

AN ANALYSIS OF BONE ARTIFACTS FROM THE SIDEY-MACKAY SITE

by Peter Hamalainen

Abstract

Bone and shell tools, ornaments, ceremonial objects and miscellaneous artifacts from the Petun Sidey-Mackay BbHa-6 archaeological site are reported.

Résumé

Compte-rendu du site archéologique Petun Sidey-Mackay BbHa-6: des outils d'os et de coquilles, des bibelots, des objets de cérémonie et d'autres objets façonnés.

Introduction

The Sidey-Mackay village site (BbHa-6) is located in Lots 8 and 9 in Concession 5 of Nottawasaga Township (now Clearview Township), Simcoe County. It lies atop a flat terrace directly south of Caroline Street at the western outskirts of the village of Creemore. As the name suggests, the site occupies two different properties, Sidey (lot 9) and Mackay (north half of lot 8), these being the names of the landowners at the time of the site's discovery.

The site is a village which has been dated to the late sixteenth century and represents the earliest phase of Petun occupation of the Collingwood area. It is one of a few protohistoric Petun sites in this region. Only a few European trade goods have been recovered from it during its excavation.

The site was first recorded early this century by W.J. Wintemberg, who collected from the site in 1923 and followed this by excavation in 1926 (Garrad, 1978: 14). Wintemberg's excavations were mainly confined to the Sidey part of the site. In 1977 Charles Garrad conducted further excavations, this time on the Mackay portion.

The faunal artifacts from the Sidey-Mackay Site had been described briefly in prior literature. Wintemberg gave a detailed accounting of the faunal artifacts recovered in his excavations (Wintemberg, 1946) while the bone artifacts recovered by Garrad have been described by Prevec in her faunal analysis (Prevec, 1979). Wintemberg's and Prevec's analyses were used by this writer in his thesis research (Hamalainen, 1981).

This study came about in 1995, when Janet Cooper obtained most of the faunal artifacts recovered by Wintemberg from the National Museum of Civilization for a private study. As this writer had done his M.A. thesis on the Petun, and since the thesis dealt in part with Petun bone tools, a partnership was formed to study and describe the bone tools from the site. Once Wintemberg's sample had been studied, the project was extended to include the animal bone artifacts recovered by Garrad.

Altogether, the sample studied numbered 289 specimens (see Figure 1). The identifications include over twenty mammal, bird, turtle, freshwater mussel, aquatic snail and marine shell taxa (see Appendix). It should be emphasized that the present study does not include all of the bone artifacts recovered by Wintemberg, as some of the specimens no longer appear to be included in the Wintemberg sample. Finally, although this study is concerned with the Sidey-Mackay bone tool sample, when this is thought to be relevant, comparisons will be made with bone tool samples found on the other Petun sites.

The following discussion of the bone tools is organized into four parts; Tools, Ornaments and Ceremonial Objects. These reflect the various functions of the artifacts. A few interesting specimens which could not be identified as to their function and are included under the heading of Miscellaneous.

Figure 1: List of Analyzed Bone Tools from the Sidey-Mackay Site

Tools	MNS	%
Harpoons	6	2.1
Projectile Points	2	0.7
Mussel Shell Artifacts	7	2.4
Awls	50	17.3
Antler Artifacts	13	4.5
Rodent Incisor Tools	71	24.6
Fleshers	2	0.7
Flesher/Awl	1	0.3
Cervid Phalanges	12	4.2
Netting Needles	14	4.8
Total	178	61.6
Ornaments		
Tube Beads	46	15.9
Tooth Ornaments	22	7.6
Pendants	2	0.7
Shell Beads	27	9.3
Exotic Shell Beads	8	2.8
	105	36.3
Ceremonial Objects		
Turtle Shell	2	0.7
Human Ulnar Awl	1	0.3
	3	1.0
Miscellaneous	3	1.0
Grand Total	289	99.9

Tools

The bone tool sample was the largest in the assemblage. Altogether, they numbered 178 artifacts, which accounted for over 61% of the analyzed sample.

Harpoon Points

Six harpoons or harpoon fragments were found at the site. Two of these were complete, two were shaft fragments, one a tip fragment and the remaining specimen a barb. Four artifacts were made of cervid antler, which appears to have been the preferred raw material for making harpoons. Of the remaining two specimens, one was fashioned from a white-tailed deer metatarsal buttress ridge and the other from an unidentified bone fragment belonging to a large species of mammal.

