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AN EARLY MEDIEVAL SWORD WITH UNIQUE INLAYS FROM FINLAND

Abstract
An Early Medieval sword from Valkeakoski Haukila, Finland was spotted by metal detector hobbyists and lifted during a scientific excavation, which revealed a cremation cemetery dating to circa AD 1050–1150. Based on the unique inlays in the blade, the sword was possibly manufactured in a central European or West Scandinavian smithy. It probably arrived north as an item of trade, was re-forged, and finally ritually discarded in a cemetery. The damage in the blade may be considered use-wear and battle damage. It hints to a turbulent period in Early Medieval (11th-13th century) Finland, especially the Tavastia region, which may have escalated in violent confrontations.

Keywords: Europe, Finland, Late Iron Age, Early Medieval, swords, sword inlays, battle damage

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INTRODUCTION

What does a mere corroded sword blade tell about the past? Studies on single objects can be easily criticized as too detached from the broad themes of archaeology (e.g. O'Connor 2015: 79), but in the microhistorical and social microarchaeological framework, local events and even single artefacts are considered important. These approaches emphasize the meaning of details, which are easily lost or overlooked in broad generalizations (e.g. Cornell & Fahlander 2002; Fahlander 2003; Fahlander & Oestigaard 2008; Magnússon 2016; Mímisson & Magnússon 2014; see also Moilanen 2020). Microhistorical and microarchaeological studies acknowledge the social significance, functions, and meanings of single objects and events in the course of history (c.f. Hakamäki et al. 2013; Kalmring & Holmquist 2018; Mannermaa & Rainio 2020; c.f. Hurcombe 2007; Eaton 2020).

In this article, we will follow the microhistorical tradition by gathering as many details as possible on a Finnish sword find from Haukila Koirankivi, Valkeakoski (catalogue number NM 41247:125, Fig. 1) and discuss how this information adds to the current knowledge on Early Medieval swords in Finland, and how it may be applied in a broader context.

THE FIND CONTEXT

The village of Haukila is located in the municipality of Valkeakoski, Finland (Fig. 2). The site is located along water-routes that have connected inland regions (Tavastia) and the Baltic Sea already during the Iron Age. The surrounding area around Vanajavesi Lake is abundant in Early Medieval grave and settlement finds. Metal detectorists found the sword in autumn 2016, from a small forest area surrounded by fields where the hobbyists had already picked up over 80 Early Medieval silver coins. The metal detector signal indicated a rather large object. Upon digging, they first discovered a bronze kettle handle (Fig. 3), which they removed. The digging was stopped when a sword was found, and the finders left the object *in situ*. They covered it with

Figure 1. The Haukila sword from Valkeakoski, before and after conservation. (Photos: Sari Pouta, 2018.)

soil and called the Finnish Heritage Agency and Pirkanmaa Provincial Museum. Shortly after, Marianna Niukkanen from the Finnish Heritage Agency and Ulla Moilanen from Pirkanmaa Provincial Museum inspected the site. It was concluded that the site (later named as Haukila Koirankivi) consists of a settlement site and a cemetery (Niukkanen & Moilanen 2016). The sword was not lifted until summer 2017 when a small-scale scientific excavation by Pirkanmaa Municipal Museum, led by Ulla Moilanen, was conducted at the site (Moilanen 2018).

The excavation revealed fragmentary pieces of undecorated ceramic vessels, a burned fragment of a bone comb, an iron axe, broken and partly melted pieces of bronze, copper, and iron artefacts, and cremated bones (Fig. 3). The total amount of bone is very small (70 g), and it includes cremated human bones from at least one individual: pieces of cranium and long bones, a piece of a phalanx, and possibly a piece of pelvis (Liira 2018). Two cremated bear claws were also found, indicating that the pyre possibly had a bear pelt on it during cremation (Moilanen 2018; Ukkonen & Mannermaa 2017: 182). The bear claws have not been perforated, but they may also originate from a belt or other clothing accessory, which are known from ethnographic material of Finno-Ugric peoples (e.g. Nuttall 2005: 386). All the bones were thoroughly burned, and they have possibly been cleaned and even crushed before placement in the cemetery. Anatomical connections were not imitated when placing the bones in the cemetery, but pieces of skull and long bones were often found together in the same spot (Moilanen 2018: 31). This may indicate that only large bones were collected from the pyre. The soil analysis revealed

