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AN ARCHAEOLOGICAL FIELD SURVEY OF STONE AGE AND EARLY METAL PERIOD SETTLEMENT AT KAUKOLA (SEVASTYANOVO) AND RÄISÄLÄ (MELNIKOVO) ON THE KARELIAN ISTHMUS IN 1999

Abstract

In the spring of 1999 the Department of Archaeology of the University of Helsinki, and the Institute of History and Material Culture/RAN at St. Petersburg carried out a two-week survey in the municipalities of Kaukola (Sevastjanovo) and Räisälä (Melnikovo) with the purpose of uncovering previously unknown, mostly Stone Age and Early metal Period sites. During the survey 36 Stone Age and 2 Early Metal period sites were found. Materials from the historical period were found at three sites, and at five dwelling sites one to four dwelling depressions were documented. Dwelling depressions are not earlier known on the Karelian Isthmus. The survey clearly shows that on the Karelian Isthmus there can be found a large number of new sites also in areas that are better known than other areas on the Isthmus. The role of survey methods is also discussed.

Keywords: Karelian Isthmus, field surveys, history of research, methodology, Stone Age, Early Metal Period.

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INTRODUCTION

The Karelian Isthmus is situated between large historical-geographical regions - Karelia, Fennoscandia and the Baltic region. This is one reason why it has also been a contact area between populations living in these regions since the Early Mesolithic. Since World War II the Karelian Isth-

mus has been an enigmatic area for Finnish archaeologists. Until 1930 about half of all known Stone Age dwelling sites were there (Uino 2000). It was not by chance that the Karelian Isthmus became known as the location of the oldest net find in the world (Pälsi 1920) already in the beginning of 1900s. Many important site areas and cemeteries were found on the Karelian Isthmus on

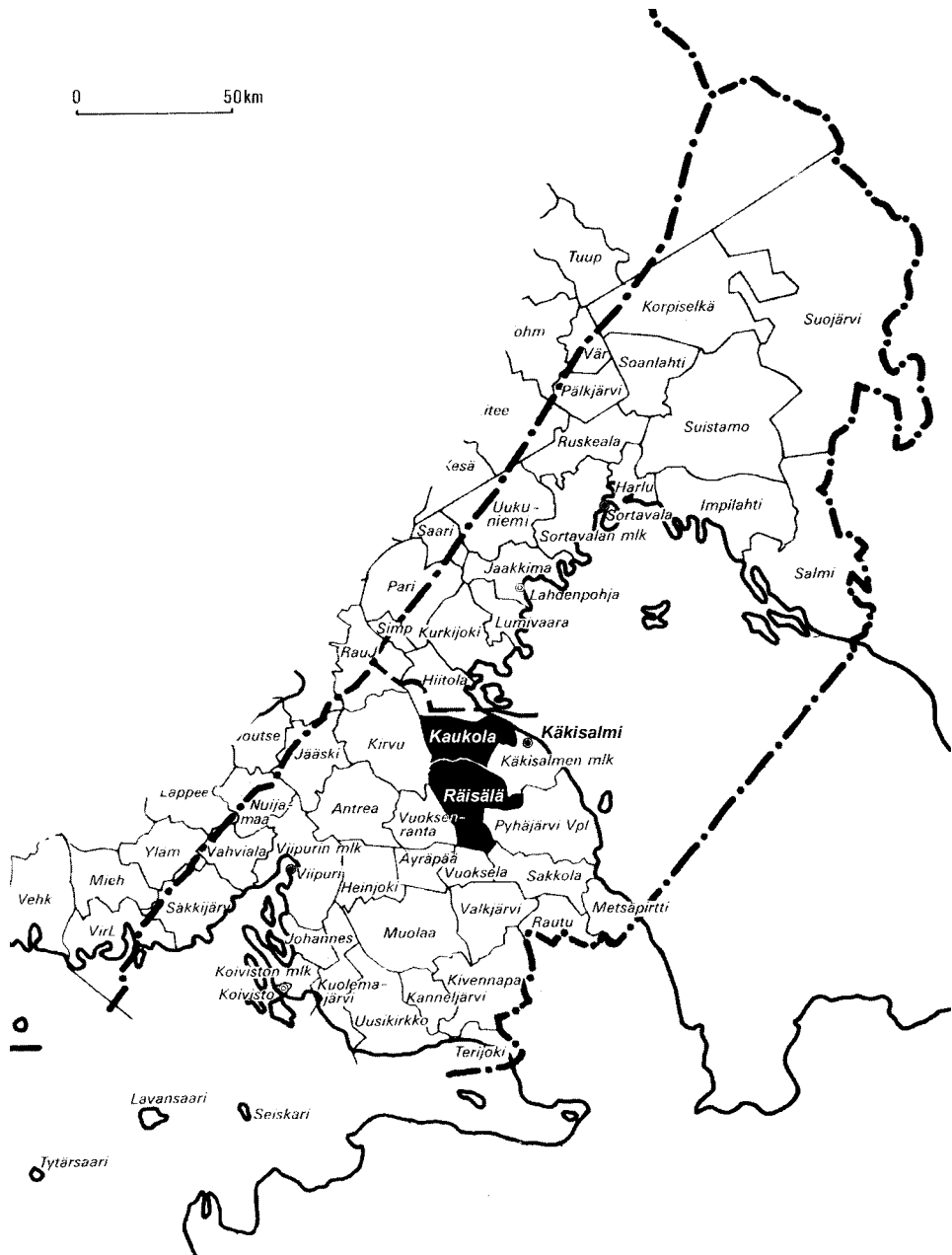


Fig. 1. A large-scale map of the Karelian Isthmus. Source: Map of Karelian municipalities published by the Karjalan Liitto heritage association.

both sides of the turn of 1900s. Archaeological findings and dwelling sites there were of primary importance when building the general view of Finnish prehistory. This also explains why several excavations and articles dealing with the prehistory of Kaukola (Sevastyanovo) and Räsälä

(Melnikovo) achieved a classical role in Finnish archaeology (Fig. 1).

The geology of the Karelian Isthmus is directly connected with the history of the Baltic Sea and Lake Ladoga. Stone Age dwelling sites have been found on ancient sea shores, but also in inland

conditions on narrow straits and islands. For these reasons the Karelian Isthmus has attracted archaeologists, geologists and geographers for over 100 years.

These are also the main reasons why the Department of Archaeology of the University of Helsinki, has focused interest on the Karelian Isthmus, in Kaukola and Räisälä, in probing possibilities to launch fieldwork together with archaeologists of the Russian Academy of Sciences. A preliminary familiarization with the area was already carried out in October 1998 (Siiriäinen *et al.* 1999). The work showed that although the “classical” Stone Age dwelling sites - around Lake Pitkäjärvi in Räisälä and at Riukjärvi and Piiskunsalmi in Kaukola - were principally well preserved for further, and more detailed surveys, it still seemed tempting to proceed by trying to find previously unknown dwelling sites in the area. Because the survey was the first one conducted by Finnish and Russian archaeologists questions relating to logistics, accommodation, maintenance of the group, its transporting from site to site etc. gained more important role than normally in archaeological fieldwork.

THE STARTING POINTS OF THE SURVEY

In addition to their large number of known dwelling sites Kaukola and Räisälä were a natural choice for the focus of the first major survey of Stone Age and Early Metal Period dwelling sites because cartographic material studied beforehand suggested that both municipalities were archaeologically and geologically favourable for surveying. It was possible to locate shore terraces at different elevations from various periods of the Stone Age. Further, particularly in Räisälä, long eskers and large glaciofluvial deltas related to them were promising locations for finding the ancient shore terraces of Lake Ladoga.

The survey was jointly conducted in the field between the 2nd and the 14th of May 1999 by a Finnish-Russian team of archaeologists. From Finnish side the leaders of the project were Petri Halinen, lic. phil. and Mika Lavento, lic. phil. from the University of Helsinki. From Russian side the leaders were Dr Vladimir Timofeev, Dr Alexander Saksa, and MA Dmitri Gerasimov.

