

# 9 Archaeology in the former municipality of Johannes

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## Abstract

The article summarizes the survey conducted during four days of field work in May 2002 in the area of the former municipality of Johannes (Ru. Sovetskij) on the western shore of the Karelian Isthmus. A total of 22 sites were surveyed. Seven Stone Age sites were already known in the River Rokkalanjoki (Ru. reka Gorohovka) area. In the study area, 10 new Early Mesolithic and Neolithic dwelling sites as well as two Iron Age or Medieval cup-marked stones were found. Three sites with Stone Age house depressions were discovered. The shores of the lagoon that filled the Rokkalanjoki river valley were the most densely populated areas; in the Middle Neolithic, the population reached its peak. Three categories of functionally different Stone Age dwelling sites could be distinguished: long-term extended activity sites with heavy fixed dwellings at high locations, long-term extended activity sites on low islands and capes, and short-term limited activity sites by the open sea.

## 9.1 Introduction

As a branch of the Saimaa–Ladoga archaeological project, a limited field survey was carried out during 20–24 May 2002 in the territory of

the former municipality of Johannes (municipal centre now Sovetskij), located in the northern part of the western coastal zone of the Karelian Isthmus about 20 km south of the city of Viipuri (now Vyborg)<sup>1</sup>. (Fig. 9.1)

The aim of the survey was to refresh and add to existing archaeological and environmental information of the area bordering the Gulf of Finland on the western coast of the Karelian Isthmus for comparison with the area connected to Lake Ladoga on the eastern coast of the Isthmus. Obviously, the Stone Age settlement pattern and material culture in general were similar in both areas, although some differences in subsistence and demography could be presumed due to certain differences in the environmental history. Among other things, the oscillation of the level of Lake Ladoga differed from the oscillation of the level of the eastern Gulf of Finland both in effect and timing and this may have had an effect on the specific settling dynamic in either area. Limited surveying in the western coastal zone of the Karelian Isthmus was later continued in the former municipalities of Koivisto and Kuolemajärvi (centres now Primorsk and Pionerskoe, respectively), neighbouring communities of Johannes (see Nordqvist & Seitsonen 2008, this volume).

The 2002 field survey was carried out as a joint expedition of the University of Helsinki,

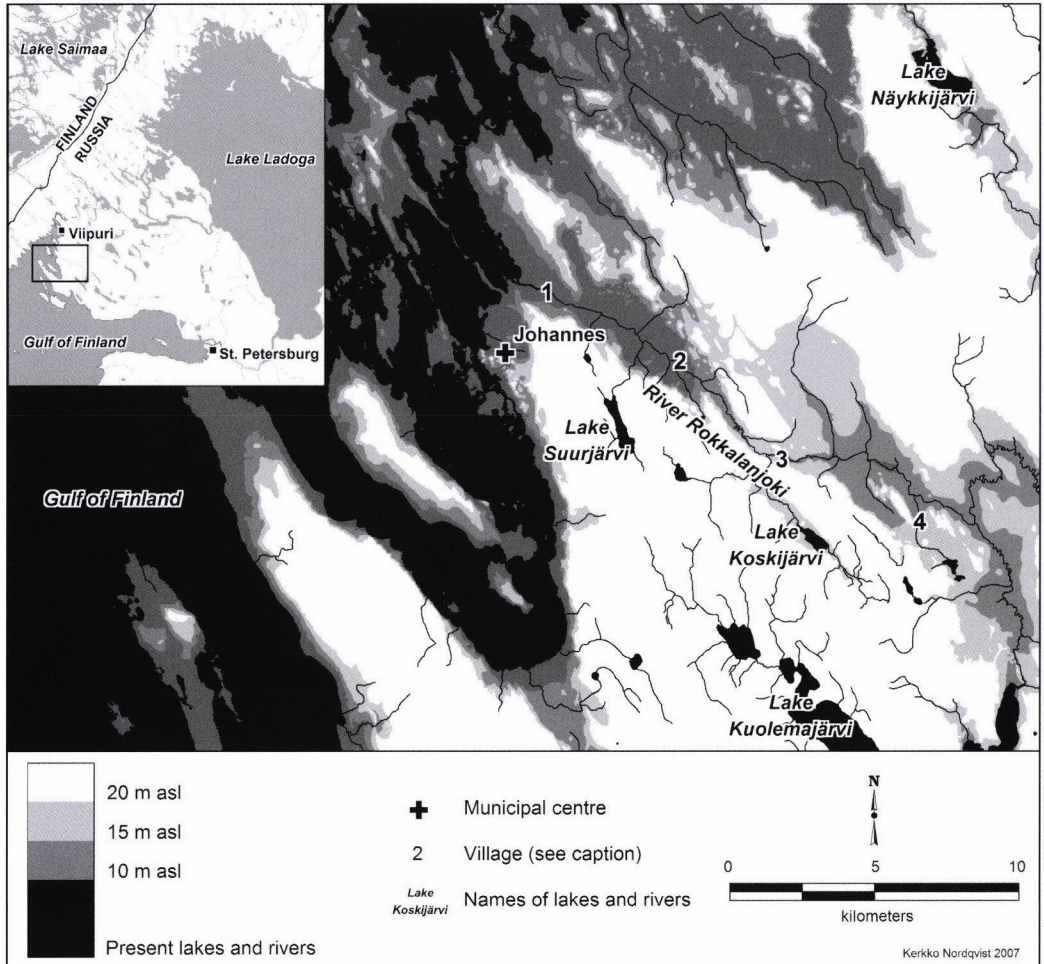


Figure 9.1 Map of the former municipality of Johannes with its surroundings, Karel'ian Isthmus, Russia. The main village areas are numbered as follows: (1) Rokkala, (2) Kajjala, (3) Koskijärvi, (4) Karhula. The different shades of grey indicate present lakes and rivers in addition to elevation zones with limits at 10 m, 15 m and 20 m asl. (Map: K. Nordqvist)

Department of Archaeology (Doc., PhD Pirjo Uino, PhD Mika Lavento, Lic. Phil. Christian Carpelan), the Russian Academy of Sciences Institute for the History of Material Culture (IIMK / RAN) (Dr. Sergej N. Lisicyn and Dr. Sergej N. Astahov, as driver) and Peter the Great Museum of Anthropology and Ethnography, Kunstkamera (M.A. Dmitrij V. Gerasimov). Also students from the Department of Archaeology at the University of Helsinki participated in the survey<sup>2</sup>. Doc. Terttu Lempiäinen, PhD (University of Turku), also participated in the

survey and carried out botanical field research in the survey area. A summary of her survey of vegetation is included as Appendix A[9] of this article.

In 1996, an attempt was made to plot the archaeological sites and stray finds onto topographic map sheets on the basis of data kept at the National Board of Antiquities in Helsinki, Finland. This was done in connection with a project aiming at defining the coordinates of cultural objects in the part of Karelia that was ceded to the Soviet Union as a result of World



War II. The project was funded by Karjalan Liitto (The Finnish Karelian League). The archaeological material was fed into an electronic database programmed by Timo Jussila (1996; Nyman 1996).

The preparation of the 2002 survey was begun in the early autumn of 2001. During 15–16 September 2001, Pirjo Uino, Mika Lavento, Petri Halinen, and Matti Huurre visited Stone Age dwelling sites excavated by Finnish archaeologists. The tour was organised by the society of former residents of Johannes and their descendants, now living in the Turku region in western Finland. The main objective was that people with knowledge of archaeological sites in the former villages of Kajjala (now Tokarevo) and Rokkala (now part of Sovetskij) would guide the archaeologists to find spots. For example, the Neolithic Stone Age sites of Väntsi and Myllykangas at Kajjala and Mutala at Rokkala, excavated in the 1930s, were located partly with the invaluable information of the former residents. This was just an introductory visit; the sites were not touched and no archaeological items were collected. The results of the preliminary visit and later of the regular survey were reported in newspapers (e.g. Lavento *et al.* 2001; Uino 2002).

Furthermore, the 2002 survey was prepared by investigating all available material concerning Johannes kept at the topographic archive of the National Board of Antiquities, Department of Archaeology, in Helsinki. All known dwelling sites and stray finds were plotted onto topographic maps (scale 1:20 000), printed in Finland before 1939. In the survey, copies of these maps were used as main reference material for the locating of sites.

The expedition in 2002 was funded with financial support provided by grants from Karjalaisen Kulttuurin Edistämissäätiö (The Foundation for the Promotion of Karelian Culture) and

from Karjalan Säätiö (The Karelian Foundation). The work was also supported by a grant awarded to Vladimir I. Timofeev by the Russian Foundation for Fundamental Research (RFFI No 02-06-80469). The survey concentrated mostly on the area around the River Rokkalanjoki (now reka Gorohovka) (Lisicyn *et al.* 2003: 39–41; Gerasimov *et al.* 2003: 11–13; Gerasimov *et al.* 2006: 148–156; also Lisicyn 2003a; Uino *et al.* 2003). During four active survey days 17 Stone Age dwelling sites were located. Seven of them were already visited, checked and partly excavated earlier (Väntsi, Myllykangas, Mutala, Ketola, Lenkkerin saha, Tokarevo 1:1, Tokarevo 1:2). In addition, three Iron Age or Historical Period sites were found. Observations were also made of various geological and geographical features in the study area<sup>3</sup>.

The present article is based on manuscripts and notes provided by each author as follows: (1) Introduction and (2) Research history by Uino, (3) Geology and geography by Gerasimov, (4) Archaeological sites and chronology, (5) Stray finds provide additional information, (6) Interpretation and discussion and (7) Concluding remark by Carpelan and Uino. The material is compiled, adapted, and completed by Carpelan.

## 9.2 Research history

The excavations carried out by Julius Ailio and Kaarle Soikkeli in 1909–1910 and 1912 at Häyrynmäki and in 1912 at Selänkangas near Viipuri started the Stone Age studies in the western coastal zone of the Karelian Isthmus (Huurre 2003: 157; Uino 2003: 129–130, 511). However, archaeological activity was extended to the municipality of Johannes and the rest of the western coastal zone of the Finnish part of the Karelian Isthmus only in the 1930s.

