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**JOINING THE FORCES: ARCHAEOLOGISTS AND
PALAEOECOLOGISTS IN THE TRACES OF NORTH KARELIAN
SETTLEMENT AND LAND-USE HISTORY**

Abstract

In the province of North Karelia, eastern Finland, an archaeological field survey along with a pollen analytical study of a small lake with annually laminated bottom sediment was carried out in 1992. The field work revealed locations with Karelian and Iron Age type ceramics, which is considered to indicate settlement sites during the Iron/Middle Ages. The pollen analytical results indicate cultivation in the northernmost part of the province already in the 13th century.

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Introduction

The province of North Karelia in easternmost Finland (Fig. 1) has been a neglected area of archaeological research as regards the Bronze and Iron Ages as well as the Middle Ages — there have been no large-scale and systematic field surveys covering the entire province. This has also been the case in the southern neighbour province of southern Savo (Fig. 1), where systematic archaeological research began as late as the end of the 1980's.

The two adjoining provinces differ markedly in the quality and quantity of archaeological finds. The most fundamental difference is that in southern Savo altogether about twenty Iron Age cemeteries and dwelling places have been recorded as well as around thirty finds of ornaments, mainly brooches and pendants (see e.g. Tolonen et al. 1991). In contrast, North Karelia is devoid of Iron Age burial sites and hillforts and, also, only one round brooch dated to the Viking Age is known so far from the province. However, a common feature for both provinces is that there have been found Iron Age axes and spearheads as stray finds.

The present project was initiated by earlier pollen analytical studies indicating Iron Age cultivation both in North Karelia and southern Savo (Fig. 2) (e.g. Grönlund et al. 1990; 1992; Grönlund & Asikainen 1992a; 1992b; Simola et al. 1985; 1988; 1991; Tolonen et al. 1991) together with archaeological evidence of permanent settlement also outside the core area of Mikkeli that have come out during recent archaeological research in southern Savo (e.g. Grönhagen et al. 1991; Jussila et al. 1992; Koponen & Poutiainen 1992; Poutiainen et al. 1992; Poutiainen & Koponen 1992; also, Sepänmaa 1993 pers. comm.).

Archaeological survey

The archaeological field survey in May 1992 concentrated on the areas with previously known Iron Age stray finds and many sites were selected on purely geographical basis (see also Poutiainen et al. 1994 in press). The method used in the survey was field-walking through the newly ploughed fields when the small pieces of ceramics are more likely to surface and be noticed.

