

BULLETIN OF THE  
MASSACHUSETTS ARCHAEOLOGICAL  
SOCIETY

VOL. XVI

NO. 1

OCTOBER, 1954



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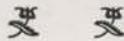
**PUBLISHED BY THE  
MASSACHUSETTS ARCHAEOLOGICAL SOCIETY, INC.**

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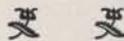
WILLIAM S. FOWLER, *Secretary*, Bronson Museum, 8 No. Main Street, Attleboro

## EDITOR'S PAGE

With the publication of the final number of Volume 15 your present Editor completed the publication of four volumes of the Bulletin. In these four volumes fifty-two articles have appeared by thirty-six authors. One of these authors submitted twelve, or nearly one-quarter of the papers published. Thirty-six writers out of a membership of nearly five hundred seems rather scanty. In the file at the moment is one unpublished manuscript, which, together with the several papers to be presented at the October meeting, will probably furnish sufficient copy for our January number. February 28th will be the deadline for the April number, six long months from now. Cannot some of you find the time during those six months to write that paper you have so long delayed?



The Bronson Museum has recently received on loan a new collection of Indian artifacts from southeastern New England. Among the five thousand artifacts in this collection are a number of outstanding specimens which are now being placed on display.



By WILLIAM S. FOWLER\*

Since the discovery at Folsom, New Mexico, in 1927, of projectile points having flutes or longitudinal grooves on both faces, similarly fluted points have been identified in many other sections of the country. The fact that the Folsom finds were lying in close association with fossilized giant bison bones set all the world speculating as to the antiquity of man in America. Subsequently, other fluted points have appeared in association with mineralized mammoth bones, as well as one lodged in a giant bison vertebra at the Lindenmeir site, Colorado, in 1935. Giant bison (Taylora), mastodon, mammoth, and other prehistoric animals became extinct, it is believed, in late pleistocene times, and early man in the New World is postulated to have been coexistent with them, and to have carried on a marginal existence in unglaciated areas. It is now known that this occurred about 10,000 years ago; a date that has been substantiated by radiocarbon-14 analysis of charred bone from the Folsom horizon at a Lubbock, Texas site, which is the most reliable Folsom date so far.

The route which Folsom man took in his trek from Asia via Bering Strait to unglaciated areas to the south is not definitely known; Bering Strait was then a land bridge which joined the two continents. However, within the last few years a well made fluted point simulating Folsom traits was recovered from the north slope of the Brooks Mountains in northern Alaska, reported by Ralph S. Solecki in, "How Man Came to North America," *Scientific American*, Vol. 184, No. 1, p.p. 11-15. Also, in territory adjacent to Point Barrow, fractured segments of fluted points were excavated from an early pre-Eskimo horizon covered by a sterile layer of hardened silty clay or marl. These finds support the belief that Folsom man was present in Alaska. Most geologists hold to the theory that one, and possibly two unglaciated corridors existed during the retreat of the fourth and last glaciation. They ran in a southerly direction from Asia through Alaska, and it is thought probable that animals and men traveled one or more of these tundra covered valleys. The Mackenzie River drainage was one of the unglaciated areas and would have afforded a possible course for early man as he trekked southward in his wanderings which ultimately reached the termination of glaciation somewhere between what is now Canada and the United States.

Whether migration spread southwest, southeast, or in both directions from this point is still a moot question. To judge from quantities of well made fluted points throughout Wisconsin, Illinois, and Ohio, it seems probable to some that the course of migration may have fanned out when this line was reached, so that the Mississippi drainage basin was being peopled contemporaneously with other areas in the Southwest and Southeast. Whatever actually happened, it is worth noting that Paleo-Americans eventually reached many parts of the United States and left their distinctive trade mark—the fluted point—as proof of their presence.

Such evidence suggests that the fluted point culture probably represents the earliest well sustained effort of man in America to conquer his environment and multiply in substantial numbers. While the earlier Sandia culture may have antedated Folsom by 5,000 years or even more, it apparently failed to expand to the same extent; few if any Sandia-like projectile points have been identified from sections of the country other than Sandia, New Mexico, where they first appeared. There, in a cave, unique points were recovered from a low level underlying a stratum containing fluted points.

It seems that Folsom men were aggressive hunters with considerable ability. Their successful occupation of a large part of what is now the United States suggests the existence of a vigorous race of people who in time found their way to the Atlantic Coast, and as far north as New England. Most recoveries of fluted points are surface finds as a result of soil erosion, or exposure by plowing where thin soil coverage has been encountered. Using specimens found at Folsom, New Mexico, as the basic type—although they may conceivably be of later development than forms from other areas—fluted points in general appear to have modified shapes, and do not always approximate the classic Folsom type; are referred to as Folsom-like, or just as fluted points. Among states producing fluted points are Oklahoma, Missouri, Louisiana, Florida, Tennessee, Kentucky, Ohio, Illinois, Wisconsin, Virginia, North Carolina, Delaware, Pennsylvania, New York, and New England states. However, it is to be noted that fluted point recoveries diminish in number as Maine is approached. This suggests lessening occupational activity as a northerly direction is pursued, and may represent cessation of

\* Illustrations are by the author

fluted point manufacture toward the end of a long northeasterly nomadic movement which terminated in New England.

Stratified fluted point finds have been made in Missouri associated with extinct Mastodon and horse bones at the West Kimnoswick site, 12 feet under ground; in Texas at the Lubbock site from a stratum underlying the Yuma horizon; in southwestern Virginia at the Saltville site, occurring in the same stratum with mineralized mastodon bones; in Kentucky below pre-pottery shellheaps; in Illinois on a pre-pottery site; in Florida in the Santa Fe River bed with fossil vertebrate remains; in Hillsborough County, Florida, resting on clay beneath 5 feet of seemingly undisturbed surface sand; in New England in 1951 at the Twin Rivers site, Rhode Island, at the lowest occupational level, associated with small unique cobble stone hearths resting on glacial gravel; and in 1952 at the Bull Brook site, Ipswich, Massachusetts, on an early coarse sand level, 12-15" below the humus. Evidence such as this, to which new fluted point discoveries are being added from time to time seems to indicate survival over a wide segment of the United States of fluted point using Paleo-Americans.

Massachusetts fluted points have been the subject of research by the author for several years. After running down all reports of the presence of fluted points, 36 perfect or near perfect specimens have been located in the State, of which 12 are illustrated (Fig. 1). They are recorded separately with essential traits and source being given in each case. In general they seem to follow Folsom-like contours: parallel basal sides, often worn or abraded; concave bases with prominent basal points; well defined fluted faces; and sometimes with stubby points, although more often points are more elongated. Only specimens having recognizable flutes have been recorded, although forms sometimes appear with all other Folsom-like traits, and may have been contemporaneous.

Adjacent regions to Massachusetts were also searched for fluted point evidence, resulting in the discovery of 9 specimens as illustrated (Fig. 2). These, also, have Folsom-like characteristics. Of somewhat different shape are fluted points from the Reagen site on the Missisquoi River in northern Vermont. Examined and reported by William A. Ritchie, these specimens have flutes on both faces,

but their shapes are more pentagonal with tapered basal sides. They are made of flint which resembles certain New York State deposits, and suggest the route of migration may have been up the Hudson River valley.