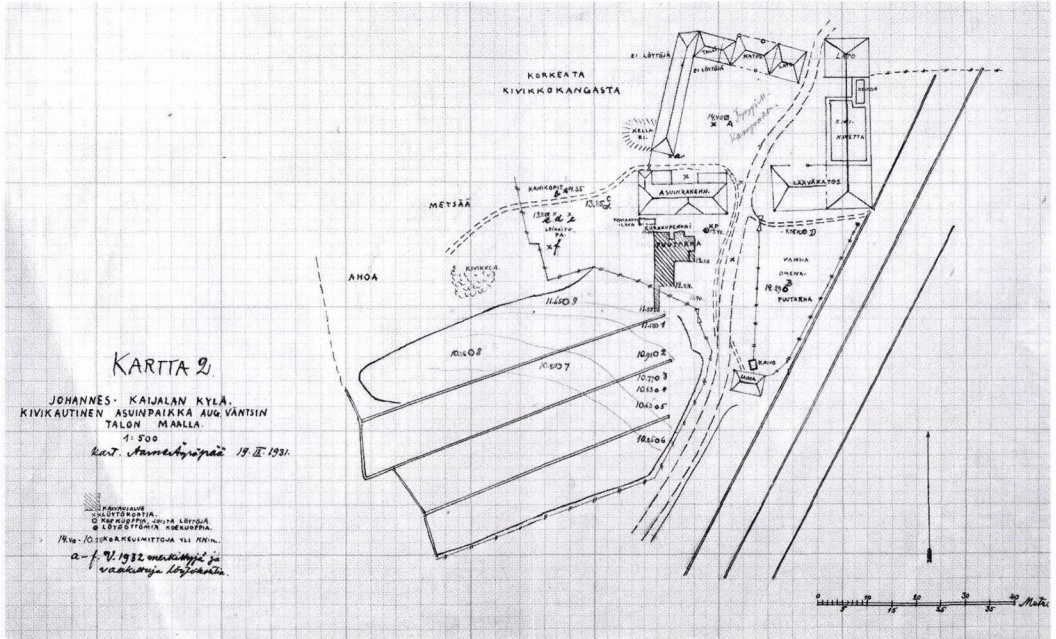


Figure 9.2 General plan of the Neolithic site of Johannes 17 Väntsi drawn by Aarne Äyräpää in connection with the 1931 excavations. While revisiting Väntsi in 1932, Äyräpää completed the plan by adding new find spots in the garden. The plan is exemplary in accuracy; even rabbit cages etc. are marked. (National Board of Antiquities)

The first stray finds from the study area, various Stone Age artefacts (NM 2658: 63–84), were collected and delivered to the State Historical Museum (now the National Museum of Finland) in 1889 by Oskari Saari (1890), who worked on behalf of and financed by the Finnish Antiquarian Society in the villages along the River Rokkalanjoki. In the 1930s, Neolithic dwelling sites were found and partly excavated at Väntsi (Aarne Äyräpää 1931) and Myllykangas (Aarne Äyräpää 1932, Sakari Pälsi 1936 [see 1937]) in the Kaijala area, as well as at Ketola (Sakari Pälsi 1936 [see 1938]) and Mutala (Sakari Pälsi 1936, Esko Sarasmo 1939 [see 1946]) in the Rokkala area. (Figs. 9.2–9.4)

Up to 1944, the collection of stray finds from the municipality of Johannes had increased to 46 Stone Age items from c. 40 find spots in the areas of the Kaijala, Rokkala, Koskijärvi (now Černičnoe), Karhula (now Djatlovo), Ojala/Kolmikesälä, and Tikkala villages. Of the Stone

Age artefacts ten were kept at the Johannes Local Heritage Museum, the public school of the Koskijärvi village, and the Museum of Viipuri.

In the early 20<sup>th</sup> century, schoolteachers used to collect and deposit archaeological objects, and the municipality of Johannes was no exception. In the village of Rokkala, teacher Eemeli Viteli was an active amateur archaeologist in the 1930s, and teacher Roosa Koponen of the Koskijärvi school collected antiquities from her district. It was, however, the discovery of a 17-year-old boy, Eino Väntsi, that played the decisive role in the launching of archaeological investigations in Johannes. Following what he had seen in a dream (!) he searched and found Stone Age potsherds in the garden of his home in 1931. (Eino Väntsi's letters to the National Museum on 22 May 1931 and 26 March 1953). Because of this, Aarne Äyräpää carried out excavations at the spot in the autumn of 1931, assisted by Jorma Leppäaho. After these excava-





Figure 9.3 General view of the Neolithic dwelling site of Johannes 17 Väntsi with August Väntsi's buildings and gardens in the background. The excavation is seen in front of the main house. View from the south-east. (Photo: A. Europaeus 1931, National Board of Antiquities)

tions, Eino Väntsi sent Stone Age pottery found at the Myllykangas site (see Riikonen 2000) to the National Museum.

After World War II, the former Finnish part of the Karelian Isthmus was more or less neglected by Russian archaeologists. In spite of this, Rimma V. Kozyreva found and Sergej I. Rudenko excavated in 1961 a Stone Age dwelling site close to the former Lenkkeri Saw Mill in the village of Koskijärvi on the middle course of the River Rokkalanjoki (Lapšin 1995: 158; Gerasimov *et al.* 2003: 11). In 2001, Russian archaeologists headed by Sergej N. Lisicyn investigated the Stone Age dwelling site of Tokarevo 1:1 found in connection with the building of a natural gas pipeline. At the rescue excavations funded by the Gazprom Corporation, dwelling depressions were discovered next to the dwelling site (Gerasimov *et al.* 2003: 11; Lisicyn 2003b; Lisicyn & Muraškin 2002: 49–51).

The archaeological material collected in

Johannes by Finnish archaeologists before the 1940s has not been used for any specific research plans. There are only scattered references to the archaeological material collected in the former municipality of Johannes and kept at the National Museum of Finland. In addition, two popular articles have been published about archaeological investigations and discoveries at certain villages (Riikonen 1999; 2000). Russian archaeologists have not been aware of these find spots before the 21<sup>st</sup> century and consequently they are not included in the catalogue of archaeological find spots of the Leningrad Oblast (Lapšin 1995).

### 9.3 Geology and geography of the study area

The area of study is located in the northern part of the western coastal zone of the Karelian Isth-



Figure 9.4 Johannes 20 Myllykangas is located on the right side of the River Rokkalanjoki, slightly upstream from the former farm of August Paakkanen. View of the river valley. To the left is the Paakkanen farm, while the Neolithic dwelling site of Johannes 20 Myllykangas is seen behind the watermill, on the hill to the right. Before World War II, the Paakkanen farm was known for its large garden with e.g. 400 apple trees. View from the south-east. (Photo: S. Pälvi 1936, National Board of Antiquities)

mus, by the eastern end of the Gulf of Finland, which is part of the Baltic basin. The coastline is protected from the open sea by large islands (Fig. 9.1).

On the other hand, the area of study is part of the Vuoksi-Coastal geomorphological province together with i.a. Kaukola and Räisälä (municipal centres now Sevast'janovo and Mel'nikovo), which are located in the northern part of the eastern coastal zone of the Karelian Isthmus. In this area, the main geomorphological features are low accumulative plains. These plains have been formed of sediments accumulated before the last glaciation and have later been covered by sediments accumulated during the Glacial and Ancylus lake stages of the Baltic.

The most important relief features in the province have formed in glacial and post-glacial times and are mainly oriented in a north-west – south-east direction. First of all, the plains are cut by long and relatively straight valleys, which are up to several kilometres wide and up

to 40–50 m deep. These valleys are the results of glacial ploughing and erosion caused by sub-glacial streams. Later the valleys became occupied by the main rivers and lakes of the area. Also some moraine formations are present in the landscape, as well as glaciofluvial formations, namely eskers, which are 20–30 m high, often ten kilometres long or even longer, and mainly oriented in a north-west – south-east direction. Many of these formations are abraded by water from post-glacial basins. (See i.a. Berghell 1900; Berghell & Frosterus 1897.)

As a result of oscillations of the sea level, terraces have formed along former shorelines on the slopes of valleys and eskers. In the study area, isostatic uplift was going on simultaneously with eustatic changes of the level of the Baltic. As a result of tilting isostatic land uplift, synchronous Baltic shoreline features and sediments appear at different altitudes above the present sea level (altitude increasing towards the north-west). Opinions have been expressed



about a non-linear gradient of the isostatic uplift of the Fennoscandian shield caused by ancient tectonic 'hinges'. The hinge theory is of certain importance for the study area, as a shift from stronger to lesser crustal tilting and a corresponding shift from higher to lower gradient values of ancient shorelines has been observed along a zone running close to the present Fenn-Russian border (Donner 1970; Saarnisto & Siiriäinen 1970; Siiriäinen 1969).

During the early phases of the history of the Baltic, namely the Baltic Ice Lake, the Yoldia Sea and the Ancylus Lake, the study area was largely covered by the waters of the Baltic basin. The Ancylus transgression culminated between 9200 and 9100 BP (c. 8300 calBC) at an altitude of c. 25 m asl in the centre of the study area (estimated with reference to the corresponding value of 27 m asl close to Viipuri; Saarnisto 2003; Saarnisto & Grönlund 1996). Around the culmination of the Ancylus transgression, the Rokkalanjoki river valley was a lengthy sound mainly oriented in a north-west – south-east direction and connected to a similar sound in the municipalities of Koivisto and Kuolemajärvi. In practice, this water system surrounded a large island, the territory of which was later shared by the three municipalities of Johannes, Koivisto and Kuolemajärvi.

A regressive phase started as a result of the breakthrough at Store Bælt in Denmark. At the end of the regression, about 8200–8000 BP (c. 7050 calBC), salty ocean water began to invade the Baltic basin, and the Litorina phase began. In the centre of the study area, the lowest level of the regression, the Ancylus to Litorina transition occurred at the same time (c. 7500 BP / 6400 calBC) at an altitude close to 11 m asl. This level is estimated with reference to shore displacement curves published by Arto Miettinen (2002: Fig. 49).

Between 7000 and 4000 BP (5900–2500 calBC), a transgressive phase known as the

Litorina transgression occurred. Sediments representing the maximum of the Litorina transgression along the western coast of the Karelian Isthmus, distinguished in a coring from the bottom of Lake Kipinolanjärvi (now ozero Vysokinskoe) located south of the area of study, have been dated to between 6400 and 6000 BP, corresponding to 5400–4800 calBC. Based on the altitudes of the highest Litorina shoreline isobases in the eastern part of the Gulf of Finland (Miettinen 2002: Fig. 50), the altitude of the Litorina transgression maximum may be estimated to c. 16 m asl in the centre of the study area. (Miettinen 2002: 54–58, 81–84.)

In the study area, it is possible to distinguish shoreline features and sediments representing the Litorina maximum and later stages of the Baltic Sea, in addition to features representing earlier stages (Ancylus, Yoldia, Baltic Ice Lake) that reached higher levels than the Litorina transgression. Littoral action during various transgressive phases predating the Litorina maximum has destroyed and/or covered all shoreline features at lower altitudes than 16 m asl. It goes without saying that this applies to archaeological features as well.

On the topographic map, however, the 15-m asl contour line approximates the sea level during the Litorina transgression maximum in the region. The contour line indicates that in Johannes, the mouth of the sound was about 1 km wide. Upstream was a section that was more than 5 km long and 1.5 to 2.5 km wide. This was followed by a narrow section, an inlet, which was c. 2.5 km long and c. 0.5 km wide at its mouth. At the bottom, the inlet then changed to a very narrow valley, c. 1 km long, which provided the outlet for the waters of the lakes upstream that had formed in the sound system described above.

