CLASSIFICATION OF STONE IMPLEMENTS OF THE NORTHEAST
by William S. Fowler

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FOREWORD

During the twenty-five year growth of this Society, attempts by various members have been made to classify and name stone implements recovered from the Massachusetts area. In these efforts, several proposals have been published, each new one benefiting from those that went before. Throughout these years, controlled site excavations have revealed the presence of four well-defined culture periods with C-14 and estimated dates: Paleo-American (9,000 yrs. ago), Early Archaic (6,500 yrs. ago), Late Archaic (Stone Bowl) (5,000 yrs. ago), and Ceramic (Woodland) (1,700 yrs. ago). Each has been associated with certain types of stone implements. Repetition of these traits in a similar sequence at site after site has strengthened reliance upon their value as culture diagnostics. While such revelations are not positive proof of the truth, they would seem sufficiently authoritative, and will be reflected to a considerable extent in these proposed classifications.

These classifications are offered with the hope that, while they may not meet the full acceptance of all, they will be appreciated by many as a realistic approach to a better understanding of the stone implement industry of central New England and other sections of the Northeast. They are the result of endless research, the work of many minds, and have proven workable in the scientific deliberations of this Society. However, while they are as complete as present day knowledge permits, continued research in the field may require further revisions or additions in the future.

These classifications are presented for use in cataloguing collections, and as a means to a more orderly arrangement and intelligent discussion of artifacts. Wherever space allows, some type variations are illustrated, although it is known that many more exist, as they tend to be limitless. Therefore, in using these classifications, it may be necessary at times to make arbitrary decisions in determining to which type a given artifact belongs. However, it is hoped that basic type traits, as illustrated, will be found to represent the essential kinds of stone implements of this area. While most specimens shown are derived from the Connecticut River and Narragansett Bay drainage basins, a few are from other parts of New England, and one is from the east Hudson River Valley. These specimens have been selected with the conviction gained from persistent research, that culture contacts of peoples of the Northeast took place without regard to state boundaries. Because of this, artifacts throughout this region tend to equate and fall into similar categories.

The illustrations are faithful reproductions of actual specimens, many of which are on display in the Bronson Museum. They have been drawn with pen and ink shading, with the intent of portraying surface effects of the different kinds of stone used. Also, an effort has been made to show the precise location of chipped scars, which are often so shallow as to be unrecognizable by the photographic process. All drawings have been worked from actual artifacts, and all but one (Pestle) in full size.

A sequel to this classification is planned for a subsequent publication, illustrating and describing essential traits of various industrial products known to have been made by artisans of the several culture periods.
Of all stone implements conceived by early man, projectile points were produced in the greatest quantity. They played an important part in providing his food requirements, and subsequently they have been especially useful as culture diagnostics in the field of archaeological research. Due to their frequent change of shape from one culture period to another and to their high frequency, they have served to a considerable extent in providing the means by which four culture periods in New England, already mentioned in the foreword, have become well defined. Many other tools, such as are described in these classifications, also have contributed much to this knowledge. However, projectile points are referred to more frequently, and are relied upon, perhaps, more than other artifacts in determining man's changing cultural status from one age to another.

This projectile point classification, as will be noted, uses numerals to indicate significant types within certain class groups, mainly, when such types are considered indicators of culture changes, as suggested by excavated evidence. Omission of consecutive numerals in some cases denotes deletion of certain types in previous systems, which have been found unnecessary refinements of present classified types. This has consolidated and simplified the present system into a more useful tool for appraisal of projectile points. Any other slight variations that may occur may be disregarded as unimportant departures from established types, no doubt the result of stone differences or the artifact maker's fancy.

This system is based upon a direct approach through names, which denote chief characteristic shapes of the different types. Assigning place names of site sources has been avoided for the reason that such multiplicity of names, not descriptive of type shapes, becomes confusing and burdensome. Over the past number of years, this system has been used successfully in classifying collections, and in reporting site recoveries. Also, it has been found workable for quick and accurate description of point types during discussions.

Aboriginal selection of stone materials for the various kinds of points may be gleaned to some extent from the illustrations. In general, it may be said that indigenous rather than imported stones were preferred throughout the last three culture periods. But in the earliest period (Paleo) there seems to have been a preference for flint, probably imported. To enumerate, in general stone preferences appear to be as follows: flint in the Paleo; quartzite and argillite in the Early Archaic; argillite, quartz, felsite, and flint in the Late Archaic; and quartz, felsite, quartzite, and flint in the Ceramic. This does not mean that other stones were not sometimes used, but merely indicates those stones having the greatest use. Procurement of flint during the last two culture periods may have come partly from cobbles in the glacial till, and partly from imported Hudson Valley flints, as in the first period (Paleo).

For the purpose of this classification, separation of arrow from spear points is unimportant, since all sizes are treated alike in each type. However, mention will be made in each group, whenever significant, indicating the scope in size of a type.

**LARGE TRIANGULAR, (Ceramic).** In this group are relatively large triangular shaped points having a basal width of more than 1\(\frac{3}{4}\); with straight to concave lateral sides, and base, which at times is extremely concave. They first make their appearance stratigraphically, with Stage 2 pottery. A modified style within this classification has occurred at one Duxbury site. Modification concerns its base, which flares slightly to a point at its center.

**SMALL TRIANGULAR, (Late Archaic and Ceramic).** These points have a triangular shape, sometimes isosceles, with a basal width of less than 1\(\frac{3}{4}\), and are considered to be arrow points. Their bases are straight to concave. In rare instances, base width may exceed 1\(\frac{3}{4}\), when blades are short with basal points outflaring. Types #1,3,4, generally with convex lateral sides, appear in the Late Archaic zone, while #5, equilateral in shape, with straight lateral sides, usually appears later in the Ceramic zone. Type #6, isosceles, may be either Late Archaic or Ceramic.

**CORNER-NOTCHED, (Ceramic).** This type includes both large and small blades, which have well defined notches extending obliquely from basal corners. They occur first with Stage 2 pottery in the middle Ceramic zone, and appear to be comparatively late arrivals, inspired by a diffusion of this same trait of earlier days from western regions.

**SMALL STEM, (Late Archaic and Ceramic).** In this category are relatively small points of less than 1\(\frac{3}{4}\) in length, fashioned with irregular shaped stems. They occur first in the Late Archaic zone and continue throughout the Ceramic; are believed to be arrow points because of their small proportions.
BIFURCATED, (Early Archaic). Points in this class appear first in the Early Archaic zone. They have sharp barbs, the result of well-defined corner notching, while a deep notch or bifurcation bisects the base. Doubtless, this point served as a harpoon projectile in a bone holder in Early Archaic times; may have continued as a spear point without barbs into the Late Archaic.

LONG EARED, (Late Archaic). This type of point is relatively broad with somewhat slender outflaring basal points. These appear as long ears by virtue of relatively deep side-notching and a well-worked concave base. In the Northeast it appears in large sizes in the Late Archaic.

PARALLEL STEM, (Early Phase of Early Archaic). This point's relatively broad stem has retouched parallel sides often ground slightly, a thinned base that tends to flute and ear, and an extended steeple-shaped point; size range is between 1½” to 2½” in length; occurs at the Early Archaic level or below.

FLUTED, (Paleo-American). This type of projectile has a flute extending up both faces — sometimes only one — from a concave base, often ground. Basal points are slightly outflaring at the end of more or less parallel basal sides. These are sometimes reworked, and frequently are slightly ground. This point may be the earliest in New England; is closely associated with a Carbon-14 date of 9,000 years ago at the Bull Brook site, Ipswich, Mass. Large to medium sizes predominate.

DIAMOND, (Late Archaic and Ceramic). This point is characterized by a diamond-like shape: a point at both ends with basal sides sloping directly without shoulders. Large sized blades are present with cremation burials of the Stone Bowl era, and smaller ones continue into Ceramic times.

LEAF, (Ceramic). In this type, the base is rounded from convex sides, which converge without shoulders. It has appeared in the Ceramic zone, and may be derived from the Tapered-stem type.

