

Maria Lähteenmäki

FOOTPRINTS IN THE SNOW

The Long History of Arctic Finland

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The Long History of Arctic Finland

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<p>Abstract</p> <p>Finland's geographical location and its history in the north of Europe, mainly between the latitudes 60 and 70 degrees north, give the clearest description of its Arctic status and nature. Viewed from the perspective of several hundred years of history, the Arctic character and Northernness have never been recorded in the development plans or government programmes for the area that later became known as Finland in as much detail as they were in Finland's Arctic Strategy published in 2010. As a consequence of international geopolitical and economic turns Finland has also moved closer to the Arctic. At the same time, Finns have gradually accepted Northernness as part of their regional and national identity.</p> <p>The work presents and evaluates Finland's Northern nature over a long historical time span. The texts focus on how Northernness has been seen, on the one hand in scientific work, and on the other in political speeches and practices. Finland, which will have been independent for one hundred years in 2017, wants to be an active operator in the Arctic region. It is looking to the North for growth, competitiveness and employment while respecting the Arctic environment.</p> <p>The writers of this reference book are experts in Northernness in their respective fields and come from different universities and central government.</p>			
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Tiivistelmä	<p>Suomen maantieteellinen paikka ja historia Euroopan pohjoisessa, pääosin 60 ja 70 pohjoisen leveysasteen välissä, kuvaa sen arktista asemaa ja luonnetta selkeimmillään. Monisataisen historiansa näkökulmasta katsottuna Arktisuus ja Pohjoisuus eivät kuitenkaan ole koskaan tulleet kirjatuksi Suomena sittemmin tunnetun alueen kehityssuunnitelmiin tai hallitusohjelmiin niin seikkaperäisesti kuin mitä tapahtui vuonna 2010 julkaistussa Suomen Arktisessa Strategiassa. Kansainvälisen geopoliittisen ja taloudellisen käänteen seurauksena Suomikin on siirtynyt lähemmäksi Arktista. Samalla suomalaiset ovat vähin erin hyväksyneet Pohjoisuuden osaksi alueellista ja kansallista identiteettiään.</p> <p>Teoksessa esitellään ja arvioidaan Suomen Pohjoista luonnetta pitkällä historiallisella aikajänteellä. Tekstit painottuvat siihen, miten Pohjoisuus on näkynyt yhtäältä tieteenteossa ja toisaalta poliittisissa puheissa ja käytännöissä. Vuonna 2017 sata vuotta täyttävä itsenäinen Suomi haluaa olla arktisen alueen aktiivinen toimija. Se pyrkii hakemaan Pohjoisesta kasvua, kilpailukykyä ja työllisyyttä arktista ympäristöä kunnioittaen.</p> <p>Tietokirjan kirjoittajat ovat omien alojensa Pohjoisuuden asiantuntijoita eri yliopistoista ja valtionhallinnosta.</p>		
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Referat	<p>Finlands geografiska läge, huvudsakligen mellan 60:e och 70:e breddgraden, och historia i det nordliga Europa beskriver bäst dess arktiska ställning och karaktär. Med hänsyn till sin månghundraåriga historia har den arktiska dimensionen och det nordliga läget för det område som senare blev känt som Finland likväl inte tidigare dokumenterats i utvecklingsplanerna eller regeringsprogrammen lika detaljerat som i Finlands arktiska strategi, som publicerades 2010. Som en följd av den internationella geopolitiska och ekonomiska vändningen har också Finland förskjutits närmare Arktis. Samtidigt har finländarna så småningom godkänt det nordliga läget till en del av sin regionala och nationella identitet.</p> <p>I verket presenteras och utvärderas Finlands nordliga karaktär under en lång historisk tidsrymd. Texterna fokuserar på hur det nordliga läget har synts dels inom vetenskapen, dels i den politiska retoriken och praxisen. Det självständiga Finland, som fyller hundra år 2017, vill vara en aktiv aktör i den arktiska regionen. Från den nordliga verksamheten söker Finland tillväxt, konkurrenskraft och sysselsättning med respekt för den arktiska miljön.</p> <p>Skribenterna, som jobbar vid olika universitet eller inom statsförvaltningen, är specialister på de nordliga områdena inom sina respektive branscher.</p>		
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PREFACE: THE LONG HISTORY OF FINNISH “COLD KNOWHOW”

The purpose of this book is to describe and evaluate the attitudes of the Finns towards their northerly location over a long time span, which it will seek to do by considering the question of how Finland's Arctic geohistorical and geopolitical position, climate and natural environment have been reflected in its politics, science and public discussion. Practically the whole country is located north of latitude 60°N, so that the Finns constitute no less than 25% of all the inhabitants of this circumpolar zone. On this criterion Finland is without doubt an Arctic country.

Given that their ancestors migrated to the area now known as Finland soon after the ice sheet of the last glaciation retreated from it, around 11,000 years ago, the Finns may be said to have had a long experience of living with protracted winters and brief summers and adapting to cold conditions. How are these collective memories reflected in opinions of the Finns and in the image that they have of themselves.

Since Finland is a long, narrow country (1157 km from north to south and 542 km wide at its narrowest point), its “northernness” affects the inhabitants of different parts of it in different ways. The people of Helsinki see the Ring III road built around the city in the 1960s as dividing their civilized urban area from the uncivilized area lying “further north”. The ring-road was in fact known at one time as the “wolf limit”, the implication being that everything beyond it, i.e. more than about 20 km from the centre of Helsinki, was wild, untamed countryside. On the other hand, a tourist advertisement film from the same period praises Helsinki as the “capital of the north”: “In winter the sea surrounding the *White City of the North* is wrapped in a glistening mantle of snow and great perseverance is needed to keep the harbours open. The gleaming snow emphasizes the clean lines of the buildings and the snowy landscape reminds us of how close to nature even the people of Helsinki are living. The city borders directly on forests that provide excellent opportunities for hiking and skiing excursions.”¹ The key concepts in this description are those of northernness, perseverance, cleanliness, nature and forest. Even nowadays the people of Helsinki still go skiing in the city's recreation areas and the surrounding nature conservation areas during the winter months, go out skating on the sea ice and fish through holes

1 *Helsinki, Pohjolan valkea kaupunki*. Helsinki tourist film, 3.5.1960. Fennada-Filmi.



A swimmer delighting onlookers in Helsinki in the 1950s by leaping into a hole in the ice.
Photo: Courtesy of the National Board of Antiquities.

in the ice on the sea and nearby lakes. One increasingly popular custom at the present time is to crown a hot sauna with a dip in the ice-cold water of the sea or a lake (so-called winter swimming). It is claimed that the contrast in temperatures helps to build up your resistance, improves your health and lengthens your life.

The feeling of the Arctic that one gets on passing beyond the Arctic Circle in Finnish Lapland is far more convincing, however. Here the snow can be as much as a couple of metres deep and it is in Lapland that the most severe frosts have been recorded, -51°C. The Arctic is also well known for its period of winter darkness, as the sun remains below the horizon for two months in Utsjoki, Finland's northernmost local government district, although it is seldom totally dark, thanks to the moonlight and the starry skies, and most of all the Northern Lights, or Aurora Borealis, which can set the whole sky aflame on clear, frosty nights. The existence of a winter season that lasts for half of the year is also reflected in the fact that the Finnish language has innumerable words and expressions for describing different kinds and conditions of snow and types of snowdrift and snowstorm. Indeed, there are many visitors for whom the very word Finland is synonymous with snow and cold. It is significant, however, that the American magazine *Newsweek* named Finland as the best country in the world in 2010 in spite of having *such a long winter*.²

The dazzling beauty of nature in the snow, and in general the vast coniferous forests to be found all over the country, are felt to have a curative and invigorating effect on the Finnish mind. The forests not only purify the air but they also refresh the mind, and there are plenty of opportunities for the Finns to have these experiences, as their country is one of the most intensively forested in the world, with 72% of its surface area covered by forests. As soon as the snow has melted in spring, almost one fourth of all the Finns set out for their summer cottages on the edges of the forests and the shores of the thousands of lakes. The miracle of spring, the awakening of the flora and fauna, is something that has to be seen and experienced with all the senses and all the emotions. There are some 500,400 summer cottages in Finland altogether, of which more than 30,000 are in the northernmost province, Lapland, and quite a large number of these nowadays are modern "second homes" which can frequently be used in winter as well as for about three months in the summer. Urbanization as a phenomenon is only just over a hundred years old in this country, and the bond between human being and nature is still a very strong one.

2 *Newsweek* August 23–30, 2010.

The lure of nature is not confined to the Finns, however, as hundreds of thousands of people from Central and Southern Europe, Asia and the Americas come to Finland, and especially to Lapland, to enjoy the natural environment of the Subarctic. The first tourist hotels on the fells of Lapland were built in the 1930s, and tourism in this region took a great stride forward in the 1980s when the first direct Concorde flights from England to Lapland took place. By 2013 the number of registered nights spent in a hotel by tourists from abroad had exceeded the million mark. The tourist brochures praise Northern Finland as the largest and most authentic adventure park in Europe and its only true wilderness area. The sun does not set at all at the height of summer, and the Midnight Sun is a further attraction for hikers, fishermen and canoeists. Nevertheless, it is the winter, and especially Christmas, that is the most active tourist season of all, in spite of the darkness and the huge quantities of snow.

The best-known figure in Finnish Lapland is naturally *Santa Claus*, who in the Finnish tradition is related partly to the internationally known St. Nicholas and partly to the Finnish pagan character *Nuutti*, a man who dressed up as a ram to symbolize fertility, with horns on his head and a birch-bark mask over his face, and went from house to house. Nowadays Santa Claus is highly commercialized and a Santa Claus Village was built for him on the "mystical" Arctic Circle just north of Rovaniemi in 1985. It is here that the thousands of letters written by children all over the world are delivered and visitors can meet Santa himself all the year round.

One distinctive feature of the history of Finland in the 19th and 20th centuries was the exploitation of the natural resources of the north. It was just over 150 years ago that the coniferous forest zone of Northern and Eastern Finland became a source of timber for the steadily growing sawmill and pulp and paper industries. The forests became Finland's "green gold", bringing work and affluence, developing the communities of the marginal areas of the country and linking the wilderness areas to the main roads. After the Second World War two of the mighty rivers of the north, the Kemi and Oulu Rivers, were harnessed for hydroelectric power and two large reservoirs by European standards, Lokka and Porttipahta, were built to ensure regular supplies of water for the power stations. Some people were nevertheless worried at the excessive exploitation of natural resources, and the resulting call for sustainable development led to the creation of an extensive network of national parks and nature conservation areas in Finland and the emergence of a growing environmental movement, especially from the 1980s onwards.

The natural environment of the north has provided the Finns with a living over the centuries, but the cold climate has also forced them to spend a good deal of time indoors and at school. This fact has been noted elsewhere, too, in that the World Economic Forum named Finland as the most innovative country in the world in 2015, on the grounds of having the best research and development cooperation between the universities and companies and the best researchers and engineers available anywhere.³ The powerful impact of the cold climate on living conditions and the structure of the economy, together with the freezing over of the shipping routes in winter, has transformed the Finns over the centuries into experts in *cold knowhow*. The rise of nationalism and the building of the Finnish nation in the 19th century meant that considerable importance came to be attached to science and research, although admittedly there had been considerable scientific activity here when Finland was simply an eastern province of Sweden (ca 1150–1809), and more systematically after the founding of this province's first university, the Royal Academy of Turku (Kungliga Akademien i Åbo), in 1640.

Once Finland had become an autonomous Grand Duchy of the Russian Empire (in 1809–1917) the university was transferred from Turku to Helsinki, where it occupied a striking position in the city centre that emphasized the bond between political power and academic prowess. Then, during the 20th century, the time came for gradually extending the network of universities to other parts of the country, culminating in the opening of the northernmost university, that of Rovaniemi, in 1979. Finland now has a remarkably dense network of institutions of higher education relative to its population of 5.5 million: 14 universities and 25 polytechnics. The increased value placed on education was initially linked to the 19th-century nationalist movement, but after the Second World War it became one of the principal projects for the country's political leaders. The Finnish university system currently boasts a total of 2500 professors and thousands of other teachers and administrators, together with a student body of 140,000. The result is that over 60% of every age class in the Finnish population will have at least a basic university qualification. In this respect the situation has altered radically over the last hundred years: a nation with few members with any schooling has grown into a well-educated population which is responsive to the demands of the information society.

3 *The Global Competitiveness Rankings*. WEF Report 2014–2015.

The concept of the north that so fittingly defines Finland has been seen and heard to a fluctuating extent in terms of both academic research and political debate over the last two hundred years, having been sometimes almost inaudible and invisible and at other times, as at present, proclaimed in a loud voice and easily recognizable. It was a combination of the end of the Cold War in 1991 and the new forms of Finnish-Russian relations with the European Union's new regional policy, Finland's decision to join the EU in 1995 and the general discussions concerning climate change and the opportunities for exploiting the natural resources of the Arctic that revived talk of the north in Finland in the course of the 1990s. It was then that the country redefined its attitude towards the north through the initiative it took in launching the EU-oriented concept and action programme that came to be known as the *Northern Dimension*. The initial proposal was put forward officially by the prime minister at that time, Paavo Lipponen, in Rovaniemi in September 1997, when he appealed for the development of external relations and regional cooperation between the Nordic countries and Russia. The Council of Europe then ratified the political outlines set out for the *Northern Dimension* in 1999.

Like the other countries in the Arctic region, Finland published an *Arctic strategy*, first of all in 2010 and with revisions in 2013 and 2016. Perhaps the most significant thing about this document is that it defines the country as an Arctic one *in its entirety*, i.e. it is now conceived of as Arctic from the edge of the Helsinki conurbation (the "wolf limit") to the land of Santa Claus. The recognition and acceptance of Finland's northern status has never been stated as boldly and unambiguously as this. All official political statements of opinion strongly indicate that the country wishes to be looked on in future as a committed Arctic actor, a country that is capable of reconciling the boundary conditions imposed by the environment of the north with the business opportunities that the region can offer, and of doing so in a manner that takes advantage of international cooperation. The Finnish Foreign Ministers have repeatedly emphasized in their speeches that the north has an important role to play in accentuating Finland's profile internationally, and it has also been stated that the crucial areas in which the country can be expected to be active are sustainable development, climate change, cooperation in transportation and logistics, social issues, the status of indigenous peoples and scientific and cultural collaboration.

The polar research that sprang into life in the 1990s has always been fundamentally international and multidisciplinary. The fact that, as a research genre, it is dominated by the natural sciences and technology may be traced back to its historical roots,

as it was specifically the natural sciences, meteorology and geophysics, that predominated in the programmes of both the First and Second International Polar Years, in 1882–83 and 1932–33, respectively, and this spectrum was reinforced further by the scientific events of the International Geophysical Year in 1957–58, when glaciology and geophysics asserted themselves as the “primary sciences” of relevance to the Arctic. It was not until the Third International Polar Year in 2007–08 that the hegemony of the natural sciences began to waver a little, since *The Human Dimension* was deliberately included in the programme, to remind people that there are also human communities living in the Arctic and Subarctic zones.⁴ This spotlighted the minorities and indigenous populations of the trans-national north of Europe, such as the Sámi, in quite a new way. But even so, it was still the natural sciences that reigned supreme in the field of Arctic research, for there was still an enormous amount of ice to study (at least for the present) and very few people. On the other hand, it should be remembered that the Eurasian Arctic has been inhabited by human beings for about 10,000 years and the American Arctic for 8000 years.⁵

In these days of classificatory systems that favour the “hard” sciences, it may be estimated that the proportion of Arctic research represented by history and the social sciences could scarcely exceed 10%.⁶ It may thus be concluded that Finnish government funds were being deliberately steered towards “hard” branches of science and that the tacit conditions placed on such finance represent a powerful element of governmental economic interest.