Also the Litorina Maximum was followed by a regression. There has been and still is disagree-

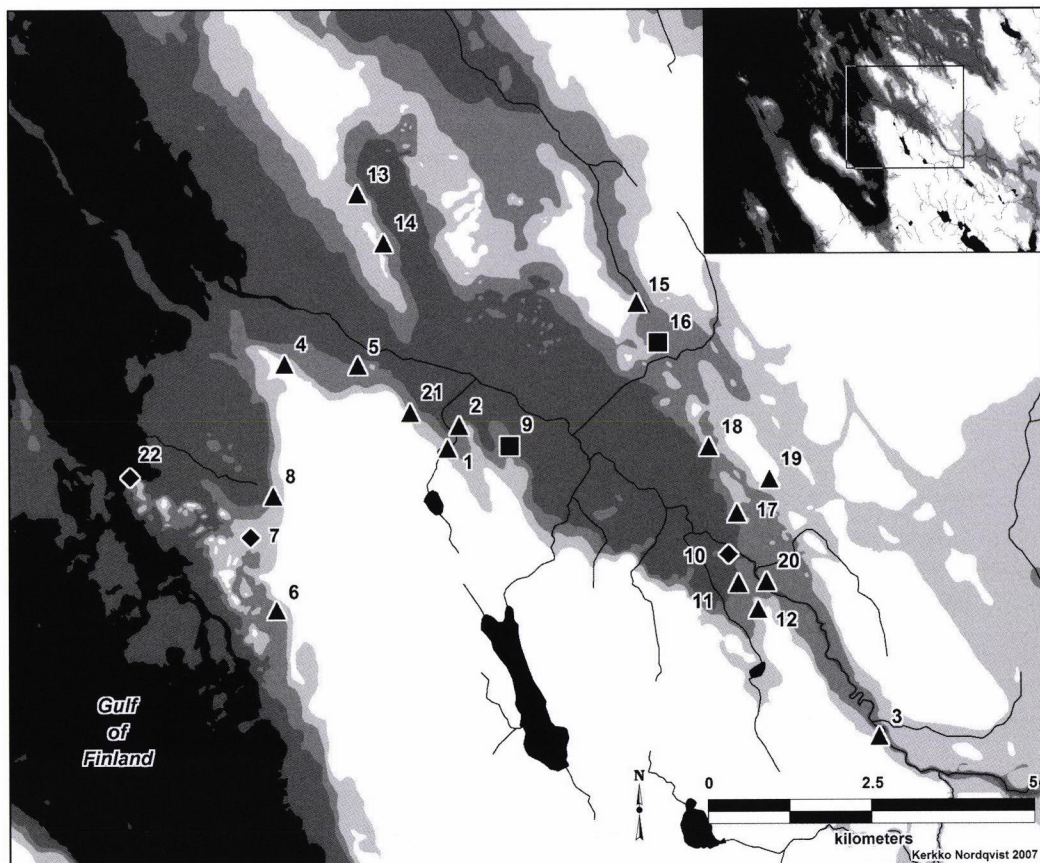


Figure 9.5 Map of the lagoon or bay in central Johannes (villages of Rokkala and Kaijala) and location of Stone Age sites and other ancient monuments in the former municipality of Johannes. Triangles indicate Stone Age dwelling sites, squares indicate cup-marked stones and diamonds indicate other site types. The numbering refers to Appendix 1 and Table 9.1. The different shades of grey indicate present lakes and rivers in addition to elevation zones with limits at 10 m, 15 m and 20 m asl. (Map: K. Nordqvist)

ment between scholars concerning the movement of the sea level and shore displacement in the Baltic basin during the later Litorina period. While some have distinguished a sequence of several transgressive oscillations (e.g. Berglund 1964; 1971; Sauramo 1958), mainstream research in Finland at present accepts the occurrence of just one major Litorina transgression (Donner 1970; Eronen 1974; Miettinen 2002; Saarnisto 2003). All of these opinions are based on morphological and stratigraphic geological observations.

#### 9.4 Archaeological sites and chronology

In the study area, both banks of the Rokkalanjoki river valley were preliminarily surveyed in 2002 around the villages of Rokkala and Kaijala and as far as the former village of Koskijärvi, 11 km upstream and along the former seashore near the mouth of the river. Geomorphologically, the Johannes–Kaijala–Hörkkö area forms a single micro-region. Also the surroundings of the municipal centre of Johannes were briefly inspected. The survey focused mainly on terraces



JOHANNES Stone Age sites																				
Nr.	Site (survey 2002)	Russian name (2006)	X	Y	Alt. m asl	Period	Dwelling	CW1:1	CW2	O-pit	Rh-pit	CW3	Kie	Pöl	Pyh	Cord				
1	Tokarevo 1:1	Tokarevo 1:1, nr. 5	671426	443030	15	N	X	X												
2	Tokarevo 1:2	Tokarevo 1:2, nr. 6	671454	443046	12-15	N		X												
3	Lenkkerin saha	Černičnoe, nr. 17	671072	443560	10-15	N		?												
4	Sulfittitehdas	Sovetskij 1, nr. 7	671530	442832	18	M														
5	Kansakoulu	Sovetskij 2, nr. 3	671528	442922	10	N														
6	Karhusuo	Sovetskij 3, nr. 9	671228	442822	14-15	N														
8	Johanneksen asema	Sovetskij 4, nr. 8	671368	442818	13-15	N														
11	Kokonmäki	Tokarevo 2, nr. 14	671260	443388	12-13	N		X												
12	Rastaanmäki	Tokarevo 3, nr.15	671228	443412	15-16	N		X												
13	Mutala	Mutala, nr. 1	671742	442920	15	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	Mänty	Tokarevo 7, nr. 2	671678	442954	15	N	X													
15	Loikas	Tokarevo 5, nr. 10	671604	443264	19	N		X												
17	Väntsi	Vantsi, nr. 13	671346	443386	10-15	N		X	X	X	X	X	X	X	X	X	X	X	X	X
18	Kankaanmäki	Tokarevo 4, nr. 11	671428	443352	12-15	N														
19	Mairinniitty	Tokarevo 6, nr. 12	671388	443426	22-25	M														
20	Myllykangas	Myllykangas, nr. 16	671262	443422	12-13	N		X				X								
21	Ketola	Ketola, nr. 4	671470	442986	15	N		X												

Table 9.1 Stone Age dwelling sites within the former municipality of Johannes and ceramic types found at each of the sites. Numbering and Finnish names according to the 2002 survey report (Uino *et al.* 2003), Russian names adopted from Gerasimov *et al.* 2006. The dating of the site is given (M = Mesolithic; N = Neolithic) and the presence of dwelling depressions indicated. Key: CW 1:1 = Sperrings 1 Ware; CW2 = Typical Combed Ware; O-pit = Round-Pitted Ware; Rh-pit = Rhomb-Pitted Ware; CW3 = Late Combed Ware; Kie = Kierikki Ware; Pöl = Pöljä Ware; Pyh = Pyheensilta Ware; Cord = Corded Ware.

at altitudes between 10 and 25 m asl because the known shoreline history suggested that this zone would chronologically cover the Stone Age.

According to the archaeological material found and the presence of a cultural layer observed during the survey in 2002 and earlier field campaigns (most of which pre-date World War II), 17 find spots can be determined as Stone Age dwelling sites (Table 9.1; Appendix 1). Most of them are located on the shore of the ancient sound described above. In the following, these sites are classified and discussed according to their altitude asl. The altitudes have been estimated on the basis of contour lines on topographic maps. In addition, three discoveries dating from the late Iron Age and/or the Middle Ages were made. (Fig. 9.5)

#### 9.4.1 Mesolithic

Drillings at the site of Johannes 19 Mairinniitty provided a couple of quartz flakes and the observation of a cultural layer. The altitude of 22–25 m asl clearly pre-dates the *Litorina maximum*. Assuming that this was once a shoreline site, it must date from the period around the *Ancylus maximum* or the early part of the *Ancylus* regression and can be archaeologically dated to the Early Mesolithic. Thus it is the oldest known archaeological site in the municipality of Johannes, so far.

A number of quartz flakes (and possible stone flakes) were spotted at the site of Johannes 4 Sulfittitehdas at an altitude of 18 m asl. This means that the site post-dated the *Ancylus* culmination and Mairinniitty, but pre-dated the level of the *Litorina maximum*.

#### 9.4.2 Early Neolithic

On the topographic map, the 15-m asl contour line approximates the level of the Litorina culmination, although the real level was probably almost 16 m asl at Kaijala in the centre of the study area and slightly higher at Rokkala and Vaahtola close to the present seashore in the north-western part of the study area. The Mesolithic to Early Neolithic transition is expected to be connected with this altitude.

The inspection of the site of Johannes 15 Loikas brought to light a cultural layer and the remains of a fireplace. Artefacts were found between the elevation of 19 m asl and the traces of an abraded shoreline were observed at a lower elevation, which apparently represented the shore of the Litorina maximum at c. 16 m asl. The finds consisted of a quartz arrowhead, quartz flakes, a fragment of a stone artefact, and pieces of greenstone and burnt bone, in addition to a stone axe finished off by piquetage and with a ground edge (the corners of which were damaged; Figs. 9.6–9.7). At the time of discovery, it was suggested to represent an ‘archaic’ (Mesolithic) type, but an alternative suggestion is presented below.

In addition, it was most interesting to find two sherds of the Early Neolithic Sperrings 1 Ware (i.e. Combed Ware 1:1) close to the remains of the fireplace. This suggests that the local production of Sperrings 1 may have started in the region simultaneously with the culmination of the Litorina transgression. However, the radiocarbon dating of a charcoal sample from the fireplace gave the following result:  $3860 \pm 45$  BP (Hela-663; 2460–2230 calBC). Clearly, the site had been settled during at least two periods: during the Early Neolithic and again during the Late Neolithic. The character of the latter will be discussed below.

Sperrings 1 is common in the southern half of Finland as well as in the southern half of the



Figure 9.6 The Neolithic dwelling site of Johannes 15 Loikas was found at a gas pipeline cleared through the forest. Open meadow (ancient sea bottom) in the background. View from the south-west. (Photo: P. Uino 2002)

Republic of Karelia, Russian Federation. The earliest relevant radiocarbon dates of Sperrings 1 Ware have been obtained in the Republic of Karelia (German 2004; Kosmenko 2004; Vitenkova 1996), and thus there is reason to assume that a westward spread of Sperrings 1 began in the Onega region. The spread reached as far as the Åland Islands between Finland and Sweden (e.g. Äyräpää 1956). A number of AMS dates of charred crust samples from Sperrings 1 Ware have been collected at two of the oldest sites in Åland, where the earliest values of  $6185 \pm 120$  BP (Ua-17856) and  $6165 \pm 75$  BP (Ua-17859) combine to  $6170 \pm 60$  BP or 5220–5040 calBC (Hallgren 2004). Logically, Sperrings 1 must have appeared in the Karelian Isthmus earlier and therefore, in this study, the date of c. 6200 BP or c. 5200 calBC is adopted for the initial settling horizon of Sperrings 1 in the Karelian Isthmus.

Obviously, this closely coincides with the date of the Litorina culmination in the region. Sperrings 1 then remained in use until c. 4500 calBC, which means that, in the study area, this type of ceramics may be found also at elevations below 16 m asl.

