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A CACHE FROM IPSWICH

Wendell S. Hadlock

From the very beginning of the Peabody Museum of Salem, to and including the present time, the various directors and curators have had a deep interest in the archaeology of Essex County, Massachusetts, which stimulated a continuous flow of archaeological material to the museum from eastern Massachusetts and the coastal areas of New Hampshire and Maine. Many of these collections, which were deposited at this museum, were placed on exhibition in the gallery of East India Marine Hall, where they remained until the restoration of the Hall in 1903. The archaeological display, like many other displays of similar institutions of its day and age, became a storage space or final resting place of the material culture of the prehistoric inhabitants of this region.

The overcrowded collections, as they were displayed, were of very little interest to the serious student of Northeastern Archaeology. There were, notwithstanding the nature of the collection, certain implements and groups of artifacts that were of interest and may have had possible significance in relation to the culture area. One such collection was a cache of thirty-four large flaked blades from Ipswich, Massachusetts. The card accompanying these implements gives very little information other than they are a "Portion of a collection of implements found in one place, and together, at Ipswich, and presented by John W. Nourse."

It appears from a few notes in the accession records for 1887 and 1888 that the original collection had been given to various persons and it was not until some time after the discovery and removal of the cache from Ipswich that the blades were presented to this museum. The first entry in the accession book is for the year 1887 with the meager information, "2351, J. W. Nourse, Three spear heads from a coll., Ipswich." At various times during the following year there are to be found the following notations in the accession book:

2357, January, John W. Nourse, Ipswich: 23 Spearheads same lot as 2351.
2361, January, Rev. John Galbraith, Ipswich: Large spear head from lot #2357.
2366, January, Mrs. E. H. Bailey, 351 Columbus Ave., Boston: Spear head same lot as 2357.
2375, February, Mrs. Emily Bailey, Ipswich; Spear point of lot #2357.
2376, February, Mrs. Jane Bailey, Ipswich; Spear point of lot #2357.
2395, April, Mrs. F. H. Foster, 322 Broadway, Chelsea; Spear point, Nourse Coll. - Ipswich.

This collection is unique among the archaeological material of this museum as it is the only one indicating a large deposit of similar implements which appear to have been cached. Not only does it appear without parallel in Essex County, but a search of available archaeological literature failed to reveal other similar deposits for the adjacent areas of Massachusetts.

All of the implements of this collection are larger than the average projectile point or knife found among Eastern Woodland chipped blades. They vary in length from 10.5 cm. to 17 cm. and are from 5.2 cm. to 7.2 cm. broad. Their average thickness is 1 cm. They do not appear to have been completely finished as they have not passed, in most instances, the rough shaping of a blade by primary flaking. Many have what appears as secondary retouching, but such retouching is by no means uniform, and it may be that the small flakes removed were more accidental than intentional. It is possible that in roughing these implements into the general shape of projectile points or large knives, the craftsman working the stone was not at all times able to control the course of the fracture and instead of removing a large flake, a small chip broke away, thus appearing as secondary work. All of the thirty-four implements either lack stems or have only small rudimentary stems. Among those in which a stem is present, it is found to be poorly flaked and in all except a few blades, off center from the rest of the artifact.

A deposit of similar flaked implements was taken from the Nevin Shell Heap, Blue Hill, Maine. (1) This collection also appears to have been a cache as the blades were stored one overlapping the other to a height of about 6 cm. and covering a circular area approximately 40 cm. in diameter. These blades appear to be more nearly finished than those from Ipswich, but collectively are very similar in size, shape, rudimentary stems, and in their primary and secondary flaking.

In the Robert Abbe Museum, Bar Harbor, Maine, there are many large flaked implements which compare with those from Ipswich and Blue Hill, but in most instances inadequate information prevents one from ascertaining the relationship of similar blades from the same area. One known cache of large implements has been reported and a few of the blades were deposited at the museum. They were found by Mr. Fletcher T. Wood of Gouldsboro, Maine, in the exposed face of the Taft's Point Shell Mound. Mr. Wood said there were about twenty-seven chipped blades, all of which were very much of the same size, deposited in a small pit in the broken clam shells. They appeared to him very much like large spear points but not so well fashioned as many of the flaked implements he had found.

(1) Information regarding the nature of this find was kindly supplied by Mr. Douglas S. Byers, Robert S. Peabody Foundation for Archaeology, Phillips Academy, Andover, Massachusetts.
Comparable deposits of flaked blades from Massachusetts have been reported by C. C. Ferguson and Arthur Hofmann. In the Heard Pond Indian Site, Mr. Ferguson reported "Several caches of blanks and partly finished implements, the largest contained 27 pieces." Some of these were leaf-shaped and others unshaped, evidently laid away to be finished later(2). During the summer of 1943, Mr. Arthur M. Hofmann excavated a small site in the township of Andover in which he removed thirteen "large projectile points" from a small area (3). The largest of these implements approach the size of those from Ipswich but are unlike in that they appear to be the finished product of the maker, and the stems are well defined. They also are unlike in the circumstances of their find, for Mr. Hofmann reported that the projectile points were found in a small area which does not seem to be an indication that they were part of a cache.

The collections of unusual blades from Ipswich, Blue Hill and Taft's Point, all of which were found in singular deposits, suggest to the author that they, like the unfinished implements of the Heard Pond site, were caches of blanks. Blanks which had been roughed into the general shape of projectile points, or large knives at the work shop of raw materials, brought to the camp site and safely put away until the owner should require them for further use. As the need for new implements arose these blanks could be reworked into the desired shapes and sizes.

Robert Abbe Museum
Bar Harbor, Maine
February 25, 1948


A PRELIMINARY REPORT OF THE POWERS SHELL HEAP, IN KINGSTON, MASS.

Charles F. Sherman

The Powers Shell Heap is on the north shore of a cove of Foundry Pond, formed by the damming of Snell Brook to furnish power for machinery used in making nails and rivets. Snell Brook is in the town of Kingston, Mass., and is just south of Jones River. Its source is at Snell Pond, 107 feet above sea level and one and seven tenths miles from its mouth in Kingston Bay, measured in a straight line. It is probable that the name was derived from the fish that frequented the brook and pond to spawn. At the present time, large schools of alewives go up the stream each spring and probably did in prehistoric times. It is fed by numerous springs and winds through swampy land throughout its course but as it is not over six feet wide and drops twenty-three feet in one-fifth mile, it is doubtful if it was ever navigable by canoes. The lower part of its course is through a salt marsh where it is subject to ebb and flow of tides. The camp sites which have been found show that Indians came to this locality; in fact the higher ground on each side of the swamps has been found very prolific in objects by numerous relic hunters.

The Powers Shell Heap is on the property of Mr. William Powers, who has been very kind and helpful in allowing us the privilege of excavating. This site was probably used as a winter camp over a long period as it is well sheltered from all the cold winds from northwest to east by steep hills on those sides. While no springs are visible now, one could be covered by the waters of Foundry Pond. The site is on a gradual slope extending down to the water's edge, beyond which shells can be seen extending into the pond.