Whatever modified shapes fluted points assume, they should be distinguished from generalized thinned-base points, which are believed by some to have Paleo-American affinity. These points in New England often have more or less parallel sides toward the base and are usually narrow with sometimes a faint presence of side-notching. Their bases are thinned by repeated indiscriminate chipping, which produces more or less truncated bases with an occasional longitudinal flake scar showing. However, these points never have definite fluted channels opposing each other on opposite faces, as is found in the case of fluted points. Thinned-base points have appeared in the upper zone at excavated sites associated with the Ceramic age. Somewhat similar evidence and conclusions are reached by John Witthoft in *Pennsylvania Archaeologist*, Vol. 20, No. 3-4, p. 52. He states in part: "Pennsylvania fluted points"—"Their closest relationships are not to any other point types of our own local area, but rather to the fluted point complexes of other parts of the United States. Here in particular I want to distinguish these from a series of pentagonal and thinned-base points of all types and sizes, which Carl Miller has described as a Paleo-Indian culture from the Bugg's Island Dam area in eastern Virginia. These points of Miller's are well known in Carolina and in Pennsylvania archaeology, and largely represent chronologically late, pressure-flaked arrow points associated with pottery on village sites." Whether the shapes of these Virginia thinned-base points match those from New England, the important thing to note is that in both cases thinned bases are not considered synonymous with the fluted technique.

A closely associated point in the Southwest with that of Folsom has been called Yuma. First identified with fossilized bones of extinct animals at Yuma, Colorado, they too have had their counterparts in other parts of the country, where resemblances have been termed Yuma-like. While their occurrence in New England is rare, at least 3 possible specimens have been located and are illustrated (Fig. 3). In general, Yuma traits seem to be confined within two categories: oblique Eden

## MASSACHUSETTS FLUTED POINTS

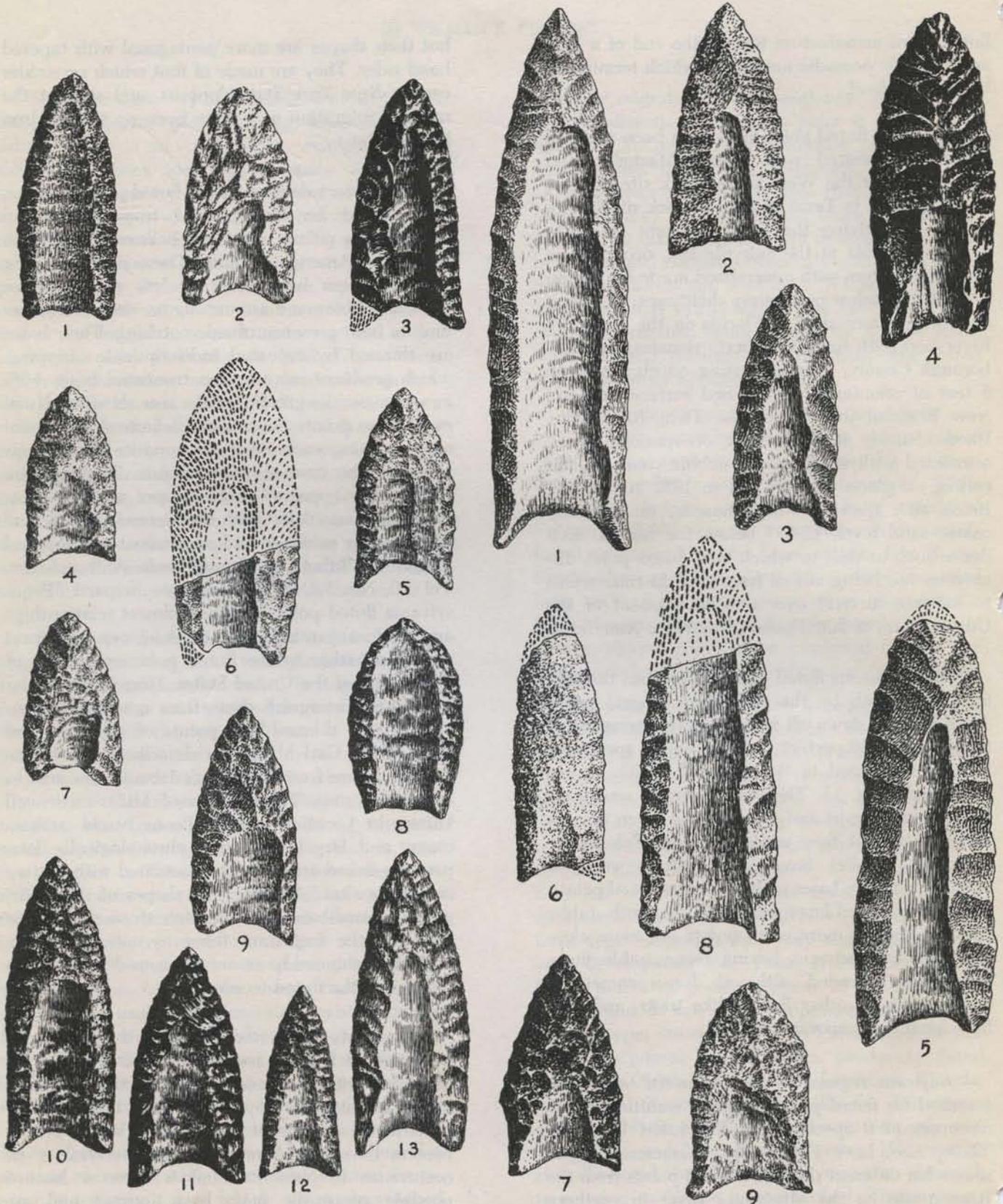


FIG. 1. Massachusetts Fluted Points. 1, Montague; 2, 3, Deerfield; 4, Nantucket; 5, Plymouth; 6, Wrentham; 7, Carver; 8, Lakeville; 9-13, Ipswich.

FIG. 2. Fluted Points Outside Massachusetts. 1, 6, Rhode Island; 2, 3, 5, Connecticut; 4, Vermont; 7, 8, Maine; 9, Long Island.

Yuma, in which chipping often appears to run obliquely across the blade, which is usually elongated without definite shoulders and stem; Scottsbluff Yuma, in which chipping does not necessarily run across the blade, and with slight shoulders to form a stem with truncated base and nearly parallel sides. Certain critics of short blades as illustrated hold that such blades are too short to be classified as Yuma-like. Nevertheless, this does not seem to be a valid objection in the light of discoveries made in the last decade in Yuma County, Colorado, where short bladed Yuma points were recovered, closely resembling exhibits (Fig. 3, No. 2, 3).

The following reference has been taken from a report by Paul H. Gebhard: "An Archaeological Survey of the Blowouts of Yuma County, Colorado," *American Antiquity*, Vol. 15, No. 2. In this account appear illustrations of two relatively short points with Yuma traits which were taken from clay marl, a part of the lowest artifact bearing horizon of the site. Description of one of these points is herewith given verbatim: "E-9, 24494 (Fig. 48, f) is an intact Scottsbluff type Yuma. Large shallow well controlled flaking. Thick lens-shaped cross section. The basal corners and shoulders are right angles. Base straight, 66.0 x 30.0 x 8.0 m.m. Stem width 26.0 m.m. Stem length 19.5 m.m. Found on the marl."

The relative length, width, and right angle basal corners of illustrated points (Fig. 3, No. 2, 3) are similar to the Gebhard specimen just described, which does not display oblique chipping. Therefore, there can be little objection it would seem in likening the New England evidence to the Scottsbluff type, unless disagreement is found with Gebhard's hypothesis that the Yuma County marl stratum at the base of blowouts represents an original deposition without subsequent wind alteration.

Enumeration of illustrated evidence from Massachusetts and adjacent New England regions follows, with descriptions and provenience of each specimen:

(Fig. 1, No. 1). Montague, Connecticut Valley of Massachusetts; coarse grained dark igneous stone; (found on the same Dry Hill site was a large concoidal spall, 3½" in length of what appears to be the same stone). Amherst College Museum, Amherst, Mass.

(Fig. 1, No. 2). Deerfield, Massachusetts; white crystalline quartz; surface-find from Deerfield meadows. Memorial Hall, Deerfield.