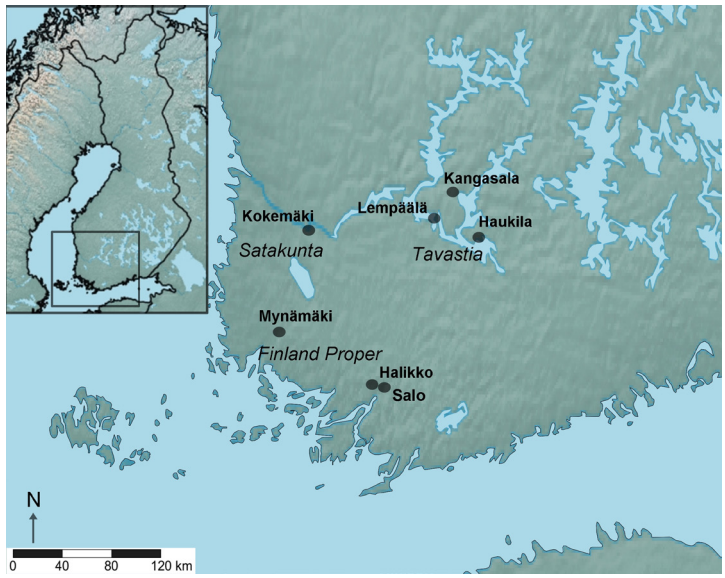

Figure 2. Map of Finland with regions and places mentioned in the article. (Map: Ulla Moilanen, 2018.)

Figure 3. A kettle handle, fragment of a bronze artefact, piece of a bone comb, and an axe found during the excavation 2017 (not to scale). (Photos: Ulla Moilanen & Sari Pouta, 2018.)

cremated remains of juniper branches and berries (Moilanen 2018: 31–3), which are common finds in Finnish and Scandinavian cremation burials (Lempiäinen 1998; Hansson 2005).

The sword had been placed on the west side of a large, natural boulder (Fig. 4), and a weight was found under the sword's tip. The kettle handle found by the metal detectorists, had been on top of the sword blade. These three artefacts had possibly been placed in the cemetery at the same time, and they likely represent a closed find in a collective cremation cemetery. Although artefact clusters have been found in cremation cemeteries before (Wessman 2010: 25; Moilanen 2017: 132–3), post-Viking Age weapon deposits are rare (Wickholm & Raninen 2006; Wessman 2010: 45). Weapon deposits have usually been interpreted as individual burials within collective cemeteries (Wickholm & Raninen 2006; Wessman 2010: 64), but at Haukila, bones were not placed in the ground with the artefacts but rather scattered in the surrounding area (Moilanen 2018).

DATING OF THE CREMATION CEMETERY AND CLASSIFICATION OF THE SWORD

Finnish cremation cemeteries have often been used for centuries. The unpublished survey at Haukila suggests that the cemetery is very large and therefore the site may have been in use for a long period of time. The small area excavated in 2017 contained artefacts that can be dated to Crusade period (AD 1025/1050–1150/1300), and the AMS dating of a human long-bone (likely a piece of femur) supported this dating (AD 1020–1160, Fig. 5). This is the period when cremation burial tradition was replaced by inhumations. Because the excavation area was located at the edge of the cemetery, it may belong to its last usage phase. The kettle handle (found in the same cluster with the weight and the sword)

Figure 4. The find location of the sword by a large stone. (Photo: Ulla Moilanen, 2017.)

