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WOODS NEW ENGLANDS PROSPECT, as it is now called, was first published in London early in 1634, and passed through succeeding editions in 1635, 1637, 1639, and in Boston in 1764 and 1865. It was reprinted exactly from the corrected edition, saving only that the modern s was used, by Eben Moody Boynton, of West Newbury, in 1898. He preserves the original spellings, which we reproduce, in all their perplexities. From Mr. Moody's introduction we take the following data.

William Wood came to New England in 1629, along with his father, John Wood. He was then twenty-three years old. He appears to have been commissioned to report on the country for the benefit of the Puritans in England, and their sympathizers. The Woods settled in Lynn in 1629. From this center William Wood made journeys along the shores and streams of eastern Massachusetts. He visited Boston when its only inhabitants were Indians and the wild creatures of the forest.

The map which he published shows "that he visited and carefully located every settlement, including the first in the Merrimac Valley, (which river does not even appear on Captain Smith's map of 1616).

William Wood returned to Lynn, from England, in 1633, after the publication of his book. "He represented that settlement in the Massachusetts Legislature in 1636. He led a colony of fifty to Sandwich, Mass., in 1637, and then disappears from the printed records."

The following excerpts are taken from the second part of Wood's book, dealing with the Indians. In order not to spoil the continuity we have inserted only the principal reference to the pages in Mr. Boynton's reprint, for the benefit of those who wish to turn to that for further reading.

THE SECOND PART.

Of the Indians, their persons, clothes, diet, nature, customs, marriages, worship, conjurations, wars, games, hunting, fishing, sports, language, death, and burials.

CHAPTER I.

Of the Connecticut, Mowhacks, or such Indians as are West-ward.

P. 59 "The country as it is in relation to the Indians is divided as it were into Shires, every several division being swayed by a several king. The Indians to the East and North east, bearing the name of Churchers, and Tarrensteen. These in the Southern parts be called Pequants, and Narragansets; those who are seated West-ward be called Connecticut, and Mowhacks. Our Indians that live to the North-ward of them be called Aberginians, who before the sweeping Plague, were an inhabitant nor fearing, but rather scorning the confrontments of such as now count them but the scumme of the country, and would soone roote them out of their native possessions were it not for the English. These are a cruel bloody people, which were wont to come downe upon their poore neighbours with more than brutish savagenesse, spoiling of their Corne, burning of their houses, slaying men, ravishing women, yea very Caniballs they were, sometimes eating on a man one part after another before his face, and while yet living; in so much that the very name of a Mowhack would strike the heart of a poore Abergendian dead, were there not hopes at hand of release from English to succour them."

CHAPTER III.

Of the Pequants and Narragansets, Indians inhabiting Southward.

P. 64 "The Pequants be a stately warlike people, of whom I never heard any miasmasour; but that they were lust and equal in their dealings; not treacherous either to their Country-men, or English; Re­quitters of courtesies, affable towards the English. Their next neighbours the Narragansets, be at this present the most numerous people in those parts, the most rich also, and the most industrious; being the store-house of all such kind of wild Merchandize as is amongst them. These men are the most curious minters of their Wampompeage and Mowhakes, which they forme out of the inmost wreaths of Periwinkle-shells. The Northerne, Earstone, and Western Indians fetch all their Coyne from these Southern Mint-masters. From hence they have most of their curious Pendants & Bracelets; from hence they have their great stone-pipes, which will hold a quarter of an ounce of Tobacco, which they make with steel-drills and other
instruments; such is their ingenuity & dexterity, that they can imitate the English mold so accurately, that where it not for matter and colour it were hard to distinguish them; they make them of greene, & sometimes of blacke stone; they be much desired of our English Tobacconists, for their rarity, strength, handsomenesse, and coolnesse. Hence likewise our Indians had their pots wherein they used to seeth their victuals before they know the use of Brasses."

CHAPTER V.
Of their Apparell, Ornaments, Paintings, and other artificiall deckings.

P. 68 "Now these naked bodies may seeme too weak to withstand the assailing heat of their parching Summers, or the piercing cold of the icee Winters, or it may be surmised that these earthly fabrics should be wasted to nothing by the tempestuous dastings of wind-driven raines, having neither that which may warme within, or shelter without; yet these things they looke not after, saving a paire of Indian Breeches to cover that which modestly commands to be hid, which is but a piece of cloth a yard and a halfe long, put betweene their groining, tied with a snakeskinne about their middles, one end hanging downe with a flap before, the other like a tail behind. In the Winter time the more aged of them ware leather drawers, in forme like Irish trousers, fastened under their girdle with buttons; they ware shoes likewise of their owne making cut out of a Moces hide, many of them ware skynnes about them, in forme of an Irish mantle, and of these some be Beares skinnnes, Mooses skinnnes, and Beaver skinnnes sewed together, Otter skinnnes, and Rackoone skinnnes; most of them in the Winter having his deepe furry Cat skynne, like a longe large muffle, which hee shifts to that arme which lieth most exposed to the winder."

P. 69 "Although they be thus poore, yet is there in them the sparks of naturall pride, which appears in their longing desire after many kinde of ornaments, wearing pendants in their eares, as formes of birds, beasts, and fishes, carved out of bone, shels, and stone, with long bracelets of their curious wrought wampompeage and mowhackees, which they put about their necks and loynes; these they count a rare kinde of deck; many of the better sort bearing upon their cheekes certaine pourtraits of beasts, as Beares, Deares, Mooses, Wolves, &c., some of owls, as of Eagles, Hawkses, &c. which be not a superficiall painting, but a certaine incision, or else a raising of their skin by a small sharpe instrument, under which they convey a certain kind of black unchangeable inke, which makes the desired forme apparent and permanent. Others have certaine round Impressions downe the outside of their arms and breasts, in forme of mules or spur-rowels, which they imprint by searing irons; whether these be foilles to illustrate their unparallelled beauty (as they deeme it) or Armes to blazon their antique Gentilitie, I cannot easily determine: but a Sagamore with a Humbard in his eare for a pendant, a blacke hawk or his occupit for his plume, Mowmackees for his gold chaine, good store of Wampompeage begitting his loymes, his bow in his hand, his quiver at his back, with sixe naked Indian spatterlashes at his heelles for his guard, thunders himselfe little inferior to the great Cham; hee will not stick to say, hee is all one with King Charles."
The South part of New-England, as it is Planted this yeare, 1634.

