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THE EARLY HISTORY OF THE FORTRESS OF KÄKISALMI, RUSSIAN KARELIA — ARCHAEOLOGICAL AND RADIOCARBON EVIDENCE

Abstract

Käkisalmi, an early medieval town on the western shore of Lake Ladoga, Russian Karelia, grew up at the eastern end of an important medieval route. Judging from the chronicles it is not clear whether the first fort of Käkisalmi was built in 1294–1295 by the Swedes or already earlier by the local Karelians. The location of the first fort is also debated.

Archaeological excavations at the site of the Fortress of Käkisalmi have revealed various kinds of finds, some of them Merovingian and Viking Age artefacts. The wooden structures lying directly on the intact clay bottom are not datable by dendrochronology; the high-precision ^{14}C analyses and the application of a curve fitting technique confirm that they date from the mid-13th century. It is concluded that there was Karelian habitation at Käkisalmi before the arrival of the Swedes in AD 1294–1295. Yet, there is no evidence that the wooden structures excavated and dated were part of a fort.

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Introduction

The town of Käkisalmi[1], on the western shore of Lake Ladoga, Russian Karelia (Fig. 1), lies at the eastern end of a water route which in medieval times led from the Gulf of Finland, near Viipuri, along the River Vuoksi to Lake Ladoga. The by-course of the River Vuoksi from Heinjoki to the bay of Viipuri in the Gulf of Finland drained in the 17th century, and all the river waters were directed into the main course of the River Vuoksi that leads from Lake Saimaa to Käkisalmi and Lake Ladoga. In 1857 the Vuoksi was partly diverted to Lake Ladoga via Lake Suvanto by deepening a threshold.

The so-called Old Fortress of Käkisalmi[2] stands on the small Fortress Island in the centre of Käkisalmi, four kilometres upstream from the mouth of the Vuoksi. The written sources of the early stages of the Fortress of Käkisalmi are few and they allow different interpretations. According to the Swedish Chronicle of Erik, the Swedes arrived at Käkisalmi in 1294 and conquered the existing fort of the local Karelians. A Novgorodian chronicle on the same event mentions that the Swedes built a small fort in Karelia in 1295 but that it was soon conquered by the Russians. In 1310 the Novgorodians destroyed the earlier fort and built a new one; in 1360 the fortress burned down and was then rebuilt.

Ever since 1891, the year of the first excavations in the area of the fortress (Schvindt 1898), the location of the first fort has also been debated. It has variously been assigned to Kalliosaari, an island upstream from the present site (Schvindt 1898; Ailio 1921, 55–60), to the site of the present fortress (Komonen 1931; Rinne 1932), and to Holmansaari (Kalasaari), an island at the mouth of the river (e.g. Kirpičnikov 1984; Kuujo 1984). There are prehistoric finds only from the Fortress Island. For a detailed account of the history, the first excavations and prehistoric finds of Käki-

