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PREFACE

Over the more than 25 years of growth that this Society has enjoyed, many members have been active in carrying on archaeological research concerning early man's existence in the Northeast. Their most notable discoveries have been made in the field, where site after site has been excavated on a controlled basis of operations, with data carefully recorded. As a result, much has been learned about the movements of peoples both in and out of this northeastern region. Implements of the hunt and of several industries, occurring in great number, have provided much of the evidence that has enabled an ever enlarging view of the social and economic developments of early days. A comprehensive classification of these stone implements, the outgrowth of much study and experimental trials, has been published with a complete complement of illustrations, Bulletin of the Massachusetts Archaeological Society, Vol. 25, No. 1. However, to obtain a fuller understanding of what took place in pre-colonial days during the 9,000 years or more of aboriginal occupation, a study of the more creative industrial products of man's ingenuity is essential.

With this thought in mind, it seems important to carry an investigation into this other department of man's productive capabilities and find out more, if possible, about the activities and movement of peoples into the Northeast. That there was continual movement of racial strains eastward, culminating in numerous New England settlements, is quite obvious to anyone who has investigated camp site remains. But to learn more about who these settlers were, where they came from, and what became of them after they reached this area, a study of their art-inspired domestic products in addition to their utilitarian implements seems essential. While such research appears necessary, it is not an easy matter to differentiate between the many recovered articles and decide to which culture group they belong. A constant search for clues has been carried on as a means toward this end, and this has brought about some success, especially during the last decade.

Contrary to the usual practice of publishing in the same book a combined account of tools and domestic products, this monograph concerns itself with man's productive accomplishments of ceremonial and domestic goods, exclusive of anything else. It appears as a sequel to the stone implement classification formerly published by this Society. It is hoped that through the separation of these two essential groups of artifacts, greater emphasis may be had, as it is directed to one or the other without interference of interests. While some domestic goods destroyed by rot are not included because they were made of destructible organic materials, such as wood, bark, hemp, and hide, as complete a showing as possible is illustrated of articles made largely of stone, with a few of preserved organic substances. However, a wide range of variations in each classification is not attempted, since such differences are limitless. Instead, a selective display is presented to illustrate some of the more important traits.

As in the case of the implement classification, culture periods referred to in this monograph and the approximate starting date for each are as follows: Paleo-American (mastodon hunters) (9,000 years ago), Early Archaic (caribou hunters) (6,500 years ago), Late Archaic (Stone Bowl) (5,000 years ago), and Ceramic (Woodland) (1,700 years ago). Stratigraphically, certain implement changes mark the termination of one and the beginning of another, although some trait overlapping takes place. This is especially true between the Late Archaic and Ceramic ages, which denotes racial continuity. Conversely, lack of trait overlapping between the early and Late Archaic ages suggests lack of racial continuity, implying racial replacement by a people with a new tradition.

Illustrations are faithful reproductions by the author of actual recoveries largely from central New England, many of which are now on display in the Bronson Museum. They are drawn full size, except in the case of some stone and all ceramic vessels, by pen-and-ink techniques or combination of techniques to produce shaded effects resembling original surfaces as closely as possible. Unavoidably, many of the artifacts were recovered in a broken condition, and at times only partially whole. In such cases, the work of illustrating took place following that of restoration. This was attempted only for those objects with enough of their original form intact to enable reconstruction of missing areas without resorting to guesswork. Printed captions under artifact groups indicate which exhibits, if any, have undergone major restoration.
Throughout man's long climb from animal beginnings, he has been known in different culture periods by his works. At first, and for countless millennia he could do little more than develop tools and weapons for his survival. But after limitless ages he emerged into a higher state of being in which his thoughts turned at times to producing more aesthetic goods for domestic use. Also, somewhere along the way he began to wonder about natural phenomena such as lightning and thunder. Sooner or later he attempted to explain his connection with all such mysteries of nature. In the course of his thinking, he conceived of certain spirits as responsible for such phenomena, while others were thought to be powerful enough to combat dangers beyond his control. Evil spirits were believed responsible for catastrophe, defeat, and death, while good spirits brought about recovery from sickness, success in the hunt, and victories of all kinds. In the end, man became humble before this all-powerful spirit-controlled world, and began to devise ways and means of receiving sanction from the spirits. For he conceived himself as a part of nature under supernatural protection, as long as he kept his place in the scheme of things.

As a result of such beliefs, cults were formed to gain favors of one kind or another, and as an aid to such action, numerous objects were devised, such as pendants and fetishes. Some were intended to drive away an evil spirit, while others were to appease some imaginary angry one. Numerous ceremonial objects were used in this way attached to different parts of the body as fancy might dictate. In the following pages, certain ceremonial charms are illustrated, doubtless only a small part of such goods.

While these ritualistic products are important, perhaps those objects made expressly for household use should be considered of even greater importance. For they helped not only to sustain life in some instances, but also served to advance the cultural status of the people. There is almost no evidence of the existence of such goods made of durable materials until arrival of the Stone Bowl industrial era of the Late Archaic. From then on they occur in ever increasing numbers. This seems to indicate a growing desire of man, to improve his material well-being, and to satisfy a human impulse to create better and more useful products for the general welfare of society.

In searching for objects made expressly for domestic use, as apart from implements applied as tools of industry, food procurement, or warfare, few if any have been recovered among the remains of the first two cultures of New England. The earliest arrivals about 9,000 years ago—Paleo-Americans—who hunted and followed mastodons and mammoths over tundra surroundings must have been highly nomadic, and doubtless had little time or inclination to devote to development of the arts. However, while no such objects have appeared of the Paleo era in the Northeast, stone Gravers of this early age have been found, suggesting pictograph engraving, an aesthetic accomplishment, if it existed, that tended to widen the gap between man and his animal nature. And this may not be too speculative, since an engraved bone was recovered at the Paleo-Lindenmeir site in Colorado.

The New England culture period that followed about 6,500 years ago — Early Archaic — was also one in which its people were constantly on the move, probably hunting caribou which moved in herds up and down the valleys of the area. These caribou hunters, like those who went before, must have been largely concerned with activities surrounding the hunt: no domestic products of indestructible materials have been discovered that are attributed to them, although such products to a limited extent made of destructible organic materials once may have existed, but have long since disappeared.

With the coming of the next culture age, about 5,000 years ago — Late Archaic — a different situation seems to have developed. Apparently, a new race of people began coming in from the Great Lakes area at about that time with advanced ideas. Their heritage had provided them with more creative minds, which in time produced something other than implements for survival. After a period of perhaps a thousand years of settlement and slow population increase, they conceived the idea of making vessels from steatite (soapstone), and so commenced the first industrial age of New England. Quarries were opened one after another in Massachusetts, Rhode Island, and Connecticut, and in time, all were busy turning out stone bowls and other products for family use.

Kettles (Exhibit #9). Attention was first focused,
Fig. 1. STONE BOWL INDUSTRIAL PRODUCTS (1-4, 7, 9, restored). 1, Platter; 2, Spoon; 3, Cup (Wilbraham Quarry, Mass., semi-finished); 4, Cup (Oaklawn Quarry, R. I., semi-finished); 5, 6, Paint Cups (Narragansett Bay Drainage, finished); 7, Plate (Oaklawn Quarry, R. I. finished); 8, Bowl (Lakeville, Mass., finished); 9, Kettle (Fort Hill, R. I., finished).
no doubt, on larger bowls or kettles, in which liquid food recipes could be prepared. They were shaped in a more or less oval form, depending to a large extent upon the natural shape of the stone block from which they were made. Usually, they had a lug at each end, which served as handles. At first, bowls were probably roughly finished. In time, techniques were improved and ultimately some unbelievable results occurred. In the end, most kettles acquired smooth surfaces inside and out from scraping, usually forming walls with uneven thicknesses. However, occasionally a prize bowl would be made by some particularly skilled workman with even walls. One such kettle, now on display at the Bronson Museum, is 9" deep, has 3/4" thick uniform walls all over, and appears as though it were molded from clay. While kettles were usually made of steatite, occasionally they were made of chlorite and even of graphite.

**Drinking Cups and Spoons** (Exhibits #2-4). After kettles had come into being, the need for something with which to eat the new liquid foods became a necessity. As a result, Drinking cups, sometimes called Ladles, were made with a lug at one end for a finger grip, and a thinned edge at the other for convenience in drinking. Some cups were made with an ordinary utilitarian lug (Exhibit #3), while others had a more stylistic one (Exhibit #4). Evidence at all quarries thoroughly excavated shows the cup to have reached its finished shape before it became broken or consumed. It has been satisfactorily restored and is now on display in the Bronson Museum. Illustration of it reveals a well-finished dish with shallow hollowing about 6½" long. It has a flat base, which still shows marks made from stone scraping or abrading. Its 4,300 year date — a carbon-14 measure of associated charcoal — probably represents a period within the first millennium of the Late Archaic. The dish is undoubtedly a household product of an age before the making of more permanent stone vessels, since the stone bowl industry seems to have had its start somewhat later than 4,000 years ago. This is based on a recent radiocarbon measure at the Horne Hill quarry near Millbury, Bulletin, Massachusetts Archaeological Society, Vol. 27, No. 2. It is indeed fortunate that this notable dish, the only one saved of several found at the site, was successfully preserved.