Fig. 8--Reproduction of William Wood's Map of New England.
commit to paper; hee that is a noted gamaster, hath a great hole in his ear wherein hee carries his Pulses in a Pincel; and when they play country against country, there would exceede the beleefe of many to relate the worth differing is nothing; so long as a man winns, he keepes laughing hearts scuffle for victorie. While the men view their swift footemanship, their curious tossings and thigns, crying out, Hub, Hub, Hub; they may be heard play at this game a quarter of a mile off. The bones being all blacke or white, make a double game; if three be of a colour and two of another, then they affoord but a single game; four of a colour and one differing is nothing; so long as a man winns, he keeps the Tray; but if he loose, the next man takes it. They are so bewitched with these two games, that they will loose sometimes all they have, Beaver, Moose-scallers, Kettles, Wampomeage, Mowhackies, Hatchets, Knives, all is confiscate by these two games. For their sports of activitie they have commonly but three or foure; as football, shooting, running and swimming; when they play country against country, there are rich Goales, all behung with Wampomeage, Mowhackies, Beaver skins, and blacke Otter skinnes. It would exceede the beleefe of many to relate the worth of one Goale, wherefore it shall be namelesse. Their Goales be a mile long placed on the sands, which are as even as a board; their ball is no bigger than a hand-ball, which sometimes they mount in the Aire with their naked feete, sometimes it is swayed by the multitude; sometimes also it is two days before they get a Goale, then they marke the ground they winne, and beginne there the next day. Before they come to this sport, they paint themselves, even as when they eat in defiance of his antagonists. Hubbub is five small burthen whereof either takes them prisoners, or expells their breath from their squised bodyes. These kinde of creatures would gnaw the other kind of traps asunder, with their sharp teeth; these beasts are too cunning for the English, who seldome or never catch any of the, therefore we leave them to those skilful hunters whose time is not so precious, whose experience bought-skill hath made them practicall and usefull in that particular.

CHAPTER XVI.
Of their fishings.

P. 92 "Of their fishing, in this trade they be very expert, being experienced in the knowledge of all baies, setting sundry baies for several fishes, and diverse seasons; being not ignorant likewise of the removall of fishes, knowing when to fish in rivers, and when at rockes, when in Bales, and when at Seas; since the English came they be furnished with English hookes and lines, before they made them of their owne hempe more curiously wrought, of stronger materials than ours, hooked with home hookes; but lasinesse drives them to buy more than profit or commendations winnes them to make of their owne; they make likewise very strong Sturgeon nets with which they catch Sturgeons of 12, 14, and 16, some 10 foote long in the day time, in the night time they betake them to their Burtchen Cannows in which they carry a forty fathom line, with a sharpe bearded dart, fastned at the end thereof; then lightning a blazing torch made of Burthen rindes, they weave it too and againe by their Cannow side, which the Sturgeon much delighted with, comes to them tumbling and playing, turning up his white belly, into which they thrust their lance, his backe being impenetrable; which done they haile to the shore their struggling prize. They have often recourse unto the rockes whereupon the sea beates, in warme weather to looke out for sleepe Seals, whose oyle they much esteeme, using it for divers things. In summer they seldome fish any where but in salt, in winter in the fresh water and ponds; in frostle weather they cut round holes in the yce, about which they wil sit like so many apes, on their naked breeches upon the concealed yce, catching of Pikes, Pearches, Breames, and other sorts of fresh water fish.

CHAPTER XVII.
Of their Arts and Manufactures.
CHAPTER IX.

Of their women, their dispositions, employments, usage by their husbands, their apparel, and modesty.

P. 99 "To satisfy the curious eye of women-readers, who otherwise might think their sex forgotten, or not worthy a record, let them peruse these few lines, wherein they may see their own happiness, if weighed in the women's balance of these ruder Indians... Their employments be many: First their building of houses, whose frames are formed like our garden arbours, something more round, very strong and handsome, covered with close-wrought mats of their own weaving, which deny entrance to any drop of rain, though it come both fierce and long, neither can the piercing North wind finde a crannie, through which he can convey his cooling breath, they be warmer than our English houses; at the top is a square hole for the smoke to escape, which in rainy weather is covered with a pluer; these bee such smokie dwellings, that when there is good fires, they are not able to stand up-right, but lie all along upon the smoked, never using any stooles or chairs, it being as rare to see an Indian sit on a stoole at home, as it is strange to see an English man sit on his heels abroad. Their houses are smaller in the Summer, when their families be dispersed, by reason of heat and occasions. In Winter they make some fiftie or threescore foot long, forty or fiftie men being inmates under one roofe; and as is their husbands occasion these poor tectonistes are often troubled like menacis, to carry their houses on their backs sometime to fishing-places, other times to hunting-places, after that to a planting place, wherein they abide the winter; there they plant corn, or to plant their corn: when their corn being ripe, they gather it, and drying it hard in the Sunne, convey it to their barnes, which are great holes digged in the ground in forme of a brasse pot, seeded with rinds of trees, wherein they put their corn, covering it from the inquisitive search of their gurmansiding husbands, who would este up both their allowed portion, and reserved seede, if they knew where to finde it. But our hoggles having found a way to unhinge their barne doors, and robbe their garners, they are glad to implore their husbands helpes to roule the bodies of trees over their holes, to prevent the rovers. Some use to say, these are as much hate as their flesh. An other of their employments is their Summer processions to get Lobsters for their husbands, with whom they baite their hoopes of a Tub; these are made very light, a man might carry one of them a mile, being made purposely halfe, or two feet wide, and twenty foote long. Their other Cannons be made of thinne Birch-rines, close ribbes together with hair, like the hoopes of a Tub; these are made very light, a man may carry one of them a mile, being made purposely to carry from River to River, and Bay to Bay, to shorten Land-passages. In these cockling fly-boates, wherein an English man can scarce sit without a fearefull tottering, they will venture to Sea, when an English Shallope dare not beare a knot of sayle; scudding over the overgrowne waves as fast as a wind-driven weede may carry nne of them a mile, being made purposely feathered shallope dare not be are a knot of sayle; scudding over the overgrowne waves as fast as a wind-driven weede...
behaviour with his feete up to his bummie, upon a board two foote long and one foote broade, his face exposed to all nipping weather; this little Pappouse travels about with his bare footed mother to paddle in the Icle Clann-bankes after three or foure days of age have sealed his passebook and his mothers recovery.

