



## Braid, Weave and »Foftail»

In Volume XXIII: 2 of the Journal of the Finnish Archaeological Society (SMYA), published in 1912, Hjalmar Appelgren–Kivalo presented the composite neck ornaments found in Hämeenlinna and Hauho. This was not the first connection where the material was discussed, but Appelgren–Kivalo was the first to investigate the braided chain technique and its origins.

The basic unit of the braid is a 0,5–1,2 metre length of drawn silver wire. At one end the desired number of loops are made to form the vertically running loop rows of the braid, i.e. its thickness. The loops are placed in a circle and the braiding is continued by drawing the end of the wire under the neck of the previous loop with the wire making a  movement. Each time the free end has to be drawn through the braid, causing metal fatigue and consequently 1,2–1,5 metres is the maximum length of one wire unit. The braiding is made flexible by bending. The technique is a typical »cold» method of silver work where the raw material is a length of drawn and heated metal wire but the actual braiding – the making of the chain, brooch or other artefact does not require any of the traditional tools of silver and gold work, only wire, two hands, a wooden stick and a once-learned braiding pattern.

### Similar chain techniques

In studying the origin, distribution and dating of the braiding technique one is continually confronted with the problem that even a sharp photograph does not necessarily show, whether the technique in question is a braid, interweave or »Foftail» (Ger. Fuchsschwanz) formed of separate links.

The *interweave* has a structure similar to a textile knit made with knitting needles or rods. The drawn and heated metal thread makes a  movement. The principle of the technique differs from the braiding technique in that the interweave uses an infinitely long wire and each new layer is formed by drawing the wire through the previous loops. This also produces a hollow, sock-like form just as the braiding technique. I do not know of any specimens of metal interweave definitely dated to prehistoric times.

The »foftail» is formed of links joined by soldering or tied together. The links are first bent double and threaded onto each other. The »foftail» is not hollow – the mid-parts of the links cross inside the chain. Two links can cross in the »foftail» chain, in which case the chain can be continued in turn in both directions. A double »foftail» chain is superficially similar to a four-row braided or interwoven chain. The »foftail» is strictly traditional gold and silver work, requiring special tools and skills. The technique was used in gold already in the Hellenistic period and the chain type has been in use from Etruscan and Roman times to our day. In the same way that braiding and interweave can form a flat band, the »foftail» permits the making of a flat band of closed and bent links.

## Braiding in different artefact forms

1. It was mentioned above that braiding is a »cold» technique and thus closely related to textile handicraft. It was used in a silk cap from Egypt, dated by Margaretha Hald to the Arabs of the 10th–11th centuries (HALD 1950, 290). The lower part of the same cap was made with a mitten knit technique. Agnes Geijer has recorded the use of the technique in Estonian folk handicraft in decorative stitch work. The example cited is a shirt collar apparently of the 19th century. (GEIJER 1938, 123, note 3). Hald also presents examples of decorative stitches in the braid technique from various parts of the world.

2. Agnes Geijer has presented a large number of impressive braided pieces and decorative bands from the Birka graves. In these, silver wire was braided on a silk band base so that the loops can be seen as decorative features on the textile surface. (GEIJER 1938, 109).

3. There are also actual braids and parts of such from Birka which are not on any textile base, but in which the braid itself forms the actual artefact (GEIJER 1938, TF. 31: 13). Although the Birka braid specimens are of microscopic size, they are very closely related the »sykerö» hair-pieces discussed below.

4. The only actual artefact for use in which I have observed the braid technique is a chain from a pair of scales found in Mårtelä, Rusko (NM 6452: 4). The supporting parts of the scale pans include cast bronze joints, three-looped joints braided of flat wire and links carelessly twisted of the same wire. The joints are connected with bronze rings.

5. Chains consisting of several parts, mentioned above, are made of rings connected by braided pieces. There may be several of these running parallel or only one. Arabian, partly also western coins and other small pendants are joined with links to the rings. The braid is exactly the length permitted by one length of wire.

