

IV.—RELICS OF THE STONE AGE IN NOVA SCOTIA. BY  
HARRY PIERS.

(*Read 13th May, 1895.*)

Not long ago I had the honour of reading before the Institute of Science a paper describing a number of aboriginal relics found in this province. It was based on a study of the many excellent specimens preserved in the cases of the Provincial Museum, Halifax. Since that time, a quantity of undescribed and very interesting material has been placed in my hands, which I shall herein describe.

A number of years ago the late Charles W. Fairbanks, Esq., C. E., formed a collection of stone implements which had been discovered in Nova Scotia. Most of these relics were given to him by William M. King who found them while clearing and plowing the land on his farm at the head of Grand Lake, Halifax County. The place was doubtless a prehistoric camping ground, but I do not know whether the Micmacs continued to resort there within the memory of man.

Mr. Fairbanks's collection is now the property of his son, Charles R. Fairbanks, Esq., of Halifax, to whom I am indebted for permission to examine and describe the specimens. Very unfortunately none of them bear labels, and therefore the exact localities where they were found are unknown; but there is no doubt that they are Nova Scotian, and probably nearly all were found on Mr. King's farm.

I have also to thank several other gentlemen whose names are subsequently mentioned, for permission to study implements in their possession.

These specimens, together with some in the McCulloch collection of Dalhousie College Museum, and others of my own, constitute the material upon which the present paper is founded.\*

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\* Judge DesBrisay of Bridgewater, N. S., most courteously offered me the privilege of examining and describing his excellent collection of aboriginal remains; but I have so far been unable to take advantage of his kindness.

## LESCARBOT'S ACCOUNT OF THE MICMACS.

Before entering upon a description of these implements, it may be well to consider the habits of our Indians as described in the writings of one of the early voyagers. This will help us much to understand the subject with which we deal. The first exact and extensive account of the Micmacs, and by far the most interesting, is to be obtained from the description of New France written by the old French advocate, Mark Lescarbot, who in 1606 accompanied Poutrincourt to Acadie. He dwelt for some time at Port Royal, now known as Annapolis, which had been founded in the previous year by Pierre du Guast, Comte de Monts. From an English version\* of Lescarbot's rare book, in the library of the late Dr. Akins, I have made some transcripts which follow in the quaint language and spelling of the translator. These extracts will be of great interest to any who are studying the archæology of Nova Scotia, for Lescarbot wrote at the period when iron implements were only beginning to supplant those of stone. Dr. J. B. Gilpin has already given us much information gathered from this writer, but seldom in the latter's language.

Speaking of the dress of the Indians, Lescarbot says they wore "a skin tied to a latch or girdle of leather, which passing between their buttocks joineth the other end of the said latch behind; and for the rest of their garments, they have a cloak on their backs made of many skins, whether they be of otters or of beavers, and one only skin, whether it be of ellan, or stag's skin, bear, or lucerne, which cloak is tied upward with a leather ribband, and they thrust commonly one arm out; but being in their cabins they put it off, unless it be cold....As for the women, they differ only in one thing, that is, they have a girdle over the skin they have on; and do resemble (without compari-

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\* "Nova Francia: or, the Description Of that Part of New France, Which is one Continent with Virginia....[by Mark Lescarbot, advocate]. Translated out of the French into English, by P. E [rondelle]." The Akins copy is bound separately, but it originally formed pp. 795-917 of the second volume of Osborne's *Collection of Voyages and Travels, compiled from the Curious and Valuable Library of the Earl of Oxford*, London, 1745-47, 2 ls., folio, generally called the Harleian Collection of Voyages.

son) the pictures that be made of St. John Baptist. But in winter, they make good beaver sleeves, tied behind, which keep them very warm. . . . Our savages in the winter, going to sea, or a hunting, do use great and high stockings, like to our boot-hosen; which they tie to their girdles, and at the sides outward, there is a great number of points without taggs . . . Besides these long stockings, our savages do use shoes, which they call *mekezin*, which they fashion very properly, but they cannot dure long, especially when they go into watry places, because they be not curried nor hardened, but only made after the manner of buff, which is the hide of an ellan. . . . As for the head attire, none of the savages have any, unless it be that some of the hither lands truck their skins with Frenchmen for hats and caps; but rather both men and women wear their hairs flittering over their shoulders, neither bound nor tied, except that the men do truss them upon the crown of the head, some four fingers length, with a leather lace, which they let hang down behind." [Book II, chap. ix.]

Describing the complexion of the savages, Lescarbot says: "They are all of an olive colour, or rather tawny colour, like to the Spaniards, not that they be so born, but being the most part of the time naked, they grease their bodies, and do anoint them sometimes with oil, for to defend them from the flies, which are very troublesome. . . . All they which I have seen have black hairs, some excepted which have Abraham colour hairs; but of flaxen colour I have seen none, and less of red." [Book II, chap. x.]

The Indians "have *matachias*, hanging at their ears, and about their necks, bodies, arms, and legs. The Brasilians, Floridians, and Armouchiquois, do make carkenets and bracelets (called *bou-re* in Brasil, and by ours *matachias*) of the shells of those great sea cockles, which be called *vignols*, like unto snails, which they break and gather up in a thousand pieces, then do smooth them upon a hot stone, until they do make them very small, and having pierced them, they make them beads with them, like unto that which we call *porcelain*. Among those

beads they intermingle between spaces other beads, as black as those which I have spoken of to be white, made with jet, or certain hard and black wood which is like unto it, which they smooth and make small as they list, and this hath a very good grace. . . . They esteem them more than pearls, gold or silver. . . . But in Port Royal, and in the confines thereof, and towards Newfoundland, and at Tadoussac, where they have neither pearls nor vignols, the maids and women do make *matachias*, with the quills or bristles of the porcupine, which they dye with black, white, and red colours, as lively as possibly may be, for our scarlets have no better lustre than their red dye; but they more esteem the *matachias* which come unto them from the Armouchiquois country, and they buy them very dear; and that because they can get no great quantity of them, by reason of the wars that those nations have continually one against another. There are brought unto them from France *matachias* made with small quills of glass mingled with tin or lead, which are trucked with them, and measured by the fathom, for want of an ell." [Book II, chap. xii.]

"Our savages have no base exercise, all their sport being either the wars or hunting . . . or in making implements fit for the same, as Cæsar witnesseth of the ancient Germans, or in dancing . . . or in passing the time in play." Lescarbot then describes their bows and arrows, but as I have elsewhere referred to this account, it may be here omitted. "They also," he says, "made wooden mases, or clubs, in the fashion of an abbot's staff, for the war, and shields which cover all their bodies. . . . As for the quivers that is the women's trade. For fishing: the Armouchiquois which have hemp do make fishing lines with it, but ours that have not any manuring of the ground, do truck for them with Frenchmen, as also for fishing-hooks to bait for fish; only they make with guts bow-strings, and rackets, which they tieat their feet to go upon the snow a hunting.

"And for as much as the necessity of life doth constrain them to change place often, whether it be for fishing (for every



place hath its particular fish, which come thither in certain season) they have need of horses in their remove for to carry their stuff. Those horses be canoes and small boats made of barks of trees, which go as swiftly as may be without sails: when they remove they put all that they have into them, wives, children, dogs, kettles, hatches, *matachias*, bows, arrows, quivers, skins, and the coverings of their houses. . . . They also make some of willows very properly, which they cover with the . . . gum of fir-trees; a thing which witnesseth that they lack no wit, where necessity presseth them." [Book II, chap. xvii.]

Lescarbot says that anciently the Souriquois or Miamaes made earthen pots and also did till the ground; "but since that Frenchmen do bring unto them kettles, beans, pease, bisket and other food, they are become slothful, and make no more account of those exercises." [Book II, chap. xvii.]

Elsewhere in the volume the writer also tells us that the labour of grinding corn to make bread "is so great, that the savages (although they be very poor) cannot bear it; and had rather to be without bread, than to take so much pains, as it hath been tried, offering them half of the grinding they should do, but they chused rather to have no corn." [Book I, chap. viii.]

Writing of the women, he says, that "when the barks of trees must be taken off in the spring-time, or in summer, therewith to cover their houses, it is they which do that work; as likewise they labour in the making of canoes and small boats, when they are to be made; and as for the tilling of the ground (in the countries where they use it) they take therein more pains than the men, who do play the gentlemen, and have no care but in hunting, or of wars. And notwithstanding all their labours, yet commonly they love their husbands more than the women of these our parts." [Book II, chap. xviii.]

Once Lescarbot saw meat cooked by an Indian in the following manner. The savage "did frame with his hatchet, a tubb or trough of the body of a tree," in which he boiled the flesh by putting "stones made red hot in the fire in the said trough," and replacing them by others until the meat was cooked. [Book II, chap. xxi.]