PRE-HISTORIC RELICS FROM BEVERLY
(With Two Plates)

Contributed by John Robinson

[Reprinted from the Bulletin of the Essex Institute, Vol. XXVII, 1895.]

On July 21, 1871, a very interesting collection of prehistoric objects was obtained by the Peabody Academy of Science from three graves, accidentally discovered on Lovett Street, Beverly, by workmen engaged in digging a trench. Some account of these objects will be found on page 125 of the Bulletin of the Essex Institute for 1871, Vol. III, as announced by Mr. F. W. Putnam at an Institute field meeting held at Ship Rock, Peabody, August 2, 1871. It was intended to give a fuller description of this collection, with illustrations, in the "American Naturalist" magazine, but this was never done. Professor Putnam also intended to contribute, to the memoirs of the Peabody Academy, an article on the pre-historic graves in Essex County; but, later, this plan was relinquished. For this last purpose, however, two excellent lithographic plates were prepared by Mr. G. W. White, and printed. It is now thought well to use these plates for the Institute Bulletin, and they are introduced here as supplementary to the article of 1871, Vol. III, pp. 123-5, above mentioned.

The plates cover the more interesting objects found in the three graves at Beverly and may be described as follows:

**PLATE I.**

| Fig. 1. Pipe, peridotite; very probably made of the rock, commonly called soapstone, from the Andover outcrop. |
| Fig. 2. Knife blade of Marblehead felsite. |
| Fig. 3. Spear-head of Marblehead felsite. |
| Fig. 4. Celt or skin dresser of diorite. |

**PLATE II.**

| Fig. 1. Slate stone marked as shown. |
| Fig. 2. Slate tablet, very probably made of the Bradford rock. |
| Fig. 3. Slate tablet, as last. |
| Fig. 4. Tablet of prophyritic dyke rock. It shows indication of the beginning of a hole at the smaller end as in figure 2. |

All of the objects are drawn actual size. In addition to the objects figured, there are in this collection from the Beverly graves, another tablet, similar to fig. 2, Plate II, but of a lighter colored slate; a porphyritic dyke rock pebble, with indentations on the edge; two flat pieces of sandstone, evidently used for rubbing or sharpening implements; a flat slate stone and two pebbles showing traces of ochre upon them; and several thin pieces of muscovite of the Andover form of this mineral. The identification of the rock materials has been made by Mr. Sears. There is no reason to suppose that these implements originated outside of Essex County; for, in each case, a rock of precisely the same character as the object is found within the limits of the country.

There are, in the county collections of the Peabody Academy, a large number of interesting objects obtained from pre-historic graves, or graves of the people of the pre-historic race which occupied this region, although from the finding of European beads and copper trinkets in connection with aboriginal stone implements, these latter burials must have been made after the year 1500, when Europeans had visited our shores. In the case of the Beverly graves from which the objects figured were obtained, unless the pipes are of European workmanship, or were made with tools obtained from the early voyagers, the age may be placed at more than 350 years. If, however, the pipes were made by Europeans or with tools obtained from them, then 270 to 350 years would be a safer estimate for the age of the objects found; they undoubtedly antedate the permanent settlement of the region in 1626.

Peabody Academy of Science
January 19, 1897.

NOTES ON PRE-HISTORIC RELICS FROM THREE BEVERLY GRAVES

Ripley P. Bullen

These notes have been written to complete as much as possible the record of the three Beverly graves covered by the foregoing reprint. Through the courtesy and assistance of Mr. Ernest Dodge of the Peabody Museum, Salem, Massachusetts, the author was able to examine the specimens which, years ago, were transferred from the Peabody Academy of Science to the Peabody Museum, Salem.

The contents of these graves were first announced at the Aug. 2, 1871 field meeting of the Essex Institute held near "Ship Rock", Peabody. F. W. Putnam exhibited the specimens which had been found the month before and donated to the Peabody Academy of Science by John Lovett of Beverly and Messrs David Moore, John Felt, C. Cooke, and F. W. Putnam. From the minutes of this meeting it is evident that the graves were found by workmen and part of the specimens removed. Putnam was then notified and he with others
finished the removal of the graves.

That portion of the minutes referring to the field work says, "The graves were on the top of a large gravel hill and had been scooped out, and after the body had been put in the grave had been filled in with the surface soil and not with the gravel taken out, as was distinctly seen, as these graves were reached not by digging down from the top but by coming on them from the side in digging away the hill, thus exposing them in section."

The complete inventory from these graves is given in the reprint except for the omission of a small portion of a skull, the enamel from one molar tooth, and two additional platform pipes.