6. There are eight finds of uniform silver-braided chains for crucifixes. A hoard from Gotland contains a length of braided chain and two crucifixes along with western silver coins and piece-cut silver (Sandegårda). In the intact braided chains the end of one wire is turned inside the chain from where the next piece of wire begins.

7. Silver braiding has been used in the chains of Thor's hammer pendants in certain Scandinavian hoard finds. In some of these the chain is affixed to the pendant, in others chains and pendants are separate.

8. The North Finnish and North Norwegian hoards contain axe-shaped sheet pendants of silver with a ring in the supporting link to which the end mounts of the chain are joined. These are of tapering conical form and are cut from sheet metal and riveted to the ends of the chain. At the connection parts and also along the chain there may be plaited rings braided of a single piece of wire.

9. Braided chains have also been found singly, i.e. not connected with any pendant, from various sites in Scandinavia and the Baltic area. There is also a single find of such a length of chain from the Richardpuszta hoard in Hungary, containing denars of the 12th century.

10. The »sykerö» hair-pieces are known from Karelian burial and hoard finds. These artefacts employ the braiding technique. Braiding was begun in the middle and the conical form was achieved by gradually shortening the distances between the loop rows. At both ends there is a mount with a link and in some specimens a pin. There are also plaited rings in the middle and at both ends.

11. The comparative collections of the Finnish National Museum contain

bracelets from Kasan, Central Russia with four-row braiding of bronze wire and flat triangular plates at the ends (KM 4016: 59; 5385: 1426).

12. A Latvian find of penannular brooch with poppy-shaped knobs and a covering of several rows of braided wire on the arc.

### **On the origin of the braid technique**

The find conditions and datings of chains and artefacts definitely employing the wire braiding technique indicate that none of the finds can be dated to earlier than the 9th century AD. However, older gold finds have been referred to by Stenberger (1958 I, 141). According to him the Namiest find of the Migration period contained braided chains. They are, however, of the simple »foxtail» technique. Stenberger's examples of Greek, Etruscan and Roman finds are just as questionable. In discussing the same chains R. A. Higgins (1961, 16) has stated that the technique was not at all in use in antiquity. He also remarks that braided chains would not even have been flexible. However, practical examples show that this suggestion is wrong.

An alternative to antique goldsmithing as a starting point can be possibly found in textile art. The above-mentioned Egyptian cap find indicates a possibility. In this artefact the braid is of silk thread. Silk has been used as the basic part in some finds of the 9th and 10th centuries from Birka. The change from thread to wire is not in itself strange. There are very close parallels to knitted patterns in mittens in silver belts and bracelets (examples from the Balkans, Finnish National Museum/Exotica no 5214: 253).

Most nordic researchers agree that braiding was a new technique that made its appearance in the Baltic area at as late a stage as the Viking period and its origins are to be searched for in the Orient. However, agreement ends on this point and all possible centres of settlement and trade in the Baltic area have been suggested as locations of manufacture. With respect to the composite chains, only Otto Alcenius (1901, 11–12) was of the opinion that they were also made in the Orient along with the Arabian and Byzantine coins and that only the western coins were added in Scandinavia. Also A. M. Tallgren regarded the scales from Mårtelä as an eastern import (TALLGREN 1919, 11–14).

### **On the dating of the braiding technique**

It was already mentioned that the braid specimens are from the Viking and Crusade periods and the majority of the finds cannot be dated even to the accuracy of one century.