The first of the two complete harpoons was made of antler (see figure 2). It was unilaterally barbed, with the barbs numbering three. The hole on the stem of the harpoon had been biconically drilled and measured 3 mm in diameter. The specimen was highly polished and exhibited striations running lengthwise along the blade, which probably reflect use wear. The artifact measured 184 mm in length, 16 mm in width and had a thickness of 5 mm.

The other complete harpoon had been fashioned from a white-tailed deer metatarsal buttress ridge. In shape it was needle-like and triangular in cross section. The harpoon had been unilaterally barbed along one of the edges, with the barbs numbering four. There was no hole and the shaft exhibited high polish. The length of this specimen was 179 mm and its thickness 6 mm.

Of the remaining fragments, one shaft fragment deserves mention, as it was very similar to the first complete harpoon discussed above. It was made of antler and the hole was biconically drilled. It would have been larger than the complete artifact, but was apparently broken during the process of manufacture. This is indicated by the barbs which were not quite finished. The artifact's width and thickness were 36 mm and 13 mm respectively, while the hole was 10 mm in diameter.

Projectile Points

Two projectile points were included in the sample. The first was made of antler and appeared as a faunal version of the typical Iroquoian Madison point. It was triangular, basally notched and fluted. Its length was 59 mm and width at base 14 mm. The thickness of the blade was 5 mm and that of the fluted base 3 mm (see figure 3).

The second point had been fashioned of an extremity bone belonging to a medium or large sized mammal. The tip of the specimen was missing, but the base was notched and the blade exhibited lengthwise striations as well as a high amount of polish. The specimen was over 46 mm long and 10 mm wide at its base.

Freshwater Mussel Shell Artifacts

Seven freshwater mussel shell fragments were artificially altered. One of these was identified as

Lampsilis radiata, another as *Elliptio complanatus*, three as *Elliptio* sp. and the remaining two as belonging to the family Unionidae. No function could be determined for these artifacts. It is likely that most of these shell fragments represent toolmaking debitage. Leechman (Leechman, 1949: 56) has suggested that some of them may have functioned as corn shellers.

The only artifact for which a function could be suggested, was a Unionidae shell fragment which was shaped like a blunt ended knife. The tool did not serve a cutting function, however, as all the edges had been rounded and ground. This artifact may well have served as a pottery smoother. The measurements for the artifact are length 67 mm, width of blade 23 mm and width of handle 16 mm.

Awls

Bone awls were one of the largest artifact types encountered in the Sidey-Mackay sample. Altogether, they numbered 50 specimens, which accounted for 17.3% of the faunal artifact sample.

Figure 4: Bone Awls from the Sidey-Mackay Site

White-tailed Deer	19
Prob. White-tailed Deer	6
Cervidae	2
Black Bear	2
Dog	2
Bear/ Human	1
Mammal	3
Mammal (Medium)	2
Mammal (Medium-Large)	3
Mammal (Large)	8
Prob. Canada Goose	1
Avian	1
Total	50

As can be seen from the above table, white-tailed deer was the species most frequently utilized in bone awls manufacture. Half of the awls were definitely or tentatively identified as belonging to this species. With one exception, an unidentified extremity bone fragment, all deer specimens could be identified as originating from the metapodials. There are several reasons that make these elements especially attractive for awl manufacture. First, deer metapodials are one of the few bones that are naturally straight. In addition, deer metatarsals and metacarpals contain a vascular groove, which runs for the length of the bone and would facilitate the splitting the bone into long splinters, which could then be used in awl manufacture. Finally, the sides of the vascular grooves contain thick buttress ridges, which could be manufactured into a straight, strong and long awl.

The process by which the metapodials were split is well illustrated by a metacarpal fragment (see figure 5). This specimen displayed additional scoring of the vascular groove deepen it, as well as three artificial grooves, one on the anterior and two on the lateral sides of the bone. The grooves

would have facilitated splitting the bone into four long splinters, ideal for making awls. That this method was utilized is attested to by eighteen deer metapodial awls, of which eight exhibited remnants of artificial grooves and ten of being split along the vascular groove.

Other recognizable species and elements used to construct awls were a black bear fibula and ulna a dog metatarsal and fibula, a humeral fragment tentatively identified as Canada goose and a fibular fragment which could have belonged to either black bear or human. The remaining awls were all extremity bone fragments which could not be identified closer than that they were mammalian or avian.