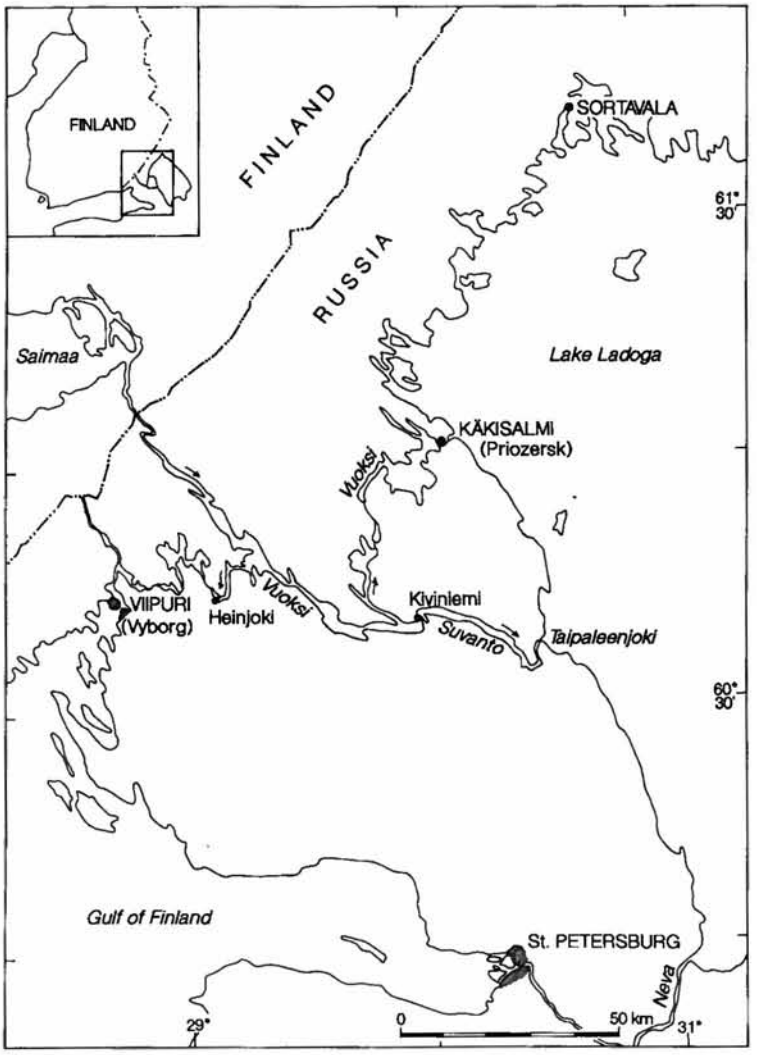

Fig. 1. The location of the town of Käkisalmi, on the lower course of the River Vuoksi. The former connection to the Bay of Viipuri (Vyborg) is also shown.

salmi, the reader is referred to studies by Taavitsainen (1990, 294), Saksa (1992, 5–17), Uino and Saksa (1993, 213–217) and the references cited.

The first extensive excavations were conducted in the courtyard of the Fortress of Käkisalmi by A. N. Kirpičnikov in the 1970's. Wooden structures were discovered and dated dendrochronologically to two periods: 1310–1360 and 1360–1380 (Kirpičnikov 1979). Coarse sand under the wooden structures was misinterpreted as bottom soil, and the excavations were not extended to deeper levels.

Kirpičnikov (1979, 60–61) interpreted the timber constructions revealed at the excavations as the lowermost blocks of houses. Thick layers of dung pointed to the existence of cattle between the houses. The island was probably surrounded by a system of landing stages or quays (Kirpičnikov 1984, Fig. 60).

Kirpičnikov's excavations revealed a considerable number of various artefacts. Among them one Merovingian and two Viking Age equal-armed brooches were the oldest. The artefacts also included Karelian types of the 12th and 13th centuries: oval tortoise brooches and knives with bronze handles. Referring to the dendrochronological dates of the horizon Kirpičnikov (1979, 67) suggested that the ornaments in question either originated in destroyed graves or that the types they represented had been current longer than assumed, i.e. as late as the 14th century.