A base line was established through the center of the camp, nearly north and south, and sections B and D consisting of twenty-five squares measuring five feet on a side were staked out, from the north end of the base line toward the east or up grade side. Each member who requested one was allotted a square, and our dig was underway.

The first artifact was found by Jesse Brewer—a trianguloid bi-excurvatum deep side notched point with a broken tip. Contact artifacts, mostly pipe stems and possibly a pistol or gunflint were found in the shell-loam stratum; for while the depth of contact material was five and one-half inches from the surface. Later a key, possibly for a chest, was recorded at a depth of fourteen inches and a cast bronze buckle was found at a depth of twelve inches. Bone fragments and stone chips were saved and counted. Shells include those of the shore-clam, sea-clam, razor-clam, quahog, scallop, one sea scallop (punctured), mussel, oyster, walk, and some small shells similar to snail. Special mention should be made of the numbers of shells which have deep dents in the surface, and which evidently came from clams that grew between rocks. They would have to be broken with a pointed stake or an antler and represent hard work whatever the tool used. Up to the present time only three shells of the walk have been found and they were perhaps transported from the other side of the cape.

Small pieces of worked plumbago are found quite frequently; no doubt some are missed as they are the same color as the soil in which they are found and very hard to detect. One fragment of a steatite vessel was found just below the broken shell-loam stratum in the yellow subsoil. Ceramic sherds are found in the shell-loam.

Shell pits start at different levels and extend down into the subsoil. Nearly every square has a fire hearth, either stoned or unstoned, the latter detected by the basin-shaped burned soil, red in color, twenty or more inches in diameter and six or more inches in depth. Bases of stoned hearths are either on or in the yellow subsoil, but most of the plain hearths are in the shell-loam. Stoned hearths were located in squares No. 6, 7, and 9B, on different levels and so close to each other that the land would have had to be terraced if they were in operation at the same period of time. The hearth in square 6B is the best exposed at this time. It is an incomplete circle. An opening in the south side appears as if a gate had been opened from the ring. The tops of three of the highest stones were exposed just below the shell-loam. These were not disturbed; as the square was worked down, more stones were exposed until a semicircle was uncovered. This was photographed and not destroyed. A shell pit was discernible in the inner side of the ring, so this was excavated and more of the ring exposed. The pit that was in the center of the hearth had the usual refuse and much charcoal. This hearth, which measured forty inches over all and was nine inches high, was made with field granite. Many of the stones had broken from the hearth. When first exposed they were covered with yellow soil and during the period of rains, dew, and sun were still yellow. They did not appear as if they had been exposed to much heat, but later, when the hearth was destroyed by a prowling shoveler, the remaining stones were examined closely and showed that they had been burned. Several were broken and were found to be pink inside and to fracture easily.

In the next square east, or upgrade, 7B, another hearth was found. This was not in the form of a ring, but just a pile of stones, none of which had been broken. They were hard to fracture and did not show the effects of heat, either in color or in the condition of the crystals. The base of these stone formations were level. The hearth in 7B was eight inches higher than the circular hearth in 6B; its center was only four feet away from the center of the hearth in 6B.

In the upper left corner of 7B and extending into 2B, another type of hearth was found. This was a level pavement of stones broken by the heat. This pavement lay three feet from the other hearth, and on a level nine inches higher than the other hearth in 7B. Paved hearths of this type were used in
Rhode Island to bake clams; they date back to the Narragansett Indians. As we have found three of these flat pavements in this shell heap and similar pavements have been found in other sites excavated, it is probable that the natives of this district used the same method of cooking their shell fish. Scattered through the area are stones that have been burned red. They are found in the shell-loam stratum which averages ten inches in thickness.

In the twenty-eight squares excavated, ten formations of stone have been found: One shell pit or kitchen midden on the line of 16B and 21B, was stoned up on the south side; 6D had a stoned pit; 9D had a pile of stones evidently used as a hearth; 2D had a circular hearth, but this formation was destroyed by boys before it could be photographed; 2D had a paved hearth similar to the one in 2B and 7B, except the first mentioned has a step of about four inches, as though one pavement had been laid over and beyond the first one. Another paved area was found in 11D. Charcoal was found in all of these pavements and circular hearths.

The projectile points are very nicely made. About 55 were found below the ten inch level. Several point blanks have been found, either awls or fish hooks, one worked bone, two worked antler bases, and two very nice antler point projectile points.

Post moulds were found in 16B forming an arc. Several single ones were found in other squares.

Special mention should be made of a small drilled sharks tooth pendant found by our oldest and most persistent excavator, Wm. Pierce. Numerous teeth that have been found have not been identified.

It is difficult to notice strata while a square is being worked, but after the sides have been exposed to the elements, the loam is either blown away or sifts down to the lower level leaving the shell layers. The report on strata exposed in 5 and 10B leads the author to believe that although the hill on the east side of the site is steep now, it was more precipitous at the time of occupation. The first erosion of the hill took place before the shell heap was started in the area excavated, for the three successive hearths were covered with yellow sandy loam.

As the shell heap grew, soil washed down the slope and met the growing heap, and in squares 5 and 10B overran the shells in two instances.

The shells were strewed around and tramped on and this, together with the accumulation of dust and dirt caused the stratification of the area which we uncovered.

Artifacts were not very numerous, which made rather dull digging, but the results are what count most. As the greater number were found in the squares nearest the base line, and the period of occupation was from steatite pottery to contact era, the artifacts should be more plentiful west of the base line.

Unwelcome visitors have caused us some trouble; first, by removing all the stakes they could, but as they did not pull up the holes, the stakes were replaced and driven down flush with the ground. On their next visit, finding the stakes were driven down so low they could not remove them, they misplaced the circular hearth in No. 16B, pulled up a bundle of grass and placed it in the center of their version of what a hearth should be, and, being incensed, took what stakes they could find and in nice block letters told us where we could go. The third invasion was by a cow that got through the dividing fence. She had more respect for our efforts, and just walked all over the area on a tour of inspection. She stepped in the center of the hearth in 6B, but did not disturb a stone. The fourth invader carried a shovel and test-dug several of the squares. He broke up the 6B hearth, and dug into a large shell pit exposed in the side of square no. 1B.

The most disturbing feature of the dig is the reporting of the key at a depth of fourteen inches on the yellow sub-soil, of a section of clay pipe stem on the same level and another section of pipe stem two inches down in the sub-soil, all in square 11B, and of the buckle at a depth of twelve inches in the shell-loam, stratum of 15B.