An human ulnar awl was also found at the site. However, as this artifact reflects ritual behaviour, it is discussed in the section dealing with ceremonial objects.

Twenty-three awls were complete. They ranged in length from the maximum of 104 mm to the minimum of 37 mm. The average length was 90mm.

Many of the awls exhibited use wear in the form of polish, striae and grinding marks. Only one awl appears to have been decorated. This was a mammalian bone fragment which had been ornamented with parallel incisions at its point.

A number of awls displayed evidence of burning and having been chewed by animals. Teeth marks belonging to carnivores and rodents were found on two deer, one cervid, one black bear and three unidentified mammal awls. One white-tailed deer, one cervid and two mammal awls exhibited thermal alteration in the form of burn marks. Presumably, these alterations were not part of the manufacturing process and may have happened after the artifacts were lost or discarded.

Antler Flakers

Antler fragments which represented flaking tools numbered 13. Of these, one was identified as white-tailed deer and another as either elk or moose. The remaining fragments could not be identified beyond the family level.

One flaking tool appears to have been modified for hafting. This was a tine fragment which had been socketed. Another tool was modified by whittling on its working surface. Use wear noted on the sample consisted of grinding on nine specimens, polish on four and striae on one.

Two antler fragments represent debitage. One was a parietal fragment with the pedicle and piece of antler still attached. The other was an antler basal fragment. Both exhibited chopping marks, indicating that they had been severed using an axe.

Rodent Incisor Tools

Rodent incisor tools composed the largest artifact group in the sample. They numbered 71 specimens, which composed 24.6% of the bone tool assemblage. Both beaver and woodchuck incisors were represented in the sample.

Of the two species, beaver incisors were by far the most frequently represented, numbering 68. The preferred element appears to have been the lower incisor, for 36 incisor fragments originated from the mandible. Thirteen incisor fragments were upper, while the remaining nineteen fragments could not be identified as either upper or lower.

Splitting the incisors longitudinally seems to have been part of the process of tool making. Fifty seven incisor fragments had been treated this way. Thirty specimens exhibited use wear on one end of the artifact, while twenty six were fragments reflecting breakage during tool use. Other indications of use were polish on three incisors, striations on two and a groove on one specimen, which probably indicates hafting.

Only one complete tool was found in the sample. This incisor had been split longitudinally and both of its ends displayed heavy use wear. One end had been ground flat, while the other end had been rounded. The length of the tool was 23 mm.

Three worked woodchuck incisors were also noted in the sample. Two were upper incisors and one lower. Two of these had been treated as the beaver incisors in that they had been split as part of the tool formation process and the ends showed heavy use wear. The third specimen exhibited considerable polish.

Fleshers

Two bone fragments were identified as fleshers. Both were highly polished. One was an working edge fragment fashioned from what was tentatively identified as a moose metacarpal. The other was a probable tibial fragment from a large mammal, which exhibited a spiral break, indicating use wear.

Flesher/Awl

This interesting artifact was made from a large mammal extremity bone. It was a blade fragment of a flesher, which had split longitudinally during use. The bone splinter was then reworked into an awl by sharpening the fragment's distal end. This is the only example of reuse and recycling of a broken artifact encountered in the sample.

Cervid Phalanges

Four elk and eight white-tailed deer phalanges had been worked. Although at one time worked cervid phalanges were interpreted as evidence of the cup and pin game, present investigation suggests that these artifacts probably represent toggles.

Of the four elk phalanges, three were proximal and one medial. One proximal phalanx was complete and had been drilled at both ends. Another proximal phalanx had a portion of its proximal end sliced off and appears to have been in the process of being fashioned into an artifact when abandoned. The third specimen was a perforated distal end fragment and seems to have been broken off as the result of use wear. The medial phalanx may be a discard. Although it displayed

drilling on both its distal articular and anterior surfaces, it also exhibited carnivore tooth marks, which may be interpreted as evidence that the bone had been regarded as refuse by the inhabitants.

Six of the white-tailed deer phalanges were proximal. One complete specimen had its dorsal and ventral surfaces ground to expose the marrow cavity. The phalanx showed polish all over as well as striations on its ventral surface.

Another complete phalanx displayed flattened anterior and posterior surfaces at both extremes. It also exhibited thong marks and striae. The proximal end was broken, probably due to use stress.

