

Practical Sciences
Bone and Antler: Period Uses
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Bone Textile Tools

There have been bone finds of textile tools through out the early settlements. While the density of the finds may differ, some of the tools appear fairly universally. In this documentation I will present some of the find information on each type of tool and then what I did to try to reproduce the type of tool.

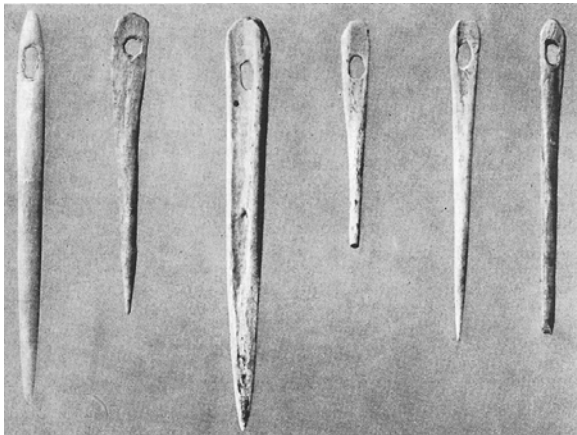
Working the Bone

MacGregor¹ discusses in some length the methods and tools used for working bone. Viking age saws, knives and axes have been found and traces found on pieces at Hedeby. Files have been found in Viking age and early Medieval Novgorod. Marks from knives used to smooth have also been found. Evidence of smoothing and polishing on objects shows that some was done. MacGregor suggests that a number of organic materials, such as sand, can be used to smooth and polish and thus may not have been “found” as tools.

Lathes, turning, punching, and drilling were all well known methods of working bone in Roman times. Evidence of such has also been found on Anglo Saxon period pieces.

Needles

In the Norse finds, the needles and pins that were found appear to be “relatively crude” and made of bone, wood or caribou antler.² Ostergard speculates whether the needles



were used for Naalbinding, sewing of netted objects or as awls. In the Birka finds, some of the needles were deliberately made with a blunt point.³ Since the object in naalbinding is looping the thread and not piercing thread, blunt or blunted points work quite well.

Bone needles that would be suitable for naalbinding have been found in Stone Age finds in Denmark, Viking age fortress of Trelleborg, and Norse settlements in Greenland.⁴ Needles that

¹ MacGregor – chapter 5 Working Methods and Tools

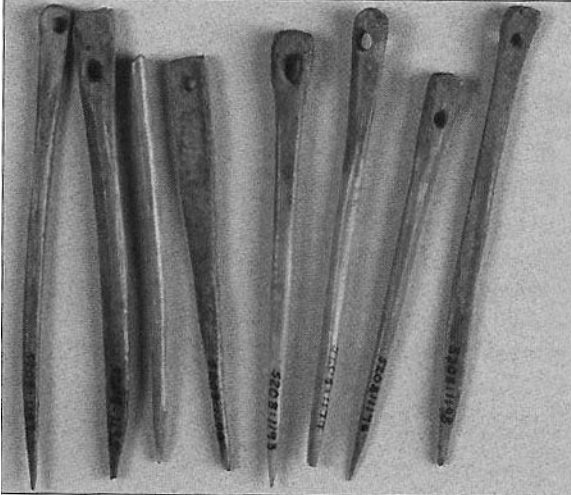
² Ostergard, pg. 111

³ Anderson, pg. 86

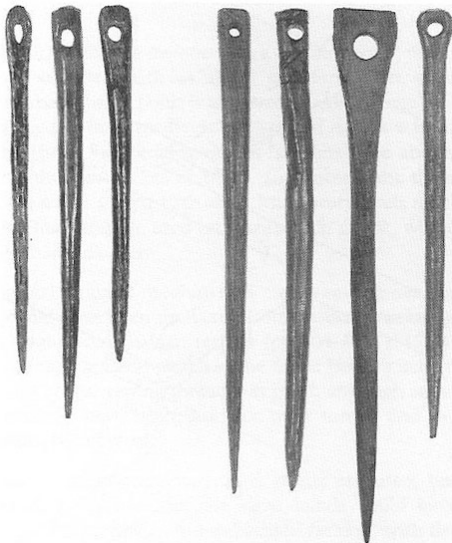
⁴ Hald, pg. 278.