Along with its scientific purposes the survey also had another main aim. It was organized as a

field course for students of archaeology at the University of Helsinki. Altogether 12 advanced level students were responsible for the practical preparation of the field work by studying different kinds of material in the archives. The students were engaged in a course of advanced field studies, the purpose of which was to obtain the means and necessary skills to conduct archaeological survey from beginning to end in a restricted area. The actual survey areas within the municipalities were chosen on the basis of suggestions from the students. They also carried out a considerable part of the subsequent work for the survey report (Halinen *et al.* 1999). Petri Halinen was responsible for the lectures of the course and he also initiated students into the methods of archaeological survey and preparation of the field work.¹

Four basic questions were posed for the survey:

1) The first group of interests was related to locating Stone Age sites involving possible dwelling depressions. A large number of Neolithic dwelling depressions have recently been located all over Finland, but also in the Ancient Lake Saimaa area (Kotivuori 1993; Pesonen 1999). It is therefore natural to assume that large dwelling-site complexes could also be found on the Karelian Isthmus. It was particularly worth noting that although rich Stone Age sites were found and excavated in these municipalities already in the early 1900s (Ailio 1909; Pälsi 1915), no dwelling depressions were known from the Karelian Isthmus before 1999.

2) It is evident that Julius Ailio, Sakari Pälsi, A. M. Tallgren, K. Soikkeli and several other pioneer Finnish archaeologists had clear hypotheses of where to find Stone Age and Early Metal Period dwelling sites on the Karelian Isthmus. It was then interesting to compare how much these hypotheses bear weight today, or might it be possible to see some kind of “change in paradigm” in seeking prehistoric sites. To this problem was also related an interest in observations about the location of dwelling sites and their environment. Although Russian archaeologists have carried out some restricted surveys in Kaukola they have concentrated mostly on the vicinity of previously known dwelling-site complexes (Dolukhanov & Timofeev 1998). One serious difficulty for the

surveys conducted by Russian archaeologists has been the lack of proper topographic maps with elevation contour lines (scale 1:20 000).

3) One more interesting question was to use the course of shore displacement as constructed by Ailio (1915) and Saarnisto & Siiriäinen (1970) as a starting point of the survey. Although it was not possible to carry out levellings of the elevations of newly discovered sites, it was still possible to estimate at least roughly what was the relation of new sites of different periods of Stone Age and Early Metal Period to the shorelines.

SUMMARY OF THE HISTORY OF MOST IMPORTANT ARCHAEOLOGICAL STONE AGE AND EARLY METAL PERIOD STUDIES ON THE KARELIAN ISTHMUS

The earliest archaeological research on the Karelian Isthmus was conducted in the 1870s by Theodor Schvindt. Although Schvindt's interests focused particularly on Iron Age settlement he made a large number of observations concerning Stone Age habitation in the area.

Stone Age studies considerably gained place at the turn of the 19th and 20th centuries through the work of the Finnish archaeologists Julius Ailio (1909; 1915; 1922), A. M. Tallgren (1914) and especially Sakari Pälsi (1915; 1918). In 1914 Pälsi investigated an unique and later internationally renowned early Mesolithic site at Antrea near the village of Korpilahti (contemporary Ozerskoye) (Pälsi 1920). Although the majority of archaeological studies before the World War II focused on the Iron Age, a considerable amount of Stone Age and Early Metal Period research was still conducted by Finnish archaeologists.

Theodor Schvindt was also a pioneer of Stone Age archaeology on the Karelian Isthmus. Between 1876-1884 he wrote a report about the results of his Stone Age studies – the report includes the material not published in his doctoral dissertation (1893). Despite this, he excavated only on two occasions at a Stone Age dwelling site. In 1982 he carried out excavations at Teperinaho and in 1905 at Papinkangas, in the municipality of Räisälä. Also the first excavations at Kalmistomäki, Räisälä (1885, 1887 and 1892) were conducted by Schvindt.

Julius Ailio, Kaarle Soikkeli, and Sakari Pälsi were responsible for the first large-scale excava-

tions in Finnish Stone Age archaeology. Ailio researched several dwelling sites at Riukjärvi and Piiskunsalmi between 1909 and 1912, and devoted his efforts to the geology and shore displacement of Lake Ladoga (Ailio 1915). Pälsi continued field excavations at the sites in Kaukola in 1911 and 1912. Because the number of both excavation and stray finds had become very large Pälsi decided to write his doctoral dissertation on this material (Pälsi 1915). Ailio's and Pälsi's excavations were also methodologically developed; for example, the excavation areas were divided into 2 x 2 m grids. The large salvage excavations at Häyrynmäki in Viipuri were conducted by Ailio and Soikkeli in 1909 and 1910. The continuation of field work at Kalmistonmäki, Räisälä in 1914 by A. M. Tallgren uncovered a great deal of important information relating to the Early Metal Period in Finland. Although a large number of Stone Age material was found also as stray finds all over the Karelian Isthmus it was still the material from the excavations in Kaukola, Räisälä, and Viipuri which essentially influenced the overall view of the Stone Age in Finland in the beginning of 1900s.

During 1920s and 1930s no major Stone Age excavations were carried out on the Isthmus. Archaeological research activity concentrated on Iron Age problems, and only minor Stone and Early Metal Period excavations were conducted. The last Finnish Stone Age excavation was carried out by Sakari Pälsi in August 1944 at Sintola in Vuoksenranta.

On the Russian side of the border, in the southern part of the Karelian Isthmus, Stone Age dwelling sites were mainly studied before World War II by geologists and students. Archaeological material was investigated and described at that time mainly according to Ailio's (1915) chronological scheme. In 1907-1908 the site of Sosnovaya Gora was discovered by S. A. Gamtchenko (1913) on the basis of the barrows near Lake Sestroretskiy Razliv. The barrows dated from the Medieval Period. Gamtchenko still collected a relatively large Late Neolithic material in his excavation in the area. This collection is now stored in the State Hermitage Museum in St. Petersburg. In 1916 an interesting dwelling site (Razliv) located by the Sestroretskiy Razliv was incidentally discovered by Baron A.P. Shtakelberg. Soon after this, in 1921, B. F. Zemlyakov conducted first archaeological excavations at the

site. This material launched a lively archaeological discussion and it was soon recognized as a "classic" Mesolithic site in the region (Zemlyakov 1922a; Gurina 1961). Now it appears to be a treasure of the Middle Neolithic, belonging to the Baltic Comb Ware culture (Gerasimov 2000). The collection from Razliv is stored in the Kunstkamera Museum in St. Petersburg.

Many Stone Age dwelling sites were discovered in the southern part of the Karelian Isthmus due to activities of the Lakhta excursion station (a centre of local folklore studies). A very important role in these investigations was played by B. F. Zemlyakov, a Russian geologist and archaeologist, who is well-known by his work in Karelia and the Kola Peninsula. His investigations of quaternary sedimentation associated with archaeological sites on the Karelian Isthmus have been important for constructing a detailed chronological scheme of Stone Age settlement in this region (Zemlyakov 1922a; 1922b; 1928a; 1928b; 1941).

In 1916 the Middle Neolithic site of Tarkhovka was discovered on the eastern shore of Lake Sestroretskiy Razliv by M. Ya. Rudinskiy and G. P. Sosnovskiy, of the Lakhta station. After this it was investigated by B. F. Zemlyakov, who made a section of the site sediments there (Sosnovskiy & Zemlyakov 1917; Zemlyakov 1922a; 1928b). The excavation unearthed a fire place and some material which is stored at the Kunstkamera museum, St. Petersburg.

In 1922 P. V. Vittenburg of the Lakhta station discovered a Late Neolithic - Early Metal Age dwelling site at Lakhta and 1923 B. F. Zemlyakov (1928a) conducted a small excavation there. The dating of this site was associated with the problems of late transgressions in the Baltic sea, which made it a subject of active discussion among geologists (Zemlyakov 1928a; Markov 1931). In 1999 P. A. Sorokin and D. Gerasimov carried out a survey at the site trying to define its precise location and to collect datable material. This survey showed that in 1933 the level of Lake Sestroretskiy Razliv was artificially lowered, and seven dwelling sites dating to the Late Neolithic (Sestroretskaya 1-7) were discovered on the western coast of the lake by G. P. Sosnovskiy and B. F. Zemlyakov (Sosnovskiy 1935). In 1998 a restricted survey was carried out there by P. A. Sorokin and V. I. Timofeev. It reinforced the hypothesis according to which all the dwelling sites have remained under the contemporary water

level of the lake. Material collected from these sites is catalogued in the Kunstkamera Museum in St. Petersburg.

Archaeological work on both Finnish and Russian sides of the Karelian Isthmus created a good basis for conducting overviews of the Stone Age archaeology in the region. The material from the Karelian Isthmus played an important role when Aarne Äyräpää (Europaeus) published one of his most important works dedicated to the chronology of Stone Age ceramics in Finland (Europaeus 1930). Many of his results were based on Sakari Pälsi's excavations in Kaukola, but also on his own excavations at Selänkangas close to the city of Viipuri. Äyräpää's work has retained its importance to the present day.

