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**RADIOCARBON DATES FROM ARCHAEOLOGICAL EXCAVATIONS
IN VIIPURI
THE CORNER SITE OF FORMER UUDENPORTINKATU AND
ETELÄVALLI**

Abstract

Discussed in the article are finds from a rescue excavation at the corner of former Uudenportinkatu and Etelävalli streets in the medieval section of Viipuri. Calibrated radiocarbon dates of the seeds of fat hen (*Chenopodiaceae* sp.) indicate animal husbandry around 1310 AD. Together with other finds, they indicate the existence of a large village community predating the masonry-built town of Viipuri. Also discussed are timber drainage structures of the 16th–18th centuries. Finds of cannonball fragments and intact cannonballs can be associated with the siege of Viipuri in 1710, as a result of which the town surrendered to the forces of Peter the Great. The support of the Foundation for Karelian Culture and the Geological Survey of Finland are gratefully acknowledged.

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A seamen's church is being planned for the currently undeveloped site at the corner of former Uudenportinkatu and Etelävalli in the medieval section of Viipuri (Fig. 1). The work was scheduled to begin in 2003. In the summer of 2003, A. Saksa conducted a salvage excavation at the site with funding from the Foundation for Karelian Culture. The excavation area is traversed by two sewer drains dividing the site into three sections measuring approximately 5 x 4 metres. The northernmost grid square of the excavation revealed the solid corner of an old masonry building, which could be located in a map from ca. 1636. The most detailed excavation work was carried out in the south grid square of the site, measuring 5 x 4.6 metres. The excavation extended to a depth of 3.7 metres, to the surface of underlying bedrock. Seven samples for radiocarbon dating were taken from the revealed cultural layers. The dating was carried out in Poznan, Poland. Prior to this, archaeology in Viipuri had relied solely on three radiocarbon

dates from 2001 from the corner site of former Possenkatu and Vahtitorinkatu streets. This site also provided Viipuri's thus far only dendrochronologically dated samples of a building (possibly a sauna), with two logs felled in the late Middle Ages, in 1478 and 1480 respectively (Belsky et al. 2001; Saksa et al. 2003).

Radiocarbon dating is a central chronological method in prehistoric archaeology and also useful in connection with historically documented times up to the late 18th century. The rapid increase in the burning of coal that began with the industrial revolution has disturbed the natural radiocarbon content of the atmosphere on which the datings are based, thus making them useless for recent periods. The use of radiocarbon dating with regard to historically documented times is limited by the imprecision of the method. At best, a margin of ± 25 years can be achieved, while dendrochronology can establish age to within a year, which is exceptional even with finds of

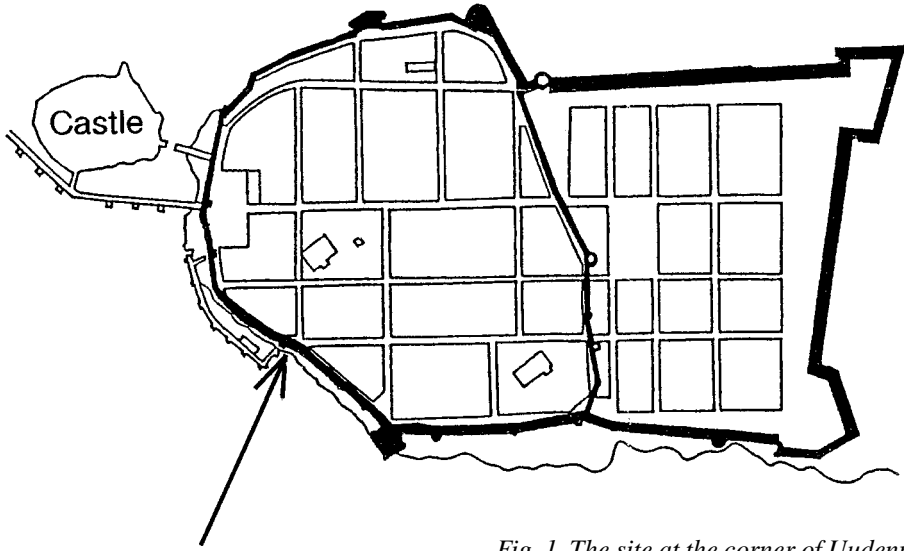


Fig. 1. The site at the corner of Uudenportinkatu Street and Etelävalli, where the 2003 excavations were carried out, is situated approximately 400 metres southeast of Viipuri Castle.