Speaking of some Indians who followed the French vessel along the sands, "with their bows in hand, and their quivers upon their backs, always singing and dancing, not taking care with what they should live by the way," the worthy advocate exclaims with enthusiasm, "Happy people! yea, a thousand times more happy than they which in these parts made themselves to be worshipped; if they had the knowledge of God and of their salvation." [Book I, chap. xiv.]

We shall now leave the old French narrator and proceed to discuss the examples of aboriginal skill with which this paper is chiefly concerned. In classifying the specimens, I have principally adopted the arrangement given by Dr. Charles Rau in his account of the archæological collection of the United States National Museum (Washington, 1876.) In a few cases, however, I have found it necessary to depart slightly from his nomenclature.

#### A.—FLAKED AND CHIPPED STONE.

*Arrow-heads.*—The collection before me contains eleven specimens which I have so denominated (Plate I, Figs. 1 to 11). This is rather a small number, but it is very likely that several have been lost or given away since the formation of the collection. Some of the implements are flaked with great skill. With one exception, to be hereafter noted, all are formed of silicious stones, mostly jaspideous, such as are found in the western parts of the province. None have been polished in any degree. All are the result of the ordinary process of flaking by pressure. The points are mostly unfractured. In length the specimens vary from 1·25 in. (Fig. 8) to nearly 2·75 ins. (Fig. 4). Larger implements of this kind are denominated "spear-heads." The distinction, however, is an arbitrary one; for without the handle, which almost invariably has utterly decayed, there is no means by which an archæologist, in the present state of our knowledge, can form a fixed rule by which he may assert positively whether a given head was used as a spear, an arrow, or a knife. It is very likely that some of the larger so-called arrow-heads, as well as many of the "spear-heads," were hafted and employed as

cutting tools. Owing to this uncertainty as to the method of use, Dr. Wilson of the U. S. National Museum, in his *Study of Pre-historic Archæology* (1890), treats of all these implements under the general head of "arrow- or spear-heads, or knives."

Two specimens (Figs. 1—2) are leaf-shaped with rounded (convex) bases. The proportions and finish of one of these (Fig. 2) makes it possible that it may have been a leaf-shaped implement either intended to be hafted as a knife, or else inserted in the head of a club. In appearance it resembles some of the palæolithic implements of Europe, and it probably belongs to that hitherto much neglected class of aboriginal remains which Dr. Wilson considers to be indicative of a palæolithic period in American archæology. Professor Wilson's researches in this direction are most interesting and important, and open a new and wide field for investigation.\*

Another specimen (length 1·8 in.) is straight-sided with a slightly concave base (Fig. 3). Five well-formed specimens (Figs. 4-8) are notched at the sides near the base. This class includes both the largest and the smallest example (2·75—1·2 ins.). The former (Fig. 4) would have been grouped with the spear-heads but for its slight proportions. A sixth specimen (Fig. 9) is broken, but possibly belongs to this class. Only one (Fig. 10) is stemmed and has a slightly concave base. The stem, like the notched sides before mentioned, was to facilitate the attachment of the head to a shaft. The last specimen to be considered, is barbed and stemmed (Fig. 11). It is 1·50 inch in length, and is neatly chipped from an olive-green or slightly smoky-coloured material, which from the smooth, curved surface of one side, and other appearances, seems to be nothing but bottle-glass.

An interesting account of the bows and arrows of our Indians is found in the quaint account of the old French advocate before quoted. The bows, saith Lescarbot, "be strong and without fineness." "As for arrows," continueth he, "it is an admirable

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\* *Vide* Thomas Wilson's "Results of an Inquiry as to the existence of Man in North America during the Paleolithic Period of the Stone Age." (*Report of U. S. Nat. Museum*, 1887-88).

thing how they can make them so long and so strait [*sic*] with a knife, yea with a stone only, where they have no knives. They feather them with the feathers of an eagle's tail, because they are firm and carry themselves well in the air: and when they want them they will give a beaver's skin, yea, twain for one of those tails. For the head, the savages that have traffic with Frenchmen do head them with iron heads which are brought to them; but the Armouchiquois,\* and others more remote, have nothing but bones made like serpents' tongues, or with [*sic*] the tail of a certain fish called *sicnau*. . . . As for the quivers, that is the women's trade." Bow-strings, according to the same authority, were made of intestines, and snow-shoes or rackets were strung with the same material.

*Spear-heads (or Cutting Implements?)*.—Two stemmed specimens (Figs. 12-13), one perfect, the other without the point, are in the Fairbanks collection. The uninjured one is three inches long, and the other, without doubt, was the same length. Two fragments (Figs. 14-15), one of which (Fig. 14) had been a very beautiful and delicate weapon, may also be placed in the present class. A fifth specimen (Fig. 16), 3.50 inches long and somewhat thick, formed of an argillaceous stone, roughly flaked, may be a spear-head or else a leaf-shaped implement for use as a cutting tool or for insertion in the head of a club.

The McCulloch collection, Dalhousie College, Halifax, contains a few stone implements, among which is a stemmed and slightly barbed spear-head (Fig. 82), 4 inches in length and 2.25 inches in greatest breadth. The same collection also contains a leaf-shaped implement (Fig. 81) of white quartz, 4.75 inches long and 2 inches in greatest breadth.

There remain to be described a couple of implements which may best be considered here, although, strictly speaking, they are of polished stone. The inconsistency of placing them under the general head of flaked implements, is immaterial and may be pardoned.

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\*The Indians who lived in what is now New Hampshire and Massachusetts.

Mr. Henry Sorette, of Bridgewater, N. S., has sent me a drawing of a very remarkable implement of unusual length which was found with other relics while excavations were being made for a canal at Milton, Queen's County, N. S. The implement may be likened to a poniard blade. Apparently it had been ground into shape. It is 18 inches long and tapers regularly from 1.75 inch in width at the base, to about .75 of an inch (according to the drawing) in width at a distance of about three-quarters of an inch from the end, where it suddenly diminishes to a point. Mr. Sorette's drawing seems to indicate a central line of elevation from base to point. My informer thinks it is made of hard slate. While being taken from the ground, it was broken into four pieces. Doubtless this relic was a ceremonial implement, such as some of the exquisitely flaked blades, long and delicate, which have been found in California.\* Its fragile character would forbid any rough usage such as that of war or sport. Strange to say, one or more other implements of this type were discovered with it at Milton. Mr. John S. Hughes of the Milton Pulp Company, in a letter to me relative to this discovery, says, "quite a number of relics were found when we were excavating for the canal; they consisted of stone chisels, gouges, and 'swords or fish-spears' about 20 to 24 inches long [i. e., poniard-shaped stone blades, one of which has just been described]. The articles were generally kept by the finders. Out of the lot I got one gouge, and Mr. Sorette has one of the swords."

In the McCulloch collection already referred to, there is a polished slate "spear-head" with a stem notched on the sides to facilitate the attachment of a handle or shaft (Fig. 83). A portion of the point, probably about three-quarters of an inch, is missing. It measures nearly 6.50 inches in length, by 1.35 inch in width at the base of the blade, from which place it tapers very gradually to the broken point. The central portion of the blade is flat. This flat part is bordered on both sides by con-

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\* See *Report of U. S. Geographical Surveys west of 100th Meridian*, vol. vii, (Archæology), page 49 *et seq.*

spicuous bevels, thus forming the edges. The specimen is unlabelled, but all of the implements in the collection of which it forms part are understood to have been found in Nova Scotia. Ground stone implements of this kind are extremely rare in the province. Dr. J. B. Gilpin in his account of the stone age of Nova Scotia (*Transactions N. S. I. N. S.*, vol. iii.) mentions an arrow-head which was polished like a celt and made of hardened slate; and a spear-head also of slate, similarly fashioned, is referred to in my account of the aboriginal remains in the Provincial Museum. These are all which have come to my notice.