* * *

The present book is intended to serve as a reminder to readers that Finland’s interest in the north is not merely a product of the global switch of attention to the Arctic that took place in the 1990s, but that interest in the region goes back several centuries, to the time when Finland was still a part of the Kingdom of Sweden and when the professors at the Royal Academy of Turku were pouring over dozens of doctoral theses

4 The Arctic vs. Subarctic distinction is a highly diffuse one, and disciplines tend to draw the line at different latitudes depending on whether they are interested in ice phenomena, climate, tree growth, snow depths etc. In the present work Finland is thought of as being entirely *Arctic in a geohistorical sense*, i.e. a northern country.

5 Pelaudeix, Cécile. Introduction. In: *What holds the Arctic together?* Cécile Pelaudeix, Alain Faure & Robert Griffith (eds.). Paris 2012, 17.

6 *Arctic strategies and Arctic research* 2013, 7–8. See www.NordForsk.org Accessed 23.1.2016.

on nature in the north and the possibilities for economic exploitation of the rivers and soils of that region. Finland and the Finns have been marinated in northernness for thousands of years, as this is the direction that has been imposed on them by the climate and nature of their land.

In honour of the Centenary of Finnish Independence this brief history is focused above all on the independence period, from 1917 onwards, and the immediately preceding period of autonomy, in 1809–1917. It is quite natural to begin the account of Finnish policies with regard to the north from the year 1809, as it was then that Finland graduated from the status of a minor duchy within the Kingdom of Sweden to that of a substantially autonomous region within the Russian Empire. This meant that the Finns became responsible for a precisely defined segment of their internal policy through the medium of their own government, the Senate, and its administrative system, and for the development of their economy and educational system. This gave them the opportunity to construct *a northern policy of their own*, whereas previously the Arctic policy was dictated by the court of the King of Sweden. Furthermore, the present area of Finnish Lapland was not even part of the Duchy of Finland until 1809, for it was only through the boundary changes that took place in that year that the Finns came to have a thousand Sámi living in their territory and were obliged to take responsibility for the living conditions of these representatives of the only indigenous people in the area of the present European Union.

This work also aims to underline the importance of a knowledge of history if we wish to understand the political and scientific nuances associated with the issue of northernness and the choices that in the last resort have provided, and continue to provide, the framework for the present and possible future living conditions of the people, communities and regions of the north. It is the task of history to help us and teach us to perceive, understand and view in the correct proportions this chaotic world of ours over a long time span: where have we come from, where are we going, how have our individual and collective identities been constructed, and what are our national strengths and weaknesses? The main body of writing in this book is based directly on research findings and the principal sources are acknowledged in the footnotes.

I would extend my warmest thanks first and foremost to the University of Eastern Finland, its Rector, Prof. Jukka Mönkkönen, Academic Rector, Prof. Jaakko Puhakka, and Prof. Harri Siiskonen, Dean of the Faculty of Social Science and Business Studies, for supporting this project and making it possible to publish this book in English as

well. The work belongs to the university's strategic top-level research area designated as *Cultural encounters, mobility and borders*⁷ and my research project (number 64737) funded by the Kone Foundation and the network East meets North, which is supervised by the undersigned and is designed to encourage joint multidisciplinary research by scholars in the Nordic countries and Russia that is focused on the border area running from the Karelian Isthmus to the Arctic Ocean coast, i.e. the Fennoscandian Green Belt Region. The project for the production of this book was approved for the national *Suomi100 (Finland100)* programme,⁸ for which I extend my sincerest thanks to the organizing committee. In addition, Finland will hold the chair of the Arctic Council from May 2017 to 2019.

Grateful thanks also go to the Prime Minister's Office for the opportunity to include this book in its series of publications. Many experts and civil servants engaged in the work of the Finland's Arctic Advisory Board, especially Finland's first Arctic Ambassador, Hannu Halinen, have given encouragement and support during the process of gathering the material for this volume, for which I similarly would like to express my thanks. I would like to thank Riitta Parikka, Nina Brander, Alfred Colpaert, Anni Ruokolainen and Minna Westerlund for practical help and Malcolm Hicks for the English translation. However, I would emphasize that I am entirely responsible in the text. Finally, especial thanks for their cooperation go to the friends and colleagues who have contributed the info boxes on various topics. There is a list of these contributors at the end of the book.

One source of personal motivation for this work has been the vision of the northern or Arctic areas as a forum for peaceful coexistence. The Arctic is something that we all have in common.

In the Light of the North

May 12, 2017

Maria Lähteenmäki

7 On the University of Eastern Finland's strategy. See: <http://www2.uef.fi/documents/10437/2523859/UEF+strategiaesite+2020.pdf/82d32b34-d708-4480-a127-35cb219e8def> Accessed 24.8.2016.

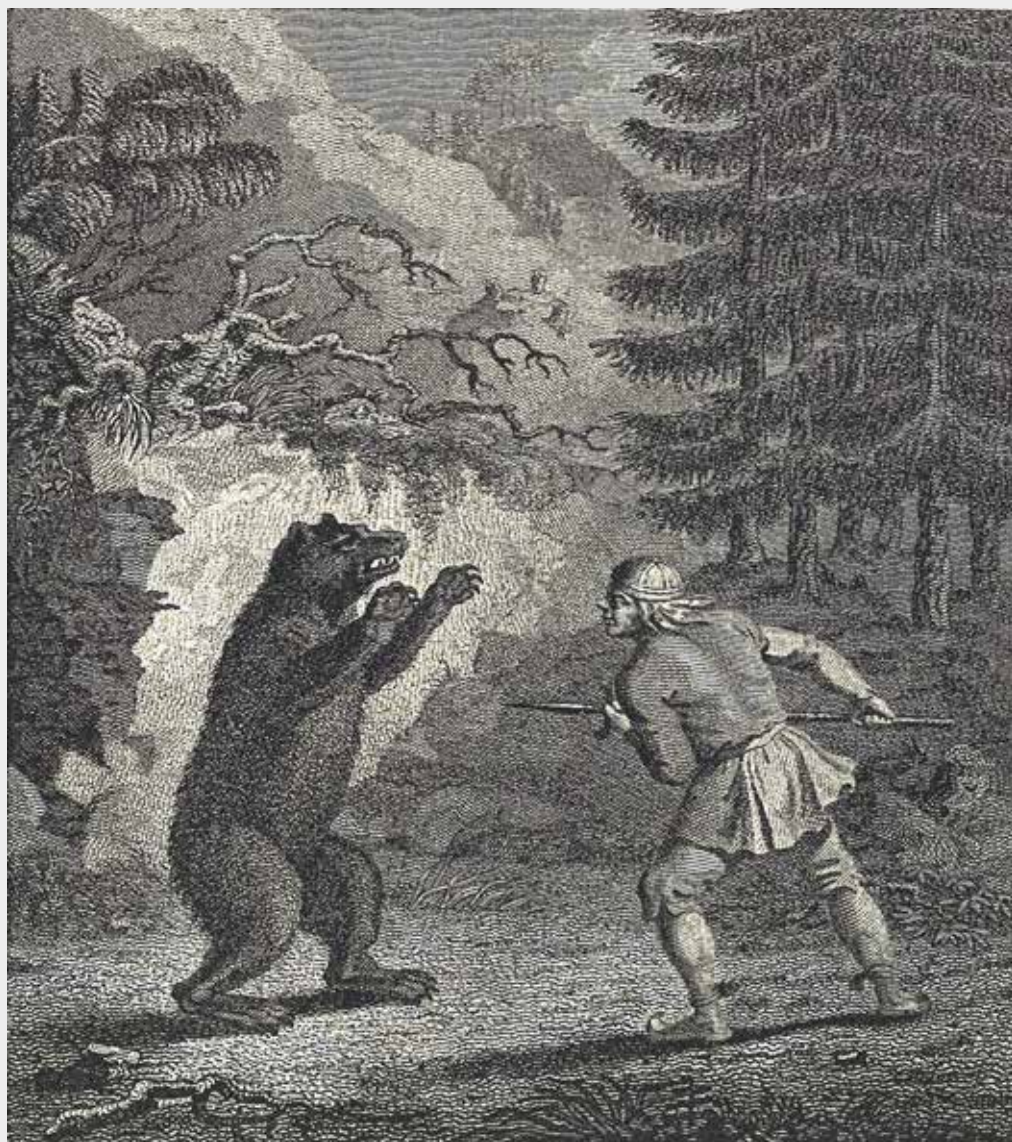
8 *Suomi100*. See <http://suomifinland100.fi/> Accessed 24.1.2016.

1 The irresistible lure of the north

If we gaze back far enough into history we can envisage how the first small groups of Finnic people, dressed in skins and furs and carrying their bundles, their bows and arrows and their spears came to the coastal districts of what we now know as Finland in the course of their wanderings some 11,000 years ago. In the first instance they were men who had come to sound out the new area, who would stay only a short time to hunt game in the forests and catch fish in the rivers and lakes or sea. They would have lived in flimsily built huts or tents before leaving to spend the darkest and coldest part of the winter in the place from which they had come. Gradually, however, they would have settled to live in these new areas, bringing their families with them. The first permanent settlements evidently arose on the sea shores and at the mouths of the rivers, although for a long time they would have continued to move from place to place in families or hunting groups in search of game, building new huts or turf dwellings as necessary.

Some of these pioneer inhabitants would have come over the Baltic ice from Estonia, some from the south-east via the Karelian Isthmus and some from the Lake Onega region further east. Scholars in later times came to refer to these ethnic groups as Finno-Ugric peoples and to regard them as having originated from the banks of the River Kama in the middle reaches of the Volga, west of the Ural Mountains. These groups from the east and south were not the only people to arrive on the shores of Finland, however, for a new colony of western origin also formed, made up of settlers from the area of present-day Sweden. Finally, Lapland received some population from the Arctic Sea coast in the north.

It has not yet been ascertained what language the new arrivals in the area of Finland spoke, but it is known that by 2000 years ago the original proto-language had divided into forms that were spoken in this region, ancient Finnish and ancient Sámi. Genetically the Finns are Europeans, their closest relatives being the Estonians,



The ancient inhabitants of the present area of Finland lived off nature, which provided them with food and the other necessities of life, but was also in many ways a source of danger. Photo: L. Morel-Patio, *Paysages du Nord*. Paris 1856.

Swedes, Germans and Poles. Thus, although the Finns live on the eastern boundary of Europe, such a length of time has passed that they have distanced themselves considerably from the Finno-Ugric genome of the Volga area and the Urals. Even the genome of the modern-day Sámi is derived from a number of sources: an initial population that entered northern Fennoscandia after the retreat of the ice sheet, an element that came from western Europe via northern Norway and a factor contributed by very early migrants and settlers from the east and south-east.⁹

Beacons pointing to a distant past

The settlers' first experiences of the tundra environment that emerged from beneath the ice must have been encouraging. They must have felt that a new land was opening up to them and offering fresh possibilities for their hunting and gathering economy and their family-based social structure to thrive. The sea, the rivers and the innumerable lakes were teeming with fish and seals, and the hinterland was a wilderness inhabited by big game such as bears, elk and wild deer and smaller mammals that were valuable sources of furs, such as beavers and foxes. Archaeologists have characterized these first humans who ventured to the north as courageous, skilful and inventive. It certainly calls for special skills to manage adequately in these barren lands where the winters are so long.¹⁰ As the centuries went by, however, these Finnic groups began to inhabit the coastal areas, lake shores and river banks in particular, but they were slow to move upstream to the heads of the rivers or into the forests in the interior of the country. In time the family units grew into clans or tribes, and eventually into mixed societies that were differentiable in terms of occupation, living habits and culture and were administered in the framework of ever larger geographical units. Thus the small Stone Age communities developed over the centuries into small towns that served as population centres.

9 Halinen, Petri. Kivikausi. In: *Muinaisuutemme jäljet. Suomen esi- ja varhaishistoria kivikaudelta keskiajalle*. Georg Haggren et al. (eds). Helsinki 2015, 24–27, 70–71.

10 Sporrang, Ulf. The Scandinavian landscape and its resource. In: *The Cambridge History of Scandinavia*. Vol I. Knut Helle (ed.). Cambridge University Press. Cambridge 2003, 31; Siiriäinen, Ari. The Stone and Bronze Ages. In: *The Cambridge History of Scandinavia*. Vol I. Knut Helle (ed.). Cambridge University Press. Cambridge 2003, 43–59.

Fairly early on six culturally distinct regions evolved within the boundaries of the area, namely Northern Finland, Eastern Finland, the Lake Ladoga region, South-western Finland, Åland and Ostrobothnia. By the end of the 13th century the castle and city of Turku in South-western Finland, also known in early times as "Finland Proper", had become the main centre for the whole area, which in turn testified in concrete terms to a certain degree of development in the fields of administration, settlement, trade and artisan occupations.

The building of Turku Castle in itself gave expression to a whole new era in the history of Finland. The process was initiated in the 1150s, when armed troops from Sweden referring to themselves as "Catholic crusaders" sailed into Turku and declared the coastal districts to be subject to the Swedish crown. The story goes that the Swedes were tired of the Finns raiding their settlements and came in a body led by the bishop and the military commander to conquer them and absorb them into their own sphere of influence. The Finns were not enthusiastic about this, and legend has it that a sturdy-built peasant by the name of Lalli killed the Swedish bishop Henrik while he was crossing a frozen lake and cast his body into the black, icy water.

These dramatic events may be said to have brought the pre-historical phase in Finnish history to a close, as written history began with the Swedes' conquest of the coastal areas and the recording of this event on paper with quill pens. In their next two incursions the Swedes extended their conquests as far as Häme (Sw. Tavastland) and the present-day city of Viipuri (Vyborg), where the military commander of that time, Tyrgils Knutsson, had a magnificent castle built in 1293. Around the same time a castle was built in Häme (Hämeenlinna, Tavastehus), similarly as a symbol of the territorial rights acquired by Sweden. The Swedes also managed to build the fortress of Landskrona on the southern extreme of the Karelian Isthmus, at the mouth of the River Neva, but were forced to retreat from this position when the building was burned down by the Russians.¹¹

The border disputes between the Swedes and the Russians on the Karelian Isthmus came to an end with the signing of the Treaty of Pähkinäsaari (Nöteborg) in 1323. This provided for a boundary to be drawn down the centre of the Isthmus dividing

11 A further castle, that of Olavinlinna, at the present town of Savonlinna, was built in the border region in 1475 as a defence against Russian attacks.

the mixed Finnish-Karelian population into a western, Swedish (Catholic) sphere of influence and an eastern (Orthodox) sphere belonging to the Principality of Novgorod. This treaty sealed the fate of the coastal areas of Finland as an integral part of the emerging Kingdom of Sweden, its eastern province, in effect. The eastern boundary of the Swedish realm was set at the River Rajajoki (Russ. Sestra), only about 30 km from the present-day city of St. Petersburg, and this was to be the eastern border of Finland for centuries to come, with the exception of the 18th century.¹²

Intellectual life in the Middle Ages¹³ revolved very much around the Catholic Church and the administrative circles representing the Crown, but one notable innovation throughout Europe during that period was the founding of universities for the combined purpose of research and teaching. Even in those days, however, the fates of these institutions were bound up with various forms of social and political turbulence.¹⁴ The earliest of these seats of higher education to be founded were the universities of Bologna, in 1088, and Paris in 1150 and 1215. It has been estimated that about 150 students from Finland attended European universities in medieval times, the majority of them in Paris. One of these was a Finn from a modest background in the rural aristocracy by the name of Olavi Maununpoika (Olavus Magni), who was supported in his education by the Bishop of Turku at that time, a relative who acted as his guardian. Olavi studied theology and the humanities at two stages during the 1420s and 1430s and was even rector of the University of Paris for a few months before he returned to Finland to take up a position as a priest. The principle purpose of the universities in those days was to train men who would be good organizers and clear, analytical thinkers without being over-encumbered with excessively detailed knowledge.¹⁵

12 The city of Viipuri and the Karelian Isthmus were under Russian rule from 1721 to 1812 and have been again since 1944.

