

The Archaeology of the Ancient Lake Kolpene in Rovaniemi: a Review of Investigations

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In this review I have described the archaeological research history around the Ancient Lake Kolpene basin without presenting new evidence, as the recent investigation by Hannu Kotivuori is based on the most comprehensive material available. However, I would like to draw attention to one important question, which has occupied my mind for a long time: the mechanism of the lowering of the water level in the lake. Just below the Combed Ware (style II) site in Kolpene there is a distinct abrasion brink that might indicate a stable water level stage lasting for some time. On the other hand, the lower section (between 74 and 75 m asl) of the Niskanperä site contained two arrowheads dated by Paula Purhonen (1973) to the final stage of the Combed Ware (style II) period. These show that the site was occupied immediately after the Kolpene site was abandoned; thus the water-level of the lake had sunk from the 77 m level to the 74-75 m level, i.e. 2-3 m, during the Combed Ware (style II) stage. Such a rapid drop in water level could have been caused by a sudden erosion in the Valajainen threshold, which seems a plausible type of erosion in a narrow channel like this. According to Arto Turjamaa's interpretation of the pollen sequence and lithology of his Salmijärvi core, the Kolpene lake had a stable stage between two rapid regressions some time before the advance (rational limit) of spruce (Turjamaa 1997); this is dated to ca. 2000 calBC in the region of Rovaniemi (Saarnisto 1981). Thus this stable stage could correspond with the formation of the above-mentioned abrasion brink at Kolpene, but more fieldwork is needed to ascertain this correlation.

Dr. Aarni Erä-Esko was the first archaeologist to express the idea that an ancient lake isolated from the waters of the Baltic Sea (Litorina Sea) had been situated in the Kemi River valley, just above the Valajainen rapids. He was in charge of the extensive archaeological survey project and test excavations in northern Finland in the mid-1950s, which were financed by water power companies. The first stages of the work were concentrated in the areas threatened by the first power plant and water reservoir projects; these included the Valajainen and Petäjäinen rapids below the town of Rovaniemi. In Rovaniemi and further downstream, in Tervola, Erä-Esko carried out investigations in 1954 and 1955, and his interim report was published as an article in the journal Suomen museo in 1955 (Erä-Esko 1955). In the same issue there was a short article by Arne

Kopisto on the results of the excavations at a Stone Age habitation site in Kolpene in Rovaniemi and another article by Mikko Paloniemi on an amber pendant found in the same site (Kopisto 1955, Paloniemi 1955).

Erä-Esko located a host of habitation sites, especially in the confluence area of the Kemijoki and Ounasjoki rivers and in the Valajainen region; most of them were at an elevation of about 78 m above sea-level (asl) (Fig. 1). At one of them, viz. the above-mentioned site of Kolpene, Kopisto carried out excavations, finding ceramics of the typical Combed Ware (style II) (Kopisto 1955). Also, at somewhat higher elevations, mostly about 81 m asl, sites were located that, according to Erä-Esko, "lead one to suppose that they were situated on the shore of the sea or a lake" (Erä-Esko 1955: 90). Other important sites

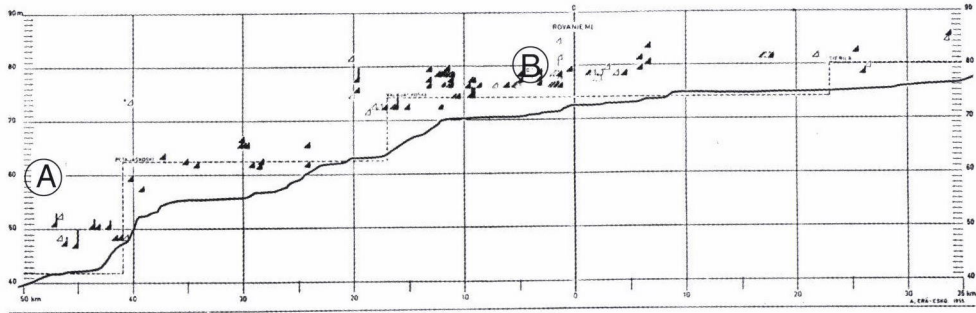


Fig.1. The profile of the Kemijoki river in the municipality of Rovaniemi. The continuous line shows the natural profile of the river and the broken line the profile after the construction of the Sierilä, Valajaskoski and Petäjaskoski dams. The filled triangles mark Stone Age habitation sites and the open triangles isolated finds. Site A is Jaatilansuvanto 3 in Tervola and B the Kolpene site in Rovaniemi. Note the difference in the elevations of these mutually contemporaneous sites: A is a seashore site at 62 m asl and B is a lake-shore site at 77 m asl. The diagram was published in Erä-Esko 1955.