Before passing to the next class, I may repeat that I consider it extremely unlikely that the implements now under notice were actually used as spear-points. Arrow-shaped implements more than 2.75 inches in length, have been denominated spear-heads in this paper more from the general custom of archæologists than my own inclinations. Lescarbot makes no mention of spears as one of the weapons of the Micmacs or Souriquois of his day, although he enumerates with a good deal of detail their other implements of war, such as bows and arrows, and clubs.\* This negative evidence has not been sufficiently noted. It is far more probable that most of the so-called spear-heads and leaf-shaped implements found in Nova Scotia, are knives. Our Micmacs had stone tools for fashioning bows and arrow-shafts and for skinning animals, and yet they are seldom recognized by collectors. This indicates that the Indian knife has been confounded with some other implement which it resembles. "Collectors are very ready," says Dr. Rau, "to class chipped stone articles of certain forms occurring throughout the United States as arrow- and lance-heads." Such has been much the habit of our local writers. The spear-shaped implements must be considered as being fairly adapted for cutting. The Pai-Utes of Southern Utah, up to the present time employ as knives, blades

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\* Rev. John Mecklenburg, or as he classically wrote his name, Johannes Megapolensis, in his *Short Account of the Maquas Indians in New Netherland*, written in 1644, also makes no mention of spears as weapons of war among the Indians of that locality. He speaks of bows and arrows, stone axes and mallets.

made of chipped stone and identical in form with what are too frequently termed spear or arrow-heads. These are inserted into short wooden handles. According to Major J. W. Powell, these knives are very effective, especially in cutting leather. The natives of Alaska still occasionally use knives formed in a similar manner, which they carry in a rough wooden scabbard. A most significant fact is mentioned by the late Dr. Gilpin\*. An admirable Indian hunter named Joe Glode, once shot a moose in Annapolis County. Not having a knife, he immediately took the flint from his gun, and without more ado, bled and dressed the carcass therewith. Lescarbot, in a sentence before quoted, mentions the occasional use of a stone in fashioning arrow-shafts.

#### B.—PECKED, GROUND, AND POLISHED STONE.

*Polished Stone Hatchets or Celts, and Adzes.*—These two groups I have classed together, for although the tools I shall here describe are usually termed celts or, more correctly, stone hatchets, in most archæological books, yet after a careful examination of a great many specimens found in this province, I have come to the conclusion that nearly all of those specimens, in form or otherwise, bear evidence of having been used as adzes, mostly hafted to wooden handles in the manner still or until recently exemplified in the stone implements of the South Sea Islands and elsewhere. This was accomplished in the following manner. A branch of sufficient stoutness was obtained, together with part of the stem from which it sprang. The stem portion was then split, forming a flat surface, and the superfluous wood having been trimmed therefrom, the flat portion was applied to the face of the stone tool which was then lashed to it by means of raw-hide thongs or possibly withes. Owing to the tapering form of the stone head, every blow would tend to tighten the hold of the binding. A piece of skin was perhaps interposed between the handle and the stone, as the Indians of Dakota have been known to do in fashioning their bone hoes or adzes.† There cannot be a doubt that most of the

\* "Stone Age of Nova Scotia." *Trans. N. S. Inst. Nat. Sc.*, vol. iii.

† See Rau, *Archæological Collection of U. S. National Museum*, p. 95, fig. 334, etc.

specimens, hereafter to be described, were so hafted and used as adzes, their form making it very manifest. Some may have been encircled a couple of times with the central portion of a withe, the ends of which when bound together would form an adze-handle, but one not so convenient as that just described. Occasionally they may have been held directly in the hand, and used as an adze, but I do not think it is at all probable.

The evident adze-like form of so-called celts or polished stone hatchets found in Nova Scotia, has been largely or entirely overlooked by writers upon the subject; neither Dr. Gilpin nor Dr. Patterson having paid sufficient attention to this most interesting fact. To me it seems of much importance. Scarcely a "celt" can be found which does not give rise to a suspicion that it had been used as an adze. Further attention will be drawn to this in the pages which follow. Our Indians, like some oriental peoples, seem to have preferred a drawing cut or one made toward the body. This is very evident and remarkable in the present drawing-method in which the Micmacs use their home-made steel knives, a method which is entirely at variance with the practice of those about them.\* This of course is the survival of a very ancient habit, and must not be lost sight of by investigators.

In answer to an inquiry upon the subject, Dr. Bailey tells me that in all New Brunswick celts there is a difference of curvature on the two sides—one being flatter than the other; but the amount of difference varies a good deal, and in some cases is hardly perceptible.

Mr. David Boyle, whose name is prominent in Canadian archæology, also writes me that about nine-tenths of the "celts" found in Ontario are flat, or comparatively flat, on one side, which is more or less indicative of their having been adzes. One thousand stone axes or adzes, at least, are in the museum of the Canadian Institute, of which Mr. Boyle is curator.

He furthermore mentions a significant fact which shows how prevalent among the Eskimo is the adze method of hafting. "It

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\* It resembles a good deal the manner in which a blacksmith uses his knife for paring hoofs.



has been recently observed," he writes, "that when European hatchets have been given to these people, they invariably take out the handle and attach another sideways, by binding it with thongs or sinews through and around the eye."

Murdoch also says that the Indians of the north-west coast of America always re-haft as adzes any steel hatchets which they obtain by trade. In some cases they even go to the great trouble of cutting away parts of the implement in order to better adapt it to the new method of use.\*

Lieut. T. Dix Bolles in his catalogue of Eskimo articles collected along the north and north-west coast of America, mentions no axes among the many thousands of objects noted. There were, however, twenty adzes, eighty-seven adze-blades, and eleven adze-heads. Dr. Wilson, of the U. S. National Museum, says that the same condition exists all down the coast to Lower California, no stone tools—save in one instance—having been found which undoubtedly had been used axe-wise.†

Among certain tribes, I understand a grooved implement is found which is used as an axe, but among the Eskimo it is replaced by the grooved adze. The line between these two implements is now being investigated. *Does the prevalence of the adze-form in Nova Scotia indicate in any way the influence or presence of the more northern race?‡* There is evidence to show that the latter people once inhabited the country much to the south of the region in which they now dwell, and the Micmacs at one time waged war upon them, as described by Charlevoix.

To return once more to the form and use of the so-called celts found in Nova Scotia, it may be said that the few speci-

\* See John Murdoch in *Ninth Annual Report U. S. Bureau of Ethnology*, pp. 165-166, and figs. 128-129.

† See Lieut. T. Dix Bolles, "Preliminary Catalogue of Eskimo Collection in U. S. Nat. Museum," in *Report of Nat. Mus.* for 1887; also Dr. Thomas Wilson, "Stone Cutting Implements," 4th paper, in *The Archeologist* for June, 1895, (vol. iii, p. 179.)

‡ I would like to draw particular attention to the possibility of many of our prehistoric remains being relics of the occupation of the country by Eskimo, previous to their having been driven northward by the Micmacs. The latter belong to the Algonquin family, and doubtless pressed to the north in accordance with the general direction of migration in the east. The significance of the form of Nova Scotian stone implements as bearing upon the question of the occupation of the land by a northern race, has not, I think, before been noted by writers.

mens which are not distinctly more convex on one side than on the other, possibly were inserted in clubs or used as hatchets. With a wooden mallet they could be used without a haft as wedges to split wood, which might sometimes be necessary; but they could never be struck with a stone hammer as some suggest. The more common adze-like form, however, was well adapted for very many uses to which it might be put by savage man, such, for instance, as clearing away the charred wood in the process of forming various hollow vessels by the action of fire, cleaning fresh skins of adhering particles of flesh, and numerous other operations. Lescarbot mentions that the Armouchiquois (Indians inhabiting what is now called New Hampshire and Massachusetts), Virginians, and other tribes to the south, made wooden canoes by the aid of fire, the burnt part being scraped away "with stones."

Thirty-eight of these so-called celts or adzes, either complete or fragmentary, are in the Fairbanks collection (Figs. 17-54), and nearly all show some indications of the adze-form to which I have drawn attention. This will be seen by reference to the side views of the implements shown in the accompanying plates. In size they vary from 4.50 to about 11.75 inches in length. All taper more or less toward the butt or end farthest from the edge. The latter is nearly always much rounded, producing a gouge-like cut, well suited to such uses as forming hollows in wood, dressing skins, etc.

Two typical specimens may be selected in order to exemplify differences in form. The first (Fig. 17) which illustrates the *broader form*, measures nearly 7.50 inches in length and 3.25 in width near the cutting edge, thence tapering to 2.10 in width close to the butt, where it rounds off. The greatest thickness is 1.60 inch. The implement has been intentionally formed somewhat flatter on one side than on the other. This is quite noticeable. The flattened side is more polished than the other, probably from the friction of a haft.

About eight or nine specimens resemble this form pretty closely, a few others less so (Figs. 17 to 30). One (Fig. 25) is

nearly 11 inches long by 3.25 in greatest breadth, and weighs 57 ounces. Another specimen ( $4.50 \times 2.25 \times .75$  ins.) is formed of a greenish-tinted stone, fine in texture, and capable of bearing an excellent polish and a fine edge (Fig. 19). It differs in material from all other specimens in the collection, but resembles in this respect, as well as in shape, a small felsite implement from Summerside; P. E. I., which is described in my paper on the aboriginal remains in the Provincial Museum.

