

Technical Sciences
Tools: Bone
Mists Spring Coronet AS L

Bone Needlecases and Bone Needles

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.

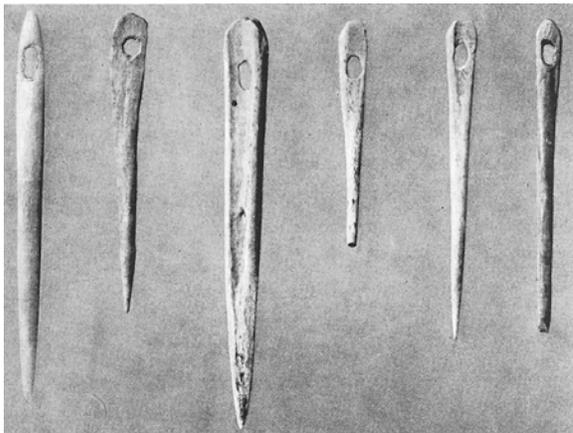
Working the Bone

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

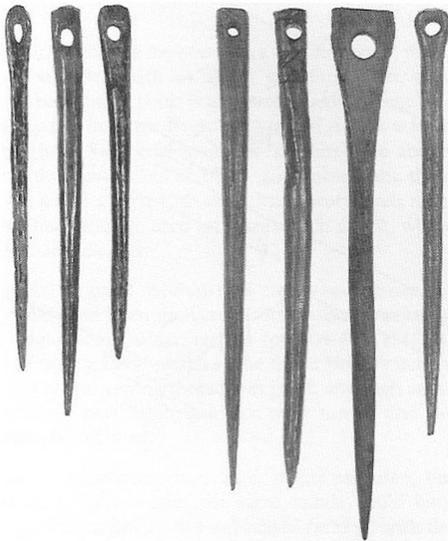
⁴ Hald, pg. 278.

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:

Since I had goose bones, these were used to make the needles. The leg bones were cleaned in hot water. The joints ends were removed with a saw. Then the bones were cleaned inside with hot water, soap and brush.

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

After cleaning, the bone was then cut with a saw into pieces to make the 2 bone needles. The longer 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 – 95 mm long 7 mm wide 2 mm eye.

For 2nd shorter needle, 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 – 68 mm long, 9 mm wide, 2 mm eye.

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.¹¹ This is the only reference I could find as to how bone cases were closed. [Needlecase 1]

Metal needles were especially prized and were kept in needle boxes. Anderson notes that some needleboxes were made of a small tubular bone.¹² In fact 136 long bone needle boxes were found in the Birka excavations.¹³ 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.¹⁴

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. [Needlecase 2]



The Swedish History Museum has a number of bone and metal needlecases on their website. Most are from Bjorko Black Earth Stockholm Sweden and date from 800-1099. Of the bone needlecases on the museum's website, only 1 is from unfired bone (asset 35245 – 476—1188364 and is 11 cm in length.

¹¹ Ostergard, pg. 113

¹² Anderson, pg. 32

¹³ Anderson, pg. 87

¹⁴ Anderson, pg. 88

¹⁵ Ostergard, pg. 112



Item #5208-1502-269570 is 7 cm in length. It shows 2 center holes slightly offset and incised rings around the ends. [Needlecase 3]



Björkö 38



The bronze needlecases were found in pieces. There is a drawing showing the reconstruction. It has a central collar that has a loop for a ring. The ends have metal end caps.

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. I used geese legs bones for the cases. 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 hot water to loosen the outer remaining cartilage and sinew. The ends of the bones were then cut off. The bones were again placed in hot water to loosen the marrow. The marrow was then removed and the bones placed in fresh hot water until all the internal soft bits could be removed with pick or thin blade. The bones edges were then filed and smoothed with sandpaper.

Needlecase 1 – 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 – 100 mm length, 15 mm width.

Needlecase 2 – Since many of the bones had no closures, one idea was that the tube was a protector. Since some of the needlecases held fabric on the inside and were found in sites with loose beads, 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 – 80 mm length, 13 mm width.

Needlecase 3 – Some of the bone needlecases have holes drilled into them near the center. In the brass needlecases there was a metal loop in the center to suspend the case some from a collar and some through the metal. On some of the bone cases there are circular lines etched into the ends. The brass cases have “screwed” end caps that may have also existed on the bone needlecases or they may have been fabric with wrapped linen ties that used the indentations to prevent slippage. Final dimension of bone portion – 93 mm length, 13 mm width.

Bibliography:

Ancient Danish Textiles From Bogs and Burials: A Comparative Study of Costume and Iron Age Textiels, by Margrethe Hald. Published by The National Museum of Denmark, 1980. ISBN 87-480-0312-3.

Bone, Antler, Ivory, and Horn: The Technology of Skeletal Materials Since the Roman Period, by Arthur MacGregor. Published by Croom Helm Ltd: Kent, 1985. ISBN 0-389-20531-1.

Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York: The Archeology of York The Small Finds 17/12, Craft, Industry, and Everyday Life, by A. MacGregor, A.J. Mainman and N. S. H. Rogers. Published by York Archeological Trust for Excavation and Research: York, 1999. ISBN 1 872414 99 0.

Dress in Anglo Saxon England, by Gale R. Owen-Crocker. Published by The Boydell Press: Suffolk, 1986, 2004. ISBN 1 84383 081 7.

The Game Birds and Wild Fowl of Sweden and Norway by Llewelyn Lloyd. Published by Frederick Warne and Co.: London, 1867. Via Google Books.

Textile Production at 16-22 Coppergate, The Archaeology of York, The Small Finds 17/11, by Penelope Walton Rogers. Published by York Archeological Trust for Excavation and Research: York, 1997. ISBN 1 872414 76 1.

Tools for Textile Production from Birka and Hedeby: Birka Studies Volume 8 Excavations in the Black Earth 1990-1995, by Eva Anderson. Published by The Birka Project: Stockholm, 2003. ISBN 91-7209-295-5.

Working in Plastic, Bone, Amber, and Horn by Erland Borglund and Jacob Flauensgaard. Published by Reinhold Book Corporation: New York, 1968.

Woven into the Earth: Textiles From Norse Greenland, by Else Ostergard. Published by Aarhus University Press: Denmark, 2004. ISBN 87 7288935 7.

“Buried Norsemen at Herjolfnæs” by Dr. Poul Norlund in Meddelelser Om Gronland LXVII. Published by C. A. Reitzel, Boghandel: Kobenhavn, 1924.

Swedish History Museum. <http://www.historiska.se>