include Kärnäniemi and Niskanperä; the latter in fact had been found in the 1930s by Jorma Leppäaho, a pioneering archaeologist in the north.

An important cluster of sites was located in the valley of the Kemijoki River, ca. 50 km south of Rovaniemi at an altitude of 62 m asl. The site Jaatilansuvanto 3 yielded a few potsherds of typical Combed Ware (style II), and thus dates to the same period as Kolpene (Erä-Esko 1957: 92). On the basis of the geological shore observations by Esa Hyypä (1950) Erä-Esko showed that Jaatilansuvanto had been situated on the shore of the Litorina Sea; consequently Kolpene at an elevation of 15 m higher, “could not have been situated on the seashore, but on the southern shore of a peninsula in an ancient lake” (Erä-Esko 1955: 92).

Later, during the late 1950s and early ‘60s, a few rich Stone Age habitation sites were excavated in the vicinity of Rovaniemi, but the problem of shoreline displacement was not discussed. It was not until 1967 that the present writer devoted some thoughts to these questions in an article in the book “Entinen Kemijoki” (Ancient Kemijoki) (Siiriäinen 1967a). In this study I followed some relevant contour lines measured by the Kemijoki power company and concluded that a lake basin isolated from the Litorina Sea was located at a level of 90 m asl. This lake started to decrease at a rate indicated by the Kolpene,

Niskanperä and Kärnäniemi Stone Age sites. This article did not yet include any maps of this suggested lake, nor did I discuss my hypothesis, illogical as it might appear, that the lake experienced regression, although its outlet was towards higher land uplift values (which should cause transgression in the basin). My conclusion was that the water level had sunk at the same pace as the erosion of the threshold at the Valajainen rapids. Incidentally, in this article I used the name Ancient Lake Kolpene for the first time.

The next reference to the lake can be found in my article “Archaeological shore displacement chronology in northern Ostrobothnia, Finland” (Siiriäinen 1978). In this article I was unable to present any new archaeological evidence for the lake, but instead I presented a map showing the extent and development of the lake, with three distinct stages: the Tapulinpelto stage (Combed Ware Sär 1) at 80 m asl, the Kolpene stage (Typical Combed Ware style II) at 77 m asl, and the Niskanperä-Kärnäniemi stage at 74 m asl (Fig. 2). I confined myself to the investigation south of the Rovaniemi town centre as I supposed that the Kemijoki valley west of Ounasvaara was so narrow that the lake could not have extended north of it. Archaeological sites – at least datable sites – were not available then in the northern part of the basin.