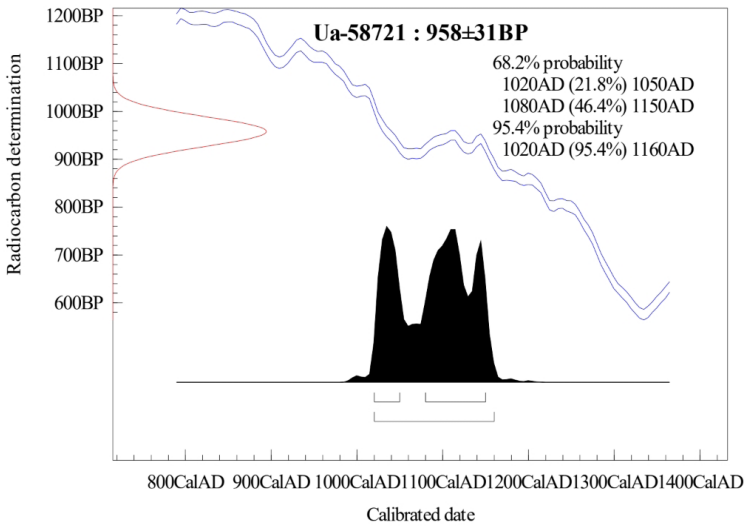

Figure 5. A human femur fragment gave a date of 958±31 BP, Ua-58721: AD 1020–1160 at 95.4%; date modelled in OxCal v3.10 (Bronk Ramsey 2009), using IntCal13 atmospheric curve (Reimer et al. 2013).

is of a particular type that has been considered common in Karelian Crusade period inhumation graves (Schwindt 1893: 41; Kivikoski 1951: 41), although, in recent years, they have been found widely around Finland by metal detectorists (Moilanen 2018: 25).

The typological classification of the sword is not straightforward. Normally sword hilts are used as a basis of classification and dating because they show much more variation in shape and decoration than blades. In this case, the hilt is no longer intact, which makes the typological assessment of the sword more challenging. German scholar Alfred Geibig (1991) created a typology for various forms of Late Iron Age and Early Medieval sword blades. The basis of this system of classification lies not only on the changes in the blade shape but also on their proportions. In this typology, there are many types overlapping each other in regard to their dating. While this kind of classification may sound like a proper tool for researchers, the poor condition of the finds often hampers the type definition. This holds true also for the Finnish archaeological sword finds. In many cases badly corroded and fragmentary blades may be included in many different typological categories according to their preserved parts, which makes their classification somewhat indefinite.

According to Alfred Geibig's typology, the Haukila blade may belong to type seven or nine (Geibig 1991: 87), both of which can be dated to the 12th century and at the beginning of the 13th century. Indeed, the slenderness of the blade is characteristic of swords of the Crusade period according to the Finnish chronology. The Viking Age swords are in general bulkier in form and equipped with a wider fuller, normally one-third the width of the blade. Also, the termination of the fuller well before the blade tip is a post-Viking Age feature.

PROPORTIONS OF THE SWORD

The shape of the sword is typical to early medieval swords with its two cutting edges and a central fuller made to stiffen the narrow and thin blade. The overall length of the sword is 87.5 cm. The length of the remaining tang is circa 7 cm, and the edged portion of the blade is about 80 cm long. Both the tip of the blade and the tang are broken, so the original proportions of the blade cannot be accurately stated. The greatest width of the blade near the tang is 45 mm, and the thickness is about 4 mm. The blade tapers in both width and thickness towards the broken tip. The fuller is 13 mm wide near the tang, again narrowing towards the blade tip. The width of the tang is between 11 and 28 mm.

All in all, the sword is in good condition, including most of the cutting edges. The main reason for the good degree of preservation is due to the cremation, from which the sword possibly originates. The surface of the blade has been covered in fire-induced patina, some of which is still intact after the conservation. This layer of

fire patina is actually a thin coating of iron oxide, which forms in high temperatures when hot iron reacts with the oxygen in the air (see Buchwald 2005: 276–7; Pleiner 2006: 110). Cremation pyres create high temperatures, in which iron artefacts will heat over 800 degrees Celsius. From this point on, an oxide layer is formed. The higher the temperature of the pyre, the thicker the oxide layer.