The collection was not segregated by graves except that of three platform pipes found, two came from one grave, one from a second, and none from the third. One pipe was not donated and so cannot be described.

Of the two pipes available the one illustrated in the reprint had three holes drilled from the bottom upwards along the broken edge and had been decorated on the bottom as shown in Fig. 10. The other pipe was similar but both ends of the platform were broken off. Four holes had been drilled from the bottom upwards near the corners of the remaining portion of the platform. It appears evident that these holes represent attempts at repair work. These pipes still retain red ochre in the irregularities of the breaks and in the drilled holes.

The "celt or skin dresser"—Plate I, No. 4 of the reprint, our Fig. 9A 4, has been a little improved upon by the artist. The actual specimen looks more like a beach pebble than one would infer from the illustration. It exhibits possible abrasion or peck marks on one edge and seems smoothed in places but bears no striations. It shows evidence of contact with red ochre.

The large blade is well chipped and the arrow point crudely chipped of prophyritic felsite of the type found at Marblehead Neck. They exhibit little if any patination.

The middle portion of the design on the incised fragment of slate does look like a house as shown in the reprint. The similarity of the rest of this decoration to that on the bottom of one of the pipes (Fig. 10) is evident. This fragment of incised slate does not today show evidence of red ochre. It was, however, catalogued at a slightly later date than the rest of the collection and may have been more thoroughly cleaned.

There were two pendants (single hole gorgets) like the one illustrated with notches at the top. The one not illustrated has a "sharpening" groove on one side indicating use as a hone. On the other illustrated pendant—Plate II, No. 4 of the reprint, our Fig. 9B 4, the end opposite the hole was ground to an edge. This specimen appears to be a perforated Celt. All of these pendants show traces of red ochre.

The mica consists of an irregularly shaped fragment about 3 x 2 inches. It does not appear to be cut. The two small pebbles do not appear to be either worked or polished nor to have any traces of red ochre. They are, however, variegated in color and may have been included with the grave goods as charm stones. They may equally well have been present naturally in the ground.

One unworked and one partially polished fragment of a poor grade of slate (sandstone in the reprint) complete the inventory. One shows much and the other only a suggestion of red ochre.

As indicated in the reprint all of the contents of these graves were probably made of local materials. At least megascopically duplicate materials are available in Essex County. Red ochre is found at Beverly Farms. While the author does not feel that the steatite of the platform pipes looks particularly close to that from the Andover quarry, there are two other possible sources of soapstone at no greater distance from Beverly.

There are significant similarities in the artifacts from these Beverly graves to those reported by Jesse Brewer for a grave in Plymouth (An Important Burial from Plymouth, Massachusetts, Bulletin of the Massachusetts Archaeological Society, Oct. 1944, Volume VI, No. 1, pp. 15-16) Both contained platform pipes, decorated on the bottom of the base and drilled for repair, large chipped blades, small crudely made arrow points, large pendants with notches at the hole end, grooved rubbing stones or hones, two smooth pebbles, and red ochre. There are also some differences such as the incised stone from Beverly, different rim decoration of the pipes, and greater number and range of shapes of projectile points from Plymouth. The similarities appear to outweigh the differences and to indicate a cultural affinity.

Andover, Massachusetts
January 3, 1947
In April, 1945, following the collapse of the main German armies, my military duties brought me to Detmold, in the province of Lippe, Germany. The town is the capital of Lippe, and is chiefly famous as being near the site of the battle of the Teutoburger Wald, where Arminius destroyed the Roman legions under Varus. The dominating feature of the landscape, for miles, is an immense statue of this same Arminius, or Herman, which is perched atop a hill a little to the south of the city.

Detmold is situated in northwestern Germany, about a hundred ten miles east of the Netherlands border and a hundred twenty or twenty-five miles due south of Bremen. It is of no military value, except that a not-so-important airport but a very important technical school for the Luftwaffe was located on the outskirts of the town, to the north. The military installations covered an area a little more than a kilometer long, from east to west, by a little less than a kilometer wide, the area being nearly rectangular. The land slopes gently to the northwest, forming one side of the valley of a small brook which, at the field, flowed nearly due west. At some time in the distant past that brook, or a large extinct tributary of it, had flowed diagonally across what is now the airfield, on a northerly course, cutting the field at approximately the halfway marks on the east and north sides. Nearly halfway down the south line of the field there was at one time a large spring or small pond, now represented by a deposit of black muck. The soil is loess, covering bedrock at six to eight feet. The bedrock is a reddish mica schist.

Just prior to our arrival the Germans had been preparing a splendid reception for us, but the tanks and infantry got there a little too swiftly and the plans did not materialize. Fireworks had been intended, in the form of hundreds of mines, which were neatly stacked up against the walls of the buildings. But the holes for these mines were there, fifteen inches across, eighteen to twenty inches deep, with the dirt at their sides, unspread. There were other holes, too, of varying sizes and depths; holes and trenches for personnel shelters, holes for gun emplacements, holes for ammunition pits, and two beautiful big ones evidently intended for turntables of some kind. These holes were all new and unused; there had been no time for the Germans to really complete anything. As if there weren't enough ground disturbed, all the land around the barracks and school buildings had been ploughed for gardens, and I came on the spot with thousands of man-hours of hard labor all done for me.

I had done a little searching elsewhere. I had found a few pieces in England; at the airfield at which I was stationed in Belgium I had found a few more, including some rather nice Mousterian specimens, but the opportunities for archaeological exploration for a soldier on active duty are few and far between. At Detmold, for the first time in months, my duties allowed me a few spare hours a day, and I began searching the ploughed areas, looking for neolithic artifacts. I didn't find anything but a few flint chips and had decided there was nothing worth looking for, when I chanced by a hole which had been sunk into the bed of the extinct brook. The sand attracted my attention, and as I examined it, I noticed some chips in it, and, partly covered by it, an implement. It took me some little time, after poking around the holes a bit, to realize that I was not dealing with neolithic reject material, but with paleolithic material. This realization was crystallized by the fact that the deeper the holes went into the earth the more numerous the specimens became. After a couple of days searching I had discovered that I could classify them into definite types. Frankly, at first I didn't know what I had. I hadn't done any reading on the European stone age for years and the only collections I had been interested in were those of Neolithic material. I also had the idea that one went pretty deep for paleoliths—into caves, and railway cuts and along river terraces—disregarding the fact that erosion is always at work on soft land on a hillside.