In 1961, R. I. Kozyreva surveyed and S. I. Rudenko carried out a small excavation within the territory of the village of Koskijärvi (Černičnoe)





Figure 9.7 Pirjo Uino holds a stone axe found at the Neolithic dwelling site of Johannes 15 Loikas. (Photo: T. Lempiäinen 2002)

on the left bank of the River Rokkalanjoki, 30 m from the river somewhere near the ruins of a small sawmill once owned by the Lenkkeri family (Lapšin 1995: 158 with refs.; notes taken by Uino 2000 at the Institute for the History of Material Culture, Russian Academy of Sciences in St. Petersburg). However, the precise location of the find spot is unknown. These studies are of special interest, because it is claimed that the finds included ceramics representing Sperrings 1. We have not had the chance to look at the excavated material in order to confirm this. A third uncertainty concerns the elevation of the site. According to Kozyreva, the altitude of the site 30 m from the river was 8–12 m asl. This, however, does not fit with the expected elevation of Sperrings 1, which in the study area would be approximately 15–16 m asl. According to Gerasimov *et al.* (2003: 11), the altitude was 20 m asl but on the topographic map this contour line runs c. 100 m off the river. Unfortunately, because of serious uncertainties and contradictions, the results of Kozyreva and Rudenko are vague and any further speculation is useless.

However, in this study, Kozyreva's and Rudenko's findings are connected with the archaeological site of Johannes 3 Lenkkerin saha, where the survey in 2002 resulted in the discovery of three find spots. Find spot A is located uphill of the River Rokkalanjoki on a flat area bordering the edge of the river bank (the lower terrace). Find spot B is located on the upper terrace uphill from find spot A. Find spot C is located on the same level as find spot B, but at a distance of 10–20 m from it. At each spot, the finds consisted of quartz debitage, small pieces of indefinable ceramics, and burnt bone.

Find spot A on the lower (riverine) terrace at an altitude of about 10 m asl must date from the Late Neolithic or later. Find spots B and C are connected to the 15-m asl contour line. However, the upper terrace on which they were discovered may have been formed as a river terrace after the culmination of the Litorina transgression, possibly during the Early Neolithic Sperrings 1 period. Unfortunately, the small pieces of ceramics do not permit any typological determination. Alternatively, it is quite possible that the material collected at B and C represents the Middle Neolithic.

#### 9.4.3 Middle Neolithic

In the study area, the Middle Neolithic is mainly indicated by the presence of Combed Ware 2 (or Typical Combed Ware: *Europaeus-Äyräpää* 1930: 179–183), found at the following eight sites: Johannes 1 Tokarevo 1:1 (altitude c. 15 m asl); Johannes 2 Tokarevo 1:2 (12–15 m); Johannes 11 Kokonmäki (12–13 m); Johannes 12 Rastaanmäki (15–16 m); Johannes 13 Mutala (15 m); Johannes 17 Väntsi (12.5–15 m); Johannes 20 Myllykangas (12–13 m); Johannes 21 Ketola (15 m). Excavations have been carried out at Tokarevo 1:1 (Lisicyn), Mutala (Pälsi, Sarasmo), Väntsi (Äyräpää), Myllykangas (Äyräpää, Pälsi), and Ketola (Pälsi). The Tokarevo excava-





Figure 9.8 Three trees growing in a dwelling depression at the Neolithic dwelling site of Johannes 14 Mänty. View from the north. (Photo: A. Koivisto 2002)

tion was carried out in 2001, but the others were completed already in the 1930s.

Of these sites, Tokarevo 1:1, Tokarevo 1:2, Rastaanmäki and Ketola have only yielded Combed Ware 2. In addition, Pitted Ware (both round- and rhomb-pitted) that appears simultaneously with Combed Ware 2 has been found at Mutala and Väntsi. Furthermore, Combed Ware 3 has been found at Mutala, Väntsi, and even Myllykangas, and also Kierikki Ware has been found at Väntsi. Both of these types overlap chronologically with Combed Ware 2 but disappear later (see below). The finds from Mutala and Väntsi also include Late Neolithic ceramics and those from Kokonmäki include alleged Metal Period ceramics (to be discussed below).

In spite of the fact that only indefinite quartz debitage but no ceramics have been discovered so far at the sites of Johannes 6 Karhusuo (14–15 m asl), Johannes 8 Johanneksen asema (13–15 m asl) and Johannes 18 Kankaanmäki (12–15 m asl), their elevation values suggest that they probably belong to the Combed Ware 2 period. At Karhusuo, however, a point of flint provides a positive indication that the site was settled during the use of Combed Ware 2, which was a period of intensive import of carbonic flint.

In Finland and in the Karelian Isthmus a certain type of large dwelling depression is connected to Combed Ware 2 and Late Neolithic As-

bestos Ware (see Ranta 2002). Such depressions were found at Tokarevo 1:1, Mutala and Johannes 14 Mänty (where no ceramics were found in the survey), each connected to the 15 m asl level, which cannot represent a shoreline contemporary with Combed Ware 2. The explanation is that it was necessary to build fixed dwellings at an altitude which was not reached by flooding caused by normal sea level fluctuation (Lisitzin 1960). Even today, westerly winds push waters to the bottom of the Gulf of Finland, where the water level may occasionally rise by almost 2 m. Experience from sites in Finland suggests that connected cultural layers are often found between the dwellings and the shoreline. At the sites in question, this aspect was not studied. (Fig. 9.8)

Two sites, Rastaanmäki and Ketola, with Combed Ware 2 but without reported dwelling depressions, are also connected to the 15-m asl contour line. In both cases it has clearly not been possible or attempts have not been made to find dwelling depressions.

According to 43 AMS datings of charred crust from Combed Ware 2 ceramics collected in Finland (Pesonen 1999; 2004), Combed Ware 2 appeared by c. 3900 calBC and disappeared between 3500 and 3400 calBC. In the study area, the former date is adopted for the initial settling horizon of Combed Ware 2 at c. 14 m asl (Väntsi). The latter date is adopted for the disappearance of Combed Ware 2 at an altitude between 12 and 12.5 m asl (Väntsi). A charcoal sample from Tokarevo 1:1 is radiocarbon dated to 4790±210 BP (Ki-10298; Lisicyn 2003b: 160) or 3950–3300 calBC. Because of the wide standard deviation, the result is trivial.

As indicated above, in addition to Combed Ware 2, Combed Ware 3 has been found at Mutala, Väntsi, and Myllykangas, and also Kierikki Ware at Väntsi. According to an AMS dating of charred crust, Kierikki Ware was used at Väntsi as early as 4870±85 BP (Hela-465; Huurre



2003: 198–199 and endnote 90) or 3770–3530 calBC. The production of the former began at the same time (Pesonen 2004). Thus, both types overlap chronologically with Combed Ware 2, but they disappear simultaneously later, c. 3200 calBC, at the end of the Middle Neolithic.

#### 9.4.4 Late Neolithic

Väntsi is the only site in the study area which has provided local Late Neolithic Combed Ware and Pöljä Ware, while Corded Ware has been discovered both at Väntsi and at Mutala. Pöljä Ware is described by C. F. Meinander (1954: 160–167) and Torsten Edgren (1964: 18–30). For Finnish Corded Ware, see Edgren's (1970) comprehensive study. The local Late Neolithic ceramics of the Karelian Isthmus, which resemble western Finnish Pyheensilta Ware (Meinander 1954: 156–160; Vikkula 1984), are poorly studied so far. The presence of Pöljä Ware at Väntsi and other sites in the Karelian Isthmus shows regular connections with eastern Finland. The Corded Ware is a stranger in the context, and Äyräpää who excavated at Väntsi was uncertain about the identification.

In the Karelian Isthmus, Corded Ware has been found at 9 dwelling sites together with other types of ceramics and at one cemetery (see Huurre 2003 with references). In addition, c. 30 battle axes of the Corded Ware culture have been collected there (besides a number of 'barbarian imitations' and c. 20 work axes), most of them as stray finds (Huurre 2003: 228–232). In the study area, a broken battle axe was found at the dwelling site of Mutala. The axe from Loikas may, in fact, be a work axe of the Corded Ware culture (flat, shaped by piquetage and with a carefully ground working edge, but unfortunately the corners are broken) rather than an archaic axe of a Mesolithic type (see above) (Fig. 9.7). The radiocarbon date of the charcoal sample taken from the fireplace (Hela-663

3860±45 BP / 2460–2230 calBC) corresponds to the end of the Corded Ware culture, which in the Baltic countries and Finland prevailed between 3200 and 2300 calBC (Carpelan 2004). A sample of charred crust from a sherd of Corded Ware collected at Lavamäki in the former municipality of Kaukola, Karelian Isthmus, is dated to 4130±60 BP (Hela-468; Huurre 2003: 234 and endnote 218) or 2870–2610 calBC.

At Väntsi, Äyräpää found the corresponding shoreline, i.e., the lower border of the presence of ceramics as well as of coloured cultural layer, at c. 11.5 m asl. The date, 2750 calBC (representing Hela-468 above), is tentatively applied to this altitude. (Fig. 9.2)

Furthermore, at Väntsi, Äyräpää found occasional small stone objects, a piece of flint, quartz debitage, and crushed pieces of burnt bone in eight search trenches between 11.5 m and 10.3 m asl. The zone below 11.5 m asl may be explained as the zone of normal frequent sea level fluctuation referred to above (cf. Lisitzin 1960).

#### 9.4.5 From the Late Neolithic to the Middle Ages

In the 2002 survey, two sites with an estimated altitude of c. 10 m asl were found, namely area A at Lenkkerin saha (see above) and Johannes 5 Rokkalan kansakoulu. The latter provided nothing but indefinite quartz debitage, the former also small pieces of indefinite ceramics. On the other hand some pieces of ceramics collected at Kokonmäki (12–13 m asl; see above) were identified as possible Early Metal Period pottery. In this study, also these very small pieces are classified as indefinite, however.