In some parts of the blade and especially on the surface of the preserved fire patina there are some visible stripes. These indicate the forging direction of the blade rather than any decorative elements or wear marks. The longitudinal streaks are caused by differential corrosion of heterogeneous iron or steel used in all iron artefacts during the Iron Ages. The process of smelting iron caused the material to be uneven in composition. Also, some slag inclusions were always left in the smelted iron, and they also show as striations on a corroded artefact.

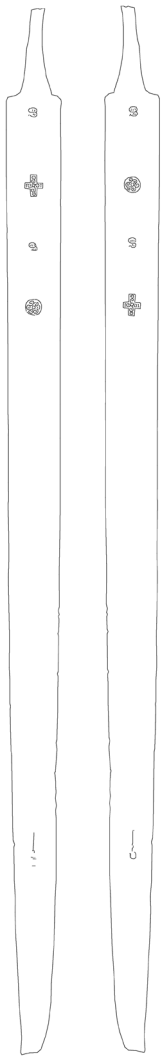

Figure 6. The location of inlays in the blade. (Drawing: Mikko Moilanen, 2019.)

THE INLAYS

As in nearly all archaeological artefacts, all observable details yield much more information of the artefact itself, its manufacture, use and discard. An outstanding feature of this sword blade is its inlays (Fig. 6–7). These were found during the radiographic examination of the blade, and they became clearly visible after the conservation had taken place.

The inlays of the blade were – as was common in the 12th and 13th centuries – made from some non-ferrous metal. During the Viking Age inlays made of various qualities of iron and steel, as well as pattern-welded material, were commonly in use (e.g. Geibig 1991: 155; Moilanen 2015: 287). Later on, perhaps already on the latter half of the 11th century, non-ferrous inlays started to appear (e.g. Oakeshott 1964: 140–3; Anteins 1966: 118; Tomanterä 1978: 55–6). These were made from small wires of silver, copper-alloys such as copper, bronze or brass, and even gold. The transitions between these various decorative techniques were not sudden but overlapping as the old tradition was superseded by a

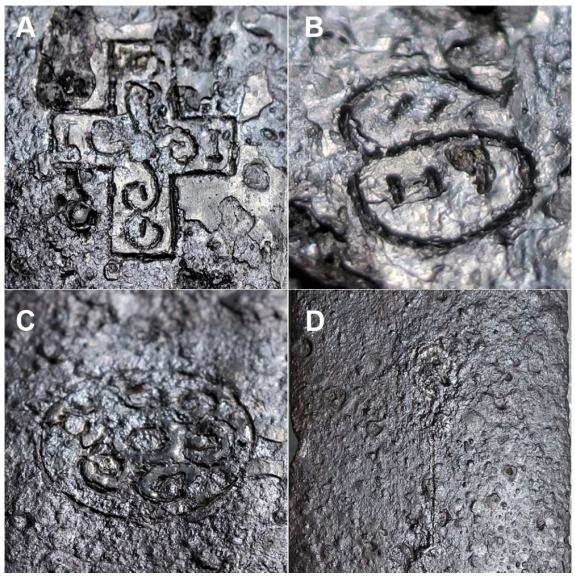

Figure 7. The main motifs of inlays in detail (not to scale). A: A large cross with spiral ornaments. B: A rotated letter S with decorative lines. C: A circle with spiral-like ornaments. D: A crozier. (Photos: Sari Pouta & Ulla Moilanen, 2018.)

new fashion (Moilanen 2015: 289–90). There are about thirty swords with non-ferrous inlays known in Finland (Moilanen 2015: 20), and this blade is yet another, finely preserved example of the variability of the inlaid motives. Some of the non-ferrous motifs were published by Jorma Leppäaho (1964) and Leena Tomanterä (1978), but some remain unpublished due to recent discoveries and radiography of older sword finds (see Moilanen 2015: 20).

