WELCOME TO THE LANDSCAPE TRAIL OF YLINENVAARA

The starting point for the 2.5 kilometres long landscape trail of the hill Ylinenvaara in the village Sieppijärvi, municipality of Kolari, is the inclusion of Struve´s geodetic arc to UNESCO´s catalogue of world heritage in July 2005. Indeed, the only measuring point of the arc in the municipality is to be found close to the top of the hill. The trail traversing the ridge previously led to the meadows in the north of the village, maybe a long time before the road line on the eastern side was established during the second half of the 19th century.

The local heritage association was planning to take care of Struve's measuring stone in Ylinenvaara as a monument of curation since 2015. The visit on the hill opened the view so, that the board of the association decided to promote the presentation of the multiple cultural features extending over the landscape. Yet the ownership of the property around the point of Struve turned to be a challenge due to over 100 landowners. Namely the legal management of an archaeological heritage site requires a personal permission of each shareholder of the piece of land in addition to the Finnish Heritage Agency. The triangulation stone is protected by the Antiquities Act, but anyone is free to visit the site. In the meanwhile, also the local village association became interested in marking the path to the stone setting. The heritage association then received a grant from the Heritage Agency to start mapping the trail. The project will be continued by lifting signposts to the numbered points, though considering the distance to the Struve´s point.

The mobile version of the map information is placed to the web page of the local museum into the link *kolari.fi/fi/palvelut/vapaa-aika/museo.html* . Guidance may be requested from the museum: 040 489 5316 or museo@kolari.fi, village association: 040 506 42 73 or sieppijarvenkylayhdistys@gmail.com, or the local heritage association: 040 57 201 49.

The route is recommended for walking. The easy-to-navigate route with its gentle ascents and descents may also be suitable for hikers with mild mobility limitations. The principle of sustainability and litterless hiking is valid on the trail: "What you bring along, you will carry it away, too." It is prohibited to make fire without a permission.

Additional partners have been the City of Tornio and "The Northern Parts of Struve´s Arc" -project, the Museum of Tornio Valley, other landowners along the trail, writers of the guiding texts, and the Press of Fell-Lapland.

Ylisenvaaran Struven piste. The measuring point of Struve at Ylinenvaara. Kuva/photo by H. Oksala 2021.

Study questions:

1. Under which law have ancient remains been preserved in Finland?

2. What is the name of the world-class ancient relic located on the scenic trail of Ylinenvaara?

3. What is sustainable hiking like?

GUIDE ① A LONG TRADITION OF REINDEER HERDING IN KOLARI

Reindeer herding has a long tradition in Kolari area and it starts from the times people hunted the wild deer. They used few tamed reindeer in attracting wild deer and many deerhunting pits have been found from Kolari area. The first litteral information about reindeer herding in our area is about raitioculture. Raitio is a person who takes care of other people´s reindeer. The first information about raitioculture is from 16th century, but the tradition is likely to be thousand of years old. In Kolari the raitio has taken care of householders´ reindeer to the end of 19th century. The most famous raitios have been Pieti Unga, Kissa-Kaija and Kohvin Lassi.

Even though the primary source of livelihood in the household wasn't reindeer herding, it was common in Kolari area that many householders owned some reindeer. After the raitioculture ended people still spoke about reindeer owners and reindeer herders seperately. In households that had only some reindeer the most important where the reindeer that where used for transport. One household could have up to twenty transport reindeer. Initially there where two reindeer herding areas in Kolari: Yli-Kolari and Ala-Kolari, but it became Kolari reindeer herding area in the beginning of 1990´s.

There are about 50 different reindeer herding related construction in Kolari area. The oldest fences are made of logs. On the villageside of Ylinenvaara has been an old logfence that was built in 1930´s. The other fence on the northwesternside is a modern boardfence and it was built in 1970's. In the beginning of last cenrury there where big reindeer round-ups up to five hundred reindeer in Ylinenvaara. Reindeer herders gathered the reindeer from the north close to Kolari for roundup. The reindeer round-ups where actually big events that gathered a lot of curious people addition to the reindeer herders. In round-ups the reindeer herders separated the animals that where slaughtered from the livestock. They usually slaughtered the animals the next day and they stayd overnight in the nearby houses in Ylinenvaara and Sieppijärvi villages.