After World War II N. N. Gurina carried out some archaeological investigations at Lake Sestroretskiy Razliv (Sestroretskaya sites, Tarkhovka). In 1961 Gurina published her fundamental monograph about the Stone Age and Early Metal Period in the NW Russia, where also all data available concerning the Stone Age on the Karelian Isthmus was presented as a large-scale generalization (Gurina 1961).

A. N. Rumyanchev conducted a number of small excavations at Neolithic sites in Kaukola during the early 1960s. He also surveyed in Räisälä and the area of Viipuri. A report exists from this field work (1969). In 1961-1962 the Neolithic dwelling site of Vyun was excavated on the Central-Eastern part of the Karelian Isthmus, near the village of Pyatirechye, not far from the coast of Lake Ladoga. The excavations were conducted by Professor S. Rudenko, the Head of the Archaeological Technology Laboratory at the Leningrad branch of the Institute of Archaeology (LOIA), now the Institute for the History of Material Culture of the Russian Academy of Science (IIMK). An area of 117 square metres was excavated. S. Rudenko wanted to test different scientific methods in the research of the site (geophysics, phosphorous analysis, C-14 analysis, petrography etc.). Several radiocarbon dates were made from the charcoal samples taken from the cultural layer (but the dates proved to be too young) and from samples taken from the geological sediments in the area situated close to the site. A large collection of Comb Ware and stone artefacts was obtained as a result of these excavations (Rudenko 1970).

Yu. N. Urban (1976) compiled a large list of sites and finds based on various types of information, collected partly by him. No report about his activities on the Karelian Isthmus has remained in the archives, and the list of the sites collected was never published. The sites Urban researched are to be found in Lapshin's book (1990; 1995).

V. M. Sokolov was an amateur archaeologist who did not carry out excavations in the western part of Karelian Isthmus, but instead collected finds at different places of the northern and southern part of the Isthmus with the help of school-children. Rather large collections of finds are stored in his school museum. The amateur V. M. Sokolov was the first who rediscovered in the 1960s the majority of sites excavated in the early 1900s by Julius Ailio and Sakari Pälsi in the Riukjärvi and Piiskunsalmi area.

In 1977 a Neolithic dwelling site at Lake Hepojärvi, close to Toksovo, was excavated by I. V. Vereschagina (IIMK). The main part of the site (about 100 sq.m.) was investigated and the remains of hearths were found. Ceramics of Sperrings type were found, but still the Typical Comb Ware prevailed the find material. The radiocarbon dates were obtained from the charcoal collected in the fireplaces with the following results: 6480 ± 60 BP, 6380 ± 60 BP, 4100 ± 60 BP, 4020 ± 60 BP (Timofeev & Zaitseva 1991). The find material of the site is so far unpublished and it is stored at IIMK.

In 1984 field work at Stone Age and Early Metal Period sites on the central and southern parts of the Karelian Isthmus was carried out by V. I. Timofeev. Some new sites were found and a number of sites discovered by amateurs (first of all by V. M. Sokolov) were investigated further.

New archaeological data were collected at some 30 dwelling sites, dating mainly from the period of the Neolithic Comb Ware culture. Small excavations were also conducted at the Early Metal Period dwelling site of Kanneljärvi 2, discovered on the low shore terrace of Lake Kanneljärvi in the central part of the Isthmus (Timofeev 1985; 1986; 1993).

Two ^{14}C dates of about 3500-3600 BP were obtained from charcoal samples collected from the cultural layer at the Kanneljärvi 2 dwelling site (Timofeev & Zaitseva 1991). In 1987 a palaeogeographical investigation was carried out at the Häyrynsuo bog situated close to the large Neo-

lithic dwelling sites of Häyrynmäki and Selänkangas investigated by Soikkeli, and Ailio. A radiocarbon date of 4600 ± 150 was obtained through pollen stratigraphy from the layers associated with sites (Kleymenova *et al.* 1988). Also a pollen spectrum of plants was investigated. Several disturbances caused by human activity were observed dating from as early as the Neolithic period.

In 1993 a small-scale field investigation was conducted by V. I. Timofeev at the sites close to the site of Riukjärvi 6. On the opposite of the preliminary hypotheses the site was not dated to Neolithic, but to the first half of the Mesolithic period (Timofeev 1994; 2000). In 1997 these sites were revisited together with P. M. Dolukhanov (University of Newcastle-upon-Tyne, Great Britain), who also made some interesting geomorphological observations at the site (Dolukhanov & Timofeev 1998).

Dr. Alexander Saksa (1998) has conducted more Iron Age field research than anyone else on the Karelian Isthmus since the World War II, but investigations have also been made in cooperation with Russian and Finnish archaeologists since the late 1980s (e.g. Saksa 1985; Uino 1990; Taavitsainen *et al.* 1994). Iron Age studies have been carried out particularly in Käkisalmi (Uino & Saksa 1993) and Viipuri (Tjulenev 1987). The Iron Age of the whole area has been researched also in large monographs (Kochkurkina 1982; Taavitsainen 1990; Uino 1997; Saksa 1998). Also many geological investigations related to archaeological problems have been carried out since 1990s. Professor Matti Saarnisto, Dr. Heikki Simola, and Dr. Elisabeth Grönlund on particular have been active in these studies. The problems have concerned the shore displacement of Lake Ladoga, but even more emphasis have been laid on palynological studies and the history of agriculture on the Karelian Isthmus (Grönlund *et al.* 1995; Saarnisto & Grönlund 1996; Saarnisto & Vuorela 1996).

The most recent field work concerning Stone Age or Bronze Age archaeology on the Karelian Isthmus has been conducted jointly by Finnish and Russian archaeologists. The field research has been made by the University of Helsinki (Halinen *et al.* 1999), the Lahti Historical museum (Takala 1998), and some individual archaeologists (see Jussila 2000). These studies have opened up new

possibilities which may change during the short period the view of prehistory in this area.

VIEWS ON THE GEOLOGICAL AND SHORE DISPLACEMENT HISTORY OF THE ENVIRONMENT OF THE KARELIAN ISTHMUS

From its discovery (Pälsi 1920) until the present day, the Antrea net has been a subject of interest for many specialists (Zemlyakov 1928b; Hyypä 1937; Sauramo 1951; Gurina 1961; Dolukhanov 1963; Meinander 1982; Timofeev 1993). The soil profile was taken in connection with the net and pollen analysis dated it to the Pre-Boreal period. In 1970 a float of pine bark was dated by the radiocarbon method (Hel-269, 9230 ± 210 ; Hel-1303, 9310 ± 140) which confirmed the pollen date. Until now Antrea has been known the earliest site on the Karelian Isthmus and it seems to suggest the beginning of the human occupation in the whole region, although the site itself is only a stray find, probably indicating a kind of accident. Early dwelling sites, the chronology of which comes close to Antrea net, have recently been found both on the Finnish side, close to Lappeenranta, but also on the Karelian Isthmus, close to the Antrea area (see Jussila 2000).

Investigations concerning the development and different phases of the Baltic Sea and Lake Ladoga have been especially important for researchers of Stone Age archaeology on the Karelian Isthmus, because the habitation of this region in ancient times was closely connected with environmental conditions. Studies relating to the phases of the Baltic Sea and Lake Ladoga have been conducted by several Finnish and Russian geologists and archaeologists, including J. Ailio (1915), B. F. Zemlyakov (1922a; 1928b), S. A. Jakovlev (1926), W. Ramsay (1926), K. K. Markov (1930), E. Hyypä (1937), P. M. Dolukhanov (1963; 1965; 1969), M. Saarnisto & A. Siiriäinen (1970), G. Lak (1978), and recently M. Saarnisto (Saarnisto *et al.* 1994). Julius Ailio (1898; 1915) was the first to present a general model of the shore displacement history of Lake Ladoga. Ailio's model is still valid in its main parts.

Already in the end of 19th century both geologists and archaeologists discovered that the shore displacement history of Lake Ladoga did not follow the simple regularly retarding model of land

uplift (Berghell 1896; Ailio 1898). Both stratigraphic evidence collected by geologists and the archaeological evidence showed that water levels in the lake rose during the Neolithic. The explanation of the phenomenon was the transgression of Lake Ladoga. The transgression suddenly finished when the River Neva formed. The formation of the River Vuoksi considerably increased the amount of water (Saarnisto 1970:75) in Lake Ladoga. Also the pluvial period and the increase of moisture have been suggested as one explanation for the phenomenon (Znamenskaja & Ananova 1967).