To illustrate the second or *more elongated form*, I shall take a fine, well-formed specimen (Fig. 31), the production of which must have cost its maker much skilful labour. It was originally about 11.75 inches long, but an inch of the end bearing the edge has been broken off. At the broader extremity, it measures 2 inches in width, from which it tapers gradually and gracefully until it measures 1.20 in breadth at the butt. The thickest portion—about 4 inches from the cutting edge previous to being fractured—measures 1.25, from which it becomes rapidly thin in order to form a sharp edge, and very gradually thinner toward the opposite end or butt. Its weight is about 26 ounces. One side of the tool is almost perfectly flat, contrasting greatly with the rounded form of the other side. In the present specimen and some others which resemble it in this respect, the central line of elevation from end to end, on the convex side, is very noticeable and adds not a little to the beauty of the implement; others are more regularly rounded and do not exhibit this ridge. A section at right angles to the length would be plano-convex in outline. The specimens which most nearly resemble this typical one, have the edge very much rounded or nearly semicircular, and so produce a deep cut like that made by a gouge.

Some twenty specimens (Figs. 31-50)—eleven of them being parts of broken implements—may be described as evidently of this form, and a few others resemble it more or less. They are without the slightest doubt adzes, and are more plainly adze-like in shape than those of the first type. Both forms grade into each other.

One incomplete specimen of the second type bears a longitudinal groove on the flat side, extending to within nearly 2·50 inches of the cutting edge (Fig. 46). I have never before seen a groove thus cut on a Nova Scotian implement of this kind. It may have been intended to lodge the crooked portion of a handle, thus gaining greater firmness, or possibly it once extended so as to form a gouge at the missing end, as remarkably instanced in two gouges, referred to hereafter. The latter explanation, however, does not seem probable. It may be that the tapered end or butt having been broken off, the groove was formed in order to again haft the remaining part in the manner just suggested; otherwise the re-hafted fragment would doubtless have slipped in its lashings. A short transverse groove, however, would have answered the purpose, and probably could have been more easily made.

A well-formed specimen (Fig. 47) of the second type, proportionately broader than other implements of the kind, has a boss near the middle of the convex side, which would help to retain the lashing in place. At the point of the butt there is a slight prominence for the same purpose. This is additional evidence of the adze method of hafting. An implement of the first or broader type, exhibits a similar knob on the same side, near the butt (Fig. 22). A gouge (Fig. 63) in the collection also has two well-defined bosses, one near the butt and the other near the middle. One or two other gouges have slightly raised transverse ridges for the same purpose. This indicates that some form of gouges, at least, were hafted like adzes.

A couple of implements resembling the second type, are somewhat rectangular in transverse section (Figs. 49 and 50). A thin celt, 6 inches long and ·65 of an inch thick, shown in Fig. 51, was possibly used as a chisel. Two other specimens (Figs. 53 and 54), measuring respectively 11·25 and 12 inches, are very rough. One, palæolithic in appearance, is merely chipped into form. The other (Fig. 53) is doubtless a natural form, and would have been rejected from the present account were it not for indications that the larger end had been artificially brought

to an edge. These two implements may belong to an older period than those of finer workmanship.\* Attention has recently been drawn to supposed evidences of a palæolithic age in America, and Prof. Thomas Wilson of the Smithsonian Institution has dealt with the subject in a paper entitled "Results of an Enquiry as to the existence of Man in North America during the Paleolithic Period of the Stone Age" (*Report U. S. National Museum*, 1887-88) which has been referred to on a previous page. Collectors in Nova Scotia should search closely for the ruder forms of implements, which from their apparently unwrought appearance may have hitherto escaped notice.

The collection contains an interesting implement which possibly is an adze (Fig. 55). It measures 10·50 inches in length, 2·50 inches in breadth near the cutting edge, and 2·15 at the butt, and its greatest thickness is about 1·70. It is elliptical in section; and does not appear to be noticeably more flat on one side than on the other. The cutting edge is battered and very dull, and the butt is somewhat shattered from a blow. What makes it particularly remarkable, is a slight groove which encircles it entirely, a little more than six inches from the cutting edge. Just above the groove are two prominences or shoulders, one on each lateral edge of the tool, and from thence to the butt the edge is slightly hollowed; all of which would assist in the attachment of a handle. I do not remember ever to have seen a similar example from Nova Scotia. It forms a link between the celt or adze and the ordinary grooved axe.

Besides the celts or adzes in the collection just referred to, some other undescribed examples which have come to my notice may be here described.

The McCulloch collection contains eight specimens (Figs. 84, 85, 87-92), all presumably from this province. Two (Figs. 89 and 90) are fragmentary, the rest entire. About five of them (respectively 10·50, 9·50, 7, 6, and 4·75 inches in length) may be likened to the first or broader type (Figs. 84-85, 87-88, 92). One of these (4·75 × 2·25 inches), showing the transition to the grooved axe,

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\* A few rude celts in the Provincial Museum resemble the two described above.

is slightly indented on the two lateral edges midway in the length (Fig. 92). This was for the purpose of holding the lashing which bound the haft adzewise. It agrees in size and shape with a syenite implement in the Provincial Museum, a description of which will be found in a previous paper.\* The adze-like form is more or less noticeable in the specimens in the McCulloch collection. It is difficult to decide to which type the two fragments belong. The collection also contains an extremely small and frail "celt" (Fig. 91)—the most slightly proportioned one which I have seen. It is not quite 4·25 inches long, an inch in greatest breadth, and ·50 of an inch in greatest thickness.† Its form is very symmetrical. Possibly it was intended for the use of a child, or else for some finer work than that for which the larger tools were adapted. In the Fairbanks collection, the shortest complete specimen, which is distinctly of the second type, measures a little more than 5·25 inches in length (Fig. 35). An implement (Fig. 86), eight inches in length, found near Margarie, Cape Breton, has been shown to me by E. C. Fairbanks, Esq., of Halifax. It is evidently an adze, and belongs to the broader form.

From my examinations of Dr. Patterson's large collection in the museum of Dalhousie College,‡ I find that nearly every so-called celt or axe therein, exhibits, more or less distinctly, one side which is intentionally more convex or rounded than the other; which, with other occasional indications, tends to raise a suspicion that they had been used as adzes. An adze (No. 40) in that collection, labelled a "stone axe, Middle River Pt., Pictou Co." (length 9·50 inches, greatest breadth 2·65), still retains the worn places, on the flatter side, made by contact with the adze-handle. Indications of this are also to be found in other instances. No. 53 in the same collection, labelled a "celt or

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\* Aboriginal Remains of N. S., *Trans. N. S. Inst. Nat. Sc.*, 1st series, vol. vii, p. 282.

† In my paper mentioned in the above note, the measurements of three "celts" were misprinted as much shorter than this. The figures in lines 17, 18, and 22, page 280, of that paper, should respectively read 4·90, 4, and 4·90 inches.

‡ A full description of this excellent collection will be found in Dr. Patterson's paper on "The Stone Age of Nova Scotia," *Trans. N. S. Inst. Nat. Sc.*, series I, vol. vii.

chisel," is nearly flat on one side, while around the other side is a depression or shallow groove wherein were lodged the thongs which bound it to an adze-haft. In nearly every case the cutting edge is more or less rounded; very rarely is it nearly straight. Indications of the prevalence of the adze-form of tool, are very frequent, and in many cases they leave not a doubt as to how the implement was used. In an axe or hatchet the flat side would have little or no advantage, except that it would allow the tool to lie closer to the wood in making cuts in one direction.

*Chisels.*—There is no implement before me which I care so to designate, although one thin celt, before mentioned, might be so considered by some (Fig. 51). It seems doubtful whether our Indians ever used an implement in the manner in which we handle a chisel. A hafted implement for striking blows would be far more useful to a savage people.

*Gouges.*—Dr. Rau, in his description of the archæological collection of the U. S. National Museum, says that these implements occur in the United States far less frequently than the celts, and that they appear to be chiefly confined to the Atlantic States. The latter circumstance suggests that the work in which they were employed, was principally necessary or possible in the country bordering the eastern coast. They may have been used in making canoes, but we would then expect to find them abundant on the Pacific Coast, unless another implement was there applied to the purpose, which is quite likely. Their employment by certain tribes may account for their more frequent occurrence in particular parts of the continent. Of course it is not probable that all gouges were put to the same use. Doubtless many of them, perhaps even all, were hafted adzewise, and employed in forming hollows in wood which had previously been charred by fire and so rendered capable of being worked by such fragile tools. They would thus be useful in making wooden canoes, or in fashioning various utensils from the same material. I cannot agree with those who consider that some of these easily-destructible implements (those with the groove from end to end) were employed in tapping and gathering

the sap of the rock maple. Surely the axes or adzes were well adapted to making the requisite incision in the bark, and this having been done, a piece of birch-bark, always available, was without doubt employed to conduct the fluid so it should fall into a receptacle beneath. Dr. Gilpin also was mistaken in supposing that gouges, etc., were used in making arrow-heads. We must never lose sight of the fact that the Indian had a fragile material from which to form his tools, and he had therefore to handle them with much care. The fair, and frequently very excellent state of preservation in which we find the edge of most cutting implements, shows that they were not often taxed beyond their strength.