Reindeer herding has changed a lot in last hundred years. Reindeer herders use snowmobiles and ATVs in gathering reindeer instead of gathering them by skiis or by foot. Because the pastures have diminished, reindeer don't find enough food from the wilderness and they have to be given food to help them through the winter. Nevertheless some old traditions still live in Kolari area. Reindeer are still tamed to pull sledges and you can still hear lapponian herding dogs bark in reindeer gathering. Reindeer herding is still an important livelihood in Kolari.

Text: Reeta Ikonen 2022

Signpost location: ETRS-TM35FIN N: 7455020.879, E: 366075.729

Study questions 4 - 6.

4. What were the raitio-herders and what did they do?

5. What was the name of the reindeer fence made of logs in Kolari?

6. Why are the reindeer gathered in fences?

GUIDE ② Parking lot

THE STRUVE GEODETIC ARC IS AN IMPRESSIVE CHAIN TO MEASURE THE SIZE AND SHAPE OF THE EARTH IN THE 19TH CENTURY

The ambitious scientific goal in the early 19th century was to get the longest possible measure corresponding to the meridian of the earth. The work, carried out between 1816 and 1855, was named the Struve Geodetic Arc according to the German astronomer F.G.W. Struve. The aim was to find out the exact size and flattening of the earth.

The Struve Geodetic Arc is 2822 kilometers long reaching from the Black Sea to the Arctic Ocean. The triangle chain was measured using triangle measurement techniques. The chain consists of exactly localized points for which there was a view towards other points. By combining points, triangles were formed as a chain. The triangular chain length was calculated mathematically. The measurements included astronomical methods and the baseline measurement for determining the correct scale.

The shape of the Earth was observed in Tornio Valley even before, by French Maupertuis in 1736 - 37 and Swedish J. Svanberg in 1801 - 03. Struve, working in Pulkovo's Observatory in Russia, negotiated with the Swedes and Norwegians to continue measurements to the north of Tornio. The Swedes measured in the 1840s and in the early 1850s from Tornio to Kautokeino under the leadership of astronomer N.H. Selander.

The North has attracted scientists and explorers for a long time. The information brought people to exotic and unexplored areas. Travelers were botanists, midnight sun and northern lights observers. Many explorers wanted to get to know special natural conditions, but also to see people living in the northern regions. Travelers stayed at guesthouses, and for example Struve's scientists hired locals to bear carefully packaged research equipment. Measuring points were often located in terrain with a challenging course.

In Tornio-Muonio Valley, roads between many villages were in the development phase still in the mid-19th century. From Tornio to Ylitornio a decent road was on both sides of the river, which continued to as a ride path to Pajala. In the 1840s, the upwards of the Matarengi was often travelled by boats as there were no uniform summer roads. Marshes were exceeded by boardwalk to some villages.

The nearby Kengis area in Pajala had become familiar to surveyors of the Struve Geodetic Arc. Scientists spent there the late summer of 1846 and 1847 doing surveys and plans. The triangulation of Ylinenvaara was carried out in August 1849. The angular measurements were taken between Kiuaskero, Muonio, Pajala's Jupukka and Paljukkavaara, and Olosvaara in Pello. Baron C. Skogman, who was involved in the measurements, wrote (1862) that he had counted 376 cut trees in the mountain at the time of the measurements. The lines of sight had to be opened to other mountains. Even today in Ylinenvaara there are numerous tree stumps that are apparently old. In the angular measurement, the measuring device was precisely aligned towards a sign erected on another mountain. The signal was a barrel attached to the top of a tree or a pole.

As a scientific result, it was finally found that the distance from the earth's core or center to the poles is about 21 km shorter than to the equator. The measurements also affected the map development. The Struve Geodetic Arc was selected on the 2005 UNESCO World

Heritage List. The Geodetic Arc represents the cultural heritage of science and technology, being a fine example of the joint effort of states.

Text: Jarno Niskala 2021

Coordinates for Struve Point in Ylinenvaara: ETRS-TM35Fin P: 7454404 I: 366659
Signpost location: ETRS-TM35in P: 7454860.212, I: 366 295.729

Sources: See above

Study questions:
7. What was the profession of the astronomer F. G. W. Struve, and where did he come from?

8. When and for what purpose did Struve let clear up and measure the triangulation chain extending from the Black Sea to the Arctic Ocean?