TAPERED-STEM, (Late Archaic). This projectile has sloping basal sides, which taper to a truncated base. They may be straight or somewhat convex; the former shape is sometimes referred to as pentagonal. This point appears first in the Stone Bowl zone and overlaps into that of the Ceramic to a diminishing degree; large and small sizes are present.

EARED, (Late Archaic). Five different eared types are shown, all having basal points, referred to as ears. They are formed, as a result of side notching and basal reworking, which produces a more or less concave base. All are found first on the Late Archaic level of which they are most diagnostic. Eared #2,3 overlap into Stage 1 Ceramic times, but are soon replaced by other forms. Types #3,4 often appear in small sizes.

CORNER-REMOVED. Seven types, as shown in this category, have one thing in common: their basal corners are removed to form stems of different shapes. Their length should measure 1½” or more, and base forms should conform to one of the seven listed types.

TYPE #1, (Late Archaic). This point is always relatively long and broad, with a truncated broad sloping stem produced by slight removal of basal corners. It has appeared in Stone Bowl cremation remains.

TYPE #2, (Early Archaic, transitional from Paleo-American). This blade is large, with a broad, long stem produced by slight retouching to form parallel sides. Sometimes, there is so little reworking that the stem is scarcely perceptible. This type resembles, somewhat, early Yuma points of the West, and has appeared infrequently in New England associated with an early phase of the Early Archaic, probably overlapping from the preceding Paleo era.

TYPE #3, (Early Archaic through Ceramic). Relatively narrow with a length of 1½” or more, this point has a short or long stem, which is often quite thick with a minimum of thinning. While only a few specimens have appeared in the Early Archaic, their frequency increases throughout the remaining two culture periods.

TYPE #5, (Early Archaic). This point has an overall triangular shape with basal corners sharply removed to form a narrow tapering stem, usually, but not always, terminated by a slight bifurcation. It occurs in large and small sizes, presumably used for spears and darts. Appearing always in the Early Archaic zone it is held to be highly diagnostic of that age.

TYPE #7, (Late Archaic). This is a broad blade, which may have long, as well as short proportions. Removal of basal points forms a relatively broad truncated stem with slightly sloping sides, sometimes almost parallel. Recovered from stone bowl quarries and their corresponding zone at site excavations, it is held diagnostic of the Late Archaic.
Fig. 1. PROJECTILE POINTS. From Narragansett Bay Area, Connecticut Valley of Massachusetts, Farmington River Valley, Conn., Ipswich and Cape Cod, Mass.
**TYPE #8, (Early Archaic).** An important distinguishing trait of this point is a stem that tapers to a stubby point from shoulders that are often slight, but nevertheless are always present. The blade is elongated, and may appear in small or large sizes. Concentration is in the Early Archaic zone with some overlapping noted into the Late Archaic.

**TYPE #9, (Early Archaic).** Similar to type #8 in most respects, this blade differs only in that its stem terminates in a rounded end. This point has its concentration, also, in the Early Archaic zone, with probable overlapping into Late Archaic times.

**SIDE-NOTCHED.** Seven types are present in this group of projectiles, with side notching common to all, but in differing degrees of prominence.

**TYPE #1, (Late Archaic).** This is a broad bladed point usually appearing in large sizes, infrequently in small. The base is deeply side notched with extensive removal of basal corners, to form a relatively narrow side-notched stem ½” or more in width. Shoulders may occur somewhat undercut to form barbs, or obliquely undercut without barbs. Its repeated appearance in the Late Archaic zone leaves little doubt of its diagnostic importance for this culture period.

**TYPE #3, (Ceramic, transitional from Late Archaic).** This point has a relatively long and narrow blade with broad side notching at its base. Often, little or no thinning of the base occurs, and frequently, side notching is scarcely discernible. Frequently occurrence of this blade between Late Archaic and Ceramic levels seems to place it in a transitional position.

**TYPE #4, (Late Archaic).** This narrow point is similar to Corner-removed #3 except it has slight side notching at its base to form a kind of spool-like stem, with a rounded end. Recovered from a Connecticut stone bowl quarry, it represents Late Archaic times.

**TYPE #5, (Late Archaic and Ceramic).** Distinct side notching with a truncated base, somewhat thinned are the chief traits of this point. Its blade may be narrow or broad, long or short, but side notching is always well defined. It appears first in the Late Archaic zone, but continues into that of the Ceramic with higher frequency.

**TYPE #6, (Ceramic).** In this blade are seen traits, which doubtless have their source in type #3. They consist of the same narrow elongated blade with broad side notching, but differ from type #3 in one respect: lateral sides form convex arcs, as they taper to the point. It seems probable that this type is a Ceramic period modification of the preceding type #3, as it has appeared in plowed ground, but in neither of the Archaic zones.

**TYPE #7, (Ceramic).** This point in medium and small sizes is usually relatively short. It has a triangular shape, distinctly side notched near the base, which is thinned and convex in shape. It always appears in the Ceramic zone, of which it is believed to be diagnostic.

**KNIFE BLADES — Fig. 2**

Besides projectiles, knives were necessary equipment for man's survival, and so have been placed next in order of importance for description and analysis. Many things besides meat had to be cut, and different styles of blades were devised in order to perform the various cutting functions. However, one trait common to all blades is a serrated cutting edge, with the exception of the ground slate Ulu. Often, this serration occurs on more than one edge of the blade, and sometimes it is so minute as to escape notice of any but the most discerning eye. Then too, serrations vary from small to large in size, depending upon the function of the knife blade being made. Some blades were hafted, as evidenced by their recognizable stems, while others were merely held in the hand. Where the line was drawn cannot always be determined by just examining a specimen. Actual use through trial and error is often the only way to arrive at a decision. In the field of woodworking, special knife blades, as illustrated, have been used successfully in preparing and fitting shafts and handles to artifacts; are believed to be woodworking knives.

**STEMLESS KNIFE, (Late Archaic and Ceramic).** This blade has one slightly convex, irregularly chipped serrated edge, with the opposite edge sometimes roughly serrated and quite straight. They meet in a stubby point at one end, and in an irregular rounded expanded base at the other, with-
Fig. 2. KNIFE BLADES. From Narragansett Bay and Buzzards Bay areas, Connecticut Valley, and Plymouth, Mass.
out development of a worked stem. The blade tends to be elongated without apparent symmetry. It appears first in the Late Archaic zone and in stone bowl quarries; occurs less frequently in the Ceramic zone.

**STEM KNIFE, (Late Archaic and Ceramic).** This blade has a well-defined stem at one end, with the other brought to a blunt point. This type of knife has several different styles of stems resembling those of projectile points, some of which are illustrated. It occurs first on the Late Archaic level, usually with ill-defined stems, indicating an irregular beginning. During the following Ceramic Age it assumes refinement with more well-defined stems.

**LEAF KNIFE, (Early Archaic), (Late Archaic — Double Pointed Type).** In this category are knives with symmetrical expanded blades, relatively broad and long, and usually quite thin and chipped with care. Both edges are meticulously serrated, meeting in a point at one end; are either truncated or rounded at the other. In some cases, both ends are pointed, as is illustrated in Bulletin of the Massachusetts Archaeological Society, Vol. 10, No. 2, showing a recovery from Plymouth, Mass. Supporting evidence is found in recovery at Wapanucket 6, Mass., of a large ground slate blade in association with remains of the first phase of the Late Archaic. It is similar to an Ulu, except that its back is convex to an extent equal to that of its cutting blade. This produces a point at each end, quite similar in shape to the double pointed Leaf knife just referred to. Recently, a double pointed specimen appeared at a South Carver site in such a way — fractured by heat, with two Eared #2 points — as to support belief of a Late Archaic association.