Three specimens were perforated distal end fragments. One exhibited grinding on its lateral sides. The other two do not appear to have been modified. The final proximal phalanx was a complete specimen which showed the beginning of a drilled perforation at its proximal end. However, the attempt to perforate the phalanx was abandoned before the drilling was completed.

The remaining two deer phalanges could not be identified as either proximal or medial. One was a worked fragment, while the other had its proximal, dorsal and one lateral side ground to the extent that no identification was possible.

Netting Needles

The number of artifacts identified as netting needled was fourteen. They were fashioned from either the ribs or extremity bone belonging to medium or large sized mammals. Four specimens were complete, while another three had been broken at the hole but later glued together by Wintenberg. Five artifacts were fragments which had been broken at the hole and the remaining two were interpreted as preforms. With the exception of one of the preforms, all exhibited a high degree of polish on all their surfaces. The lengths for the tools ranged from a maximum of 112 mm to the minimum of 97 mm, with an average of 105 mm.

In addition to breakage at the hole, evidence of use wear consisted of length-wise striations on seven and broken tips on three specimens. The holes were either drilled or cut. Two needles displayed unifacial and three bifacial drilling, while the holes in four more had been bifacially cut. The method of making the hole could not be determined in three specimens.

Two artifacts were interpreted as being netting needle preforms. One conformed to the physical attributes of a netting needle perfectly, except that it lacked a hole. The other was a rib splinter belonging to a medium sized mammal, which was the shape of a netting needle and may thus represent raw material selected for making this artifact.

The only evidence for decoration was noted on one needle, which had been completely coloured black. This had been accomplished by either charring the specimen or staining it with grease mixed with soot.

Ornaments

One hundred and five bone ornaments were included in this analysis. These composed 36.3% of the sample.

Tube Beads

Tube beads were fashioned from mammalian and avian longbone shafts. Altogether, beads and bead fragments numbered 46 specimens. Because the articular ends, which are the most diagnostic parts of these elements are missing only a few definite or possible species identifications could be made. Mammalian species identified were woodchuck, gray squirrel, dog and white-tailed deer. The only identified species of bird was crow, while the swan and goose families were also recognized.

Figure 6: Tube Beads from the Sidey-Mackay Site

Woodchuck	1
Gray Squirrel	1
Dog	4
Prob. Dog	5
White-tailed Deer	1
Mammal (Med)	10
Mammal	2
Crow	1
Swan sp.	1
Goose sp.	1
Prob. Canada Goose	3
Prob. Goose sp.	7
Prob. Swan sp.	1
Prob. Duck sp.	1
Avian (Med.)	3
Avian (Med.-Large)	1
Avian (Large)	2
Avian	1
Total	46

The skeletal elements chosen for beads consisted of mainly tibiae in the case of the identified mammals. The only exceptions were a dog radius and femur and a femoral section belonging to white-tailed deer. The recognized avian elements were exclusively ulnar segments, with the addition of three possible femoral fragments tentatively identified as belonging to Canada goose.

The number of complete beads was 32, with another 11 bead fragments. The remaining three specimens are believed to represent manufacturing debitage.

One specimen, a swan ulna, was unusually long, measuring 70 mm in length. This odd artifact may represent a sucking tube as opposed to a bead. It was smoothed at both ends and highly

polished. However, no tooth marks were found on it. The lengths of the remaining complete beads varied from 57 mm to 8 mm in length with the average length being 30 mm.

With one notable exception, none of the beads were decorated. The exception was an ulnar fragment tentatively identified as Canada goose. The specimen was black in colour and highly polished. The blackening may have been accomplished either through charring the bone or by smearing it with fat mixed with soot.

The process of manufacture suggested by the debitage was to first cut off one or both ends of the selected long bone. The cutting was done using the "groove and snap" method, whereby the shaft was first scored and then broken off. The shaft was then polished and the broken end or ends ground smooth. From the polished shaft a number of beads of desired length were then removed again using the groove and snap method. Altogether, 21 specimens exhibited evidence of this method.

Tooth Ornaments

Twenty two teeth belonging to elk, black bear, and the dog family had been fashioned into ornaments.