GUIDE③THREE BILLION YEARS OF YLINENVAARA'S LANDSCAPE DEVELOPMENT TOWARDS THE CULTURAL ENVIRONMENT

The mica bedrock of Ylinenvaara was formed three billion years ago in a marine environment. Less than two billion years ago, the rock turned into a northwest-southeast hump pushed by the Svecokarelian mountains. The last glacial period of the Earth started 2.6 million years ago, and its final stage, the Veiksel continental glacier began 116,000 years ago, carrying mixed rock material and accumulating it as a moraine outcrop at the Ylinenvaara cliff. About 10,300 years ago, this hill was lifted as an island from the Ancylus Lake stage of the Baltic Basin, having melted from the glacier. All the similar hills around formed an archipelago, bordered by a dry coastal continent in the east. In the north-east at the distance of 42 km, behind the open water, the mountain Yllästunturi was rising as a beacon. Due to the land uplift, the lake Ancylus may have surrounded Ylinenvaara for about 350 years, while the lake's impact in Kolari lasted for a total of 700 – 1000 years.

The first post-glacial plants were grasses and marshes. The earliest animals could be waterfowl as well as fish and ringed seals. In the next stage, the low-lying heathers and shrubs, such as junipers and willows, were already able to support arctic land mammals, like the wild reindeer. The first forests were birch-dominated, so they attracted beavers and elk. This dry and continental climate ended about 8700 years ago by starting the warm pine and alder phase, when bears and forest fowl arrived. The strong peat growth, as registered from Teuravuoma about 8,400 years ago, may have brought more afforestation and depletion of water bodies. About 3,800 years ago the natural landscape began to evolve into the cooling spruce period with the onset of what it is today.

Sieppijärvi is known for 2–5 unexplored Stone Age sites. If based on the heights of the ancient shores alone, they could date back no to 10,300 to 9,900 years at earliest. The oldest site could be the fireplace on the eastern slope of Ylinenvaara. The clearest finds come from the farm Pääkkölä, where a couple of green stone chisels, an adze, quartz flakes and burnt bones are documented. There are also finds from Poikkijärvi, Saarikoskenoja, and from the local museum at Rova. Apart from the mentioned stone setting, other sites are located 2,5 to 4,5 kilometers southeast of Ylinenvaara.

The cultural heritage site that illuminates the history of the village is the Lamminjänkä timber trail, which may be based on the medieval Pirkka traders´ natural route between Tornio and Sodankylä. The Pirkka traffic became significant since the end of the 13th century through fur trade and taxation, as well as the increased need for traction reindeer. This is how the reindeer husbandry typical of the Tornio Valley is considered to have originated. The next milestone is a written information from the 1430`s when the border of Lapland was located north of Pello. Further to the north of it, foraging in the wilderness required a permission of the local inhabitants, the Lapps. A description of the people of the arctic forests, as based on Olaus Magnus' visit in 1518–19 shows that they were engaged in fishing, small-scale reindeer husbandry and trade. Sieppijärvi is first mentioned in the list of wilderness lakes in 1553, where the right to fish was recorded for a farmer from Hietaniemi.

The starting point for the emergence of the present-day village settlement in Sieppijärvi was the founding of the iron forge to Köngänen in Pajala in the west. In the 1650`s, Sieppijärvi was annexed to the economic area of Köngänen, especially as a meadow to produce natural hay. There was apparently an indigenous old man, named as Sieppi, who guided the people

of the forge to Sieppijärvi. His hut was eventually overshadowed by the pioneer farm of the becoming village in 1677.

The era of the measurements of Struve`s chain in the mid-19th century is reflected by the contemporarily widespread industry of burning pine tar. This activity is remembered through a tar grave and its trough on the western edge of Ritalaki.

Text: Hilkka Oksala 2021

Location of the sign: ETRS-TM35ENG P: 7454713.545, E: 366486.395

Sources: See the Finnish version.

The caption:
If you imagine the green valley between the fell Yllästunturi on the horizon and the northern plateau of Ylinenvaara in the foreground to be completely free of conifers, but covered by water, you will get an idea of the landscape that was formed by the post-glacial Ancylus lake here about 10,000 years ago. Photo by H. Oksala 2021.

Study questions:
9. What type of rock is the bedrock of Ylinenvaara?