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A THUMB NAIL SKETCH OF KING PHILIP’S WAR

Excerpts from a book in preparation — by Henry F. Howe

One of the pleasantest chapters in the otherwise forbidding social history of early Massachusetts was that written by missionaries to the Indians. The Mayhews on Martha’s Vineyard, and Richardson Bourne and Samuel Treat at Mashpee and Eastham on Cape Cod, made considerable progress in educating and ministering to the natives in those areas. But the great career in this field of endeavor was that of the Rev. John Eliot, second pastor of the church at Roxbury. Eliot saw more clearly than the others the need for a religious literature in the Algonquin tongue, which Indian teachers could be trained to use to instruct their fellow natives. He succeeded in working out a practicable system of transcribing the spoken language of the Indians into written form and produced an Indian Bible, which was printed at Cambridge in 1661. He had taught a hundred Indians to read, and in his democratic Indian colony at Natick he set up a school for the natives which he became the source of more than a thousand conversions of Massachusetts Bay natives to Christianity. These prodigious efforts had the financial support of a Society for Promoting and Propagating the Gospel, in England, but the unremitting labor was that of Eliot himself, who managed to accomplish all this in addition to his duties as pastor of the Roxbury Church from 1637 to 1670. He was much beloved by the natives, and earned their devotion even after the distrust of the colonists generally.
had made these praying Indians prisoners on Deer Island during King Philip's War. The inevitable annihilation of the Indian as a factor in Massachusetts life which that war produced destroyed the effect of his work, but his achievement was none the less a great one, and his stature in retrospect grows as one compares his work with that of some others of the Puritan religious leaders. His approach to the whole Indian problem, almost alone among the colonial leaders, was an intelligent and sound one, even by modern standards. But, single-handed, he could not save the Indians.

Eliot's success was mostly with the weak remnants of the coastal Indians around the Bay, and his work had little effect on the stronger Nipmucks, Narragansetts, and Mohegans to the west. Even the Wampanoags of the Plymouth Colony fell little under his influence, since both Massasoit and his successors frowned on the conversion of their men to a loyalty to the English God. Massasoit held faithfully to his treaty with the English, but his death in 1661 created a new situation.

Many factors contributed to increasing antagonism between the English and the Indians. The basis of all of these was of course the insistent and inevitable encroachment of the towns upon the forest. We have recited the list of the new communities, each for the most part "buying" its territory from some local sachem who stood to profit individually from the deal, though the Indians generally were unable to understand the European notion of land ownership and only gradually appreciated that it included hunting rights and destruction of the forest. Game disappeared as the plantations grew; Indians were haled before English judges for crimes they failed to comprehend; white settlers got off unpunished for cheating the Indians. The most unruly and undisciplined class of planters were likely to be those congregated in the frontier settlements, and it was with these the Indians had to deal. After Massasoit's death, even the governors grew jittery, and repeatedly demanded that Indians deposit their arms at Plymouth as a token of good faith. So often did they repeat this sort of manoeuvre that there seemed as much ground for Indian rumors that the English were about to attack the natives, as for the prevalent English suspicion of plots among the Indians against the towns. When Massasoit's heir, Alexander, died on the way home from one of many summonses to Plymouth, Philip, his brother, succeeded to an uneasy leadership that he was unprepared to exercise. "None the less a fore the English, but his death in 1661 created a new situation.

The evidence as to whether or not Philip was himself the primary aggressor in the War suggests that his followers hurried him into action sooner than he wished. He did make attempts to secure offensive agreements with the neighboring Pocassets and Saco-nets, but such evidence is balanced by warnings he gave to English neighbors in Swansea that enabled them to escape safely to Rhode Island before the storm broke. The War was a popular uprising among the tribes, and did not at first have the character of a carefully planned military campaign. It began with houseburnings by small parties of Indians, in Swansea, and Dartmouth, together with raids on cattle in outlying settlements, and murder of English emissaries attempting to get help from Plymouth or Boston. Only when the colonies mobilized considerable forces to put down the uprising, did the Indians begin to assemble large war parties, and once this mechanism was set in motion, it became a full-fledged war.

During the ten days following the first small skirmishes on June 16, 1675, English troops of horsemen and militia began to converge on Swansea. Plymouth forces assembled at Bridgewater under Captain Church were joined at Taunton by others under command of Majors James Oudworth of Scituate and William
Indians destroyed the town. Punitive burning of brought the struggle to a head. It profit from their expected victory. But the whole and attained an uneasy neutrality, though they secretly nursed the wounded and the families of the Wampanoag mucks, and only courageous fighting and eleventh-temporized, and Philip managed to swim and raft a large portion of his warriors across the Taunton River, on the low tide at night, into Rehoboth. A remnant of his forces were captured at Assonet and were later sold into slavery, but Philip succeeded in outflanking his opponents and fought his way across the corner of Rhode Island to join forces with the Nipmucks who were also on the warpath. The small force under Captain Henchman left to contain Philip's forces in the Assonet peninsula completely failed in their mission, for instead of attacking Philip, they again temporized, and Philip managed to swing and raft a large portion of his warriors across the Taunton River, on the low tide at night, into Rehoboth. A remnant of his forces were captured at Assonet and were later sold into slavery, but Philip succeeded in outflanking his opponents and fought his way across the corner of Rhode Island to join forces with the Nipmucks who were also on the warpath. A remnant of his forces were captured at Assonet and were later sold into slavery, but Philip succeeded in outflanking his opponents and fought his way across the corner of Rhode Island to join forces with the Nipmucks who were also on the warpath.

This first phase of the War had been singularly inept from the English standpoint. Little use had been made of friendly Indian forces, of which a number were available, from Mohegans and Eliot's people, and the advice of frontier leaders like Captain Church who knew Indian ways and tricks, had been ignored.

The summer and fall of 1675 were a black period in Massachusetts history. Philip's escape to the Nipmucks made it impossible to keep that tribe at peace. Desperate negotiations by brave frontier traders like Ephraim Curtis of Worcester failed to prevent a concerted attack on Brookfield by the Nipmucks, and only courageous fighting and eleventh-hour reinforcement of the besieged inhabitants saved them from massacre on the fourth of August. The Indians destroyed the town. Punitive burning of Indian villages by the angry colonial militia now brought the struggle to a head. It was clear to both sides that a war of annihilation was in prospect in Massachusetts. Rhode Island's Narragansetts maintained an uneasy neutrality, though they secretly nursed the wounded and the families of the Wampanoag and Nipmuck warriors. Willy Unos kept his Mohegans of Connecticut on the English side, hoping thus to profit from their expected victory. But the whole western frontier of Massachusetts, particularly the exposed Connecticut valley towns, lay wide open to the type of ambush and surprise attack at which the Indians were adept.

After the destruction of Brookfield, the Confederation quickly mobilized to meet the new threat. The frontier towns crowded into their strongest garrison houses and feverishly built stockades around them, abandoning hard won homes and outlying farms to the marauding bands of savages, who promptly destroyed them, killing cattle and burning the buildings and corn fields. Small forces of militia, hurried to the aid of beleaguered garrisons, were repeatedly ambushed by Indian forces, and some of them slaughtered to a man. The Massachusetts Bay forces were singularly slow in learning how to protect themselves against surprise, and repeatedly sent out relief expeditions and wagon trains of supplies without the precaution of forward and flanking scouting parties or the use of friendly Indian reconnoiterers. Their commanders submitted to the inevitable popular clamor against all Indians, and refused the help of Christian natives and Mohegans even when they volunteered their services and their quite reliable information about enemy forces and dispositions. No Connecticut expedition was ever ambushed, because of their dependence on Mohegan scouts, but time after time, even monotonously, bands of Philip's warriors lay in wait in narrow ravines for Massachusetts companies strung out along the trail in single file, waited until they had passed through their last avenue of retreat, and then fell upon them from both sides, pouring a murderous fire down the hills from thickets and sheltering woods.