The inlays of the Haukila sword have not been preserved, and the decorative non-ferrous metal has probably melted in the heat of the funeral pyre. For this reason, the inlays can be stated only to be non-ferrous. The ornaments and figures may still be distinguished by the remaining grooves in which the metal wire was attached. On each side of the blade, there are five figures; four closer to the hilt and one near the tip. The first four figures lay at the bottom of the fuller, while the one near the tip is situated on the flat of the blade, just after the fuller ends. The first four figures include two figures resembling rotated letters S and having smaller decorative lines inside the curves. One figure is a circle with spiral-like elements inside, and the fourth one is a large cross, again with spiral ornaments inside its frames. The mark near the blade tip is somewhat fragmentary. Drawing analogies from other contemporary sword finds, this mark could be interpreted as a crozier, that is, a bishop's staff (e.g. Leppäaho 1964: 76–7). While the figures are the same on both sides of the blade, the circle and the cross switch their places on each side.

RE-FORGING AND BLADE DAMAGE

Some details of the sword still require some further attention. First one of these focuses on the tang. Normally the tang is forged symmetrical, but in this case, the tang seems to be a bit off from the centerline of the blade. This may be purely incidental and of no importance, but a precise swordsmith would have the ability to forge the tang symmetrical and straight, even if someone else made the hilt for the blade in some other locality. In the worst scenario, an asymmetrical tang would make the sword ill balanced and not so user-friendly. One possible explanation could be the re-forging of the tang so that the owner of the sword could have a specific hilt customized to their liking or wishes. Considering that the hilt parts were forged from iron, polished and maybe decorated, it is much easier to reshape the tang than to modify the slots in the guard and the pommel. A somewhat similar blade from Leikkimäki in Kokemäki (catalogue number NM 1174:1) also has a re-forged tang to fit a typologically older, silver-decorated hilt. If a smith with lesser skills, for example, a village smith, did the reshaping of the tang, the end result could be a crude tang like in the Haukila sword.

Yet another feature could indicate a newly forged tang: the location of the inlays. Usually

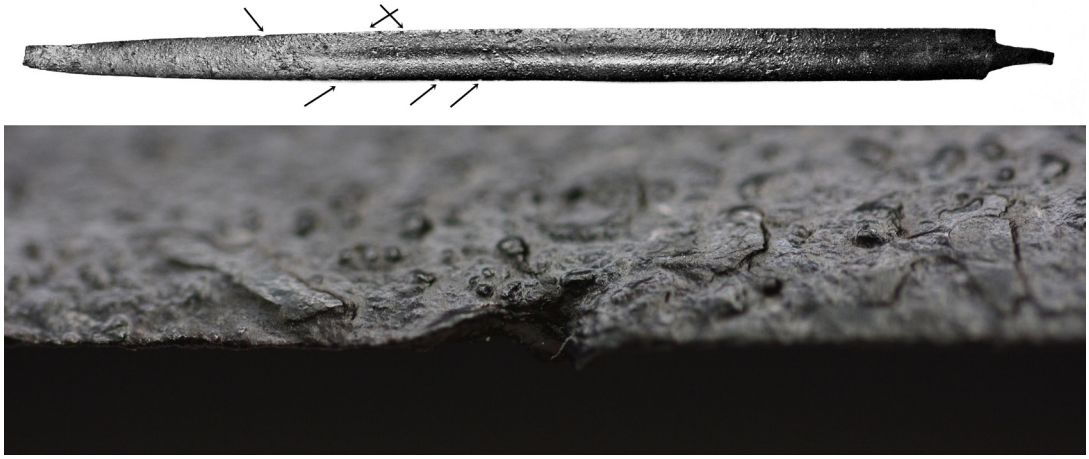

Figure 8. One of the nicks in detail, and the directions of the hits on the edges. (Photos: Ulla Moilanen, 2018.)

inlays - whether large pattern-welded ones like in the Viking period or later non-ferrous ones - begin at some distance from the lower guard (see e.g. Moilanen 2015: Fig. 32a–d). In the Haukila sword, the first inlays are very close to the shoulders of the tang, indicating that a new tang was stretched and shaped from the widest part of the blade near the hilt. This kind of operation must be made very carefully to not to lose the inlays nearest the tang during heating. Similar cases are also known from the Viking period. For example swords from Lempäälä (NM 4254), Mynämäki (NM 11859:1) and Salo (TMM 14105) show pattern-welded marks very near or even slightly under the lower guard (Moilanen 2015: 101).