10. What was the name of the large freshwater basin that melted from the continental glacier?

11. What did the border of Lapland between Pello and Sieppijärvi mean in the 1430s?

SIGNAGE (4 A) STRUVE CHAIN MEASURING POINT – YLINENVAARA

The Struve chain is a triangle chain whose measuring points were measured between 1816 and 1855 to determine the exact size and shape of the earth. In August 1849, the measuring point of the local law area of Ylisenvaara, which is more than 200 metres high in the municipality of Kolari, was triangulated. The point was involved in forming a 2,820-kilometre triangulation queue in the then Russian and Swedish regions, passing from the Black Sea through present-day Finland to the Arctic Ocean.

Today, these 265 triangle points in the chain, of which approximately 104 are in Finland, are located in ten countries: Norway, Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine. On the proposal of these states, the chain was recognised as a UNESCO World Heritage Site in 2005.

The Ylinenvaara measuring point is protected under the National Antiquities Act. The measuring point was serviced by the authorities in 1913. During Finland's independence period, the point was long forgotten until Petri Vaattovaara found it with crosses set in stone in July 2005. At the time, the points of the Struve chain were usually marked with a hole drilled in stone or rock, but in the then Russian-Swedish border region north of Tornio, Swedish surveyors used a cross hacked into stone or rock.

Although the preservation and undiscoverability of the terrain markings at the Struve measuring point in Ylinenvaara is probably the result of chance and the preconceptions that have guided elsewhere, the discovery of the point in the summer of 2005 was the result of an accurate and determined search. Petri, who worked as a researcher at the University of Kuopio, noticed in his home village of Sieppijärvi at his cloudberry picking holiday in July when he visited village speeches and local newspapers that the point had been searched hard but not found. The World Heritage Sites were already familiar from around the world, so he wanted to find the point of Struve in the home village. The first step was to find out how Struve's points were marked by calling the National Land Survey of Finland. He borrowed a terrain map of the area with elevation curves from a neighbor. The cross or borehole in the stone or rock was in mind when examining the Ylinenvaara slope with a compass and map in hand. Suddenly, a regular cross carved at the front could be seen on the stone, which was among the other head-sized stones. Although the forest was obscure, the sunny day made it possible to detect a clear cross-carving on the reserved part of the stone in the local Ylinenvaara legal area, which was located well below the highest Ylinenvaara peak. Petri marked the location of the discovery with an orange string notice attached to the tree next to the discovery of the Struve triangulation point in Ylinenvaara, and the matter was also announced in the area's newspapers. The residents visited the point over the years, and the National Board of Antiquities visited the site in the summer of 2020, marking the area with an orange ribbon. Until then, Petri's string attached in 2005 was the sign which is seen in the photo below.

The terrain markings of the Struve chain measuring point, formed by the Ylinenvaara triangulationists in 1849, are still very noticeable as a whole, and the cross-engraving of the stone is one of the few crosses hacked into the measuring points of the Struve chain that can still be seen today. The precipitates of the cross and the rectangular cluster around it, which is about ten stones, are in line with the main directions of the air. The location is up to 30 meters lower than the highest peak of Ylinenvaara.

At the time, the Ylinenvaara measuring point was forming three triangles in the triangulation chain and was connected to four different triangulation points. Two of those points in line of sight with Ylinenvaara are located behind the Tornio-Muoniojoki river on the Swedish side (Paljukkavaara and Kerrojupukka) and the other two on the current Finnish side (Olosvaara in Pello and Kiuaskero in Muonio near the border of Kolari municipality).

Located close to the village of Sieppijärvi, Laestadius hiking trail, the Homeland Museum and the northbound highway and offering views for its guests, the Struve chain measuring point can also be found marked on the terrain map, in the immediate vicinity of the easy-to-reach wide path in the forested local peak area.

Text: Petri Vaattovaara 2022

Struve point coordinates: ETRS-TM35FIN P: 7454404 I: 366659
Sign location: ETRS-TM35FIN N: 7454558.879, E: 366569.062

More information:
https://www.kyppi.fi/palveluikkuna/mjreki/read/asp/r_kohde_det.aspx?KOHDE_ID=1000016403

The caption:
The cross-carving is on the surface of the largest, flat stone of the right-hand group of stones. Photo H. Oksala in 2015.