(Fig. 1, No. 3). Deerfield, Massachusetts; of gray-black flint; surface-find with collection of stone artifacts from the Deerfield meadows. Memorial Hall, Deerfield.

(Fig. 1, No. 4). Nantucket, Massachusetts; light colored flint; acquired through museum acquisitions from local residents of the area, therefore, cannot be authenticated positively as coming from Nantucket. R. S. Peabody Foundation Museum, Andover, Mass.

(Fig. 1, No. 5). Plymouth, Massachusetts; of pink porphyritic felsite, resembling impure Saugus jasper; recovered from surface during road construction in Plymouth. Collection of Tony Viera, Plymouth.

(Fig. 1, No. 6). Wrentham, Massachusetts; light brown flint; from recognized camp site, in light yellow soil about 8" deep after humus removal; found by Roy E. Morse, and is a part of his collection, Mansfield, Mass.

(Fig. 1, No. 7). Carver, Massachusetts; light gray flint; recovered from a cranberry bog and given to Roger A. Chauvin.

(Fig. 1, No. 8). Middleboro, Assawompsett Lake, Massachusetts; red flint; basal sides taper and are slightly worn or ground; excavated by Harold M. Curtis at Wapanucket site, 22" below humus junction with subsoil in white sand. Bronson Museum, Attleboro, Mass.

(Fig. 1, No. 9). Ipswich, Massachusetts; surface find at Bull Brook by R. S. Esty (deceased).

(Fig. 1, No. 10-13). Ipswich, Massachusetts; dull black, glossy maroon, light gray, and dark tan flint respectively; basal sides are worn or ground; excavated at the Bull Brook site, 10-15" below humus on hard packed gravelly sand; representative sample from 24 perfect or near-perfect specimens. Collections of the Vaccaro brothers and of W. A. Eldridge of Beverly and East Lynn, Mass.

(Fig. 2, No. 1). Rhode Island; of yellow jasper. Harvard Peabody Museum, Cambridge, Mass.

(Fig. 2, No. 2). Stratford, Connecticut; gray flint. Collection of Edward H. Rogers, Devon, Conn.

(Fig. 2, No. 3). Westbrook, Connecticut; red jasper; from the Lynn Farm site. Collection of Edward H. Rogers, Devon, Conn.

(Fig. 2, No. 4). Moretown, Vermont; black flint; from a ridge, 1½ miles south of the town, southeast of Swamp Brook. Middlesex School Museum, Concord, Mass.

(Fig. 2, No. 5). West Haven, Connecticut; dark gray flint, similar to material from Flintridge, Ohio; from Staley collection and believed to be of Connecticut provenience. Collection of Edward H. Rogers, Devon, Conn.

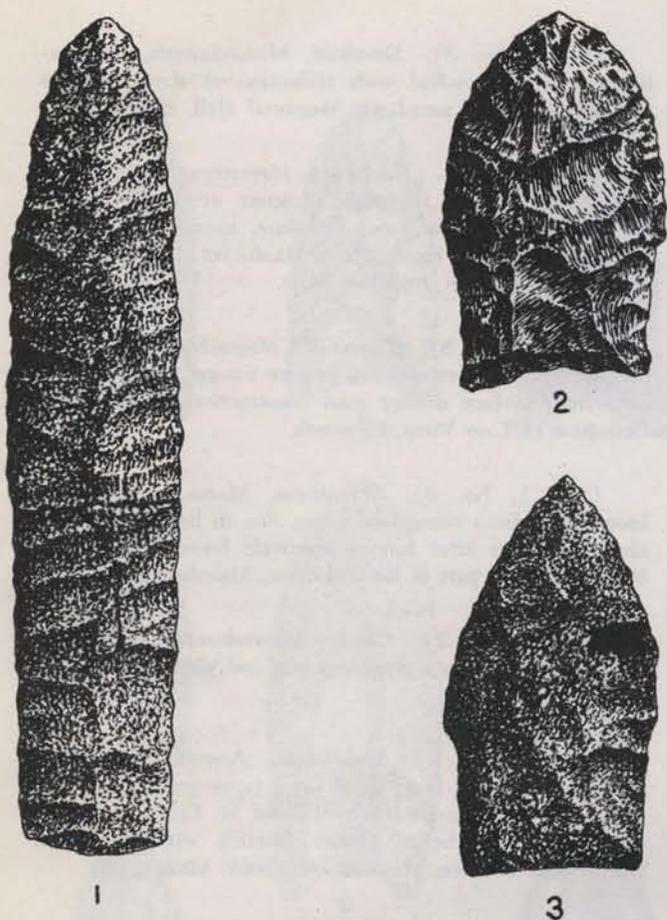


FIG. 3. Yuma-like Points. 1, Plymouth, Mass.; 2, Jamestown, R. I.; 3, Wayland, Mass.

(Fig. 2, No. 6). Twin Rivers site, Rhode Island; quartzite; parallel basal sides are retouched, and one shows wear or is ground; excavated from the lowest horizon of the site. Collection of William S. Fowler, Rumford, R. I.

(Fig. 2, No. 7, 8). Mount Desert Island, Maine; surface recoveries by R. S. Esty (deceased).

(Fig. 2, No. 9). Greenport, Long Island; of exotic mottled bright chestnut on cream white flint; base and edges half way toward tip are heavily worn or ground; found by Roy Latham on the Wickham farm, Pipes Neck Creek. Collection of Roy Latham.

(Fig. 3, No. 1). Plymouth, Massachusetts; of indeterminate yellow stone, heavily patinated; is Eden Yuma-like, thin with some oblique chipped scars running from edge to edge; recovered in 1935 in two sections from yellow sandy soil 8" below top of ground, 3" below humus, and 3" above white sand stratum. Collection of C. F. Sherman, Plymouth, Mass.

(Fig. 3, No. 2). Jamestown, Rhode Island, (Conanicut Island); of apple green flint resembling Cocksackie material; Scottsbluff Yuma-like; excavated by John English

well beneath the plow line in yellow subsoil at a shore site. Collection of John English, Providence, R. I.

(Fig. 3, No. 3). Wayland, Massachusetts; of exotic curdled garnet-gray felsite; Scottsbluff Yuma-like; excavated at the Heard Pond site by C. C. Ferguson from a deep level underlying the Early Archaic zone. Bronson Museum, Attleboro, Mass.

Fluted specimens as illustrated, with but one exception, (Fig. 2, No. 1), have been verified as having fluted channels on both faces. It is the writer's belief that this specimen in the Harvard Peabody Museum is also similarly fluted. Attempted rundown of reports indicating the presence of additional specimens have failed to produce results. However, 36 fluted specimens with as many more broken segments at the Bull Brook site have been recovered in Massachusetts. This evidence, while limited, seems sufficient to postulate man's presence in New England during the late Pleistocene. Of all available coastal evidence, 219 surface finds from various counties in Virginia represents the greatest concentration — (Bulletin of the Archaeological Society of Virginia, Vol. 6, No. 4) — while the Shoop site in Pennsylvania has produced 53 fluted specimens. However, not all of the Virginia points have fluted faces, although those which are without have chipped thinning of concave bases with forms approaching the Folsom type. Since fluted point frequency is less in New England regions with none reported further north, it is probable early migration was from the south and came by water. A review of the evidence will show that the source of each point is near a navigable water course or in a seashore locality. This supports the hypothesis of arrival by water rather than by land.