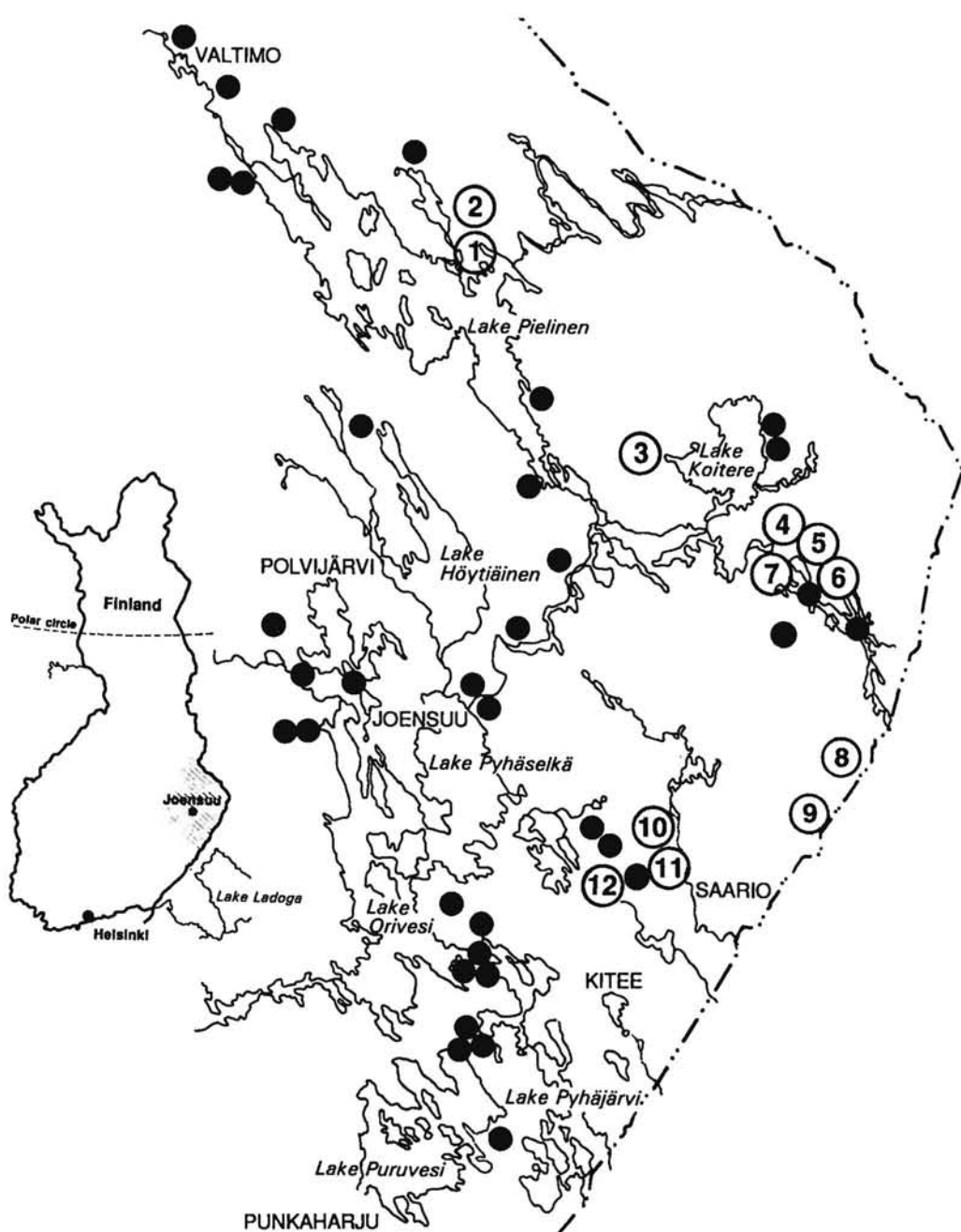


Fig 1. Location of North Karelia and southern Savo provinces in East Finland (hatched, left) and archaeology of North Karelia: new sites of the 1992 field survey (labelled circles) and previously known Bronze/Iron Age finds of which most are stray finds (black circles).

The 1992 field work revealed twelve new archaeological Iron Age/Medieval sites in North Karelia: two sites with Bronze Age/Early Iron Age ceramics and ten sites with fragments of Karelian and/or Iron Age type ceramics (Fig. 2), five of which are probable dwelling-places due to the existence of a clear cultural layer.

Iron Age type ceramics is a common term for several kinds of pottery. Their mode of manufac-

ture is highly variable as regards the raw material mixtures, baking temperatures, shaping techniques etc. Also, some subtypes are considered to be of local production and some are imported. At the present an approximate range of dating for Iron Age type ceramics is AD 400–1400 (Taaivainen 1990). So far we do not know the time when this kind of pottery ceased to be in use, therefore it is not possible to say whether the new