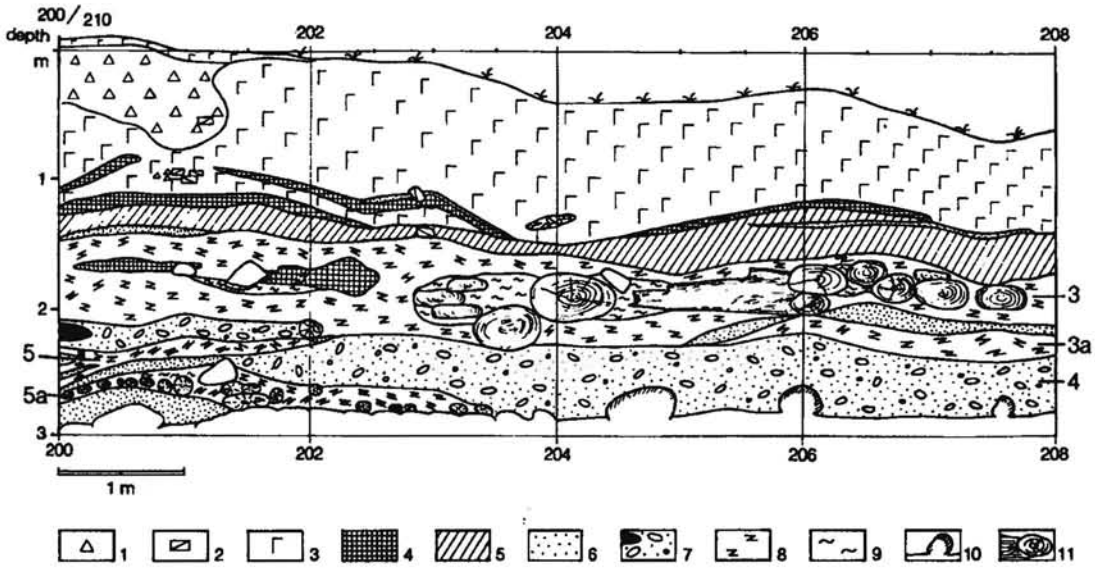

Fig. 2. Generalized section of the western excavation area at Käkisalmi in 1990 (Saksa 1992). 1) lime-mixed mortar; 2) pieces of brick; 3) dark cultural layer; 4) clay lense; 5) black cultural layer; 6) fine sand; 7) coarse sand with slag: black spot; 8) chips; 9) ash and charcoal; 10) blue clay and big stones; 11) wood. The horizons mentioned in the text are indicated by numbers (3, 3a, 4, 5 and 5a).

In 1989 and 1990 archaeological excavations were carried out at the Fortress of Käkisalmi as a Russian-Finnish joint project. It was during these excavations that, for the first time, a horizon was reached at which wooden structures were found lying on the intact clay bottom. Only some timbers from the upper layer of the building remains were in a fit condition to be dated dendrochronologically. All of them were found to derive from the 14th century (Zetterberg et al. 1995); they do not help in clarifying the earliest building activities. Hence, only the radiocarbon method is applicable to dating the lowest wooden structures of the Fortress Island.

Pollen and macrofossil analyses carried out on the cultural layers overlying the wooden structures of Käkisalmi, i.e. layers originating from the time period between the latter half of the 14th and the 17th century, indicate an urban milieu and storage of food and fodder inside the fortress (Vuorela et al. 1992, 187–196). The macrofossil flora studied from the soil samples collected from the level of and underneath the above mentioned wooden structures contains a high number of settlement weeds, which indicates very intensive human impact in the Crusade Period or somewhat later (Lempiäinen 1995).

The current paper summarizes the results of the excavations in 1989 and 1990 which focused on solving whether there was Karelian habitation and perhaps also a fort on the Fortress Island already before the arrival of the Swedes in 1294–1295. Detailed accounts of the dendrochronological and radiocarbon dating programmes are published elsewhere (Zetterberg et al. 1995; Kankainen in press).

Excavations in 1989 and 1990

The excavations of 1989 and 1990 were carried out in the northeast corner of the courtyard, close to the present fortress wall, as an almost direct continuation to the east and south of the main areas excavated in the 1970's (see Zetterberg et al. 1995, Fig. 1). Figures 2 and 3 illustrate the western excavation area of 1990 (area W); the excavation horizons concerned are indicated by numbers 3, 3a, 4, 5 and 5a. Kirpičnikov's excavation area was not reached by us and therefore Figure 2 shows an undisturbed profile.