13 The Middle Ages are said to have lasted from the 6th to the 15th century in Europe, but from the 12th to the 16th century in Finland.

14 Välimäki, Jussi. Yliopistot keskiajan sosiaalisena innovaationa. *Kasvatus ja Aika* 3/2015.

15 Palola, Ari-Pekka, *Yliopisto-opiskelua keskiajalla – Olavi Maununpoika Pariisissa*. See <http://www.tieteessatapahtuu.fi/983/palola.html> Accessed 2.3.2016.

Sirpa Aalto

Finns in the sagas

In addition to the references to inhabitants of the present area of Finland that have been passed down to us in ancient European documents, as discussed above, one of the most interesting pieces of evidence concerning the Finns and Sámi is to be found in the form of the tribe named Finnar that features in the Icelandic sagas of the 13th to 15th centuries.

The ancient Icelandic word *Finnr* or *Fiðr* (pl. *Finnar*) refers to a Sámi man, the corresponding feminine form being *Finna* or *Finnkona*, although the word *Finnar* is sometimes interpreted as referring to the Finns, since the place name *Finnland* is also to be found in the sagas. The area occupied by present-day Finland was nevertheless a very distant place as far as the Icelanders were concerned, and they do not appear to have any clear notion of the difference between it and Finnmark in northern Norway, or of how the Finns were distinct from the Sámi. The sagas also tell us that the same area was occupied by tribes such as the *Bjarmar*, *Kvænir* and *Kirjálar*, i.e. the Bjarmians, Kvener and Karelians. These ethnic designations cannot with certainty be associated with any particular people or nationality nowadays, but they may well refer to groups that spoke Finnic languages.

The only saga which very probably speaks of Finns rather than Sámi is the Saga of St. Olaf in the *Heimskringla*, written by the Icelander Snorri Sturluson around 1235. This saga recounts how the Norwegian King Olaf (Haraldsson) took part in Viking expeditions on the Baltic Sea in his youth, and the descriptions allow us to deduce that he and his men must have reached the south coast of Finland. Having gone ashore there they found themselves in difficulties, as the local inhabitants attacked them with bows and arrows. Olaf and his crew fled, but the "Finns" used magic to whip up a storm so that the Viking ship only just survived. In a poem attached to the description of the expedition the "Finns" are referred to as *Finnlendingar*, a word that does not occur anywhere else in the sagas. It has been proposed that the word is used here because it fits in with the metre of the poem. There are two place names mentioned in the poem, too, Herdalir and Bálagarðssiða, but these do not appear to refer to any actual Finnish places and have been understood as being merely poetic language.

The one thing that the ethnic names mentioned above have in common is that in an Icelandic-Norwegian cultural context they represent foreignness and otherness. This is reflected in the descriptions given of Finns and Sámi, who are frequently attributed in a stereotypic manner with the ability to work magic and to use it to cause damage. Since the sagas were written from a Christian viewpoint, magic implied evil and paganism, and those who practiced it are depicted as malicious opponents of Christendom. The creation of a disparaging image of an unknown people is a universal means of building an identity for one's own group.

Later, from the 19th century onwards, nationalist-inspired efforts were made to write an impressive history of Finland in order to create a national and ethnic identity. The Finns had to have at least as magnificent a past as their neighbours in Sweden and Norway, who had developed self-images of their own on the strength of the Viking tradition. Thus the Finns also set out to look for traces of their ancestors in the sagas. The first people to write about "the ancient kings of Finland" were Johannes Messenius (1579–1636) and the unknown author of the *Chronicon Finlandiae*, a work that has been dated to the second half of the 17th century. These writers derived their information from medieval sources such as the *Gesta Danorum* of the Dane Saxo Grammaticus, the account of the Diocese of Hamburg by Adam of Bremen and the sagas mentioned above. Messenius and the author of the Chronicle of Finland wrote their histories according to the Göta historiographic principles which had become popular in Sweden on account of the support they gave for the country's aspirations as a great power, with the result that these works do not stand up to modern source-critical scrutiny.

The concept of Finland having a mystical history with a succession of ancient kings lives on even today as *wishful thinking for the past* in the works of pamphleteers and amateur historians. The idea is based partly on the ancient tradition of recording history in the form of chronicles and seen in the light of the author's philosophical background rather than being interpreted in the manner of a professional historian. One element in this philosophical background may have been the conspiracy theory

which held that the official history of Finland was dominated by the views of the pro-Swedish *Svecoman* political faction. Such an approach was apt to confer upon Finland an imaginary past that in reality never existed.

References:

Aalto, Sirpa. *Categorizing Otherness in the Kings' Sagas*. University of Eastern Finland. Joensuu 2010.

Aalto, Sirpa. The Finnar in Old Norse Sources. In: *The Viking Age in Åland. Insights into Identity and Remnants of Culture*. Frog & Joonas Ahola & Jenni Lucenius (eds.). Suomalaisen tiedeakatemian toimituksia, Humaniora 372. Helsinki 2014, 199–226.

Heimskringla II, Bjarni Aðalbjarnarson gaf út. Hið íslenska fornritafélag. Reykjavík 1979.

Koskela Vasaru, Mervi. *Bjarmaland*. University of Oulu. Oulu 2008.

Schalin, Johan. Härdalar, namnet Karis, och den första nedtecknade händelse i Finlands historia. *Finsk Tidskrift* 8/2008, 414–428.

The north as the home of frosts

A highly important turning point for the identity of Finland as an arctic area was reached during the 16th century, at the end of the Middle Ages. The credit for directing the attention of politicians in the Kingdom of Sweden towards the far north should go to King Gustavus (Gustav) Vasa, the charismatic nobleman Gustav Eriksson, who ascended the throne in 1523. He has been described as an unscrupulous and strong-willed ruler, but he was also a skilful one who dared to rise up against the power of the Kingdom of Denmark. He declared Sweden independent of the union of Denmark and Norway, strengthened the country's central administration, made the provinces more tightly subservient to Crown control, largely through the influence of the Church and the system of bailiffs, and applied the principles of the Reformation to transform Sweden into a Lutheran country. It was also during his reign that it became a nation-state characteristic of the Early Modern Era.

Beyond the boundary laid down in the Treaty of Pähkinäsaari¹⁶ lay a wilderness area (*Sw. fellesdistrict*) stretching as far as Lake Inari and Varanger Fjord in Northern Norway which could be exploited freely by the Swedes and the Russians, the western part of which was designated a part of Sweden under the provisions of the Treaty of Tåyssinä (Teussina) in 1595 that brought a period of 25 years of war between Sweden and Russia to an end. Some of the border markers dating from this agreement are still to be seen on the present boundary between the provinces of Savo (Savonia) and Karelia in Finland, e.g. at the straits of Ohtaansalmi, on the Pisa hill and at Tiilikajärvi. This was the first time that the area now known as Northern Finland was incorporated into the sphere of influence of the Kingdom of Sweden.

One sign of the centralization of power was the declaration issued by Gustav Vasa that all the wilderness areas that had not previously been entered into the registers of ownership automatically belonged to the Crown, which thereby gave the Crown complete control over land use in Lapland as well. In addition, the King encouraged citizens who had no house or farm to move to the Crown lands in the north as settlers. His decree of 1542 to this effect meant that settlement could spread beyond the Arctic Circle and into the lands inhabited by the Sámi, but he added the proviso that

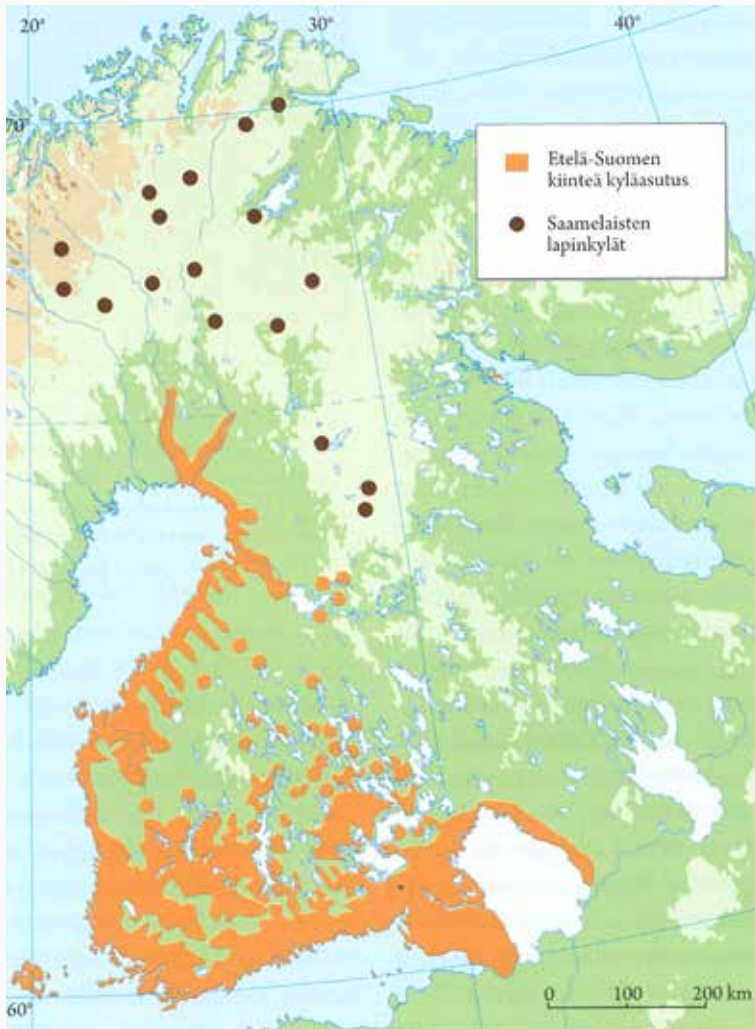
16 The demarcation ran north-westwards from the River Rajajoki on the Karelian Isthmus to a point on the coast of the Gulf of Bothnia close to the present-day town of Raahe.

new settlements should not be allowed to infringe the hunting rights of the Sámi. The king similarly issued strict regulations governing trade and fishing in the north “unto the ends of the Earth”, i.e. as far as the Arctic Ocean coast. Anyone who wished to fish for salmon or hunt seals in that area was required to have a Crown permit from the authority entitled to levy taxes on these activities. Although all these significant regional measures were aimed originally at subjecting the border regions in the north and east to tighter Crown control, the edict regarding Crown ownership of all unclaimed lands has later been a crucial point in the land ownership demands put forward by the Sámi inhabitants of the region, disputes that are still going on in the 2010s.

At the time when Gustav Vasa issued his edict Lapland was still a very sparsely inhabited region, consisting largely of wilderness. Wolves, foxes, lynxes, wolverines and bears roamed through the low-lying forested areas in large numbers, while muskrats and beavers occupied the river banks and herds of wild deer wandered over the fells. The few settlements to be found beside the rivers and lakes were mostly gathered into *siida*, villages of huts or tents occupied by kinship units, or clans, under the leadership of chieftains. The people of Lapland gained their livelihood mainly from hunting, fishing and trading, over an area extending from the Arctic Ocean coast to trading posts on the shores of the Gulf of Bothnia. One 17th-century source recounts that domesticated deer were used in the north for pulling sleighs, as beasts of burden and as sources of materials for the making of clothes, domestic utensils and ritual objects such as drums and amulets. The people of the north had numerous gods, to which they sacrificed game animals. The administrative region of Lapland, a crescent-shaped area that extended from the Swedish fells inland from Umeå across to Kuusamo in Finland, had a total population of perhaps a few hundred people.¹⁷

One figure who left a visible mark on the early history of Lapland was Olaus Magnus, a learned member of the Swedish Svinefot dynasty who was a churchman, and an explorer and observer who visited parts of northern Finland as far north as Tornio and Pello. The first map on which he indicated specific places by name was his *Carta Marina*, or “Maritime Map”, of 1539, which became a major source of information on the northern regions, as also did his *Historia de gentibus septentrionalibus* (1555), a history of the peoples of the north, their economy and their culture. Both works were

17 Enbuske, Matti. *Vanhan Lapin valtamailla*. Helsinki 2008, 155–158, 160.



Map 1. Settlement in Finland in the 16th century. The black dots indicate the Sámi villages and the light brown areas in the coastal regions of Southern Finland the permanent settlement of the Finns. From: Karttakeskus Oy (L13013/17).

translated into numerous languages and contributed greatly to the settlement of the northern regions.

These works acted as sources of more reliable and consistent information on Fennoscandia than could be obtained from fragmentary notes, chronicles, annals or sagas. Olaus Magnus based them on careful and extensive examinations of ancient and medieval sources dealing with the north together with precise observations and field notes of his own. The parts dealing with the present-day area of Finland make delightful reading, as they contain stories about the wild nature of the people of the forests, their unusual hunting customs and their "pagan" rites. One of the most interesting things is how well the people, both Finns and Sámi, had adapted to conditions in the north. For Olaus Magnus the north was above all a place of frosts and a home for the god of war and all manner of spirits and goblins.

One thing that Olaus Magnus noted was that the Finns of the 1550s, both men and women, were skilled in speeding along on wooden planks of varying lengths that were curled up at the tip (skis) and at shooting with a bow and arrow, and that they would occupy themselves during the agonizingly dark and bitterly cold winters by building huge fortresses out of snow and waging war amongst themselves with snowballs. They were really too wild to be good soldiers, but they possessed a wide range of weapons, the most destructive of which the Crown forbade them to use during peacetime. They were nevertheless ready to deploy some of these, such as axes, lassoes, stones tied with rope to wooden poles, spruce-wood spears, body armour of sealskin tanned with chalk, or helmets made of reindeer or elk hooves, against marauders or people who crossed the boundary illegally. They also used large, fierce dogs to repel intruders. Innumerable instances of the Finns' warlike qualities have remained in the annals of Swedish history, one of which is the tale of the Finnish guerrillas destroyed in the 1580s the Russian monastery at Petsamo (Petšenga), which had only been functioning for some 50 years. It was not until the late 19th century that the monastery was rebuilt.

The old documents that have survived represent the Finns as a rugged nation occupying a rugged terrain. Legend had it that their country was so cold because it lay beneath cold constellations, the Great Bear and the Plough and close to the vast icy ocean. From early times they would fish through the ice during the winter and burn strips of resinous pine wood in their cottages for heat and light. They worshipped their own heathen gods, the sun and moon, givers of the light that they so ardently

craved for, and various animals, and would be constantly muttering incantations under their breath, going into a trance or practising witchcraft. And most of all, these stubborn, wild people so loved the old customs that had been handed down to them by their ancestors that it was extremely difficult to convert them to Christianity. They had been known to sell wind to travellers to counteract the wind they were struggling against, and when they had received payment for it they would give the traveller a length of rope that had three knots in it. The first knot meant a gentle wind, the second a more severe wind and when the third knot was undone this would bring a disastrous storm.