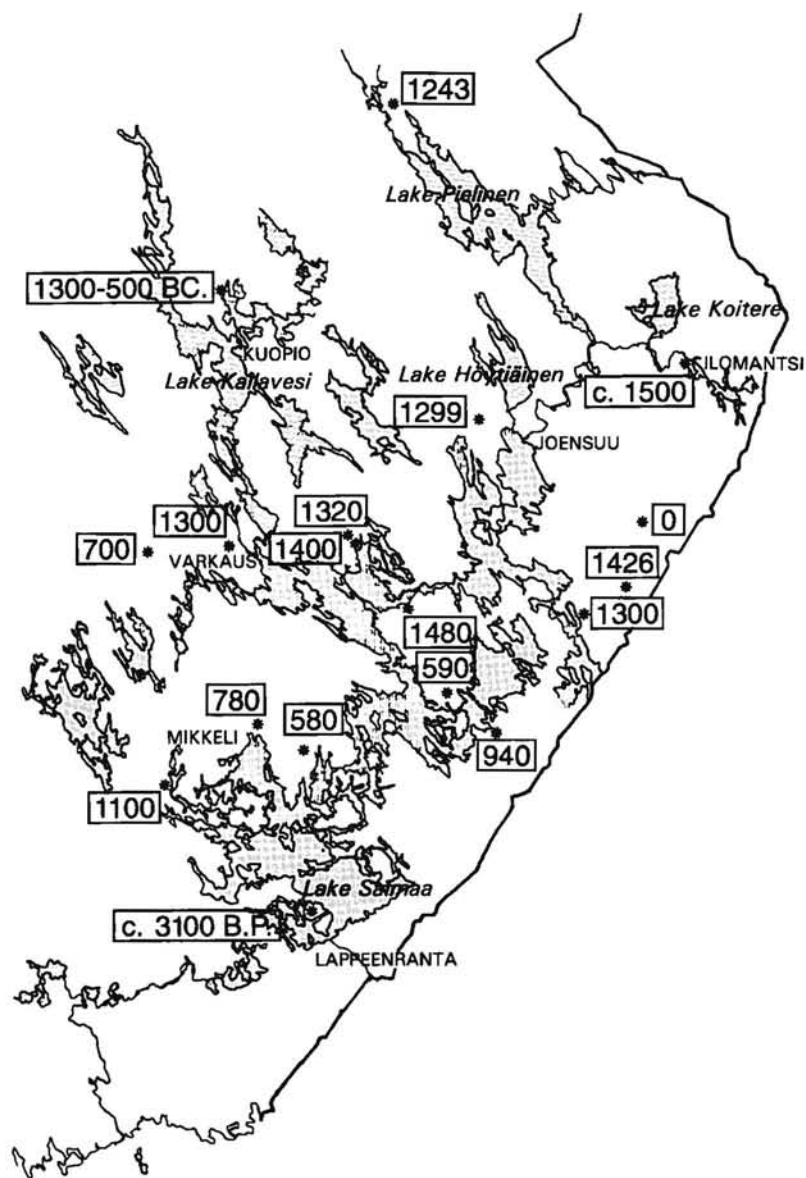


Fig. 2. Pollen analytical evidence of earliest signs of cereal cultivation in eastern Finland. (Sources: Grönlund et al. 1990; 1992; Grönlund & Asikainen 1992a; 1992b, Simola et al. 1988; Tolonen 1980; 1984; Vuorela & Kankainen 1993).

sites date back to the Iron Age or to the Middle Ages — or possibly both. The precise dating is one of the major tasks in the future, because the ceramics is the most important single indicator of Iron Age dwelling sites.

Palaeological research

A pollen-analytical study was carried out in a

small lake, Lake Ristijärvi (Valtimo), in the northern catchment of the Lake Pielinen (Fig. 1). The lake basin is 16 metres deep and surrounded by till covered hilly landscape with clayey water-lain sediments in the lower areas. The bottom sediment of Lake Ristijärvi is annually laminated, which provided dating for the stratigraphical levels (about such sediments see Simola 1991). The sediment samples were taken with a freezing corer

described by Huttunen and Meriläinen (1978) and a 5 metres long piston corer.

The earliest signs of cereal cultivation around Lake Ristijärvi were varve-dated to the late 13th century. However, weak indication of vegetation disturbance is evident already in sediment layers deposited during the Late Bronze Age/Early Iron Age. The Iron Age cultivation history around the lake is summed up in a histogram (Fig. 3), where the pollen influxes of cereal (incl. barley, corn, rye and wheat) and spruce pollen grains are calculated for 50-year intervals from AD 500 to the present.