The months of September and October brought defeat after defeat to the hardy Massachusetts settlers of the Connecticut River valley. A preliminary attack by Massachusetts troops on the Pocumtuck Indian village near Northampton succeeded only in ranging this western clan solidly along side the Wampanoag and Nipmucks under Philip. Whereas the colonial military command had thought of this attack as a strengthening of that northern portion of the frontier, the effect was just the opposite. Within less than four weeks after the Northampton raid, the Pocumtucks had burned to the ground and forced the abandonment of Northfield and Deerfield, and had successfully ambushed two strongly escorted ox-trains bringing the supplies from those towns southward, wiping out the escorting militia to the tune of almost a hundred men killed. Half the male population of Deerfield and "the flower of Essex", more than fifty troopers from Cape Ann and the Ipswich region, fell in these bloody ambuscades. Twenty five miles of frontier farms lay desolate in ashes, and a new stand must be made on the line of Hatfield and Hadley. In October the Indians made raids on Northampton, Hatfield and Springfield, and most of the population in these towns had to retreat into the stronger garrison houses, which they hastily palisaded while they watched innumerable contraband consumption of their farms, fields, dwellings and grist mills. Springfield alone lost 32 houses and 25 barns in the raid of October fourth. More scouting parties were ambushed and massacred. Threats to Suffield and Clarksbury caused the withdrawal of the Connecticut reinforcements to defend their own territories, leaving the Massachusetts towns unable to keep both garrisons and offensive companies in the field at once. Only the towns brought any sort of relief to the western towns, and their little garrisons lived
through the winter in miserable isolation, short of supplies and fearful of attack. This was their only source of satisfaction was that the Indians suffered more acutely from starvation and lack of shelter than they.

Around Massachusetts Bay the ghostly defeats stimulated authorities for the first time into some kind of effective action. The United Colonies set about the drafting of a thousand men. Export of all sorts of provisions other than fish was prohibited. A popular wave of revulsion against all species of Indians forced the imprisonment even of John Eliot's praying natives on the islands of Boston Harbor. A winter campaign against the neutral Narragansetts was instituted for the somewhat inadequate reason that they refused to deliver up the Wampanoag women and children and wounded whom they were harboring. Fresh levies of troops from Cambridge, Watertown, Roxbury, Dorchester and Weymouth gathered in rendezvous at Dedham with Connecticut Valley veterans, marched to Attleboro and Providence, there to be joined by new men from the Plymouth towns, and at Wincdor met more than three hundred from Connecticut. Under command of Governor Josiah Winslow of Plymouth and Major Treat from Connecticut, this force of perhaps 1,500 men, by far the largest army the colonies had ever assembled, made a forced march of eighteen miles to attack the great Narragansett winter village in a deep swamp near Kingston, Rhode Island. On an island in the swamp, Canonchet's followers had built themselves a stockaded redoubt reinforced by hedges and an inner rampart of rocks and clay, with blockhouses so arranged as to flank the approaches with crossfire. Three valiant companies of militiamen stormed a weak point in these defenses where an unfinished portion of the stockade was filled in with a large tree. They were repulsed with heavy losses. Major Appleton, veteran commander of the Connecticut valley garrisons, led a further assault, which several Connecticut Colony companies joined, and a breach was made, through which the English poured, setting fire to the Indian houses and butchering indiscriminately the warriors, women, and children who inhabited the great village. Hundreds of Indians were killed or burned to death, but many more escaped as the confederation consumed their flimsy houses. So the victors and vanquished were left in the deepening snow of a rapidly worsening December blizzard, each withdrawing to lick their wounds and extricate themselves as best they could. Through a horrible night of snowstorm the colonial army struggled back to Wickford, carrying 150 of their wounded, of whom 22 died on the way. No one knows what the losses were, in killed, but estimates of 75 dead, including seven officers, among the English were not implausible. The Narragansett power was hurt, though not wholly broken. Its remnants fled to join Philip at Quebog, near Brookfield, but not before raiding the Rhode Island town of Warwick in January, taking 200 sheep, 50 cattle and 15 horses to supplement their waning food supplies. Governor Winslow retaliated by leading what has been called the "hungry march," burning and seizing Indian supplies throughout the Narragansett country in late January, proceeding northward into Massachusetts, and there disbanding his winter campaign army at Marlboro on February third.

Throughout the remainder of the winter Narragansett refugees poured into the Micmac country, adding their hungry mouths to the hungry tribes already there. Many were the raids made on English cattle and stores to feed these refugees. In the month of February, Sudbury, Lancaster, Concord, Medfield, and Weymouth were attacked in turn. At Lancaster, 50 of the garrison were killed or taken prisoner, among them sturdy Mrs. Rowlandson, the minister's wife, whose diary became one of the great source books for the War. At Medfield, 18 were killed and 50 houses burned. When Major Savage with several hundred colonial troops destroyed the Quebog village on the first of March, many of the Indians who escaped proceeded to attack and burn the Town of Groton, which was forthwith abandoned by the English. In March, also, eleven were killed within the bounds of old Plymouth when William Clark's garrison at Eel River was attacked and burned. Chelmsford, Marlboro, and even Roger Williams' Providence were burned in March. Perhaps the most awful day of the War was the twenty-sixth of March, when not only were Marlboro in Massachusetts and Simsbury, Connecticut burned, but six of a Longmeadow party on their way to church in Springfield were killed or captured, and Captain Pierce of Scituate with 50 soldiers on an expedition in Seekonk were ambushed and all but 8 killed, surrounded, with their backs to the Pawtucket River.

Philip had spent part of the winter at Schaghticoke in the Hudson Valley of New York, probably trying to get help from the Iroquois and the French, and perhaps supplies from Dutch traders. In none of these did he succeed. He returned in March for a council of war with Canonchet and sachems of the Pocomtucks and Nipmucks. It has been supposed that their plans called for planting crops in the northern Connecticut Valley, to support the warriors while they kept the colonial troops busy putting down raids on the eastern towns. Canonchet was sent back to Rhode Island to collect seed corn for the planting, and certainly raids multiplied in the east. In April, Bridgewater, Stillerica, Chelmsford, Marlboro, Weymouth, Hingham, Wrentham and Sudbury were attacked in quick succession. At Sudbury, Captain Wadsworth's company of 50 were ambushed and 35 were killed. In May, Haverhill, Rowley, Bridgewater, Halifax, Middleboro and Scituate suffered raids and burnings.

But Philip's campaigns were almost over. Despite the increasing rapidity and widespread character of the assaults, Philip's fortunes were ebbing fast. Early in April the good news spread through the colonies that Canonchet, that vigorous warrior of the Narragansetts, had been captured by Connecticut troops in Rhode Island and executed. His mission to collect seed for the Indian harvest was never to be fulfilled. A second body blow to Philip was Captain Turner's attack on the great Indian headquarters village at Turner's Falls on May 16. Turner was killed, along with 10 of his men, but the Indians lost over a hundred, and the colonists proved that attacks by the Indians in the east were not going to prevent strong counter-blows to the Indian bases in the west. This was further proved when Philip's men were quickly repulsed by strong forces at Hatfield and Hadley a few weeks later.