I collected perhaps a hundred good specimens—I cannot be exact because a number were broken in shipping. The wear and tear of ages did not prove nearly as destructive as the army postal service; one of my boxes arrived with a hole in it through which a good many important fragments were lost. The specimens include cœurs de poing, discs, scrapers, knives, burins, stone balls, flakes, a cup, and a figurine. I did not have either time or opportunity to be scientific; I'd go out when off duty, poke through a pile of dirt, deepen a hole a bit, pick out the specimens and bring them in to my quarters.

For every one I got I probably missed ten. I left some large hammerstones as they were too big, and some stone balls, of which I did not realize the significance, considering them as small hammerstones.

I noticed especially two things—first, that the specimens from the deeper holes were larger than those from the shallower ones, and that those from the bed of the extinct brook were of a much glossier patination. In form, a couple of the specimens from the bed of the brook resemble the rostro-carinate eolith type, but of course I am not claiming them as such. I mention them here because a French archaeologist stated that there is a transition in form between eoliths and the later cœurs de poing, which statement seems to be reasonable to me, because I have several specimens which could be links in such a transition.

To finish up my story of the actual collecting—I checked the occurrence of implements by digging a trench over six feet deep to bed-rock, much to the astonishment of the English, who looked as if they thought the sky was falling when they saw a sergeant apparently digging a latrine, and to the horror of the Russians who were feeding—they couldn't see why I didn't go over to the P.O.W. compound and get a couple of S.S. officers for my heavy work—and to the absolute disinterest of the Americans, who were used to the Air Corps members acting in a
peculiar manner, these being members of an organisation where authority went by the job, and not the rank.

At one time European archaeologists sharply divided the stone age into three periods: the palaeolithic, divided into the older and later periods; and the neolithic, following it. There were sharp gaps between all three. That idea has changed, and transitional periods are now recognized, one of which, that between the Mousterian and Aurignacian cultures, is represented by the material at the site at Detmold. It may be well at this point to give a short recapitulation of the palaeolithic European cultures, with their outstanding characteristics.

CHELLEAN—Core tools (coup-de-poing), rough scrapers and awls. Caves, river terraces, glacial drift.

ACHEULEAN—Same as above, but with considerable refinement of manufacture.

MOUTERIAN—Essentially a flake tool industry though the coup-de-poing persisted. Much more variety in tools, the smaller being invariably made of a chip of which one side only was worked.

AURIGNACIAN—The coup-de-poing disappears and a host of new forms, specialized for bone or wood-working, appears. The implements occur not only in caves but in open stations.

De Morgan says that the Mousterian implements occur contemporaneously with those of the two other cultures—it is evident that a considerable time must have elapsed before these cultures were replaced by the Mousterian. No skeletal remains are available to allow the determination of the race or races which produced the two older cultures, but the Mousterian has been definitely connected with Neanderthal man, a species entirely different from ours, Homo sapiens. In spite of denials that there was any relationship between the two species, or that one could have developed from the other, a transition exists in the matter of implements.

Here let me backtrack a little to state that the Aurignacian culture, which succeeded the Mousterian, was the work, and the first work known, of Homo sapiens. These remarks are pertinent here in that the Detmold implements belong to the period transitional between upper Mousterian and lower Aurignacian. The Mousterian culture endured throughout the glacial period; as the ice age ended, it was succeeded by the Aurignacian, somewhere between eighteen and twenty-five thousand years ago. As to the implements, I quote Burkitt, who speaks of the Audi rock shelter.

"In the Dordogne, on layers containing late Mousterian industries, there rest beds which yield artifacts of quite a different character. A classic site is the rock-shelter of Audi not far from the ruin of the mediaeval castle at Les Eyzies. At first sight the new industry appears to show a very considerable falling off from the beautifully made though monotonous late Mousterian implements. The tools are, for the most part, rough and poorly made. Many Mousterian types persist. We find a few small coup-de-poing, discs, side scrapers, Mousterian points and so on, but among these occur end-scrapers, awls, geodes from Aurignacian caves, in a half-hearted guess that they might be the precursors of pottery. The other item is the flint ball. Such balls have been found in groups of three in Aurignacian caves; it has been suggested that they might have been throwing weapons, like the gauchito bolas. I have two only, but I left several behind me.

That the implements were manufactured on the site was evident from the great numbers of chips and fragments of flint. Undoubtedly many of these fragments performed some use as implements, but due to the general crudity of the assemblage it is rather hard to tell which were used and which not, except as specialized forms are noted. The technique in manufacture seemed to consist of shattering a flint block, and then picking out the pieces which approximated the size and shape desired, which were then used after being retouched. There are, however, some very nicely worked specimens, especially some of the larger scrapers and end scrapers, but the
burins and gravers are mostly crude, and formed more by accident than by design. The coups-de-poing are also for the most part crude affairs. These coups-de-poing came without exception from the deeper holes, as did most of the larger pieces, while the better gravers and end scrapers came from the smaller holes near the surface. Under the circumstances in which the finds were made it is impossible to give the exact depth at which any given piece occurred originally, but as the dirt was thrown on one side at nearly every hole, it was a fair assumption that the dirt at the top of the pile came from near the bottom of the hole.