In the article I mentioned briefly that I had

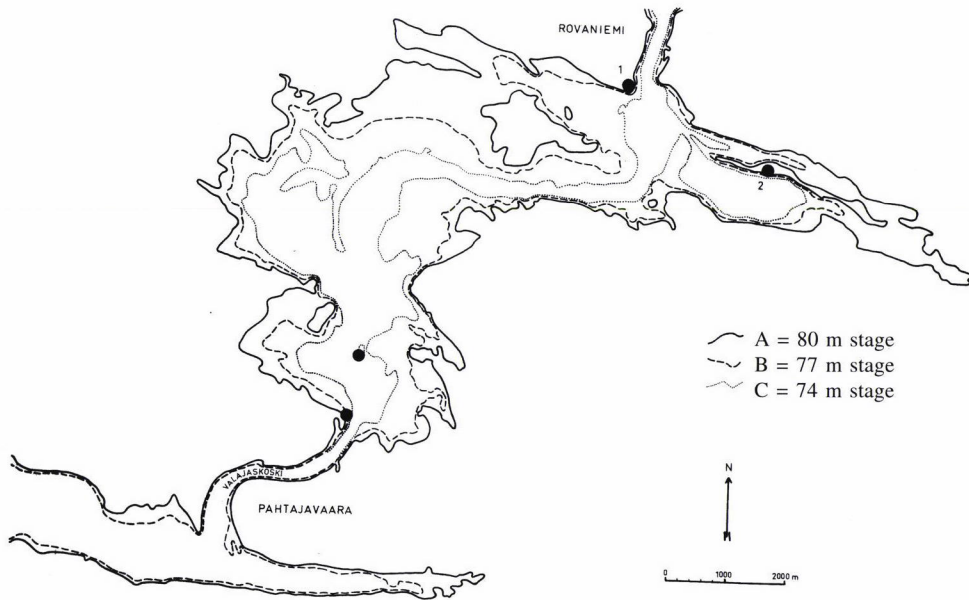


Fig. 2. Ancient Lake Kolpene as reconstructed on the basis of the four sites (1. Tapulinpelto, 2. Kolpene, Kärpäniemi and Niskanperä). The map was published in Siiriäinen 1978.

made sediment corings in 1973 near Niskanperä just north of the road leading from Rovaniemi to Kemi and observed a 1 to 2 m thick layer of mud (Siiriäinen 1978: 18). As I used a simple sampler of the Hiller type I did not manage to obtain reliable samples for either pollen analyses or radiocarbon datings, but in my view the mud layer was a sufficient indication of a lake of rather long duration.

In 1986, I finally published the results of the excavations carried out a quarter of a century earlier in Kärpäniemi in an article entitled “Kärpäniemi in Rovaniemi – a subneolithic site with a palisade in northern Finland” (Siiriäinen 1986). The article included a map of the latest stage of the Kolpene lake as indicated by the sites at Kärpäniemi and Niskanperä; this stage belongs to the period of Kierikki and Pöljä ceramics found in these sites (Fig. 3). Sherds from an asbestos-tempered vessel with a horizontally grooved outer surface and smoothly inward curving rim were encountered at Kärpäniemi, with the lower limit at 75-75.5 m asl. These can be dated to the Kierikki period or the initial phase of the Pöljä period. Niskanperä, on the other hand, had yielded ceramics from the later Pöljä

period at a slightly lower elevation (ca. 74 m asl). Thus, I presented the following sequence (the ceramic types are illustrated in Fig. 4):

1. Tapulinpelto stage (Combed Ware Sär 1) 80 m asl
2. Kolpene stage (Combed Ware style II) 77 m asl
3. Kärpäniemi stage (Kierikki - early Pöljä) 75 m asl
4. Niskanperä stage (later Pöljä) 74 m asl

This sequence must be taken only as a theoretical model, and in this article I suggest (taking into account C.F. Meinander’s critical views on the existence of an ancient lake) that during the later stages (3 and 4) the basin could have been in fact a flood-basin with an annually fluctuating water level, and not a real perennial lake; the habitation sites would have been situated just above the flood-limit of the basin. Such a basin should of course be visible in the sediment layers as lamination or micro-sedimentation of some kind.

During the excavation at Kärpäniemi we observed small (diam. 4-8 cm) flecks of dark colour on the excavation levels 80-110 cm below the surface. These I interpreted as traces