At the Oakholm site on Quaboag, Lake, Brook-
From this evidence as presented, it seems likely
that the making of wooden dishes and bowls with moderate hollowing was an accomplishment of early artisans, who eventually became the Stone Bowl Makers of New England. Besides several shallow dish-like recoveries at Oakholm, two of the remains were somewhat larger than the one illustrated, with deeper hollowing resembling more the form of a bowl. This might suggest that the woodworking of this archaic period was more extensive than might be imagined. Further, it is probable that other products made of organic materials subject to rot were also in use, but have long since disappeared.

**GORGETS — Fig. 3.**

Ornaments seem to have formed an important part of personal possessions in the Late Archaic, to judge from recoveries made at numerous excavated sites. It is probable that they were on the increase toward the middle and latter part of this age. A product worthy of note in this culture period is the Gorget in its early rather chunky form (Exhibit #8). It is worked into an oblong shape and is relatively thick and unattractive. Like all products in this class, it has two holes drilled through its central area, spaced about 1” apart. As in this case, since it often appears made of steatite in this earlier phase, presumably it was first conceived and manufactured during the industrial years of stone bowl making. There is no clue, so far observed, as to its exact function. However, because of its holes, it is presumed to have been attached to a person as a badge of office, or for some other identifying purpose. As illustrated, a groove occasionally extends between the holes.

With the coming of the Ceramic Age, Gorgets had developed into attractive multi-shaped forms, large or small in size, and often were made from unusual grained stones, sometimes with variegated shades. Evidently, by then they had become highly thought of as important objects for identification or personal adornment. Illustrations in this group reveal a great diversity of shape as found in this class of products, always perforated in the central area by two holes, sometimes three or more. Literally, endless variations may be expected. The Gorget with concave sides (Exhibit #1), sometimes with concave ends as well, is known to be a trait of the Ohio Adena people, whose limited migration to the Northeast seems to have occurred soon after the beginning of the Christian era. This Reel-shaped Gorget has occurred at several eastern Adena sites, including New England. Exhibit #4, too, is a shape that has been associated with Adena. Exhibit #7, an unusual form, may represent a later development on account of its crescent-shape and refinement of styling.

While it has been suggested that these objects may have been used as a badge of office, it is just as probable that they had some ceremonial function instead. Whatever their use, all indications suggest that they were highly prized among other personal possessions. They are made from various kinds of stone, including steatite, which are relatively fine grained, soft, and of a sedimentary formation in most cases. Occasionally, a piece of slate is used, like Exhibit #7, which is nearly black, and may have been selected on account of its deep lustrous shade.

**WHALETAIL PENDANTS — Fig. 4.**

In this group are shown products, which are presumed to be pendants. Judgment is based on several outstanding characteristics, including a relatively light weight, prominent central notching of most specimens, but not all, fantastic styling with a spread of wings resembling a whale’s tail, and use of fanciful colored or marked stones. For example, Exhibits #5 and 7 are made of deep red slate, and Exhibit #8 is of black slate. Unusual prominent graining is present in three other exhibits, #2-4, which are made of argillite, a comparatively soft and easily worked stone. Deep notching, when present, is most significant, as this same trait is to be found on similarly shaped small pendants, as shown under Pendants and Beads (Fig. 11, #27,34). The Whaletail form as a large pendant may have been used for personal adornment in the performance of ceremonial rites. Supporting this belief was recovery, at Titicut in a pit containing powdered red ochre, of a Whaletail pendant (Exhibit #6) together with what seems to be a Clumsy plummet of Late Archaic times. While the use of red ochre continued to a negligible extent into the Ceramic Age, this recovery at Titicut has the appearance of being a Late Archaic deposit. Therefore, it seems to be a good speculation to place these large pendants as ceremonial ornaments of the Stone Bowl industrial era. Furthermore, if they represent a whale’s tail, their connection with this culture period seems realistic, as certain coastal evidence points to probable deep sea fishing by some of the people of this age.
Fig. 3. GORGETS (2, 6, restored). 1-3, 5, 7, 8, Narragansett Bay Drainage; 4, 6, Central Massachusetts; 9, Hingham, Mass.
Fig. 4. WHALETAIL PENDANTS (1-3, 5, 8, restored). 1, 3, 5, 6, Narragansett Bay Drainage; 2, Wayland, Mass.; 4, 7, North River Sites, Mass.; 8, Central Massachusetts.
A most intriguing recovery is this relatively thin disc made of steatite. It was found about 1940 in a plowed field at its edge nearest the stone bowl quarry at Oaklawn, R.I. In fact, the distance separating them could not be more than two hundred yards. Since camp litter is nonexistent in the field, the probability is that this disc represents a product from the quarry workings, which was accidentally dropped by the quarriers as they were conveying quarry-made products to their home camp. Nothing of this kind has ever come to light before, so far as is known, which provides no help in determining the purpose of the disc.

Since it is made of steatite and lay near the quarry, there is every reason to believe it is closely related to quarry operations of the Late Archaic. Based entirely upon this close association, one suggestion has been that it may have served as the cover of a stone bowl. However, objections to this theory come readily to mind and are based on several pertinent observations. First, almost never is a stone bowl made with an even rim. Consequently, the usual extreme undulations of the rim would make use of a flat cover wholly untenable. Second, it is difficult to imagine any reasonable purpose for the five holes, spaced around the edge of the disc, if it were used as a cover. Third, since the disc is shaped in an even ellipse, it would require a bowl with its rim in an equal ellipse to accommodate it as a cover. But this is unrealistic since stone bowls — with possibly a rare exception of which the writer has no knowledge — at the most, have contours which only approach full elliptical shapes.

What then can be said in behalf of some other possible use? Upon careful observation, the holes of the disc are found to be drilled from the convex face through to the flat back, without being met by drilling from the reverse side, as is customary in aboriginal work. This makes the perforations appear beveled only on the face. Based upon this characteristic, the deduction seems evident that the maker of the disc was primarily concerned with the looks of the face and not the flat back. Further, it should be noted that one hole is placed deliberately at either end of the disc. Therefore, had it been suspended, either of these holes would have served well from which to tie the suspension cord. This leads to a possible conclusion that the disc was intended to be worn as a massive pendant suspended from the neck. The four remaining holes, then, might have been used from which to attach gaudy decorations, such as dyed feathers or tufts of hair. Used in this way, it might well have served for personal adornment in some ceremonial rite the maker had in mind. However, it seems more than likely that it became lost on its removal from the quarry and never fulfilled its intended mission.

When it comes to describing and analyzing this group of forms, it is much easier to show the individual characteristics of each than to imagine the use to which they were put. Obviously, except Exhibit #6, each was intended to represent some animate object. Exhibits shown in this group of illustrations reveal only a fraction of such objects that may have been made, but they will serve to show the skill of primitive artisans in modeling animate and inanimate forms.

Exhibit #2 is made of steatite and seems to depict an animal's head, probably that of a bear. But the most interesting feature of this effigy is the deep hole drilled in its back, which does not perforate its face.
This is believed to have been purposely made that way, and if so, a possible guess might be allowed. Might not the end of a stick have been placed in the hole, and the effigy, affixed to the stick in this way, have served as a ceremonial wand? The bear could well have been presumed to have exerted certain occult powers, should this wand have been employed by a medicine man.

Creatures of the sea are well represented in the collection, including a sperm whale, porpoise, and a fish. The later ( Exhibit #5) of sandstone is, of course, a pendant and may or may not have had some other significance. As for the whale and porpoise, nothing is known about the way they may have been used. The latter is made of steatite, which seems to suggest an affinity with the industrial Late Archaic. Modeling of these large sea-going creatures may suggest that they were hunted and taken by deep sea fishermen of that age, and the effigies merely represent what was uppermost in their minds; or they might have been used as ceremonial objects, which were thought to have certain occult powers.

Exhibit #1, obviously, is the face of a man. While it doubtless has no resemblance to man of those days, it exemplifies the artisan’s ability to strive for creative diversification. This human facial effigy is made of steatite, and while small, is proof that the primitive urge was present in the Northeast, as elsewhere, to attempt human reproductions. This urge may also be seen in Exhibit #3, a ceramic human figure by appliqué, possibly a doll because of its undeveloped breast. Obviously, a product of the Ceramic Age, its construction is of especial interest. First, the model was shaped from clay having medium mineral temper, and fired, resulting in a dark reddish brown form. Then a thin outer layer of clay without mineral temper was applied over the figure to produce a smooth covering. After this, it was again fired, but this time only lightly, not enough to darken the natural light gray of the clay, which has chipped off in some places.
— note lower end of right-hand leg.