The relatively good degree of preservation of the Haukila blade allows us to find yet another interesting feature. These are the damages on the blade. The cutting edges are quite finely preserved by fire patina with only small nicks caused by corrosion. However, around the first third of the blade from the tip, there are many small nicks and bends, which clearly belong to the time of use or discard of the sword (Fig. 8). These small nicks give the impression that the sword has been struck against something, perhaps another weapon or a shield. In the next section, we will discuss whether these marks result from deliberate breakage or battle use.

DISCUSSION

Compared to other sword finds from Finland from the Viking and Crusade periods, the Haukila sword reveals an exceptional amount of information. First of all, it has been properly recovered by archaeologists. The majority of Finnish sword finds were found decades ago, the oldest ones at the second half of the 19th century. Often landowners have made the finds, and archaeological excavations have rarely taken place at the find spot. At Haukila, the site was properly excavated to understand the find context. The sword had been placed in a cremation cemetery typical to the find area. The typology of the sword blade and the AMS dating of human bone found from the cemetery are not contemporaneous, but the fact that these cemeteries were used for a long time and that the sword blade is covered with fire patina indicates that the slightly younger sword also originates from a cremation burial. Unfortunately, it is impossible to study

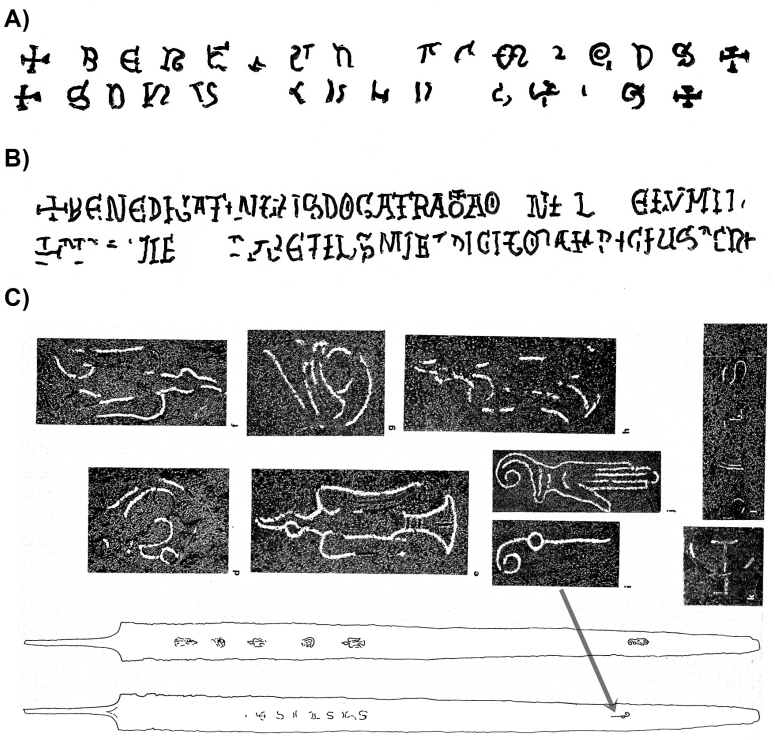

Figure 9. Silver wire markings on a sword from A) Halikko Katunpää (NM 15676) and B) Kangasala Liuksiala (Museum of Liuksiala 8). (Drawings: Mikko Moilanen.) C) The sword from Kokemäki Leikkimäki include an inlaid crozier near the tip. (After Leppäaho 1964.)

the relationship of the cremation cemetery to the adjacent settlement site and the silver hoard, because only a small-scale excavation was conducted at the cemetery. However, Haukila Koirankivi site offers a great potential for further excavations and studies on an early medieval settlement-cemetery complex and the relationships between the living and the dead.