Seventeen gouges are in the Fairbanks collection (Figs. 56-72). In length the perfect specimens vary from 5.50 to 10.50 inches. With perhaps one or two exceptions, all taper more or less toward the extremity furthest from the crescent-shaped edge. The one which most plainly exhibits this tapered form, measures 2 inches in width near the latter edge, and thence tapers regularly to a small rounded end at the other extremity; its total length being 6.50 inches (Fig. 63). These implements are often of noticeable symmetry, and probably were once well-polished. They are formed of stones of only moderate hardness.

The extent of the groove which gives them their characteristic form, varies much. Such variations, doubtless indicate different uses to which the tool was to be put.

In some, the *groove is almost entirely indistinguishable* and confined to the vicinity of the cutting edge. They thus pass gradually into the adze-form, which this tool otherwise greatly resembles. Three or four of the gouges before me, are of this unpronounced shape (Figs. 56-58, 60). They vary from 8.50 to a little more than 6 inches in length.

Six specimens have the *groove extending about half the length* (Figs. 59, 61-65)\*. They vary from 6 to 10.50 inches in

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\* A specimen (Fig. 93) in the McCulloch collection, Dalhousie College, differs a little from typical examples of this form, and slightly exhibits the transition to that in which the groove extends throughout.



length. Another specimen of this kind is in my own collection, and was found at Waverley, near Dartmouth, by Mr. Skerry (Fig. 94). It, together with three of the six just mentioned, are wide and exhibit a very deep, broad groove. Another, narrow and 9 inches long, is very interesting (Fig. 64). Although the groove is quite evident and extends for half the length, yet the end of the tool bears no cutting edge, that portion being blunt. The other extremity, however, has been rubbed into a narrow adze-like edge. The implement may be a disabled gouge which had been altered into an adze; the gouge groove, having been utilized as a convenient resting place for the T-shaped portion of a handle, which was then whipped round with thongs. Or possibly the groove may have been intentionally made in order to assist in maintaining the position of the haft. Another specimen (Fig. 65) much resembles the one just described, but the gouge-edge is less blunt. Both may have been hafted in the middle like a modern pick-axe, and so used both as a gouge and as an adze; but this is not probable. As a slick-stone for dressing skins, the combination of two forms would not be without advantage. The fragment of an adze-like implement (Fig. 46) which has been referred to in my description of polished stone hatchets and adzes, resembles the two tools I have just noticed, inasmuch as although the edge is undoubtedly adze-like in shape, yet the upper portion of the fragment bears a shallow but distinct groove. Among the specimens in the cabinet of the Canadian Institute, Toronto, is an implement having a gouge at one extremity and a chisel at the other. It was found in Simcoe County, Ontario, and will be found figured in the report of the Institute for 1891, page 38.

An examination of at least three gouges (Figs. 61, 63, 94,) of the second or half-grooved form, puts it beyond doubt that these three were hafted like adzes, with the concavity facing the user. My own specimen (Fig. 94) from Waverley shows plainly on the convex side two ridges for retaining the lashing, and another (Fig. 63), well proportioned, exhibits two prominent nodules for the same purpose. One or two adze-like "celts" bear similar

nodules (Figs. 47 and 22). Probably many other gouges were thus hafted. Without doubt it was the most reasonable method of handling these tools when delivering excavating blows.

We shall now pass to those gouges in which the *groove extends throughout the entire length*. Five well-defined examples (Figs. 66-70) are in the Fairbanks collection, together with two (Figs. 71, 72) which are rough and very poorly formed. The groove varies in depth from about .09 of an inch (Fig. 72) to more than .50 of an inch (Fig. 66), and in width from a little over .75 to nearly 1.50. Three of the five well-formed examples are fragmentary, having been transversely broken near the middle. The adze-like manner of hafting would not be quite so well adapted to this particular form.

*Grooved Axes.*—These implements are rarely found in Nova Scotia. Dr. Patterson has succeeded in obtaining but one specimen (7.25 inches long by 3.25 wide) which was discovered at St. Mary's, Guysborough County. Two examples are in the Provincial Museum, Halifax, and have been previously described.\* One of them is double grooved. In this respect it is probably unique in Nova Scotia. The second groove was very likely formed in order to shift the haft and so improve the balance of a faulty implement. These, together with the examples which I am about to describe, are all which have come to my notice in Nova Scotia. It is quite possible that they were only introduced through trade with other tribes or as trophies of war. They are also rare in Ontario as compared with Ohio, Kentucky, and some neighbouring states. Dr. Bailey informs me that of six axes in the museum of the University of New Brunswick, Fredericton, four are grooved, and he has seen others of the same kind in the St. John collection and elsewhere in that province.

Two well-formed, perfect specimens (Figs. 73-74) each with a single groove, are in the Fairbanks collection. They agree in outline and general proportions, and their form may be considered typical. The larger one (Fig. 73) is 7.50 inches long and 4 inches in greatest width, and weighs 49½ ounces. The smaller

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\* *Trans. N. S. Inst. Nat. Sc.*, vol. vii., p. 282.

one is 6·75 inches in length and 3·75 in greatest breadth, and weighs 40 ounces. Both appear to have been formed from oval quartzite boulders such as are found on beaches. From near the groove, to the edge, they are neatly "pecked" into shape, while the whole of the butt, above the groove, is smooth, being evidently the original surface of the boulder. The aboriginal worker in stone, was doubtless always ready to take advantage of such material as nature had already partially shaped, thus lessening his labour. The edges do not show signs of rough usage. The butt of the smaller one is intact, but that of the larger bears the marks of many light blows which probably were the result of its use in cracking bones in order to extract the marrow.

These axes could have been employed in detaching birch bark and in girdling trees and so killing them preparatory to felling them by the aid of fire, the axe being again used in order to remove the charcoal as it formed. The tool would also constitute a formidable weapon. Prehistoric man made his few implements answer as many purposes as possible.

An axe very similar to those I have described, is figured by Dr. Rau (*Archæological Collection of U. S. National Museum*, figure 72). It was found in Massachusetts. I have never seen a Nova Scotian axe with the groove only on three sides, as shown by that writer in figure 73 of his work.

*Hammers.*—A beautiful hammer-head (Fig. 95) is in my own collection. It is formed from an egg-shaped boulder, very slightly compressed on opposite sides. Its length is 3·50 inches, greatest breadth 2·50 inches, and its weight a little more than 19 ounces. Midway from either end, it is entirely encircled by a "pecked" groove, which has not been smoothed by friction. This groove was formed in order to attach a handle. Its roughened surface would tend to increase the hold of the haft and its lashings, and the interposition of a piece of hide, which was quite probable, might account for the absence of any smooth surfaces in the groove. Each end shows distinctly the denting marks of numerous blows, but there are no large fractures. This

condition of the ends and the formation of the groove, are evidences of the hand of man, but the oval shape of the stone is the work of natural agencies, perhaps slightly improved by the skill of the aboriginal craftsman. The implement was probably used as a weapon in time of war, while in the peaceful occupations of savage life, it was put to any uses to which it was adapted.

Grooved stone hammers are very rare in Nova Scotia, in truth I do not remember to have met with another. They are also, I believe, rare in the neighbouring province of New Brunswick. My specimen was found in July, 1894, while the foundation was being dug for a manse, two or three rods to the northward of St. James's Presbyterian Church at Dartmouth. A great number of human skeletons have been unearthed at that spot, but after careful inquiry and personal search for anything which might serve to identify those who are there buried, I have only succeeded in obtaining this hammer and a linear-shaped piece of iron, 9.50 inches long, which I think must have been a dagger-shaped implement. or possibly a spear-point. A second iron relic of the same kind was discovered, but I did not see it. The bones were from one foot to two and a half or three feet below the surface of the ground. In one instance I succeeded in finding the remains of a nailed wooden box or rough coffin. It was almost entirely disintegrated and chiefly appeared as a dark-coloured line in the soil. The grooved-hammer was found close to one of the skulls. After a good deal of investigation, I have come to the opinion that there is no evidence whatever to show that this was an Indian cemetery, except the presence of the above-mentioned relics. Those who are buried there, are doubtless white men. The theory that they were the victims of the massacre at Dartmouth in 1751, cannot be maintained. Various reasons make me strongly of the belief that this spot bears the bones of many of the Duc d'Anville's plague-stricken followers, others of whom were interred near the shores of Bedford Basin. For further information on this point, the reader may refer to a footnote on page 6 of Mrs. Lawson's History of

Dartmouth. It is known that the Micmacs assembled about the French camp, and the presence of an Indian implement in the burial-ground of their allies is not to be wondered at. The weapon may even have been placed in one of the coffins as a savage mark of respect for the alien dead.