Exhibit #6 appears to be a miniature reproduction of a Platform pipe. This trinket is made of steatite and probably is a product of the age of stone pipe making.

MOVABLE PICTOGRAPHS — Fig. 7.

Among the most thought-provoking remains of primitive man are the marks and writings he left on stones, recording his thoughts or events, as the case might be. The Mayas in Central America were the only occupants of the New World to develop a written language, only recently partially deciphered. However, certain other groups in North America did picture writing on immovable rocks or cliffs to a limited extent. Here in New England such remains are to be found at Brattleboro and Bellows Falls, Vt., at Machias and Bingham, Maine, as well as at various places in the Narragansett Bay Drainage. These petroglyphs consist of the outline drawings of human faces, people, animals and of great interest at Brattleboro, of the Thunderbird. This was a favorite spirit, who is supposed to have produced thunder and lightning. It has appeared reproduced in different forms at several sites in New England, and apparently was embraced quite generally in cults of the Northeast. Deciphering of pictographs seems essential to any analysis of them, but is at best most speculative. Nevertheless, an attempt will be made to suggest the meaning of the illustrated movable pictographs, with the understanding, of course, that other interpretations admittedly are possible.

Exhibit #1, now on display in the Bronson Museum, is a most absorbing piece of picture writing. This incised stone formed the cover of an underground cist, placed at the bottom of a hole dug beneath a stone hearth at Titicut, a site located on the upper reaches of the Taunton River. In the cist, buried in red powdered ochre, were a Full Grooved ax, a Clumsy plummet, and what seemed to be the white quartz engraving tool used in cutting the pictograph. The artifact contents of ax and plummet of the types they represent are diagnostic, and quite definitely indicate that the deposit was made in Late Archaic times. Cremation is known to have been practiced during this culture period with secondary burials, often with red ochre added, following the ceremony at the crematory (Wapanucket 6 site). Therefore, it seems probable that this deposit might likewise have been a secondary burial. Beside this, what more can be said as to the meaning of the picture writing?

Some time ago, Chief Crazy Bull of the Sioux — a direct descendant of Sitting Bull — visited the Bronson Museum and examined this pictograph with great interest. He was asked to present his ideas as to its meaning, since the Sioux still use picture writing on their tepees and elsewhere. After some study, he subscribed to the following interpretation.

The figure in the center is that of a man, probably holding fishing tackle, and his canoe is shown at the left in three different positions around a fixed point. This sort of repetition of an object from a pivot, indicates movement of it while being held fast; is similar in motive to the many repeated legs of the famous drawing of the running pig in a Paleolithic cave of southern France. Hence, as the canoe is shown to be in motion, while held fast at a fixed point, the meaning seems obvious that it is tipping over. The several curved lines around the axis, according to the chief, quite definitely indicate a high wind, the force that is overturning the canoe. The snake, which is drawn over all, is to show that the fisherman belonged to the snake clan.

Piecing together the circumstances suggested by the evidence and its interpretation, the following events may have taken place. A man went out to fish in his dugout, a hurricane came up, overturned the canoe, and the fisherman drowned. Either his body was never recovered, or if it was, it was cremated. The secondary burial ceremony may have taken place in the dead man’s wigwam. Here, the stone hearth was taken up, and a hole dug beneath it in which was placed the stone cist. Some survivor had the ability and urge to cut the pictograph on the stone cover in commemoration of the event. Whether or not this interpretation will satisfy everyone, it seems a logical possibility, supported as it is by a lineal descendant of the former exalted medicine man of the Hunkpapa Sioux.

Another pictograph that definitely belongs to the Late Archaic of about 4,300 years ago is Exhibit #6, since it was recovered at Wapanucket 6, which has this radiocarbon date. This is a flat smooth pebble, which has been hammered along one edge and has 7 deep cuts on the opposite side, for what purpose is problematical. Pecked and cut out on one face is the form of what presumably is intended to be the Thunderbird, although its wings are too short. Exhibit #4 from Duxbury, on the other hand, is a pendant made from a stray stone bowl fragment, and on its face is a much better rendition of the Thunderbird. As this
Fig. 7. MOVABLE PICTOGRAPHS. 1, 2, 5, 6, 8, 11, Narragansett Bay Drainage; 3, Maine; 4, Duxbury, 7, Wareham, 9, Brookfield, Mass.; 10, New Brunswick.
pendant came from a closed Ceramic site, it is clear that the ritualistic observance of the Thunderbird continued on into cult of the Ceramic Age. Exhibit #7 is still another example, lacking details as found in the others, of a Thunderbird pictograph cut on the face of a smooth flat pebble; recovered from Indian Hill in Wareham. This specimen came from the Late Archaic zone at the site.

As illustrated, pictographs often appear on small pendants in the form of animate or inanimate objects. Usually, these picture stones, it is believed, were used as fetishes having occult powers. They may have been used to induce certain desired results, such as curing a sick person, or saving its owner from harm. Exhibits #3 and #8, both doubtless belong to the Ceramic Age and may have been used 1) to induce good yields of maize in the case of #3, and 2) protection from harm by the snake spirit in the case of #8. Exhibits #2 and #5 are of interest, as indicating Christian conversion attempts of pagan natives in early colonial times. Referring to #2, the cross and altar may indicate that conversion was a success. However, for #5 the implication is different. Here are shown a cross on one face and a bird on the other, which seems to convey a duplication of interests. The probability is that conversion was accepted with reservations, i.e., the cross or Christian guarantee is supplemented by a pagan tribal spirit symbol, as a double surety of salvation. Exhibit #11 is a shaft abrading tool of sandstone. On its face is the mark of ownership indicating that it belongs to the tortoise clan. Similarly, Exhibit #9 is a slate knife with marks on its face suggestive of a deer. Here again, ownership may be indicated as belonging to the deer clan, or of course the marks may have served as a decorative feature instead. Finally, Exhibit #10, apparently, is just a decorated flat sandstone pebble. It was one of 8 engraved small pebbles recovered in what appeared as a cache, located in a shell-heap at Holt’s Point, New Brunswick, buried a foot or more in the shell. Two of the group have design motifs resembling Exhibit #10 in many respects. Obviously, because of the shell association, these engraved stones belong to the Ceramic Age, when shellfish were eaten. The one that is illustrated represents artistic designing that is well developed, with the motif symmetrically arranged to correspond to the stone’s shape. It may have served as nothing more than a lucky stone of some kind, although the design could have a meaning, since it appears essentially the same on three of the pebbles.

STONE PIPES — Fig. 8.

One of the foremost industries seems to have been that of making stone pipes. The custom of smoking, as evidenced by certain straight pipes, appears to have originated somewhere on the Pacific coast in the general vicinity of California. Ages passed before it found its way across the continent to New England. Probably it was not until the close of the Late Archaic that the first stone pipes were made in this northeastern area. By then, movement of Adena peoples from their Ohio homeland brought various types of pipes into this region. As the stone bowl quarries may still have been in operation at the time, it would not have taken long to add pipe making to the work of bowl making. This could have occurred as late as A.D. 200, as ceramics apparently did not replace stone bowl making until about A.D. 300. It is known from a Carbon-14 date of charcoal associated with pipe making at Oaklawn quarry in Rhode Island that as late as about A.D. 731 stone pipes were still being made at that quarry. However, extensive evidence there of broken pipe litter seems to indicate that pipe making had been in progress for a long time before this date.

At a few other stone bowl quarries in New England, but not all, excavated evidence clearly shows that pipes were being made to a limited extent. From this it might be deduced that pipe making arrived just as many quarries were closing, and so failed to appear at all quarries. At the same time, probably some quarries were reopened and from then on concentrated on the making of pipes. Oaklawn seems to be such a site. Still another site is a chlorite quarry in Stafford Springs, Conn., not yet excavated. At that location the dark greenish-gray chlorite is extremely fine grained, so much so that it may be readily carved with a jackknife. Exhibits #11 and #13 are made of just that sort of chlorite, which may well have come from this Connecticut source.