At the onset of agriculture during AD 1250–1500 the amount of cereal pollen grains in the sediment is small and the spruce pollen grains are at a very high level. The cultivated plots were probably quite small in area with a low production of cereal pollen grains and spruce as a dominant tree species of the forests. The cereal pollen rain increases markedly from the 1600's onwards with a simultaneous and drastic decline in spruce pollen

indicative of a wide-spread utilization of fertile spruce forests for slash-and-burning cultivation as has been shown also in several pollen analytical studies elsewhere in eastern Finland (e.g. Grönlund et al. 1990; Simola et al. 1988). Slash-and-burning or swidden was a rotational cultivation technique, which is known to have led to depletion of forests and a general shortage of timber in the first decades of the 1800's (e.g. Heikinheimo 1915).

Focusing at the early land-use of Saario village

The village of Saario in North Karelia (No. 11 in Fig. 1, map in Fig. 4) provides a meeting-point between archaeology and palaeoecology: few pieces of Karelian ceramics dating back to the Iron/Mid-

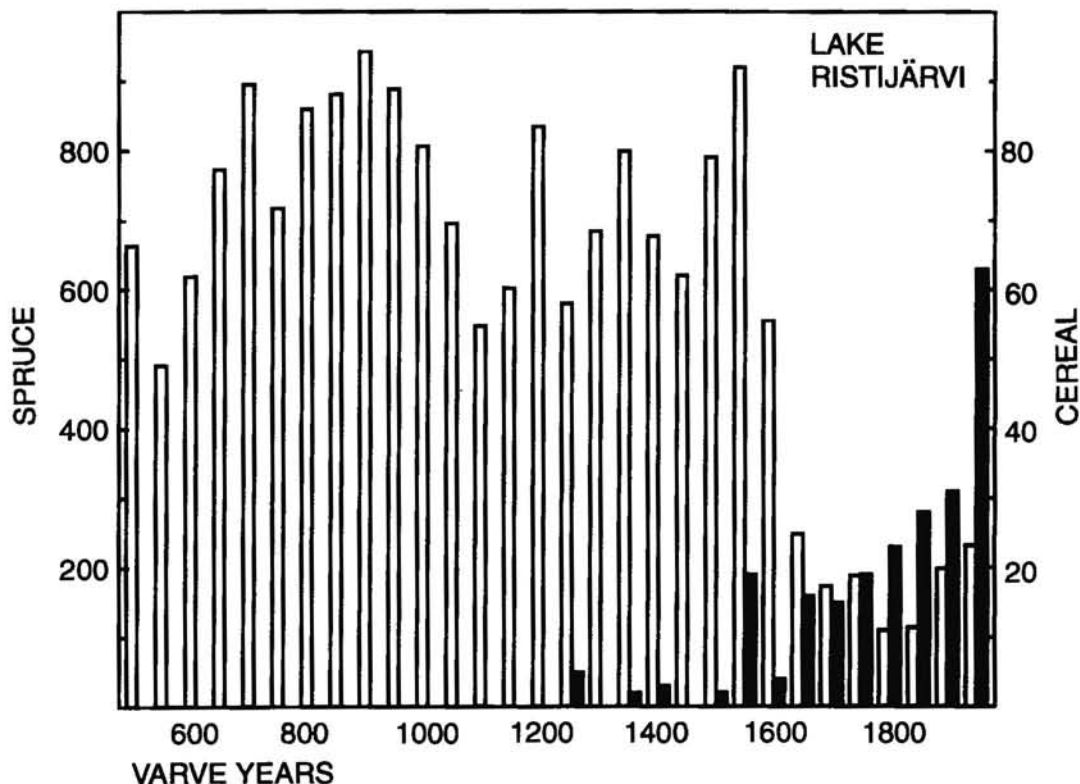


Fig. 3. Histogram of cereal and spruce pollen influx (exx cm⁻² yr⁻¹) in 50 yr. intervals in Lake Ristijärvi (Valtimo, North Karelia). Note the different scales for the pollen types: spruce scale on the left, cereal scale on the right.

dle Ages was found from the silty fields surrounding Lake Pitkälampi, which has been intensively studied by palaeoecological methods (Grönlund & Asikainen 1992a; 1992b).