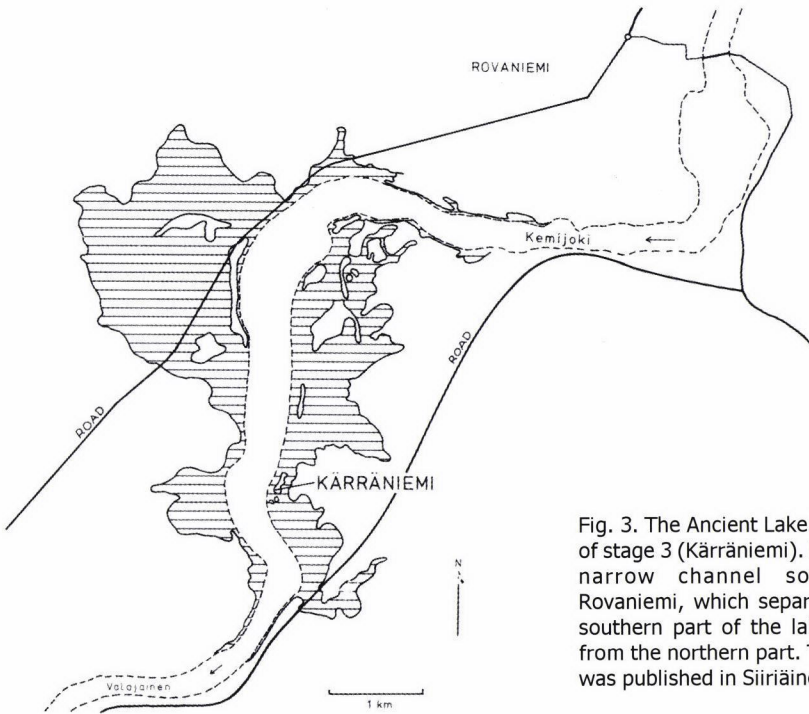


Fig. 3. The Ancient Lake Kolpene of stage 3 (Kärräniemi). Note the narrow channel south of Rovaniemi, which separates the southern part of the lake basin from the northern part. The map was published in Siiriäinen 1986.

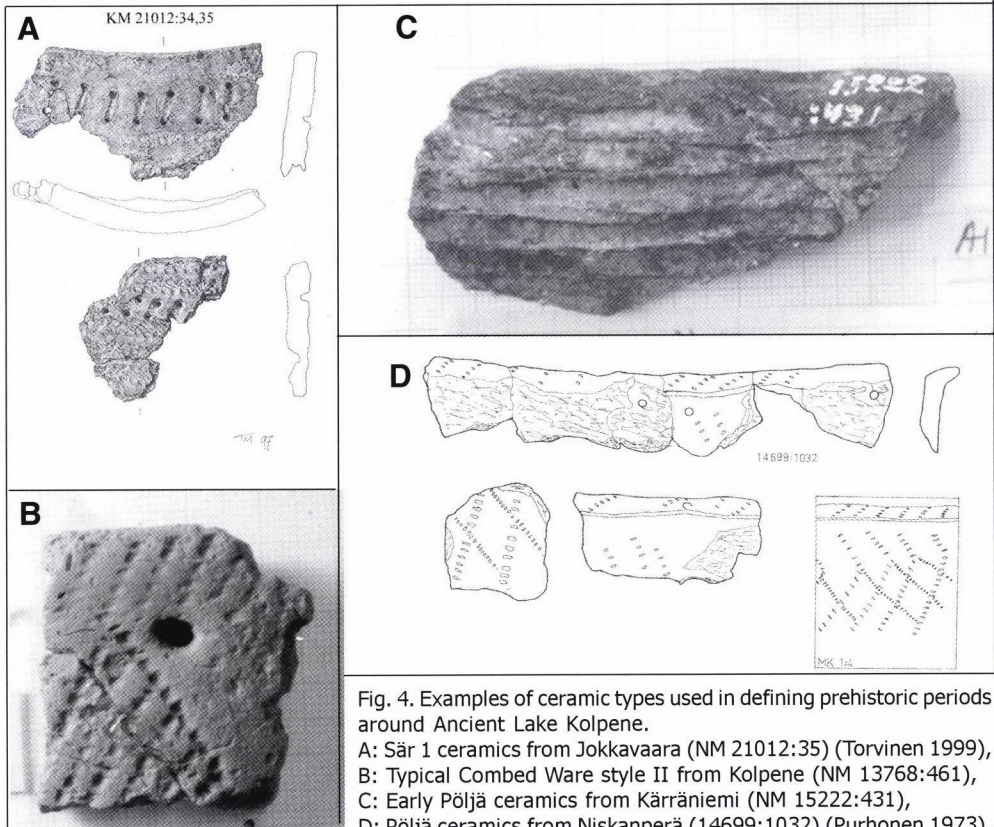


Fig. 4. Examples of ceramic types used in defining prehistoric periods around Ancient Lake Kolpene.