Study questions:
12. How long is Struve's chain?

13. When was the Struve score measured in Ylinenvaara?

14. In which modern states does the Struve chain run?

GUIDE 4b THE LAND OWNERSHIP AROUND THE POINT OF STRUVE´S CHAIN IN YLINENVAARA

The point of Struve`s chain in Ylinenvaara, Sieppijärvi, is located on a farm with the base number 11. The new farm number 11 was founded by Olli Pasma's son Abraham alias Aapo with a temporary permission in the early 1830´s. Aapo used the surname of his first wife, Satta. However, the farm was ordered to be moved to the southern shore of Lake Sieppijärvi in 1841, as it remained under the older farms in the village.

On the south side of the lake, Aapo built a house at a slightly higher point, called as rova. The name of the farm became Järvirova, which also became the surname of the Aapo family. In addition to the home plot, the farm included several meadows and a forest plot in Ylinenvaara.

After Aapo, the farm was taken over by Salomon Järvirova in 1848. He sold the farm to Erkki Koskenniemi in 1868. Erkki and Eeva (nee Kangas) also used Järvirova as their surname alongside Koskenniemi, and their children began to use the surname Järvirova until the priest changed the family name back to Koskenniemi in the 1940s. Seven of the children of Eeva and Erkki have offspring, and eight died childless. Erkki died in 1904 and Eeva in 1921. The children managed the farm together for almost forty years.

In a deed of sale as dated in September 1925, the estate sold all such spruce trees from which one could get 13 English feet with the top of 4 inches of healthy paper wood under the bark. It was also agreed in the deed of sale that the buyer should cut down and remove the timber before the last day of April in 1926. The price was agreed to be 50 pennies per floating cubic foot.

The division of the heritage after Erkki began in 1946, but still in 1951 the forest was sold by the heirloom. When an offspring of the younger generation applied for a division for the property, the old men updated that “let it break up”. The farm was finally divided to descendants of Erkki and Eeva in the early 1950`s. The forest plot in Ylinenvaara was divided into several pieces and Alma Koskenniemi received one part. Alma died childless in February 14, 1958. Alma`s part remained in the estate, from which a part of the heirloom separated its pieces off in the late 1980s. Those heirs, who do not know that they belong to Alma's inheritance, remained there. The landmark of the Struve chain is located in this undivided column of Alma´s heirloom.

Text 2021: The data was collected from the home archive by the great granddaughter of Eva and Erkki Koskenniemi.

Location of the sign: ETRS-TM35ENG P: 7454558.879, I: 366569.062

The caption:
Road alignment on the west side of Sieppijärvi between the 1860s and 1870s. Source http://urn.fi/URN:NBN:fi:jyu-200806175507.

Study questions:

15. When was the piece of forest in Ylinenvaara annexed to the estate of Abraham or Aapo Pasma or Satta?
16. To whom did the woodland around the Struve point belong when the triangulation was provided in Ylinenvaara?

GUIDE ⑤ THE STORIES HIDDEN INSIDE THE LANDSCAPE

The landscape in front of you tells meny stories from the past. The swamp before you is called Heinävuoma, Hayswamp. Its name comes from the times people made hey from swamps and riverbanks. The hills around it have witnessed many heroic events and some less heroic incidents. The most distant hills are all the way in Sweden. From Sweden starts the beginning of the nearby village Sieppijärvi.

The tale tells that there was a man called Sieppi in ironwork in Köngänen village near Pajala in Sweden. He was sent to discover the lands eastside of Tornioriver. He found a lake full of fish and plenty of water birds. And its banks turned out to grow a lot of hey. Sieppi got usufructuary right to the lake in return of his expedition and the lake, nearby hill and swamp where named after him. The villagers remember him by name Sieppi-äijä, Sieppi-geezer. The tales authenticity is nevertheless uncertain.

The Köngänen ironwork owned heymeadows in Sieppijärvi and some place names are from that time. For example Papinniitty, Priestsmeadow got its name because it belonged to Köngänen churches priest. The little hill on the villageside on Heinävuoma is now named Vankka but its original name was Ruukinvankka, Ironworksvankka. Heymeadows got their name from the Köngänen priest, but the sexton was not forgotten either. On the westside of Heinävuoma behind Kuurusenvaara lies Suntiovuoma, Sextonsswamp and rives and hill by the same name. According to old tale a sexton from Pajala church was heading to Sieppijärvi but got lost in the way and sunk in to a swamp. He was saved by gods miracle (by his own words) and after this occasion villagers started to call the place Sextonsswamp.