I have not, at present, prepared a complete list of specimens, as I feel that the classification should be left to more expert hands than mine. I feel that the site is an important one, existing as it does so far to the north, and the material is abundant enough and the area is large enough to justify further exploration, which I leave for someone else.

October 1916

POTTERY TRAITS OF THE PLYMOUTH DISTRICT

Charles F. Sherman

On the northern plains, in the vicinity of Lake Winnipeg, there was a tribe who were called the Assiniboins. The name was derived from the Chipewa (Chippewa) who means "he cooks with stones," so it was only natural for the first whites to translate it into "Stone-boilers." The Assiniboins, or Stone-boilers, who were a member of the great Siouan linguistic stock and a branch of the Fanktonal Sioux, were so called because of their singular mode of boiling meat. In order to boil meat, these people first dug a hole in the ground about the size of a common pot, then pressed a piece of the hide of the animal into the hole, and filled it with water. The meat to be boiled was then put in the water-filled hole. In a fire which was built nearby, stones were heated to a red heat. When hot, these stones were successively put in the water until the meat was boiled. Catlin, in whose letters this information is contained, tells us that they were too rude and ignorant to make pots and that the Mandans later taught the Assiniboins the art of making pottery.

This mode of cooking was probably employed by the eastern tribes before they made their soapstone vessels or, later, their ceramic pottery, if we may judge by the many fire stones found scattered around the various camp sites and in many plowed fields of this district. This method of boiling food was ousted by steatite pots; later, when the Indians found out how to make ceramic pots, the use of steatite vessels was abandoned by the tribes who lived at a distance from the quarries. Clay was easily obtained in nearly every locality, and could be made into pots with less effort. In some localities the making of pottery was abandoned early in the 17th century.

In writing of the pipes made by the Narragansett Indians, William Wood says, in his "New England's Prospect": "They make them of green and some times blacke stone: they be much desired by our English tobacconists, for their rarity, strength, handsome-

Roger Williams writes, "The Women make all their earthen vessels."
tempered ware was found above ten feet of midden deposit in which there was no pottery. The peculiar line-filled rectangular panel arrangement occasionally found on Lake Borgne Incised is also found on rare vessels from Caddoan sites in southwest Arkansas (Harrington, 1920, PIs. 56 B, 27 B). The accompanying material definitely places these vessels in the Caddoan horizon."

At camp M-12-22, near Plymouth, sherds and large sections of pots have been found, bearing incised, punctate, and dentate designs, also coarse and fine cord markings, and plain unmarked surfaces. All the rim sherds from this site that have come to my attention have out-curved rims, some moderately and others more pronouncedly so. The tempering material in this native ware may be coarse or fine broken shell, sand, grit, broken quartz and fibre.

Colors range through dark and light gray, and buff, some sherds have a reddish tint. Texture varies from coarse to fine, but paste is well consolidated.

Hardness also varies; many of the sherds are poorly fired and are very soft when damp, others are fired quite hard and can be handled when damp with little danger of crumbling, even when first removed from their resting place in the soil.

As a rule a band of design is parallel to the rim and consists of horizontal or diagonal lines. Some designs have parallel diagonal lines spaced at equal intervals. One sherd has a plain exterior and a fine cord-marked interior. The three-quarter section of pot showed the impression of finger tips on the inner side. A few sherds are polished on both sides and have been classified as belonging in Carlisle Smith’s Glasson Point Period. Thickness of the various sherds varies from 3/16 to 7/16 of an inch.

With the exception of two groups, the sherds do not show any signs of having been made by the coiled method of manufacture. One of these two groups was fibre-tempered and quite a few of the sherds have either a convex or concave edge, showing that a section was added to the vessel as it was constructed. This might have been a coil but I am inclined to think it was just a strip or lump of clay added to pot as needed. Let us go back to the first two pots mentioned and consider the pieces of clam or scallop shell a half inch in diameter, surely they could not roll a coil with these large sharp particles and then squeeze them out to a thickness of 3/8 of an inch with their hands, and they would have to, to manufacture a vessel by the coiled method. I believe the process followed by certain Canadian tribes and described in Sagard’s History of Canada, written in 1636 was much the same as that used by the tribes in this vicinity: "They are skillful in making good earthen pots which they harden very well on the hearth, and which are so strong that they do not, like our own, break over the fire when having no water in them. But they cannot sustain dampness nor cold water as long as our own."

"They do not, like our own, break over the fire when having no water in them." As the pot was not fired hard, the clay had not fused and therefore it would not expand and contract with the heat and cold, where as the hard-fired English or French vessels could not expand without breaking.

"But they cannot sustain dampness nor cold water as long as our own," is only further proof of the light firing. The clay was porous and would absorb the water and become weak; and, as the pressure on the inside of the vessel was far greater than the atmospheric pressure, the vessel would collapse. One can tell by the condition of the sherds when removed from the ground that the ware had not been hard fired as they are little stronger than the natural clay.

Regarding the shaping of the pot, Sagard writes, "Then making the mass into the shape of a ball, they make an indentation with the fist, which they make continuous mark by striking repeatedly on the outside with a little wooden paddle as much as is necessary to complete it."

As previously mentioned the coarse cord-marked design on the oldest pots was made with a cord-wrapped paddle. I believe it must have been done during construction of the vessel or very soon after the pot was constructed as they couldn’t paddle the clay hard enough to make the impressions after the pot had dried and there doesn’t appear to have been any application of soft clay after the vessel was constructed. Incised designs can be cut in pottery after the vessel is partially dried but punctate and dentate designs have to be impressed when the clay is still moist.