The truth of the matter was that guerrilla warfare in the Indian manner could go on only as long as the country could support the marauding bands. So long as cattle and corn were available for subsistence, the Indians could maintain their raids, once they had laid waste the country, and colonists had retired into strongly defended garrisons, it was no longer easy to eat. Supplies poured into Massachusetts Bay from her sister colonies, but after the
towards Massachusetts, being about six miles square, but later expanded to include more land.

The Quaboags were the independent tribes of River Indians, consisting of the Wekabogans, Quaboagans, Brookfieldans, and a few others. They lived in the area now known as the Quaboag region, which includes parts of Massachusetts, Connecticut, and New York.

When Brookfield was first settled, in 1660, it consisted of an area of six miles square, but later expanded to include more land. The Quaboags were one of the independent tribes of River Indians, dwelling in the Connecticut Valley system.

Several main trails or their branches and other connecting paths, passed through their territory and more or less established the sites for their chief villages, which were located at the red colored ponds in the Brookfields, and now known as Wekabog, Quaboag and South Pond.

One trail, known as the "Wampanoag Path," went from Norwich to Woodstock, Connecticut. From here a branch trail struck off through Southbridge, into Sturbridge, where it parted, one trail going past the lead mines to Springfield, the other crossing the Quaboagans to Springfield, passing through the town of Brimfield, and then south to the Mohegans. Another trail left the "Old Connecticut Path," in the town of Weston, through Sudbury Center and Stow to Lancaster, thence through Princeton, the south part of Barre, the north part of New Braintree to Wekabog pond in West Brookfield. From here it passed through the central part of Warren, entered Brimfield and then east of "Steerage Rock" and so to Springfield. A branch of this path went from Lancaster through Holden, to Quaboag pond, in East Brookfield.

The largest of these Quaboag villages, "Wekabog," was located at the southerly end and adjoining the pond of the same name, with the main cluster of wigwams built on a bluff or high plain, and sheltered from the north by a fringe of large hemlocks and pines. After the departure of the natives, the piles of firestones, indicative of wigwam sites, bothered the settler's plow. Great quantities of domestic utensils, such as stone kettles, drinking cups, grinders, pestles, axes and awls have been turned up, many of which are still preserved. Two steatite kettles in perfect condition, found on the western part of the plain, are now in Amherst College.

Another trail left the "Old Connecticut Path," in the town of Weston, through Sudbury Center and Stow to Lancaster, thence through Princeton, the south part of Barre, the north part of New Braintree to Wekabog pond in West Brookfield. From here it passed through the central part of Warren, entered Brimfield and then east of "Steerage Rock" and so to Springfield. A branch of this path went from Lancaster through Holden, to Quaboag pond, in East Brookfield.

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Mason Phelps

INDIANS OF OLD BROOKFIELD

Excerpts from "History of North Brookfield" by Josiah H. Temple 1887

Massachusetts Archaeological Society: Bulletin

November, 1917

Cohasset, Massachusetts
Tradition locates the burial place of this clan on the bluff at the north-easterly end of the pond, and a number of skeletons were plowed up by the early settlers. However, it is more likely that this village was used as a strong defensive fort, as is indicated by the still visible remains of several "barns" on the terrace at its southeasterly foot. These Indian barns or granaries, used for storage of corn etc., were circular excavations in the ground, the sides of which were left slightly converging, and especially where the soil was sandy or liable to cave in, the sides were coated with clay and hardened by heat, and are now often found unbroken. These "barns" — the smaller ones were 3 to 5 feet in diameter by equal depth; the larger were 10 to 15 feet in diameter by 5 to 10 feet deep — were commonly set in the sloping sides of a knoll or bank, to secure dryness, and the better to shed rain.

A notable wigwam site lay across the river, south-east about three fourths of a mile. A cool spring supplied water, while large heaps of chips indicated a work-shop area. Many stonite cups, pieces of clay pottery, a well-finished pipe and other utensils and ornaments have been unearthed. The site was occupied as late as 1745.

The other permanent village, "Gubagud or Quobacut" was on the south-east end of Quaboag pond and east of the canal connecting this with South pond. Remains of Indian occupancy are still plainly visible. The top of the bluff where the main part of the wigwams stood is still a waste of drifting sands, bare of vegetation, except where some white pines have lately taken root and the birches and sedges are maintaining a precarious foothold. Piles of firestones showing the alternate action of fire and water are still visible as are indications of two large "barns". As far back as anyone remembers the place has abounded with Indian relics of various kinds.

To the north of the pond, in the fork of Seven-mile and Five-mile brooks, there was formerly a steep conical hill, called Fort Hill. The top showed signs of having been artificially levelled, and surrounded by a rude breastwork. It probably was originally an Indian fort, and may have been utilized by the whites for a like purpose at a later period. The East Brookfield railroad station and freight-yard now occupy much of the site, the earth having been removed for filling.

Ashquoach, an important Quaboag village, often named in the early records, was situated on Indian Hill, north of Great (now Sherman's) pond, in Brimfield, and a short distance from the old Brookfield (now Warren) line. It was directly upon the great Indian trail from Woodstock to the Great Falls at Holyoke. The town was distinguished for its extensive corn fields and its defensive fort, and was known in the records as Quaboag Old Fort, till the Indians removed to their "new seat" on Menamesek river in the summer of 1675. A spring of water — the essential adjunct to an Indian fort — comes out at the foot of the precipice. There is a good place for wigwams in the sheltered depressions of the south-easterly slope of the crown of the hill.

There was another Ashquoach which is named in the Indian deed of 1665, as being between the head of Waltaug brook and Quaboag pond. On plowing the ground a few years since, large beds of clam-shells were discovered under the soil, which appear to be placed at equal distances from each other; these together with Indian utensils found there, prove that this was a place of their resort and dwelling.

Quassuck. According to William Pynchon, there was a small cluster of Indian wigwams and a corn field in Sturbridge, a little way south of Quassuck pond (now called Lead-mine pond), close to where the ore was afterwards worked.

Putikookuppog. A large village of Quaboags situated on the south bank of the Quinnaquoag, near the present line between Sturbridge and Brimfield. Many relics of various kinds have been found here.

There was an Indian settlement at the eastern base of Colonel's mountain in the north-east part of Warren, near the town-farm house. Two springs supplied never-failing water. An Indian lodge was standing here as late as 1716, at which date their burial place was well defined. Stone utensils, arrow and spear points were abundant in the soil.

Besides these clearly marked village sites, there are other places where single wigwams or small clusters were pitched, and occupied for a longer or shorter period. One such site was at "Indian plain" on the Edmond's place, near Horse-pond brook. A cluster of wigwams stood below the Hodges place, in the south-west corner of Brookfield near the Sturbridge line. The Rock House in the north-west of West Brookfield has a probable connection with our Indian history. There is a tradition that this place was used by the Indians as a winter resort and stronghold.

It might be well to note that the only mention of Indian occupancy, by the author, in the North Brookfield area, is the one mentioned above, near Horse-pond brook.