Alongside the Finns, the Far North, that “other world”, was populated by Sámi, or “forest dwellers”, by the people of Ruija, i.e. people of Finnish extraction who had settled on the north coast of Norway, and by the inhabitants of Bjarmland, an area on the shores of the White Sea to which Swedish rule extended. These peoples who spoke quite distinct languages traded with each other busily and had close contacts with the adjacent Russians, Swedes and Norwegians and with German traders who visited the north.

It was natural for the Finns to make use of parts of the prey animals they had caught and other products of nature in their weapons and tools and for culinary purposes. Even the vessels they used were made as hard and durable as possible in order to withstand the severe frosts. The demands of personal hygiene were met by building saunas beside suitable rivers and lakes. In the words of one 17th-century observer, they appeared to be living harmoniously in their wilderness abodes, amidst the beauty and innocence of nature, and in much greater safety than the town-dwellers in the south with their protective walls.¹⁸

At the same time as Olaus Magnus was recording his impressions of the Finns and Sámi, a Finn by the name of Mikael Agricola (d. 1557), who had studied theology under Martin Luther at the University of Wittenberg, was sitting in Turku recording observations of his own on the ancient customs of the Finns, their heathen gods and the Finnish language. His Finnish translations of religious texts and his efforts to combine features of the dialects spoken in the eastern and western parts of Finland earned this collector of folklore and politician who had taken part in the Finnish-

18 Magnus Gothus, Olaus. *Pohjoisten kansojen historia. Suomea koskevat kuvaukset*. Helsinki 1973.

Russian peace negotiations the title of the “father of the written Finnish language”. Thus it was that in the course of the 16th century Finland not only acquired a historical position and space of its own but its languages and cultures, too, began to take on more recognisable features.

The beginnings of Arctic policy

The successor to King Gustav Vasa as a proponent of northerly-oriented policies within the Swedish realm was his son Charles IX (1550–1611), who began to promote his father’s interests by recognising a specific Arctic policy.¹⁹ Having first reached the position of regent and eventually, after a divisive power struggle and civil war, having been made king, he emphasized that he was not only king of the Swedes but also of “the Finns, Karelians and Sámi”. In 1602 he issued his crown bailiffs with an 11-point programme for settling the Sámi in villages in order to simplify the taxation of their fishing, hunting and reindeer herding activities. Although the tax reforms were not always implemented successfully in practise, this tighter grip exerted by the Crown on the Lapland villages did mean that the Sámi themselves were more prepared than before to seek protection from the Crown, e.g. by referring their boundary disputes to the Crown assizes.²⁰

In the course of his reign Charles held protracted and highly intense negotiations with the Danes concerning Sweden’s rights of ownership over the Arctic Ocean coast. The Swedes’ principal argument was based on the ancient taxation system by which Sweden had levied taxes from these coastal areas for centuries through the medium of the Birkarl organization, the members of which were related to the Finns. The Danes could not accept this explanation, and the matter remained unsettled. By the 17th century Sweden had become a major power in Europe and once again wished to establish its northern border at the Arctic Ocean. Other notable moves that reflected the determination of the authorities to bring the northern regions under Crown control were the granting of town status in 1621 to the village of Tornio, and

19 This topic was discussed by the Sodankylä-born historian and editor of the leading Finnish newspaper *Päivälehti* and its successor *Helsingin Sanomat* Santeri Ivalo (1866–1937), in his doctoral thesis. See Ivalo, Santeri. *Kustaa IX:n Jäämeren politiikka* (1894).

20 Enbuske 2008, 159–161.

the granting of similar status to the town of Oulu some time earlier, in 1605. Both of these served as centres for trade and navigation in the north.

The Swedish leadership sought legitimacy for its tighter control of the northern regions from the scholars of the day, commissioning a survey of the history and current state of the kingdom's northern territories from Johannes Schefferus, who was a professor of rhetoric and politics. The main reason for this would appear to have been that rumours had spread in Europe that the Swedes had won their wars by resorting to Sámi witchcraft, and in order to dispel any such ideas Schefferus went out of his way to emphasize that the Sámi were exceedingly peaceably disposed by comparison with the Finns, who were renowned for their warlike qualities.²¹

Schefferus published the results of his survey in 1673 under the title *Lapponia*. He had been assisted in the gathering of material for this by priests attached to parishes in the north, and also by local inhabitants such as Olaus Sirma, a Sámi from Sodankylä who later became vicar of Enontekiö. Schefferus broke completely new ground by demonstrating that the Sámi and the Finns were of the same origins, a fact that is still accepted today,²² and that the place names Bjarmia, Scritfinnia and Lapponia that had been mentioned in previous works all in effect referred to the same land; it was merely that scholars had given the same area a variety of names at different times. The original settlers in the area had been Finns (skidhfinnar, or "Ski Finns") and Sámi, or Lapps.

It has been said that the name "Lapp" was used first by the Danish scholar Saxo Grammaticus around 1190 and this had gradually been adopted into the name of the area as Lapponia, Lappmarken, Lappland or Lappi. It is interesting that Schefferus noted in his time that the people themselves didn't like the term Lapp, which held connotations of banishment for them, but preferred the name *Sabmi* for both the area and the people. It is no coincidence that in 1673, in the same year than Schefferus' book appeared, the Crown issued another, still more emphatic, decree concerning colonization of the northern parts of the realm. The border of Lapland, which ran

21 Schefferus, Johannes. *Lapponia*. Hämeenlinna 1979, 27–33.

22 Recent research has shown that part of the Sámi genome has been inherited from the Finnic-Sámi proto-population, some from the east over a period of thousands of years and some from a western European source that reached the coast of Norway after the Ice Age. Halinen 2015, 71; Kulonen, Ulla-Maija. Saame kielikunnassaan. In: *Johdatus saamentutkimukseen*. Helsinki 1994, 87–100; Carpelan, Christian. Katsaus saamelaisuuden vaiheisiin. In: *Johdatus saamentutkimukseen*. Helsinki 1994, 20.

slightly further north in the area of present-day Finland than it does nowadays, somewhere between Rovaniemi and Sodankylä, was designed to separate the Lapps (*lappalaiset*), i.e. Sámi, who lived by hunting, fishing and gathering, from the cattle-rearing Finns (*lantalaiset*). The crossing of boundaries such as this was not such a dramatic event as one might in retrospect think, however, for although the North had been a sparsely populated area for centuries, this had never prevented people belonging to the different ethnic groups from moving about and mixing. After all, the whole area of Finland was inhabited by the time of the Stone Age, for instance.

One important milestone in the history of science among the Finns also occurred in the 17th century, when Queen Christina of Sweden was instrumental in the founding of Finland's first university, the Royal Academy of Turku, in 1640. The creation of a network of universities in the north, and thereby the linking of Sweden and its affiliated territory of Finland to the European university system, was part of Sweden's cultural and educational programme during the period for which it was a world power. Other institutions founded with the same idea in mind were the University of Tartu in Estonia (also a Swedish territory at that time), in 1632, and Lund University in Sweden itself, in 1666, while the oldest university in the kingdom (and in the present-day Nordic region), that of Uppsala, dating from 1477, was further developed to bring it up to contemporary standards of scholarship.

It is interesting to note in this connection the close cooperation that took place at that time between leading statesmen, politicians and academics. The first professor of moral philosophy and history, and later of jurisprudence, at the Turku Academy, Mikael Wexionius, for instance, wrote the first significant and widely quoted geographical and statistical account of the Kingdom of Sweden²³ in 1650 at the request of the Governor-General of Finland, Per Brahe. This work dealt with the history of the provinces of Sweden, the languages used in them, their economic status and their administration, and one of its effects was to create a picture of a consistent region referred to as Finland that had an identity of its own. In fact he presented this as the third geographical unit making up the Swedish realm, alongside the core regions of Svea and Göta.²⁴

23 *Epitome descriptionis Sveciae, Gothiae, Fenningiae et subjectarum provinciarum* (1650).

24 *375 humanistia: Michael Wexionius (1608–70)*. Helsingin yliopisto. See <http://375humanistia.helsinki.fi/humanistit/michael-wexionius-gyldenstolpe> Accessed 1.3.2016.

The author and professor of medicine Olof Rudbeck similarly recognised the Finns as the second oldest among the peoples of the world after the Swedes in his historical treatise *Atlantica* (1679–1702), which was a grossly overstated eulogy in which he maintained that Sweden was the cradle of all culture and learning in ancient times and that the Swedish language had been the source from which all other human languages were derived. Although these notions were pure figments of the imagination, they did have the effect of opening the doors of Sweden’s universities to students interested in various aspects of their own country.

Many speeches in praise of the homeland were given at the Turku Academy in the late 17th century as well, some of which were dedicated to the grammar of the Finnish language, while others revived echoes from the distant past, until eventually a broader concept of the Finns as a nation began to emerge.²⁵ Thus it can very well be said that the first actual Finnish nationalist was Daniel Juslenius, who was born in Finland, educated in Turku and later became professor of Greek and Hebrew and subsequently bishop of Porvoo and Skara. His two major works, *Vanha ja uusi Turku* (Turku, ancient and modern, 1700) and *Suomen puolustus* (The Defence of Finland, 1703), are designed to burnish the Finns’ reputation and speak of them as a people in their own right. The latter work, which Juslenius produced during the war with Russia, may be regarded as the first written expression of Finnish nationalism. In the social confusion and helplessness of the times, Juslenius was led to write of the Finns as a nation and call on them to show a measure of self-esteem in their everyday work and their high academic ambitions. The work was also notable in that he referred to the Finns as “us” in contrast to “others”.

It should also be noted that Juslenius was speaking not only to the small number of university students of his day but also to broader sectors of the Finnish community. For him Finland was the eastern province of the Kingdom of Sweden, a duchy in its own right, and as such it was divided into two dioceses and six regions: Finland Proper, Åland, Häme, Uusimaa (Sw. Nyland), Karelia and Ostrobothnia. Lapland was still a part of Sweden in the 18th century. Juslenius’ definition of who was a Finn and who was not was based on whether the person concerned had been born and brought up in

25 In theses submitted to the Turku Academy in the 17th century, e.g. Alanus, C.C. *Kort Berättelse om Kemi Lapmarckz tillståndh i Öster-Norlanden Under Åbo Bischops Stijft Belågit* (1639); Tornaeus, J. *Beskrifning öfver Torneå och Kemi Lapmarker* (1672); Also maps, such as: Tresk, Olof. *Kartor öfver Torne och Kemi Lapmarker* (1642–43).

the Duchy of Finland. Thus his colleague at the Turku Academy, Mikael Wexionius, who had been born in Sweden, was in Juslenius' eyes always a Swede, in spite of the fact that he spent most of his life in Finland, made his career there and was eventually buried there.²⁶

Learning becomes more international

Where the Finnish academics of the late 17th century concentrated their efforts on increasing people's knowledge of the history and geography of Finland, the European academic elite of the 18th century directed their gaze towards Lapland with a new, more critical concept of scholarship in mind. Scholars were no longer content with sitting at their desks and searching existing documents for information going back as far as possible into the past, but now they were prepared to go out and do fieldwork amongst the people. The small body of Finnish intellectuals had responded well to the new, critical approach to science that had spread through Europe at the beginning of the century.

The first professor of history at the Turku Academy was Algot Scarin, who held the post from 1722 to 1761. Like the 17th-century historians, he tried to shed light on the past history of Sweden and Finland, but he broke free from the Olof Rudbeck tradition and developed a more critical approach to history. It was thanks to Scarin that the study of the local histories of Finland gained a firm foothold in Turku, and the fact that work of this kind came to be accepted as academic did much to expedite the rise of academic folklore studies during the following century.

The real impetus for historiography in the Fennoman spirit was nevertheless provided by Henrik Gabriel Porthan, who was professor of rhetoric in Turku from 1777 to 1804. He was of Karelian descent and belonged to the Purtanen family of merchants, which may in part explain his innate interest in Karelian folk poetry and the history of the Finno-Ugric peoples. Like most professors of his time, he encompassed many branches of study, being known equally well as a historian, folklorist and geographer.

²⁶ Manninen, Juha. *Kansakunnan aatteen synty Ruotsissa ja Suomessa*. See <http://www.tieteessatapahtuu.fi/021/manninen021.htm> Accessed 1.3.2016.

Porthan inherited his spirit of Finnish nationalism from his grandfather's brother, the above-mentioned Daniel Juslenius, who was a universal role-model for the 18th-century Fennophiles in their studies of the Finnish identity and their attempts to arouse national feeling.

Porthan's view of Finnish history was that the Finnic peoples had once occupied a single, uninterrupted area but had later migrated in various directions. The first to leave the original homeland had in his opinion been the Sámi, who became the first inhabitants of the north, the *Fenni* as described by Tacitus (*Germania*, in 98). Porthan also edited the first newspaper to be published in Finland, *Tidningar utgifne af et sällskap i Åbo* (A Newspaper published by a Society in Turku), which included descriptions not only of parishes in various parts of Finland but also of those of Lapland. Under his direction some two hundred dissertations were submitted to the Turku Academy that dealt with the northerly location of Finland in Europe and the possibilities for economic development under cold conditions.²⁷ Subsequent generations looked on Porthan with respect as "the father of Finnish history", and he became Finland's first notable citizen to have a monument erected in his honour, in Turku in 1864, financed by a collection subscribed to by the general public.

All in all, about 4200 doctoral theses and other dissertations were produced at the Turku Academy during the period 1640–1828, and their subjects confirm the status of history as the principal field of study at that time, accounting for 345 of these works. For comparison, it should be mentioned that 177 theses were written on legal topics, 94 on medical ones, 87 on astronomy and 33 on the Finnish language.²⁸ The projection of both Sweden and Finland as nations called for a firm foundation in terms of academic historical research, which rendered historians popular as essential collaborators and guides to the past for those in power.

Among the most significant academic figures in 18th-century Finland were the natural scientists Pehr Kalm, Pehr Gadd and Johan Gadolin. Pehr Kalm was of Finnish descent but was born in Sweden, where his parents, also academics, had fled for safety during the Russian occupation of Finland in 1713–21. Kalm's father died while they were in Sweden, but his mother brought the children back to Finland with her

27 Tarkiainen, Kari. *H.G. Porthan*. See <http://www.kansallisbiografia.fi/kb/artikkeli/2599/> Accessed 1.3.2016.

28 Turku Academy doctoral theses 1642–1828. National Library of Finland, Doria. See <http://www.doria.fi/handle/10024/50699> Accessed 1.3.2016.

after the occupation was over. He subsequently studied first in Turku and then in Uppsala, partly under the direction of Carl von Linné. Although later generations have come to know him best as an explorer who received a scholarship from the Royal Swedish Academy of Sciences to travel round North America, his first journeys as a botanist were to Moscow and Ukraine. Kalm also supervised a number of doctoral theses dealing with Lapland that were produced at the Turku Academy, including one by Johan Wegelius, son of a priest working in Lapland, entitled *Mielipide yrityksiä taloudenpidon haitoista ja apukeinoista Kemin Lapinmaassa* (Attempts at opinions on economic disadvantages and means of overcoming them in Kemi Lapland, 1758).²⁹

Pehr Gadd was a Finnish naturalist, economist and chemist who became the country's first professor of chemistry in 1761. His interests included the applications of chemistry in metallurgy, farming and the manufacture of saltpetre. It is Johan Gadolin, however, who is looked on as having been the true pioneer of chemistry in Finland. Son of the country's first professor of astronomy, Jakob Gadolin, he also exercised a considerable influence on the advancement of industry in Finland. He was a founder member of the Finnish Economic Society (Suomen Talousseura) and was actively engaged in its work, including the creation of schools for various forms of handicraft and manufacturing. This in turn marked the first step towards the teaching of technical subjects. All the disciplines mentioned above, chemistry, astronomy and biology, expanded further as industrialization and research into conditions in the north spread to Finland in the 19th century and developed in the course of time into specialized fields of academic research in this country.