**ULU, (Early Archaic).** This type of knife usually has a semi-circular blade with a more or less straight back. When this is sharply defined — sometimes with elemental decoration — it is called a comb-back. The blade is usually made of slate, chipped and pecked into shape, then ground smooth all over, with a honed cutting edge. The blade is quite thin and at times is perforated with two or more holes by grinding — not drilled — directly below the comb-back. They are thought to have been used for thongs, which bound the blade to a bone or wood handle. When no holes appear, the blade may have been either held in the hand, or lashed to a handle made of a split stick, with thongs wound around each end. Similar knives are found among Eskimo tools of Alaska, where they are called ulus. Their earliest appearance in New England, stratigraphically, is in the Early Archaic zone — recently at the Washakumaug site, Framingham, Mass. — of which they are held to be diagnostic. They have never been found in stone bowl quarries of the Late Archaic, where knives of the Stemless and Stem types appear.

**FLAKE KNIFE, (Paleo-American through Ceramic).** In this class group are relatively small flakes up to about 2” in length, usually of flint, one or more edges of which are retouched with minute serrations. Sometimes, such reworking is so indistinct as to escape notice, as seen in the last exhibit. These knives are of frequent occurrence at low levels, where they are associated with Paleo artifacts. Occasionally, a flake knife made of flint quartzite or argillite may appear on later culture levels, including that of the Ceramic.

**NOTCHER, (Late Archaic and Ceramic).** This blade is believed to be a woodworking knife, principally used in hafting. It is variously shaped from igneous stones, with one thinned straight edge roughly serrated. Usually, the opposite edge is somewhat thicker, depending upon the shape of the original spall. It seems likely that the Notcher was held with a forefinger grip and used with a sawing motion to cut a notch in the end of shafts and handles, while the wood was green, for insertion of blades. It occurs in the last two culture zones.

**ROUGHING KNIFE.** Another woodworking tool, this blade is made of a medium thick spall of convenient size to fit in the hand. It is of igneous stones, and has large coarse serrations on one or more edges. It may be used in preparing wooden handles for hafts, but only when the wood is green. Its function, probably, was to cut away unwanted bulges in straightening the handle. This is done with oblique slashes drawn toward the body. Its culture affiliations have not as yet been clarified.
It has been said that drills, or perforators, were one of man’s earliest tools. If so, it seems probable that the human impulse to make holes in man-created products was common to primitive people the world over. Here in New England, certain well-defined and carefully worked drills with different shaped bases frequently occur. Names selected for each describe the essential shape of their bases. Accompanying illustrations should suffice, without further description, to characterize the different basal types, some of which resemble those of projectile points. However, it is important to present probable culture relations for each, as has been gleaned from site excavations over the past decade. While knowledge about some is limited, most types can be placed with considerable assurance.

Early Archaic seems to embrace the Expanded drill.

Late Archaic has been found to include several types: T-base, Tapered-stem, Plain, Eared, and Cross drills, also the Pipe Bowl reamer.

Ceramic is known to embrace the Crescent and probably Side-notched drills, also the Pipe Bowl reamer, as stone pipe making continued through much of this age. And the Flake drill with unworked base is common to all three culture periods. The Diamond drill is presumed to belong to the Late Archaic along with the other types mentioned, although, as of now, there is no evidence to support this hypothesis.

As yet, drills have not been identified with the Paleo-American culture, although limited evidence suggests the possibility of their presence.

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**Fig. 3.** DRILLS. From Narragansett Bay area, Connecticut Valley, and Plymouth, Mass.
Some of the more interesting stone tools of primitive peoples are those which served as wood or charred wood cutting implements. They are frequently found to have large proportions for heavy work, although small sizes also exist, suitable for use in making small wood products. Some of the blades shown in this section have been found associated with evidence of various cultures of which they are
considered to be diagnostic. Usually, they are made from igneous stones, but at times hard formed sandstone is used. Some of these implements are believed to have been employed in early times for gouging out and shaping logs with the aid of fire, in the making of dugouts. At least, the Full Grooved ax, Plain gouge, Celt, and Hatchet were so used in Late Archaic days, as shown by evidence at the Eaton dugout workshop site, Bulletin of the Massachusetts Archaeological Society, Vol. 22, Nos. 3 & 4.

CHANNELED GOUGE, (Early Archaic). Distinguishing traits of this implement are a shallow, but well defined hollowed-out bit at one end; a relatively long stem at the other, usually terminated by a knobbed enlargement; a wide channel across the back of the stem with flat trough to hold thongs for its haft — sometimes only faintly worked; and a parallel-sided to flaring bit. For sometime this gouge has been thought to belong to the Early Archaic, transitional from the Paleo, because of its significant appearance on this low level at an upland site in Rhode Island. More recently it has occurred again — 2 specimens — on a corresponding early level at a Carver, Mass. upland site, which seems to confirm its value as a diagnostic of this culture, possibly overlapping from the Paleo.

GROOVED GOUGE, (Late Archaic). In the case of this gouge, hollowing of the blade is usually moderate. Its length is relatively short with usually a slightly out-flaring bit. Its most outstanding trait is a well-defined groove — sometimes two — extending across the back of the stem for hafting thongs. This gouge quite definitely belongs to the Late Archaic, since it has occurred repeatedly in this zone, but better yet, has been recovered from a Connecticut stone bowl quarry.

KNOBBED GOUGE. This type of gouge often has a deeply hollowed-out area extending the entire length of the implement, which has a uniform taper toward its head. The most outstanding trait is one or more small nipple-like knobs on the back of the stem, where a groove for hafting would normally occur. At present, knowledge is lacking as to which culture this type belongs.

PLAIN GOUGE. In this group are short and long gouges, the latter not shown for lack of space. They are different from all other types in that their stems are left plain without grooving of any kind. Their hollowed-out faces may extend from end to end, or only half way. Recoveries from some sites suggest that these blades may belong to the Late Archaic, overlapping from the Early Archaic. However, so far as is known, they have not been recovered from any stone bowl quarry.

ADZ. This implement is somewhat similar to the gouge, except it has a narrower cutting bit that is beveled with one flat face, usually ground to a cutting edge. It is thick throughout, and most always has one groove across the back of its stem for hafting thongs. Two variations are illustrated without grooves. One has an oblique hump on its back, the other on its face. The former has sometimes been called a Humpback adz. The culture to which such blades belong is not clear at this time. Exhibits are from the Connecticut Valley of Massachusetts, where they occasionally occur as surface finds.

AX, CELT, AND HATCHET BLADES — Fig. 5

Another group of wood cutting tools, contain ax blades of different shapes and sizes. The larger ones were probably used in felling sizable trees with the aid of fire. The smaller ones, no doubt, were employed in doing lesser work and in making small wooden products. For these various jobs, those blades were used, which have ground bits, while the Chipped ax might have been utilized for slashing brush in preparing camp. These implements are usually made of hard fine grained igneous stones, except the latter, which is generally made of less durable stones, such as impure granite, argillite, or sandstone.

FULL-GROOVED AX, (Late Archaic). In this category are small and large ax blades. In general, they are relatively thick; are shaped with sides that taper toward the bit, which is ground to a cutting edge in most cases. A well-defined groove is pecked out on both sides of the head, usually extending over both faces as well, sometimes ground smooth — occasionally two grooves are present. It should be noted that for inclusion in this class an ax blade does not need to have the groove completely encircling its head. Side grooving, as shown by the first exhibit, is sufficient for qualification. This type of ax has been recovered from stone bowl quarries and from their corresponding culture level in sufficient quantity to make it an impressive diagnostic of Late Archaic industrial times.
Fig. 5. AX, CELT, AND HATCHET BLADES. From Narragansett Bay area, Connecticut Valley, Sudbury River Valley, and Central Massachusetts.
3/4 GROOVED AX. This type of ax should doubtless be considered a component of the Grooved ax family. It is distinguished from the Full-grooved type by a groove, which only extends around three sides of the head. The fourth side is left ungrooved, possibly for insertion of a wedge to tighten the haft. It is seldom found in the New England area, and so far in no stone bowl quarry.

CHIPPED AX. Usually large in size, this ax blade resembles modern axes in that it generally has an expanded blade with a heel. As far as is known, it has not appeared during excavations in a position that would substantiate its culture source, although it is thought to belong to the Ceramic.