In 1989 the stone foundation of a 17th century building was unearthed and underneath it, at a depth of about two metres, wooden structures (excavation horizon 3). Just inside the north and west walls of the stone foundation, a deeper test

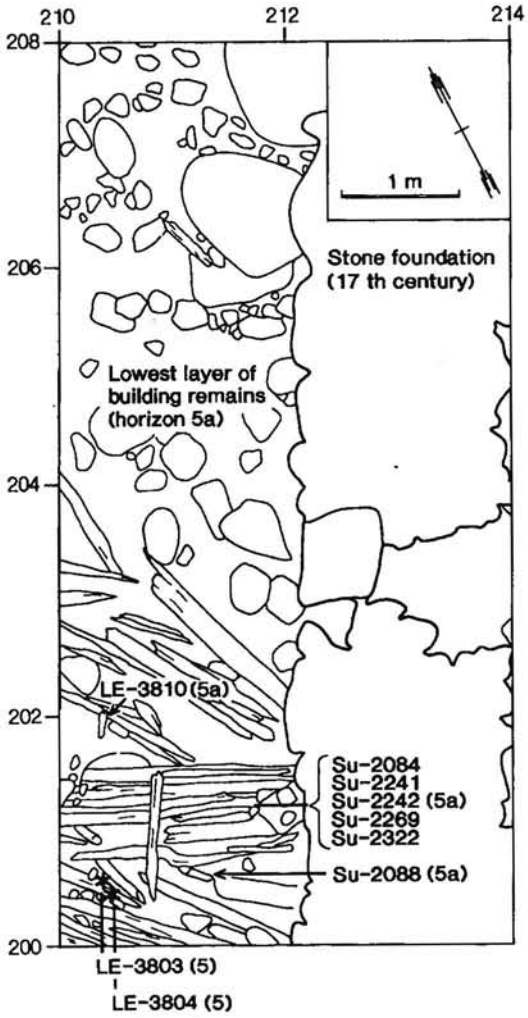

Fig. 3. Sketch map of the western excavation area in 1990. The lowermost wooden structures (horizon 5a) immediately above the bottom clay are shown. The sites of the samples submitted to ^{14}C analysis from horizons 5 and 5a are marked.

trench was dug through a layer of coarse sand to the bottom clay.

In 1990 the excavation was continued at a deeper level in two areas: east of the stone foundation (area E), and west of it (area W, Fig. 2 and 3). The wooden structures found in 1989 (horizon 3) continued in the area W. Beneath it there was a layer of chips with some charcoal (horizon 3a), then a 40–50 cm thick layer of coarse sand (horizon 4) and, finally, at a depth of 2.6–2.8 m, another horizon of wooden structures (horizon 5) with chips between, some of which were lying on the intact clay bottom (horizon 5a, Fig. 3). The orientation of the two horizons of wooden structures differed from each other.

Finds

The excavations of 1989 and 1990 revealed numerous artefacts (see Fig. 4). Some 15th century lead seals, a die of bone, and a small cross of amber represented a younger group of artefacts. Oldest among the finds were a round pierced pendant (probably 11th century) and an equal-armed brooch (8th century) of a type already found in the excavations of the 1970's.

The number of the Crusade Period artefacts increased as a result of the 1990 excavations. Ornaments (oval tortoise brooches, a chain holder, a fragment of a silver penannular brooch) as well as knives with bronze handles decorated with band ornaments, all common in Karelian 12th and 13th century graves, were found. Two other penannular brooches, some finger-rings, and a sheath-shaped needle case probably date to the Crusade Period, too. Viking Age and Crusade Period types are found among the glass and carneol beads as well.

Furthermore the excavations revealed slags and also artefacts pointing to metallurgy, fishing implements (net floats of birch bark as well as weights covered with birch bark), spindle whorls, whetstones, tinder flints etc. The organic material (i.e. remains of leather shoes and box lids of birch bark) was well preserved in the moist ground. A wooden writing pin, a *stylos*, was an especially interesting find. All of the pottery was wheel-thrown Slavic ware.