Altogether, four styles of pipes were manufactured: Straight, Platform, Elbow, and the Bowl-type, as shown by the illustrations. The order of sequence is known only as it appeared at the Sweet-Meadow Brook site in Rhode Island, located about 4 miles distant from the Oaklawn quarry. At that site, the Straight-form — from which Tubular pipes could have been made — was the earliest, toward the close of the Late Archaic. Then followed the Elbow and Platform styles, which seem to have been interchangeable. These extended into Stage 1 pottery times. About half way through the Stage 2 pottery zone, the Bowl-type put in its appearance (Exhibit #13). This sequence, although found at only this site, seems highly reliable and should serve well as a guide.
Fig. 8. STONE PIPES (2, 3, 6, 9, restored). 1, Quarry Layout for a Platform Pipe (Oaklawn Quarry, R. I.); 2-4, Platform Pipes (2, 3, Narragansett Bay Sites, 4, Rowley, Mass.); 5, 6, Elbow Pipes (5, Plymouth, 6, Bridgewater, Mass.); 7, Elbow Pipe-form showing bowl reaming; 8, Blocked-End, and 9, Cigar-shaped Tubular Pipes (Brookfield, Mass.); 10, 13, 14, Bowl-Type, 11, Straight, 12, Effigy, and 15, Elbow Pipes — all drilled to accommodate wooden stems (Narragansett Bay Drainage).
In regard to these pipe styles, Adena migrants in A.D. 200, and later, brought with them two straight styles of pipes; also, they may have been responsible for the other styles as well. The two Adena types are known as Blocked-end and Cigar-shaped Tubular pipes (Exhibits #9,9, respectively). When they are importations from the Adena homeland of Ohio, they are usually made of fireclay (indurated clay). Apparently, they received little acclaim from the native occupants here, with whom the Adena people merged. Search has failed to produce evidence of native-made pipes of a similar kind, except possibly in a few instances. Occasionally, recovery takes place of a Tubular pipe made of steatite, which may suggest on-the-spot manufacture from this indigenous stone, but even then the maker might have been an Adena man. Just how these pipes were used is still a mystery, but they are presumed to have been a part of the occult equipment of Adena shamans or priests.

It is of interest, now, to move to the Oaklawn quarry for the answer as to how pipes were made. Exhibit #1 from that site shows a blank of a Platform pipe in the process of being cut out of steatite. From this it may be seen that, as in this case, the outlines of the pipe, in some instances, were pecked out on the stone blank selected; chlorite was often used as well as steatite, and during later times, sandstone was sometimes used (Exhibit #14). After its shape had been outlined in this way, the stone stock was pecked away up to the outlines of the layout — in this instance the stem fractured and the form was discarded as useless. When the cutout was successfully accomplished, the emerging stage is known as the pipe-form. From here on, hollowing of the pipe bowl with a stone Reamer (Exhibit #7), and drilling of the pipe stem took place, the latter, probably by abrasion with the stick drill-and-sand technique. This was followed by shaping, thinning, and polishing to produce the final results.

Exhibit #2, a Platform pipe of steatite, is striking because of the extreme width of the flange about its bowl. It was recovered from the Stage 1 pottery zone, while Exhibit #5, an Elbow pipe of chlorite, was uncovered in a shell-filled refuse pit, also of the Ceramic Age.

On the other hand, an Elbow pipe of steatite (Exhibit #8) appeared at the top of the Late Archaic zone at Titicut, probably representing the close of that age or the start of the Ceramic. Exhibit #3, an expertly shaped small Platform pipe of chlorite with a concave base was found out of context, but with drilled stem intact, located only about 5 miles distant from Oaklawn quarry. Exhibit #4 is one of several Platform pipes taken from graves in Rawley, Mass.

Exhibit #12 of steatite, although a Platform pipe in form, lacks the customary tapered stem shape as shown by the other specimens. It is a surface find from the Narragansett Bay area in Rhode Island and has a well-worked animal effigy on its forward stem. If this is the figure of a pig’s head, as seems likely, the pipe cannot antedate colonial times, as wild pigs were probably nonexistent in prehistoric New England. Therefore, it doubtless is of Indian workmanship in the 17th century after imported pigs had been added to colonial livestock. Its bulky stem with relatively large drilling seems intended for insertion of a wooden stem. Exhibit #11, a small Straight pipe of chlorite, Exhibit #15, an Elbow pipe, and Exhibits #10,13,14, Bowl-type pipes, all require hollowed sticks or reeds for stems. Exhibits #8,9, Tubular pipes of fireclay, appeared as grave goods in Adena-connected graves in Brookfield and doubtless are Adena importations.

**BIRDSTONES — Fig. 9.**

These fanciful products of man’s creation in the form of sitting birds are of rare occurrence in New England. Usually, they appear as a part of grave goods in burials, often with red ocher, but with human bones disintegrated into powder; their origin seems to be Adena. In Ohio where Adena reached its cultural peak, the Birdstone is a probable trait. It is often made of banded slate, sandstone, or other sedimentary stones. It assumes an assortment of shapes, and has either prominent protruding eyes appearing on both sides, or eyes which are suggested by suitable markings in the stone. Most specimens have holes drilled obliquely, one through each end of the base. These perforations are made by two drillings that meet from bottom and end at each basal extremity. Illustrations attempt to show restricted views of these holes without impairing other important features of the worked stones.

While the function of this product is still hidden among the secrets of the past, speculation seems to favor a ceremonial use of some kind. It seems to this writer unnatural to assume, whatever it was attached to, that it would have been held in any way other than in an upright position to satisfy the form of a sitting bird. To have been used as an atlatl weight, as held by some, the drilled holes should probably extend from side to side, which is not the case, to permit its
attachment to the atlatl. Therefore, this use seems highly questionable.

It is felt by some that most all, if not all Birdstones, were brought into this area as possessions of Adena migrants. However, there is evidence of a kind to suggest manufacture of some Birdstones in New England. For example, Exhibit #8 of sandstone, an excavated find, was recovered broken into three pieces, but without drilled holes in its base. Indicating that it may have been in the process of manufacture is the presence at one basal end of a small pitted dent, made as though in preparation for drilling. Of course, even in this instance, the maker might have been an Adena workman with the required technical knowledge.

Exhibit #7, a Duxbury surface recovery of fine
sandstone, is of interest because of the two holes drilled through its side at the fractured end. Evidently, at some time it had become broken in two and was repaired by lashing the two sections together by means of thongs through these holes and others in the missing section. Apparently, the use to which it was put caused the hole nearest the end to break out, thus destroying the hitch. The end was then ground smooth, with the subsequent probable use being that of a pendant.

Exhibit #6, a surface find from Rhode Island, is unusual because its head and tail are not shaped. What meaning should be attached to this deficiency is not clear.

Exhibit #1, possibly of fire-clay blackened from fire exposure, was recovered from an Adena-connected burial in Brookfield, Mass. It seems to be more nearly a bird effigy, and yet it has the same sitting posture as that of a Birdstone. Its small proportions may explain its lack of the customary drilled basal holes. Its large grotesque head, tufted crest and long bill are traits that seem to connect it with a Birdstone. However, the tiny holes, which serve as eyes, are unlike the usual protruding eye knobs. Because of its presence in a grave, it may be that this specimen was only a symbolic reproduction made expressly for the burial.

Exhibit #4 of beautiful banded slate, an excavated recovery from Rhode Island, closely resembles a type that appears to have Adena association. Its eyes are formed by the grain of the stone when rounded for the bird’s head. This specimen seems so skillfully made with fine exact drilling of its basal ends, as to preclude it from any source other than that of Adena.

BOATSTONES — Fig. 10.

Another well-known Adena product is this problematical hollowed stone. It is made in the shape of a boat, and rarely reaches larger proportions than those as illustrated. It is seldom recovered at New England camp sites; usually appears in Adena-connected burials, associated with either Birdstones, Tubular pipes, or other Adena grave goods. On occasion, the plow sometimes dislodges specimens from such deposits, and brings them to the surface. All three illustrated specimens were surface finds and have the essential characteristics found in most Boatstones. Besides the boat-like shape, these products are always perforated with two holes, one through either end of the boat-form. Usually, they are made of relatively soft stones, which submit readily to hollowing by scraping, such as steatite, chlorite, slate or sandstone.

Exhibit #1 of steatite is unusual because of the rather elaborate marking on one side. In this case, the incised work seems to suggest the outline of a serpent, the crosshatch work being used to portray the diamond scales of a reptile’s back. If this is what was intended, then it may be a clue as to the Boatstone's function, since serpents were held to have certain
Fig. 11. PENDANTS AND BEADS. Stone Pendants: 1-3, 6, 9-12, 14-22, 24, 26, 34, (Narragansett Bay Drainage); 4, 23, (Central Mass.); 5, (Hingham, 7, 27, Springfield, 8, Duxbury, 13, New Bedford, 35, Cape Cod, Mass.). . . 25, Ceramic Beads, (Warren, R. I.); 28, Shell Wampum, (Central Mass.); 29, Conch Shell Beads, 30, Bone Beads, (Maine); 31, Shell Pendant, (R. I.); 32, Barrel-shaped Copper Beads, (Brookfield, Mass.); 33, Rolled Copper Beads, (Assawompsett Lake Site, Mass.).
occult powers. Could it be that Boatstones were used by shamans in such a way as to produce a cure for the sick? Many other uses have been suggested of a more utilitarian nature, which may come closer to the truth, but as yet not one has been substantiated.

Exhibit #2 has somewhat more style with its sloping ends, but is not hollowed out as deeply as the first. It is made of attractive dark red slate, which seems to have been selected because of its brilliance.

