steatite or chlorite, stone pipes were fashioned first by the Stone Bowl Makers in three styles: straight, platform, and elbow. Evidence of these styles appears in the Stone Bowl horizon at Sweet-Meadow Brook, and of the elbow type in the Stone Bowl horizon at Titicute. Pipe-forms of all three styles are found in abundance at Oaklawn Quarry. Elbow and platform types continue into Stage 1 ceramics, as evidenced at Sweet-Meadow Brook. Then at the same site, style changes to the elbow type without stone stem, but perforated for insertion of reed stem in Stage 2 ceramics.

GORGET. Presumably, a ground slate pendant with two or more holes, it first appears in the Stone Bowl horizon at Potter Pond. It occurs again with Stages 1 and 2 ceramics at Sweet-Meadow Brook.

NET SINKER, (notched). This implement is restricted to those roughly chipped stones or pebbles, which have a notch chipped out of two opposing sides—not pecked. It first appears with Stage 3 ceramics at Sweet-Meadow Brook, and at Green Point is in refuse pit #18 of 14th century origin. Quantities of this implement appear in plowed areas of fishing sites on navigable rivers. For example, on exhibition in the Bronson Museum are numerous specimens taken from a Minisink Island site on the Delaware in northern New Jersey, associated with a Stage 3 ceramic urn of the Oswasco pre-Iroquoian culture. Since its frequency rapidly increases in plowed fields, where frequency of late artifacts is greater than earlier ones, its chief functional use is believed to have come late. Occasional appearance of similar chipped stones in archeaic times, because of their low frequency, may represent other uses where quantity was not a factor.

CONCLUSION

This study of lithic trait relationships to ceramic stages of development suggests several interesting postulations. Like all such investigations, certain interpretations may be possible for those who care to analyze the evidence with care, and apply logical reasoning. Of the eighteen traits recorded, including one ceramic, ten are seen to have overlapped from the industrial age of stone bowl making, and are marked on the chart with an asterisk. That is, these ten are found to have had their origin in the culture period preceding that of ceramics. Of the
eight remaining traits, five were probably inspired by similar traits of the Stone Bowl era, sometimes with different functional uses. This leaves only three traits, which may be said to have been new creations or adoptions: large triangular point, corner-notched point, and hatchet club. Attempted explanations for the presence of these traits will be presented subsequently. But first, it seems fitting to observe what appears to be an overall conclusion.

With ten definite overlapping traits and five others, which seem to be derived from the preceding age, it should follow that racial continuity is suggested between the Stone Bowl Makers and the Ceramic artisans who followed. Of course, new arrivals were doubtless coming into New England from time to time, so that this racial mixing could have tended to break down old traditions with the introduction of new ideas. However, there were evidently too few to upset to any great extent established traits of the former settlers: excavated evidence reveals but a few innovations, which might be attributed to such intrusions.

The five traits believed to have been inspired by inventions of the Stone Bowl era are: crescent drill, triangular hoe, corn-planter, notched netsinker, and ceramic pipe. Because of excavated evidence, it now seems probable that the crescent drill, with its concave base in the shape of a crescent, is an aesthetic attempt to improve the T drill of Stone Bowl days. This drill with a straight base occurs with remains of the industrial age, preceding ceramics.

Triangular hoes follow the shape of triangular tailing-breakers of the stone bowl quarries at Westfield, Wilbraham, and Oaklawn. These earlier soil-breakers became so much a part of the industrial tradition that later-day planters evidently felt impelled to adopt them for agricultural tools, generally in smaller sizes.

Similarly, corn-planters, undoubtedly, were derived from spike tailing breakers in use generally at all steatite quarries, except at Westfield and Wilbraham, where triangular breakers were in use. The spike tailing breaker, with its elongated blade tapering to a spike at one end, seems certain to have been the traditional type that drove later-day planters to adopt its modification, the corn-planter. Evidently, this motivating force was so strong that the planting stick used in other parts of North America was rejected in favor of a stone dibble with a sharpened end.