Many of the sherds found in this district have a thick layer of untempered clay on the exterior and some are also lined with the same material. It has been stated that this layer is to cover the seams between the coils. According to my theory, procedure was as follows: After the vessel was constructed, it was allowed to dry hard. Then the pot was turned upside down, resting on its rim, and a mixture of clay and water of the consistancy of cream was poured over the base. Next, a round stick, the middle of which is wrapped with cord, was rolled from the top to the rim, as a cook rolls out dough. The clay moves down ahead of the roller, leaving the impression of the cord on the pot. This is shown by continuous cord marked lines. One of my sherds shows this system very plainly. It is quite obvious that the continuous cord marking could not be impressed while the pot was being constructed as the clay would have to be so moist it would not hold its shape, but would slump down in a mass. The above mentioned sherd has eight and nine parallel lines that were put on with an instrument like a comb with long flexible teeth that would adjust themselves to the various contours of the pot, especially around the neck and rim.

I learned by experience that clay tempered with large or many shell particles can not be hard fired as the shell is converted to lime which gathers moisture from the atmosphere after the pot has cooled. The moisture causes the lime to expand and soon the pot is broken in minute pieces. A loaf of clay tempered with shell particles was excavated at site M-12-22; this clay was 4 inches above the glacial sand and was covered by a flat stone and 6 inches of brown soil. After keeping the clay nearly a month I decided to make a pot. This I fashioned to the best of my ability and considered how best to fire it. I finally decided it would be best to let the people at the pottery shop do the firing. They were agreeable but wanted a piece of the clay to see if it would take as much fire as they were using, so I took a small ball of clay left after making the pot and made a pipe bowl with it. I took this down to the Pottery Shop and they put it in the kiln and fired it with
1900 deg. F. of heat. It took the firing well and was as hard as brick. At home I placed it on a high shelf in a steam heated room and in five days it was cracked and broken in many pieces. They fired the pot with the same temperature two days earlier than they expected.

When I called for the pot it was well cracked and broke in many pieces after I took it home. This proves that the early shell tempered pots we find could not be hard fired. Some of the hard fired sherds we find are tempered with shell but the particles are very small and few in number.

Plymouth, Massachusetts
October, 1946

NOTES ON THE ENVIRONMENT OF NEW ENGLAND

Douglas S. Byers

In our considerations of the prehistory of Massachusetts and the surrounding regions comprised in New England we are often accustomed to attribute to the Indians abilities far beyond their powers, and hard and fast customs which may, in fact, exist only in our imaginations. We may forget the potentialities and limitations which the unexploited country presented to primitive man, and we may overlook resources which are now of no significance because of changes wrought by exploitation of the land or the development of richer deposits beyond our immediate ken.

As some slight information as to primitive conditions may be gained from a perusal of such works as the accounts of early travellers or of recent researches, I have had the temerity to set down here these observations which are, at best, incomplete. It is not possible in such limited space to take note of every minor variation from the general picture.

To begin with, the land on which we live is for the most part an old land, its hills and mountains resulting from the erosion of less resistant rock from among the roots of once-lofty ranges. From the hilltops we observe the general uniformity of the summits of surrounding hard rock hills, a relic of the plain that existed before the land surface was tilted once again and rivers woke to new strength to deepen their channels. Our heritage from the successive cycles of uplift and erosion are the rough stony hillsides. In the course of time most of the relatively small areas of sedimentary rock in which cherts might be expected to occur have been deformed and metamorphosed. As a result, such materials are not commonly found in the country rock of New England. Nevertheless beds of sillicious stones, the group including the jaspers, chalcedony and chert, are known. B. K. Emerson mentions one in the town of Conway, Massachusetts, and there is an outcopping of much-faulted jasper or jaspelit in the town of Saugus. Because of this paucity of sillicious stones primitive man was frequently forced to turn to igneous rocks, including felsites, often of porphyritic structure, or to quartz for material from which to make his chipped implements.

Trade is frequently invoked to explain the presence of copper objects in New England. However copper nuggets have been found in New England, for they occur in connection with the ancient lavas of the Connecticut Valley. B. K. Emerson and J. F. Schairer have reported them as occurring in the towns of Whately, Massachusetts, and Cheshire, Mount Carmel, Simsbury, Granby, Bristol, South Meriden, and New Haven, Connecticut. A nugget weighing 200 pounds which was found in glacial gravels near New Haven, and now in the Peabody Museum of Yale, is presumed to have been plucked from one of these deposits by the advancing ice.

Glacial ice did much to alter the land surface. It ground its way southward scouring the face of the land with boulders imbedded in the bottom of the sheet, depositing a mantle of rock flour, sand, and gravel of varying thickness over the country, in some cases scooping out lake basins, in others, damming or diverting streams. Glacial action transported a boulder of foreign rock to the summit of Mount Washington, a clear indication of the depth of the ice. The slow march of the ice sheet also transported useful rocks for great distances from their parent outcrop; the boulder train of Kineo felsite can be traced from Mount Kineo to the sea and onto the islands in the area near and east of Penobscot Bay.

Dr. Howe has traced the train of Hingham red felsite across a portion of Norfolk and Plymouth counties in Massachusetts. With such a variety of material already present among the glacial debris it seems unnecessary to conjure up long overland journeys to procure what the ice had already transported. No Indian in his right mind would journey to Mount Kineo to get felsite that might be had among the glacial boulders on the shore. The same might be said for the jaspers and cherts which also occur occasionally in glacial gravels.

The highlands of New England are so familiar to us that they need no extensive comment, yet it would be well to recall that there are two belts of upland on either side of the valley of the Connecticut that on the west formed by the Green Mountains and their extension southward through the Berkshire Hills of western Massachusetts and Connecticut, with an other on the east comprising the White Mountains of Maine and New Hampshire and their southern outliers, and the hills of eastern Massachusetts and Connecticut. There are also scattered mountains in Maine among which there are elevated regions of limited extent.