It is of particular interest that the dwelling sites of Riukjärvi and Piiskunsalmi (Kankaanmäki, Nököpelto, Iivosen rantapelto, Teräväisen rantapelto etc.) have revealed large amounts of Typical Comb Ware (hence Ka II), some Early and Late Comb Ware (hence Ka I and Ka III), and Neolithic Asbestos ceramics of the Pöljä and Kierikki type. Also worth noting is the fact that a large collection of Early Metal Period ceramics in the dwelling site complex consists of Textile ceramics, and only some vessels of Luukonsaari and Sirnihta Ware have been found. Considerable amounts of Slavo-Karelian ceramics dating to the historical period have been found at many dwelling sites (Ailio 1909; Pälsi 1915:passim; Meinander 1954:190; Uino 1997:236-240; Lavento 2001:244-254). According to Saarnisto and Siiriäinen (1970:16), the dwelling sites around Riukjärvi and Piiskunsalmi are at an elevation of 14-24 m asl. The dwelling site of Pitkäjärvi in Räisälä revealed a ceramic sequence from Ka II:1 to the Pöljä type, together with an arrowhead of the Pyheensilta type, at an elevation of 21-22 m asl (Pälsi 1918). Finds from Teperinaho in Räisälä included Ka II at 19 m asl (Saarnisto & Siiriäinen 1970:16). Finally, the survey area also contains the well-known multi-period dwelling site of Kalmistomäki Hovi in Räisälä (Meinander 1954) at an elevation of 18.5 m asl. In addition, there are also some other areas on the Karelian Isthmus with elevation observations, which are of importance in discussing the basic models of shore displacement history of the area and the starting points of the survey.

C. F. Meinander dated the beginning of Textile ceramics (or late Textile ceramics known as the Kalmistonmäki group) on the basis of the transgression of Lake Ladoga to the middle of the first

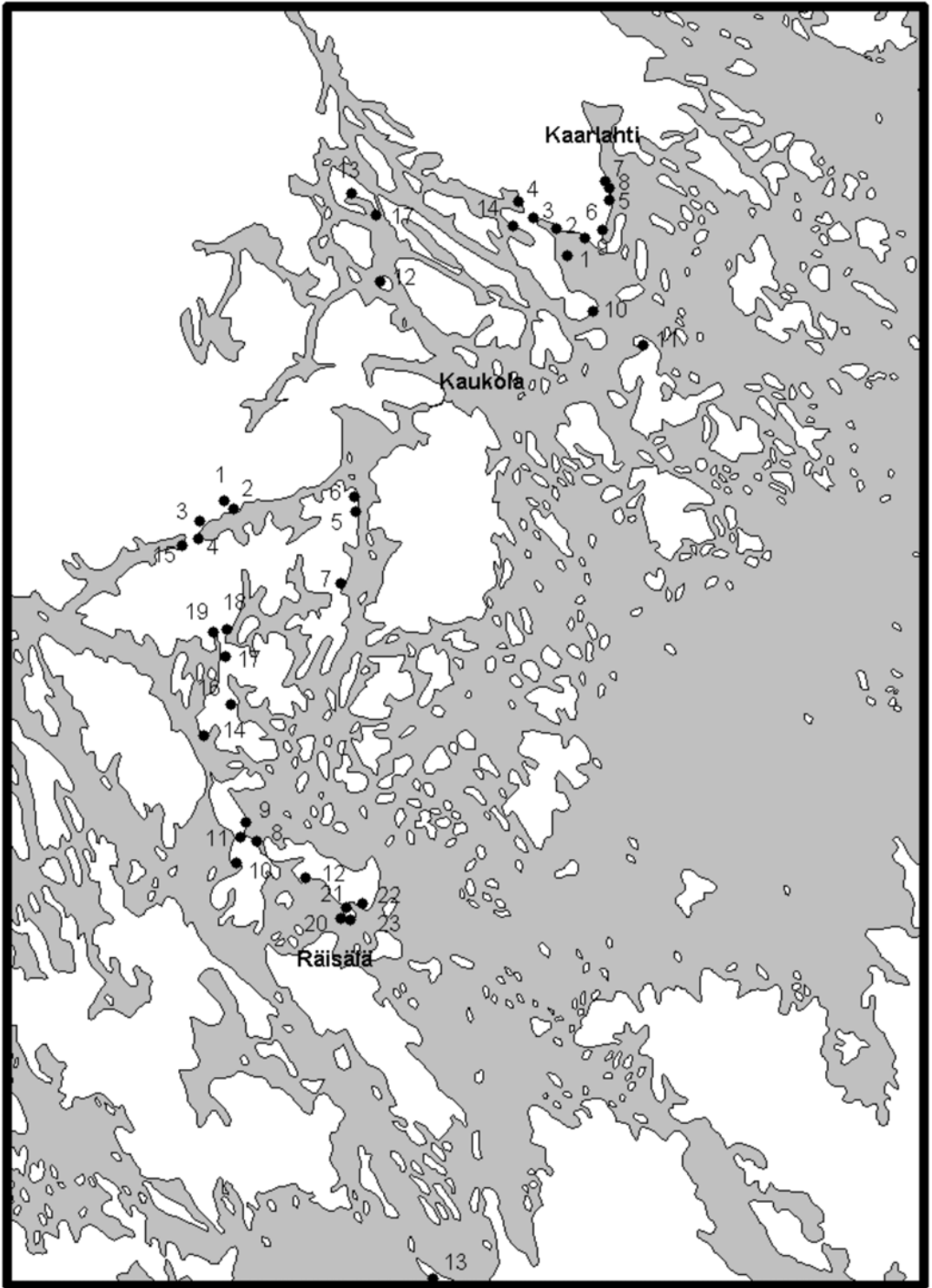


Fig. 2. New dwelling sites in Kaukola and Räisälä with the 20 m contour line. Visible area is 33 x 23 km. The illustration shows an area of 33 x 23 kilometres. Map: Antti Korpisaari and Mika Kunnari.

millennium BC (Meinander 1954:195; Saarnisto & Siiriäinen 1970:18). In the late 1970s G. Lak *et al.* (1978) proposed that the peak of the transgression had already taken place around 1100-1000 BC. In 1994 a carbon-14 date (2970 ± 380) from a site containing asbestos ceramics close to Kuuppala in Kurkijoki, at an elevation of 18 m asl, has given support to the earlier dating (Saarnisto *et al.* 1994:77; Saarnisto & Grönlund 1996:210).

What has been earlier said about the shore displacement history on the Karelian Isthmus illustratively shows how well it is known in general. This is why it also played a central role in planning the survey in Kaukola (Sevastyanovo) and Räisälä (Melnikovo). The shore displacement observations were the basis of the analysis of maps.

METHODS OF THE SURVEY

In general terms, the survey of May 1999 was conducted on the basis of methodology applied in Stone Age and Early Metal Period basic surveys in Finland in 1990s. The main emphasis in the investigation was not on inspecting sites and stray finds that were already known sites but on locating new sites, in new kinds of topographical and ecological environments. The basis of the successful fieldwork lies in detailed knowledge of all relevant archive material (particularly the Topographic Archives of the National Board of Antiquities, Helsinki), and the study of so-called basic survey maps (1:20 000 - 1:50 000). In addition to basic maps also some special maps involving different type of information relating to the environment, soils, geological formations, agriculture etc. can have an important role in the survey. The find material already known from the investigation area makes it possible to postulate the elevation models for sites dating from different prehistoric periods. The application of shore displacement in sub-areas on the Karelian Isthmus is presented in more detail in the following chapter.

All archaeological information concerning Stone Age and Early Metal Period sites available in the archives of the National Board of Antiquities of Finland was marked on printed basic maps of 1:20 000 scale. Used as base maps were digital copies of maps published in Finland before 1939. For the archaeologists conducting the survey the most important information in these maps

for locating sites consists of waterways, bogs, fields, buildings, roads and stands of trees. Although many details – farmhouses and their outbuildings, roads etc. – are only in ruins today the maps have still proved to be very useful in practical field work. The dating of a site is based on contour lines, in the case of Kaukola and Räisälä particularly at elevations of ca 20 and 25 m asl. They were marked on copies of printed maps for illustrating chronological information and features of local topography – straits, capes, bays, estuaries of rivers etc. The most promising sheltered coves, terraces and areas situated in the otherwise favourable topographical locations, along potential waterways and land roads were separated for further checking in the field. Some environmental factors, geographical and geological attributes characterizing the most typical locations of different types of sites (Vikkula 1994) were also checked in the field.