The existence of Merovingian and Viking Age artefacts in the cultural layer of the courtyard actualizes the question of the earliest phases of human action on the island. Taavitsainen's (1991, 11) hypothesis according to which the Crusade Period and earlier metal ornaments would simply represent raw material for casting collected from cemeteries has to be taken into consideration because there is evidence of metallurgy on the island. However, the considerable number of early beads has to be explained on other grounds, and some of the early ornaments are intact and well preserved.

It is possible that the artefacts from the period AD 700–1300 originated in the cultural layer of a settlement (or a cemetery) destroyed in connection with the heavy fortification that begun late in the 13th century. During the works the island may have been levelled and earth may have been re-

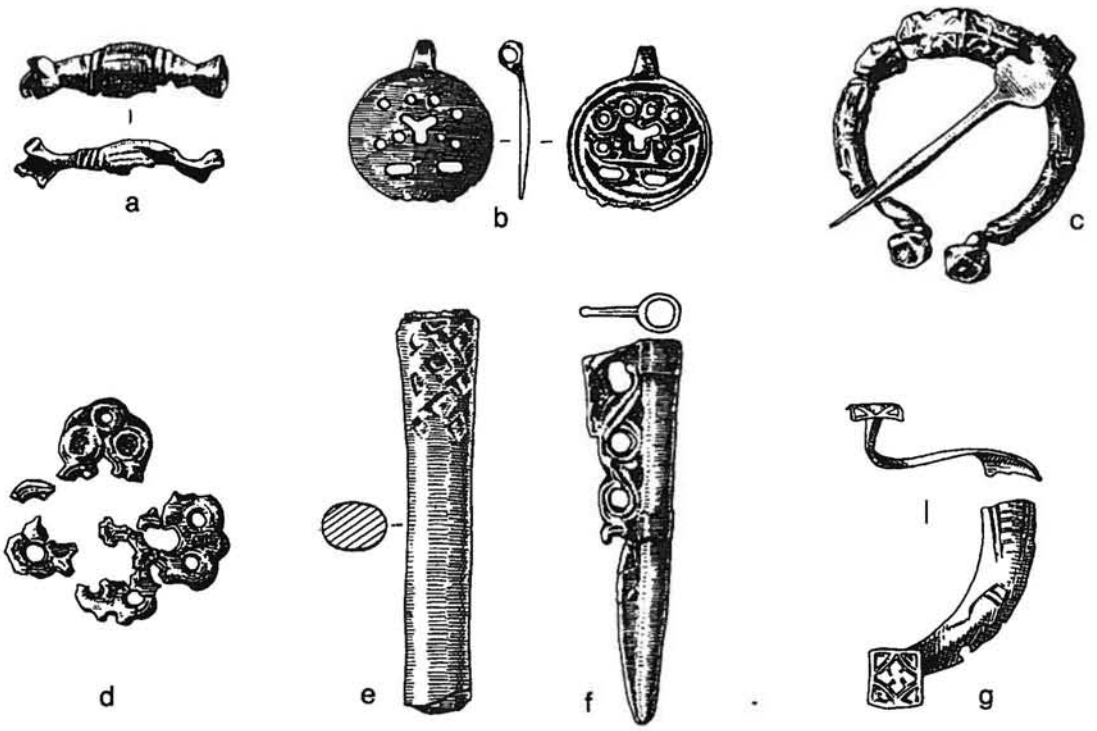

Fig. 4. Artefacts found in the excavations at the Fortress of Käkisalmi in 1990. a) equal-armed brooch; b) round pierced pendant; c) penannular brooch; d) chain holder; e) bronze handle of a knife; f) sheath-shaped needle case; g) fragment of a silver penannular brooch. Drawn by G. A. Kuznecova.

moved to strengthen and elevate the wet shoreline.