Notched net-sinkers, found in quantity on upper levels, may well have been inspired as simple adaptations of earlier notched stones used for other purposes, such as line sinkers, clubs, or toys.

When we consider ceramic pipes, usually with elbow shapes, there seems no doubt as to their origin. Stone pipes of steatite and chlorite of the preceding age must, of course, have furnished the motive that finally influenced the later-day potters to try their hand at making ceramic copies.

The three remaining traits, apparently, were the result of either independent invention or diffusion from outside culture centers: large triangular point, corner-notched point, and hatchet club. In the case of large triangular points, it seems probable from excavated evidence at Sweet-Meadow Brook that these wide blades were an outgrowth of wide blade eared #2 points; also in evidence at Green Point. That is, with the advent of Stage 2 pottery, the slightly notched basal points or ears were discarded as unnecessary for hafting, resulting in the large triangular point.

Corner-notched points appear to have no early source in New England; so far have not been found below Stage 2 horizon. Since they occur in greater frequency in Pennsylvania and New York State, it is probable the idea, as well as many of these points, came from those culture centers. Yellow jasper and a certain gray felsite, indigenous to Pennsylvania, from which they are often made, seem to label them as importations.

Hatchet clubs appear at most sites to follow pronged clubs of Stone Bowl days. Therefore, they are presumed to be later-day creations, whose source is unknown. It may be just a coincidence of human invention that they assume similar proportions to our modern iron hatchets. In any event, it is possible that a connection exists between the latter and hatchet clubs when their cutting edge is ground sharp—most specimens have chipped edges only.

This study leads to the conclusion that the peoples of New England throughout the evolution of pottery were influenced by a strong impelling Stone Bowl tradition. Customs of living derived from perhaps 2,000 years of stone bowl making seem to have molded the future thinking of peoples.
force was so strong that ceramic descendants chose implement styles, which had been a part of their heritage through countless ages, rather than accept traits from outside culture centers. The one outstanding exception seems to have been the conoidal shape of ceramic pots. This was adhered to from the start rather than the flat bottomed form with lugs like the traditional stone bowl of former days. This may be explained by the fact that the latter shape had been tried out and found undesirable throughout Pennsylvania, New Jersey, and Long Island, long before the knowledge of ceramics jumped across the Sound and moved up the rivers of New England. In other words, by the time New England artisans received information about how to make pots from clay, the experimental stage of ceramics had ended.

In the summer of 1954 I was visiting Dr. Frederick Clarke of Woodstock, N. B., an archaeologist of some importance in the Province. He was proudly showing me some of his prized findings. Among them was an engraved stone, (Fig. 14A) shows the engraving. The scratched design was of no significance to him. A short time before I had read Mallery's Picture-Writing of the American Indians, 10th Annual Report of the Bureau of Ethnology, 1888-1889, and it seemed to me that some of the stones illustrated in it were similar to this one, so I quickly got the article from my car. I thought that Figs. 549, 550, and 655 had the same significance. I have reproduced Fig. 549, and 550 (Fig. 14B and C). Mallery's description of them follows:

"Fig. 549 gives three examples — only one is illustrated here — actual size, of a large number of similar designs scratched on the rocks of Kejimkujik lake, Nova Scotia. They were at first considered to be connected with the ceremonial or mystery lodges, many sketches of which appear on the same rocks, and examples of which are given in Figs. 717 and 718. Undoubtedly, there is some connection between the designs, but those now under consideration are recognized by the Indians of the locality as the elaborate forms of head dress sometimes extended so as to become masks, which are still worn by a few of the Micmac and Abnaki women. Those women are or were of special authority and held positions in social and religious ceremonies. Their ornamental head coverings, therefore, were insignia of their rank. The modern specimens seen by the present writer are elaborately wrought with beads, quills, and embroidery on fine cloth, velvet or satin, but were originally of skin. The pattern still used shows some fantastic connection with rock drawings of this class, and again the latter reproduces some of the tracings on the ground plans of the mystery lodges before mentioned. The feathery branches of trees appearing on both of the two classes of illustrations are in modern head coverings actual feathers. The first of the three figures shows the branch or feather inside of the pattern, and the other two have them outside, in which variation the bushes or branches of the medicine lodges show a similar proportion. The third sketch, in addition to the exterior feathers, shows flags or streamers, which in ceremonial head gear in present use is imitated by ribbons.