An important part of the pre-fieldwork was to find out the existence and location of different kind of quaternary formations such as estuaries, drumlins and glaciofluvial deltas etc. Usually these formations can be observed on basic maps, but in many cases also geological maps – particularly when soil maps were available – were used for this. Unfortunately, only old soil maps of large scale are available from the survey areas on the Karelian Isthmus. Despite this, the basic features of the most important geological formations could be established by investigating 1:20 000-scale maps. The majority of Stone Age and Early Metal Period dwelling sites in the area of the Baltic Shield are situated on gravel and sand formations. These soils together with suitable elevations indicate shores, terraces and pine heaths where rain water soaks down quickly, and where snow also melts first after the winter.

In addition to soil types and elevation, also an understanding of the local topography played an important role in the survey. Finnish archaeologists have discussed the topographical aspects relating to sites particularly in connection with Mesolithic settlement (Siiriäinen 1981; 1987; Matiskainen 1989). Most Mesolithic sites have been found in different types of sea-shore environments, where coastal archipelagos or even outer archipelagos were used. The outer archipelago was an area of small hunting stations in certain seasons also during the Bronze Age (Seger

1986a; 1986b).

All these questions have also been investigated in large and small lacustrine environments. Dwelling sites on sheltered bays, the shores of small inland lakes and rivers, river estuaries, and the coastal archipelagos of large inland lakes are known from the Ancient Lake Saimaa area (Vikkula 1995), belonging to the same water system as the Stone Age sites of Kaukola and Räisälä (Fig. 2). The methods of natural geography have been applied to a great deal in the field surveys of the 1990s in the Ancient Lake Saimaa Project (Wilhelms 1995; Maaranen 1996a; 1996b) in analysing environments around the sites of different types and age. They have also been useful on the Karelian Isthmus. In addition to these, also various methods of geoarchaeology and soil science have recently been applied in surveys (Lavento 1997). However, soil samples were not taken in the surveys of Kaukola and Räisälä.

Survey methodology has developed at a brisk pace during the 1990s in Finland.² Because surveys have become an increasingly important part of field work also methodology has been developed for different conditions and questions (Lavento 2000). At Kaukola and Räisälä it was possible to check only part of the potential areas, and the survey as a whole can be considered a sample.

EARLIER RESEARCH CONCERNING STONE AGE AND EARLY METAL PERIOD SETTLEMENT IN KAUKOLA AND RÄISÄLÄ

In the archive material concerning Stone Age and Early Metal Period dwelling sites in Kaukola and Räisälä at the National Board of Antiquities can be separated – depending on manner to calculate – coarsely 20 and 30 sites and ca 10 stray finds, which were collected before the World War II.³ After the War all information about the new field studies is in the Russian Academy of Sciences, the Institute of the History of Material Culture, St. Petersburg, in the Museum of Anthropology and Ethnography named after Peter the Great, Kunstkamera, St. Petersburg, or at the University of St. Petersburg.

No large surveys have been conducted neither in Kaukola or Räisälä by Finnish archaeologists, but most sites have been first located on the basis of stray finds picked up by local people. Ju. N.

Urban and V. M. Sokolov carried out field surveys in Riukjärvi and Piiskunsalmi area in 1970s (Uino 1997:39), but these investigations brought not much new information.

The largest Stone Age studies on the Karelian Isthmus were made in the surroundings of Lake Riukjärvi (Pälsi 1915), in the fields situating by a relatively low esker. Together with large excavations in Räisälä Pitkäjärvi and Papinkangas, and Viipuri Häyrynmäki Aarne Äyräpää was able to say that Stone Age studies in Karelia are on a good footing, better than those of other periods of prehistory (Europaeus 1923). After 1920s the state of research went worse for many decades. Not until 1990s the place of almost all Stone Age dwelling sites known by Pälsi were again located in this area of Riukjärvi and Piiskunsalmi (Timofeev 1994). In addition to large number of finds excavated by Julius Ailio and Sakari Pälsi also local farmers collected yearly large number of stray finds during their cultivation activities. It is worth to note that finds from Riukjärvi and Piiskunsalmi comprised that far largest find collection in Finland. Although in both Riukjärvi and Piiskunsalmi the great majority of finds are Stone Age ceramics and fragments of stone implements also later periods are well represented in these sites.

In Räisälä Stone Age dwelling sites were mostly found on the esker running in the N side of Lake Juoksemajärvi. Theodor Schvindt, who was particularly concentrated on the Iron Age of the Karelia, also conducted excavations at Räisälä Teperinaho in 1892 and Papinkangas in 1905. The well-known Stone Age dwelling sites of Pitkäjärvi (Pälsi 1918) brought in light Pälsi's interpretation about the Stone Age hut – an interpretation which has kept its place until our days. In addition to these dwelling site clusters only stray finds have been known in the parish (Appendix 1). Stray finds are stone axes and adzes, perforated stones, etc. which are easy to understand as prehistoric finds by laymen.

Until recently no sites involving dwelling depression were known in these parishes. Still both Julius Ailio and Sakari Pälsi (1915; 1918) documented remains of hut floors both in Kaukola and Räisälä. These hut floors included no remains of depressions or sand walls. There can be several explanations for this. One important observation is that almost all Stone Age and Early Metal pe-

riod dwelling sites known before the World War II on the Karelian Isthmus were found in cultivated field, in the edges of eskers or gravel formations. It is also possible that cultivation which has utilized fields sometimes for even several centuries may have gradually destroyed dwelling depressions. Another possibility – which seems even more likely – is that Ailio, Pälsi and other archaeologists before World War II looked for sites in a different kind of geographical and topographical environment than today. In other words, this implies a gradual change in the paradigm of surveying. Instead of stray finds picked up by local people particularly in connection with cultivation, archaeologists today will put more emphasis on the active surveying of forest areas, augering samples, digging test pits or even making clearings or soundings. The results of these new approaches are very clearly visible in the Kaukola and Räisälä survey of 1999.

A third possibility is that Ailio and Pälsi uncovered and documented “postholes”, which were actually not postholes. Dwelling depressions researched in Finland have revealed only a small number of postholes which means that many hut constructions during the Neolithic have had something else than posts as their supporting structure. This question remains open. Posts are probably not needed in light huts. Instead, it is of considerable importance that today we know of remains of houses, which implies the use of timber constructions (Karjalainen 1996; Vaara 2000).

The Early Metal Period excavations on the Karelian Isthmus have remained few in number, but perhaps the most important of them were conducted at Kalmistomäki Hovi in Räisälä first by Theodor Schvindt in 1885, 1887 and 1892. This location included both a cemetery and a dwelling site. A. M. Tallgren’s excavations in 1914 unearthed a fragment of the casting mould of an Ananino axe and a bracelet (Tallgren 1914). Also unusual textile-impressed ceramics were of particular interest for him. Later excavations in the area conducted during the 1930s by S. Pälsi and C. F. Meinander reveal much new information. The relatively large material of Early Metal Period ceramics at Riukjärvi and Piiskunsalmi was recovered in connection with Stone Age excavations (Pälsi 1915), but was not discussed until 1950s (Äyräpää 1953; Meinander 1954). Later, this material was more profoundly investigated by

Carpelan (1965), Uino (1997), and Lavento (2001).

Iron Age research has been carried to a much greater extent on the Karelian Isthmus. In addition to Schvindt’s (1893) work and research by many Finnish Iron Age archaeologists, a great deal of fieldwork has recently been carried out by Alexander Saksa. Because both Saksa’s (1998) and P. Uino’s (1997) dissertations are profound syntheses of this research they will not be discussed here more.

THE FIELD SURVEY OF 1999

A starting point of contemporary surveys on the Baltic Shield is that all Stone Age dwelling sites were situated close by the ancient shore, which is displaced as a result of land upheaval. Therefore, an important part of the 1999 survey was to recognize ancient shore formations. An ancient shore formation can sometimes be identified as a steep fall of the slope profile, but sometimes it is very difficult to discern. During the Ka II period, the waters of Lake Ladoga remained for a long time at the same elevation with the result that the shore may be well developed. The ancient shoreline is often situated at an elevation of ca. 20 m asl with shore formations 2-3 metres in height.

Careful investigations of archive material concerning Stone Age and Early Metal Period dwelling sites has helped in creating a rough model for research in the field. Together with shore displacement models presented by geologists and archaeologists (Ailio 1915; Hyypä 1937; Saarnisto & Siiriäinen 1970), it seemed evident that the majority of Neolithic dwelling sites (sites involving Comb Ware) could be found at an elevation of 20 m asl. Early Metal Period ceramics were assumed to be found at this elevation, but it seemed also possible that dwelling sites with Textile ceramics and subtypes of Säräisniemi 2 Ware could also be discovered some meters below this level, close to 15 m asl. This could be postulated when taking into account the rapid regression of Lake Ladoga during the Early Metal Period. Mesolithic sites were assumed to have been occupied when the water level was close to an elevation ca. 25 m asl. Because land uplift is relatively slow on the Karelian Isthmus, in the outer area of the Baltic Shield, and because of the abnormal rise of water level in Lake Ladoga the detailed model of shore-



Fig. 3. A dwelling depression at Pontuksenhauta in Kaukola. Dr Alexander Saksa by a tree inside a depression 1. View from S. Photo: Mikael A. Manninen.

displacement history for the area is still under investigation.