### CONCLUSION

Using the earliest occupational date for Paleo-Americans as measured by carbon-14 analysis at Lubbock, Texas, (charred bone in association with fluted points), of about 10,000 years B.P. 1954, it may be assumed that fluted point hunters reached New England perhaps 500 or 1,000 years later. It now seems probable that between 9,000 and 6,000 B.P., at the end of which period the first phase of the Early Archaic age may have started, fluted point users were arriving along the coasts above Cape Cod and pushing up navigable rivers into the uplands of the country. During this long period of some 3,000 years certain changes in culture traits undoubtedly took place. Therefore, variation in

fluted point shapes, as well as addition of different artifacts to the complex may be anticipated as appearing at various sites. It is thought probable that these may represent different periods of Paleo-American occupation.

Two excavated sites in Massachusetts seem to present evidence of the earliest settlement: Bull Brook in Ipswich, and Wapanucket on Assawompssett Lake in Lakeville. The former has been reported by Douglas S. Byers in *American Antiquity*, Vol. 19, No. 4, 1954. His paper describes and illustrates a 35 piece sample of fluted points and associated artifacts, including graters, scrapers, knives, and drills. However, since Byers omits geologic evaluation of the site,\* it seems important for chronological analysis to introduce at this point a geological report on the area made by Chester E. Smolski as his thesis for a graduate degree at Clark University, September, 1953, entitled, "Physiography of Glacial Marine Deposits at Ipswich, Mass."

\* A paper by Mr. Byers discussing the Bull Brook Site from a geological point of view will appear shortly in *American Antiquity*.—Editor.

According to Smolski's interpretation of the evidence, Bull Brook site appears to rest on one of a number of sand plateaus, identified by him as "sandy mesas." They have an elevation of from 47 to 57 feet above the level of Bull Brook and extend for quite a distance from Rowley to Ipswich. At several places in the immediate area rise abrupt hills or drumlins, of which Turkey Hill and Town Hill are examples. At one time in early post glacial days known as the De Geer stage, the land in this area was still depressed from the great weight of ice which had formerly covered it, and had not risen to its present level. The sea had flooded the land, causing Turkey Hill and others to appear as islands. During an estimated long period of time—probably 4,000 years, as indicated by varves in contemporaneous Lake Hitchcock—these conditions persisted, and wave action against certain rock deposits on the island shores caused erosion, which formed sand. This was deposited along the mainland shore and in time formed a more or less continuous deposit of sand, which marked the marine shore of those days. However, toward the end of the period the land rose, which drained Lake Hitchcock in the Connecticut Valley as well as the Ipswich inland sea. Meltwater continued to flow

from the receding glacier to the north, which formed Bull Brook and other streams with a greater flow of water than as of today. As these various water courses developed, they cut channels through the sandy marine shore, and separated it into several sand deposits. As time passed, strong winds and overflowing streams piled sand still higher. As the land continued to rise the sand mesas of today were thus formed. Therefore, these sand mesas should represent what is left of the marine shore of the De Geer geologic stage.

Now, it seems quite probable that Paleo-Americans arrived in this area by dugout from the South at about the end of the De Geer stage, when the land was rising. They could have camped on the high sandy shores of the inland sea, which was then receding. The coarse, hard packed sand of the stratified level from which Bull Brook fluted points have been excavated, 10 to 15" below the loam, seems to confirm this hypothesis. The finer sand overburden would then become the wind-blown and water-washed deposit as predicated by Smolski. This correlation, if true, would seem to support an early date of settlement at Bull Brook of perhaps 9,000 years B.P. as previously postulated.

The other site with early implications is at Assawompssett Lake, but has not yet progressed far enough to establish a geological-archaeological correlation. However, it seems highly significant, that on an elevated terrace at this site high above present lake-water level was excavated a fluted point (Fig. 1, No. 8). Made of red flint it lay in white sand 22" below the loam. The fact that it is made of flint, which is not indigenous, and has a classic shape as well seems to place it in the same early period with Bull Brook. If this is so, then associated traits at both sites in the same horizons should represent the first period of settlement in early post glacial times. Enumeration of traits include relatively wide fluted points of flint, graters, end scrapers, and specialized knives, all made of flint.

A somewhat later settlement stage might be indicated by recoveries made at the Reagen site, 300' above the Missiquoi River in northwestern Vermont. Here, pentagonal or tapered stem fluted points have been recovered from the wind-eroded surface, made of flint and reported by W. A. Ritchie in *American Antiquity*, Vol. 18, No. 3, p.p. 249-258.

From a geologic point of view the present 300' elevation might not have existed when the site was first occupied. Instead, it might have been the sandy shore of an inland sea where Lake Champlain now lies when the land was still depressed at that latitude. If so, this would have been relatively later than Bull Brook settlement, after the ice cap had melted and moved farther north.

A still later chronological stage might be represented by excavated evidence at the Twin Rivers site in the uplands of Narragansett Bay drainage. Here, there appeared an early horizon on a gravel kame terrace, which yielded one relatively narrow fluted point of quartzite (Fig. 2, No. 6). Associated with it at this low level were small cobblestone hearths with fire pits, seemingly made to accommodate fuel of small sticks and dried grass. In one of these was found a deep channeled short gouge of greenish-black igneous stone. Now, since the fluted point is made of indigenous quartzite and has modified proportions, it may represent on-the-spot manufacture by the last of the fluted point makers in New England. This settlement stage would also be identified by the small exotic gouge already mentioned.

The final stage of occupation in early post glacial times might be typified by certain low level

remains on wind-blown white sand at the Titicut site in Bridgewater, Massachusetts. Apparently, they represent a period after fluted points had ceased to be made since no fluted points were recovered in this low horizon. It was probably at a time which ante-dated the Early Archaic. At this site on the white sand low level appeared the same small cobblestone hearths with fire pits as at Twin Rivers. But what seems of the most importance, a large semi-circular knife was found in one of these hearths. This implement was pecked all over, about  $\frac{1}{2}$ " thick with a highly ground  $\frac{1}{2}$ " beveled edge, and had side notches made at both ends to hold leather thong wrappings for a handle. It was made of dark igneous stone, and resembled what might be considered as the forerunner of the ulu. Long narrow projectile points, corner-removed 9 (Bulletin of the Massachusetts Archaeological Society, Vol. 15, No. 1) as used by the Archaics seem to predominate spear point recoveries. Taking these three traits together: hearths, knife, and points; it appears probable that the low horizon on white wind-blown sand at Titicut represents a transitional stage between fluted point makers and Early Archaics.

Bronson Museum  
Attleboro, Mass.  
August 16, 1954

By WILLIAM J. HOWES

RANGE OF FORM AND DECORATION

(Third Installment)

With few exceptions the pottery of all primitive people was constructed with either a round or a pointed base that would not support itself in an upright position, and the ware of the New England Indian was no exception. From existing specimens the variation in outline was limited. The cylindrical body, pointed base type, with no rim projection, is characteristic of early Southern New England. With the exception of one of this type from Long Island, no others seem to have been found outside the territory. It probably preceded the type in which the upper portion is contracted to form a neck, such as has been found in the shell heaps of Maine. While there is no conclusive evidence in this connection, yet in Southern New England enough fragments have been found to show that such a type was produced.

On two pots from Derby, Connecticut the base was warped to one side and the rim was of irregular height all round suggesting primitive and inexperienced workmanship. Were it not for the well smoothed surface these pots would unquestionably be placed at once in the primitive ware classification.

Early Rhode Island and Nantucket pots were more symmetrical but of a more globular form with a plain level rim and the characteristic pointed base. There was no decoration on them saving the textured surface markings of the structural implements used in forming and wiping the exterior surface, similar to the pot from Hughdale, Rhode Island. This type, with slight modification, is found from Chesapeake Bay northward through portions of Pennsylvania, New Jersey, and Long Island. While there is a slight diversity, yet there is a likeness of type throughout, for they all are of simple form and construction and appear to have been produced early in the ceramic period.