HATCHET, (Late Archaic and Ceramic). This group of blades contains implements made of relatively flat igneous stones, frequently of basalt. Often, they have shapes resembling small thin axes, with chipped shanks and with bits ground to a cutting edge. They may have almost any shape, usually with an expanded bit like a hatchet, although at times, they have parallel sides. Their frequency is high in the Connecticut Valley, but in areas toward the sea coast they occur less frequently. They appear first, stratigraphically, in the Late Archaic zone, and recently, the type has appeared in close association with the Full-grooved ax. Evidently, they extended down through Ceramic times, for it seems likely that the 1634 commentator, William Wood, refers to them when he says: “Their Cannows be made of — Pinetrees — burned hollow, scraping them smooth with Clam-shells — cutting their out-sides with stone-hatchets.”

CELT, (Late Archaic and Ceramic). Implements in this group are wood-cutting blades. They were first pecked into shape, then ground smooth over most surfaces. This tool has a honed cutting edge with its median centrally located without a bevel. Its sides are either somewhat parallel or flaring toward the bit, and it occurs in large and quite small sizes, but always without grooving on its stem. It has been recovered from the last two culture levels; may have existed in the Early Archaic, as well. Because of its high frequency, it was doubtless a most useful implement, and is thought to have been employed for all kinds of woodworking. Some celts probably were hafted, while others were held in the hand and driven with a mallet.

CLUBS — Fig. 6

It should be remembered that early man was fundamentally a hunter, and did not become a fighter in a military sense until populations had increased to a point where small family groups were not sufficient to protect their hunting and fishing rights. This must have been the situation that brought about formation of tribes, following which, inter-tribal warfare developed. There is now evidence from excavated sites of a kind to suggest that the advent of this sort of fighting developed after the transition from stone bowl to ceramic pot manufacture, or when the Late Archaic came to a close. This being a well established postulation, the question naturally arises: What was the purpose of the clubs, which appear in Archaic zones of occupation?

At a Rhode Island upland site a number of clubs were recovered on most levels. Excavated evidence seems to support the postulation that this was exclusively a small hunting site. With this in mind, an idea has become a conviction that the several clubs found there were employed in hunting; actually had a specific function in killing the quarry. The conception is that clubs in general were basically hunting weapons, which may have been used to dispatch game when brought to bay, and were only incidentally used as fighting weapons with the coming of warfare in the Ceramic Age. This thesis will be clarified still further during the following descriptions of club types.

HATCHET CLUB, (Ceramic). This implement resembles to some extent the present day hatchet, with a somewhat flaring bit and the suggestion of a heel. Its head tends to taper toward a blunted point, but unlike the Hatchet, the blade is always chipped into shape; is never ground. It is made of durable igneous stones, such as pegmatite, quartz, and basalt, although frequently it is made of impure granite. This type of club has always appeared in the Ceramic zone, never earlier. Therefore, it is the only type to have the probable distinction of playing a dual role as a hunting and military weapon. The fourth exhibit of basalt seems well suited for performing the latter role. As a matter of fact, it resembles so much the iron tomahawk of colonial days, it could well be a copy of it in Late Ceramic contact times.
Fig. 6. CLUBS. From Narragansett Bay area, Connecticut Valley, Plymouth, Mass., and Maine (Ball-Headed Club).
PRONGED CLUB, (Early and Late Archaic). In this class of implements are clubs formed by chipping only. They have bits drawn to a stubby point or prong, with heads that have well-defined side notches for hafting. Made of durable stones, like basalt and granite, they have appeared on the Late Archaic level, while exhibit two is from a stone bowl quarry of western Massachusetts. Although only relatively small in size, their side notching resembles that of Grooved axes, which seems to add emphasis to their affiliation with the Late Archaic era. It is also probable from fragmentary evidence that this type of club was used by hunters of the Early Archaic.

BALL-HEADED CLUB, (Ceramic). This type of club is often made from a small cobbles with rounded ends, with nearly the shape desired. A small amount of pecking was all that was needed to produce a groove about the stone for hafting. So far as is known, recovery of this club has not occurred at excavated sites; exhibit is a surface find from the Isle au Haut in Maine. A fully hafted specimen with a rawhide cover sewed around a wooden handle was found in Connecticut, buried in a stone cist. It was in a high state of deterioration, but with great care was preserved and is now in the Norris Bull collection at the University of Connecticut. It must be conceded that such a recovery could not have extended as far back as the Archaic; more likely belongs to the Late Ceramic. Therefore, this type of club appears to have more of a military connotation than one of hunting.

WAR-CLUB PRONG, (Ceramic). This kind of implement is a relatively small chipped stone, symmetrically shaped, with a worked point at one end and an irregularly shaped head at the other. It is quite thick at the head and tapers abruptly to its stubby point. Made of igneous stones like felsite, quartzite, and quartz, it occurs only in the Ceramic zone, where it has relative high frequency. The probability that it was sunk in the end of a wooden handle, expressly as a war club, is supported by early commentators. Rogers, an early reporter, says: “Another instrument of great esteem and importance among them is the tomahawk. This weapon is much like a hatchet, having a long stem or handle; the head is a round ball or knob of solid wood, well enough calculated to knock men’s brains out, which on the other side of the stem terminates in a point where the edge would be, if made a hatchet, which point is set a little hooking or coming toward the stem; and near the center, where the stem or handle pierces the head another point projects forward of a considerable length, which serves to thrust with like a spear or pike pole.” Might not exhibit two be such a thrusting point as is referred to in this statement?

STONE SINKERS — Fig. 7

In early times, man was not only a hunter but also a fisherman. While this is a probable assumption, information is less clear as to the methods he employed in taking fish. Primitive peoples of the earth today use various kinds of equipment, which may or may not be suggestive of fishing gear of prehistoric New England. Perhaps the best way to derive information about it is to examine certain stone artifacts, which appear repeatedly at excavated sites, and study their relation to certain diagnostic evidence. By such research, four different types of implements have been singled out as probable sinkers, used in fishing with lines or nets. But when it comes to determining to which of these two ways of taking fish the several different weights apply, the problem becomes more complex. Whatever may be said will not of course satisfy everyone, and yet, excavated evidence seems convincing enough to venture a guess in an effort to assess the situation. However, it should doubtless be born in mind that fishing gear of the Northeast may not have followed the same pattern as that of other sections of the East.

CLASSIC PLUMMET, (Early Archaic). Among the artifacts found on the low level of the Early Archaic is this symmetrical weight, shaped like a modern plumb bob. It is pecked into shape; is sometimes ground smooth over all. It occurs in numerous shapes all expertly proportioned with a well-worked small knob at the top; is considered diagnostic of this age. The base of these weights in most specimens tends to be pointed, although some are somewhat rounded. Stones used in their manufacture include impure granite, sandstone and other semi-hard materials, but never steatite or chlorite, so far as is known. It is thought probable that these stone weights were used as fishline sinkers with
hooks attached, the bait being smeared on the stone as a lure. The pointed or rounded base would have served to guide the weight straight down as it sank, with greater efficiency resulting.

**CLUMSY PLUMMET, (Late Archaic).** This weight lacks symmetry and is irregularly pecked, with an unsightly large knob. Otherwise it resembles its classic counterpart. Occasionally, it contains encircling cuts as though made for holding hook lashings in place. Sometimes, it is made from a pebble without reshaping, while at other times it is pecked from stone materials such as, argillite, sandstone, schist, steatite, and chlorite. The last two stones occur in stone bowl quarries, which are presumed to be their source. This culturally places this plummet type in the Late Archaic, influenced very largely by the stone bowl industry. Furthermore, one Clumsy plummet appeared alongside a Full Grooved ax in a red ochre deposit within a stone cist: exhibit three. This quite definitely connects its culture position with that of the Grooved ax. The existence of this modified plummet seems to stem from a new tradition of the late Archaic, which displaced that of the Early Archaic. While its new implement traits largely replaced those of...
the former occupants, certain tools of the Early Archaics apparently were found of sufficient value to warrant their adoption, even though modified; the Classic plummet is one of them. However, the fact that its modified likeness lacks the original symmetry and aesthetic proportions of the former, seems to support the thesis that the copy is the work of people, who were not the inventors of the trait. In other words, the new artisans, not being the creators of the plummet, lacked the necessary incentive to make their copies conform to the original classic shape.