A: Sär 1 ceramics from Jokkavaara (NM 21012:35) (Torvinen 1999),
 B: Typical Combed Ware style II from Kolpene (NM 13768:461),
 C: Early Pöljä ceramics from Kärräniemi (NM 15222:431),
 D: Pöljä ceramics from Niskanperä (14699:1032) (Purhonen 1973).

of posts originally forming a construction with two parallel rows following the direction of the shoreline and ca. 10 m from it (Siiriäinen 1986: Fig. 9). I hypothesised that the construction was a kind of protection against the flooding from the lake. The floods must therefore have been fairly regular and severe. This is also indicated by the thick layer of sand and silt at the site: in some sections the cultural layer was almost 2 m thick within this fine-grained sand layer. The water-flow through the basin must have been rather rapid, at least during the final stages of the evenly narrowing lake. This would have caused the finest soil fractions to flow through the basin and a sand-bank island near the shoreline would have formed, which then would have become a settlement of Stone Age people. Such sand-bank sites have been rather common during this period elsewhere as well, at least in northern Finland (e.g. Huurre 1958, Siiriäinen 1967b and 1986).

During the 1980s and '90s Markku Torvinen and Hannu Kotivuori carried out additional surveys and excavations in the area, which resulted in locating several new sites around the Ancient Lake Kolpene basin (Kotivuori & Torvinen 1992, Kotivuori 1996) (Fig. 5). An extensive site on the southern slope of the Jokkavaara hill was investigated; Sär 1 ceramics were found there (Torvinen 1999). Eleven radiocarbon measurements date the site within the time bracket of 5540 and 3860 calBC. The Sär 1 pottery in Jokkavaara occurs slightly above an elevation of 80 m asl, which accords well with the Kolpene lake stage 1 determined on the basis of the Tapulinpelto site (cf. above).

In 1989 and '90 Mika Lavento carried out excavations at the Piirittävaara habitation site situated north of the confluence of the Kemijoki and Ounasjoki rivers (Lavento 1990). The site yielded archaeological material from two distinct periods: Typical Combed Ware (style II) and Early Metal Age ceramics of the Lovozero and Kjelmöy types. Combed Ware was found at an elevation of 76.5 m asl, immediately above a row of rocks indicating an ancient shore. This shows, contrary to my earlier opinion, that the Kolpene lake extended

north of the Ounasvaara hill at this stage, although it is still possible, at least theoretically, that – if the channel below the hill was narrow enough to isolate the northern part of the basin to form an independent sub-basin – the Piirittävaara site was situated on the shore of a separate small lake. If future investigations show this to be the case, then we can reconstruct stages 2 to 4 of the Kolpene lake into a twin-basin. This might be strengthened by the fact that the Early Metal Age pottery in Piirittävaara was found at the same altitude as the Combed Ware, and consequently clearly above the level of the earlier Kärrianiemi and Niskanperä sites with their Kierikki/Pöljä pottery.

According to this observation the water level in the northern part of the basin would have retained a higher level even after stage 2 (Combed Ware, style II). Also, the bronze (or copper) axe of the Seima type found at Niskanperä (Purhonen 1973) is contemporaneous with the Lovozero ceramics of Piirittävaara (cf. Carpelan 1979).

The latest views on the Kolpene lake have been expressed by Hannu Kotivuori in his general presentation of the prehistory of Rovaniemi (Kotivuori 1996) as well as Heikki Annanpalo, following mainly Kotivuori, in his review of the prehistory of the Niskanperä village (Annanpalo 1997). Kotivuori had at his disposal far more extensive archaeological material than previous investigators; this material has been published as a data list by the Lapin Seutukaavaliitto (Kotivuori & Torvinen 1992). In the region of the Jokkavaara hill, i.e. in the northern part of Ancient Lake Kolpene, there are three or four newly discovered habitation sites of the Sär 1 period, all between 80 and 90 m asl elevations (Fig. 5). Kotivuori concludes — with reference to the uppermost Sär 1 sherds at the elevation of 88 m asl in Jokkavaara and to the fact that seal bones occurred at this elevation as well — that the Kolpene lake in fact became isolated from the Litorina Sea during the Sär 1 period and not already towards the end of the pre-ceramic period, as I had proposed earlier (Kotivuori 1996: 83). Kotivuori has also recently discovered two occurrences of Early