Other locations showing signs of Indian occupation, besides the ones mentioned in the North Brookfield History, might also be referred to. On Quaboag pond, just above the point where the river leaves the pond is a flat area, several feet above water level, stretching along the shore for quite a ways, now occupied by cottages, where numerous points, several pot sherds etc., have been found. Considerably farther back off the pond and to the left is evidence of another site. Also, where the combined waters of Seven-mile and Five-mile brooks, enter the pond is a high bank, cut by the highway, from which have come numerous points, drills and pot sherds. One other site might be mentioned. This site lies on the east side of the Quaboag river, above the West Brookfield bridge, on a sand ridge running back from the water.**

In the summer of 1675 the able-bodied warriors of these Quaboag clans suddenly left their ancestral towns, and concentrated at the "Menamesek country", on the old Nashaway trail in the north part of New

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*This is the site being excavated at the present time by the Nipmuck chapter of the Massachusetts Archaeological Society under the direction of Dr. W. Elmer Ekblaw.

**This site is being excavated by Mason M. Phelps of the Warren King Moorehead chapter.
As appears from contemporary history, these clans built three towns on the easterly bank of the Ware (Menamesek) river, to each of which, according to Indian etymology, the name Menameset was applied.

This shifting of the clans was followed by the burning of Brookfield, King Philip's War and the withdrawal of the remnants of the Quaboag people to other fields.

A FORTIFIED HILL IN MENDON

J. Edward Barns

In the volume, "Antiquities of New England Indians", published by Peabody Museum, Cambridge, Mass., in 1935, the author, the late Charles C. Willoughby, refers, on pages 287 and 288, to an old mound in the Mill River valley in Mendon. He visited this place in 1928 and evinced great interest in the location, which was between two brooks, also, the size of the once palisaded section, which was then clearly indicated.

In the volume mentioned above, Mr. Willoughby has well described this mound, a rough drawing of which accompanies this sketch; also a drawing of the fireplace made from the old photograph. It is assumed that that protected spot was the home of the chief of the tribe. Mr. Willoughby found evidence of corn cultivation not far from the mound.

Fortunately, the writer had taken snapshots of one part of the mound where the trench was in a better state of preservation, about ten years previous to the visit above referred to. The fireplace was at that time discovered under eight inches of accumulated briers, leaves and loam and also photographed. Since 1918, people roaming the woods have destroyed the symmetry of the Red Man's "fireless cooker". Decaying leaves and thickly growing brush have filled most of the trench during the past twenty-nine years.

Several arrowheads, a semi-polished hammerstone, dug up near the fireplace, two small stone knives, one spearhead and a hoe have been excavated there by the writer. More relics have been found there by others.

The mound is a half-mile distant from the largest camp-site in this section which covered several acres of land, and which was the habitation of a Nipmuck tribe. Tradition infers that this was the location of the group that King Philip visited just previous to that ill-fated Indian uprising. The Mendon town history states that the war was started by an attack July 14, 1675, on Mendon, which was burned and some inhabitants slain. This land, once the old camp, has been under cultivation for probably 150 years and the plow has revealed many hundreds of artifacts, which have been eagerly sought by curio hunters. At one time eight fireplaces were to be seen revealing the situation of that many wigwams, not far from Mill River.

Milford, Massachusetts
June, 1947

Fig. 26 - Section of Mound once fortified by the Indians.

Fig. 27 - Fireplace on top of the Mound.
Different styles of stone agricultural hoes have appeared in various parts of the Old World, as well as in different localities of the Americas. In North America, the blades that have attracted the most attention, perhaps, are those that occur in the Mississippi Valley and in the Southeast. They are generally flat blades with excursive bits somewhat elongated, and one style is side notched near the base for hafting. About 6 to 8 inches in length, they are made of durable stones for the most part, such as flint, quartzite or chert, and are well chipped into symmetrical shapes. They usually have a perceptible polish on both sides of the bit, which is said to be the result of soil abrasion.

It is not clear whether their function was that of hoes or spades, but they appear to have been subjected to considerable wear. As they are flat, they must have been hafted on a crooked stick if they served as hoes, or on a straight one if they were used as spades. They appear to have been made by experienced artifact makers, as they are well formed, with even chipping. Apparently, their common acceptance as hoes has given rise to the belief in all parts of the country that to be a hoe, an artifact must be of a similar shape — generally flat and rounded on all edges. Consequently, in the Northeast, certain oval-shaped, flat artifacts, completely re-worked, have, in the past, been considered to be hoes by some. However, this theory has recently been disproved by the appearance on all horizons, including pre-agricultural ones at the Titicut excavation, Bridgewater, Massachusetts, of these same oval-shaped artifacts, made mostly of shale or granite.

This revelation poses the question, if such flat stone blades had a functional use other than that of hoes or spades, what were the hoes of the agricultural era? Considering the wide spread cultivation of maize among the Indians in the Northeast as reported by protohistoric writers, obviously some method of tilling the soil must have been used. Champlain speaks of a wooden steved used as a spade, and the shell of a horseshoe crab used as a hoe. Still others, such as William Wood and Roger Williams, speak of the use of clam shells as hoes, while the latter says that formerly they were of stone. Unfortunately, none of them relate the method in which they were hafted, if at all. While digging sticks were undoubtedly used in the Southwest for making holes into which to drop kernels of maize, the forbidding soil of the Northeast may have presented more of a problem than the soil of the Southwest. Furthermore, if the aborigines of the Northeast cultivated with such a tool as a hoe, its function probably was primarily one of breaking soil or digging holes. It would, therefore, have differed somewhat from that of the steel hoe. While the latter hoe blade is tipped at an acute angle to the handle for the purpose of sliding under roots of weeds and cutting them off, it is not well suited for digging holes, except when used corner-wise. Consequently, the stone hoe of the aborigines, which was probably used for breaking soil, weeding, and digging holes, would logically assume a more obtuse angle from the handle in order to point downward when applied to the earth, and still allow the laborer to remain in an upright stance.

There are some of the reasons that have seemed to support the discovery of what has been classified as triangular hoes (William S. Fowler, "The Hoe Complex," American Antiquity, Vol. 12, #3). This paper will not try to further justify the existence of the triangular type of hoe, which is amply covered by the original report in American Antiquity. Rather it will describe the implement, and then proceed to trace its origin and diffusion as suggested by recent research and investigation. While these arguments may seem to some to be based on no more than an assumption, the author offers several illustrations of well-defined specimens, all sufficiently worked and shaped to show that his conclusions are based on something more tangible than ethereal imaginations. This factual evidence should not be pushed too lightly aside, especially when consideration is given to the fact that not only the author but already several others have altogether recovered hundreds of like specimens, all of which have occurred either in deposits of the agricultural horizon, where stratigraphy was available, or from surface finds. While the tanged type of hoe occurs occasionally on some sites, the triangular type appears much more frequently, and evidently was the preferred hoe.