Hald⁵ found suitable for naalbinding are shown in the picture; being both round or flattened. A needle, found attached to a shoe of looped needle netting in Lures, Persia has a needle of about 15 cm and is round.⁶

The 278 bone needles at Birka (780 – 970 A.D.) of Viking Age tools vary in length from 30 to 210 mm with a concentration of around 70 – 110 mm.⁷ While there is no correlation between width and length, the Birka bone needles varied in width from 2.5 to 15 mm with a concentration of 3.5 – 5 mm. Anderson notes that the flatter needles are generally slightly wider than those that were round or oval. This would also fit with the flatter needles being used for looping or netting rather than sewing. The eyes of the needles were between .5 and 9 mm with a concentration of 3 mm.⁸



At Hedeby 302 of the 554 bone needles could have been used for sewing. They vary in length from 50-190 mm with a concentration of 80 – 110 mm. The eyes tend to be between 2 – 3 mm. 75% of these needles had a head smaller than 11 mm and Anderson speculates that these would be ones used for sewing. The remaining ones might have had other uses such as for single needle knitting (i.e. Naalbinding) or awls.⁹



At Coppergate there were 20 “needlelike” objects found of bone or antler. Of these, they are only willing to identify 3 as sewing needles (72-82 mm long, 5.5-6.5 mm at the widest). The remainder were identified as clothing pins with loop ties, or possible naalbinding needles, awls, hair pins, or netting needles.¹⁰

Making 2 bone needles:

I was able to obtain the tibia of a pig (no fibula available). Taking the raw bone, it was brought to a boil and then simmered in water for 3 hours. The water was changed twice. At this point I could remove the remaining meat and cartilage.

⁵ Hald, pg. 279 – picture figure 282

⁶ Hald, pg. 278.

⁷ Anderson, pg. 85

⁸ Anderson, pgs. 83-86 – picture figure 42

⁹ Anderson, pgs. 1127-128

¹⁰ Rogers, pg. 1783 – picture figure 831

It was then set to simmer for another couple hours to soften the marrow. The marrow was removed and the bone cut with a saw at 2 of the “corners”. It was then set to simmer in fresh water for another couple hours to finish removing the fat and remaining tissue.

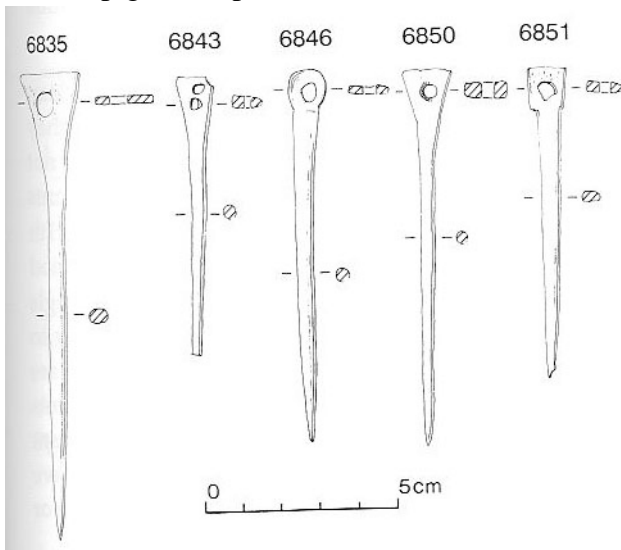
After cooling, the bone was then cut with a saw into pieces to make the 2 bone needles, the pin and the smoother. For the “sewing needle” a thin strip was taken off by saw. It was then ground and sanded until smooth with one end rounded and the other sharp. An eye was then drilled through. Then a final round of smoothing with sandpaper. Final dimensions – 115 mm long 6 mm wide 2.5 mm eye.

For the looping/naalbinding needle, the remaining portion of the side from which the sewing needle was taken was used. It was then ground and sanded until smooth. It was kept wider, flattened a bit at the head and tip; with the tip being rounded. Having done naalbinding, I left the center a bit rounder as the loops slip easier with a rounder needle. An eye was drilled through. Then a final round of smoothing with sandpaper. Final dimensions – 95 mm long, 8 mm wide, 3.5mm eye.

Pins

During the Viking period, bone pins were used for clothing closings as well as hair ornamentation.¹¹ MacGregor notes that most pins were cut from limb bones of horses and cattle using the side of the bone¹², although the pig fibula was also popular if more of an everyday/everyman object.

In the pig fibula pins,¹³ the head of the fibula is used as the wide portion. Sometimes they



were perforated, but the width of the head and wear patterns suggests that they were not used as a needle. MacGregor discusses 2 ways that a cord could have been used in conjunction with the pin. If from the Migration Period on the Continent, they would have been paired and used at the shoulder to secure an article of dress or joined by a cord as were Anglo Saxon union pins. An alternative way would be to tie the cord around the tip of the pin similar to a safety pin. Owen-Crocker also discusses this form of pin tie arrangement¹⁴ as does Rogers.¹⁵