On the basis of the previous information, the areas at suitable elevations were field-walked in detail and by taking into consideration also some other characteristics of topography. The potential areas were assumed to be at the ends of capes, at the mouths of bays, on islands and the S and SW slopes of eskers etc. (Vikkula 1994). Particularly areas on eskers, ridges and their edges were inspected. Not only topographic variables were the focus of inspection, but also locations with suitable soil and vegetation were observed. Vegetation was still not assumed to be as useful a tool in locating human settlement in Stone Age environment as in the Iron Age context.

Field surveys of potential dwelling-site areas concentrated on investigating surface topography and possible structures visible at the site. Each survey team at Kaukola and Räisälä had a soil auger, 5 cm in diameter, for making small probes into soil horizons. Often these probes yielded remains of ancient artefacts and burnt bones. The aim was to dig small test pits above the shore horizon, or where possible, in potential dwelling depressions. Only seldom test pits were made by digging soundings or sondages by spade. The reason for this was that the documentation of test pits (1 x 1 m in size) would have taken too much

time. In few cases some quick “cleanings” were made on the edges of terraces. On terraces were observed modern (20th-century) pits or fire ditches, the edges of which were sometimes cleaned.

Surface observations were made particularly in places where the surface had recently been disturbed for some reason. These places were ploughed fields, the worn surfaces of paths, pits, fire ditches, scarps in roads and paths and the stumps of trees. These places were carefully inspected in the hope of finds or other remains of early habitation. In almost all cases the first signs of sites were discovered on the basis of surface observations.

A field map was drawn at every new site found during the survey (Figs. 3 and 4). Although this took considerable time it still proved to be useful, because in this way it was also possible to establish many qualities relating to the map. In many cases it was possible to observe ancient shore terraces and shore formations; the elevations were sometimes characterized in trying to separate possible chronological phases on the basis of the spatial distribution of finds.

Also observations concerning the potential size and topographical factors at the sites were made, together with observations of environment. Vegetation, primarily trees, but also ground cover or

KAUKOLA PONTUKSENHAUTA
P. Halinen, M. Lavento 1999
Generalmap
Scale 1:1000
Drawn by S. Nieminen, M. Salminen

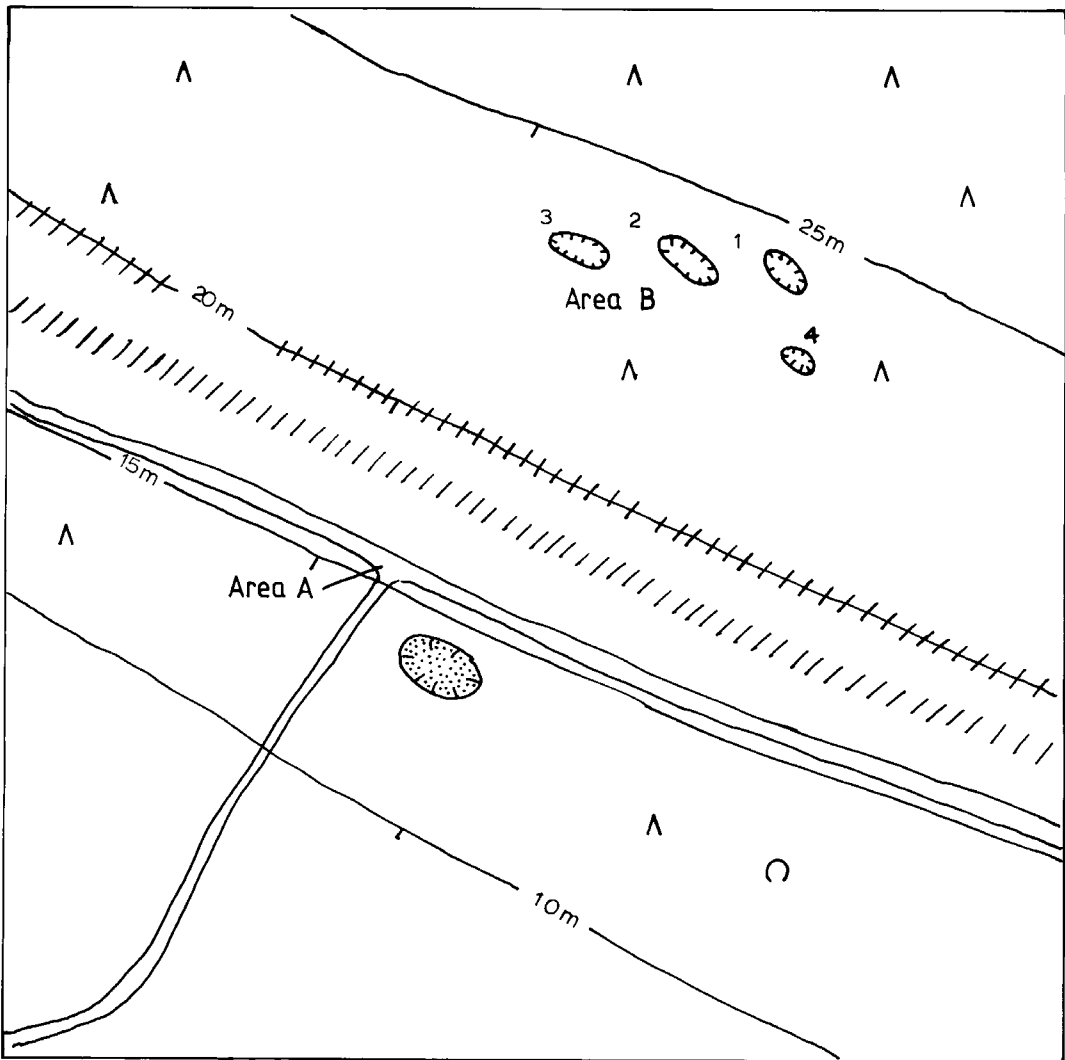
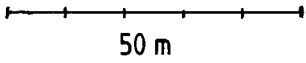
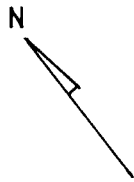


Fig. 4. General map of dwelling depressions at Pontuksenhauta in Kaukola. Drawing: Susanna Nieminen and Mari Salminen.



Fig. 5. A Lapp cairn at Tossinakanjärvi N in Kaukola. View from E. Photo: Mika Lavento.

undervegetation was documented. As opposed to many specialized surveys in Finland no soil samples – e.g. for phosphorous analysis - were taken. Descriptions of shore profiles were only seldom made. No levellings were carried out. The reason was lack of time, but also the difficulty to find fixed points for levelling.

RESULTS AND DISCUSSION

Because the purpose of the survey was to study Stone Age and Early Metal Period settlement, the great majority of new sites found were Stone Age dwelling sites (Fig. 2). Of all 37 new sites (see App. 1) only two can be wholly or partly dated to the Early Metal Period. One of these is a multi-period dwelling site, another a possible Lapp cairn without any find material (Fig. 5). Three Stone Age sites in Kaukola also revealed ceramics of the

Slavo-Karelian type. Some sites also revealed small fragments of iron slag the dating of which is usually impossible.

Two sites which were found during the survey proved later to be previously known,⁴ which meant that altogether 34 Stone Age dwelling sites were found in Kaukola and Räisälä (see App. 1). In addition, five other potential dwelling sites were found, but they were still not classified as dwelling sites because of scant surface observations or finds made on them. A find location was defined as a dwelling site in such cases where remains of cultural layers could be observed, or if more than one find category, remains of fireplaces or dwelling depression were observed.