Stratigraphic pollen analysis was carried out from the annually laminated sediment of Lake Pitkälampi in 1990 (Fig. 5). The first cereal-type pollen grains were found from sediment levels dating to about 0 AD/BC i.e. to the Early Iron Age. Above this level, small-scale or discontinuous cultivation up to the late 12th century is evidenced by a few cereal pollen grains and by pollen of e.g. the nettles (*Urtica*), composites (Asteraceae/Chicoriaceae) and goosefoots (Chenopodiaceae). During the period of AD 1300–1400 a profound increase of the agricultural intensity took place in the village, which is reflected in

the pollen diagram as an increase in cereal-type, rye (*Secale*), birch (*Betula*) and weed pollen taxa and a permanent decline in spruce (*Picea*) pollen.

Discussion

The Iron Age stray finds of North Karelia — as well as those of Savo and Northern Finland — have earlier been explained as remnants of trappers and occasional traders (e.g. Huurre 1985, 52; Kivikoski 1961, 277–278; Lehtosalo-Hilander 1987, 329, 385, 400; Lehtosalo-Hilander 1988, 161–162; Simola et al. 1991, 252–253; Vikkula 1990, 58, 60).

However, on the basis of our present research in North Karelia it is evident that the abundance

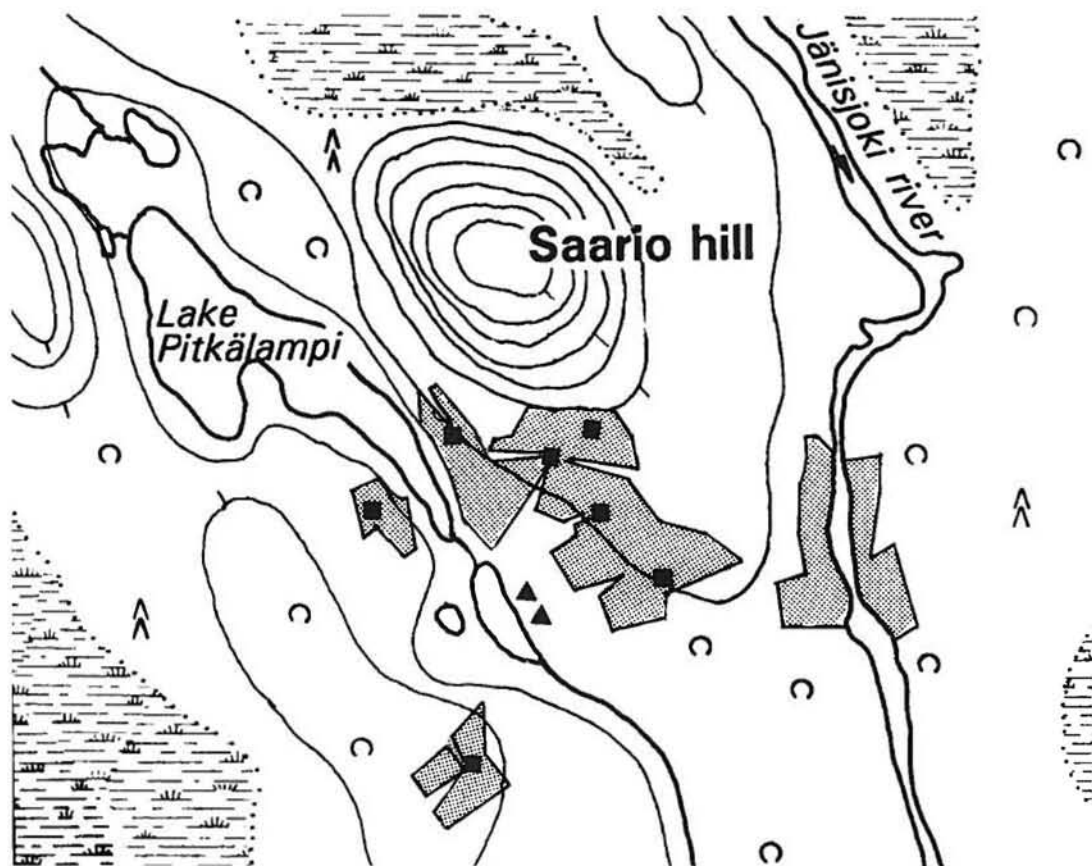


Fig. 4. Map of Saario village. The black triangles denote areas with Iron Age type pottery. The two adjoining lakes are our palaeoecological sampling sites with annually laminated sediments.