If there had been any doubt remaining of the interpretation of this class of drawing it would be removed by the presence of a number of contiguous and obviously contemporary sketches of which Fig. 550 is an example. Here the female chieftain or, perhaps, priestess appears in a ceremonial robe, with her head completely covered by one of these capote masks. The researchers made not only establish the significance of this puzzling class of designs, but also show that their authors were of the Abnaki or Micmac branches of the Algonquin linguistic family."1

Very little has been published on the use of head dresses or masks by the Malecite, Penobscot, or Passamaquoddy, although the custom has been recognized as used by the Micmacs. Apparently,

1. Mallery, Garrick, pp. 425-6, 470
2. Fewkes, Walter, p. 260
4. Speck, Frank G., p. 147
5. Fewkes, Walter, pp. 272-3
Speck was unaware of the custom among the Wabanaki, as he did not include it in his monogram on masking among the eastern Indians. Special head gear has been known to have been used by the Passamaquoddy. In excavations made at East Machias, an Indian was found with a copper headband and remnant of a woven tiara... "Mrs. Brown had a silver head-band similar to those worn in ancient times on festive occasions, and probably at dances." Mrs. Brown tells us of the use of masks by Passamaquoddy women: "Then the door was burst open, and six women, chosen from among the visitors, entered dancing. As they passed before the chief, he threw a shawl over the head of the first one, the captains throwing shawls over the others. They danced three times around the room, still covered, then all present joined in the dance, the women leading. This is called 'Mooe-mayic-hapijic'
or 'women thanking for the chief.' The shawls become the property of the women who dance, and are treasured trophies. The old custom was to place masks over their faces. There are none of these masks in preservation so they use shawls instead."

I think that the last two quotations are enough to show that masks were used by the Passamaquoddy in former times. The head dress was used as a definite designation of power. Today the chief keeps this by wearing a set of feathers on the few remaining festive occasions. Many museums have the "Micmac" hat on display, which is of similar shape and style to those inscribed on the rocks. These were held in high esteem by the Penobscot. "These hats are understood to have been proper only for married women." Possibly this idea came from the old belief of the Passamaquoddy that hair strings had certain magical powers, "especially in love affairs." This idea also seems to indicate that people of power showed such designation by wearing a special head dress. Even women's hair was thought to be a source of magical power and is often found in the old stories, now almost unknown, told to the younger generation of Wabanaki.

"In olden times the hair of women was tied with hair strings which were securely bound to a flat plate on the outside. This plate was formerly of shell, or later of metal. To this hair string was ascribed certain magic powers, especially in love affairs, and the possession of it was a potent spell."5

I have tried to show that the inscription of the stone found at the Meductic Flat is similar to those found in abundance among the Micmac. No one has reported the custom of wearing masks during serious ceremonies among the Malecite and there is no indication of any remnant of such custom among the Malecite today. This stone does not prove that the custom was used by the Malecite, although it must have been known to them as being used by their neighbors. The Passamaquoddy were originally a branch of the Malecite, and, although they have moved to Maine, they still speak the same language and have most of the identical customs. It is strange that no one has recorded any use of such masks as being used among the Penobscot, but we do find that they used the Micmac hat and that it suggests certain magical powers which have perhaps come down from a custom similar to the Passamaquoddy habit of using a head plate.
The village of Meductic was the largest of the old Malecite villages. Unfortunately, it has been farmed for several generations and so completely disturbed that no accurate scientific investigation is possible. Relic hunters have found many items of interest at this site, which shows that the area was popular long before the European occupation, as well as after.