During the age of utilitarianism in the 18th century the explicitly quoted aim of academic research was to serve the needs of the fatherland and promote its economy and well-being in every sense, while provincialism, with its support for local research, and cosmopolitanism, with its emphasis on international issues, existed side by side among the motives espoused by the active scholars of the day. Concrete evidence for the latter way of thinking was provided by the international expeditions into Lapland

²⁹ Wegelius, Johan. *Tankar Om Möjligheten och Nytan af Beqwamare Båtfarter i Kimi Elf uti Österbot* (1758); Lähteenmäki, Maria. Scholars Discover Local History. The Case of North-East Lapland in the 18th century. *Polar Record*. Vol 48, Issue 3 2012, 291–303.

and as far as the shores of the Arctic Ocean. The greatest attention internationally³⁰ was aroused by the expedition arranged by the French astronomer Pierre Louis Moreau de Maupertuis in 1736–37 to measure the degrees of latitude in the Tornio Valley in order to determine the shape of the Earth, or more precisely, whether or not it was flattened somewhat at the poles.

One of those assisting Maupertuis on that journey was an astronomer, industrialist³¹ and local justice from Tornio by the name of Anders Hellant who became well-known later for providing the academies of science in Stockholm, Paris and London with magnetic and astronomical observations. He had been a contemporary of a Swedish astronomer Anders Celsius when studying at Uppsala and had been the first person other than Celsius himself to draw attention to the process of land uplift taking place in Sweden and Finland. He published papers on topics such as the effects of climate on the health of the people of Kuusamo and Sodankylä, a description of the town of Tornio and an almanac based on the night sky in Tornio. Maupertuis is said to have complemented his interpreter on his scientific prowess, “Mr. Hellant, you are a born astronomer!” In the end it was the results achieved by Maupertuis that brought Lapland to the attention of European scientific circles, leading the celebrated writer and philosopher Voltaire to refer to Maupertuis as the “Marquis of the Arctic Circle” and declare that henceforth the light would shine upon Europe from the north.³²

From the mid-18th century onwards the Swedish authorities put a great deal of effort into developing conditions in Lapland. In 1751, for instance, a committee was set up under the direction of Hellant and the provincial secretary Lars Qvist to look into the governance and economy of the region and to issue a statement and set of recommendations for further development in these fields. Their highly detailed

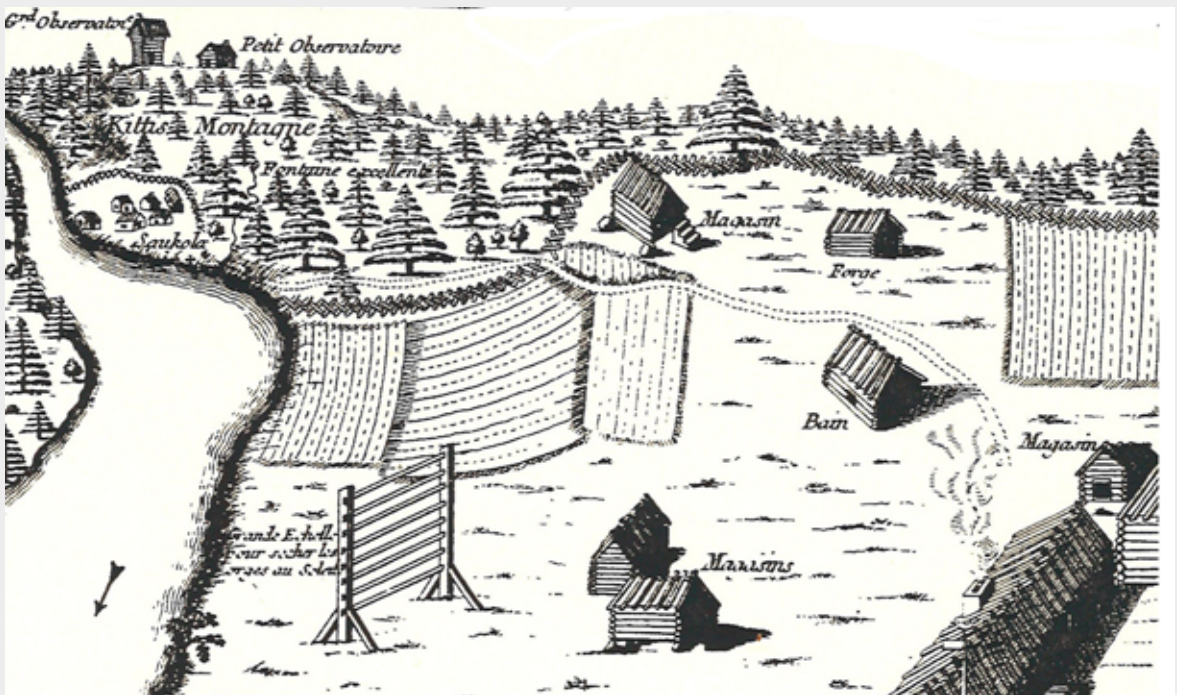
30 Lapland had, of course, been visited previously by numerous scholars, adventurers, explorers and young people making a *Grand Tour* of Europe, including: the scientific and political expedition of H. von Birckholtz, S.A. Forsius and D.T. Hjort in 1601–1602. See *Tornionlaakson vuosikirja* 1979, 90–122; Negri, F. *Viaggio settentrionale* (1700, Finnish trans. *Matka Lappiin* 2014); Linné von, Carl. *Flora Lapponica* (1737, Finnish trans. *Lapin matka* 1993); Motraye de la, A. *Travels through Europe, Asia and into part of Africa, with proper cuts and maps* (1730); Consett, M. *Tour through Sweden, Swedish-Lapland, Finland and Denmark. In a series of letters* (1789); Acerbi, G. *Travels through Sweden, Finland and Lapland to the North Cape in 1798 and 1799* (1802); Clarke, E.D. *Travels in various countries of Europe, Asia and Africa* (1824); Skjöldebrand, A.F. *Voyage pittoresque au Cap Nord* (1805).

31 Hellant moved to Tornio in 1739. Among his other activities he was a merchant in Tornio and at various market sites in Lapland. He started a factory making glue from reindeer antlers at Jukkasjärvi in Lapland in 1743, but later moved it to Tornio.

32 Pihlaja, Päivi Maria. *Tiedettä Pohjantähden alla*. Helsinki 2009, 75.

report containing a vast number of proposals was completed in 1754, leading to the appointment of a Lapland Committee the following year. Hellant himself had made other expeditions to the shores of the Arctic Ocean and White Sea in 1748 and 1749 and had written extensive accounts of these in which he emphasized the importance for Sweden of obtaining territory on the northern coast. He also published separate papers presenting the new astronomical observations he had made on those journeys and made use of the material acquired on his travels in the north to draw a map of Swedish Lapland and the whole of the extreme north of Europe in 1741 and again in 1749. He revised his map once more in 1769, at which point it was the most accurate map of this region available.³³

33 See, for instance, Vahtola, Jouko. *Anders Hellant*. See <http://www.kansallisbiografia.fi/kb/artikkeli/17/> Accessed 2.3.2016.



Two observatories, a large one and a small one (top left in the picture), were built in the Tornio Valley for studying the movements of celestial bodies and measuring the shape of the Earth. Photo: M. Outhier, *Journal d'un voyage au Nord en 1736 & 1737*. Paris 1744.

Numerous 18th-century scientists were interested in astronomy, responding to the challenges posed by the mathematical measurements and gravity issues put forward by the British physicist and astronomer Isaac Newton, and also to the general interest in the collecting of samples and statistics with regard to plants and insects and their classification. Taxonomy was indeed one of the emerging branches of science during that period, as employed so successfully by Carl von Linné.

The reports published by the various expeditions to the Tornio Valley also contained classifications of the inhabitants of the northern regions, to the extent that these definitions of races and their mutual hierarchies later provided the fundamental principles for the 19th-century theories of race. According to the climatic theory prevailing in the 18th century it was the cold climate that was responsible for the short stature of the inhabitants of Lapland and for the deficiencies in character and mental capabilities shown by the Finns.

The Finns did not confine their expeditions to the northern regions, however, but also set out for the far corners of the Earth. One such explorer was the clockmaker and graphic artist Herman Spöring the Younger, who had also studied medicine at the Turku Academy and Uppsala University, following in the footsteps of his father, who was professor of medicine at the Turku Academy. Spöring took part in James Cook's first expedition to the South Pacific in 1768 as secretary to the Swedish botanist Daniel Solander, but contracted dysentery during the journey and died. He was buried at sea in the Indian Ocean and had an island named after him.³⁴

All in all, the academic sciences and economic activities closely connected with them were judged to be developing well by the late 18th century. The Royal Academy of Science in Stockholm, which had been founded in 1739 on the model of the Royal Academy in London, dating from 1660, and had concentrated chiefly on the natural sciences, had become more international and had joined the network of European academies of science, so that its professors gained a reputation as experts in the northern regions of Europe. At the same time there were other institutions in Sweden, such as the Scientific Society of Uppsala, the Academy of Literature, the School of Medicine and laboratories of chemistry and mechanics, all of which were open to

34 Marjomaa, Risto. *H.D. Spöring*. See <http://www.kansallisbiografia.fi/kb/artikkeli/8155/> Accessed 2.3.2016.

applications from Finnish students and teachers.³⁵ One English traveller who had visited Tornio commented in 1786 that although the people of the north lived far away from the elegant societies of their times, they were anything but uneducated.³⁶

The northern regions underwent a far-reaching change in 1751, when revisions were made to the border between Denmark-Norway and Sweden. This put an end to the border disputes that had been going on for the previous 150 years, but the outcome of the peace negotiations at Strömstad was a disappointment for Sweden, which suffered a dramatic loss of its overland connections to the Arctic Ocean. The agreement was also ethnically significant in that it guaranteed the rights of the Sámi living in the border area to cross the border freely as they had done earlier.³⁷ In practice all other travellers and the Finns living in Lapland could also continue their seasonal migrations to the Arctic Ocean coast for fishing purposes and could cross the borders in the north with passports or customs formalities. It was only the tighter border regulations introduced between Sweden-Norway and Russia in the 19th century that were to alter this situation.

35 Pihlaja 2009, 29–30.

36 Consett, Matthew (1786). See *Aikain muistot. Lapin kuvauksia neljältä vuosisadalta*. Heikki Annanpalo (ed.). Helsinki 2000, 13.

37 Pedersen, Steinar. Lappekodisillen i Nord 1751–1859. *Diedut* 3/2008.

2 All eyes on the Arctic Ocean and Siberia

The war between Sweden and Russia in 1808–09 altered the whole direction of the history of Finland and Lapland, in that it culminated in the creation of the Grand Duchy of Finland as an autonomous buffer zone between the two major powers. In geohistorical terms, perhaps the greatest change of all was that affecting the northern part of Fennoscandia, hitherto known as Swedish Lapland, as this was divided between Finland and Sweden by means of a border that ran mostly along the Tornio River. The northern boundary of this region continued to follow the course of the Swedish-Norwegian border of 1751. Both the incorporation of part of Lapland into Finland and the new status of the Grand Duchy as a part of the Russian Empire had profound consequences for both political and academic life in Finland.

The crucial fact as far as the re-shaping of the collective and cultural identities of the Finnish people were concerned was that Finland had already achieved self-government under Swedish rule,³⁸ so that comparable status within the Russian Empire served simply to confirm this situation, to the extent that the period of autonomy was marked by substantial economic growth and a flourishing of the Finnish science and culture. The Finns were allowed to retain all the laws that had applied under Swedish rule, their use of Swedish as the language of administration, their Lutheran religion, their educational system and their commercial structures. Similarly, passport and customs formalities still applied at the Finnish-Russian border. In effect, it was only the country's military and foreign affairs that were handled in St. Petersburg.

In the course of the 19th century the pro-Finnish nationalistic (Fennoman) elite became particularly interested in Lapland and the Sámi, for both ethnological and

38 Tommila, Päiviö (ed.). *Suomen tieteen historia 2*. Helsinki 2000, 67.

cartographical reasons. As a result of the boundary changes Finland had gained a minority population of some 900 Sámi, making up about 9% of the approximately 10,000 inhabitants of the new territory. The Sámi belonged to the same Finno-Ugric linguistic family as the Finns, and many young nationalistically minded scholars sensed that they could make a prominent academic career out of studying the language and culture of these distant cousins in the north.

One consequence of the new border was that the expression "*Finnish Lapland*" (Suomen Lappi) was coined around the mid-19th century. The first instance of the word *lappi* in written Finnish dates back to the prayer book of Mikael Agricola, published in 1544, where it meant "pagan", and it first appeared in its present sense in 1678, in Henrik Florinus's dictionary, as part of the compound word *Lapinmaa*, "the land of the Lapps".³⁹ A second consequence was that the valley of the Kemi River now formed the core of the Lapland region rather than the Tornio River as in earlier days.⁴⁰ This shift eastwards was indeed politically expedient as it gave the status of the gateway to Lapland to the town of Kemi instead of Tornio, which was right on the border with Sweden. Towards the end of the 19th century this same status was attained by Rovaniemi, which had grown up out of a former log floaters' settlement. The third consequence was that the image of Lapland in the eyes of the Finns became a more comprehensive and realistic one.

For nationalism and the National Romantic movement the 19th century meant the closing of many borders and the imposition of tighter controls, and this was the case in the northern parts of Finland as well. Cross-border contacts with Sweden were regulated by the treaty of 1809 and those with Norway by agreements concluded in 1825–26 and 1852. Likewise the whole length of the border between Finnish Lapland and Russia was surveyed and marked on the ground in 1833. Thus Finland came to have its own border control posts and customs procedures with respect to its boundaries with both Sweden and Russia, a fact which helped to underline its self-governing status, strengthen the domestic elements of its economy and promote political activity, and thereby to develop a national identity.

39 Häkkinen, Kaisa. *Nykysuomen etymologinen sanakirja*. Helsinki 2004, 574.

40 On the first map of Finland to be published in Finnish, in 1846, *Lappi* referred specifically to the Kemi region of Lapland, which comprised the area now known as Central Lapland, or the local government district of Sodankylä and its surroundings.