The oldest specimens seem to be decorative braids found in Birka. The braids are on a silk base and are dated to the mid-9th century – end of the 10th century. Also small pieces of braid occurring singly have been found (e.g. grave 557, first half of the 9th century). The following chronological group consists of composite chains, occurring only in hoards. On the basis of coin finds they can be dated to a period ranging from the very end of the 10th century to the end of the 11th century. There are also single chains or fragments from the same period, but for example a fragment of a chain of copper from Kurikka (NM 13376: 6) can be dated to as early as the mid-10th century. The chains of the crucifix pendants are mainly from the 11th century, only the

Kekomäki pendant from Kaukola (grave 3) is of the late 12th century. An 11th century dating is probable for the Scandinavian hoards with braided chains for Thor's hammers. Bell-shaped sheet pendants with chains are of the chronologically youngest group – ca. 1100. This may be a possible dating for the »sykerö» hair-pieces.

Appelgren, Geijer and Stenberger were all of the opinion that the braiding technique was adopted in the Baltic area in the 11th and 12th centuries as a form of folk art and that these products could be identified due to their coarser and less refined technique. However, the result and its coarseness depend a great deal on the thickness of the silver wire used. The thickness does not in my opinion provide any information on the place of manufacture. However, it does shed some light on the functions of the artefacts. The pendants and chains seem to be in a balanced relationship with each other.

### Braided chains and crucifix pendants

Because this paper is presented in connection with Paula Purhonen's paper on crucifixes, I shall present in the following all crucifix specimens known to me with braided silver wire for the chain . . .

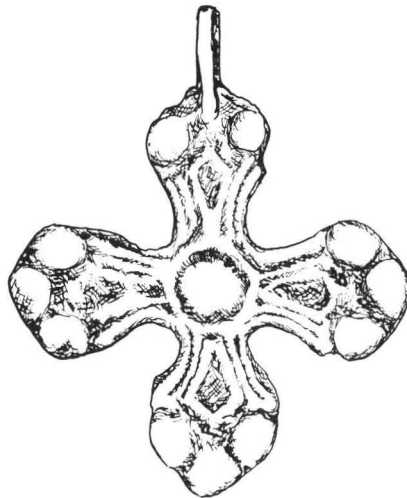
Bonderup, Denmark. Hoard containing i.a. 2 necklaces and 240 western silver coins (dating ca. 1070). The chain measures 80 cm and has a four-row braid. There is niello on the crucifix as well as on the animal-head end mounts of the chain. A plaited ring of a single wire is joined to the connecting point of the chain and animal-head mounts.

(SKOVMAND 1942, 156, fig. 35)

(HOLMQVIST 1963, fig. 1)

Kaukola, Kekomäki. Grave find, on the neck of a buried male (dating ca. 1200). Thin 5-row chain, fragmentary (NM 2489: 332, 334, 336–7). The chain ends in ferrules of silver plate joined to a silver ring. The ring is closed in the same manner as in the corresponding specimens from Hämeenlinna. (Fig. 1).

(SCHWINDT 1892, 38, fig. 225)



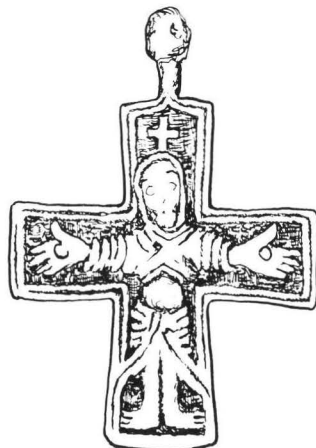
Maaria, Taskula, Grave 8. On the neck of a buried male (dating 11th century). The grave was damaged in sewer digging and the crucifix and chain were also damaged. There is no information on the chain ends (Turku Museum 13150: 9). From the same grave there are two spearheads of Petersen's type G with silver decoration on the socket. Other finds: axe, strap end mount, shears, etc. (KIVIKOSKI 1939, 155, Tf. XXXIII: 2)

Sandegårda, Sanda sn, Gotland. Hoard find. Includes i.a. fragments of necklaces, pins of penannular brooches and 768 western silver coins. This find is included with certain reservations, because the fragment of braided chain cannot be linked with any certainty to either of the crucifix pendants of the find. The length of 4-row chain measures 4 cm and is strongly drawn. (STENBERGER 1958, 183–4, Abb. 225: 9)  
(HOLMQVIST 1963, fig. 23)