Sieppijärvi was part of Pajala church till year 1809 and peace of Hamina. People from Sieppijärvi went to church to Pajala and the people from the ironwork came to make hay from Sieppijärvi such as people from Sieppijärvi went to their heymeadows near Tornioriver. In summer they used duckboards. By these same duckboards people went to Pajala to listen to vicar Lars Levi Laestadius. Thats the reason why villageassosiation named the duckboardroute after Laestadius when they renovated it in the beginning of 2000's.

The southernside hill behind Vankka is Sieppuvaara which was named after Sieppi-äijä. On top of it was a fire quard post till 1980's. Behind that, a bit in its shade are Äijävaara and Äijäjärvi. Käkivaara house had a meadowpatch by Äijäsrteam. Käki-Salkko, Käkivaaras old landlord, was oce in his old age heading to that meadowpatch to take food for the haymakers. He got lost on the way and accidently came to the shore of Äijäjärvi. According to the tale, the old man said to the lake: "You sure are Äijälake, but who put you here?". Käki-Salkko also took part to the great bearkilling that took place in Kuurusenvaara in 1870's. Kuurusenvaara, Kuurunenhill witnessed how men went to kill the bear as men go to battle in war and just as in war the woonded men were carried home.

Text: Reeta Ikonen 2022

Location of the sign: ETRS-TM35FIN P: 7454209.983, I: 366658.395

Study questions:

17. Who is said to have led the people from the Köngänen Works to make hay in Sieppijärvi, and when? In what direction was the factory located?
18. Who was the famous priest that was ordained the pastor of Pajala in the same year, when the point of Struve was triangulated in Ylinenvaara?

GUIDE ⑥ HISTORY OF FORESTRY IN SIEPPIJÄRVI

Utilization of Sieppijärvi forests has a long tradition. Tar burning was practiced commercially from the early 19th century until forestry work provided a better and safer livelihood for the locals. As early as the 1870s, Swedish sawmills extended their purchasing activities to Finland, when restrictions on deforestation began to be lifted. From that period, it can also be considered that large-scale commercial exploitation of Sieppijärvi forests began.

Only sawn trees were harvested at the end of the 19th century and the beginning of the new century, when talking about pruning forestry. The saw logs were floated along Naamijoki River to Tornio River and further along to Hellälä in Tornio, where the timber were separated. At that time, the sawmill of Kemi Company, founded in 1893, operated in Kemi, and the sawmill of Kurt Company in Kuusiluoto.

Floating of pulpwood began when Kemi established a pulp mill at the bottom of the Bay of Bothnia in 1919. Demand continued to grow with the new sawmill and mill established in Veitsiluoto in the 1920s. Cuts were also carried out in Sieppijärvi and its nearby villages. The felling employed a large number of forest workers and horses. The cuts mainly concerned seed wood, small open cuts were also carried out, as well as some growing cuts. Felling in Venerova was carried out in 1946, and likewise the cuts of Vaattovaara and Venevaara began in the late 1950s. When the roads were built and improved, some of the timber began to be transported by trucks to the intermediate stockpile on the ice of Lake Sieppijärvi to await the spring. Even today, old, well-preserved logs, which also show the owner's stamp, may rise from the bottom of Lake Sieppijärvi,.

All forestry work was done as manpower in the early 20th century and forest transport was mainly by horses, sometimes even reindeer. Chainsaws appeared in the forests in the 1950s, when forestry tractors and trucks were also used for transportation. Some of the timber was transported directly to the sawmills in Kemi in the late 1960s. Since the completion of the Kolari railway (1966), most of the area's timber has been transported by train through the Koivumaa shutdown and Sieppijärvi station to the Kemi mills. After the end of the floatings of Tornionjoki River in 1971, transport was completely transferred to rubber wheels and railways. Today, the loading sites of timber on the Kolari railway are located in Kolari and Pello. In the late 1980s, multi-purpose machines came to Sieppijärvi's forests, which are now mainly used for felling.