In the central part of the study area around the River Rokkalanjoki, the environment appears to have provided acceptable sites for settling at or close to the shoreline at altitudes down to 10 m asl, but according to the available material, this altitude is followed by a period of 3000 years or

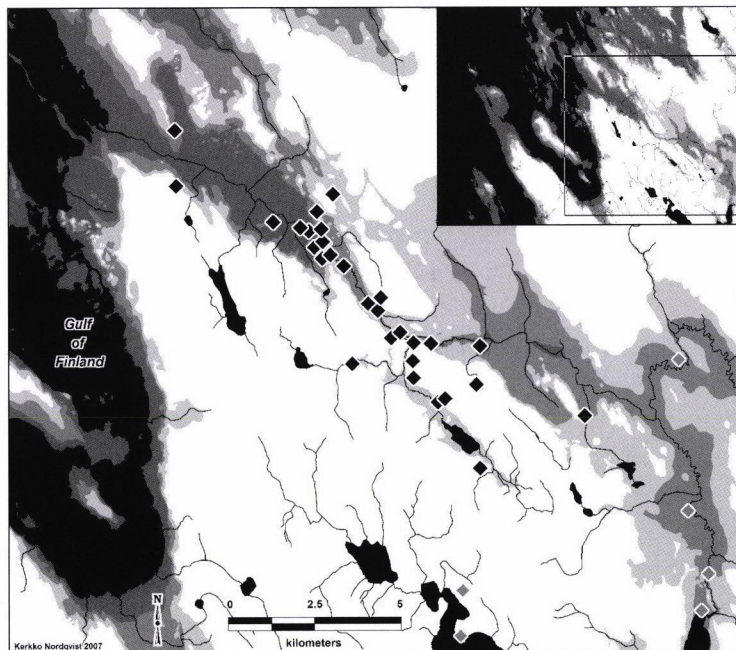


Figure 9.9 Black diamonds indicate stray finds in the former municipality of Johannes (grey diamonds indicate stray finds outside Johannes). Cf. Table 9.2. The different shades of grey indicate present lakes and rivers in addition to elevation zones with limits at 10 m, 15 m and 20 m asl. (Map: K. Nordqvist)

more without known archaeological settlement in the area of study.

The archaeological Iron Age material from the western zone of the Karelian Isthmus is scarce and Johannes has been considered completely void of archaeological finds datable to this period (Uino 1997). On the other hand, it is obvious that the archaeological fieldwork in the region has focussed on the Stone Age and that there have been no real attempts to track down the traces of later settlement. Even though this was true also for the 2002 survey, some Iron Age or Medieval antiquities were found. These findings include two cup-marked stones (Johannes 9 Jokiniitty, Johannes 16 Soppimuta; Fig. 9.12) and a site with burnt clay (Johannes 10 Kaijalan posti).

### 9.5 Stray finds provide additional information

According to catalogues and files kept at the National Board of Antiquities, Helsinki, a total

of 46 Stone Age artefacts have been collected as stray finds within the former municipality of Johannes. Including one item missing from the collections, 10 objects lack any possible information about the find spot and for the rest the accuracy of this information varies. These 36 objects have been given suggested coordinate values in addition to an estimated value of uncertainty for each, i.e. a radius within which the object evidently was found. The radii vary between 50 and 500 m. (Fig. 9.9; Table 9.2)

All of the stray finds have been discovered during agricultural work, which explains why their distribution is limited to the gardens and fields in neighbourhoods around the lower reaches of the River Rokkalanjoki (Rokkala, Kaijala, Koskijärvi) and its tributary from the south, Koskijärvenoja (Ojala, Kolmikesälä, Hylkiälä), in addition to two villages (Tikkala, Karhula) further to the east and also south of the River Rokkalanjoki. Obviously, most of these neighbourhoods have never been properly surveyed archaeologically.



## JOHANNES Stone Age stray finds

Cat. item	Village	Find place	X	Y	Rad. m	Alt. m asl	Per.	Function, Type
ViM 1273-13	Johannes							Axe, Roller Shaped
Kotis.museo	Rokkala	Kotikuusi	671620	442976	100	15		Mace head, Flat
Kotis.museo	Rokkala	Miko Leinonen	671460	442980	500	25	M	Adze, South Karelian
NM 2658: 63	Kaijala	Kallio	671356	443258	100	7.5	M	Gouge, Curved Back
NM 2658: 64	Kaijala	Matti Rastas	671252	443398	200	10-15		Adze, East Karelian
NM 2658: 65	Kaijala		671262	443422	100	10-15		Axe, Rectangular Cross-section
NM 2658: 80	Kaijala							
NM 2658: 81	Kaijala		671336	443396	200	10-12.5	M	Gouge, Curved Back
NM 2658: 82	Kaijala							Adze, East Karelian
NM 2658: 83	Kaijala							
NM 2658: 84	Kaijala							Adze, East Karelian
NM 3420: 5	Kaijala	Kukkonen	671296	443404	500	10		Gouge, East Karelian
NM 3420: 6	Kaijala	Gabriel Hiiri	671340	443336	300	5-10		Axe, Rectangular Cross-section
NM 3420: 7	Kaijala	Kukkosen mylly	671296	443404	500	10		Adze, East Karelian
NM 3420: 8	Kaijala	Aleksi Puusa	671284	443376	500	<10	M	Adze, South Karelian
NM 3420: 9	Kaijala							M Gouge, Curved Back
NM 9407: 1	Kaijala	Anton Hiiri	671436	443430	500	15-20	M	Axe, Transverse Primitive
NM 9407: 2	Kaijala	Anton Hiiri	671386	443384	300	10-15		Adze, East Karelian
NM 9564: 1	Kaijala	Arvo Hiiri	671330	443360	50	5-7.5	M	Adze, South Karelian
NM 10442: 49	Kaijala	Nikod. Hörkkö	671230	443460		10		Adze, Flat
NM 10442: 50	Kaijala	Nikod. Hörkkö	671230	443460		10		Adze, Flat
Kotis.museo	Kaijala	Antton Puusa	671300	443400	100	10-12.5	M	Adze, South Karelian
NM 2658: 68	Koskijärvi	Adam Kosonen	671122	443530	200	15	M	Adze, South Finnish
NM 2658: 69	Koskijärvi	Antti Hörkkö	671008	443710	500	5-10		
NM 2658: 70	Koskijärvi	Antti Hörkkö	671008	443710	500	5-10	M	Axe, Transverse Primitive
NM 2658: 75	Koskijärvi	Sahala	671040	443622	100	17.5-20	M	Adze, South Karelian
NM 2658: 77	Koskijärvi	Lenkkeri	671102	443558	500	15	M	Adze, South Finnish
NM 2658: 79	Koskijärvi	Hörkkö	671010	443660	500	15-20		Adze, Rectangular Cross-section
NM 10725: 1	Koskijärvi							M Axe, Transverse Primitive
NM 10725: 2	Koskijärvi	Sahala	671040	443622	100	17.5-20	M	Adze, South Karelian
NM 11022	Koskijärvi	Otto Puusa	670958	443658	200	20-25	M	Whetstone
Kansakoulu 1	Koskijärvi							Adze, Rectangular Cross-section
Kansakoulu 2	Koskijärvi	Armas Hörkkö	670950	443484	50	20-25	M	Adze, South Karelian
Kansakoulu 3	Koskijärvi	Erkki Törni						Adze, Rectangular Cross-section
Kansakoulu 4	Koskijärvi	Heikki Sairanen	670910	443660	500	20		Axe, Ostrobothnian
Kansakoulu 5	Koskijärvi	Kauko Törni	671140	443566	50	25-30	M	Adze, South Karelian
Kansakoulu 6	Koskijärvi	Etholen	671024	443596	100	15-20		Axe, Transverse Rectangular Cross-section
Kansakoulu 7	Koskijärvi							M Adze, South Karelian
NM 2658: 72	Koskijärvi	Kolmikesälä	670650	443850	500	20-25	M	Axe, Transverse Primitive
NM 2658: 71	Koskijärvi	Ojala	670840	443730	500	20-25	M	Adze, South Karelian
NM 2658: 66	Koskijärvi	Tikkala	670890	443840	500	25-30	M	Adze, South Finnish
NM 2658: 67	Koskijärvi	Tikkala	670890	443840	500	25-30		
NM 2658: 73	Koskijärvi	Tikkala Uitto	671000	443850	50	15		Adze, East Karelian
NM 2658: 74	Koskijärvi	Tikkala Uitto	671000	443850	50	15		
NM 2658: 78	Koskijärvi	Hylkiälä	670850	443750	500			Adze, Ostrobothnian
NM 2658: 76	Karhula		670800	444150	1000	10-15		Adze, Ostrobothnian

Table 9.2 Stone Age stray finds from the former municipality of Johannes. Column 'Rad. m' shows the locating accuracy (radius in meters); column 'Alt. m asl' refers to the altitude above present sea level; column 'Per.' gives the dating of the artefact (M = Mesolithic; the rest are Neolithic). Abbreviated collections: Kansakoulu = Koskijärvi Public School; Kotis. museo = Johannes Local Heritage Museum; NM = National Museum of Finland; ViM = Museum of Viipuri.

41 of 46 objects were available for classification. Regrettably, in Finnish archaeology, the criteria for the classification of stone tools are not unambiguous. However, according to a classification performed by one of the authors (Carpelan), the collection of stray finds includes six types of adzes (25 objects), five types of axes (9 objects), two types of gouges (5 objects), one type of mace head (1 object) and one type of whetstone (1 object). As for periodisation, 21 objects represent the Mesolithic while the remaining 19 represent the Neolithic; the position of a Roller Shaped Axe with Pecked Surface is uncertain and its find spot within Johannes is unknown. Roller Shaped Axes with Pecked Surface appear in both Mesolithic and Neolithic contexts around the Baltic Sea and in Russia (Carpelan is currently preparing a manuscript on Roller Shaped Axes). Excavations at Neolithic sites have revealed stone tools of various types but they are not described or discussed in this study.

### 9.5.1 Mesolithic

The 21 objects classified as Mesolithic display a restricted set of types among the functional classes of objects:

Number	Function, Type	Finnish term
3	Adze, South Finnish	eteläsuomalainen tasataltta
10	Adze, South Karelian	eteläkarjalainen tasataltta
4	Axe, Transverse Primitive	alkeellinen kirves
3	Gouge, Curved Back	käyräselkäinen kourutalтта
1	Whetstone	hioin
<b>Total: 21 objects</b>		

The Whetstone is considered Mesolithic because of the altitude and environment of the find spot. This means that slightly more than half of the classified stray finds from Johannes date from the Mesolithic. For 18 of these objects it is possible to determine a find spot with a satisfactory precision (see above).

As discussed above, during the Ancylyus the Rokkalanjoki river valley formed part of an extensive sound system. Later, during the Litorina culmination, the lower part of this valley formed a large bay within the villages of Rokkala and Kajjala with a shoreline at an altitude of c. 15 m asl. During the survey, one dwelling site was found in Rokkala on the then open coast and (18 m asl) another in Kajjala on an island in the sound (22–25 m asl). They must date from the Ancylyus culmination and the early part of the regression.

Of the 8 Mesolithic objects from Rokkala and Kajjala, it is possible to estimate the altitude of 7 find spots. Six of them, all within Kajjala, were found at low levels (7.5–12.5 m asl). This means that they have been found lying on the ancient sea bottom. In other words, the adzes, axes and gouges were once dropped in the water accidentally or deliberately. They suggest that a closer survey would probably reveal traces of additional Mesolithic dwelling sites in the area. A South Karelian Adze found at c. 25 m asl not far from the Neolithic site of Johannes 21 Ketola (see above) probably hints at the existence of such a site.