**GROOVED WEIGHT, (Late Archaic).** Artifacts in this class consist of small and large cobbles with a well-defined groove pecked longitudinally around the stone. Occasionally, a second groove encircles the stone, transversely at the center. This artifact has appeared on the Late Archaic level, and is thought to have been used for a line sinker. Perhaps, it was a quickly made substitute for the Clumsy plummet. Cobbles with a groove enclosing them transversely are more likely to be Ball-headed clubs, if occurring in the Ceramic zone.

**PERFORATED WEIGHT, (Late Archaic).** This may be another kind of line sinker made from a small or large pebble with a perforation pecked through its center. It appears first in the late Archaic zone, but its use is still in question, although, it seems likely that it was employed for fishing.

**SIDE- NOTCHED WEIGHT, (Ceramic).** This simple artifact consists of a pebble or small core, which has notches roughly chipped out of two opposite sides. It occurs in quantity in plowed areas of some river, lake and bay sites; also has appeared in the Ceramic zone. Considering these facts, and because this weight could be quickly made, it is believed by some that it was used for a net sinker. If this is so, then knowledge of taking fish in nets probably arrived in the Northeast during the Ceramic Age.

**ATLATL WEIGHTS — Fig. 8**

It is now generally accepted as a result of evidence from certain burials in the Southeast and elsewhere, that the spear-throwing stick (atlatl) often had a stone weight attached. In the Northeast such weights occur in four different types. They have been recovered from various excavations associated with evidence having functional significance. As a result, the thinking of most research analysts has been considerably changed from the days when these weights were thought of as bannerstones. Most of the forms are perforated by a ¼ to ½” hole, running transversely through their mid-section. Invariably they are ground and polished and have fanciful shapes, suggesting a use not only as atlatl weights, but as good luck trappings to assist the hunter in hitting his quarry. Hence, they seem to appear as part of his hunting equipment, calculated to improve his kill.

**WING, (Late Archaic).** In this group are forms with out-spreading sides resembling wings. Their variations are limitless; only a few are illustrated for lack of space. The first and next to the last exhibits came from small mountainous hunting sites, which tends to show that they served as hunting gear, not as ceremonial bannerstones. Furthermore, the latter was from the Ragged Mountain stone bowl quarry in Connecticut, providing additional evidence that this Wing type belongs to the Late Archaic. Wing atlatl weights are made of stones often having either beautiful graining, attractive coloration, or fanciful spotted surfaces. Usually, easily worked stones were utilized, such as sandstone, and other sedimentary varieties. In most cases, surface grinding has been carried to a high state of polish, which indicates great value was placed on such weights.

**WHALEY AIL, (Late Archaic).** This atlatl weight has a perforation, as do most specimens of the Wing type, but not all — some have a groove instead — and is believed to be allied to it; the first exhibit was excavated from the same Late Archaic level as that of the Wing type. However, this type differs in having wings that extend to points with a spread resembling a whale's tail. Stones for these weights were selected with the same eye for beauty, as in the case of the Wing type.

**BOWTIE, (Late Archaic).** Still another type of atlatl weight is found in this form, which is without a perforation. Its wide notched-out area, centrally located on both sides, probably secured thongs that lashed it to the atlatl. This specimen appeared on the Late Archaic level. It is made of argillite, chipped into shape, but not ground. However,
Fig. 8. ATLATL WEIGHTS. From Narragansett Bay area, Sudbury River Valley, and Farmington River Valley, Conn.
other recovered specimens have been ground and polished with more or less truncated ends; are made of fine grained sandstone.

**OVAL, (Early Archaic).** This atlatl weight is ground and polished. It tends to be more or less oval in shape, although at times it assumes slightly more aesthetic proportions. Frequently, grooves appear, possibly for decoration, while invariably one face is either perceptibly concave or thinned. By actual hafting this weight, it has been discovered that this thinning modification was required in order to permit the forefingers of the throwing hand to grasp the spear shaft. Otherwise the excessive surface bulge of the oval shaped pebble, from which most were made, would have held the shaft away and prevented finger contact. This weight is made of stones without aesthetic markings, a departure from the Wing type, which came later. Oval atlatl weights have appeared, stratigraphically, at a level below that of the Late Archaic, associated with diagnostic artifacts of the Early Archaic.

**POUNDING STONES — Fig. 9**

Percussion flaking was the basic method used in shaping most stone artifacts, and dates back to the beginning of man. When the first man picked up two stones, and with one cracked flakes off the other to make it into a more effective tool or weapon, he advanced himself by that much beyond the status of ape. Ever since then, man has been pounding with stones. Principally, stones have been the means of chipping other stones into various shapes of artifacts, but as industries developed, they helped in the making of such articles as baskets, wooden bowls, dugouts, log mortars, and ceramic pots. Down through the years of man's struggle for survival he learned a great deal about how to use pounding stones. He soon realized that for making a small artifact a correspondingly small stone was required in order not to shatter the object. And for some kinds of activity, such as kneading clay, he readily adopted other larger forms of pounders. In the course of such endeavors, he developed varied techniques, which enabled him to do finer and more exact work. Only a few of the more well-defined types of pounders have been illustrated, as obviously, many kinds must of necessity remain unnoticed, as they are so roughly formed from hammering as to be scarcely recognizable, including Anvil-
stones, used sometimes as a base for operations. When it comes to possible culture connections of these tools, it may be readily understood that only those having special traits and occurring in close association with some recognized industry can be separated into culture periods; ordinary pounding stones, as such, were common to all cultures.

**GROOVED HAMMERSTONE.** This type of pounder occurs in large and small sizes. Usually, it is a cobblestone with a pecked groove encircling it transversely; wear from hammering shows at one end or both ends. When it has large proportions, it is often referred to as a Maul and obviously performed heavy duty operations, such as driving stakes, or splitting wood into staves for basket making. Its chief distinguishing trait is the full groove. This accommodated thongs, which lashed it to a handle. It is usually made of impure granite, sandstone, or other-like stones. Its culture affiliations are as yet unknown.

**HAMMERSTONE.** (All culture periods). In this group of pounders, to be found at all culture levels, are stones with irregular forms and sizes. As the shape was formed fortuitously, as a result of pounding, it has little or no significance. Size is the important factor in assessing the functions of this tool. In the past, little thought has been given to this particular, but in recent years certain recoveries of the implement have appeared in such a way as to throw new light on the subject. For example, at the Westfield stone bowl quarry a white quartz tool quarry-workshop was discovered. Here cached away in a rock crevice were 15 tiny End picks, all carefully worked. A significant feature of the recovery was the presence of three or four relatively small pieces of quartz, each being battered by hammering. The two smallest exhibits are from this cache. This demonstrates beyond doubt that minute stones were required and used as hammers, when making such small tools as those of this cache. For pounders of the Hammerstone type, only hard igneous stones were used, like quartz, quartzite, felsite, and basalt.

**PITTED POUNDINGSTONE, (Ceramic).** This type of pounding stone usually occurs in large sizes made from sandstone or impure granite cobbles. It has wide circular pits pecked out on its two opposite faces, and sometimes on both of its sides as well; roughened ends appear from pounding, occasionally with worn facets showing. It has occurred associated so closely with pottery making that it is believed to have been employed, among other possible functions, in crushing and kneading clay, preparatory for the making of ceramic pots. The pits in this pounder are presumed to have served for finger grips. This implement should not be confused with other so-called pitted stones, with smaller and deeper pits. Four were found in close association with a platter in the living area of a Connecticut stone bowl quarry. Hickory nut trees, of which there are a great number at the site, suggest that these pitted stones may have been used as anvils for cracking nuts in preparing a meal. They, too, are made from semi-durable cobbles, but show no signs of wear from pounding along their edges.