With the regeneration felling, the soil was worked to ensure germination and to facilitate sowing. The main method was burning in the 1950s and 1960s. There were large incineration sites e.g. in Ritolaki, Kuurusenvaara, Korkealehto and Jalomaa. There was a big forest fire in Siikamännikkö in 1962, when a forest fire lit by lightning burned almost the whole area.

The hoeing and planting was introduced in the late 1950s, the first plantings of Metsähallitus were made in Saarijärvenkuusikko with open root seedlings. The seedlings were packed in 2000-piece wrapping packages. Pillar cutters appeared in the construction sites in the mid-1960s, when hoeing was allowed to recede. A new tillage or plowing was developed for the thick-area reform areas. This became the dominant method in the 1970s and 1980s. The proportion of siltation on thin soils began to increase in the 1980s, and lighter methods began to be developed in the following decades. Intermittent harrowing, patching, excavating rake

and turning harrowing came alongside in the 21st century. Today the share of ploughing in tillage is quite small.

The Ylisenvaara area of Sieppijärvi, where the measuring point of the Struve chain is located, is mainly made of dry fabric, i.e. lingonberry type, to some extent also fresh fabric, i.e. blueberry type. The woods are mainly pine, some birch can also be found. The forest in the pattern is 140–160 m3 / ha, the age of pine is 120–145 years. There are no fresh traces of felling. Some stumps of old trees felled with an axe can be found in the area, probably felled in the early 20th century. There are also fire stumps in the area, this area, like most of Lapland's forests, have been burned in the past and replaced by a new forest.

Otherwise, a lot of felling has been done in the vicinity of Ylisenvaara, both as a forestry saw with a chainsaw and with multi-purpose machines. Managed seedlings and thinned young forests are the best carbon binders in our forests.

Finnish text: Kari Koivumaa 2021

Location of the sign: ETRS-TM3ENG P: 7454014.420, E: 366962.395

Sources:
Sundqvist, Jarl (1967): Lauttojen laskusta irtouittoon.
Metsähallitus (2000): Kolarin alue-ekologinen suunnitelma.
Bruno Eelis Koivumaa, memory information.
Kari Kullervo Koivumaa, memory information.

The caption:
The Struve triangulation line was felled with axes as early as the late 1840s. Are these old stumps of the Lakitie arm perhaps from that time? Photo by H. Oksala 2021.

Study questions:
19. What was an important forest product before the commercial forestry?

20. When did the cut of the forests around Sieppijärvi start?

21. Where did the first buyers of timber wood come from?

22. When did the floating of timber start in Kolari and Sieppijärvi, and where were the logs headed?

23. For what purposes was timber needed increasingly?

GUIDE⑦ HISTORY OF ELECTRICITY IN SIEPPÄRVI

Einari Iivari started working on a sawmill, mill and power plant with the villagers in 1940 in Sieppijärvi at Saarikoski in the river Naamijoki, as the national network was far out of reach. The power plant was completed as a power source for the sawmill and mill in 1941. Lines were drawn to the village and to some extent to the surroundings. As there was often relatively little water in the Naamijoki River, the electricity generated by the power plant was not sufficient for a very large area.

The company of Sieppijärven Sähkö was founded later. It took the responsibility for the distribution of electricity by keeping the network in good condition. The electricity company also built street lights up to Ylinenvaara.

Over the years, the national network was extended to the village of Sieppijärvi and from there across Ylinenvaara to the village of Kolari. A new high-voltage line was built from the municipality of Pello to Sieppijärvi in 1962, and later to Kolari. The company of Sieppijärven Sähkö, when it no longer had its own power plant, bought electricity from the company of Tornionlaakson Sähkö. The Sieppijärvi company was sold to Tornionlaakson Sähkö in 1969.

The network had to be strengthened again as the demand for electricity in the fell area increased. Thus, again a new high-voltage line was built from Pello to Sieppijärvi and via Ylinenvaara to Kolari in 2009.

Finnish text: Pekka Vaattovaara 2021

Location of the sign: ETRS-TM35ENG P: 7453717.753, I: 367176.395

The caption:
The electricity line of Ylinenvaara, the scenery to the SW. Photo Jarno Niskala 2021.

Study questions:
24. When was electricity first received in Sieppijärvi?

25. What was the earliest source of electricity in Lake Sieppijärvi?

26. In what ways did the company Sieppijärven Sähkö Oy excel in its position?