Exhibit #3 was found more than 100 years ago in a Rehoboth plowing near a brook. Since it is made of chlorite, it evidently belongs with Exhibit #1 of steatite to the period of stone bowl making of the Late Archaic, presumably toward its close during the influx of Adena migrants.

In this class of products, as with Birdstones, the assumption is that Boatstones were either imported or made in New England by Adena workmen. Their absence at excavated sites, but their presence in Adena-connected burials again suggests that they were not accepted by native peoples as necessary to their cultural existence.

PENDANTS AND BEADS — Fig. 11.

In this group of personal ornaments a wide range of sizes, shapes, and materials are represented, having diversified uses. The larger Pendants may have served as badges, denoting positions of authority. The smaller ones, all perforated by one hole like the larger specimens, could have been used as fetishes with magic curing qualities when administered by medicine men. Or, they might have been merely ornaments hung from the ears, as reported by William Wood in 1634, or attached to necklaces. Some seem to have been fashioned with the intent of reproducing some well-known implement, as for example, Exhibits #1-3 resemble the Plummet, while Exhibits #17,18 the Full Grooved ax. Exhibit #13 of steatite, somewhat damaged, may have been intended for an owl. The distinctive notches found on several, doubtless are not tally marks as thought by some, but evenly spaced decorations. Exhibits #14 and 21 obviously were intended to imitate projectile point shapes. Exhibit #4 is a good specimen to illustrate a certain large pendant type. As will be noted, it has closely set notches along its upper drilled end. It is believed that these are for decoration, and did not serve for cutting purposes, as held by some.

One reason for this opinion is that the stone material used for this type of Pendant is relatively soft, such as slate or other sedimentary stones. Many of the smaller specimens are made from pebbles of nearly the desired shape, but in the case of the larger ones, stones with distinctive markings or with attractive colorings were often selected and worked into shape.

When it comes to beads, several materials were employed: bone, shell, copper, and potter's clay. These are indicated in the group caption, but further information seems desirable with reference to copper beads. Free copper was not readily available in New England; the chief source, as it would seem, has been traced by spectrographic analysis to the Lake Superior region, where nugget copper was readily procurable. Either copper material was imported for native Rolled copper beads made here, or else what is more likely, beads of this kind were made in other areas nearer the source and imported to New England. The latter probability is evident, for example, in the case of Exhibit #32. These Barrel-shaped Rolled copper beads apparently were brought in by Adena people, as they were recovered from Adena-connected burials in Brookfield, Mass.

Pendants have special attraction not only because of fantastic shapes, of which no two specimens are exactly the same, but because they represent the extent to which primitive man went to create articles of beauty for personal adornment. The desire to express this urge, which is inherent in most human endeavor, may be seen in any collection of such pendants and trinkets of man's ingenuity. The specimens shown here doubtless do not extend further back than sometime during the Late Archaic Age. Probably, most of them are derived from the end of that culture period and on into the Ceramic Age.

STAGE 1 CERAMIC POTS — Fig. 12.

When ceramics finally arrived in New England about A.D. 300, as established by extrapolation, cooking pots began to be made of clay, and use of heavy stone bowls gradually came to an end. This industrial change marks the beginning of a new culture period when the work of making cooking vessels was performed by women; formerly it had been done by men in the making of stone bowls. This labor change must have set in motion certain social forces, which in effect amounted to an industrial revolution.
Fig. 12. STAGE 1 CERAMIC POTS (restored). 1, Narragansett Bay Site; 2, Wareham, 3, Plymouth, 5, Assawompsett Lake, Mass.; 4, Rimsherd Proflies (not to scale — with coarse mineral temper); 6, 7, Late Stage 1 Design Sherds (not to scale — exterior elemental motifs over cord-marked exteriors, with cord-marked interiors, representing probable merger with Stage 2 — rare).
A study of potsherds from broken ceramic vessels is an essential part of archaeological research, for the industrial development of those days may in this way be partially discovered. Markings found on the sherds reveal the way pots were constructed, the techniques used, and what is of prime importance, when improvements took place as a result of arrival of new ideas. Obviously, those sherds found undisturbed at the lowest ceramic excavated level represent the earliest pots at a site. By comparing these deepest recoveries from various sites it has been possible to identify the earliest kind of pots made in New England. These are called Stage 1 pots, and are in this way separated from the remaining three stages that followed. They may be identified by their stratigraphic positions and by certain emerging traits that set them off one from another. In other words, by using this method of investigation a quick and informative outline may be had of about 1,300 years of pottery making up to colonial times. Therefore, potsherd study of this kind becomes a means for measuring cultural changes during the Ceramic Age.

During the earliest ceramic period of Stage 1 pottery, progress was slow, as potters were striving — many times by trial and error — to perfect durable cooking pots out of clay, about which they knew very little. Excavated evidence reveals no important improvements for several hundred years, during which vessels were without designs except for cord-marking over outside as well as inside walls. Toward the close of this stage, a few elemental design motifs were attempted, as shown by Exhibits #6, 7, while at the same time inside and outside surfaces of the ware continued to be cord-marked. Probably, such sherds actually indicate a merger with Stage 2 pottery making. Apparently, cord-wrapped paddling was used inside and out in order to help hold the clay coiling together. For, as will be seen, this technique was followed in Stage 2 by stick-wiping, which seems to have been better fitted for accomplishing this objective.

The style of pot with pointed base and conoidal shape appears to have resulted as the best one to distribute evenly to all surfaces the extreme heat from the hot embers in which the pot was placed. Undoubtedly, it had been discovered that a flat bottomed pot, modeled after a stone bowl, quickly cracked from the uneven distribution of heat. In fact, this has been proven by evidence from western Pennsylvania and the upper Ohio Valley. Here, in the stone bowl-making area of the Appalachians the stone bowl industry was the first to be hit by the diffusion of ceramics, probably from Asia, and re-sisted the change to the Asiatic conoidal shape. The first ceramic pots here and all the way through to Long Island had flat bottoms, doubtless inspired by the flat bottomed shape of stone bowls, which were being replaced; were followed by conoidal pots. By the time ceramics jumped over the Sound into New England the experimental stage had ended, making the diffusive conoidal style by then a necessity; flat bottomed ceramic pots are absent in New England. No evidence has come to light to show the manufacture of ladles or drinking cups. Apparently, no ceramic utensil was made other than the universal conoidal pot, which appears in small as well as in large sizes.

Diagnostic traits of this earliest ware are listed below in the same sequence as that used for the three remaining ceramic stages, with estimated starting dates for each. Rimsherd profiles, as illustrated, made somewhat larger than scale, exhibit very coarse mineral temper; shell was experimented with, unsuccessfully, toward the end of the period. This first stage of pottery making must have been concerned to a considerable extent with experimental work, which would have prolonged its total span of years. As time passed and the later developmental stages arrived, technical advance became more rapid with creative improvements following quickly in succession. Hence, a much longer period may be expected for the first stage, with ever shorter ones developing for the remaining three stages. A Carbon-14 date at the Sweet-Meadow Brook pottery site in Rhode Island indicates the end of Stage 1 times to be about A.D. 1000. Taking these several factors into consideration, the approximate starting date and duration of each of the four stages has been calculated.

**Stage 1 — Earliest — A.D. 300**

1. **Shape** — conoidal with prominent pointed base.
2. **Neck** — irregularly straight.
3. **Rim** — usually rounded.
4. **Ware** — relatively thick.
5. **Construction** — coiled with coils often weakly joined together.
6. **Surface** — cord-marked inside and outside.
7. **No decoration** — 2 exceptions with cord-marked interiors and exteriors noted at end of period: 1) elemental incised marks, 2) dentate single linear.
8. **Temper** — coarse mineral (crushed quartz).
STAGE 2 CERAMIC POTS — Fig. 13.

Improvements and innovations, which serve to set this period off from those of the first, are important as they tend to improve pottery results in both appearance, as well as in structural strength. Simple design motifs appearing on necks over cord-marked or smooth exteriors begin to beautify formerly drab uninteresting contours. While such embellishments rarely cover more than the neck, they add to the pot’s attractiveness; probably received much attention, resulting in healthy competition between potters (Fig. 14). These design motifs show the more important techniques, which are identified in the accompanying caption. It should be pointed out that curved dentate lines as appearing on pot (Exhibit #7) are rare and may indicate superior independent skill, or a special development toward the close of the period. Description of the technique called — trailing (Fig. 14, #16-18) — may be explained as being a repetition of parallel lines in two or more linear produced by the use of a multi-pronged stick, which is dragged or trailed over the surface to be marked. This differs from incised lines of Stages 3 and 4, which are made one at a time with a one pronged stylus. Another technique — rocker-stamp (Fig. 14, #6,7) — consists of an interlocking series of slightly curved dentate marks, believed to have been made by rocking the edge of a shell or its equivalent back and forth over the pot’s surface. Still another intricate technique is called — push-and-pull — as shown on pot (Exhibit #6). It consists of alternate jabs with a multi-pronged stick, joined by trailing of the stick, as it is first pushed in then pulled a little before being pushed in again to form horizontal bands.