On the Karelian Isthmus possible hut-floor remains have been mentioned to exist at Pitkäjärvi in Räisälä (Pälsi 1918), but possible also at Riukjärvi in Kaukola (Pälsi 1915). The hut floor of

<u>Elevation asl</u>	<u>Kaukola</u>	<u>Räisälä</u>	<u>Tot</u>
Sites between 25-30 m	2	7	9
Sites between 20-25 m	9	14	23
Sites between 15-20 m	4	2	6
Tot	15	23	38

Table 1. Rough elevations of dwelling sites in Kaukola and Räisälä



*Fig. 6. A dwelling site of Kökkölä in Räisälä. Overview by the road to NE.
Photo: Merja Uotila*

Pitkäjärvi cannot be counted as a dwelling depression, because no depression of a building was observed at the site during the excavation, which means that before 1999 no dwelling depressions were known in this area. The closest parallels have been found in the Lake Saimaa area (Karjalainen 1996). In the Karelian Republic the nearest dwelling depressions are known from Syamozero and on the W side of Lake Onega (Pankrushev 1978 II:45-47; Zhulnikov 1999:32-39, ris. 5). The hut floor of the Pitkäjärvi type – a round bottom with postholes but without any visible depression or walls - has proved to be exceptional and this kind of structure has not been excavated in the area since World War II. A critical inspection of Pälsi's observations would be welcome. This is possible, because knowledge relating to the Neolithic house-floors has essentially increased since Pälsi's days. Thus, some archaeologists might even say that Pälsi's "postholes" were not actually postholes, but something else which was still natural to interpret as such.

The dwelling site of Kökkölä in Räisälä (Fig. 6) represented a type which has often been found in the Lake Saimaa Area. A special characteristic of the site is that the habitation history can be followed there from the beginning of the Neolithic to the Early Metal Period. At several dwelling sites shore terraces can be distinguished, which can be at least roughly dated on the basis of ceramic types

isolated in the material. The dwelling sites date from a long period. At both Kaukola and Räisälä the majority of sites were found at elevations between 20-25 m asl.

No finds were collected at elevations above 30 m asl. Nine sites were found at elevations between 25 and 30 m asl. Apart from quartz flakes nothing was observed that could have connected them with the Mesolithic Stone Age. It should still be remembered that elevations have been estimated only by using basic survey maps which means that the margin of error is 2-3 meters. Therefore, this information should be not regarded as highly accurate.

The majority of the ceramics found during the survey consisted of Typical Combed Ware (Fig. 7a). Early Comb Ware belonged to the material of the large dwelling site of Kökkölä in Räisälä. The ceramics of this site implied also some sherds of the "eastern" Combed Ware or Rhomboid-Combed Ware (Fig. 7b). This kind of Combed Ware involving a great deal of comb imprints in ornamentation was also found at two other sites (Räisälä 14 Hietakangas, Räisälä 17 Portinharju). Late Combed Ware was found at three sites. Neolithic asbestos-tempered ceramics existed at two sites, and it seems probable that one of them (Kaukola 6 Kalliola) can be classified as Early Asbestos Ware (Pesonen 1996).

The dwelling site of Kökkölä has already been

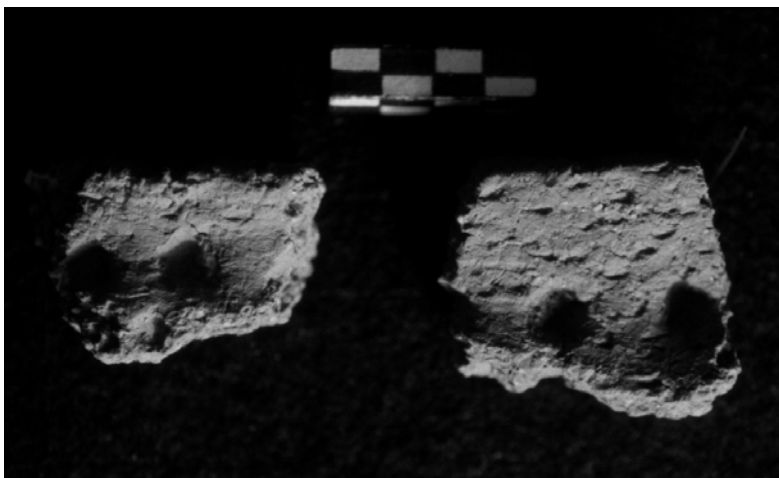
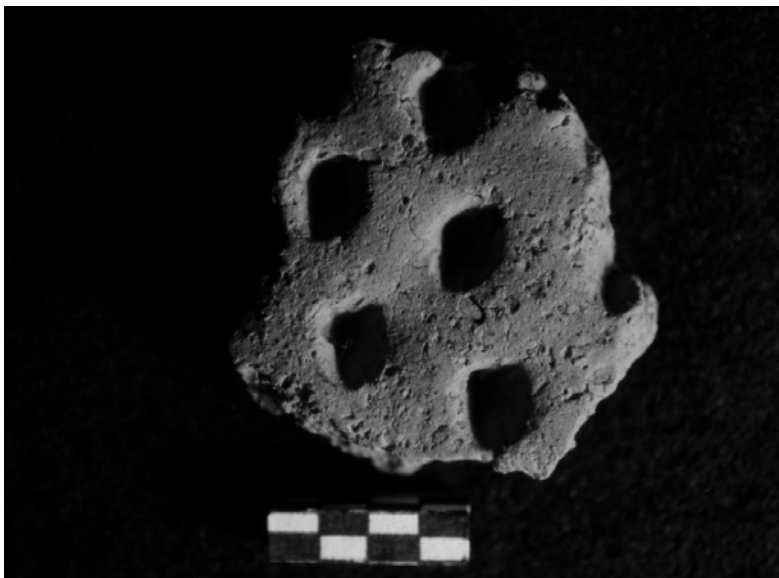


Fig. 7. Typical Combed Ware (a), Rhomboid-Combed Ware (b) and Textile ceramics (c) from Kökkölä in Räisälä. Photo: Mika Lavento.



Fig. 8. An overview to dwelling depressions of Valkialampi in Räisälä from S. Photo: Merja Uotila.

mentioned several times. This is because it represents a long period of habitation from the Early Combed Ware to the Textile ceramic phase (Fig. 7c). At the site there are two shore terraces, the lowermost of which is at the elevation of the road running parallel to it. The dwelling site of Kökkölä is large. The zone where ceramics, flint and quartz flakes were found, is over 400 m long, but still no remains of dwelling depressions were observed. Topographically, the dwelling site area is on the narrow strait on an esker, which widens into a glaciofluvial delta formation towards the north.

The majority of dwelling sites found during the survey revealed ceramics from only one period. The small ceramic fragments keep the type definition unclear. For instance, asbestos-tempered ceramics can be Early Asbestos Ware, but it can be connected together with the Pöljä or Kierikki groups, or even some types of Säräisniemi 2 Ware as well. Therefore, one should not try to “press” too much information from the fragmentary material. Digging test pits and soundings for finding more datable material together with elevation information would be still welcome to shed more light on shore displacement on the Karelian Isthmus.

It was of particular interest that five sites with dwelling depressions were found during the survey. Dwelling sites with depressions are often situ-

ated on eskers or drumlins on sheltered niches, in areas where the soil is soft enough for digging pits and depressions (Fig. 8). In Kaukola and Räisälä sites with dwelling depressions were usually small, with only one to four house bottoms. The size and shape of the actual depressions varied considerably. The depressions at Mäenala (Räisälä 16) and Juoksemajärvi W (Räisälä 4) were small. They were oval in their form, and their length did not exceed 6 m, their depth being ca. 0.3 m (Fig. 9).

A very different dwelling depression was found at Sylijärvi SW 2 (Räisälä 6). It was unexceptionally large, 19 x 4.5 m in size, but its depth was only 0.4 m. At the dwelling site of Pontuksenhauta (Kaukola 11) were found four oval house bottoms (Fig. 3). The largest of them was 10 x 6 m in size, and the smallest one only 5 x 5 m. Depressions at the site comprised a small village-type of settlement. At Valkialampi (Räisälä 12) there was an almost round depression, ca. 10 x 10 m in size (Fig. 8). This site also had two more depressions, which were less than ca. 5 x 5 m in size. The number and size of depressions on the Karelian Isthmus roughly reflects the results obtained also in the Ancient Lake Saimaa area (Pesonen 1999).

Discovered inside the depression at Valkialampi was the fragment of an arrowhead



*Fig. 9. A dwelling site with depressions at Juoksemajärvi W in Räisälä form E.
Photo: Ninni Närväinen.*

which greatly resembles types dating from the Late Neolithic period. Ceramics were found together with depressions only at the sites of Juoksemajärvi W and Pontuksenhauta. At the first-mentioned site there was Typical Combed Ware; the second site had Neolithic Asbestos ceramics of the Pöljä or Kierikki type. When trying to date depressions one should bear in mind that ceramics were often not found inside the depressions but on the terraces outside them, at a lower elevation. This is the case, for instance, at the dwelling site of Pontuksenhauta, where ceramics were found even two metres lower than the elevation of the lowest depression, almost 20 m from the depressions. It may then date from some younger period of habitation, and not necessarily the period of use of the house-floors. No soundings were made at these sites. Inspection by spade inside the dwelling pit did not uncover archaeological finds.