Rubbing or grinding is another manual action as natural to man as that of pounding. Therefore, it does not seem strange that artifacts appear on various levels in several forms, which bear signs of having been subjected to abrasion. However, they have but simple shapes produced by use, not by design. They are thought to have been utilized by artifact makers — as were pounders — in fashioning some of their various implements and other products. As with all classifications, a few of these types can be connected with certain cultures, while others cannot. And there doubtless are still other more ill-defined rubbing stones used for certain kinds of abrasion, such as smoothing interiors of ceramic pots, which lack distinctive traits for identification. They usually appear as pebbles in various shapes with smooth facets produced by wear from rubbing, or with irregular grooves, thought to have been used for sharpening bone awls.

**WHETSTONE.** As the name implies, this type of rubbing stone has over-all traits of its modern counterpart. It measures 6-8" in length and is relatively slender. Sometimes a hole is perforated through one end by pecking, perhaps for a thong with which to hang it up when not in use. Uniformly worn edges of the stone indicate wear from long even lengthwise strokes of rubbing. Because
In this class of rubbing stones are specialized tools with pecked-out grooves, sometimes worn from constant rubbing. They consist of two kinds. The first is made from a small chunk of coarse grained stone, like granite, pegmatite, quartz, or conglomerate. It has a wide pecked-out groove on one face, often showing signs of wear. This tool is believed to have been used like a file on large shafts and handles being prepared for hafting. Its function doubtless was to remove knots and unwanted bulges, but only while the wood was green. The second kind is made of a piece of stone, sometimes a pebble, having abrasive qualities, but finer grained than that of the first, such as sandstone, schist, or argillite. This abrader has one or more narrow grooves on one face, each measuring about \( \frac{1}{8} \)" across. They are thought to have served in smoothing arrow shafts, the equivalent of modern sanding, but only after the wood had become dry.

**Abradingstone, (Late Archaic).** Irregular, roughly flaked stones with worn rounded surfaces are often unnoticed by the casual collector. However, artifacts of this sort exist for those with a keen eye, and a desire to examine every phase of primitive activity. Such stones are believed to have been rubbing stones with definite functions. Both exhibits came from a Rhode Island stone bowl quarry. Such tools are frequently found at quarries, where they were probably used for thinning the walls of stone bowls. They are made of stones having inherent, hard, sharp cutting facets. Such stones as crystalline quartz, and conglomerate, (quartzite embedded with quartz crystals), like those exhibited, are the kind of stones to be looked for. Such Abradingstones were not only used in finishing stone bowls, but doubtless performed similar functions in the making of wooden products as well.

Because of their use in steatite quarries they belong to the Late Archaic; have not, as yet, been identified with other cultures.

**Shaft Abrader.** In this class of rubbing stones are specialized tools with pecked-out grooves, sometimes worn from constant rubbing. They consist of two kinds. The first is made from a small chunk of coarse grained stone, like granite, pegmatite, quartz, or conglomerate. It has a wide pecked-out groove on one face, often showing signs of wear. This tool is believed to have been used like a file on large shafts and handles being prepared for hafting. Its function doubtless was to remove knots and unwanted bulges, but only while the wood was green. The second kind is made of a piece of stone, sometimes a pebble, having abrasive qualities, but finer grained than that of the first, such as sandstone, schist, or argillite. This abrader has one or more narrow grooves on one face, each measuring about \( \frac{1}{8} \)" across. They are thought to have served in smoothing arrow shafts, the equivalent of modern sanding, but only after the wood had become dry. Woodworking abraders of the coarse variety are found at all culture levels. However, the second kind has appeared only in the Late Archaic zone toward its close. It is presumed to have been in use...
throughout the Ceramic to judge from its frequent appearance in plowed fields.

SINEWSTONE, (Ceramic). Another kind of rubbing stone is displayed by this type. It is always made of hard igneous stones, usually fine grained quartz or felsite. It consists of a block of stone of a convenient size for hand use. On its surface is a series of narrow grooves, or one broad one, worn smooth by persistent rubbing. While the exact function of this tool is unknown, it is thought by many to have been employed in rubbing strips of sinew to soften them in preparation for use as bow strings. Supporting evidence is found in the fact that they have first been encountered in the Ceramic zone; a period when the use of bow-and-arrow was on the increase.

SCRAPERS — Fig. 11

Perhaps one of the most versatile tools of primitive times is an object with a sharp or rough edge, suitable for scraping. Like pounding and rubbing, the scraping motion must have been common to all peoples. Consequently, appearance at all culture levels of stone artifacts in many shapes with edges suitable for scraping is not unexpected. They form an important place in the life of primitive peoples.
today, and there is every reason to believe they always have throughout all ages. This classification has attempted to allocate the different styles into respective type groups, each with separate determining traits. As to the use to which each was put, only reason and comparison with scraping primitive techniques of today can help solve the problem. Obviously, it is the over-all smoothing of edges, when wear is present, that identifies a blade as a scraper. However, many blades made of igneous stones show no wear, either because of little use or the hard nature of the stone. But, repeated conformity of their shapes to some one of the several types, seems reason enough to classify them as scrapers.

**STEM,** (Paleo-American through Ceramics). This kind of scraper generally has an irregular stem, which may be asymmetrically placed, as for the first four exhibits, or symmetrically located at one end, as found on all the others. The former are thought to have their stems notched only on one side, so as to tilt the blade away from the handle at an obtuse angle, when lashed to it in a longitudinal groove at one end. All scrapers of both varieties have expanding convex blades, usually beveled with chips struck off from one face. The last exhibit of Hint may be the broken base of a projectile point, reworked into a scraper. The elongated exhibits presumably were hafted to the crook end of a stick, following a Dakota Indian haft of today, and used to remove hair from skins. When wear is present, it is localized at the expanded bit end, indicating operation from a fixed position in a haft. These scrapers are always made of durable igneous stones, such as quartz, quartzite, felsite, and flint. The two exhibits of flint next to the last, were recovered from Wapanucket 8 site, Assowampsett Lake, with close Paleo-American association. Scrapers similar to the other exhibits are to be found on all other culture levels.

**SHAFT,** (Early Archaic through Ceramic). This scraper may be made from a flake or from a thicker spall. In either case, it has at least one sharply chipped edge, either straight or concave, which shows signs of intentional design in its shaping. Blades of this kind were probably utilized in scraping down shafts or handles after the wood had become dry, often suggested by worn concave edges. Of course, a Flake scraper with a suitable scraping edge might have been used similarly, but is separated from this class because of its casually worked edges. Shaft scrapers are made of extremely hard stones, such as crystalline quartz, quartz crystal, and hard fine grained quartzite, as well as flint when obtainable. They occur on all culture levels extending back through Archaic times.

**STEPEEDGE,** (Early Archaic through Ceramic). Features that set this scraper apart from the others are, a more or less circular shape, having considerable thickness with one flat face. The blade is beveled, with chips struck off from its flat face. Most always it is made of quartz, although other igneous stones are sometimes used. Its presence is found in both Archaic and Ceramic zones, but its functions are problematical.

**FLAKE,** (All culture periods). Any flake of hard durable stone, which has one or more edges sharpened by reworking, usually without definition as to contour, belongs in this category. Also certain thin flakes, chipped into circular shapes the size of coins, uniface with beveled edges, sometimes with the bulb of percussion showing, are included in this group of scrapers.