Of the 13 classified Mesolithic stray finds from upstream of Kajjala (the neighbourhoods of Koskijärvi, Ojala, Kolmikesälä, Hylkiälä, Tikkala and Karhula), it is possible to estimate the altitude of 11 find spots. The altitude (5–10 m asl) of a Primitive Transverse Axe suggests that it was probably dropped in the water. The remaining 10 objects were found at altitudes between 15 m and 25 m asl. This indicates that they originate from dwelling sites on the shores (above the Litorina maximum) of the ancient sound and its complicated inlets. A look at the contour lines of the topographic map reveals that e.g. the Koskijärvenoja valley on the southern side of the sound must have provided a most profitable environment for hunters and fishers as early as the earlier Mesolithic.



Number	Function, Type	Finnish term
5	Adze, East Karelian	itäkarjalainen tasataltta
2	Adze, Flat	lattea tasataltta
2	Adze, Ostrobothnian	pohjalainen tasataltta
3	Adze, Rectangular Cross-section	nelisivuinen tasataltta
2	Axe, Rectangular Cross-section	nelisivuinen oikokirves
1	Axe, Transverse Ostrobothnian	pohjalainen kirves
1	Axe, Transverse Rectangular Cross-section	nelisivuinen poikkikirves
2	Gouge, East Karelian	itäkarjalainen kourutaltta
1	Mace Head, Flat Perforated	lattea reikäkivi
<b>Total: 19 objects</b>		

### 9.5.2 Neolithic

In the Neolithic, there is more diversity of types than earlier among the functional classes (see table above).

A find spot with a satisfactory precision can be determined for 14 classified Neolithic objects. One of the objects from Kaijala (Axe with Rectangular Cross-section) was found at a low level (6–7.5 m asl), which indicates that it was lying on the bottom of the ancient bay. On the other hand, 7 objects from Kaijala were discovered at altitudes between 10 m and 15 m asl along the shores of the ancient bay. Their find spots should be surveyed for Middle and Late Neolithic dwelling sites. The only find from Rokkala, a Flat Mace Head discovered at c. 15 m asl by the western end of the bay, could indicate the existence of an Early Neolithic site.

Of the 8 objects from the neighbourhoods of Koskijärvi, Ojala, Kolmikesälä, Hylkiälä, Tikkala, and Karhula (upstream of Kaijala), the altitude of 5 find spots can be estimated. Obviously, two of the finds indicate the existence of Neolithic dwelling sites around an ancient larger Lake Koskijärvi, which once filled the whole valley of the present small lake and its drainage, the small River Koskijärvenoja. The shoreline of this ‘palaeolake’ (following an earlier inlet, see above) probably coincided with the 20-m asl contour line.

### 9.5.3 Discussion

Obviously, the stray finds add to our knowledge of the spatial distribution of the activities of the Stone Age population living in the environs of the present River Rokkalanjoki. The Mesolithic societies established camps on islands and shores close to the open sea, as well as inland along the sound on the shores of quiet inlets. The stray finds also indicate that the Neolithic societies exploited small lakes in the inland for the same purposes. This means that a comprehensive survey of the whole area is necessary to understand the economic and social system of the societies living in the Rokkalanjoki drainage.

## 9.6 Interpretation and discussion

### 9.6.1 Mesolithic

Before 2002, Mesolithic dwelling sites were unknown in the area of study. Because of the short time available for survey in 2002, the search was mainly directed at the elevation zone between 10 and 15 m asl where the existing material had been collected. However, occasional visits to higher altitudes (exceeding the Litorina maximum) brought to light two Mesolithic find spots: Mairinniitty bordering on a shore feature between 22–25 m asl and Sulfiittitehdas (18 m asl). On the other hand, the examination of the

remaining stray finds revealed the existence of Mesolithic axes and adzes found at Mesolithic altitudes within and east of the Koskijärvi village area. All of this proves that directed search would probably reveal more Early Mesolithic dwelling sites from the time between the *Ancylus maximum* and the early part of the *Ancylus regression*. In the study area, the *Litorina* transgression probably eroded and/or covered Middle and late Mesolithic dwelling sites up to the altitude of c. 16 m asl.

In the Early Mesolithic, the dwelling site of Mairinniitty was located on a low and flat sandy island in the large bay that covered large parts of the study area at that time. The island, 600 m or so south-west of the mainland but with large open waters to the south and west, may have been covered by pine forest, which dominates the local environment today. Sulfiittitehdas, again, on a sandy shore gently sloping towards the N, was located at the verge of the open sea. Also this location may have been covered by pine forest. Obviously, sandy ground on open shores by open waters satisfied the needs of the local Mesolithic societies at least during a certain season of the year. On the other hand, many of the Mesolithic stray finds indicate that the Early Mesolithic population also used to dwell around shallow inlets on the southern side of the sound that filled the Rokkalanjoki river valley in the Koskijärvi and Ylikylä areas. These waters probably provided profitable fishing in spring and summer. Later the inlets became small lakes still providing favourable environments for Late Mesolithic and Neolithic hunter-fishers.

### 9.6.2 Early Neolithic

The 2002 survey revealed Sperrings 1 Ware at Loikas. The site slopes towards the north-east and borders a shore feature at the altitude of c. 16 m asl, i.e., at the local level of the *Litorina maximum*. In the Early Neolithic, the site of

Loikas was located on a large island (with two peaks reaching a height of 30 m asl) on a cape by a north-west – south-east oriented sound that separated the island from the mainland. The cape must have been a good observation post and the sound a peaceful shipping lane compared to the open waters on the other side of the island. Also in the wintertime it must have been practical to follow this route skiing and hauling sledges. The location of the site probably made it a good base for profitable fishing and fowling, too. However, by the end of the Sperrings 1 period at the latest, shore displacement cut off this channel precisely at the location of the dwelling site and the place was probably deserted as unsuitable. (Figs. 9.5–9.6)

The Early Neolithic material collected in the area of study is very limited. This may be due to insufficient fieldwork. On the other hand, Early Neolithic types are rare also among the stray finds of stone objects. However, this is mainly due to the fact that most of the stray finds have been collected at altitudes below the Early Neolithic level (cf. Table 9.2).

As pointed out above, it is futile to speculate about Kozyreva's and Rudenko's findings of alleged Sperrings 1 Ware somewhere close to the former Lenkkeri sawmill on the left bank of the River Rokkalanjoki c. 6 km south-east of Loikas. However, the River Rokkalanjoki was a continuation of the route mentioned above, and upstream it led to Lake Kaukjärvi (now ozero Krasavica), where the multiperiod dwelling site of Kelosenniemi is located (former municipality of Uusikirkko, centre now Poljany). Excavations at Kelosenniemi by Europaeus in 1926, Pälsi in 1933 and Timofeev in 1984 in addition to inspections by Hannu Takala in 1999, have revealed the presence of Early Neolithic Sperrings 1 users (Takala 2005: 140–142). It appears logical to assume a functional connection between the Sperrings 1 dwelling sites at Loikas



	<b>A – Altitude c. 15 m asl</b>	<b>B – Altitude c. 12.5 m asl</b>
<b>1 – Location by open sea</b>		6 Karhusuo 8 Johanneksen asema
<b>2 – Location by western shore of lagoon</b>	1 Tokarevo 1:1 13 Mutala 14 Mänty 21 Ketola	2 Tokarevo 1:2
<b>3 – Location by eastern shore of lagoon</b>	12 Rastaanmäki	11 Kokonmäki 17 Väntsi 18 Kankaanmäki 20 Myllykangas

Table 9.3 Middle Neolithic dwelling sites in Johannes grouped by elevation asl (A, B) and geographic distribution (1, 2, 3).

(even Lenkkerin saha?) and Kelosenniemi. This assumption provides an interesting point of departure for further fieldwork focussing on the Early Neolithic.

### 9.6.3 Middle Neolithic

This period is mainly manifested by the presence of Combed Ware 2 but also by the presence of carbonic flint and certain dwelling depressions. In addition to 11 dwelling sites thus identified as Middle Neolithic, one site is added to the list on the basis of altitude (see above). Compared to the numbers representing the earlier periods, this obviously represents a considerable growth. This growth could be explained by the fact that most of the existing archaeological material of the study area has been collected in the 10–15 m asl elevation zone in connection with farming and other types of work. However, the majority of the stray finds represents Middle Neolithic types, and precisely this fact suggests that human activity was much more intensive during this period than earlier. The growth in the number of dwelling sites suggests that this intensity was due to a rapid population growth that started in the beginning of the Middle Neolithic.

The dwelling sites may be grouped on the one hand by elevation asl and on the other hand by geographical distribution (Table 9.3). Elevation divides the sites into two groups: (A) those at an altitude close to 15 m asl (Mutala, Mänty,

Ketola, Tokarevo 1:1 and Rastaanmäki) and (B) those at an altitude close to 13 m asl (Karhusuo, Johanneksen asema, Tokarevo 1:2, Kokonmäki, Myllykangas, Väntsi and Kankaanmäki). Geographical distribution divides the sites into three groups: (1) those located by the open sea (Karhusuo and Johanneksen asema), (2) those located by the western shore of the lagoon that filled the Rokkalanjoki river valley (Mutala, Mänty, Ketola, Tokarevo 1:1 and Tokarevo 1:2) and (3) those located by the eastern shore of this lagoon (Rastaanmäki, Kokonmäki, Myllykangas, Väntsi and Kankaanmäki).

It appears that all but one of the sites of group A (altitude close to 15 m asl) are located on the western shore of the lagoon that filled the lower part of the Rokkalanjoki river valley (Mutala, Mänty, Ketola, Tokarevo 1:1). The exception (Rastaanmäki) is located on the eastern shore of this lagoon. The sites of group B (altitude close to 13 m asl), on the other hand, are geographically divided into three groups. Four sites (Kokonmäki, Myllykangas, Väntsi and Kankaanmäki) are located on the eastern shore of the lagoon, one site (Tokarevo 1:2) is located on the western shore of the lagoon, and two sites (Karhusuo and Johanneksen asema) are located outside the lagoon by the open sea. Obviously, this grouping is very coherent and as such probably reflects the socio-economic basis, strategy, and tactics among the Middle



Figure 9.10 Mika Lavento, Jonina Jansson, and Sergej Lisicyn investigating the Neolithic dwelling site of Johannes 11 Kokonmäki. View from the east. (Photo: H. Sinisalo 2002)

Neolithic population living in the area of study. (Figs. 9.10–9.11)

As pointed out above, dwelling depressions are found at Mutala, Mänty, and Tokarevo 1:1. The dwellings have been large and heavy structures well suited for living during late autumn, winter, and early springtime. The explanation given above for the exceptional elevation is that it was necessary to build fixed dwellings at an altitude which was not reached by flooding caused by normal sea level fluctuation (Lisitzin 1960). The reason for the elevation of the Ketola and Rastaanmäki sites must be the same. Tentatively, these sites were the winter quarters of five groups (extended families?) exploiting the region around the River Rokkalanjoki. On the eastern side of high terrain, Mutala, Mänty, Ketola and Tokarevo 1:1 were sheltered from winds blowing from the open sea, but at the same time it was easy to reach the sea for seal hunting and other activities. The Rastaanmäki people, on the other hand, may have practised forest hunting to a higher degree. Of course, such sites may be described as ‘extended activity sites’, if such an expression is preferred (Kvamme 1985).