Lake Pitkälampi % pollen diagram

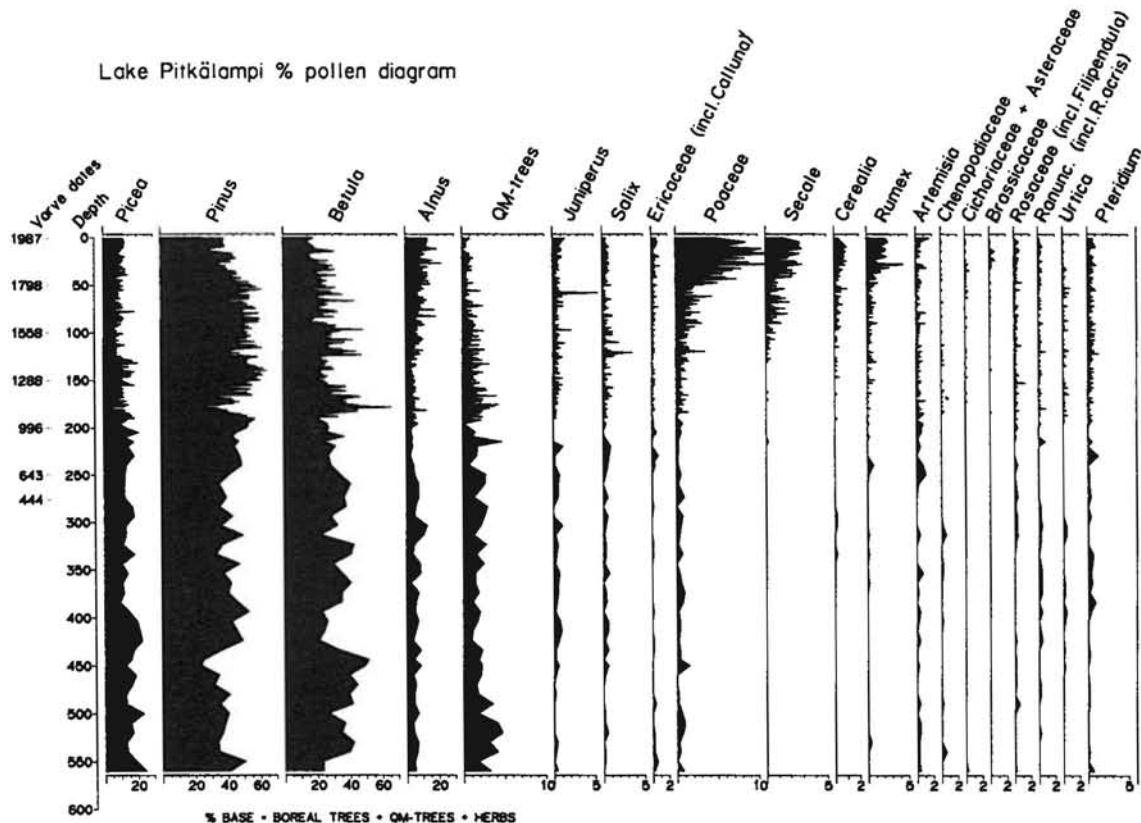


Fig. 5. Stratigraphic percentage pollen diagram of Lake Pitkälampi sediment; selected taxa. QM = tree species mixed oak forests.

of new sites with Iron Age type/Karelian ceramics together with the palaeoecological results and the earlier records of stray finds point to Iron Age settlement. The economy was based on hunting/fishing as well as crop cultivation in the relative periphery of North Karelia i.e. outside the core areas of Mikkeli (e.g. review in Lehtosalo-Hilander 1988) and the densely populated areas around the Lake Ladoga (Saksa 1985, for further discussion about Iron Age economics in the interior of Finland: Taavitsainen et al. 1993, forthcoming).

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