Radiocarbon dating

The ^{14}C dating programme included ^{14}C analyses of 13 wood and charcoal samples from the oldest cultural horizons of the 1989 and 1990 excavations (Kankainen in press). The wood samples were dated at the Geological Survey of Finland (Su). The technique involves proportional counting of CO_2 and the application of pulse-shape discrimination as described by Mäntynen et al. (1987, 869–873) and Äikää et al. (1992, 414–419). The charcoal samples were dated separately in St. Petersburg (LE) with the benzene liquid scintillation technique. One timber was separated into several samples which were dated and then matched with the dendrochronological calibration curve to give a precise calendrical age. Figure 5 summarizes the results of the ^{14}C dating programme.

One of the first three radiocarbon dates from the 1989 excavations (Su-1873, 825±30 yr BP; see Fig. 5) suggested that the Fortress Island was inhabited in the 13th century (Saksa et al. 1990, 65–68). The 11th to 14th centuries are problematic for radiocarbon calibration due to strong variations in the atmospheric radiocarbon content. Therefore, the dating programme on samples taken in 1990 (Kankainen in press) included the subdivision of the oldest of the wood samples (Su-2084, timber W/5a, 880±35 yr BP) into contiguous samples (rings 1–15, 16–35, 36–55) which were dated and matched with the calibration curve to give a precise calendrical age, using a curve fitting technique (Pearson 1986, 292–299). The outermost 20 annual rings of timber W/5a, i.e. rings 36–55, which already had been dated along with single samples (Su-2084), were remeasured for their ^{14}C content (Su-2269). All the single wood samples were dated on their youngest annual rings.

All the dates (Fig. 5) fall between the middle of the 11th century and the middle of the 15th cen-