Obviously, Karhusuo and Johanneksen asema, where no ceramics have been found, have been camps used during activities directed to-

wards the open sea. There have probably been more such camps along the shoreline, and some of them may have been used by people from the inland. Intensive survey along the shoreline in order to find such sites would be a very important task. Such sites may perhaps be classified as ‘limited activity sites’ (Kvamme 1985).

Four known dwelling sites (Kokonmäki, Myllykangas, Väntsi, and Kankaanmäki) on the eastern shore and a fifth (Tokarevo 1:2) on the western shore of the lagoon may have been the homesteads used by the proposed extended families from spring to autumn. Tokarevo 1:2 may have been used by the Tokarevo 1:1 people and Kokonmäki by the Rastaanmäki people while Myllykangas, Väntsi, and Kankaanmäki respectively were used by the rest of the families. Naturally, this is mere speculation. At these sites, however, located on low and flat small islands and capes, fishing and fowling and gathering were probably the most important economic activities. The dwelling types remain unknown. Here again one might assume ‘extended activity’.

One must not forget that the River Rokkalanjoki was a route to several lakes in the inland and that the drainage area included various productive biotopes like forests and wetlands (some probably often flooded by the river) etc.



Figure 9.11 The Neolithic dwelling site of Johannes 17 Väntsi during the survey in May 2002. The stone foundations of the buildings are in the background behind the apple trees in blossom (cf. Fig. 9.3). Riina Mäki and Andreas Koivisto are field walking. View from the east. (Photo: P. Uino 2002)



In addition to gathering and fishing, the inland provided important game, such as elk, beaver, etc. (beaver is identified among the bone fragments collected at Tokarevo 1:1; see Lisicyn 2003b: 160). The stray finds mentioned above indicate that the Rokkalanjoki drainage area was exploited by the Johannes Middle Neolithic Society. This question remains outside the scope of the present study, however.

Because the members of the Middle Neolithic population of the study area were Combed Ware 2 users, the disappearance of this ceramic type soon after 3500 calBC raises the question of the continuation of the Johannes Middle Neolithic Society. Combed Ware 3 has been found at only three of the sites (Mutala, Myllykangas, and Väntsi) and Kierikki Ware at one (Väntsi). After a period of overlap with Combed Ware 2, both types prevailed in Finland until c. 3200 calBC. The date of a sample of charred crust from one Kierikki sherd (3770–3530 calBC) makes it simultaneous with Combed Ware 2, and without more datings, it is only possible to speculate about the continuation of the Middle Neolithic settlement in the area of study.

At any rate, it seems that the population must have diminished considerably, but the reason for this remains difficult to understand: at least

no visible indicators appear to suggest that the local environment would have deteriorated (cf. Siiriäinen 1981). The problem may arise from insufficient fieldwork.

#### 9.6.4 Late Neolithic

However, ceramic finds suggest that Väntsi was settled in the beginning of the Late Neolithic as the only known site in the study area. The excavated material includes local Late Neolithic Combed Ware and Pöljä Ware, which reflects the situation in the Middle Neolithic: connections with both western and eastern Finland are indicated. Also the material culture in general, as well as the economic basis (fishing, hunting, gathering), remained the same.

In the beginning of the Late Neolithic, the Corded Ware culture spread to the south of Finland across the sea from Estonia and/or along the Karelian Isthmus. However, there are nine known find spots of Corded Ware in the Karelian Isthmus in the former municipalities of Johannes, Kaneljärvi (centre now Pobeda), Kaukola, Metsäpirtti (centre now Zaporozskoe), Uusikirkko, and Viipuri (Huurre 2003: 154–157, 232–234; Lapšin 1995: 172; Mökkönen & Nordqvist 2006: 12–14). In the area of study, Corded Ware was discovered both at Väntsi and at Mutala, and a broken battle

axe was also found at Mutala. The dwelling site at Kelonen in the former municipality of Uusikirkko, bordering on the study area, is important because of the location within the drainage area of the River Rokkalanjoki and the multiperiod material including i.a. Corded Ware (cf. Mutala and Väntsi above; see Huurre 2003: 154, 156; Takala 2005: 140–142; Uino 1997: 341).

In the Karelian Isthmus, a total of five battle axes of the Continental type A (type I according to Äyräpää; see Laitakari 1928) have been found in addition to three ‘barbarian imitations’ (Huurre 2003: 228–230). One of the latter was found on the shore of Lake Kuolemajärvi (now ozero Pionerskoe) in the former municipality of Kuolemajärvi, bordering Johannes, and within the drainage area of the River Rokkalanjoki (Äyräpää 1952: 9 and Fig. 4; Takala 2005: 72, 81; Uino 1997: 242). Of the subsequent ‘Finnish’ battle axes of type II, only one has been found in the Karelian Isthmus, in addition to two ‘barbarian imitations’ (Laitakari 1928; Äyräpää 1952: 13–14 and Fig. 9; Huurre 2003: 228).

The presence of the Corded Ware culture in the Karelian Isthmus was probably mainly limited to the earlier part of the period. In addition to the Battle Axes of type I, an early date is supported by the finding of a rim sherd of an A-type amphora in the former municipality of Kaneljärvi (Mökkönen & Nordqvist 2006: 12–14). Corresponding rim sherds have been found in the municipality of Askola, in southern Finland (Luhio 1964). The result of an AMS dating of a charred crust sample from a sherd of ‘ordinary’ Corded Ware from Lavamäki in Kaukola indicates that Corded Ware users were present there around 2750 calBC.

At the end of the Corded Ware period, a second movement connected to this cultural entity arrived at the south of Finland from Estonia. This movement is not manifested by ceramics but by the appearance of battle axes with ‘Ta-

pering Butt’ (Soikkeli 1912). Eleven of these battle axes have been found in the Karelian Isthmus, one of them in the former municipality of Uusikirkko bordering on the study area and within the drainage area of the River Rokkalanjoki (Huurre 2003: 229–230; Takala 2005: 143, 152). In addition to this, a radiocarbon date of a charcoal sample and an axe resembling the Corded Ware type of work axe, both collected at the dwelling site of Loikas (see above), suggest that the cultural expression of this second wave of influence played an active role also in the area of study at the end of the Corded Ware period (c. 2300 calBC).

In the Karelian Isthmus, Corded Ware appears at dwelling sites of the local inhabitants. This suggests that the Corded Ware users had a tendency to establish relations with and adapt to the conditions among local hunter-fisher societies that lived in camps located by the shoreline. Their flexibility probably led to an easy assimilation before 2700 BC. Four centuries later, with a shoreline at 10 m asl, the former channel in front of the dwelling site at Loikas (see above) had diminished to a small lake (postulated ‘palaeolake’ of Soppimuta), which drained into the lagoon through a small brook called ‘Paskaolja’ on the topographic map of 1937. The shoreline of this shallow lake may have been at a distance of 200–300 m from the settlement. This would indicate that the Late Neolithic people living at Loikas were not dependent on an immediate connection to the waterfront like the earlier hunter-fishers. Instead, as at many Corded Ware sites in the south of Finland, they may have found it practical to have a zone of bushy meadow where they could secure food for sheep and goats, between the dwelling site and the water (Carpelan 1973).



### 9.6.5 From the Late Neolithic to the Historical Period

As pointed out above, in the central part of the study area around the River Rokkalanjoki, the environment appears to have provided acceptable sites for settling at or close to the shoreline at altitudes down to 10 m asl. According to the available material, this phase is followed by a period of 3000 years or more with no known remains of archaeological settlement in the area of study.

One explanation for this may be the fact that, at the eastern end of the ‘Rokkalanjoki lagoon’, all dwelling sites and most of the stray finds are located above the 10-m asl contour line. There all of the find spots are somehow connected to recent houses and gardens. On the other hand, some stray finds have been found below the 7.5-m asl contour line close to the river in the centre of Kaijala and again connected to recent houses. The stray finds in question are Neolithic axes and adzes, obviously lost or deliberately dropped in the water.

However, the zone between 10 m asl and 7.5 m asl (and lower) is mainly arable field void of stray finds and has not been surveyed archaeologically. On the other hand, the 7.5-m asl contour line shows that in the eastern part of the lagoon there have been at least three rather large islands and some smaller ones. Because they have been more or less exploited for building during generations, possible remains of Early Metal Period dwelling sites have been destroyed. Naturally, local residents have not considered potsherds (if any) worth collecting and keeping like stone axes, which could be sold to collectors. Nor have these areas been targets for archaeological survey. Obviously, the archaeological understanding of the course of events in the study area during the Early Metal Period and later is hampered, even prohibited, by destruction on the one hand and insufficient survey on the other.

In fact, on the coastal strip between Viipuri and St. Petersburg, there are few find spots with a confirmed dating to the Early Metal period (i.e., the Bronze and the Early Iron Ages), so far. The material from a dwelling site at Lahta and from some of the sites around Sestroveckij Razliv close to St. Petersburg, in addition to Pontiaho 1 in the former municipality of Koivisto, really includes Early Metal Period Textile Ware (Gerasimov *et al.* 2003: 7–8; Gurina 1961: 502–506, 532; Lapšin 1995: 175–176; Nordqvist & Seitsonen 2008, this volume).

At 5 m asl (around the middle of the first millennium BC), the ‘lagoon’ began to be transformed into a lake with the outlet through the Rokkala rapids about two km from the present seashore. Obviously, this ‘Rokkala palaeolake’ survived for a long time, i.e., as late as the Historical Period, judging from the fact that the westward growth of the village of Kaijala did not cross the 5-m asl contour line until the 20<sup>th</sup> century (according to the topographic map sheet of 1932 there were two houses narrowly below the 5-m asl contour line). The lake was probably an excellent environment for fishing and fowling, but may have finally been deliberately drained and dried in order to get more land for cultivation.

As pointed out above, three findings datable to the late Iron Age or the Middle Ages were made: two cup-marked stones and a find spot with burnt clay.

A cup-marked stone is a boulder (sometimes a visible outcrop of bedrock) on the surface of which there are several or many manmade cup-shaped depressions (seldom up to a hundred cups or so or only one). The cups are considered to have been sites for offerings connected to the promotion of agricultural fertility and production and also the health of people. It is not possible to date the objects themselves, but as a group the cup-marked stones in Finland appear in topographic contexts dating from the



Figure 9.12 A cup-marked stone at Johannes 16 Soppimuta was found in a former field during the survey 2002. Five cups in two groups were observed on the top of the boulder. Behind the boulder from left to right are Riina Mäki (pointing at the group of four cups), Andreas Koivisto, Pirjo Uino (pointing at the separate cup), Christian Carpelan, and Dmitrij Gerasimov. View from the south-east. (Photo: T. Lempiäinen 2002)

Viking Age and the Medieval Period. In eastern Finland, a weak tradition of offering at existing cup-marked stones survived to the early 20<sup>th</sup> century. (Hautala 1960; Tvauri 1995.)