The 1852 boundary agreement with Norway nevertheless rankled in the minds of the Finns, since it prevented those inhabitants of Lapland who regularly crossed into the coastal strip of Northern Norway on a seasonal basis to fish in the Arctic Ocean from doing so without a passport. This led to a situation in which increasing numbers of Laplanders were officially moving to live in Northern Norway, to the annoyance of the Finnish authorities. In order to compensate these migrants for their loss of income the Finnish government of the day, the Senate, published a programme for the internal development of Lapland (Lapin sisäisen kehittämisen ohjelma), also in 1852, but its implementation proceeded very slowly, so that the border issue escalated into a demand voiced by the Fennoman representatives for the rights of access to the Arctic Ocean coast to be restored. Surprisingly, it appeared for a moment that the whole issue would be amicably resolved, as the liberal Emperor Alexander II asked the Finnish Senate in 1864 to allow the area occupied by the Rajajoki (River Sestra) arms factory, which had remained on the Finnish side of the border in spite of being located fairly close to St. Petersburg, to be incorporated in the gouvernement of St. Petersburg. In return he offered various concessions, including an area of territory in the north to be named by the Finns. The Finnish leaders were enthusiastic about this and began eagerly to measure out suitable areas on the Arctic Ocean coast. To their disappointment, however, Alexander II was assassinated before this could be put into effect and Russia was overcome by a wave of Slavic nationalism. The Finns would not abandon the plan, however, but unanimously set out on an extensive propaganda campaign for a land corridor to the Arctic Ocean. This campaign continued until the "Tsar's promise" was finally fulfilled in 1920.

Scholars gazing eastwards via the north

For academic life in Finland the Grand Duchy period meant revival, a clear profile and a distinctly more scientific approach. The dominant themes in the academic life of Europe as a whole were high ideals, romanticism, liberalism and nationalism, and as elsewhere, history remained one of the most important branches of study for this nation that was still engaged in building an identity of its own, a position which was greatly strengthened by the gaining of independence in 1917. In keeping with the spirit of the times, the leading academics in the country were also its principle politicians. Thus the professors of history during the period of autonomy engaged themselves in a search for evidence of their country's origins way back in the past

and attempted to identify the location of the roots of the ancient Finnic and Finno-Ugric languages, in much the same way as Johannes Messenius had searched for “Finland’s magnificent past” in his 17th-century work.⁴¹

One difference, however, was that the ambitious young scholars who were vying for places in the university saw their road as leading not westwards but to Lapland and from there over the eastern border to Karelia and on to northern Russia. It has been estimated that Finns carried out around 40 expeditions to the Kola Peninsula alone between 1829 and 1914 and that more than 60 scholars took part in these journeys.⁴² The area beyond the Arctic Circle, “Finland’s coldest colony”; i.e. Lapland, was a fashionable place for academics and scientists to visit and a convenient laboratory and testing ground for methods and equipment before moving on to the more demanding conditions of northern Russia. The first 19th-century Finnish academic to travel to Lapland and study the Finno-Ugric peoples was Anders Sjögren (1794–1855), who, inspired by the German scholar J. G. Herder, had become a Finnish representative of the Göta tradition of tracing the ancient, dignified history of nation-states,⁴³ in the study of which philological, historical and ethnographic fieldwork played an essential role. Sjögren, who hailed from Eastern Finland, set out on his first journey, arranged on the strength of a scholarship from the Emperor Alexander I, in the direction of Lapland, Sodankylä and Inari, and from there into Russia, travelling via the Kola Peninsula to Arkhangelsk and other parts of Northern Russia. The whole expedition lasted from 1824 to 1829.

One significant publication to arise from this as far as Finnish Lapland was concerned was Sjögren’s *Anteckningar om församlingarne i Kemi-Lappmark* (Notes on the church parishes of the Kemi Lapland), which he completed while in Arkhangelsk in 1828, but he also compiled a body of historical and statistical data on the Finno-Ugric group known as the Komi, who inhabited the banks of the great rivers of Northern Russia that flow into the Arctic Ocean and had partly colonized the Kola Peninsula. Sjögren devoted his research efforts in later years to field trips in the Northern Caucasus and Crimea in 1835–37 and in the Baltic in 1846 and 1852.

41 Messenius, Johannes. *Suomen, Liivinmaan ja Kuurinmaan vaiheita*. Helsinki 1988. (1. edition in Latin in 1636).

42 Löppönen, Paavo. Tutkimuspolitiikkaa itsenäisyyden ajan alun Suomessa. *Terra* 100/1 1988, 46.

43 Anttila, Aarne. *Elias Lönnrot. Elämä ja toiminta*. Helsinki 1985, 78.

Diaries and travelogues that had arisen as by-products of scientific expeditions or were based on journeys undertaken for that purpose were popular reading for those who wished to expand their view of the world in the 19th century and earned a certain fame and recognition for their writers that even extended to the court in St. Petersburg. Sjögren's career is a good example of this, as it was on the strength of the interest aroused by his expeditions that he was elected to a post of academician in Finno-Ugric and Caucasian languages and folklore at the St. Petersburg Academy of Sciences. This in turn gave him the opportunity to help other Finns to obtain funding for studies of the Finno-Ugric peoples, their languages and their cultures.

It was by virtue of Sjögren's influence that one of the most notable "gifts of the North to Finnish science", Matthias Alexander Castrén (1813–52), managed to fulfil his own academic dream. Lapland was looked on at the beginning of the 19th century as a region lying beyond the Arctic Circle that was accessible via the "gateway" at Tornio but for which an alternative route through the large villages of Kemi and Rovaniemi on the Kemi River would gradually develop in the course of time. Where the first and principal destination in Lapland in the 18th century had still been the Tornio Valley, the whole of the region was now opening itself up as an attractive field of study. For Castrén, the orphaned son of a vicar from south of Rovaniemi, the world that lay beyond the Arctic Circle was just as strange as for his colleagues from Helsinki, since he had gone to school in Oulu and finally qualified to study Finnish at Helsinki's Imperial Alexander University.

As its title suggests, his *Nordiska resor och forskningar* (Study journeys in the North)⁴⁴ published in Swedish in 1852 and 1855, told of his travels in Lapland, the Kola Peninsula, the White Sea area of Karelia and Siberia and was widely read and highly regarded by the academics of his time. Castrén had made his first journey to Lapland for study purposes in 1838. Although in his own words his principal interest at that time had been in the Finnish language, he was also concerned with Sámi and Estonian, and it was to acquaint himself better with the Sámi language that he had embarked on this journey.⁴⁵

44 Finnish translation *Tutkimusmatkoilla pohjolassa*.

45 Castrén, M.A. *Nordiska resor och forskningar*. Helsinki 1967. [1 edition 1852].

Castrén made his second journey to Russian Karelia, in 1839, and his third, a longer excursion to Lapland, the Kola Peninsula and Arkhangelsk and then to Siberia, in 1841–44. On this third occasion he was accompanied in the early stages by the doctor and collector of folk traditions Elias Lönnrot (1802–84). As far as they knew, no one had previously collected linguistic material from this area, which was an attractive one for these ambitious scholars. In particular, they hoped to gather information on the Sámi village of Akkala, who had been living in isolation and had developed a language of their own. For the early part of their journey they also had the company of a vicar and philologist from Northern Norway, Nils Vibe Stockfleth, who was a friend and correspondent of Sjögren's. Stockfleth and his wife had also visited Lönnrot in Kajaani before setting out on the expedition.⁴⁶ This tells us much about the extent of the cross-border network that existed between intellectuals at that time.

The Finnish scholars were also interested in the shores of the White Sea because it was suspected that the first inhabitants had been of Finno-Ugric origin, and later this was proved to have been the case.⁴⁷ Once in Arkhangelsk, Castrén concentrated on writing about his experiences in Lapland, but unfortunately he fell ill with tuberculosis and had to spend several months in the town and the nearby village of Uima in order to regain his strength. It was only at the end of November 1842 that he was able to resume his travels towards the east, although still by no means fully fit.

He travelled in reindeer or horse-drawn sleighs or carriages, in boats or river craft, in frosts and biting winds in winter and in the Arctic daylight and tormented by mosquitoes in summer. He spent the night in squalid hovels on occasions and in icy cold huts on others. This arduous travel routine lasted for a year until he came ashore at Obdorsk beyond the Urals in November 1843. Again he was in a poor state of health, and having collected the material he needed he immediately set out for home, arriving in Helsinki in May 1844. Once at home, Castrén quickly returned to health and without a thought for sparing himself or considering the dangers that might lie ahead, he boldly set out for a new expedition to Siberia, this time to the Krasnoyarsk area. This lasted from 1845 to 1850, and although it yielded a great deal of material, it was a strenuous ordeal from which he returned in a state of exhaustion. In spite of this, Castrén succeeded in completing the thesis he needed in order to apply

46 Lönnrot, Elias. *Matkat 1828–1844*. Helsinki 1981, 300–301. [1. edition 1841].

47 See *Suomalaisten juuret nykytutkimuksen mukaan*. Paul Fogelberg (ed.). Helsinki 1999; There are still place names in the Arkhangelsk district even in the 2010s that point to Finnish-Karelian origins.

for a professorship and became the first person to be appointed professor of Finnish language and literature at the University of Helsinki in 1851. A year later, however, tuberculosis led him to a premature death.⁴⁸ Castrén and Sjögren left a considerable amount of material behind them concerning their research in North-Western Russia, and their works were read avidly in Russia as well.⁴⁹

The north in the *Kalevala*

Castrén's colleague Elias Lönnrot is known internationally above all as compiler of the Finland's national epic poem *Kalevala* (1835), which can with good reason be looked on equally well as a historical work, containing as it does a great deal of information about the life of past societies and their social relations and conflicts, as passed down in ballad form from one generation to another. The proponents in these ballads are two peoples with distinctly different cultures, the *Kaleva* tribe to the south, representing the Finnish people, led by Väinämöinen, and the *Pohjola* (North) tribe in the north, led by the Maiden of Pohjola. The latter people were also referred to in the ballads as *lappalaiset* (the Lapps) and the area in which they lived as *Lappi* (Lapland). Lönnrot made it clear that these two peoples did not see eye to eye, and recounted in the very first ballad of the first edition of his *Kalevala* how a Lapp belonging to the people of Pohjola attempted to assassinate Väinämöinen. Pohjola is depicted throughout in dismal terms as *Pimentola*, a "land of gloom" that is known best for its frosty fells and perpetual darkness.⁵⁰

Scholars have located the *Pohjola* of the *Kalevala* geographically in various ways, as referring to Ostrobothnia, the area north of Lake Ladoga or even the northern shores of the White Sea. The presence of a major body of water is an important feature, however, as the ballads tell us of people arriving there across the sea by ship. The Pohjola tribe were affluent people who lived in huts and cottages with fenced-in yards, lit their houses with candles, tilled the land, raised cattle and pigs, travelled on horseback, ate salmon and butter, brewed beer and drank it large quantities in their

48 Forsius, Arno. *Matias Aleksanteri Castrén – tuberkuloosi tiedemiehen kohtalona*. See <http://www.saunalahti.fi/arnoldus/castrén.html> Accessed 6.5.2016.

49 Buharov, D.N. *Matka Lapissa syksyllä 1883 (Poyezdka po Laplandii osenyu 1883 goda)*. Helsinki 2010.

50 Lönnrot, Elias. *Kalevala*. Helsinki 1999, 43–44. [1. edition 1835].

feasts, but were ignorant of the blacksmith's art. The area where they lived abounded in snow, and bears and wolves roamed there freely. Birch, alder, spruce and pine trees grew there, and also junipers, and the people gathered berries from the forests to eat. The girls plaited their hair and wore white dresses for special occasions, keeping them in wooden storehouses in between.⁵¹

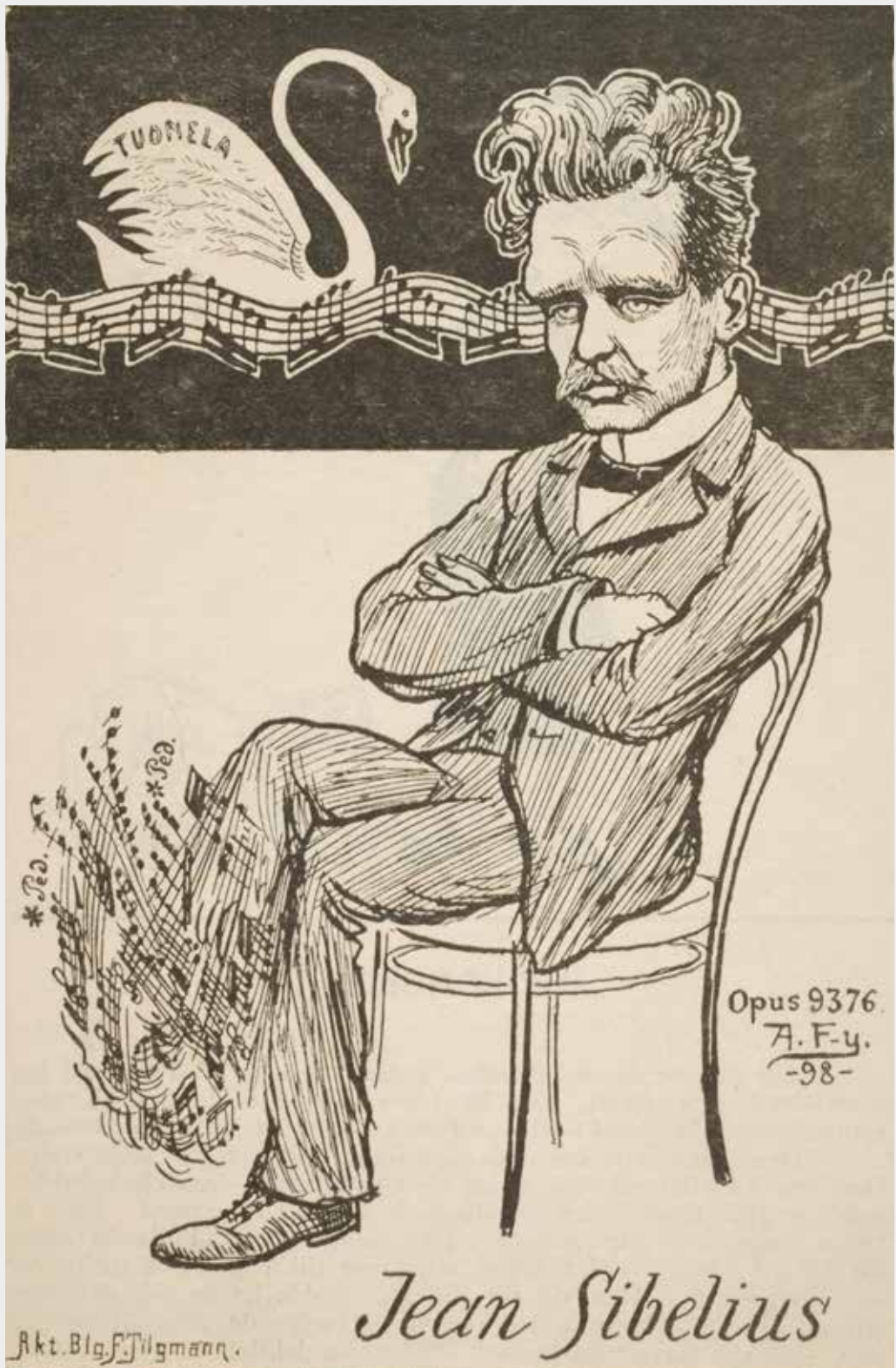
As is evident from these few details, the people of Pohjola could not have lived in the very far north, nor do they strike one as being related to the Sámi. It would seem, in fact, that the term "Lapp" refers here to people in general who live in the north rather than to the Sámi, and the word is known to have been used from early times onwards for those living in northerly or remote places who gained a livelihood from reindeer herding, hunting and fishing. Philologists have demonstrated that the word *Lappi* for Lapland corresponds to the word *lappi* in the Karelian language which means the White Sea area of Karelia, i.e. the area north of that principally settled by the Karelians.⁵² This interpretation fits in well with the use of *Pohjola* observed in the *Kalevala*. On the other hand, what is said about living conditions there could equally well apply to the Tornio area, for instance. But in spite of the various ways in which the words "Lapp" and "*Pohjola*" could be construed, it is clear that the description of *Pohjola* in the *Kalevala* has many of the familiar images of northernness associated with it: a cold climate, harsh living conditions and a people who are suspicious of outsiders.