In later pieces made by the Southern New England Indians, influenced no doubt by their contacts with Mohawk characteristics, the pointed end gave way to a more rounded base, similar to that of the small end of an egg. There was a more

pronounced contraction near the top forming a neck and an everted curvature to the rim. The walls were thick and thin on the same vessel, and the surfaces were roughly finished on the general run of pots, save at the top where decorative features were used. A characteristic of Algonkian work was the decoration of the rim that quite frequently run down on the inside a short distance.

In general the largest pots did not exceed twelve inches in diameter. Morton in his Force Tract says,

“there were pots holding two or more gallons in existence.”

In an interview with Prof. George H. Perkins some years ago he stated that there was one pot in existence in Middlebury, Vermont holding twenty quarts, and that the University of Vermont had one holding twelve quarts. There is one in the Rodimon collection that holds sixteen quarts.

Most of the larger pots seem to have been used for dry storage, for a greater number of them have holes drilled in the side walls toward the base. These holes, sometimes two or three on a side, were in all probability made for running thongs through them so that the pot might be suspended up out of the way of children and animals. The need for this low suspension seems to have been recognized as a necessity to prevent heavy load breakage of the utensil were these holes for thong suspension placed nearer the rim. Many fragments of small pots show these perforations near the rim.

The thickness of the material in the same pot often varied greatly. In one pot the range of thickness was from three thirty-seconds to three-eighths of an inch. This is about an average as found in Connecticut Valley production. Potsherds have been found of greater thickness than this which evidently were produced in a territory where the material was of a coarser quality than that found in the Connecticut Valley.

Pottery decoration can be divided into two general classes. One may be called constructive

decoration, a type in which the coiling has not been obliterated. The plain horizontal bands, the spiral and overlapping ridges formed by strip lapping; also the pinched and rippled bands used alternately were variations of this type of ware that have been referred to heretofore as characteristic of work found in the Southwest. Another form is the textured surface produced by wiping the outside walls with a chip, a cord wound stick, or any other implement or material that was at hand that would bring the surface to the finish desired, which many times resulted in a decorative pattern. A potsherd from a Nantucket shell heap indicates a checkered surface pattern made by reversing the direction of the implement as each stamping was applied on the surface after the structural portion had been completed.

New England constructive decoration depended upon imprints made by pressing the plastic material into basketry forms or other mediums that were used to separate the moulded work from the form and prevent adhesion to it. Fabric, twine, skins, and grass markings also have been identified as having been used as such mediums. Fabric markings have been found on the interior of the ware in certain pieces. The imprinting on the interior walls was probably due to the use of a moistened cloth that was applied to the inner surface. A wadded cloth was used over the hand for a substantial backing while finishing the exterior surface. It might also have been left in the pot to keep the clay in a plastic state until its decoration was completed.

The decoration of almost all aboriginal pottery of this section of the country was characteristic of the work of the group that produced it, and its evolution and development are clearly traced from the most primitive article through to its final development. It was mostly confined to the upper portion of the pot, particularly around the neck and rim. In some pieces the decoration was carried over the rim and down on the inside neck of the pot. In most pots where the decorative work is to be found in the lower section which included the body and base, the surface has the appearance of an applied coarse textile ornamentation, or similar to that of a pebbled surface. This was the result of a constructive development of the surface made by a wooden paddle, a cord wound stick, a corn cob, or cloth over the hand which was used in wiping the

outside surface down to the proper finished contour. The blade of the wood paddle might have been the natural surface of split wood, or one that was scored with a series of crossed straight lines forming a diamond or square set of grooved lines. As it was wiped over the ware in different directions it produced a textile effect.

Applied ornamentation includes surface indentations, punctate and incision markings, painting with pigments, and modeling as for sculpture. In its simplest form it was made by wiping the surface with the hand, or a chip of wood, a bone or a stone, whichever was found nearest at hand when the pot was being constructed

The early New England Indian type of decoration was distinguished by having been done mostly with an implement either of wood or bone, which would produce a series of depressions by stamping into the surface of the ware while it was in a plastic state. This implement had a flat wedge shaped end that was notched with a fairly uniform set of teeth. It varied in width to conform to the location where the decoration was to be applied. From the imprints found on some pieces the implement used seems to have been no more than a thin splint of wood with the end broken off fairly square, which imprinted depressions corresponding to the outline of its end.

In most of the patterns found the ornamentation was done with a straight edged implement. Occasionally there is found a design that indicates the use of an implement where the teeth present a slightly curved outline, due to the curvature of the splint itself. The patterns on the ware indicate that splints of varying widths and thicknesses were used. The teeth also were coarse or fine depending upon the design to be produced.

It would seem that such a rigid and inflexible type of implement would limit the range of ornamentation. An analysis of the many designs produced, however, indicate that the artizans became quite proficient and were enabled to manipulate it in such a manner as to produce quite a range of ornamental designs, many of which are characteristic of certain sections only. By repetition bands were formed, some in series that were parallel with each other; some with zig-zag design; others in a diagonal series of lines; and still others that had

# TECHNIQUE OF MANIPULATION WITH THE ALGONQUIAN TOOTH EDGED IMPLEMENT

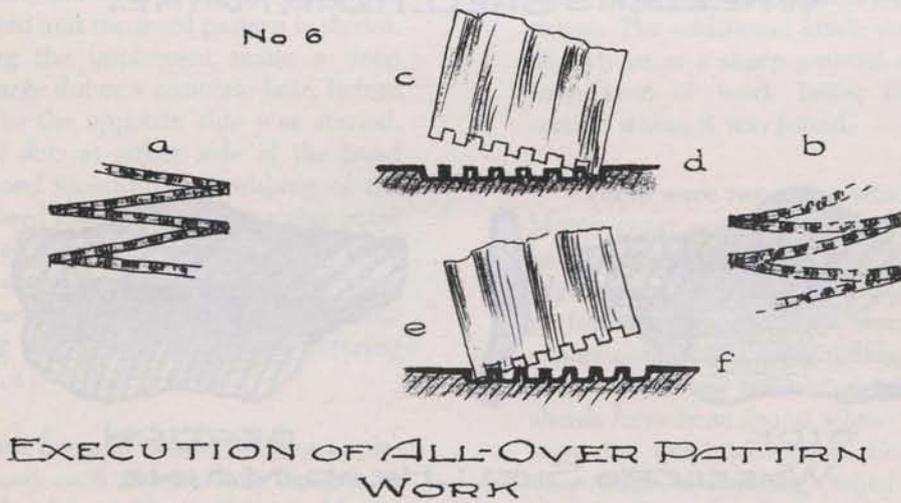
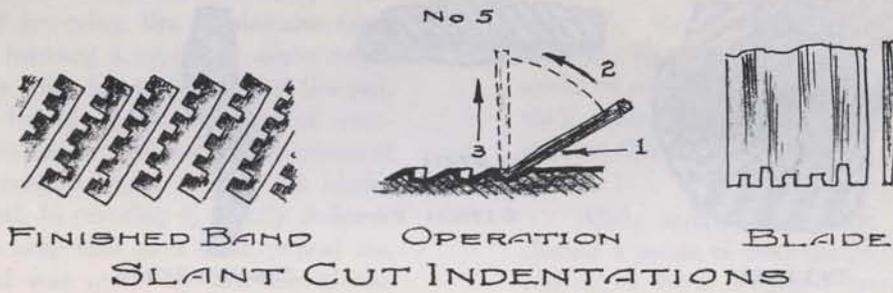
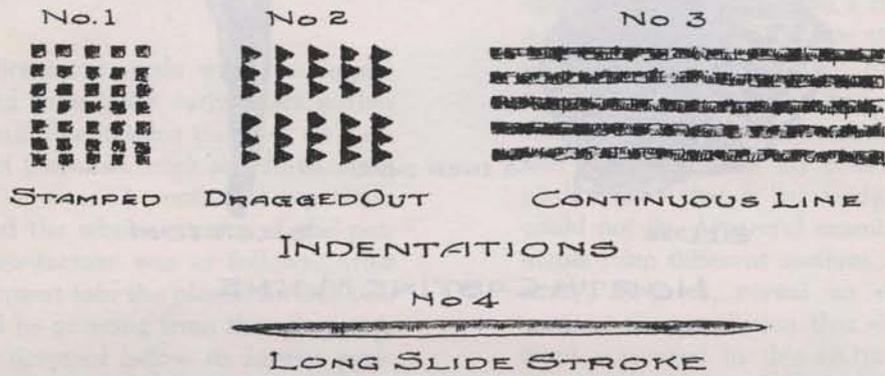


Figure 4

PHILLIPS ACADEMY MUSEUM  
ANDOVER MASS.