It is also possible that the depressions were dug through an earlier cultural layer, and that these earlier finds have been found during the survey outside the wall, i.e. around the depression. Examples of this have recently been documented in the northern Lake Saimaa area (Karjalainen 1996).

In some cases it seems possible to find almost identical parallels to some depressions in Räisälä

and Kaukola in the Lake Saimaa area. The structures which seem to have parallels in the Saimaa area were built during the Ka II and Ka III periods. The depression at Sylijärvi SW 2 is an exception in this respect. This type of structure has been found in the coastal zone of the Baltic Sea, for instance, at the dwelling site of Jokipelto in Peurasuo, Yli-Ii (Alakärppä *et al.* 1998), which is dated with shore displacement chronology to the Late Stone Age, ca. 4000 BP.

Most dwelling sites on the W and SW area of the Karelian Isthmus are situated on eskers or their edges, in the labyrinthine coastal zone of Ancient Lake Ladoga. Sites have been often found also on narrow straits or small islands. The sites are on the sunny side of slopes, opening to the S, SE or E, but there are also exceptions. In general, dwelling sites were situated in varying environments. When comparing the environmental information relating to sites in Kaukola and Räisälä with Anne Vikkula's (1994) six-part environmental model one can see that almost all topographical areas were utilized. The location of sites also suggests that all seasons are represented. The survey finds comprised fish bones, which, however are difficult to connect with specific seasons of the year (cf. Matiskainen 1989).

The seasonal nature of sites often has better visibility than their year-round use. This hypoth-



Fig. 10. A dwelling site of Rampala in Kaukola. Overview from NE. Photo: Mikael A. Manninen.

esis finds support in the size of sites and their relatively thin cultural layers. Although considerable differences were observed in the numbers of dwelling depressions, no such large Stone Age dwelling sites, as for instance in the Sätös area in Outokumpu (Karjalainen 1996) or Vihi in Rääkkylä (Pesonen 1998), have so far been found on the Karelian Isthmus. The sites were used by the populations applying different types of locations in different parts of their utilization area. This makes it possible to construct models for the location of sites in the middle part of the Karelian Isthmus the SW and W parts of the Lake Ladoga region. The testing of these models by excavation is necessary in future research.

Nor should the large excavations conducted by Ailio and Pälsi in the Riukjärvi and Piiskunsalmi area, and Pitkäjärvi and Teperinaho in Räisälä, be ignored. Although no dwelling depressions were found it is evident that these sites were occupied for several thousand years, and that populations in them have been relatively large. It is also more than probable that some shelters or house structures existed in the area although they are no longer visible.

It is worth noting that the topographic location of dwelling sites differed in an important respect between Kaukola and Räisälä. It seems that most sites in Räisälä were located on eskers, on gravel

and sand soils. Particularly around Lake Pitkäjärvi and Lake Juoksemajärvi conditions favoured Stone Age settlement. In Kaukola most sites found during the survey were located in contemporary fields, on terraces lying just below low eskers or drumlins (Fig. 10). Therefore, the soils at these sites were sandy silts or silts, sometimes with very coarse boulders. A good indication of soils is that dwelling sites in Lake Riukjärvi and Lake Piiskunsalmi are situated on contemporary fields. But there is a low esker running NW-SE also in Riukjärvi, where a ca. 0.5-1 m thick layer of silt and clay covers the sorted gravel and sand belonging to the esker. This may be caused by sedimentation during the transgression of Lake Ladoga. It might also explain why Ailio and Pälsi observed a soil horizon above the cultural layer. More observations and field investigations are still needed for pursuing this hypothesis further.

Moreover, because there are no clear terraces in Riukjärvi and Piiskunsalmi on the lower elevation than ca. 20 asl, it is not difficult to believe that the habitation has stayed roughly at this elevation from the Mesolithic (Timofeev 1993) to the Early Metal Period. Prehistoric ceramic types also occurred sometimes below and above this elevation (see table 1). Using ceramics for dating the transgression maximum of Lake Ladoga is thus not any straightforward method, and particularly the sites

at Riukjärvi and Piiskunsalmi are not the most feasible ones for this purpose. In addition to transgression, there is also the problem of the absence of distinct terraces, and the influence of long-term agriculture that has mixed the original archaeological context several times before the excavation of sites.

CONCLUSIONS

One interesting result of the survey 1999 in Kaukola and Räisälä was that it illustrated how the methodology of field surveys has changed from the days of Pälä and Ailio, and how the new approach can essentially affect the results of archaeological fieldwork. A great majority of dwelling sites known before the 1940s in Kaukola and Räisälä were found in fields. Most of the sites were initially discovered as a by-product of active cultivation. On the basis of this most dwelling sites appear to be situated on shore terraces and fields. Also Iron Age settlement with several large cemeteries essentially influenced the general view of the prehistory of the Karelian Isthmus.

The surveys of the 1990s - in which the purpose has been to detect Stone Age and Early Metal Period sites - have concentrated on finding sites on eskers, deltas, drumlins and various kinds of moraine formations. This means that most dwelling sites have been found in forests instead of open fields. This may also be one reason why several dwelling depressions have previously been found on the Karelian Isthmus. One practical reason may be that Finnish archaeologists have not learned to recognize dwelling depressions on a large scale until the 1980s. Although some special areas, such as Sätös in Outokumpu, or the Törmävaara area in Tervola, were known they still represent a curiosity.

The results of the survey carried out in 1999 in Kaukola and Räisälä were very encouraging. They evidently show that even a relatively small investment in survey work can provide a great deal of new archaeological information. Even today, the Karelian Isthmus has a special position in Finnish prehistory. Finnish archaeologists still know the field work carried out by Julius Ailio, Kaarle Soikkeli, Sakari Pälä, Aarne Äyräpää and many others in this area. These results are still a part of Finnish prehistory. Yet, only very little Stone Age and Early Metal Period research has

been carried out there since these days. The situation has changed after the 1980s, as a result of work carried out by the Russian archaeologists Alexander Saksa, Vladimir Timofeev, and several others. Now at the turn of 21st century, fieldwork has again begun intensively also by Finnish archaeologists. It is hardly too daring to assume that the coming decade will change the picture of the prehistory of the Karelian Isthmus considerably more than the past 50 years after World War II.

ACKNOWLEDGEMENTS

We would like to thank Christian Carpelan, Lic.Phil, about the list of sites and find places in Kaukola and Räisälä found before 1944 (App. 1). We also thank professor Matti Saarnisto and docent Pirjo Uino about their information in finishing the manuscript.

NOTES

- 1 Participants of the survey in Kaukola and Räisälä. The Russian archaeologists: Dr Vladimir Timofeev, Dr Alexander Saksa, Dr Vladimir Nazarenko, Dr Sergej Astahov, and MA Dmitri Gerasimov. Archaeologists from the University of Helsinki: Lic.Phil. Petri Halinen, Lic.Phil. Mika Lavento; students from the University of Helsinki: Mikael A. Manninen, Susanna Nieminen, Mari Salminen, Minna Haapanen, Lauri Skantsi, Niina Turri, Vivi Deckwirth, Ninni Närväinen, Merja Uotila, Karin Hinkkanen, Jaana Pietilä, and Hanna Pyy.
- 2 These methods have recently been published in several articles in "Arkeologinen inventointi. Opas inventoinnin suunnitteluun ja toteuttamiseen" (see Maaranen & Kirkinen (eds.) 2000).
- 3 The number of dwelling sites depends on manner of distinguishing them. For instance, on the Piiskunsalmi and Riukjärvi area in Kaukola, Pirjo Uino (1997) has connected together several sites which Ailio and Pälä (1915) have considered to be separate dwelling sites. The essential problem is related to locating Ailio's and Pälä's old excavation areas (see also Lavento 2001).
- 4 The sites are, Kaukola 15 Piiskunsalmi (17, see Pälä 1915), Räisälä 18 Olla (Pälä 1918, Räisälä Pitkäjärvi). The dwelling site of Hiidenmäki 12 in Kaukola got the same name as the site Hii(d)enmäki Kangaspelto Pessi (KAUK 15), which, despite the same name, is a different place (see Uino 1997:238-239).

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ABBREVIATIONS

FA	Fennoscandia archaeologica
FM	Finskt Museum
SM	Suomen Museo
SMYA	Suomen Muinaismuistoyhdistyksen Aika- kauskirja