The cup-marked stone at Jokiniitty has just one cup, but on the top of the boulder at the Soppimuta meadows there are five cup-shaped depressions. These objects are very interesting because they are the first cup-marked stones found in the western zone of the Karelian Isthmus (cf. Uino 1997: 90–100). The Soppimuta boulder (Fig. 9.12) indicates that when the religious use of the boulder began, the postulated ‘Soppimuta palaeolake’ had diminished so that the shoreline may have been close to the 12.5-m asl contour line. The boulder is located in the middle of an old field not far from the oldest

permanent peasant settlement of Kaijala dating from the mid-fourteenth century. Traditionally, the Soppimuta fields were considered especially productive (Loikas 2000: 38, 47).

## 9.7 Concluding remark

The Johannes archaeological project collected information through survey in the field (2002), cartographic analysis, and use of reports of fieldwork carried out earlier, in addition to interviews of informants (earlier residents) with knowledge of archaeological find spots. The results may be summarised as follows:

(1) In the area of study, Early Mesolithic, Early Neolithic, Middle Neolithic, and Late



Neolithic dwelling sites as well as stray finds were found. Later archaeological sites and stray finds are virtually unknown with the exception of two cup-marked stones and tiny remains of a possible dwelling site, which date from the end of the Iron Age or the Middle Ages. The reason for the lack of finds is discussed.

(2) The prehistoric population reached its peak in the Middle Neolithic. For this period, it appeared possible to distinguish three categories of functionally different dwelling sites: long-term extended activity sites with heavy fixed dwellings in high locations, long-term extended activity sites at low islands and capes, and short-term limited activity sites by the open sea.

(3) In order to understand the succession of changes in the cultural development, it was necessary to make comparisons within a geographically wider frame of reference.

(4) It turned out that the available base of information and the fieldwork carried out in the area so far are insufficient. Additional task-specific fieldwork will make it possible to improve the understanding of the area and add details in the future.

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## Endnotes

- 1 Cultural-historical information about the area in Russian: Balašov 2006.
- 2 Jonina Jansson, Andreas Koivisto, Riina Mäki, Henna Sinisalo
- 3 In the report of the years 2001–2005 published by the IIMK/RAN (St. Petersburg), including a presentation of the international activities of the Institute, nothing is said about the cooperation with the University of Helsinki nor about other Finnish-Russian joint research projects carried out in the Karelian Isthmus and in Ladoga Karelia during this period (Hronika, 2006).

## Notes on the plants of Johannes municipality in the Karelian Isthmus (Russia)

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The Johannes municipality (present municipal centre Sovetskij) is one of the municipalities in the archipelago of the eastern part of the Gulf of Finland on the bank of Viipurinlahti Bay (Ru. zaliv Vyborgskij). The vegetation of the coast, shores, and river banks of the area is very rich in valuable broad-leaved trees belonging to the southern broad-leaved forest zone. The most important river, Rokkalanjoki (Ru. reka Gorohovka), flows through the municipality. Its many rapids and different kinds of habitats provide suitable sites for many shore and water plants. The total number of vascular plant species in this southern area of the Karelian Isthmus is about 700, with a few threatened vascular plants (Kotiranta *et al.* 1998, Hämet-Ahti *et al.* 1998, Hiitonen 1946, Linkola 1916; 1921).

During the years 2002–2003, the author participated in two short excursions to Johannes with the archaeologists of the University of Helsinki and the members of the society of former residents of Johannes in order to make notes on the vegetation. The studied sites were the old church village, the ruins and surroundings of the old church, the Kirjola estate, the eastern part of the municipality, and the villages of Kajjala (Ru. Tokarevo) and Koskijärvi (Ru. Černičnoe). One of the most important vegetation types was found on the banks of the Rokkalanjoki River. This paper is a short summary of the plants seen during the excursions, and only a few characteristic plants of the vegetation of this area are presented. Latin names follow Hämet-Ahti *et al.* (1998).



Figure 1 *Stellaria holostea*, a typical and common plant, flowers in early spring on the southern Karelian Isthmus. (Photo: T. Lempiäinen)

**Common coniferous trees** were spruce (*Picea abies*) and pine (*Pinus sylvestris*). Juniper (*Juniperus communis*) grew on dry slopes and the edges of forest and meadows. **Broad-leaved forest trees** were oak (*Quercus robur*), *Acer platanoides*, *Fraxinus excelsior*, *Ulmus glabra*, *Tilia cordata*, *Larix decidua*, and *L. sibirica*. All these were present as cultivated trees in some old gardens, but broad-leaved forest trees also belong as native species to this vegetation type. Birches (*Betula pendula* and *B. pubescens*) and *Populus tremula* were very common trees everywhere in the southern part of the Karelian Isthmus. The garden – or what remains of it – of the Kirjola estate, on the bank of the Gulf of Finland, was a nice example of an old English garden containing all the abovementioned broad-leaved trees. *Tilia x vulgaris* and *T. platyphylla* grew by the main roadsides, form-



ing a nice lane. Common trees included *Alnus incana* and *Alnus glutinosa*. **Common bushes** were *Corylus avellana*, *Lonicera xylosteum*, *Viburnum opulus*, *Sambucus racemosa*, *Prunus padus*, and *Sorbus aucuparia*. *Syringa vulgaris*, *Salix alba*, *Caragana arborescens*, *Crataegus grayana*, *Malus domestica*, *Prunus cerasus*, *P. avium*, and *P. domestica*, with many roses (i.e. *Rosa pimpinellifolia*, *R. gallica*, *R. rugosa*, *Rosa x majorugosa*), were found also as mementoes of the small gardens and settlements dating from the Finnish settlement period. Native willow species on shores and river banks were *Salix aurita*, *S. caprea*, and *S. phylicifolia*. *S. fragilis* 'Bullata' (terijoensalava in Finnish) was common at many sites, as was also *S. alba* 'Sibirica'. *Rubus caesius* belongs to the native vegetation of the Karelian Isthmus, but in Finland it grows wild only in Ahvenanmaa (Hämet-Ahti *et al.* 1998).

Native plants of **dry and wet meadows** were *Alchemilla acutiloba*, *Melampyrum nemoreum*, *Campanula glomerata*, *Campanula rotundifolia*, *Centaurea scabiosa*, *Deschampsia caespitosa* (today very common and dominant in the old Finnish fields, which were cultivated earlier but are now fallow), *Filipendula ulmaria*, *Anthriscus sylvestris*, *Epilobium angustifolium*, *Fragaria vesca*, *Galium album*, *Geranium sylvestris*, *Geum rivale*, *Geum urbanum*, *Hieracium pilosella*, *Hypericum maculatum*, *H. perforatum*, *Lychnis flos-cuculi*, *Phragmites australis*, *Plantago lanceolata*, *Potentilla palustris*, *Rumex acetosa*, *Rumex confertus*, *R. crispus*, *Scirpus sylvaticus*, *Silene dioica*, *Silene latifolia*, *Silene vulgaris*, *Stellaria media*, *Solanum dulcamara*, *Solidago virga-aurea*, *Thalictrum flavum*, *Thymus serpyllum*, *Trollius europaeus*, *Verbascum thapsus*, *V. nigrum*, *Veronica longifolia*, *V. officinalis*, *V. chamaedrys*, *Vicia cracca*, *V. sepium*, *Viola canina*, *V. canina* ssp. *montana*, *V. riviniana*, *V. tricolor*, and *Viscaria vulgaris*.

Plants growing on **river and sea banks or in water** included *Leymus arenarius*, *Typha latifolia*, *Angelica archangelica* ssp. *litoralis* (the shore of the Kirjola estate), *Calla palustris*, *Caltha palustris*, *Potentilla palustris*, *Cicuta virosa*, *Schoenoplectus tabernaemontani*, *S. lacustris*, *Nuphar luteum*, and *Nymphaea alba*. The plants **flowering in early spring** were *Heptatica triloba*, *Anemone nemorosa*, *A. ranunculoides* (common for example in the area of the Kirjola estate), *Allium oleraceum*, *Lathyrus vernus*, *Ranunculus ficaria*, *Stellaria holostea* (Fig. 1), and *S. nemorum*, as well as poisonous *Daphne mezereum* with light red flowers. **The archaeophytic** plants that spread before the 17<sup>th</sup> century (Hämet-Ahti *et al.* 1998) included *Verbascum nigrum*, *Allium oleraceum*, *Arabis glabra*, *Chelidonium majus*, *Dianthus deltoides*, and *Hypericum perforatum*. Also *Sedum acre*, *S. telephium*, *Thymus serpyllum*, and *Lychnis viscaria* grow at similar sites. *Filipendula vulgaris* was not found, but it also grows in this area. **The neophytic plants**, which spread after the 17<sup>th</sup> century, included *Berteroa incana*, *Bunias orientalis*, *Artemisia absinthium* (may be archaeophytic in this area), *Impatiens glandulifera*, and *Pastinaca sativa*. Garden plants that were cultivated earlier and are now wild include *Aquilegia vulgaris*, *Fragaria muricata*, *Heracleum mantegazzianum*, *Lupinus polyphyllos*, *Spiraea x billiardii*, and *Spiraea x rosalba*. They are young plants in the Karelian Isthmus; the oldest is perhaps *Fragaria muricata*, from the 17<sup>th</sup> century. The most dangerous and poisonous umbelliferous plant is a 'giant umbelliferous', *Heracleum mantegazzianum*, that has run wild extensively in the Karelian Isthmus. **The forest plants** of cliffs and the underbrush were *Arctostaphylos uva-ursi*, *Convallaria majalis*, *Dactylorhiza maculata*, *Lathyrus sylvestris*, *Matteuccia struthiopteris*, *Melampyrum sylvaticum*, *Milium effusum*, *Oxalis acetosella*,

*Paris quadrifolia*, *Platanthera bifolia*, *Polygonatum odoratum*, *Trientalis europaea*, *Maianthemum bifolium*, *Trifolium medium*, and *Vicia sylvatica*, as well as the ferns *Pteridium aquilinum*, *Thelypteris palustris*, *Phegopteris connectilis*, *Dryopteris filix-mas*, *D. cristata*, *D. carthusiana*, *Athyrium filix-femina*, *Gymnocarpium dryopteris*, and *G. robertianum*. **The common weeds** of yards, road sides, middens, etc. included *Chenopodium* species, *Plantago major*, *Poa annua*, *Stellaria graminea*, *Cirsium arvense*, *Capsella bursa-pastoris*, *Thlaspi arvense*, *Taraxacum officinale*, and many other common weeds around the houses, cowsheds, small house gardens etc. Some old **medieval medicine plants** were found in the area: *Chelidonium majus* (Fig II) was rather common, but also *Hyoscyamus niger* and *Leonurus cardiaca* were found. They all were used as medicinal herbs, the first for eye diseases, *Leonurus* for heart diseases, and *Hyoscyamus* as a medicine for different kinds of pains, usually for toothache but also for many other purposes: as an-aesthetic, insect poison, spice for beer etc. (Lempiäinen 1991).



Figure II *Chelidonium majus*, a medieval medicinal plant, grows commonly in the ruins of the Kirjola estate. (Photo: T. Lempiäinen)

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