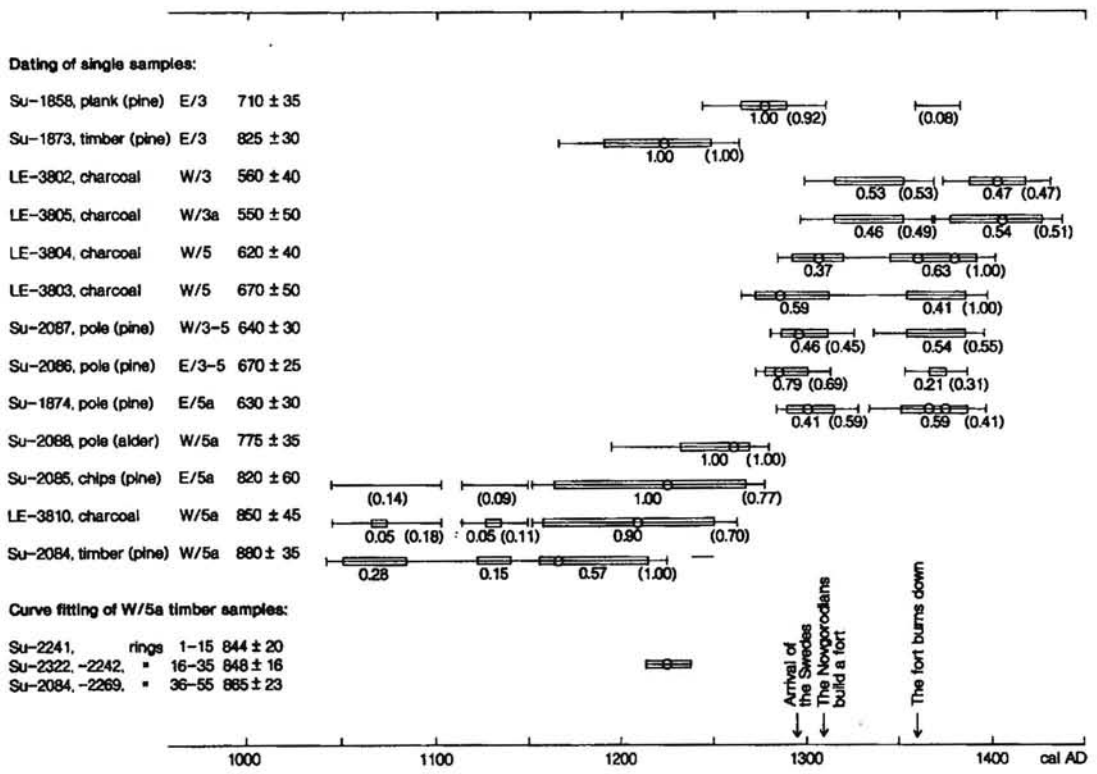

Fig. 5. The ^{14}C ages and calibrated dates (Stuiver & Pearson 1986; Stuiver & Reimer 1986) of single samples, and the result of curve fitting of W/5a timber sample. The circles show the most probable cal AD dates. The triple lines indicate 1σ (68%) confidence levels and the single lines 2σ (95%) confidence levels for cal AD ranges. The numbers below the lines show the probabilities of the respective cal AD age ranges, within the 1σ and 2σ (in brackets) confidence level.

tury, in agreement with archaeological evidence. Nevertheless, in the assessment of the dating results it is important to take into account the temporal relationship between the dates and the hand of man on the trees in question.

The time lag between the dates of the wood samples and the death of the tree in question or its utilization by man may be several tens of years because none of the sample trees had their original surface left. The relation between the charcoal and chip dates and the felling of the trees is even more uncertain. The possibility that old timbers were re-used in new buildings must also be kept in mind when considering the reliability of the ages and interpreting them; during the excavations some signs of re-use of timbers were noticed.

The calibrated dates cluster in two groups. Most of the samples taken from the deepest excavation horizon, 5a, most probably belong to the structures predating the arrival of the Swedes at Käkisalmi in AD 1294–1295, whereas most of the samples assigned to excavation horizons 3–5 date to the 14th century when the area was first ruled by the Swedes and later by the Novgorodians. Timber Su-1873, though taken from horizon 3, dates to the 12th and 13th centuries, and pole Su-1874, which was interpreted as belonging to the horizon 5a, was made in the 14th century.

Owing to the calibration problems of the 11th to 14th centuries, more precise ^{14}C dating of the building activities of the Swedes and the Novgorodians cannot be achieved with single samples only. However, on the basis of dendrochronological dating it has been assessed that pole Su-1874 was felled between AD 1350 and 1360 (dendrochronological sample no. 07; Zetterberg et al. 1995).

Calendrical dating of the W/5a timber samples with a curve fitting technique (see Fig. 5) shows that the present surface ring of the timber derives

from AD 1225±12 years. If the timber had belonged to a building made by the Swedes, 58–82 annual rings should have decayed from its surface, i.e. more than the number now remaining. Taking into account the present good condition of the timber, this does not seem possible. Hence, the timber must have belonged to a Karelian fort or some other wooden structure that was built at the site of the present Käkisalmi Fortress in the mid-13th century. The dates on single timber, chips and charcoal samples from the deepest horizon also refer to building activity in the 13th century.

Conclusions

The high-precision ^{14}C analyses on the lowermost wooden structures excavated at the site of the Fortress of Käkisalmi and the application of a curve fitting technique confirm that there were wooden structures on the Fortress Island in the mid-13th century before the arrival of the Swedes in AD 1294–1295, i.e. earlier than expected on the basis of written documents. There is no evidence that the structures excavated and dated from Käkisalmi were part of a fort.

Artefacts of considerable age (Merovingian and Viking Age artefacts) have been found at the fortress site. About 50 finds have been classified as having been in use before AD 1300. The oldest artefacts are from the 8th century, i.e. they are about 500 years older than the wooden structures found and dated so far.

Notes

[1] The Finnish name *Käkisalmi* is *Priozersk* in Russian, *Kexholm* in Swedish. In Russian chronicles Käkisalmi is called *Korela*.

[2] The so-called New Fortress (i.e. bastion) of Käkisalmi was built in the 16th–17th century. It stands on the Spasski Island, two hundred metres north of the Old Fortress.

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