Elk teeth were the most frequent, numbering nine. Two were incisors and seven canines. Both incisors exhibited roots that had grooves carved for suspension, with one specimen having one and the other two grooves. The canines showed a greater variety of alteration. The roots of three teeth had been severed, with two of them still exhibiting evidence of the groove and snap method of detachment. Two canines displayed a notch at the root while another showed an unfinished attempt at drilling a hole in the root. The remaining canine presented a biconically drilled perforation.

Eight teeth belonged to black bear. One was a molar with a biconically drilled root. The remaining were canines. Four canines showed grinding of the crown. Two canines had been split lengthwise, possibly by accident. The roots of two canines had been perforated. One fragment was charred and broken.

Of the five canid teeth, four canines were identified as dog. The roots of two had been drilled while another exhibited grinding of the crown similar to some of the black bear specimens. The remaining canid tooth could have belonged to either dog or wolf. It was either a molar or premolar fragment which displayed a transverse cut at the base of its root.

Pendants

Two invertebrate shells had been fashioned into pendants. The first specimen was a roughly circular piece of freshwater mussel shell which exhibited cutting along its edges and an unifacially drilled hole. The length, width and thickness of the specimen were 15 mm, 11 mm and 3 mm respectively, while the diameter of the hole was 4 mm.

The second specimen was a conch or whelk shell fragment with a unifacially drilled hole near its

top. The sides had been smoothed. Its length was 28 mm and width 15 mm.

Shell Beads

Beads made from local aquatic snail and freshwater mussel shells numbered 27. Three species of freshwater snail were identified.

Figure 7: Freshwater Aquatic Shell Ornaments from the Sidey-Mackay Site

Goniobasis livescens	10
Campeloma decisum	10
Pleuroscera acuta	4
Freshwater Mussel	3
Total	27

Except for the string hole the snail shells were unaltered. The hole was located on the first, or body whorl and was produced by gently abrading the exterior surface until a hole was created. This method of grinding was preferable to drilling because of the delicate nature of the snail shell. Three *Campeloma decisum* and one *Goniobasis livescens* shells exhibited a break at the hole, probably resulting in the loss of the bead. Three *Goniobasis livescens* shells showed thermal alteration, which was probably accidental following the loss or discard of the specimens.

All three freshwater mussel beads were discoidal and measured from 11 mm to 19 mm in diameter and approximately 2 mm in thickness. Two of them had been perforated with the hole about 1 mm or 2 mm in diameter. These three specimens should be regarded with some caution, for although they probably are prehistoric, they may also date to the nineteenth century. Bone buttons similar in shape have been found associated with historic sites, such as the military dead at Snake Hill (Stephen Cox Thomas: Pers. Comm.).

Exotic Shell Beads

The exotic bead sample, which numbered eight artifacts, consisted entirely of conch or whelk shell. Six cylindrical beads were fashioned from the columella of this marine shell. Of these, five were complete and the sixth broken longitudinally. The only decoration noted on the beads consisted of a groove exhibited by one of them. The cylindrical beads measured 7 to 15 millimetres in length, with an average of 12 millimetres, while their maximum and minimum widths were five and twelve millimetres respectively, with an average of eight millimetres.

The two discoidal beads were complete. Both measured eight millimetres in diameter.

It is interesting to note that the Sidey-Mackay site was the only Petun site in the Collingwood area to yield both freshwater snail and marine shell beads. Also worthy of note is that the snail shell beads far outnumbered the marine shell beads. On sites dating later in the Petun sequence marine shell beads increase dramatically in number, while freshwater snail shell beads become altogether absent. As will be discussed in the conclusions, this probably reflects the stimulus given to indigenous trade by European fur trade.

Ceremonial Objects

The bone artifact sample which reflected ceremonial activities was quite small, numbering only three specimens.

Turtle Shell

Two worked turtle shell fragments are believed to represent fragments of shell rattles. One was a left xiphiplastron belonging to either a painted turtle or an eastern box turtle. The interior of the shell showed polish while a hole, 4 mm. in diameter, had been uniaxially drilled from the exterior surface.

The other shell fragment was tentatively identified as a nuchal of an eastern box turtle. Like the first specimen, it exhibited polish on the interior as well as a 4mm hole which had been uniaxially drilled from the interior.

Human Ulnar Awl

This artifact was the only human bone in the artifact sample. It was 20 mm long and made from the proximal end and adjoining shaft of the left ulna. The olecranon process was broken off while the proximal end, as well as the shaft, displayed cut marks which indicate severing of the joint and defleshing. In addition, the specimen exhibited both rodent and carnivore tooth marks.