**OVAL,** (Early Archaic through Ceramic). This type of scraper has an irregular oval form, and occurs in quite small as well as in large sizes. While the latter are frequently referred to as choppers, they more rightly should be called scrapers, because of their over-all worn edges. Had they been employed for chopping, edges would have developed a rougher condition, more like those of pounding stones. Furthermore, if the large ones are called choppers, what is to be done with the small ones, which are too light weight to be used as choppers, and are usually excessively worn like the large blades? It seems more realistic to place all sizes together in the same class because of their similar characteristics. They are usually made of coarse semi-durable stones like, impure granite, shale, argillite, and only occasionally of felsite. More large blades are found in the Archaic than later, while frequency of the small ones increases as the Ceramic is approached. Considering the practice of the present day Plains Indians, who use a metal counterpart of the large blade for desliming skins, it is possible that Oval scrapers had a similar function. Certainly, their stone composition is not durable enough, and their edges too thick and dull to be useful for chopping or cutting anything.
Sometime around 5,000 years ago a new tradition came into New England, brought by migrants from western or southerly located areas; this was the start of the Late Archaic. The newcomers introduced different stone artifact types, such as: Grooved ax, Grooved gouge, Stem and Stemless knives, Grooved weight, Pronged club, Wing atlatl weight, to say nothing of many types of projectile points and drills. However, these latest arrivals soon learned that close cultural contact with outside regions was difficult — was probably non-existent in those days — since natural barriers of mountains and sea tended to prevent it. Hence, industrial activities of this Late Archaic Age of the Northeast approached isolation of a sort, which must have induced independent inventive thinking. It now seems probable that steatite (soapstone) outcrops may first have been discovered here by these people, and quarries opened for the manufacture of bowls, kettles, cups, and other eating utensils. Not only steatite, but chlorite, granite, and even graphite were utilized for such products. Then, as more and more bowls were turned out, a culture center quite possibly developed in this area. Certainly, a greater variety of small industrial tools appear more frequently in New England quarries than in those further south throughout the Appalachians, while similar large tools are equally abundant. This seems to point to a higher degree of tool diversification in the northern quarries, as though they were the center of the industry. Be this as it may, the following classification of tools represents the principal types used by the quarriers. All but one of these (small black End pick from a Rhode Island site in the Late Archaic zone) came from Massachusetts and Rhode Island quarries, and probably represent a long period of tooling. This may have consumed several generations of trial and error, until these basic types emerged as the accepted tools of the industry. In 1893, when quarries were first investigated, they were thought of as having been operated by male labor, in which women had no role. Now, however, it is a demonstrable fact that women did take part. Their labor was that of loosening and removing the chip-and-dust tailings from quarry floors, to allow the men to quarry deeper on veins of steatite and chlorite. Today it is possible to envision family groups trekking to the quarry, and remaining there during the time required to peck out the various bowls they were in need of. This was no casual undertaking, but a well thought-out one with family participation, which must have become a powerful economic factor in molding many of the mores of the times. Furthermore, it was no short-lived experiment, lasting only a few hundred years. Evidence recovered up to now seems to indicate an extended period of quarrying lasting more than a thousand years. It seems certain that quarries would not have closed until the advent of pottery, when ceramics replaced stone bowl making about A.D. 300.

**END PICK, (Late Archaic).** This tool consists of large and quite small sized blocks of stone roughly shaped with a point at one end — sometimes at both ends or at one corner of the block. Most of these tools have their basal edges dulled by chipping; were held in the hand without handles. Occasionally, side notching indicates they were hafted like axes. Picks of large sizes were employed for quarrying blocks of steatite from the outcrop, while smaller ones performed the finer work of shaping the bowl. At times, some of these tools were made with chisel-like bits ⅛ to 1" in width, and are referred to by some as chisels. Actually, their function was no different from that of the End pick, and therefore, they are assumed to be a part of this category. The three smallest exhibits came from a quartz-quarry-workshop at the Westfield quarry. They were part of a cache of 15, all with lengths of ⅛ to 1 ⅞. Because of their sizable number, it is difficult to consider their function as anything other than that of pecking. For the major part of shaping bowls was accomplished with the pick, the work being completed by scraping. They could not be Gravers, as such tools are never present, and probably were not a part of the industry. Therefore, it is likely that very small tools like these were essential in pecking out small products, such as spoons, small drinking cups, and paint cups. Picks are always made of durable stones like, basalt, quartz, rhyolite, and other igneous stones, most of them obtained from outcrops at the quarries. In addition, evidence indicates that pointed stones were used in both Archaic and Ceramic ages at camp sites, in pecking into shape many kinds of stone artifacts. However, they are not considered to be a part of this classification, since they are usually, ill-defined.

**HAND GOUGE, (Late Archaic).** The implement in this class of quarry tools has a well-defined convex bit protruding from one end of a stone block. One of its faces is more or less flat, from which chips have been struck to form the other; is beveled like a scraper. Probably this tool was held in the hand and used to gouge out interiors of small bowls in the process of hollowing; its closest modern counterpart might be the scoop chisel. Apparently, it was considered indispensable, as it has appeared in most stone bowl quarries. Like all quarry tools, it is made of the toughest stones like, quartz, quartzite, or rhyolite.
Fig. 12. STONE BOWL INDUSTRIAL TOOLS. From Narragansett Bay and Connecticut Valley Quarries.
ABRADING-SCRAPER, (Late Archaic). Another useful tool, found in all quarries, occurs in large and small sizes — lack of space prevents exhibit of the latter. This tool is made from a relatively thick four-sided blade with three of its sides thinned to irregular rough edges, while the fourth side (lengthwise) is left in its original state. This becomes the handle and was sometimes enlarged by strips of hide wound around it, indicated by side notching of the exhibit. Trial tests have found this tool to perform best when applied to the interior of a bowl with a sawing-scraping motion in the hollowing process, although it might also have been used on the outside. It is made of durable stones similar to those of the Hand gouge.

SHAVER, (Late Archaic). Another efficient tool is displayed in this category. Invariably it is made of quartz, perhaps because this stone holds a sharp edge longer than other stones indigenous to this area. The Shaver appears in relatively large and small sizes. It consists of an oblong piece of quartz thinned on one side, and then chipped to a keen straight edge with at least one adjoining corner rounded. It has occurred at several quarries, and because of the rounded corner is believed to have been employed for thinning the walls of bowls from within by scraping. The rounded corner was obviously made for the purpose of preventing an otherwise pointed end from digging into the bottom of the bowl during scraping operations.

CHISEL-SCRAPER, (Late Archaic). This finishing tool has occurred at the Westfield quarry only. Several specimens appeared there in the adjoining quartz tool quarry-workshop. It is a comparatively small implement, carefully chipped with a beveled cutting bit like that of a chisel at one end. At the other end, the stem has been somewhat rounded by chipping to form the handle, free of sharp edges. As in the case of the Shaver, this small tool is always made of quartz, and would have been serviceable in the hollowing of small cups and other products.

TRIANGULAR TAILING-BREAKER, (Late Archaic). This is a woman’s tool used in loosening the trampled floor debris of the quarry. Relatively large in size, it has a triangular shape with one point used as the bit, the only one showing wear. One, or occasionally both basal points are trimmed for symmetry at either end of an oblique base. This served as a seat for the handle, one end of which was lashed to the blade. This tool occurs exclusive of any other kind of tailing-breaker in both western Massachusetts quarries; has occurred once, each, in a Rhode Island and a central Massachusetts quarry, but not at other quarries. It is made of semi-durable stones, such as granite, quartzite and pegmatite. Apparently, it had not been adopted at all quarries before stone bowl making came to a close.

SPIKED TAILING-BREAKER, (Late Archaic). Another implement used by women for breaking up quarry tailings is found in this classification. When not worn down to small proportions, as in the case of the exhibit, it is quite long and heavy. It is made from an elongated slab of stone, roughly chipped into shape with a tapering point at one end, the other end being slightly modified for a handle. Made of only moderately hard stones like granite, schist, and chlorite, taken from quarry outcrops, it is not durable enough for pecking steatite; could only have been employed against something less rigid such as tailings. This type of tailing-breaker occurs at all quarries except those in western Massachusetts, where the Triangular type appears instead.