*Pendants and Sinkers.*—Two well-formed specimens of this class—one perfect, the other nearly so—are in the Fairbanks collection (Figs. 75-76). They are both somewhat pear-shaped and much resemble plummets. The lower extremity is pointed, and the upper end expands into a knob to facilitate suspension. They thus resemble figure 106 in Dr. Rau's description of the archæological collection of the U. S. National Museum. The larger one (Fig. 76) is formed of dark red sandstone, and measures four inches in length. The greatest diameter is toward the lower end. The other is made of a dark hard stone. Its length is three inches, and the largest part is situated about midway between the ends. It is not so elongated as the other example. The two sides, including the knob, are somewhat compressed, thus making the diameter 1.40 inch in one direction and 1.70 in the other.

A third "sinker" (Fig. 80) has been kindly lent me by W. C. Silver, Esq., of Halifax. It was found in the bed of the Salmon River, adjoining that gentleman's property at Preston, about seven miles to the east of Halifax. He informs me that the place where it was discovered was an old spawning ground. The specimen is a very beautiful and perfect one, fashioned with great pains from a reddish stone, like sandstone, containing small particles of mica. Its length is 3.25 inches, and its greatest diameter (1.20 inch) is near the upper end or point of suspension. The groove just below the knob at the top, is distinctly smoothened by a thong by means of which it must have once been suspended. The discovery of the stone in a river, tends to strengthen the view that it had in some way been employed in connection with fishing. Whatever may have been its use, it shows what skilful work our Indians bestowed upon the manufacture of some of their implements.

These so-called "plummets" or "sinkers" are very rare in Nova Scotia. Dr. Gilpin figures one in his paper on the stone age. There are but two in the Patterson collection: one, 3.75 inches long, well-shaped, with a pointed lower end, being from Annapolis County; the other, two inches long, quite light in weight, with a rounded end, from Lunenburg County. There are none in the collection in the Provincial Museum. Dr. Bailey in his "Relics of the Stone Age in New Brunswick," figures four or five which had been found in that province.

It is worthy of remark that the sides of such specimens as I have examined, exhibit more or less a tendency toward compression, as has been already noted of one example. This slightly flattened form was probably intentional. Dr. Patterson's Annapolis "sinker" has been ground down in one or two places on the side, but I have not found any others in this condition. I may say that although all specimens are carefully fashioned, and of the same general appearance, yet they differ much among themselves in detail of form. In no case have I noted any with a hole for suspension, although such would have been a more secure method of hanging them had they been used as weights for fishing-lines.

These pear-shaped objects have long perplexed archæologists who have attempted to define their use. We find them variously denominated sling-shots, sinkers for fishing-tackle, stones used in playing some game, personal ornaments, sacred implements for performing some religious ceremonies, plummets, spinning-weights, etc.

In a paper entitled "Charm Stones; Notes on the so-called 'Plummets' or 'Sinkers,'" Dr. Lorenzo G. Yates has presented the very interesting results of his investigation into the uses of such implements. For reasons given in the paper, he discards all the stated theories on the subject, except that relating to their employment in sorcery.

A Santa Barbara Indian, California, when asked by Mr. H. W. Henshaw why one of these stones could not have been used as a line sinker, replied with much common sense, "Why

should we make stones like that when the beach supplies sinkers in abundance? Our sinkers were beach stones, and when we lost one we picked up another."

A very old Indian chief, of the Napa tribe of California, told Dr. Yates that the plummet-shaped objects were charm-stones, which were suspended over the water where the Indians intended to fish. A stick fixed in the bank, he said, bore a cord which sustained the bewitched stone. In a similar manner they were employed in order to obtain good luck while hunting. Napa Indians also state that they were sometimes laid upon rocks or peaks, from whence it was supposed they travelled through the water during the night and drove the fish to favourite spots for catching them, or in other cases, drove the game of the woods to the most advantageous hunting grounds.

Other Indians of California say they were medicinal stones, and describe the method in which they were used by sorcerers for curing the sick, bringing rain, extinguishing fires, calling fish up the streams, and for performing ceremonies preparatory to war. A perforated stone was said to make its wearer impervious to arrows.

The above statements may help us to form our own opinion as to the use of these very curious stones in Nova Scotia. Many still hold to the belief that they were sinkers, but most of the evidence seems to be against that theory.

*Pipes.*—Smoking utensils are somewhat rare in Nova Scotian archæological collections. Only three complete examples, and one in course of construction, are among Dr. Patterson's specimens in the museum of Dalhousie College. Four are in the cases of the Provincial Museum, Halifax, and will be found described in a previous paper by the writer. One of these is probably of European manufacture. Dr. Bailey mentions but a single specimen in his article on the stone-age in New Brunswick. The Fairbanks collection, as now before me, contains no example.

Hon. W. J. Almon, M. D., of Halifax, possesses a large, well-formed pipe (Fig. 96), which is without doubt the most

remarkable one yet found in the Maritime Provinces. The circumstances of its discovery are as follows. In 1870, an upturned copper kettle was unearthed by Mr. John J. Withrow\* in a piece of woodland to the westward of Upper Rawdon and within ten rods of the line of an old French trail or road from Shubenacadie to Newport, Hants County. The kettle was about eighteen inches or two feet under the surface. Beneath it, when lifted, were found the stone pipe just mentioned, two iron tomahawks, five or six iron implements about eight or nine inches long, very much rusted, and having a slight prominence near the middle of their length, also about seven dozen oval blue beads ornamented with lines, etc., each bead nearly the size of a sparrow's egg, and lastly a tooth which seems to have been the curved incisor of a beaver. There were no human bones or other indications of a burial. The five or six iron implements Mr. Withrow thinks were knives, but they were so corroded as to make identification very difficult or impossible. The kettle was fifteen inches or so in diameter and about nine inches in depth, and it had a handle for suspension. Close to where the kettle was found, was a hemlock, two feet in diameter. With the exception of a few of the beads, which Mr. Withrow retained, the relics subsequently belonged to J. W. Ouseley, Esq., barrister of Windsor. Half of the beads were given by this gentleman to the late Judge Wilkins, the remainder are still in his possession. Dr. Almon obtained the pipe from Mr. Ouseley.

The bowl and stem of this splendid example of aboriginal skill, are formed of one piece, thus somewhat resembling a clumsy modern clay pipe. The intervening portion forms a curve. The most noticeable feature of the article is a bold representation of what is undoubtedly a lizard, placed with its ventral surface on that side of the bowl which is farthest from the smoker. The fore and hind legs clasp the bowl, while the long tail lies upon the lower surface of the stem. The broad head extends upward beyond the rim of the bowl. Two dots at the extremity of the somewhat pointed snout, represent the

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\* Now of South Uniacke Mines, Hants County, N. S.



nostrils of the animal. The mouth is closed, and reaches around to the side of the head, beneath the eyes. The latter are represented by large, well-defined, circular cavities. Across the back of the neck appear a row of five elliptical cavities, their greatest length being in the direction of the length of the body. The long fore-legs are bent upwards at right angles, and the toes rest on the sides of the bowl's rim. Incised lines divide the fore-feet into rather long toes, seven of which are on the right foot. The hind legs are shorter, slightly broader, and are gradually lost in the contour of the bowl, without any indication of toes. A longitudinal line extends from the thigh to the vicinity of the hind foot. A round hole, about  $\cdot 25$  of an inch in diameter, is drilled from side to side of the bowl, at the ventral surface of the lizard and just anterior to the hind-legs. This hole was doubtless for fastening the pipe, by a thong, to the smoker's dress, in order to prevent its being lost or broken; or else for the attachment of an ornament. The rim of the bowl is decorated on top by groups of from four to seven incised radiating lines. The cavity for the reception of the narcotic is nearly circular, and is an inch in diameter. It gradually tapers downward for about an inch and a half, where it is somewhat suddenly constricted to nearly the size of a lead pencil, after which it extends nearly an inch further downward until it meets the perforation of the stem at a little more than a right angle. The total depth of the cavity, therefore, would be nearly two and a half inches. One side of the cavity is continuous with the throat of the lizard.