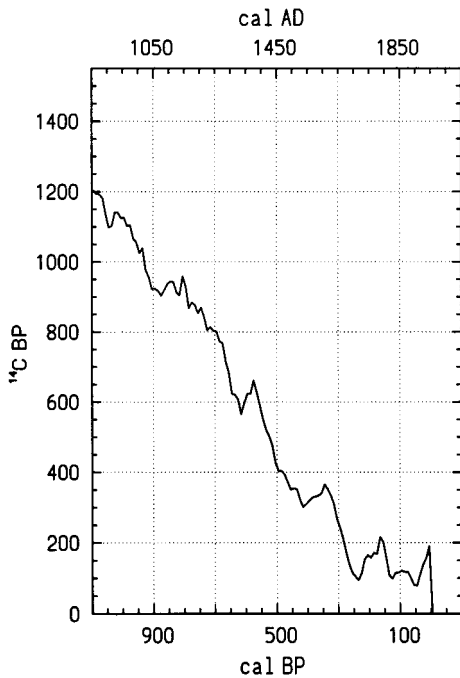


Fig. 2. Radiocarbon dates are converted or calibrated into calendar years with the INTCAL98 calibration program (Stuiver et al. 1998). In the example diagram given here, the radiocarbon age (14C BP) is shown on the vertical axis and the corresponding age in calendar years (cal AD) is on the horizontal axis given as before 1950 (cal BP).

artefacts. A further limitation is the calibration of radiocarbon dates, i.e. their conversion into calendar years. The amount of radioactive carbon in the atmosphere has varied through history, with the result that radiocarbon dates differ to varying degrees from calendar years, though less than a hundred years over the past thousand years. Radiocarbon dates are converted into calendar years with calibration programs and tables based on thousands of year-rings dates obtained from living and dead trees. Calibration, however, is not always unequivocal, and there can be several alternative results. This is shown by the calibration curve given here for the period beginning in 850 AD (Fig. 2) (Stuiver 1998, Fig. A19). A thousand radiocarbon years (BP or Before Present = before 1950 AD) corresponds quite closely to 1000 AD, while for example 600 radiocarbon years falls in the period 1300–1400 AD on the calibration curve.

Despite these reservations, radiocarbon analysis is an important additional dating method also in historical archaeology. Timber for dendrochronology is not always available or datable objects are not found in the cultural



Fig. 3. The bottom cultural layer at the Uudenportinkatu-Etelävalli corner site overlays undisturbed soil and bedrock at a depth of 3.5 metres beneath the present surface. The layer contains plant seeds indicating the pasturing of cattle. A radiocarbon date of fat hen seeds (*Chenopodiaceae* sp.) gave the result 625 ± 25 BP (Poz-4297), with a probable calibrated age of 1310 AD. Situated 20–30 cm above this location was the bottom plank floor of the excavation, radiocarbon-dated to 555 ± 30 BP (Poz-4383), calibrated to ca. 1410 AD. Photo Matti Saarnisto.

layers. The chronological comparison of cultural layers in different locations is supported by radiocarbon dates. As discussed below, Viipuri is a good example of this.

The bottom cultural layer at the Uudenmaankatu-Etelävalli corner site (Fig. 3) has a maximum thickness of 20–30 cm and ends in underlying bedrock or undisturbed sand. The layer contained net floats and sinkers covered with birch bark, wood shavings, animal bones and cattle dung containing ‘typical medieval flora’ according to Terttu Lempiäinen (Department of Biology, University of Turku), i.e. seeds of pasture grasses of the period. A radiocarbon analysis was made of the seeds of fat hen (*Chenopodiaceae* sp.), the most probable date being 1310 AD (Poz-4297, $625 \pm$ BP). Above the layer, there were the remains of the oldest wooden structures of the excavation. A decayed floor plank at a depth of 3.4 metres gave a radiocarbon date of 555 ± 30 BP (Poz-

4383), calibrated to ca. 1410 AD. The orientation of this lowest wooden structure differs from that of the upper ones. The upper houses, of which there were remains in four layers had paved yards, but there was no paving next to the bottom house. The cultural layers of the upper houses revealed a large number of leather artefacts and intact leather footwear of the 16th–17th centuries, a pair of scissors, knives and pottery, but no fishing gear.

A timber of the wooden structures of the upper cultural layers was dated. It had been cut off when a wooden sewer drain was built at the site. The timber and the drain log are of the same age, 310 ± 25 BP (Poz-4294) (Fig. 4). The calibrated age of the drain log falls between 1520 and 1640 AD, most probably 1520–1600. A problem for the dating of the sewer drain is the age of the birch bark covering it: 150 ± 30 BP (Poz-4384), calibrated to 1760 AD at the earliest, possibly ca.