The governor of Alaska

Castrén was not the only Finn travelling around the northern regions of Russia in the early 19th century, as the Arctic regions also attracted Finnish people for diplomatic or commercial reasons. One of these was Arvid Adolf Etholén (also known as Etolin, 1798–1876), a native of Helsinki who was appointed governor of Alaska. Educated at the Imperial Naval Academy, he had entered the service of the Russian-American trading company. Numerous Finns had been employed by the company prior to his time, but it was with Etholén that they began to adopt an important role in its affairs.

51 Lönnrot 1999, passim.

52 Häkkinen 2004, 573–574.



The composer Jean Sibelius, as seen in a cartoon by A. Federly in the magazine *Fyren* in 1898. In the background is the Swan of Tuonela, familiar to us from the Kalevala. Photo: Courtesy of the National Board of Antiquities.

Etholén himself served in the Russian colonies in America and the Pacific in 1818–24, 1826–37 and 1840–45, taking part in expeditions to survey the coast of Alaska in 1822–23 and acting as an assistant and deputy to the governor of Alaska in 1832–37. On his return to St. Petersburg he was appointed to the highest administrative position in the company's hierarchy, that of Governor of Russian America. He travelled to his post in the capital of the Russian colonies in Alaska, Novoarkhangelsk (nowadays Sitka) by a route that took him around South America, accompanied by a retinue that included several Finns, such as Uno Cygnaeus, who had been taken on as priest to the Lutheran Congregation of Alaska, the natural scientist Reinhold Ferdinand Sahlberg and Johan Bartram, who served as Etholén's adjutant.

Etholén's term of office as governor (1840–45) coincided with a period of rapid expansion for the company in Alaska. New bases were established, various public buildings were erected in Novoarkhangelsk and Etholén traded certain territories with the British Hudson Bay Company and with the Americans, to whom he sold the southernmost Russian base on the continent, Fort Rossiya in California. He also fostered relations with the native people and presided over the adaptation of their customs in the prevailing spirit of cultural imperialism.

In the course of his travels Etholén amassed a collection of ethnographic material from Alaska, the Aleutian Islands and the Pacific Islands. His first donation to the Turku Academy was destroyed in the Great Fire of Turku in 1827, but he made a second donation, to the University of Helsinki, on his final return to Europe and this eventually came to be housed in the National Museum of Finland.⁵³ Etholén also left his mark on the geography of Alaska. There is an Etolin Island named after him amongst the Alexander Islands, and also an Etolin Strait, Cape Etolin and Etolin Bay on the island of Nunivak, an Etolin Point on the north shore of Bristol Bay and an Etolin Street in the town of Sitka. There is also a Cape Etolin on the island of Urup in the Russian Kurile Islands.

53 Marjomaa, Risto. *Arvid Adolf Etholén*. See <http://www.kansallisbiografia.fi/kb/artikkeli/5411/> Accessed 2.8.2016.

Kristiina Kalleinen

The famous Nordenskiölds

The mineralogist Adolf Erik Nordenskiöld (1832–1901), the best-known Finnish-born polar explorer, became a celebrity in his time as a result of his voyage through the North-East Passage along the Arctic coast of Russia in the sailing ship and whaler *Vega* in 1878–79. The heroism attached to his expedition was accentuated not only by the nationalistic aura that surrounded it but also by the fact that the *Vega* had been trapped in the ice off the Chukchi Peninsula for ten months before it was able to complete the journey to Japan and return to Sweden via the Pacific Ocean, Indian Ocean and Suez Canal. When the *Vega* moored in Stockholm in April 1880 after very nearly two years at sea the Swedes cheered their new national hero and the King honoured him with the title of baron and presented him with the Grand Cross of the North Star.

Having cut out a promising career for himself at the Imperial Alexander University in Helsinki, Nordenskiöld had been forced to go into exile in Stockholm after arousing the disapproval of the Russian authorities by stressing Finland's close relations with Sweden. In 1860 he was granted Swedish nationality, and this also opened up better possibilities for preparing for his polar explorations. He took part in two excursions to Svalbard (Spitzbergen) led by the Swedish explorer Otto Torell in 1858 and 1861, the first of which was a purely scientific journey into Arctic waters starting out from Scandinavia, and then he himself arranged a third expedition to Svalbard in 1864. A year earlier he had visited Finland and had married a Finnish countess by the name of Anna Mannerheim. The couple then returned to Sweden and Nordenskiöld successfully continued with his explorations and the gathering of scientific material.

Further preparations for sailing through the North-East Passage were made in 1875 and 1876 by means of journeys to the estuary of the River Yenisei and the Kara Sea, which later came to be known as "the refrigerator of Europe". These experiences convinced him that it was possible to sail through the North-East Passage but that it would call for exceedingly careful planning and preparation.

Nordenskiöld had inherited his interest in the geology and mineralogy of the north from his father, Nils Nordenskiöld (1792–1866), who later came to be known as the father of Finnish mineralogy. Unlike his son, Nils Nordenskiöld was on good terms with the Russians, and the close relations that he had formed with the Russian Governor-General of Finland at that time, Fabian Steinheil, while still a student at the Turku Academy were decisive for the advancement of his career. Steinheil was an enthusiastic amateur mineralogist and collector of minerals and was pleased to take the young Nordenskiöld under his protection. Thus Nils Nordenskiöld was able to publish the first-ever Finnish textbook of mineralogy, *Bidrag till närmare kännedom af Finlands mineralier och geognosie* (A Contribution to Better Knowledge of Finland's Minerals and Geognosy, 1820), on the strength of a scholarship from the Emperor and to undertake a tour of Central Europe lasting almost three years by virtue of a further scholarship, visiting mines and factories, acquainting himself with the latest discoveries in the natural sciences and meeting the foremost mineralogists and chemists of the day. On his return in 1824 he was appointed as Finland's first Director of Mining.

Nils Nordenskiöld was convinced that, in order to break free of its dependence on Swedish iron ore, Finland would have to discover deposits of this valuable ore in its own territory, and this led him to arrange extensive ore prospecting excursions all over Finland in the 1830s and 1840s. He also travelled to Siberia to develop a copper enrichment method for the Demidoff Mines at Nizhni Tagil. He visited the Urals for the first time in 1849 and made two more trips there before the outbreak of the Crimean War in 1854. In between these journeys he attended the world's first exhibition of industrial products, the Great Exhibition of 1851 in London, a city which he visited a number of times after that to meet British colleagues such as W. H. Miller, professor of mineralogy at the University of Cambridge. Nils Nordenskiöld was invited to honorary membership of the prestigious *Royal Geographical Society* in 1864.

On the death of his father, Adolf Erik Nordenskiöld turned his attention to developing his own career and bringing up his family. His wife Anna bore him four children, including two sons, both of whom became explorers and scientists. Their elder son Gustaf, born in 1868, made an expedition to the Mesa Verde area of Colorado and

brought back a valuable collection of scientific material of various kinds which is now in the National Museum of Finland. Two years before his untimely death, Gustaf Nordenskiöld published his findings from that expedition in *The Cliff Dwellers of the Mesa Verde* (1893), which has become a classic in its own field. His younger brother, Erland undertook a number of expeditions to South America at the beginning of the 20th century, spending some time among the Indians of Bolivia. He was appointed professor of ethnology at the University of Gothenburg in 1924.

Adolf Erik Nordenskiöld's sister Anna married a cousin from the Swedish branch of the Nordenskiöld family, and their son, Otto Nordenskiöld, became a geologist and geographer and was professor of geography in Gothenburg from 1905 onwards. His best-known expedition was to Antarctica in 1901–03, during which the party camped for the winter on a glacier and collected a substantial amount of scientific material. Their ship, the *Antarctic*, sank on the return journey, but fortunately a Uruguayan merchant ship was able to rescue the whole party from the icy sea. Nordenskiöld's account of the journey, *Polarvärlden och dess grannländer* (The Polar World and its Neighbouring Countries) was published in 1907.

Adolf Erik Nordenskiöld's younger brother Karl qualified as a forester at first, but when the Observatory of Magnetism and Meteorology at the Imperial Alexander University in Helsinki was transferred to the auspices of Societas Scientiarum Fennica and became the Central Department of Meteorology (nowadays the Finnish Meteorological Institute), Karl Nordenskiöld was invited to become its director, since he had been doing related research for Societas Scientiarum from the 1860s onwards and had gained a reputation as a talented meteorologist. He was sponsored by Societas Scientiarum to attend the first International Meteorological Congress in Vienna in 1873. Karl had five children from his marriage with his cousin Vilhelmina Nordenskiöld, and the legacy of an interest in the natural sciences was reflected among other things in the career of their daughter Eva, who worked as a research assistant in chemistry for the Peatland Cultivation Society in Jönköping, Sweden, from 1892 onwards before returning to Finland to be a chemist with the Finnish Peatland Cultivation Society, a rare position for a woman in those days.

As is evident from the above, a predilection for the natural sciences appears to have been handed down within the Nordenskiöld family in an astonishingly regular manner. Even their earliest known Finnish ancestor, the accountant Johan Norberg, who came to Finland in the late 17th century, had studied economics and mining at Uppsala University and is said to have been especially interested in minerals. The Great Northern War and the plague that spread to Finland as a consequence of it led Norberg to escape back to Sweden, but once the war was over two sons of his, Anders and Carl, who, like their father, had studied natural sciences and mathematics at Uppsala, settled in Finland using the modified surname Nordenberg. The younger brother, Carl Nordenberg, took up residence in the Frugård manor house that his father had bought in Mäntsälä, just 65 km north-east of Helsinki. The brothers were subsequently both raised to the nobility by virtue of the part they had played in the national defence, and in 1755 they adopted the name Nordenskiöld.

The Swedish branch of the Nordenskiöld family continued to thrive via the heirs of Carl's son Admiral Otto Nordenskjöld. The last Finnish Nordenskiölds were Eva and Iri, daughters of Adolf Erik Nordenskiöld's brother Karl, both of whom died in Helsinki in 1936. The saga of the Nordenskiölds had come to an end in Finland, but it continues to this day in Sweden.

References:

Archives of Frugård Manor. Coll. 372. National Library of Finland, Helsinki.

Gustaf Nordenskiöld, geologist. In: *Kaukaa haettua*. Museum of Cultures, Internet exhibition. See <http://www.kaukaahaettua.fi/nordenskiold.html> Accessed 10.9.2016.

Kalleinen, Kristiina. *Kuninkaan ja keisarin Nordenskiöldit*. Finnish Literature Society, Helsinki 2014.

In Arctic waters and on the Kola Peninsula

In addition to scholars in the humanities like Sjögren and Castrén and businessmen and officials like Etholén there were numerous natural scientists in the 19th century who turned their attention towards Arctic waters. One of these was a physicist from the Finnish Ostrobothnia by the name of Jakob Chydenius (1833–64), who took part in an expedition to Svalbard (Spitzbergen) arranged by the Swedish explorer Otto Torell in 1861. This was the first notable Swedish expedition to polar regions.

Chydenius's task on this expedition was to make magnetic observations together with N. K. Dunér and to determine the feasibility of measuring degrees of latitude in the region. In the end they divided the work between them so that Chydenius was responsible for the northern islands in the group, but when the ship was prevented by ice from sailing any further north he took a boat and went to study the northern parts of the island of Svalbard itself. On his return Chydenius was awarded a prize by the Royal Swedish Academy of Science for his research into the possibilities for measuring the degrees of latitude in Svalbard, and he had intended to take part in a further expedition there in 1864, but he died before it took place. When the planned surveying of the degrees of latitude was eventually carried out in 1898–1902 the expedition very largely followed the route that had been proposed by Chydenius, and a glacier and mountain range on Svalbard have been named after him.⁵⁴

The main focus of Finnish research in Arctic regions nevertheless continued to be on the Kola Peninsula, the most significant contribution of all being the Great Kola Expedition of 1887, inspired by the success of A.E. Nordenskiöld in sailing through the North-East Passage. The aim of this expedition, which attracted the leading Finnish scientists of the day, was to map the interior of the region, which had earlier remained unexplored, to determine the course of the treeline there and to study the local fauna, flora and geology. A half of the cost of the expedition was met by *Societas pro Fauna et Flora Fennica* and the remainder by the University of Helsinki and various private individuals.

The northern parts of Finland itself also attracted interest during this period. In 1882–83, for instance, a group of scientists inspired by the International Polar Year travelled to Sodankylä in Central Lapland and established a Polar Research Station, or observatory, on the outskirts of the main village for the study of scientific

⁵⁴ Jakob Karl Emil Chydenius. *Svensk Biografiskt Lexikon*. See <http://sok.riksarkivet.se/sbl/Presentation.aspx?id=14850> Accessed 12.5.2016.

phenomena, principally meteorology. Corresponding meteorological stations were also set up in the northern parts of Scandinavia and Russia around that time. This meant that Finnish Lapland was also able to benefit from the interest shown generally in the climate of Arctic areas, in that the region gained a place on the international scientific map. During its first year of operation the Sodankylä station sent in more than 300,000 observations to the International Commission.⁵⁵

The vanguard of the Great Kola Expedition,⁵⁶ the botanist Alfred Kihlman (later Kairamo), the zoologist Reinhold Envald and the curator of the samples, Gustaf Nyberg, left Helsinki for Oulu by train in April 1887 and proceeded from there in horse and reindeer-drawn carriages via Kuusamo and Kandalaksha to the town of Kola. Nyberg and Envald then remained in Kola while Kihlman travelled on alone to the village of Lovozero (Luujärvi) in the interior of the peninsula, from where he made botanical excursions and observed the everyday life of the Sámi. The main group set out by sea via Stockholm, Trondheim and Vardø, arriving in Kola in June 1887, but had to wait until July to go into the field as the other men had not managed to secure enough reindeer for transporting the party and their equipment. Finally they were able to leave for the interior in two groups at the beginning of July to carry out their research and collect samples.

The members of the expedition divided up into various smaller groups in order to achieve a greater coverage in their mapping of the nature of the region, largely its flora and fauna, from Kandalaksha to Ponoï and on to Kola. They travelled sometimes on foot, sometimes in reindeer-drawn carts and sometimes by boat, or else moved from one base to the next by ship. The last of the party didn't leave the Kola Peninsula until September, taking the material that had been gathered with them. Some of them went via the Sámi villages to Litsa on the Arctic Ocean coast and from there by ship along the Norwegian coast and through the Straits of Denmark to Helsinki, while others waited in Arkhangelsk for a steamship to Moscow, from where they travelled

55 Donner, K.R. Luettelo Pohjois-Pohjanmaata ja Suomen Lappia käsittelevästä kirjallisuudesta. Albumi I. *Jouko* 1910.

56 This consisted of Johan Axel Palmén, zoologist and leader of the expedition, Alfred Oswald Kihlman, botanist studying the forest limit, Wilhelm Ramsay, geologist, Viktor Ferdinand Brotherus, bryologist, Reinhold Envald, zoologist studying insects, who also acted as the expedition's doctor, Alfred Petrelius, student, who was responsible for surveying and mapping, Gustaf Nyberg, caretaker at the Helsinki University Zoological Museum, who was responsible for conserving and storing zoological samples, David J. Sjöstrand, sea captain and master of the Bogskär lighthouse, who assisted in practical matters, and Mikko Ivanov, an assistant from the White Sea area of Karelia.

home via St. Petersburg. Meanwhile a third group went overland to Petrozavodsk with the help of bearers, after which they took a train to St. Petersburg and proceeded from there to Helsinki. It would have been impossible to return home from Kola via Finnish Lapland in view of the heavy loads they would have had to carry and the poor road connections. All in all, the journey had lasted more than five months, but it was deemed to have been worthwhile.