¹¹ MacGregor, pg. 113

¹² MacGregor, pg. 115

¹³ MacGregor, pgs. 121-2

¹⁴ Owen-Crocker, pgs. 47-48

¹⁵ Rogers, pg. 1783

Pig fibula pins and similar pins were rarely decorated. Most of the work went into cutting the head to form a distinct head section; although during the early Christian period there are more decorations such as notch carved heads.¹⁶ In the picture, these pig fibula pins from Coppergate (Group 2 Figure 909)¹⁷ are representative of a number of different finds from the late 7th C. through the early 15th C. The largest number of finds are from the late 7th – mid 12th C. #6835 is 123.8 mm long and 20.2 mm wide. #6850 is 98.7 mm long and 12.9 mm wide.¹⁸ Also at York, there were another series of bone pins of a similar style to the pig fibula ones.¹⁹ [see also picture and comments above]

Making a pig bone pin:

As noted above the pig bones were long simmered with several changes of water. The bone was then sawed lengthwise into pieces. It was then ground and sanded until smooth, keeping the head formation and sharpening the tip. The eye was drilled and then further smoothing with fine sandpaper.

Since much of the commentary focused on the lack of ornamentation of the pig bone pins, I opted to not do any incised decoration. In addition, noting the comments on finding cross cuts from a saw on finds, I opted to not take out the cross cuts from the top of the pin. Final dimensions – 82 mm long, 18 mm wide, 3 mm eye for thong.

Seam Smoother

Seam smoothers were prized objects noted in inventories and priests' contracts. They were used to press the seams of garments. There are examples from Viking Age women's graves in Norway. Usually of glass, they could also be bone.²⁰ The Icelandic term is *Slikja* which means to polish or smooth.²¹



There were no notations on details of length, width, etc. The picture in Ostergard²², appears to be of about 3-4 inches in length and about .5" wide.

Making a bone seam smoother:

As noted above the pig bones were long simmered with several changes of water. The bone was then sawed lengthwise into pieces. It was then ground and sanded until smooth. Further smoothing with fine sandpaper was then done.

While the final is not quite shaped as the picture it has a curved flat plane for pressing, a slightly thickened rounded end for comfortable holding, a sharp thinned edge for getting into the seams and which, I think over time, would come close to the shape in the picture through use. Final dimensions: 80 mm

¹⁶ MacGregor, pg. 121

¹⁷ MacGregor/York, pgs 1950-51

¹⁸ MacGregor/York, pg. 2013

¹⁹ MacGregor/York, pg. 1951

²⁰ Ostergard, pg. 115

²¹ Ostergard, pg. 114

²² Ostergard, pg. 112

long, 10 mm wide.

Needlecase/Needleboxes

Ostergard comments on a 112 mm long hollow bone from Aandnaes that is thought to be a needlecase. It was found without needles and closed at one end with a small peg.²³ This is the only reference I could find as to how these cases were closed.

Metal needles were especially prized and were kept in needle boxes. Anderson notes that some needleboxes were made of a small tubular bone.²⁴ In fact 136 long bone needle boxes were found in the Birka excavations.²⁵ Of these 61 were available for analysis revealing a length of 40 to 80 mm in length with a concentration of 50 – 70 mm. Anderson goes on to note that while metal needleboxes are primarily found in grave finds, the bone boxes were of a more everyday usage.²⁶

Anderson also states that notes on the finds indicate that some of the boxes were lined with a textile. However, there is no notation as to whether these were metal or bone boxes.



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Making a bone needlebox and a bone needleholder:

It is most likely that the original long bones used were small animals or birds legs; such as geese. Since geese were not available, I used smallish turkey legs as they were of a similar size. The legs were roasted with the meat on them. Then once the meal was completed, the joint ends of the bones were removed with a saw. The bones were placed in water, brought to a boil and then simmered for about 1 hour. The marrow was then removed and the bones placed in fresh water to simmer until all the internal soft bits could be removed with pick or thin blade. The bones edges were then filed and smoothed with sandpaper.

Box – In order to have the box close, both ends needed to be filled with something. Since one end was a small peg, I surmised that the other end would be a more “permanent” closing, but one which would have disintegrated over time. Thus, was fashioned a small piece of wood to fill one end. The wood and bone was then dipped, several times, in beeswax to create a seal on the one end. A wood peg was fashioned for the other end. Final dimensions of bone portion – 82 mm length, 20 mm width.

²³ Ostergard, pg. 113

²⁴ Anderson, pg. 32

²⁵ Anderson, pg. 87

²⁶ Anderson, pg. 88

²⁷ Ostergard, pg. 112

Holder – One possible interpretation was to use the tube as a protector, but the actual holder of the needles would be on the inside – a piece of fabric. Thus, I fashioned a piece of fabric, held with cord. Glass beads were used on the ends to keep the fabric and cord in place. Final dimensions of bone portion – 72 mm length, 18 mm width.

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