No 51998

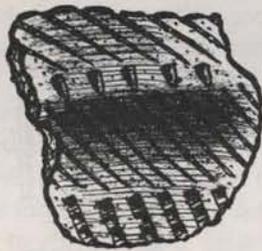
5 INCH POT.

SIDE



SECTION

NORTH CASTINE MAINE



No 57711

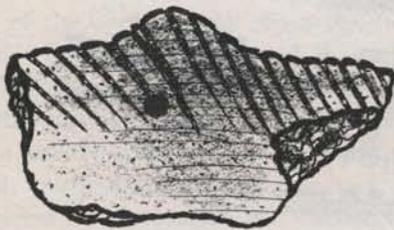
6 INCH POT.

SIDE

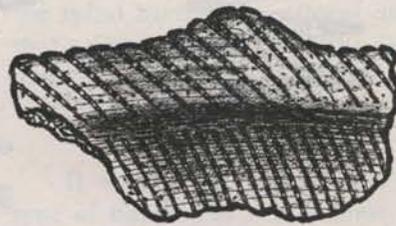


SECTION

WHEELER'S SHELL HEAP, MAINE.



No 57711



SIDE

SECTION

WHEELER'S SHELL HEAP, MAINE

ALGONQUIAN WARE FROM MAINE SHELL HEAPS

the ornament alternate with blank spaces. Some were formed into all over patterns, the herringbone and diamond type being quite common throughout Southern New England. By use of the proper technique in manipulation of the implement many varied types of ornamentation were produced, a few of which will be found herein illustrated on the different plates.

One type of ornament made with this implement that was used from quite early times is that of a series of zig-zag indentations stamped on with a rocking motion of the hand, back and forth, from top to bottom of the ware. A continued repetition of this unit covered the whole exterior of the pot. The process of manufacture was as follows. After stamping the implement into the plastic surface one end was raised and by pivoting from the other end, it was turned and dropped below its former position, making an imprint somewhat diagonal to that first made. This process was then repeated by alternately raising and lowering the implement from left to right, thus forming a series of acute angle dotted indentations from top to bottom of the pot. Sherds have been found where this type of ornament was made into bands with such an implement having a slight curvature at the end of the blade, the drag of the teeth in pivoting is clearly defined. It is interesting to note that at a later period the same type of band was made by the use of the stylus. With this implement the drag of the point in making the curved and recurved pattern is shown. During its making the implement made a deep impression like a large dot or a punctate hole, before the recurve back to the opposite side was started. This succession of dots at either side of the band accented and defined its width. A rubbing of the design from one sherd revealed that the stylus point was somewhat wedge shape, for in raising from the punctate hole each time there was a slight turning of the implement in the hand, that made the line wider coming out than it did when entering the hole. (See Fig. 4).

The use of both fine and coarse toothed implements that produced such outstanding designs as is shown on one sherd from North Castine, Maine, seems the culmination of their proficiency and ability in ornamentation. (See Fig. 5).

One pottery fragment from the Whaleback Shellheap, indicates that the implement used was

toothed only part way across the edge. In competent hands, by alternate reversals of the implement and using a rocking motion, a curved and recurved design was easily accomplished. (See Fig. 6).

Holmes in his *Aboriginal Pottery of Eastern United States* suggests that a disc with many sprocket like teeth around a rim like wheel, having a small stick inserted in one side of the center, was used to some extent. By operating this handle between the thumb and fingers a series of depressions were made that formed a continuous curved and recurved band. By rotation it would accomplish results that a flat wedge shaped implement could not do. A careful examination of many fragments from different sections of New England territory, however, reveal no evidence that would warrant the conclusion that such a type of implement was used in this section of the country. A sherd recently found in the Cape Cod district had such a curvature that one might conclude it was made by the roulette type wheel advanced by Holmes. Identical markings, however, have been made on a plastic clay pat by use of a small scallop shell, which in all probability was the implement used on this sherd. (See Fig. 7).

While indentation work, aforementioned, included a series of dots made by stamping, yet the Indian of New England territory broadened its scope to include other kinds having a similar application. The additional kinds were made by the use of a stylus or a sharp pointed awl type implement, each kind of work being characteristic of the section where it was found.

There were two outstanding kinds found in the Maine coast section. One was that of a series of holes made with a flat base round stick that was slightly smaller than a lead pencil. The holes were perforated deeply into the ware, generally forming a horizontal band surrounding the pot, and many times overlaying completed ornaments. Occasional sherds have been found where bands of these holes were the only decoration. Could this application over other decoration, which occurred in most cases and none in others, have any mystical significance? If so it has not been handed down to us. The other kind, not so often used, was that of a rectangular base stick about one-sixteenth by one-quarter inch in size. This stick seems to have been jabbed into the plastic surface of the ware as

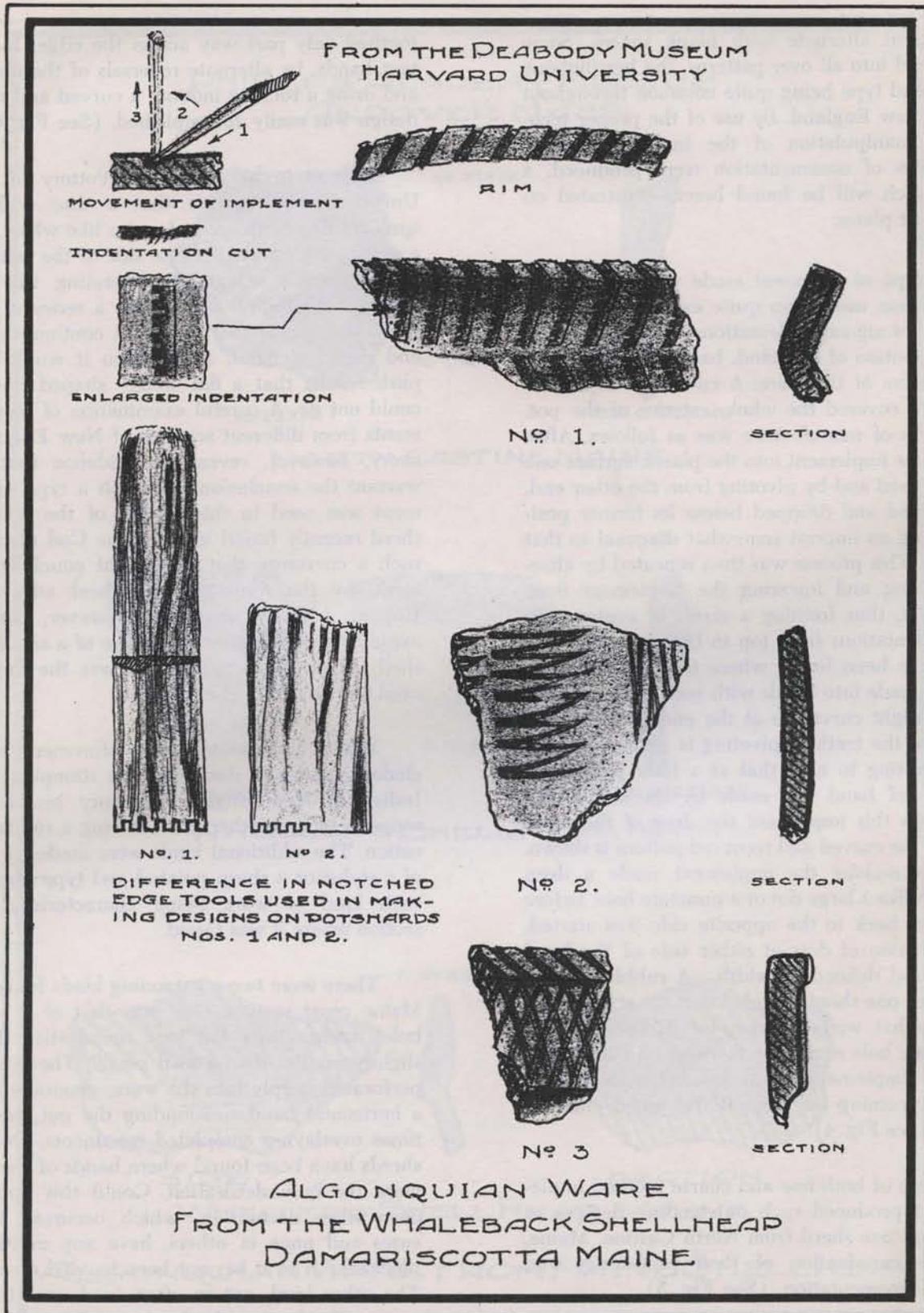
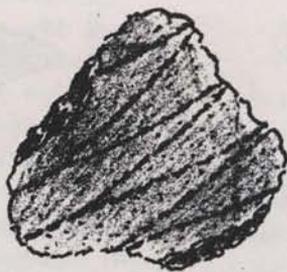