The length of the stem from the extremity to the edge of the bowl nearest the smoker, is about five inches. Its diameter at the mouth piece is  $\cdot 40$  of an inch; and at the further portion, near the bowl, a trifle more than an inch. The diameter of the perforation at the mouth-end is  $\cdot 28$  of an inch. The bowl rises  $1\cdot 80$  inch above the stem. The thickness of the bowl at the thinnest part, is about  $\cdot 17$  of an inch. Taken generally, the whole pipe may be said to be about seven inches long, but from the mouth-piece to the tips of the figure's snout, it measures  $7\cdot 60$  inches.

The entire specimen is in a very excellent state of preservation, and without a flaw. It is formed of a fine gray stone, different from any found in the province, and closely resembling the material of the remarkable stone tubes in the Provincial Museum (*Vide* "Aboriginal Remains of Nova Scotia;" *Trans. N. S. I. N. S.*, vol. vii.) It bears a fine polish. I did not observe any tooth-marks upon the stem, as would probably have been the case had it always been placed in the mouth without some protective material. A short tube of wood may have originally served as a mouth-piece.

It is a unique specimen in this part of the Dominion. I consider it almost beyond question that it is not the work of Micmacs, but probably came into Nova Scotia as a trophy of war or else by trade with some distant tribe. The stone tubes, just mentioned, probably owe their presence here to the same agency. Trade was not uncommon among the prehistoric tribes, and Lescarbot mentions that our Micmacs, or Souriquois as he called them, greatly esteemed the *matachias*, or strings of shell beads, which came unto them from the Armouchiquois country, or the land of the New England Indians, and they bought them "very dear." Tobacco itself must have been obtained by trading with nations by whom it was cultivated.

Strange to say, in Dr. Rau's account of the collection of the U. S. National Museum (cut 192) is figured a pipe about four and a half inches long, which bears an extremely close resemblance to the Nova Scotian specimen, both in the attitude of the animal upon it and in general shape. Apparently, however, it is much less boldly carved. It was found in Pennsylvania, and is described by Dr. Rau as a very beautiful, highly polished steatite pipe, carved in imitation of a lizard, the straight neck or stem forming the animal's tail, and its toes being indicated by incised lines. The similarity between the two specimens is therefore remarkably pronounced.

Mr. David Boyle, in the report of the Canadian Institute (session 1891, page 29), figures a similar pipe found in a grave in

the Lake Baptiste burying-ground, Ontario. Mr. Boyle speaks of it as exceedingly rare. It is made of a soft "white-stone." The animal whose form extends above the bowl and more than half-way along the stem, he considers was probably intended to represent a lizard.

Mr. Boyle also figures another pipe (*Report Canadian Institute*, session 1886-7, page 29,) which may be likened to our specimen, although the resemblance, owing to the different position of the figure and the absence of a distinct bowl and stem, is not nearly so great as in the two instances we have just given. It was discovered at Milton, Halton County, Ontario. The material of which it is formed is a light-gray stone, very soft and porous, containing minute specks, probably micaceous, and quite unlike anything in the geological formation of that province. The cavities on the body and long tail, resemble those on the neck of the Nova Scotian specimen; they are probably intended to represent spots of colour such as the aboriginal artist had seen on the animal he imitated. Several lizards bear clearly-defined spots of bright colour upon their bodies. Notwithstanding the length of the snout, Mr. Boyle thought that the resemblance of the head to that of a monkey was very striking. I am rather of the opinion that, like the figures on other pipes mentioned, the carving was intended to represent a lizard.

Dr. Almon possesses another stone pipe (Fig. 98), which, although most beautifully ornamented and very symmetrical in outline, is nevertheless of secondary interest, for the reason that it is doubtless of comparatively modern manufacture. It was purchased from a Micmac on the Dartmouth ferry-steamer. In general appearance it closely resembles one found at Dartmouth in January, 1870, described by me in a paper on the aboriginal remains in the Provincial Museum (page 287), or another from River Dennis, Cape Breton, which is figured in the plate appended thereto. This form is considered by Dr. Patterson to be the typical one adopted by our Indians. The bowl, somewhat barrel-shaped, rises from a base, laterally flattened. In the

present specimen, this flattened base or keel, when viewed sideways, is square, not lobed, in outline, and below the centre it contains a round hole for the suspension of an ornament or to facilitate attachment to the owner's dress by means of a thong. The bowl and keel are most tastefully ornamented with single and double straight lines, dots, very short diagonal dashes, and conventional branches of foliage, all arranged in neat designs which entitle the carver to much credit for his excellent work. I have never seen a more comely Micmac pipe. The style of ornamentation much resembles that of a very graceful pipe of fine argillite which belongs to my father, Henry Piers, Esq. This, for the sake of comparison, I have illustrated in Fig. 97. It was made by a Maliseet Indian of New Brunswick, and bears the date March 5th, 1859. The figure on the fore part of the bowl is excellently carved, and represents a long-haired Indian, seated, with arms across his breast. The other decorations manifest much taste on the part of their swarthy designer.\*

Dr. Almon's specimen, last referred to, is made of a blackish stone, probably a close grained argillite. The total length is nearly 2.50 inches; and the height of bowl, 1.40. It is in a fine state of preservation, and everything seems to indicate that it was formed with modern metal tools. Possibly it is not a century old.

Dr. Almon's lizard pipe and the flat-based specimen from Musquodoboit in the Provincial Museum, are the most interesting examples of this class I have yet seen in our province. Neither, however, are to be considered as typically Micmac.

*Incertæ sedis.*—Three specimens, which cannot be treated under any of the preceding heads, yet remain to be described. A

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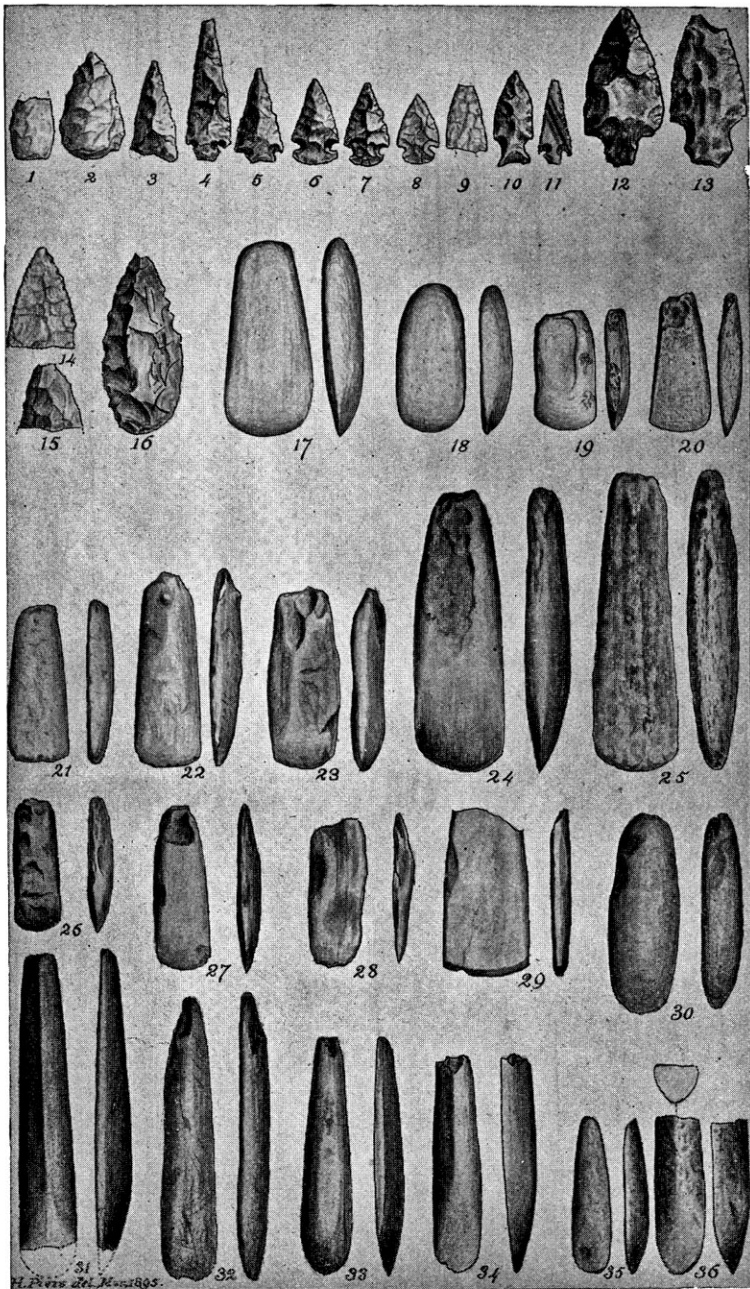
\* The half-tone plate does not show with sufficient distinctness the designs on the pipes represented in Figs. 97 and 98. M. Lescarbot says that "our Souriquois [Micmacs] and Armouchiquois savages have the industry both of painting and carving, and do make pictures of beasts, birds, and men, as well in stone as in wood, as prettily as good workmen in these parts; and notwithstanding they serve not themselves with them in adoration, but only to please the sight, and the use of some private tools, as in tobacco-pipes." [Book II, chap. v.]

singular, roller-shaped object, presumably of aboriginal workmanship, which I find in the McCulloch collection, is shown in Fig. 79. The ends have evidently been cut off while the stone was rotating. Another curious object (Fig. 78) is in the Fairbanks collection. One face thereof is slightly hollowed, while the other is correspondingly convex. The wider end has been partially cut away so as to leave a short neck. I shall not venture an opinion as to the use of these two relics. An oval boulder (Fig. 77), very regular in shape, is in the same collection. Not the slightest importance, however, can be attached to it, for it is merely a natural form bearing no marks of man's workmanship.