Fig. 4. Two intersecting timber drains covered with birch bark were discovered in the excavation. The wooden material of both was still hard. The calibration of the radiocarbon dates gives the drains several alternative ages, which are discussed in the text. Photo Matti Saarnisto.

1800 AD. The birch bark is approximately of the same age as another wooden sewer drain laid on top of the former drain. Both drains slope towards the sea. The lower drain is a split and gouged log lined with birch bark. It appears to be of cruder technique than the drain crossing it, which was made of wide planks and covered with two layers of planks with birch-bark insulation between them. The lower drain was filled with sludge, but in the upper drain there was clear water on top of the sludge in the late summer of 2003. The timber of the drains is hard, of colour of freshly cut wood and in good condition. The drains have survived undecayed in the anaerobic soil.

The plank and birch bark of the upper drain are of the same age, 185 ± 25 BP (Poz-4295, Poz-4385), calibrated to ca. 1760–1770 AD, i.e. of almost the same age as the birch bark covering the lower drain. There is a previous dating of birch-bark lining from a wooden well apparently belonging to a drainage system to the same age (180 ± 40 BP, SU-3604; Saksa et al. 2003). The dates show quite clearly that sewer works were

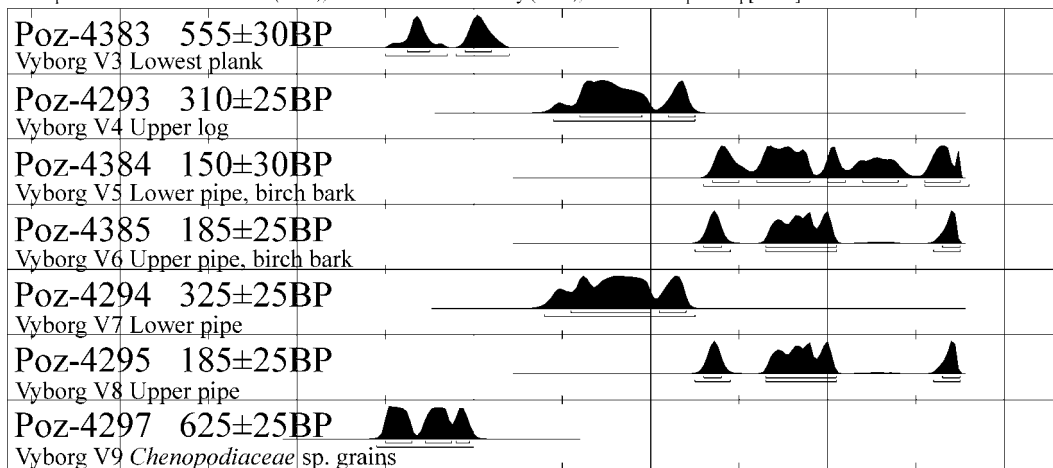
carried out in Viipuri in the 1760s–1770s. On the other hand, it is less certain whether the lower drain log dates the drain building to the second half of the 16th century. This is supported by another contemporaneous date of the log cut off at the lower drain. The lower drain would thus have been lined with birch bark at the same time as the upper drain was constructed. The dating is further complicated by the possible re-use of the lower log.

There are documentary references to drains in Viipuri from the early 17th century (Ruuth 1908). At the time of writing in August 2004, archaeological excavations at the nearby Kiltatupa (Guild house) site have revealed a drain at the bottom of the cultural layer that may date from the 16th century or could be possibly older. In connection with the above-mentioned building from the 1480s at the corner site of former Possenkatu and Vahtitorninkatu streets there is a birch-bark covered plank trough indicating at least a local water-drainage system.

Telling marks of the change of rule in Viipuri

Table 1. Radiocarbon dates from the archaeological excavations of Vyborg in 2003. The corner site of former Uudenportinkatu and Etelävalli.