An improvement called stick-wiping, having to do with the treatment of the ware during its construction, seems to have produced more tensile strength. As has been noted, all through Stage 1 times clay coils, pinched on one over another, were partially held together by cord-wrapped paddling on both sides of the ware. Then, at the start of Stage 2 ceramics, a new technique was introduced replacing cord-marking. It consisted of a two, three, or four pronged stick being wiped over the pot’s interior, and sometimes over the exterior as well. The best results seem to have been obtained when the prongs were wiped uniformly in an oblique direction over the interior. In this way, prominent fine grooves were cut across clay coils, which tended to interlock one

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**Fig. 14. STAGE 2 DESIGN TECHNIQUES — Simple Motifs.** 1-5, Cord-wrapped-stick; 6, 7, Rocker-stamp; 8-15, Dentate; 16-18, Trailing; 19, Shell Dentate; 20, Thumbnail Marks.
Fig. 13. STAGE 2 CERAMIC POTS (restored). 1, 3, 7, Narragansett Bay Sites; 2, Duxbury, 6, Plymouth, Mass. (2, early phase — 2, 3, 6 have stick-wiped interiors); 4, 5, Rimsherd Profiles (not to scale — with shell or medium mineral temper).
with another to join them more firmly together. However, when this process of stick-wiping was done with only the frayed end of a stick in a haphazard irregular way, the coils are found to separate badly with an apparent lack of adhesion. Such evidence indicates that skillful stick-wiping was by no means universal; required years to perfect. As a result, Stage 2 pottery remains do not all exhibit the same high quality of tensile strength.

During this second stage, pots retained the same conoidal shape as that of the first, but occasionally, with a constriction of neck, doubtless for aesthetic reasons. From this it would seem that potters were striving to get away from the stiff appearance of straight necks. Another departure from the past was the occasional formation of sharply undercut bottoms (Exhibit #3). However, this variation is rare and may have been confined to small vessels to enable them to sit upright on the ground when used as storage containers.

Another marked change is seen in the temper used for strengthening the ware. From the coarse, and at times, very coarse mineral temper of the earliest pottery, it now was reduced to medium sized grains. In addition, potters frequently used crushed shell for temper. Shell had been experimented with for this purpose toward the close of Stage 1 times, but only infrequently and with poor results. However, by the start of the next stage, satisfactory results were obtained from the use of shell as well as of crushed stone; the two seem to have been interchangeable.

Stage 2 — Intermediate — A.D. 1000

1. Shape — conoidal with a more or less pointed base; sharply undercut at times — rare.
2. Neck — either straight, or somewhat constricted.
3. Rim — usually flat, infrequently rounded, everted lip sometimes both inward and outward, often with simple scored decoration on top and outside of edge.
4. Ware — thick or thin, as may have been required.
5. Construction — coiled, with improved joining of coils.
6. Surface — stick-wiped, or finger or tool-smoothed inside; often cord-marked outside, slightly stick-wiped at times.
7. Decoration on neck — simple motifs; techniques include: punctate, thumbnail jabs, dentate, trailing, push-and-pull, rocker-stamp, and cord-wrapped-stick; infrequently, no decoration.
8. Temper — medium mineral, or shell.

STAGE 3 CERAMIC POTS — Fig. 15.

After about 400 years, Stage 2 techniques were superseded by certain marked changes, influenced no doubt by new ideas, which continued to push in from outside culture centers. While these innovations may seem small and inconsequential in themselves, when added to what went before, they did much to alter the general appearance of pots of this third developmental stage.

Apparently, new methods of smoothing the pot’s interior produced better meshing of clay coils, although stick-wiping continued to be employed to a limited extent. The pot’s exterior is cord-marked, and at times is partially smoothed over. In the pot’s shape there are certain definite modifications. For one thing, although the conoidal form is retained, often it has a less pointed base. For another, an attempt at producing collars is to be found on many of the larger vessels. There is what is known as a laminated collar as shown in Exhibits #1, 6, 7. This is produced by pinching onto the rim an additional coil of clay in order to strengthen it. Then there is the stand-up collar like Exhibit #10, which adds distinction to the pot’s appearance. Another change to note is that Stage 3 pots invariably have more regimented rims, which are flat. Often they are artfully decorated, as shown by the twisted rope design of Exhibit #10. Another modification is found in the rim decoration of some pots, in which the motif is carried down a short distance on the inside walls; a trait not found on Stage 2 pots. Still another diagnostic of Stage 3 pottery is found on some vessels. It consists of the bisecting of the rim’s top surface with the marking tool used for the rest of the design treatment, i.e., a stylus or a dentate stamp (Exhibits #3-5). The stylus appears to have had its inception as a popular marker during this period (Fig. 16), as incised designs occur for the first time. In addition, two techniques of the former period continue to appear: dentate and cord-wrapped-stick. However, they are employed to form more elaborate motifs, which at times tend to cover part of the body as well as the neck. Geometric figures are often in evidence, and the dentate platted design (Fig. 16, #13, 14) frequently appears. Use of the punctate in Stage 3 times is rare — found in
Fig. 15. STAGE 3 CERAMIC POTS (restored). 1-3, 9, Narragansett Bay Drainage; 10, Kingston, Mass. ... Rimsherd Profiles (not to scale — with shell or fine mineral temper): 4, 5, with bisecting of rim tops; 6, 7, with laminated collars; 8, with plain flat rim.
Fig. 16. STAGE 3 DESIGN TECHNIQUES, (motif elaboration with geometric figures often appear). 1, Cord-wrapped-stick (laminated collar); 2, 3, 7-12, Incised; 4, Dentate (closed-in herringbone); 5, Dentate (laminated collar, crosshatch); 6, Dentate (diamond); 13, 14, Dentate (platted); 15-19, Incised-Dentate (chevron variations).

combination, only, with other techniques (Fig. 16, #13), except in the case of Maine pottery, where it appears frequently in both Stage 2 and 3 ware.

Finally, another change is noted in the use of fine mineral temper, instead of the medium crushed stone of Stage 2 pottery. With the coming of Stage 3 ware, this temper often seems to be composed of crushed stone as fine as sand. It is during this period that vegetable temper begins to appear, although infrequently.

Stage 3 — Late Prehistoric — A.D. 1400

1. Shape — modified conoidal, pointed base tends to be somewhat rounded.
2. Neck — constricted, sometimes straight; surmounted at times by a narrow collar, usually laminated.
3. Rim — flat and evenly constructed; everted lip, occasionally; often scored decoration appears outside, and sometimes inside as well; top of rim, at times, is bisected all around by same marking tool as used for rest of the design work.
4. Ware — various thicknesses; has improved tensile strength.
5. Construction — coiled, showing near perfection in coil joining.
6. Surface — tool-smoothed, or stick-wiped inside; smooth, or cord-marked often partially smoothed over outside.
7. Decoration on neck and collar — elaboration of design motifs include: cross-hatch, closed-in herringbone, platted, chevrons, diamonds, rectangles, and large Vs; techniques embrace: incision, dentate, cord-wrapped-stick, and punctate in combination — rare.
8. Temper — fine mineral, or shell; vegetable — infrequent.
STAGE 4 CERAMIC POTS — Fig. 18

Sometime around A.D. 1600, certain Iroquoian traits diffused into the northeastern coastal area, which were adopted by New England potters. They were so different from those which had identified Stage 3 pottery up to that time, that the whole appearance of the vessel changed. In fact, in some instances the modifications are so extreme in conformity to Iroquoian shapes that it is difficult to identify locally made pots from those of the Iroquois. Generally speaking, however, the latter seem to be made with more precision, especially with reference to the uniformity of their design motifs. Another marked difference is to be found in the body contour of the pot. Local potters made their vessels, quite generally, with shapes approaching the traditional conoidal form, but with the pointed base decidedly rounded (semiglobular). On the other hand, Iroquois potters usually made theirs somewhat rounded in shape (full globular) (Fig. 17). With these few exceptions, local Stage 4 pots might be taken for Iroquoian ware.

For a New England pot to fit into this last stage, it should have a pronounced pressed-out collar with castellations. However, castellations are not always present, as may be seen by Exhibit #6. Usually, castellations appear in quantities of two or four in number. One castellation or more than four are rarely seen except among pots of the Iroquois. Castellations are occasionally prominently high, but more often are low and less conspicuous. Appearance of only one castellation, as in Exhibit #5 is rare; presumably represents in this case an importation either of pot or potter from some outside culture area. This exhibit represents a small burial pot with elaborate decoration of its single castellation. Three bossed faces appear on top, underlaid by two ears of corn in the shape of a V. Exhibit #4, another burial pot, has prominent lobes formed about the base of its collar. This trait, together with its relatively high castellations and design motif are reminiscent of Shantok pottery of southern Connecticut.