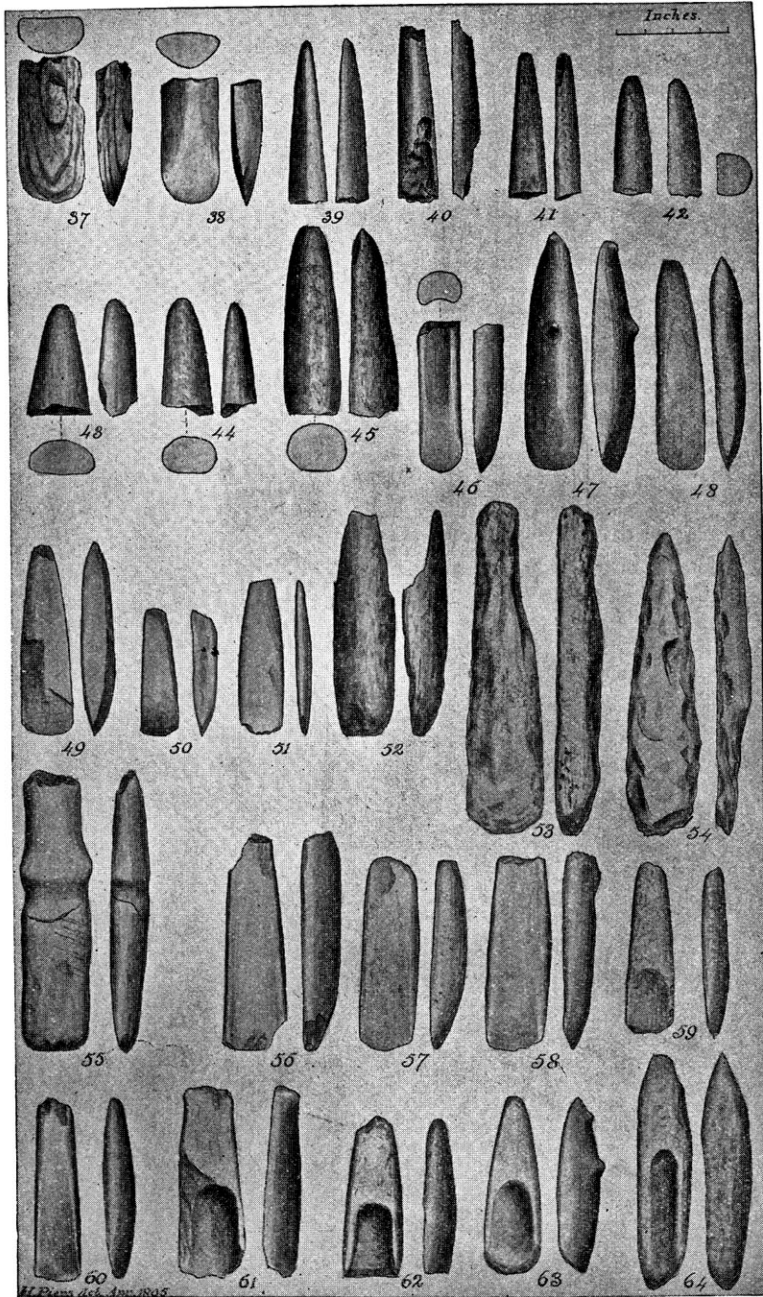
#### EXPLANATION OF PLATES I. TO III.

*Scale: Figs. 1-16, 96-98, two-sevenths natural size; Figs. 17-95, one-seventh natural size.*

Fig. 1-11. Arrow-heads.	Fig. 79. Roller-shaped stone.
12-16. Spear-heads or cutting imple- ments.	80. Pendant or sinker.
17-54. Adzes and celts.	81-83. Spear-heads or cutting imple- ments.
55. Grooved axe or celt (?)	84-92. Adzes or celts.
56-72. Gouges.	93-94. Gouges.
73-74. Grooved axes.	95. Hammer.
75-76. Pendants or sinkers.	96. Lizard pipe.
77. Oval stone.	97. Maliseet pipe.
78. Stone of unknown use.	98. Keelid pipe.

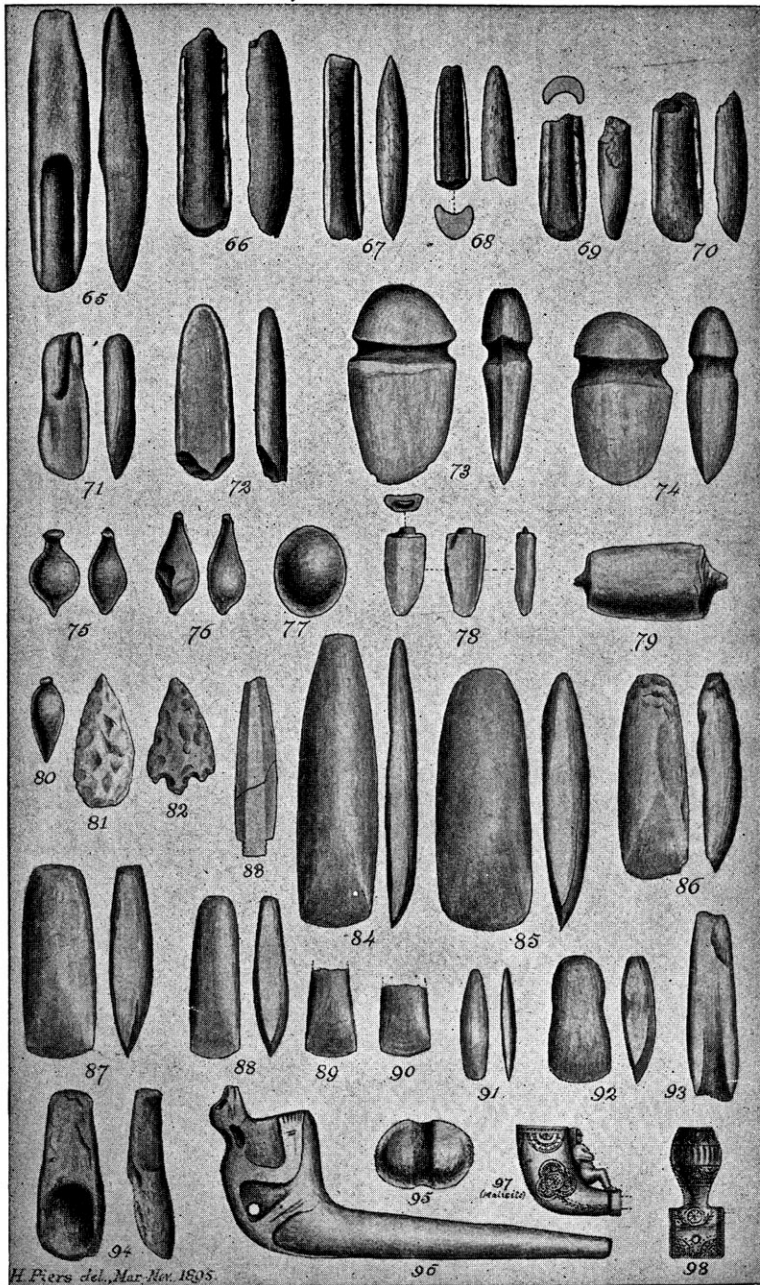


Illustrating Mr. Piers' Paper: "On Relics of the Stone Age in Nova Scotia."



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