FIG. 6



POTTERY FRAGMENT FOUND AT  
WAREHAM - MASS.



SIZE OF A TYPE OF SCALLOP SHELLS  
THAT WILL PRODUCE THE SAME MARKINGS

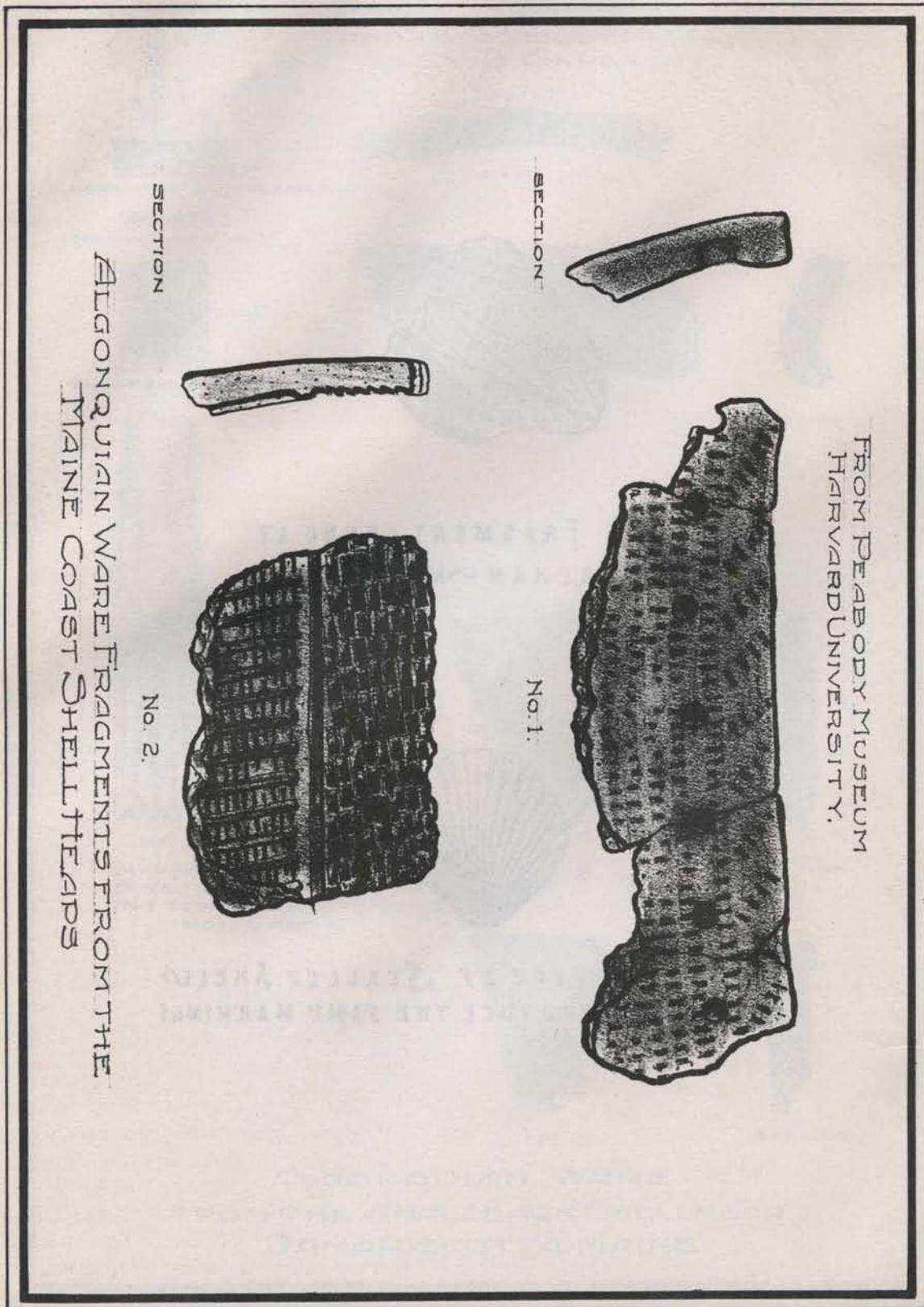


FIG. 8

though it was done in a vicious manner, to form a continuous and thickly stamped, hit or miss type of marking, horizontal band surrounding the pot. Both of these were probably placed on late ware. (Fig. 8).

Dentil or a notch type of ornamentation was a late type that seems characteristic of the Connecticut Valley section. This type was indented in the base of the wide collar at its junction with the deep undercut neck that originally were Mohawk features. These dentils or deep "V" shape indentations were a most effective decoration, and seem to have been widely adopted by the local Indian.

The use of punctate decoration has been found in but few locations in Southern New England. It evidently was associated with very late production when the native Indian had become quite proficient in executing original designing on the ware they produced.

On a workshop site above South Hadley Falls, Massachusetts, another sherd was found having a band that was a combination of both stylus line and punctate hole markings. These punctate holes began and terminated the width of each curved and recurved line as it flowed back and forth. An imprint rubbing of the ornament reveals that the point of the stylus was somewhat wedge shape. As the stylus left the hole it must have been turned somewhat with the thumb and fingers presenting the wedge shape wide line that changed to a fine one as it entered the punctate hole at the opposite side. Upon reversing to make the recurved lines it was again broad and narrow to the punctate hole.

From the time of Mohawk contact with the River Indians of the Connecticut Valley there seems to have been an awakening of interest in Mohawk motifs and a change in pot form which resulted in their being incorporated in the ware of a great part of the Algonkian utensils of Southern New England. The change never developed beyond a transitional stage, for the production of all earthenware pottery ceased before the evolution could produce a definite new type.

The wild roving and restless Mohawk, who was persistent and at times irresistible, preferred roaming the fields, hunting the forests, and fighting for spoils, to occupying himself with labor at home.