Most of the inlay figures of the blade are unique, and no similar sword blade decorations are known elsewhere. This is not a total surprise, since all non-ferrous inlaid motives known from the Late Iron Age and Early Medieval Europe are more or less unique when compared to each other. This is mainly because there are several variants of the same motives (see Oakeshott 1960; 1964, Tomanterä 1978, Drboglav 1984; Głosek 1984). In the Haukila case, even the single figures have no strict analogies, although the crozier and letter S resemble previously known markings (see Leppäaho 1964: 77; Tomanterä 1978: 46). Many blades from elsewhere in Europe contain crosses and circles, most likely as connected to Christian imagery, but none of them are strictly similar. Furthermore, the sequences in which these symbols appear seem to vary a lot. No identical sequences of letters or symbolical figures are known so far.

The closest parallels to the inlays of the Haukila sword can be connected to the rotated S-like figures, two on each side of the blade. The disc-pommeled sword from Katunpää in Halikko (NM 15676) shows letter sequences on both sides of the blade (Fig. 9) possibly executed with silver wire. Among these letters is one stylistically very similar figure as these S-figures in the Haukila blade. Tomanterä links this sword from Halikko with another sword from Liuksiala in Kangasala (Museum of Liuksiala 8), which exhibits stylistically similar Latin letters including the word BENEDICAT (Fig. 9), all inlaid in silver (Tomanterä 1978: 46–9). This sword has a rare, hexagonal variant of a disc-shaped pommel. The word BENEDICAT could date the sword to the end of the 12th century or to the 13th century (Wegeli 1903–5: 265– 268; Bruhn-Hoffmeyer 1954: 116). It is possible that the inlays of the Haukila sword could originate from the same workshop as the two above-mentioned Finnish examples from Halikko and Kangasala.

According to some scholars, the bishop's staff has been connected to the famous medieval sword-making centre of Passau in modern-day Germany (Nordman 1943: 53). Sword industry has been operating there since the Roman times, mainly because good-quality iron ore could be acquired nearby. Tomanterä has noted that the Passau factory used to mark its blades with an inlaid or stamped figure representing a wolf (Tomanterä 1978: 70), while both the blades discussed above are missing this particular mark. The characteristic wolf pattern has been used since the end of the 13th century (Schmid 1903–5), and it remains uncertain what kinds of marks or stamps were earlier in use. The crozier may then indicate that the sword maker had episcopal connections. After all, some monasteries in Western Europe had smithies already during the Viking Age (see e.g. Stalsberg 2007). At the simplest, crozier may be there to attest the power of Christianity. In Finland, there is one sword with a gold-inlaid crozier near its tip. This is the previously mentioned silver-hilted sword from Leikkimäki, Kokemäki (Fig. 9; see also Leppäaho 1964: 76–7; Tomanterä 1978: 70). Although the hilt of this sword with its animal ornaments may be dated to the 11th century, the blade is clearly younger by its form and inlays. It is also clear that the tang of this sword had undergone some forging to fit the older hilt.

However, the manufacture of inlays could suggest another possible origin. Usually, non-ferrous inlays have been sunk in channels made by a chisel of some kind, leaving behind a straight, carved line. Although these lines must have been carved or struck wider at the bottom to keep the decorative metal wire in its place, they appear as straight lines on the surface of the blade. The inlays in the Haukila blade have been made in a rarer manner by using a series of consecutive chisel strokes creating a serrated-looking channel. Traces of a similar tool can be seen in, for example, Viking and Crusade period spearheads, where the animal-ornaments have been carved in silvered sockets (see Leppäaho 1964: 92–113). In these, maybe Scandinavian handicrafts according to the animal motifs, the carved line is similarly serrated. This gives room to speculation whether some of the inlays were actually made elsewhere than the blade. Traditionally, all the sword blades in this time

period are seen as Frankish manufacture. After all, if the blade is suitably hardened, these kinds of inlays may be executed even in a ready, polished blade. Only the ferrous inlays must be made before the blade is shaped and polished (e.g. Moilanen 2009; 2015: 218–21).