Use of human remains as source of raw material for bone artifacts frequently indicates the brutal treatment meted out to prisoners of war. Further evidence of disrespect to the remain is indicated by rodent and carnivore tooth marks, the carnivores most likely being the village dogs, which suggests that the remain was discarded in a refuse heap, where animals could have chewed on it.

There are several possible identifications for the ethnicity of the victim. French sources indicate that prior to the arrival of Europeans in the area, the Petun and the Huron had "fought cruel wars with each other" (Thwaites, 1896-1901: 43). This allows the possibility that the ulnar awl may represent a Huron captive.

Another possible identification of the ulna is that it belonged to a member of the "Fire Nation", Algonquian peoples who inhabited the Michigan area and with whom the Petun and the Neutral neighbours were at war at the time of the arrival of the Europeans.

Miscellaneous

The functions of three artifacts could not be determined. Two of these were notched rib fragments. The first belonged to white-tailed deer and originated from the right side. It was 72 mm long and showed a series of notches along the lateral border of the rib.

The second rib fragment belonged to black bear. It was 232 mm long and displayed over 25 cut marks across its ventral surface. The ventral surface also appears slightly polished. As with the white-tailed deer specimen, this rib fragment originated from the right side.

The third artifact was a dagger-like object of antler with a perforation at one end. It was 285 mm long and partly charred at the end with the perforation. The sides of the artifact were straight while one of its surfaces was flat and the other curved. Although no species identification could be made, the antler was tentatively identified as elk.

Conclusions

The importance of the bone artifact assemblage from the Sidey-Mackay site lies in how well it illustrates and confirms our understanding of Petun culture on the eve of the arrival of the Europeans:

The immediate and most conspicuous impression left by the Sidey-Mackay assemblage is its size and variety. Numerically it is one of the largest bone artifact samples recovered from an archaeological site in Ontario, with many species being utilized as sources of raw material for artifact making.

The large size of the sample gives valuable insight as to the methods used in manufacturing the artifacts. This is well illustrated by the white-tailed deer metapodial awl and the tube bead samples.

The high frequency of certain skeletal elements in the sample, such as deer metapodials, suggests that these were purposefully selected as raw material for making artifacts.

The flesher fragment which had been reshaped into an awl indicates that there was some reuse and recycling of the raw materials.

The few exotic shell artifacts indicate that there was comparative little long range indigenous trade at this time.

Warfare is indicated by the human ulnar awl. The ethnicity of the victim could not, of course, be determined.

Comparison of the Sidey-Mackay bone tool sample with assemblages from later Petun sites demonstrates well the effects of the European fur trade:

The first effect is a decrease in the number and variety of bone tools. This was caused by the introduction of European trade goods, which not only replaced some of the indigenous artifacts, but also served as a new source of raw material for artifact manufacture. A good example of this phenomenon is harpoon heads. While the Sidey-Mackay site produced six complete harpoon heads and fragments, only three bone or antler harpoons have been recovered from all the later Petun sites. That bone and antler were replaced by European trade goods and metal salvaged or recycled from trade goods is suggested by an interesting trade knife from a later Petun site, which was being fashioned into a harpoon head at the time of its loss (Garrad, 1969: 10).

European fur trade also stimulated indigenous trade. At the Sidey-Mackay site little evidence of indigenous trade was recovered. The only items which could be attributed to this activity were the exotic marine shell. Local materials, especially aquatic snail shell, was used extensively for bead

making. This contrasts with the later sites in the Petun sequence, which date to and after the increasing involvement of the Petun in European fur trade. At these sites local freshwater snail beads have been completely replaced by exotic marine shell as raw material for the making of beads.

Acknowledgements

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Finally, the National Museum of Civilization is gratefully acknowledged for making the Wintemberg sample available for study.

Figures 2, 3 and 5 follow.

Appendix: Sources of Raw Material Utilized in the Manufacture of Faunal Artifacts

Species Identified:

Human (*Homo sapiens sapiens*)
 Woodchuck (*Marmota monax*)
 Gray squirrel (*Sciurus carolinensis*)
 Beaver (*Castor canadensis*)
 Dog (*Canis familiaris*)
 Black bear (*Ursus americanus*)
 Elk (*Cervus canadensis*)
 White-tailed Deer (*Odocoileus virginianus*)

 Crow (*Corvus corax*)
 Swan family (*Cygninae*)

Goose family (Anserinae)
 Duck family (Anatinae/Aythinae)

Lampsilis radiata
 Elliptio complanatus

Goniobasis livescens
 Campeloma decisum
 Pleurocera acuta

Conch/Whelk family (Strombus sp.)