Maaria, Taskula. Grave find. On the neck of a buried male (dating 11th century). A 66 cm length of 4-row chain ending in cast animal heads holding the supporting ring of the crucifix. Other finds from the grave include a spearhead of Petersen's type G, shears, a bronze dish, 2 silver penannular brooches, belt fittings with bronze mounts, a knife with silver ferrules etc. (NM 11275: 29)  
(KIVIKOSKI 1939, 155, 169–170, Tf. XXXII)  
(KIVIKOSKI 1973, 1146)


Laitila, Untamala (NM 15140: 1). Grave find, on the neck of a buried male (dating post quem 973). A total of 6,5 cms of braided chain has been preserved. The chain is drawn with 4 rows and ends in animal-head mounts biting into the ring of the crucifix. Other finds from the grave include 2 silver rings, a stamp-ornamented bracelet, a silver penannular brooch, belt fittings with mounts and a German silver coin. (Fig. 2).  
(ITKONEN 1964, 47–)

Bothamn, Lenvik, Norway. Hoard find (dating ca. late 11th century). 4-row chain ending in mounts of bent sheet silver riveted to it. At the connection points and in the middle of the chain there are plaited rings of a single wire in five places. There is another braided chain and two necklaces from the same find.



Bothamn, Lenvik, Norway. Hoard find (see above). 6 loop rows in a large chain. There are three smaller crucifixes hanging from the plate-like crucifix pendant. At the ends of the chain there are mounts of bent sheet silver and single-wire plaits at the connecting points. There are also two plaits on the chain at points where three separate 4-row chains are joined to it. At the ends of each of these there are small bell-shaped pendants on rings.  
(SJØVOLD 1974, 331, Pl. 24 & 31)

Flatvollen, Lyngen, Norway. Hoard find, dated to the end of the 11th century. Fragmentary chain, possibly 4 rows with mounts of bent sheet silver at the ends. The cross is plate-like as above. The find also includes 2 necklaces, a round silver brooch with struck boss ornamentation and fragments of silver rod.  
(SJØVOLD 1974, Pl. 31)

Drammen, Norway. (Oldsaksamling C 63). 15th century crucifix. The chain is of relatively thick strongly drawn wire and has five rows. At the ends of the chain are filigree ornamented gilded mounts joined to a -shaped holder. The artefact is an encolpion crucifix.

The crucifix pendant consists of the crucifix, chains (or bands) and their point of connection, which is usually formed of the end mounts of the chains and a ring. None of the crucifixes found in connection with the braided chains are exactly similar, but parallels can be found for each crucifix model and type either as single specimens or affixed to different chains or bands. For example, there are two specimens identical with respect to their mould with the Kekomäki crucifix from Kaukola in chamber-grave number 1 of the same cemetery, both on the necks of males. The crucifix from grave 8 in Taskula, Maaria is matched by a find from grave 7 of the Kirkkomäki cemetery in Kaarina. This specimen is attached to a ring chain.

Animal head mounts of cast silver occur in crucifix pendants, but there are no pairs of the same type in the above finds. Similar animal heads have, however, been found joined to the ends of »foxtail» chains. (e.g. HOLMQVIST 1963, fig. 29, 30).

This may indicate that crucifix pendants were made of parts acquired from different places. Whatever the place of manufacture of the actual crucifixes had been, it seems that the braided chain was a cheap and easy substitute which could be acquired ready-made. But from where? The most natural explanation would be from the same place as other silver material.

It is to be noted that along with the »foxtail» chain braided chains occur also in common artefacts – simple cast crucifixes, Thor's hammer and sheet metal pendants. The only technically advanced artefact is the Bonderup crucifix. In all technically high-class crucifixes of Byzantine origin with niello work (Halikko) or enamel (Orø) or in gilded western crucifixes (Halikko), the chain if preserved is always in the »foxtail» technique.

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