In his wanderings he would raid the territory of the Connecticut Valley. From the River Indians he reaped the harvest of conquest, and these raids resulted in his becoming a "terror" to the Southern New England Indians that finally brought them under subjection and tribute. A record from the first settlers was that,

"The Indian of the Connecticut Valley paid an annual tribute that was exacted of them by the Mohawks."<sup>(1)</sup>

(1) History of the Connecticut Valley.

After this conquest, during the early spring season, when the shad and salmon were making their annual run to the headwaters of the Valley streams for spawning, the Mohawks would come with their families and with other Indians from throughout Southern New England to gather in their supply of fish. While encamped nearby the squaws would make their yearly supply of pottery utensils from the fine quality of material that was found so abundantly in this locality.

The outline or form of Iroquoian pottery exerted a greater influence on the Algonkian ware than did its decoration. It seems to have changed the outline of their utensils throughout New England. The straight body wall gave way to that of an egg shape form, and on many of the later pieces, the body wall was rounded to a globular form. In the Connecticut Valley the upper portion of their pottery was radically changed, for the River Indian developed pottery nearer to the Mohawk type than that of any other section of New England. This probably was due to the intimate contacts the local Indian made while the Champlain Valley Mohawk Indian was here. Distance from this focal point and a lack of remembrance of detail resulted in more freedom from copying, and more creative ability was shown in the changes made, as there were fewer pieces to copy.

While whole pots, and those that are pieced together from fragments make a valuable contribution to the knowledge and trend of the changing character of the ware, yet isolated fragments from an innumerable number of pots, having no body outline, contribute more information as to actual development, for in the neck and rim portions of aboriginal pottery the most distinctive features were developed. Both family groups seem to have con-

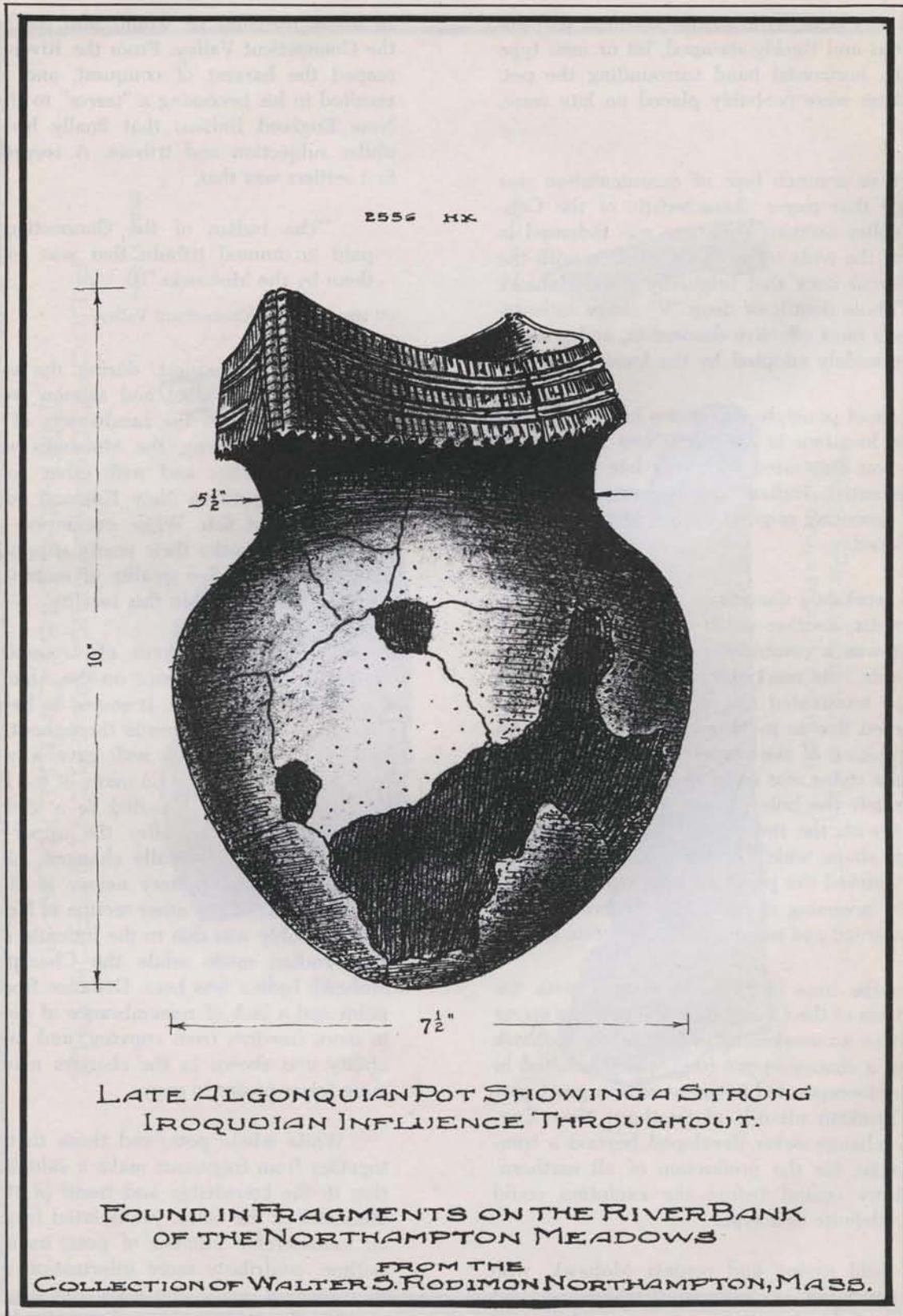


FIG. 9

centrated the outstanding features of their designing at these points.

Many fine specimens of decorated fragments showing unusual rim, collar, and neck features of the changing ware have been found. Most of them lack the necessary body sections that would determine the shape of the pot, and therefore, we find it impossible at times to determine its outline. From the curvature of most fragments and the direction of the ornament one is able, however, to determine a very close approximation of the pot's diameter.

In the progress of evolution, Algonkian pottery ran through several stages of development. The old slightly contracted neck became considerably undercut so that it cast deep shadows below, and it extended above to form a wide collar to the rim. As time passed decoration was added to the collar and a series of indentations or notches were applied at the top of the neck angle. The collar was then flared and later the flat rim was projected at intervals to high points with graceful sweeping curves between. Two and sometimes three or more high points were spaced equi-distant around the rim. (See Fig. 9). In late pieces a square collar and rim were developed. At first the rim was level and later the four corners were raised to high points having long depressed curves between. In the final stages of development the minor indentations were developed into bold notched depressions, creating deep shadows that were outstanding.

The diversity of outline of the upper portion of the Mohawk pottery together with the variation of

the pattern of the ornament, both of which were refined and executed with care, was in marked contrast to the general run of the Algonkian type of workmanship. In working with a sharp pencil-pointed implement like a stylus, there was a freedom of marking and an individuality of ornamental conception that the limitations of the toothed edge implement used by the Algonkians in making a series of indentations could not produce. In later work the stylus type of marking was adopted to a large extent by the Algonkians but the designs were more carelessly applied. The lines in the same direction were not parallel nor were they evenly spaced. They were indifferently executed and were not contained within the limits of the design. Many of the lines overlapped the ornaments at the sides, top, and bottom.

There was a trend toward blending the motifs of ornaments taken from the designs made by both groups of workmen. Ornaments formerly done with a Mohawk stylus that made long single strokes were now executed by the Algonkian Indian using his toothed edged blade in stamping a series of continuous indentations the full length of the line. Many of their ornaments were based upon the diagonal basketry weave design of the Mohawk.

This stylus which was a sharp pointed wood or bone implement, was used to a great extent in the later work done by the Algonkian. It is practically the only implement used by the whole Iroquoian family.