These are chiefly of interest as they provide differences in temperature and climate which were reflected in the forests which clothed the region. If we go north of the border into Quebec we find upland or mountainous country extending from the mountains of Vermont, New Hampshire, and western Maine and
swinging northeastward from the Champlain lowland toward the Gaspee Peninsula. The Champlain lowland and the ever-narrowing plain extending eastward along the St. Lawrence form a very different belt, from the point of view of climate and topography.

Because of differences in elevation and exposure the forests of New England presented an exceedingly complex picture. Add to this possible complicating factors from the point of view of differences in soil and water supply and the picture becomes well-nigh impossible to outline in such an article as this. It will suffice to say that the so-called central hardwoods, the forest of oaks chestnut and hickory, were found throughout Connecticut and Rhode Island and extending up the eastern coast of Massachusetts. Valleys offer suitable conditions for a more northerly extension of this forest, as may be seen in the Hudson and Connecticut valleys, while ridges of sufficient altitude to afford some degree of temperature difference permit a more southward extension of the next more northerly type.

A forest composed of white pine and "transitional hardwoods" occupies the valley of the Connecticut from the vicinity of Holyoke northward to a point somewhat above the mouth of the Ammonoosuc River; extends over nearly all of Massachusetts and northeastward between the mountains and the sea through southern Maine and along the coast to the Penobscot, which it follows northward approximately as far as the Mattawamkeag.

Throughout the higher regions of northern Maine, along the backbone of the Green Mountains, through the higher parts of the White Mountains, and in eastern Maine, is a forest composed principally of spruce and fir, but with other conifers and certain hardwoods intermixed. These areas are covered by tongues of the great spruce-fir forest of the far north.

In the intervening area, between the spruce-fir forest, and the white pine-transitional hardwood forest, is a forest composed principally of the "northern hardwoods" -- beech, yellow and white birch, sugar maple, with a scattering of ironwood, basswood, elm, ash, black birch and red oak.

It will, perhaps, help to clarify the general arrangement in one's mind to turn to Figure 11, a map prepared by Dr. Hugh M. Raup, which we reproduce here by his permission.

It should be pointed out that in most of the area there is no such thing as a "pure stand" save as human or natural clearings have occurred to offer opportunities for the simultaneous or "progressive" seeding of an aggressive form that is able to establish itself more successfully under prevailing conditions than competing forms. As a case in point we may name large stands of white pine on burned-over gravelly soil. Forests are composed of numberless inter-related communities of trees which have become established for a variety of reasons, among them exposure, shade, water supply, drainage, and character of the underlying soil. By the same token, it should be pointed out that southern forms will be found north of their arbitrary limits if one looks in sheltered spots, particularly on the southern sides of hillsides, while northern forms will be found well to the south of arbitrary limits, especially on the north sides of hills, or on the shaded southern banks of deep ravines or steep-sided valleys.

The study of the forests which formerly clothed the region is of interest only in so far as it casts light on the conditions under which the Indians lived. If we may quote from Champlain's narrative of his voyage of 1606, at the end of the part having to do with his stay at Gloucester:

"Some of the land was already cleared up and they were constantly making clearings. Their mode of doing this is as follows: after cutting down the trees at the distance of three feet from the ground, they burn the branches upon the trunk, and then plant the corn between these stumps, in course of time tearing up also the roots. There are likewise fine meadows here, capable of supporting a large number of cattle."

We must remember that the Indians had difficulty in clearing land. In the vicinity of Plymouth this appears to have led to the discovery of the usefulness of fish as fertilizer, for Squanto told the Pilgrims that except they got fish and set it with them (in these old grounds) it (their corn) would come to nothing. Bradford goes on to tell us that where an abundance of fish for fertilizer was not available the Indians could clear up a piece, plant eight or ten years, and still have good crops.
The difficulties of opening and maintaining a clearing in the several types of forest are to be considered. So, also, is the type of soil to be found under the forest and the type of litter which lies under the trees. By and large, the hardwood forests offer the most ideal type of clearing. They produce a soil which is richer in plant food and less acid than the podzols which form under the conifers.

Consider again the length of the growing season and the character of the summer. A minimum of 100 consecutive frost-free days is generally accepted as having been required to develope and mature the Indian types of corn. If we observe the accompanying map, we see that our limiting number of frost-free days comes remarkably close to being the same as the boundary of our spruce-fir forest. Along the coast of Maine, east of Penobscot Bay, where the coincidence is not so close, we find that the summers are cooler, and that in August fogs are apt to come in. Except for the varieties of corn that are quick growers, it is not always possible to ripen corn along this belt.

Exceptions to generalities usually occur, and this is but a case in point. Although we may say that, in general, agriculture based on corn is not possible beyond certain limits, one will find sheltered spots with good air drainage where corn will grow and mature within the regions here designated as impossible for corn agriculture. But because of the fact that this is not the general rule, one can assert that these regions are not suited to a culture based on the growing of maize. Taking into account such factors as we have considered, I have prepared a map (Figure 13) of the several zones into which New England may be divided with respect to the practice of primitive agriculture.

Fig. 12—Available Growing Season in Four-Fifths of the Years. Isothermal zones are general indications only; factors of local influence not taken into account. Based on a map prepared by the Eastern States Farmers Exchange.

Fig. 13—Areas suitable for primitive agriculture in New England.

Many early writers have referred to the Indians' custom of burning the woods in order to maintain an open forest for ease in hunting. The results were to weed out the more fire-susceptible trees, and to establish the fire-resistant species. The custom was continued by the colonists until laws were passed, first, limiting such burning to the period between March 10 and April 30, and then, in 1743, prohibiting the practice entirely. Further reference to the forest cover and its resources will be found in my paper on "The Environment of the Northwest" in Man in Northeastern North America, from which most of the matter in this article is taken.

This paper is intended to point out the basic factors limiting the economy of the people who lived in New England. Consequent results on density of population and on social organization may be expected to show division along roughly identical lines.

Andover, Massachusetts
January 1947
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