Perhaps this stone was the Dup-sko-dgan, or personal mark of an honored Malecite, who had been one of the masked female visitors at a Micmac or Passamaquoddy Chief-Making Ceremony. The stone may have been used by her as an identification marker for her wigwam.

Gloucester, Massachusetts
October, 1956

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EDITORIAL COMMENT

For the benefit of those wishing to excavate a private site, which has come to their attention, we have outlined below certain procedural steps to be taken. Over a period of years, these methods have proved workable in furnishing necessary data toward an intelligent interpretation of the evidence on many sites in this area. However, first, it may be well to review certain cultural probabilities. In New England there appear to have existed four culture periods, clearly identified by a change of certain artifact traits from one to another. Starting approximately 9,000 years ago, when man first came into this area (carbon-14 dating, Bull Brook site), there followed certain events down through the ages, some of which have become increasingly clear, as a result of site excavations to date.

7000 B.C. — Ancient (Paleo) — lowest horizon on glacial deposits—at Bull Brook, 10-15" below humus on coarse sand—chief diagnostic is the fluted projectile point.

4000 B.C. — Early Archaic — horizon just above in subsoil—important diagnostics are: ulu; oval atlatl weight; corner-removed #5, 8, and 9 projectile point types.

2500 B.C. — Late Archaic (Stone Bowl) — horizon lies at or about “junction” between humus and subsoil, overlaps part way into each—important diagnostics include: industrial stone bowl working tools and stone bowl fragments; grooved ax; grooved gouge; wing atlatl weight; stemless and stem knives; eared, corner-removed #7, small stem, small triangular, and tapered stem projectile point types.

300 A.D. — Ceramic (Woodland) — horizon is in humus, usually disturbed by subsequent plowing—important diagnostics are: potsherds; crescent drill; triangular hoe; corn-planter; sinewstone; war club prong; large triangular and corner-notched projectile point types.

GENERAL EXCAVATING DIRECTIONS

After securing permission to excavate site in question, stake out area to be dug in 5 or 6 foot grids (squares) starting from a base line, and indentifying squares by consecutive numerals in one direction, and by alphabet letters in the other.

Next, open face of one grid all the way across, extending ditch into the subsoil 4 or 5 inches. Then remove turf from a 15 inch bench across the ditched end of grid. Now, with straight edged trowel or sawed-off small hoe carefully scrape surface of bench. Continue scraping until some artifact ap-
pears; stone chips may be saved to indicate degree of occupational evidence.

The next step is to properly record the recovered artifact on a 4 x 6" piece of paper or card, in order to locate it vertically and horizontally for purposes of future study in writing up the site.

RECORDING DIRECTIONS: Draw around artifact on paper recording form. Using any suitable level record depth of artifact from grass roots, measuring to nearest inch. Then record distance from artifact to "junction"—the demarkation line separating humus from subsoil, (apt to be irregular). Now state in which stratum, humus or subsoil, the artifact appears—if at "junction" so state and record one vertical measure only, from "junction" to grass root level.

Should an additional sub-stratum soil deposit occur below humus, give it a name as a part from the underlying subsoil, and record additional vertical measures to its top and bottom from artifact, if it happens to lie in it.

One or more artifacts found in refuse pits should have their vertical position recorded by considering the top surface of the pit as the depth for all, since this is their level-of-origin along with the formation of the pit. Show outline of pit in grid square on paper form.

Horizontal position of artifact in grid may simply be recorded by placing an X at approximate place in the square where it is found upon the paper form (Fig. 15). This should be dated and marked with the site's name, as well as with the name of person finding the artifact. All artifacts should be cleaned when convenient and numbered numerically, placing the corresponding number on the paper form for each. India Ink has been found best suited for marking stone artifacts.

For further instructions for the recording of stone hearths, and other manifestations, as well as how to go about accumulating the evidence for writing up the site, contact our Society Office, Bronson Museum, Attleboro, Mass., and we will be glad to help to the best of our ability.