Of the three Cape Cod pots, Exhibit #2 is unusual inasmuch as it has four design motifs — each one appearing between two castellations. Exhibit #7 has exceptionally fine proportions besides a meticulously executed design on its collar. This intricate motif is set off by four ears of corn bosses, one appearing between every two castellations. Its near conoidal shape with rounded base clearly indicate it to be a pot of local manufacture.

The two non-castellated pots, Exhibits #8 and 9, are definitely affiliated with Stage 4 ware both structurally, as well as historically. And yet they are enough
Fig. 18. STAGE 4 CERAMIC POTS (1-7, restored). 1-3, Cape Cod; 4-7, 9, Narragansett Bay Drainage, (6, early phase); 8, Pecowsic Fort Site, Springfield, Mass., (8, 9, late phase, creative decline).
different in shape to excite suspicion as to this association. Actually, when all evidence surrounding these pots is examined, they seem to represent ceramic products of late Stage 4 times — probably about A.D. 1650 — when potters may have found it easier and more agreeable to copy highly prized metal vessels of the colonists than create styles of their own. If so, a creative decline had taken place that tended to stifle independent invention, i.e., Exhibit #8 may be a copy of an iron pot and #9 a small copper kettle. The former was found intact at the site of the Indian Pecosic Fort in Springfield, which was connected with the burning of the village in Philip’s War of 1675.

Design motifs of Stage 4 pottery are accomplished in most cases by incision. However, lines are sometimes made by a dentate line stamp, which is repeated continuously to form what is known as line-dentate (Fig. 19, #14). While the chevron motif seems to be of more frequent occurrence, it is often found either confused or broken up by other motifs. Figure 19, #15 is a close-up of burial pot #4 already described.

Stage 4 — Historic — A.D. 1600

1. Shape — semi-globular, slightly suggestive of the conoidal shape, rarely full globular except for small pots.
2. Neck — decidedly constricted; surmounted by a pressed-out collar, usually but not always with castellations; simple shapes resembling colonial metal kettles without collar and castellations noted during creative decline at end of period, 1650-1675.
3. Rim — usually flat without decorations, sometimes rounded with simple scoring.
4. Ware — thinned with good tensile strength.
5. Construction — no coiling in evidence.
6. Surface — tool-smoothed inside; tool-smoothed, or cord-marked smoothed-over outside.
7. Decoration — on collar, often slightly on neck; chevron variations with multiple linear fill-ins, occasionally with face or corn bosses added — rare; techniques include, incised and line-dentate markings.
8. Temper — fine mineral, or shell; vegetable — infrequent.

GAMING STONES — Fig. 20.

In all probability, man has had an inherent desire from earliest times to take risks staked on the outcome of anything involving chance. This may be seen in his gamble for survival, as through the millenniums he pitted his prowess in the chase, often against odds which seemed insurmountable. In spite of the superior brawn and cunning of most of his prey, his mental astuteness usually gave him the advantage. However, there is evidence to show that luck tempered by calculated skill was not always enough, and disaster rather
than success resulted. In view of this precarious existence, the wonder is that man was able to hold his own, and at the same time multiply sufficiently to insure his survival.

Love for risky involvements has been a persistent gambling trait, which together with aggressive action has remained with man throughout countless ages of his upward climb. Just how he applied these traits in ways other than as required for the hunt can only be guessed at. But sooner or later, they must have showed themselves in the performance of other activities, one of which was that of amusement through games of chance or skill. However, gaming counters to indicate such activities either did not exist during earliest times, or else they were made of destructible materials, which have long since rotted away. The first indication of gaming activities come from stone counters, which have provided factual evidence of the playing of several games. While stratigraphic evidence is lacking up to now, a temporal determinant is to be had in the use of steatite for one of the larger gaming stones among those illustrated (Exhibit #7). Use of this stone material should place this counter in the Late Archaic during the stone bowl industrial activity of that era. For steatite was not known to the Early Archaics; they left behind no artifacts made of it. And steatite seems not to have been used by Ceramic artisans except for pipes, and for small objects made of broken fragments of stone bowls from earlier times.

**Discoidal Stones** (Exhibits #2,7). The earliest exhibit in this group appears to be #7, one of two illustrated specimens of this type of counter. It is the one previously referred to made of steatite, probably of the Late Archaic. It would seem to follow that Discoidal stones may have had their source in this culture age. They occur in large and small sizes made of easily worked stones such as steatite, sandstone, black slate, and rarely of quartz. Circular in form, they are slightly hollowed out on both faces to form a distinctive shape, easily recognizable. These stones are believed to have been rolled on the ground in some sort of competition, but just what rules governed the game is problematical.

There is a game known to be of Cherokee origin called Chunkey, which in earlier times may have been diffused into the Northeast. The counters used by the Cherokee are similar to Discoidal stones — are called Chunkey stones. In playing the game, each participant has a pole about eight feet long tapering to a flat point at either end. The players set off on the run, abreast, while one of their number rolls the stone disc on its edge in their line of movement. At this moment the players thrust their poles in the direction of the moving stone, judging as best they may where it will come to rest. The player whose pole lands closest to this spot wins the bet, with the play being repeated over and over again. In this manner, the players are kept on the run most of the day, staking their various possessions on the results of the game.

**Flat-Faced Rolling Discs** (Exhibits #10-12). These stone discs are similar to Discoidal stones except that their faces are worked down to flat facets instead of to shallow cup-shaped hollowings. While no evidence is available, it seems probable that these discs were interchangeable with Discoidal stones. In the process of diffusion into the Northeast, there might well have occurred modifications in the game of Chunkey to alter not only the shape of counters but also the rules of the game. In practically all games, the element of suspense was encouraged through the making of bets. Wagers were satisfied by the forfeit of personal possessions, which sometimes included the loser's wife when everything else had been gambled away.

**Stone Balls** (Exhibits #1,3). Artifacts have been recovered as surface finds, which like these exhibits appear to be pecked into nearly round balls, relatively heavy, and large in size. They are not water-worn pebbles, for pecked scars are prominent over all surfaces. These balls are evidently man-made, since the pecking has left irregular facets, which prevent the balls from being exactly spherical. One such Stone ball appeared on a known camp site in South Hadley, after severe wind storms had eroded and swept its surface clean. So far, however, nothing is known about their culture affiliation from stratigraphic research.

**Dice Stone Counters** (Exhibits 4-6, 8,9). In this group, the counters are flat and are squared by chipping except Exhibit #6. This is a small flat-faced disc, which could well have been used in the same way as the other chipped specimens. While the chipped forms are flat and squared, they doubtless served in a similar manner to standard dice cubes, their two faces being marked differently.

Several aboriginal games are known to have been played in colonial days, which required marked counters like these stones. The play for each was based upon throwing the Dice stones and placing bets on which marked face would turn up. In some games, only one or two counters were required, while in others more were used. However, the objective in each was to win a bet on the turn of chance. These games might well have been carried over from earlier Ceramic days.

Fortunately, reliable evidence exists that seems to
Fig. 20. GAMING STONES. 1, 3 Stone Balls; 2, 7, Discoidal Stones; 4-6, 8, 9, Dice Stone Counters; 10-12, Flat-faced Rolling Discs; (2, 10, 11, North River Sites, Mass.; 1, 3, 4-9, 12, Narragansett Bay Drainage).
connect chipped Dice stone counters with a game of chance, which, as late as 1640, might have been used in making deals in bartering with the colonists. In about 1935 archaeological research located what is presumed to have been William Pynchon's trading post with the Indians at Warehouse Point, a town near East Windsor, Conn., on the Connecticut River. Foundation remains were uncovered of a structure about the right size for the post, and in them appeared an early colonial metal spoon of a European mold. The structure was placed conveniently on the high bank of a small stream close by its outlet into the Connecticut. It seemed probable that here at last had been located Pynchon's well-known trading post, from which the nearby town of Warehouse Point takes its name.

Several years later, the writer surface hunted a small plowed field on the high river bank adjoining the trading post, not a stone's throw from where its remains were located. No fire stones or other camp litter were to be seen to indicate an aboriginal camp site. But before he left the field a milky white quartz artifact caught his eye. It was chipped on four sides into about a 1” square flat form, similar in shape to the illustrated specimens. An idea then began to take shape that this artifact had had some direct connection with the bartering, which must have taken place at this site. Soon, what at first was only an idea, now became a certainty that here was a gaming stone of some kind, used by natives in their trading deals with the whites. This evidence seems to support the previous hypothesis that squared chipped stones of this kind were used like dice, i.e., in their simplest form they might have been blackened on one side, then thrown into the air, the bet being made as to which side would turn up.