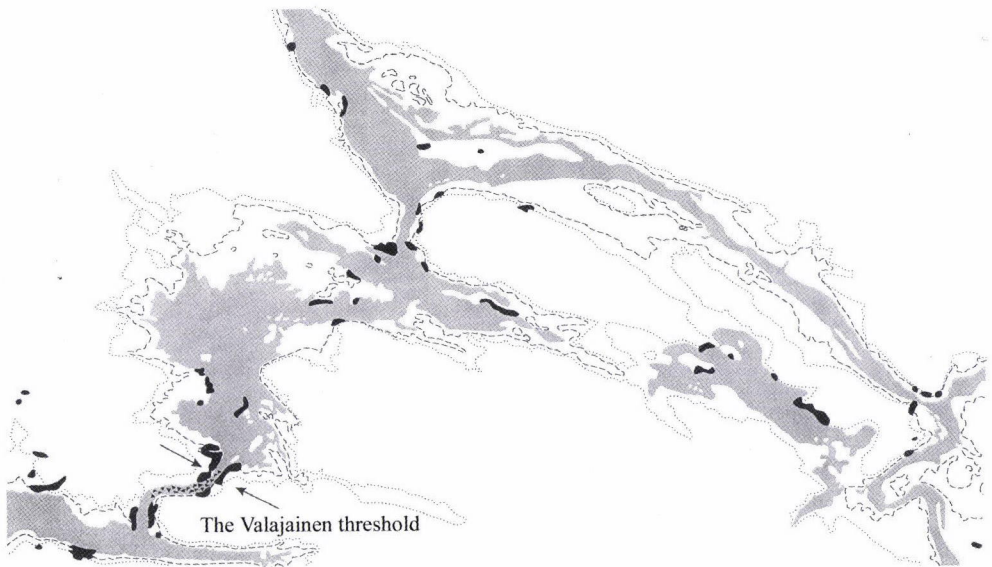


Fig. 5. Ancient Lake Kolpene as reconstructed on the basis of the archaeological material accumulated up to 1996. The map was published in Kotivuori 1996.

Metal Age ceramics in the same southern part of the lake. According to him, the Veitikanharju site contains pottery of the Sarsa-Tomitsa type and the Kolpene site has sherds of the Lovozero type in addition to Sarsa-Tomitsa (however, Kotivuori has marked these occurrences with question marks on his distribution map).

In conclusion to this review article, I would like to briefly place Ancient Lake Kolpene and the settlements on its shores into a wider context. After its isolation from the Litorina Sea the lake was situated close to the seacoast but later, when the coastline retreated due to the rapid land uplift, the distance from the lake to the coastline increased, and during the final period of settlement ca. 2000 calBC the distance was already ca. 40 km. The lake can be characterised as a small and shallow through-flow basin or – especially towards the end of its development – as a restricted basin, prone to annual flooding, within the coastal zone. I do not know whether there are hydrological investigations of such basins, but at least in archaeological investigations such basins have been noted: *e.g.* Järvensuo in Humppila in the Koenjoki channel (Siiriäinen 1983, Aalto *et al.* 1985), the small

lakes in the Mustionjoki channel in Nummi-Pusula and Lohja (Siiriäinen 1981) and Ruoksmäki in Askola and Renkomäki in Lahti, in the Porvoonjoki channel (Meinander 1954, Schulz 1996). These are dystrophic lakes in which spawn-fishing has been productive and the microclimate profitable for a rich shore vegetation. *Trapa natans* has thrived – possibly even been cultivated in southern Finnish lakes – as shown by the occurrences of water-nut in Ruoksmäki and Humppila, among others (Kolpene itself, however, has always been clearly north of the northern limit of *Trapa*, even during the Holocene climatic optimum). These lakes have also provided favourable resting areas for migrating birds. All in all, the small lake basins within the coastal zone have always constituted an important milieu, and in some case have possibly attracted permanent settlements to their shores because of their significant vegetal nutrition.

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