Description of Triangular Hoes

The following six traits are the chief determinants of the triangular hoe:

1. A triangular shape that may vary from equilateral to an elongated isosceles form.
2. One point of the triangle, usually the thinnest, forms the bit. It is usually blunted or broken off to form a square-ended bit, one-half to one inch wide, whose thickness decreases towards nothing.
3. Both base points are often broken off, apparently to effect symmetry and to facilitate handling.
4. The blade is more or less hooked, and this would throw it out of balance if it were used with a side haft, as, for example, for an axe.
5. There is always an oblique base, half an inch or more in depth, on which rests the end of the straight stick that is used for the handle.
6. Slight notches frequently appear when required under one or both base points, evidently intended for holding the hafting thongs in place.

*All illustrations are by the author.
Triangular hoes are usually made from spalls which have been broken off cobbles or blanks by percussion or by fire, although in the smallest size they are sometimes made from large flakes. The stone material used is generally from the commonest local deposits, and usually has a low tensile strength, such as shale, granite, schist, and certain sedimentary formations. Occasionally, isolated specimens will be made of quartz, quartzite or felsite. While they appear to be rudely percussion-flaked, with only such working as is needed to reduce them to symmetrical proportions and to the six trait requirements already referred to, their rude form were no doubt just as efficient in accomplishing the end result as though they had been more carefully worked. Hypothetically, this apparent deficiency of workmanship has been explained by actual evidence from the field, which seems to suggest that they were made by the women who tilled the soil, and not by the artifact makers of the camps.

Origin of the Idea

Implement traits, like everything else, must have a beginning, but to find sufficient evidence to determine where and how they originated is usually an almost impossible experience. However, good fortune seems to have produced convincing evidence to support a postulated provenience for the triangular hoe blade in a preceding cultural period of development, presumably before agriculture had been introduced.

From recent research in the steatite quarries of New England has come evidence which bears directly on the subject, but before discussing it further, the chronological position of the steatite industry should be considered. While evidence secured from camp sites makes it appear that steatite bowls were in limited use when Indians also used clay pottery, in turn believed to have been contemporaneous with agriculture, there has occurred no evidence of any kind at steatite quarries to confirm such an industrial association. Furthermore, no material that has appeared in any excavated grave in which complete steatite bowls have been a part of the grave goods would suggest an agricultural association. These facts, together with a lack of historical reference to the use of steatite pots has formed a basis of belief that the steatite industry was, in the main, carried on during an era that preceded that of agriculture. If this is a logical premise, then it may be assumed that stone traits appearing in steatite quarries antedate those found associated with agriculture.

An important function at steatite quarries, and one that has received but little notice from earlier research, is that of removing tailings from around steatite outcroppings. W. H. Holmes, in the latter part of the nineteenth century, when reporting on the quarries of the Potomac Valley, stated that the removal of tailings was no doubt an established practice, but that no stone implements had appeared that could have been used for that purpose. Instead, he suggests the possible use of wooden implements which have since disappeared. Notwithstanding such reports, it may now be stated as a result of recent excavations in New England quarries that, at least in this region, stone tools were used for removing tailings. Of these implements, those used for breaking up the trampled dust and flakes from the steatite deposit have been called tailing breakers, and it is these tools that provide a possible clue to the origin of the triangular hoe.

Fig. 28 - Tailing breakers from steatite quarries: a, Dolly Bond; b, Oaklawn; c, Wilbraham. (One-fourth natural size.)

Of the twenty-four documented aboriginal steatite quarries of New England, one group consists of a series of outcroppings that extends from North Andover, Massachusetts, to Westerly, Rhode Island, while the other group consists of outcroppings confined to the Connecticut Valley from Westfield, Massachusetts to Bristol, Connecticut. Eight Lot, Dolly Bond and Oaklawn quarries of the eastern group have produced long-tongued tailing breakers (Fig. 28, a, b). Also, Barkhamsted quarry — the northernmost site of the Connecticut quarries — has produced similar tailing breakers. These tools are made apparently for hand use with no indication of hafting. They are elongated slabs of granite that have been percussion-flaked and have a relatively long pointed tongue for the bit. Some have experienced considerable wear as evidenced by smooth rounded edges as in Figure 28b, but probably not from working steatite as their tensile strength is too low to permit it.

In the two quarries of western Massachusetts, at Wilbraham and Westfield, another style of tailing breaker has appeared (Fig. 28, c). This tool, which is reworked on all three sides, was probably made
for hafting as is evidenced by the slight notches under its two shoulders. It has the six traits of the triangular hoe as previously listed, is about 8 inches long and weighs 4 to 5 pounds. It was probably used for breaking up tillings, for it, too, is made of granite with low tensile strength. So far this tool trait in the triangular shape has been negative, or too ill defined for recognition on all other quarry sites examined.

From these facts, it is apparent that tilling breakers were specialized tools that were devised to meet a particular need. They were probably the result of independent invention rather than diffusion, for if the idea had developed naturally through contacts with border cultures, similar tools might be expected to appear in outlying regions in the same horizon, but this is not the case. Consequently, it seems probable that they were original inventions. Furthermore, as there are two types, both made of the same stone and with similar hypothetical functions, it seems to be a clear case of convergence. Apparently, both groups of workers were satisfied with the results from whichever form of breaker they used, and industry did not persist for sufficient time to demonstrate the superiority of one style over the other. Hence, it appears that the hafted triangular type (Fig. 28 c) was confined to the upper Connecticut Valley, as it does not appear at Barkhamsted, where, of all the Connecticut sites, lies the closest to its source. It must be assumed, therefore, that Barkhamsted probably indicates the breaker type of those sites to the south, and this would then confine the triangular form to the Connecticut Valley of western Massachusetts.

Agricultural Adaptation

Based on this postulated premise of the priority of the steatite invention of the triangular tilling breaker during the steatite epoch, it seems to follow that the later use of an implement with all the diagnostic traits of the earlier one, even though it were put to a different end use, would suggest a close association with the primary creation. Assuming, therefore, that the agricultural epoch followed that of the steatite industry, it remains but to substantiate the use of the triangular blade as a hoe in order to trace its origin back to the triangular tilling breaker of the preceding age.

In 1724, J. F. Lafitau made an important contribution to this research when he illustrated Huron squaws of the St. Lawrence region tilling the soil with triangular bladed hoes, hafted on handles. Obviously, these were not contact trade hoes or their shape would have been broad bitted, and they must therefore be considered to have been made of stone and to have existed as a result of development from a prehistoric source. No better evidence is needed to support the basic premise of this paper that the preferred stone hoe of northeastern prehistory was probably triangular in shape.

If this comparison be accepted as evidence, then it naturally follows that some aboriginal cultivation depended to a considerable extent upon a triangular hoe. This being the case, and realizing that cultural advance prefers not to develop new inventions but to borrow previous ones which were found to fit into the culture pattern of the day, a good example of adaptation seems apparent. Of course, invention of the tilling breaker of the steatite industry and the appearance of a similar stone trait in agricultural days could represent a parallelism of two separate independent inventions, but this seems unlikely. The fact that both the steatite invention and the greatest concentration of agricultural triangular hoes occur in a comparatively restricted and secluded area — the Connecticut Valley of western Massachusetts — seems to suggest an adaptation from the preceding age. This region is set apart from surrounding terrain by virtue of its fertility as against arid sandy wastes and wooded mountainous barriers. It presents, therefore, an ideal setting for a continuous cultural development before overland raids had developed to interrupt its continuity.