In further support of this thesis, it may be argued that these Dice stone counters are not scrapers because their edges are not beveled. Also, scrapers, as a rule, assume shapes with only one edge sharpened for scraping. This edge is usually convex, except in the case of Shaft scrapers, when it is straight to concave. Dice counters might be considered as Shaft scrapers, if it were not for the fact that such scrapers have but one scraping edge, and are usually irregular in shape.

result, stone pipes made of steatite and chlorite were the first to make an appearance. It was not until some time during the Stage 1 pottery era that potters attempted to make pipes of clay. From simple styling at the start of the Straight type, more elaboration followed, which concentrated upon production of the Elbow type of pipe; evidently, the Platform and Bowl types were never attempted. It is of interest to note that clay pipes were not produced at first with the introduction of ceramics, but came years later. Evidently, their manufacture was delayed until potters had acquired enough skill in the making of pots to give them the confidence required to try something new. Although research at this late date can never find out exactly what the problems of manufacture were and how they were solved, by careful analysis of recovered evidence, much can be deduced to help in discovering some of the techniques involved.

It is likely that the Straight pipe was the first to be made, since it seems to be the simplest type, one that would have given the least trouble. While it may have been the first, apparently, its popularity was limited, as very few recoveries have been made compared to those of the Elbow type. Exhibits #1 and 2 illustrate what kind of pipe looks like, and the cross section of #1 serves to show how it may have been manufactured. After the bowl had been pressed out, probably by finger manipulation, a square-sided stick, in this case, was pushed through the stem, and may have been left imbedded in the clay. Upon the firing of the pipe, which took place next, the stick would have become reduced to char, and could have been easily cleaned out. It seems probable that this method of perforating ceramic pipe stems was in general use, except that round sticks were preferred to square ones. Exhibit #2 shows unusual design elaboration and may represent a later development. The temper used in Exhibit #1 is crushed shell, while that used later on in many, but not all Elbow pipes is fine mineral. Apparently, good results were obtained from the use of both shell as well as mineral temper.

Throughout pottery Stages 2 and 3, Elbow ceramic pipes were made in various shapes and sizes, from the simplest with no design treatment to more decorative developments (Exhibit #9). Probably, small plain pipes made in an obtuse angle (Exhibit #4) preceded more elaborate forms. As time passed, there appears to have been a trend toward more acute angles of bowl to stem, equaling a right angle in the case of some pipes.

With the arrival of Stage 4 times, new ideas pressed in from Iroquois culture centers that not only changed the styling of pots, but also of ceramic pipes.
Fig. 21. CERAMIC PIPES (4-7 restored). 1, Straight Pipe and Profiles, (Plymouth, Mass.); 2, Decorated Straight Pipe, (Connecticut); 3-11, Elbow Pipes, (3, 6, 7, Conn. Valley of Mass., 4, E. Greenwich, R. I., 5, So. Windsor, Conn., 8, Norton, Mass., 9, E. Prov., R. I., 10, 11, Scituate, Mass.).
There is evidence to show that stone pipes continued to be made right up to colonial times along with ceramic pipes, but, whereas the latter probably were made by female potters, stone pipes are believed to have been made by the men as formerly. However, New England potters never attained the remarkable results of the Iroquois in their tall bowl Trumpet pipes. They only approached such perfection as illustrated (Exhibits #6,7). In addition to such apparent efforts at copying, independent invention accounted for certain variations in the case of some large sizes (Exhibits #10,11). These two pipes were recovered from a rock shelter in close association with Stage 4 potsherds, which should make them contemporaneous. They may serve to demonstrate acquired skill, particularly in the successful accomplishment of long pipe stems.

Enough evidence has been presented, it would seem, to support the thesis of ceramic pipe development as outlined. From hesitant beginnings with the making of simple straight pipes, more complex shapes soon appeared, all of the Elbow type. Extending over a period of 700 years or more, potters acquired skill that enabled them to create some noteworthy results (Exhibits #3,7,9). However, creative variations are limitless and no one collection, no matter how extensive, could possibly hope to encompass them all.

OTHER DOMESTIC PRODUCTS — Fig. 22.

Up to this point, discussion has been focused on those products of man’s skill, which are the most numerous since they are made of stone, and to a lesser extent of pottery. The major classes of such goods as found in New England have been illustrated and described with at least one omission. This concerns a group of products known as Bar Amulets. These articles are of rare occurrence; are made of slate, sometimes banded, and have traits that seem to link them with Birdstones. As the name implies, they consist of short or elongated bars having rounded cylindrical forms, except for flat bases similar to Birdstones. Also, they have another resemblance in that their basal ends are drilled through obliquely with small holes. Some years ago a large well formed specimen appeared as a part of the grave goods of an Adena-connected burial at Holyoke, Mass. Because of this, it may be assumed that Bar Amulets occurring in New England are Adena importations, diffused from the Ohio area, where their presence is better known.

Doubtless, there were many products made of wood, bone, or hide, which have long since rotted away in the acid soil of this northeastern region. A few of them have been observed in their organic rot remains but not recovered. For example, in a Titicut burial associated with bone projectile points appeared the darkened outlines of all that remained of a quiver and arrows. Then there must have been articles made of wood or bone extending back into prehistoric days, which would equate with those reported by early commentators among New England tribes, as well as the Iroquois, some of which have survived in museum exhibits, i.e., drums, ladles, spoons, cradle boards, and whistles. Also, it is known that in colonial times, brass and copper kettles were highly prized by the natives, from which they managed to cut and fashion various useful articles.

The art of weaving had been known and used by some western peoples extending thousands of years back, at least to about 9,000 years ago. In Fort Rock Cave, Oregon, where arid conditions tend to preserve organic matter, were recovered several fragments of fine basketry decorated with false embroidery. They lay under a layer of pumice, and were associated with sandals, which produced a radiocarbon date of 9,053 ± 300 years ago. Also, in Danger Caves, Utah, with nearly a similar date, appeared examples of twined basketry, netting, and mats, besides objects made of wood, hide, bone, and shell. The art ability that produced these fabricated goods must have continued on, it would seem, and have been handed down through countless generations to produce similar products, as found in the hands of proto-historic natives.

Woven Relics (Exhibits #2-4). Only in burials of colonial times, in which disintegration of organic matter has not completely taken place, will be found traces of the weaver’s art. Fortunately, at the Titicut site in
Burial #3 occurred Exhibit #2, the remains of a basket. This was found on top of a layer of bark that covered the body. Recovered, as was fabric (Exhibit #3), by means of plaster casts of each made in the grave, appeared this fragment of an attractive woven basket with a variation in the woof, evidently used to beautify the product.

In the same burial appeared Exhibit #3, representing a woven fabric, which was used as a covering around two colonial iron hoes. Why such care was taken to wrap these planter’s tools is difficult to understand. However, here is clear evidence that weaving was a part of the native economy, and may have produced several different kinds of fabric, probably made from either frayed bark or hemp.

Still another piece of woven material from this burial is shown by Exhibit #4. This is a section of woven rush matting used as a shroud over the body. Doubtless, woven mats of this kind were used on wigwam floors and for lodge coverings in the summer as well, according to reports made by early commentators.

Brass Spoon (Exhibit #1). Of all native-made goods, perhaps this well-fashioned spoon stands out as an unusual example of fine hand work. It appeared in a burial with the small Stage 4 burial pot (Fig. 18, #5) at Wapanucket #1, Middleboro. Its slightly roughened thin edges and irregular designing suggest that it was handmade from a piece of sheet brass. The metal resembles that from colonial brass kettles, which probably was its source. That such a perfect spoon bowl could have been hammered out by hand seems most unusual. If this product serves no other purpose in today’s research, it illustrates the existence of superior manual skill among some natives of colonial times, and suggests by inference its development over a long span of human creative effort.

Comb (Exhibit #5). This product, made of bone, is presumed to have been used by women for personal adornment. Its occurrence is infrequent, since bone is subject to deterioration from rot under ordinary circumstances. Lime acts as a preservative for bone and other organic matter, which accounts for the preservation of such Combs, when found in shell deposits. The illustrated specimen was recovered from a shellheap.
on Little Chebague Island, Casco Bay, Maine, and although slightly damaged is a good example of this artistic product. Great diversity exists in the decorations used on Combs, which doubtless were a development of the Ceramic Age, since they occur in shell deposits. How much earlier they were used is not known. However, their absence in earlier deposits suggests that their advent occurred as a part of woman’s industrial ascendancy during the start of Ceramic times.

EDITORIAL

Identification through an established classification of stone implements is necessary for a better understanding of the ancient past. Fortunately, this Society has such a classification, fully illustrated, of which copies are still available: *Classification of Stone Implements of the Northeast*, Bulletin, Vol. 25, No. 1, 28 pp.

Especially, in the case of new Society members, or anyone else who has not yet obtained this important work, it may still be purchased from this Society at a reduced price to members of $1.00, non-members $1.50.

With the present distribution of *Ceremonial and Domestic Products of Aboriginal New England* as a sequel to the former implement classification, it seems essential that both of these descriptive monographs should appear together in everyone’s files to insure a complete account of man’s accomplishments in the Northeast.

Copies of the implement classification, Vol. 25, No. 1, are now available from a depleted supply, which may soon require a second edition.