Of great interest are also the signs of use on the Haukila sword blade, giving information of yet one event of its life cycle. Could it be that the sword was ritually destroyed by removing the hilt and breaking the tip? The habit of destroying artefacts, especially weapons, is an Iron Age feature having many explanations among scholars, all the way from practical matters to religious beliefs (see e.g. Karvonen 1998; Wickholm & Raninen 2006). Normally swords were sharply bent from their blades, chopped into smaller pieces, and/or their hilts were violently removed. Thus, the missing of the hilt of the Haukila sword may connect to this phenomenon. Also, traces of hacking may be connected to a manner or ritual destruction of the weapon (Karvonen 1998: 7). The bent and broken tip could also be interpreted as deliberate breakage, but it is the small blunting instead of breaking of the whole tip that indicates battle damage (see Moilanen 2010: 4–5). Also, the nicks on the edges of the blade are mostly directional blows towards the hilt, and therefore may indicate battle damage. This is evident especially with the nicks around the first third of the blade from the tip. The first third is a so-called point of percussion, which does not vibrate when a strike is delivered in the area. The damage around the percussion point strongly indicates that the sword was damaged when striking something or someone with it. This phenomenon can be seen already in swords of the Bronze Age (Kristiansen 2002: 323–5) as well as the Roman Iron Age swords recovered from the Danish bogs (Gebühr 2005), not to mention the swords from the historical period (e.g. Oakeshott 1991: 107–261; Kämpe 2010). While swordsmanship manuals exist in the Middle Ages about AD 1300 onwards, older combat techniques remain unknown without written or pictorial sources. Thus, the way the Haukila sword could have been used remains a mystery.

In the Finnish material, there are at least thirteen swords with similar kinds of nicks and burrs from the Viking and Crusade periods (Moilanen 2010: 4). This means that the phenomenon is not rare in Finland and the existence of violence cannot be excluded. Some of the examples come from the regions of Finland Proper and Satakunta, but the majority of them are found from Tavastia region, away from the coastal areas (Moilanen 2010: 4). Considering the inland concentration of damaged swords, including the specimen from Haukila, it is interesting that at least in the Crusade period, written sources do mention warlike activities and plunder happening in these areas (Taavitsainen 1990: 145–6). The Chronicle of Novgorod is one example (see Ailio 1915: 338–9; Lind 1977). Similarly, some Swedish runestones document violent activities happening in Finland, in one case the place has been even interpreted as Tavastia (e.g. Montelius 1914: 93). The period may have also been restless due to changes in social and political power, caused by the spread of Christianity, the establishment of Catholic congregations, and gradual transition to Swedish rule (Hiekkanen 2010). Another possibility for battle damage not discussed in this article is ritual swordplay or fight that could have taken place as part of the burial ritual.

CONCLUSIONS

Swords from the Crusade period in Finland are numerous, and the Haukila sword blade acts as an example of what kind of information a single sword blade can reveal. Although microhistorical and microarchaeological studies are based on detailed descriptions of artefacts and sites, it is necessary to tie the acquired information on broader themes. We have done that by combining the evidence of traditional archaeological research and the observation of the inlays, and based on the data, we speculate that the Haukila sword was likely imported either from central Europe or western Scandinavia and used for a period of time before being deposited in a cremation cemetery as part of funerary rituals. The sword blade is decorated with unique inlays that display Christian symbolism and bears signs of both practical and ritual use. The manufacturing method of the inlays is similar to Viking and Crusade period spearheads made in Scandinavia, giving room to speculation whether some of the non-ferrous inlays were actually

made in Scandinavia and not in Frankish areas, as traditionally thought. The sword also provides evidence of battle damage, which has been noted in several other contemporary swords from the surrounding area in Finland. This may be connected with turbulent times and tensions in Early Medieval Tavastia. All these features place the sword find in a broad context of European trading networks and political, religious, and social changes in Early Medieval Finland.

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