With this observation as a postulated probability, it seems likely that this fertile valley formed the center of development for the triangular hoe; that it was invented in the preceding steatite industrial epoch as a tilling breaker, and was adopted with only a slight modification in size for use as a hoe by the agriculturalists who followed. Hypothetically, it might be argued as a logical conclusion that this indicates an uninterrupted natural cultural development from the steatite to the agricultural era and that racial continuity was probably preserved with little interference from outside migratory influences in this culture center.

So far as the hoe is concerned, it was apparently conceived of primarily in its large size as a soil breaker — a natural step from the tilling breaker — and secondarily in its small size as a cultivator and weeder. The effect of this important adaptation on the marginal regions of this culture center is an interesting conjecture that will now be considered.

Trait Diffusion

Starting with the premise that the idea of using a pointed hoe blade emerged from a cultural center that probably was in the Connecticut Valley of Massachusetts, it is important to note the habitation sites on which this trait appears (Fig. 29). By reference to this map, it will become apparent that areas where all conditions are suitable for agriculture are located around curving ways. These are indicated by shading and are taken from an article by Douglas S. Byers, "Notes on the Environment of New England", Bulletin of the Massachusetts Archaeological Society, Vol. 5, No. 2, pp. 29-31. That these agricultural regions would be the most likely areas where hoes should be in evidence is a foregone conclusion, and the results of extended research by the author have amply confirmed it. The map also indicates different sites where triangular hoes have occurred, and one glance will suffice to show that all are within or are situated near the preferred agricultural section. However, this does not mean that triangular hoes may not ultimately be found on other sites in outlying regions where agricultural conditions are not so favorable, but only that at least for the time being they have not appeared. Nevertheless, the fifty-one sites on which specimens have been present suggest a significant postulation, which may have a bearing on migratory and cultural problems of the agricultural epoch.

In order to obtain accurate data, the author made a field trip in the fall of 1947 to ascertain if possible the extent of apparent use, which had diffused. The results of this research reveal
several significant aspects concerning this diffusion, which seems to have been relatively widespread. At the culture center in the upper agricultural area of the Connecticut Valley, the trait is very much in evidence (Fig. 30). On all seventeen sites listed, from the Deerfield River to points south, there is a prolific reoccurrence of this trait. It continues to appear on Connecticut sites, down the river and up the Farmington. It also is evident in the Thames, Naugatuck and Housatonic valleys. In Massachusetts, it reappears up the Taunton, Merrimack, Concord, and Sudbury valleys (Fig. 31). While it occurs at Plymouth (Fig. 32) it is infrequent on coastal sites in this region, and so far has not been reported on Cape Cod. Moving westerly, it is much in evidence at sites on both sides of the Hudson River (Fig. 33), and is well defined in the Mohawk Valley above Schenectady (Fig. 31). While research stopped here, it is entirely possible that the trait diffused on up the valley and throughout the agricultural areas of New York State. Furthermore, although no evidence has been uncovered to postulate a southerly movement of the trait, there is a chance that it will ultimately be found to exist on camp sites in New Jersey, for it is unbelievable that it did not move in a southerly direction when it is seen to have moved in all other directions. Lafitau's illustration, already referred to, would seem to indicate that it may even have moved north along the coast and on, up the St. Lawrence River into Huron territory. Whatever the reason for such wide-spread diffusion, it seems obvious that this type of hoe must have been well suited to the agricultural needs of the times, for traits are borrowed and used only when they fit culture patterns and are found to meet certain definite needs.

**Conclusion**

Based on the evidence presented in this paper, agricultural development of the Northeast probably followed a more or less similar pattern of which triangular hoes were an important part. However, the failure of early commentators to make mention of them may be accounted for by the subsequent use of clam shells by coastal peoples. When consideration is given to the similarity of traits between a quahog shell and a stone triangular hoe, it may well be that shells were employed when available in place of worked stone hoes after the introduction of the idea from the Connecticut Valley. Certain it is that both William Wood and Roger Williams relate how clam shell hoes were in use for weeding and that they are talking about coastal Indians who lived about Massachusetts Bay and Narragansett Bay. However, they fail to say whether the shells werehafted or not and leave that to conjecture. Because of the extreme labor that would result if a shell were held in the hand while digging, this paper takes the stand that the clam shells referred to must have been hafted to accomplish the excellent results cited by these reporters, particularly those mentioned by William Wood.

Figure 35 gives a graphic view of what the haft may have looked like. It is identical to that used for the triangular hoe and is the strongest attachment of shell to handle that can be devised. Its unmistakable resemblance to a handle for a stone hoe is inescapable and its close association, therefore, to the triangular hoe development seems to follow as a good probability. To haft the shell at the butt end of the handle and attach it by means of two drilled holes through the shell as has been suggested by some, would only serve to weaken the shell, whereas a crooked stick over the shell would serve no good purpose other than what is already provided by the use of a straight stick, as illustrated. Furthermore, as the latter kind of handle is much more readily found in the woods than the former, there seems to...
Fig. 30 - Connecticut River Valley, Mass. Scale 3/8.

Fig. 31 - Merrimack-Concord River Valleys, Mass. Scale 3/8.

Fig. 32 - Plymouth, Mass. Scale 3/8.

Fig. 33 - Hudson River Valley, New York. Scale 3/8.
remains no good reason to support the theory that a crooked stick served as haft in preference to a straight stick.

The haft illustrated requires but a slight nick in the outer edge of the shell to secure the thongs on one side, while the shell muscle supports the thongs on the opposite. The stick rests in a natural oblique groove at the base. As a whole, clan shells have all six traits of the stone triangular hoe. Because stone hoes are not found on Cape Cod, it seems probable that there, as well as in other coastal regions, shells had completely replaced stone hoes in early agricultural times. Their use would have saved much labor spent in flaking stone, and broken blades could have been replaced with no loss of time or energy. However, further inland, where quahog shells were only available as a result of importation, triangular stone hoes were apparently in general use.

Because of the frequency of their occurrence at sites on river valleys, it seems probable that the idea was diffused by water travel up and down rivers, estuaries, and along the sea coast. As culture is determined to a considerable extent by environment, it is likely that the similarity of soil requirements in the Northeast readily revealed the benefits that would accrue through the use of a pointed hoe blade, and hence made the triangular hoe universally acceptable. From this it would appear that there probably was free and friendly intercourse between various tribal groups in the Northeast, at least in the beginning of the agricultural epoch when the method of cultivating must have been a subject of universal discussion. Apparently, there was sufficient social harmony to prevent the establishment of barriers that would otherwise have retarded or completely eliminated the diffusion and acceptance of culture traits in a natural way. The Hudson and Mohawk valleys are good examples of regions where conditions were favorable to diffusion, and here triangular hoes are frequent and well defined. Such evidence as this would seem to indicate a simultaneous development of agriculture throughout the Northeast, which perhaps tended for a time at least to promote friendship and prevent friction between different tribal units.

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