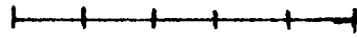
Species Tentatively Identified:

Moose (Alces alces)
 Canada goose (Branta canadensis)
 Painted Turtle (Chrysemys picta)
 Eastern Box Turtle (Terrapene carolina carolina)

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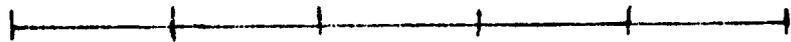
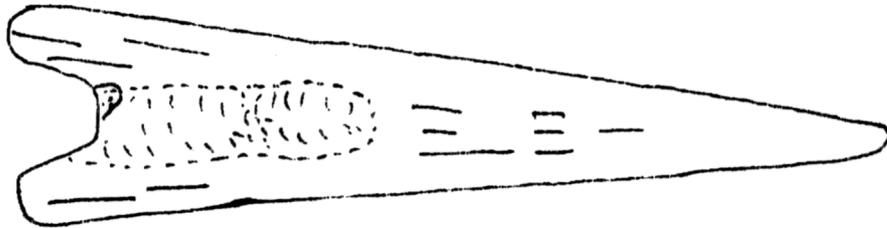
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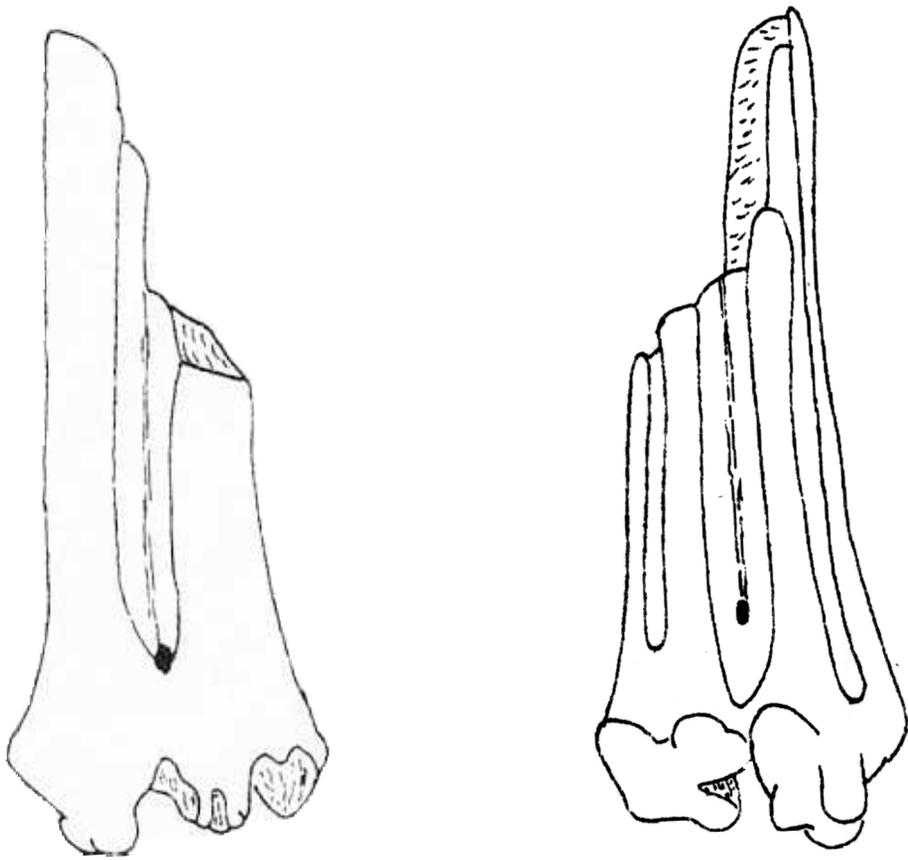
5 cm

Figure 2: Complete Antler Harpoon Point.



5 cm

Figure 3: "Madison-Like" Antler Projectile Point



5 cm

Figure 5: White-tailed Deer Metacarpal