HAND SPADE, (Late Archaic). Another tool used by women is shown in this category. It is made from a relatively flat slab of stone, suitable for hand use. The end with the widest spread is chipped so as to form a slight concavity on one face, while the other end, usually unworked, serves as the handle. Frequency of this tool is high at all quarries. Its shape indicates beyond a possible doubt that it was used in the hand as a spade, to shovel loosened tailings into baskets for removal to quarry dumps; wear always appears at the enlarged end. It is made of semi-durable stones including shale, chlorite and steatite schist, as well as thin slabs of granite schist.
Soon after the arrival of pottery making came the introduction of maize; and women became the planters. Presence of this planting industry is found in what seems to be reliable evidence: the Triangular hoe blade. It appears first with Stage 1 potsherds on the earliest Ceramic level, approximately A.D. 300. This culture period followed after the quarries closed down and clay pots were successfully made to take the place of stone bowls. However, the culture center, which formerly may have existed in New England, now had shifted to new centers in outlying regions to the west, or southwest. Ceramic ideas flowed from them, even though slowly, and with them came importation of the first seeds of maize. Implements of this female industry doubtless were inspired by women's tools of the preceding stone bowl quarrying: a traditional impulse at this time peculiar to the Northeast. Significantly, three of the four chief tools of the planters appear to be modifications of tailing-removal tools, which they resemble. They differ in most respects from planting tools in other parts of the continent.

**TRIANGULAR HOE, (Ceramic).** This seems to be the most important tool of the planters, to judge from its high frequency. Probably inspired by the Triangular tailing-breaker of the quarries, it now appears in smaller sizes for the most part. The same triangular shape is present with a thinned working point, lopped off basal points for symmetry, and an oblique base, sometimes slightly concave. Frequently, retouching occurs directly below basal points to eliminate sharp edges in accommodation for hafting thongs. This tool is made of durable stones such as, basalt, felsite, sandstone, granite, quartz and quartzite. Its popularity may have been partly due to the frequent availability of fire spalls of nearly the right shape with the essential oblique base. This tilted the blade away from the handle at an obtuse angle, providing the correct stance for the operator.

**STEM HOE, (Ceramic).** While limited in number, enough specimens of this tool have been found to warrant placing it in a separate category by itself. Its chief characteristic is a crook in the stone at the stem end, which was attached to the handle. The bit at the opposite end is thinned by chipping, and may be outflaring or shaped more like a spoon, when made from a pebble spall. Durable stones were used in its manufacture, much the same as for the Triangular type. Scarcity of the Stem hoe is due, no doubt, to the infrequent appearance of stone blanks with the required crook at one end.

**STEM SPADE, (Ceramic).** Evidence seems to support the belief that this tool, formerly held by many to be a hoe, is a spade instead. It is made from stone slabs with a thinned blade that is either pointed, rounded, or truncated. The opposite end is narrowed more or less to form a stem, which is lashed to the handle. It is made of stone schist that has spalled with somewhat of a flat face and thin proportions. It may have been used to form the oval corn hills of those days, and is undoubtedly derived from the Hand spade of the quarries.

**CORN-PLANTER, (Ceramic).** This simple tool of the planters is of considerable interest. It consists of an elongated stone 6-7” long, which has been roughly chipped into shape. The bit end has a stubby point, while the opposite end is either shaped for a hand grip, or worked to form a suitable stem for lashing to a handle. It was used for making holes in corn hills into which to drop seeds of maize, as is shown by the Lafitau drawing of 1724, Bulletin of the Massachusetts Archaeological Society, Vol. 21, Nos. 3 and 4. It is usually made from easily worked stones such as, impure granite, shale, and sandstone, and doubtless was derived from the quarry Spiked tailing-breaker. For, whereas a digging stick was used in other parts of the country, in the Northeast the Corn-planter was employed, probably inspired by the Stone Bowl tradition.

**PESTLE, (Late Archaic and Ceramic).** When this grinding implement has relatively long proportions, is well made, and sometimes has an effigy handle, it is held to be diagnostic of the Ceramic Age. However, when it is shorter, and at times more casually made, even from long cobbles, it has been found to belong to the preceding Late Archaic. In the former instance, its chief function was grinding maize, while in the latter, it was doubtless used for grinding nuts in small stone mortars. Sometimes stone mortars of various sizes were used in grinding maize, but more often, Ceramic Age mortars were made of logs with a deep hollowing at one end. Cylindrical in shape, the Pistle is made from stones like schist, and sandstone, pecked into shape and then ground relatively smooth.

Another maize grinding tool—not illustrated—is the Muller. It is made of a flat-faced cobble of convenient size for hand use, and was used to grind maize in shallow stone mortars. This kind of grinding, evidently, was infrequently used, to judge from the scarcity of these artifacts.
Fig. 13. AGRICULTURAL TOOLS. From Narragansett Bay area, Connecticut Valley, and Plymouth, Mass.
MARKING STONES — Fig. 14

In the course of man’s development of his aesthetic accomplishments, he had need of some sort of marking tools. No doubt these were nothing more than bits of wood, bone, or even one’s fingers for work with some substances. However, when working in clay, for cutting lines and for making precision series of rows of dots (dentate) to impress a design, markers made of more durable materials were required. The one that outlasted all others is stone, and is found to occur in different shapes for effecting various kinds of work.

GRAVER, (Paleo-American). This type of marker is made from a flake, usually of flint. Along one edge occurs one, and infrequently two or three nipple-like points, which have been skillfully chipped. This tool appears closely associated with Paleo remains on a low level, and is held to be diagnostic of those times. However, occasionally similar markers, but made of quartz or other indigenous stones appear on upper culture levels, which suggests that the Graver was not unknown to later peoples.

DENTATE STAMP, (Ceramic). This implement consists of a flake, which has a series of teeth chipped out on one straight edge. It may be made of any durable stone, and sometimes has its back dulled by fine chipping for a suitable finger grip: second exhibit. While its functions are not yet clarified, it is presumed to be a potter’s tool for stamping dentate designs in pottery. The second exhibit instead of being a dentate stamp, might better have served as a trailing marker for making parallel lines in pottery.

STYLUS, (Ceramic). With the advent of Stage 3 pottery, incised designs often appear cut with a sharp pointed implement. Such a tool is the Stylus, which from then on gained in popularity for incising pottery. Most any durable pointed object would have served this purpose, but occasionally a stone flake of nearly the right shape, as illustrated, with only slight retouching, occurs in the Ceramic horizon, and is believed to be a Stylus.

Over the past few years, persistent field excavations and research have located five different deposits of unusual interest. Four of these have features, which appear to place them in the same culture sphere, identified with ceremonial remains of a cremation burial complex. The Boats, Coburn, Mansion Inn, and Hawes sites all seem to exhibit secondary burials, in which red ochre was used even if sparingly. Several remarkable blades from these sites, some as much as 8 - 9" in length, were recovered along with numerous Grooved axes, and, at the Mansion Inn and Hawes sites, steatite stone bowls as well. Blades from the Coburn site — omitted from the exhibits for want of space — are similar to some of those shown. Quite a number of these blades have been deliberately broken, as if to satisfy some ceremonial rite. At the Mansion Inn site a crematory occurred in the center of a number of secondary burial deposits that lay all about. It contained numerous burned projectile blades and knives, some of which were cracked or broken. At the other three sites only secondary burial deposits were encountered, although a few burned human bone fragments and fire burned artifacts were present. Whether these large blades include knives as well as projectile points cannot be determined. But, whatever they are, the fact remains that blades of this size are seldom if ever found at camp site excavations or as surface finds. They may have been made and used expressly as sacrificial burial offer-
Fig. 15. CEREMONIAL BLADES. From Buzzards Bay and Narragansett Bay areas, and Sudbury River Valley.
ings, and therefore are placed in this special group by themselves. Undoubtedly they belong to the Late Archaic to judge from their several traits, and especially because of their association with Grooved axes and stone bowls.

Of additional significance are nine large blades, eight of Coxsackie flint and one of white quartz. They were taken from two deep deposits in which red ochre formed a part of the features. These recoveries are from Wapanucket 8 site, Assowampsett Lake, Massachusetts. Five of the blades are illustrated, depicting side notched and eared characteristics of a kind, which may link them with earlier projectile types, elsewhere. Work at this site is still in progress with hopes of locating further evidence to help establish the culture relation of these deposits.