Atmospheric data from Stuiver et al. (1998); OxCal v3.9 Bronk Ramsey (2003); cub r:4 sd:12 prob usp[chron]



1000CalAD 1200CalAD 1400CalAD 1600CalAD 1800CalAD 2000CalAD
 Calibrated date

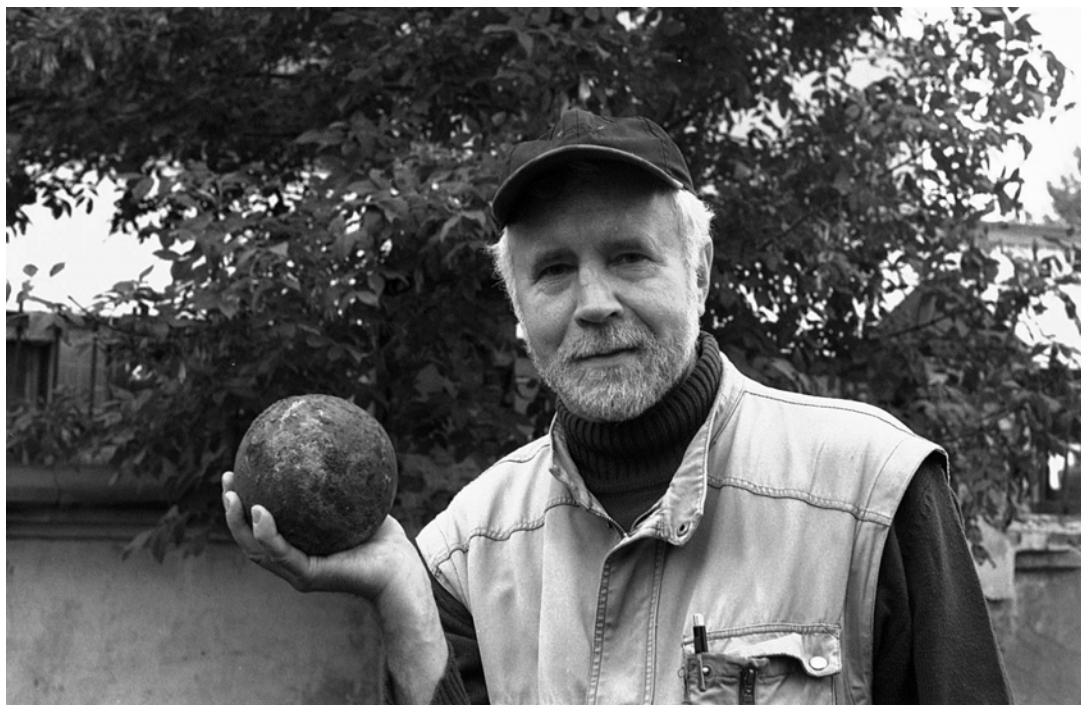


Fig. 5. Alexander Saksa holding a cannonball, one of several discovered in the street pavement at a depth of 2.2 metres. The cannonball dates from the siege of Viipuri in 1710, which ended in the surrender of the town to the forces of Peter the Great. Photo Matti Saarnisto.

in June 1710, when the town surrendered to the forces of Peter the Great, were also revealed in the cultural layer at the Uudenportinkatu-Etelävalli corner site (Fig. 5). At a depth of approximately 2.2 metres there was a street paving on top of which were seven fragments of an exploded cannonball and three intact cannonballs roughly 15 cm in diameter. The cannonballs were fired from Tervasaari Island at a distance of approximately 200 metres. They had broken the pavement in several places. In the pavement and the overlaying cultural layer there were traces of fire, charcoal, charred wood and fire-worn stones. The cultural layer on top of the pavement contained ceramics, leather, pieces of stove and roof tiles, gun and tinder flint, fragments of clay pipes, fish bones, bones and three Russian coins, one from the 1720s and two from the second half of the 18th century. The upper 1.5-metre layer of the excavated area contained waste from the period after the Second World War, which was removed with excavation machinery.

The bottom cultural layer of the Uudenportinkatu-Etelävalli corner site is thus from the 1310s. This date is slightly younger than that of the oldest wooden structure 500 metres away at the corner of Possenkatu and Vahtitorninkatu streets, which is from the 1270s (760 ± 40 BP, Su-3589; Saksa et al. 2003). The latter date is surprisingly old, as it is from the east margin area of medieval Viipuri. The dates for the

lowest cultural layers in different parts of the town will no doubt provide information on the extent of the village or settlement at the mouth of Suomenvesi at the time when work began on the castle of Viipuri in 1293. Numerous finds indicating fishing and animal husbandry from late medieval layers suggest a village-type community where trade and crafts had not yet acquired the role that they had in Viipuri in Modern Times.

Archaeological rescue excavations in Viipuri have revealed an old, hitherto almost unknown wooden town of a large area underlying the masonry-built town. The cultural layers are over two and even more than three metres thick. There is less knowledge of medieval period of Viipuri than any other corresponding town in the Baltic region, which also denotes lacunae in the medieval history of Karelia.

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