Results of the work carried out by the expedition were published in numerous scientific journals, the map of the Kola Peninsula produced in the course of that work was made public in 1890, and an exhibition of photographs taken by the group and artefacts collected by them was held in Helsinki in spring 1888. Kihlman made a new journey to the southern and eastern shores of the Kola Peninsula in 1889, and he and the geologist Wilhelm Ramsay made a study of the mountains surrounding Lake Umba in 1892. The other geologists involved in the first expedition revisited the Kola region in 1891 together with the mineralogist Viktor Hagman, and finally Ramsay carried out further explorations there in 1897, 1898, 1911 and 1914.⁵⁷

⁵⁷ Kairamo, Alfred O. *Kuolan 1887 vuoden retkikunta ja Suomen maantieteellinen seura: matkamauistelmia ja kuvia*. Helsinki 1938; Rikkinen, Kalevi. *Suuri Kuolan retki 1887*. Helsinki 1980.



The Karelian folk singer Pasi Jääskeläinen and his family in 1914. Photo: Courtesy of the National Board of Antiquities.

Utilization of the natural resources of Lapland

Exploitation of the forest resources of Eastern and Northern Finland began in earnest in the 19th century, when the state programme for the colonization of new agricultural areas was extended beyond the Arctic Circle and large-scale felling of the forests commenced in the 1860s. The growing sawmill, pulp and paper industries required increasing amounts of roundwood, and this meant that the forests were in effect the main source of expansion in the national economy, hence the custom of referring to them as “Finland’s green gold”.

The intensification of agriculture in subarctic areas called for much adaptation, the development of suitable strains of crops and types of fertilizer and the increasing of the field area by draining peatlands and clearing forests. All this was taking place against a background of new agricultural policies and recent research findings. The proposals put forward by scientists with regard to abandoning the notion of collective land ownership⁵⁸ and extending the colonization of northern regions were the starting points from which the autonomous Grand Duchy of Finland set about its ambitious plans to develop agriculture.

Way back in the 18th century Pehr Kalm, professor of economics at the Turku Academy, had formed a botanical garden in Turku for the purposes of testing new strains of economic plants, while Johan Kraftman, adjunct professor in economics, had begun a series of practical lectures on the development of agriculture and Pehr Gadd, professor of chemistry, had begun speaking of the possibilities for finding new sources of livelihood and of the special situation facing agriculture in Finland on account of climatic demands. At the same time, inspired by reports of fruitful collaboration between scientists and economists in Europe, the Finnish Economic Society had been founded to promote the intensification of agriculture and the creation of an agricultural advisory system. During the 19th century the custom of the burning and cultivation of swiddens, which had consumed substantial areas of forest, gradually gave way to field cultivation, and livestock rearing became the dominant form of agriculture in the eastern and northern parts of the country. It was important

58 One person behind the reform of agriculture in the 18th century was Jacob Faggot, one of the founder members of the Swedish Academy of Sciences. In practice this meant the gradual partition of the common lands and rationalization of the land holdings of farms in Sweden and Finland from 1757 onwards.

for Finland that attention should be paid to agriculture, as farming accounted for 90% of the country's employed population in 1805.

The spread of potato growing marked one of the major innovations on farms at higher latitudes. Strains were found that could grow even in the northernmost parts of Lapland, and these were instrumental in ensuring the survival of the increasing population of that region. A system for providing seed potatoes for the whole country was instigated in 1801, and steps were taken in the 1840s to increase the areas of arable land on farms by draining peatlands, lowering the water levels in lakes and taking steps to prevent flooding. Similarly, support was given for the artificial feeding of cattle and the acquisition of hardier and more productive cattle and sheep, largely through the granting of assistance and awarding of prizes by the Senate (government) for the adoption of new strains of crops and different breeds of cattle. The regional aspect of this development work was promoted by founding agricultural societies specifically for Northern and Eastern Finland.⁵⁹

The input from scientists was of decisive importance for the development of agriculture in subarctic areas, for without their intervention knowledge of the new plants strains, livestock breeds, tilling methods, fertilizers and economic ideas would not have spread among those responsible for political decisions nor among the people at large. Given that crop failures were still a realistic prospect at that time, scientists published a great number of practical handbooks and farmers' magazines designed to tide them over when conditions were at their worst, e.g. *Sanomia Maanviljelijöille* (News for Farmers), while handbooks such as *Pottuin kasvattamisesta* (On the growing of potatoes), *Hyväntahtoisia neuvoja katovuosina* (Well-meaning advice for famine years) and *Keinoja lannan lisäämiseksi* (Ways of adding fertilizer) gradually steered the attitudes of the farming population in a more perceptive and ingenious direction.

59 Niemelä, Jari. *Lääninlampureista maaseutukeskuksiin*. Helsinki 1996, 19, 27–28, 52, 60–61.

Päivi Maria Pihlaja

The Aurora Borealis connected Finland to the High Arctic

A spirit of close collaboration between scholars and the new academies of science all over Europe had developed by the 17th and 18th centuries and scholars in the north were anxious to take part in this. Since one of the motives behind the collaboration was a division of labour on geographical grounds, the idea began to spread among Finnish scientists that they could most successfully project a favourable image of their own country in scholarly pursuits by generating new information about conditions in its northern parts. Since the concurrent revision of the notion of empirical knowledge required direct observations concerning the natural environment, researchers were encouraged to go out into the field. Relevant objects of study in the north at that time included the effects of cold on materials and living things, the formation of ice crystals and astronomical and other unusual phenomena to be seen in the northern sky, such as the Midnight Sun or the bending of light in the Earth's atmosphere.

One early example of specialized objects of study was the *aurora borealis*, or Northern Lights. This spectacular phenomenon of moving lights visible in the night sky close to the latitude of the Arctic Circle attracted considerable attention internationally in the early 18th century and raised hopes within the northern countries of being credited for finding a scientific explanation. The first scientific society to be formed in Sweden, the *Collegium Curisorum* in Uppsala, noted the lengthy writings on this subject published by European scholars and regretted the fact, since it regarded the phenomenon as occurring specifically within the Swedish geographical sphere. Certain scholars therefore decided to take advantage of their travels in Europe to publish long lists of observations of the aurora borealis recorded in Sweden, adding later details of deviations in compass bearings associated with these, an effect that later came to be regarded as decisive in explaining the cause of the phenomenon. There were also scholars, and also many amateur observers, including an inhabitant of the town of Tornio by the name of Anders Hellant, who published similar records.

In spite of the extent of the interest shown in this phenomenon, it remained unexplained until the beginning of the 20th century. The geomagnetic disturbances

that regularly occurred in conjunction with the aurora borealis led many to assume that the resolving of this enigma would at the same time be a major step towards understanding one of the most fashionable scientific topics of the 19th century, the Earth's magnetic field. Further interest was aroused on account of the large-scale polar expeditions that were taking place at that time, in connection with which the aurora borealis became one of the foremost icons of the world of the Arctic. Merely a reference to them would conjure up visions of the distant polar regions of which few people had any personal experience. Images of this somewhat mysterious phenomenon suited the tastes of the Romantics, and in the spirit of the contemporary belief in the powers of science, they also took on a symbolic meaning, alluding to the light of knowledge that could penetrate to the remotest corners of the world. European scholars deliberated over the reasons for these lights and asked their colleagues in the north for details of actual observations. This in turn led to fears that concentration on natural phenomena specific to the northern regions would place the local scientists in the role of mere observers while it would be their foreign colleagues who came to be credited for the syntheses and theories.

Further discussion of the role of scientists living in the north was provoked in the Finland of the mid-19th century by the controversy over what were known as the national sciences, i.e. those branches that, like history and philology, were building up a concept of the Fatherland. Among others, J. V. Snellman criticized the natural scientists for their lack of interest in participating in this project. The researchers replied that they were engaged in providing better descriptions of the natural environment in Finland and were at the same time making pioneering discoveries in the north in fields of study for which scientists in other countries did not have the same opportunities. It was in this way that they were earning the international respect that the young nation and its culture so earnestly desired.

The research activities building up the profile of the fatherland also provided support for themes taken up by meteorologists that involved the making of local observations

in various parts of the country and the opening of new institutions for studying these. Europe's first observatories had been established in Paris and Berlin in the 1810s, and systematic observations had been made at Göttingen in the 1830s. The idea of a magnetic observatory was imported into Finland via the Academy of Science in St. Petersburg. This observatory began functioning in Helsinki in 1844 and changed its name to the Central Department of Meteorology in 1881, when responsibility for its management was transferred to Societas Scientiarum Fennica. It later became known as the Finnish Meteorological Institute.

By the end of the 19th century the fascination with the aurora borealis was beginning to add weight to the contention that these northern topics were just what Finland needed in order to march out boldly into the international scientific arena. Meanwhile, the worldwide interest aroused by the polar expeditions served to accentuate further the importance of studying conditions in the north. In particular, the exploits of the Finn A.E. Nordenskiöld as leader of the Swedish expeditions to the Arctic Ocean aroused a great sense of pride in Finland, since some of the glory that this had bestowed on him was regarded as belonging to the land in which he had first seen the light of day.

Some of Nordenskiöld's Finnish colleagues had taken part in his Arctic expeditions and many of them had aspirations of mounting a Finnish expedition of their own. Discussions on the topic, in common with the nationalistic spirit of the times, centred around the idea of national character and the mission that each nation had to pursue in order to justify its existence through its contribution to world history. Nordenskiöld's example and the migration of Finns to the Arctic Ocean coast of northern Norway inspired many people to believe that Finland was destined to fulfil itself by travelling the roads to the north.

At that time, in the 19th century, the aurora borealis featured in the research programme of every polar expedition. Nordenskiöld was no exception, as he made new, ground-breaking observations on the area of occurrence of this phenomenon, i.e. the auroral oval, as he passed through the North-East Passage in the late 1870s. After his return, he lectured on this topic on the occasion of his visit to Finland, accompanied by festive celebrations. Nordenskiöld reckoned that it was precisely by

taking up northerly themes such as this that the small nation of Finland could gather substantial recognition for its efforts.

One person who took part in one of Nordenskiöld's voyages, the Finnish physicist Selim Lemström (1832–1904), was very interested in the aurora borealis. It was Lemström who arranged for Finland to take part in the programme for the first International Polar Year in 1882–84. The purpose of this year of joint observations proposed by the Austrian Arctic explorer Karl Weyprecht was to systematize observations in the Arctic so that the expeditions sent by different countries could make observations in separate areas over the same period of time and according to the same principles. Lemström directed the work of "Finland's first polar expedition" at the Tähtelä Observatory in Sodankylä, Central Lapland, and at its subsidiary station at Kultala in Inari. The observations were concerned with matters such as fluctuations in the Earth's magnetic field and proved highly successful. Thus the project was estimated in hindsight to have substantially improved Finland's scientific image as a civilized nation with an agenda of its own.

The 19th-century expeditions to the north generated a great deal of new scientific data, but they also did much to construct and fill in the image of Finland projected by the national awakening that was taking place at the same time. Contemporary speeches began to confirm a narrative of a special destiny for Finland and its Arctic knowhow that had its roots in the centuries of adaptation to cold conditions that the nation had already undergone.

References:

Kallinen, Maija. Tieteellistä tutkimusta Lapissa. In: *Lappi – maa, kansat, kulttuurit*. Ilmo Massa & Hanna Snellman (eds.). Finnish Literature Society. Helsinki 2003, 228–242.

Nevanlinna, Heikki & Holmberg, Peter. *Geomagnetismia, meteorologiaa ja revontulitutkimusta Suomessa 1700-luvulta 1900-luvun alkuun*. Bidrag till kännedom av Finlands natur och folk 191. Helsinki 2011.

Pihlaja, Päivi Maria. *Tiedettä Pohjantähden alla. Pohjoisen tutkimus ja Ruotsin tiedeseurojen suhteet Ranskaan 1700-luvulla*. Bidrag till kännedom av Finlands natur och folk 181. Helsinki 2009.

Seppinen, Ilkka. *Selim Lemström: Aleksanterin yliopiston fysiikan professorina 1878–1904 toimineen geofysiikon elämä ja työ*. Finnish Meteorological Institute. Helsinki 2006.

Politicization of research in the Arctic

On the death of M.A. Castrén the post of professor of Finnish in Helsinki fell to Elias Lönnrot, who had also made a reputation for himself as an explorer of northern areas and an advocate of regional policies. His travels had taken him from Petsamo to Arkhangelsk on the Arctic Ocean coast and from the White Sea area of Karelia to Estonia and Ingria, and prior to this, in 1836–37, he had been to Lapland, the town of Kola and the White Sea area of Karelia. On his return from his journey to Lapland in 1837 Lönnrot wrote that something ought to be done about the conditions under which people were living on the shores of the Arctic Ocean and about the land ownership issue there. In his opinion it was “unnatural” that the Norwegians should be allowed to prevent people from moving between Finnish Lapland and the Arctic Ocean coast in pursuit of their means of livelihood, and he proposed that the situation could be rectified by founding a “Finnish-Lapp borough” at the mouth of the River Paatsjoki (Pasvikelva), and he even dared to take the radical political stance of accusing the Norwegian authorities of drawing the boundary through the inland village of Neiden, to the detriment of the Finns, rather than along the coast. Similar demands had been made in their time by two Finnish priests working in the border region, Jacob Fellman (1819) and Carl Stenbäck (1835).⁶⁰

Jacob Fellman (1795–1875), vicar of Utsjoki and Inari, who had been born in the vicarage in Rovaniemi, was another person who had a considerable influence on the image of Lapland and the Sámi. He took up his post in the north in 1819 and left in 1829, and his notes on his experiences in Lapland, *Anteckningar under min vistelse i Lappmarken I–IV*, published in 1906, have retained their value up to the present day. Alongside his pastoral duties Fellman studied the Sámi language, published church texts and other material in that language and collected Sámi incantations, or *joiku*. His descriptions of the “Lapps” as he called them, were both realistic and positive. Finland was still very much a “class society” in the 19th century, so that a deep gulf existed between the common people and those who were educated, a gulf that was visible in its most concrete forms in matters of housing, dress, social circles and table manners.

A certain academic weight was added to the 19th-century discussions of Arctic affairs by the professor of history, Yrjö Koskinen (Yrjö-Sakari Yrjö-Koskinen), whose

60 Lähteenmäki, Maria. *The Peoples of Lapland*. Helsinki 2006a, 261–274.

notable work *Oppikirja Suomen kansan historiasta* (A Textbook of the History of the People of Finland, 1869) mentions with regard to settlement in the north that the first inhabitants of the region were a “dubious” people of early Ugric origin who later came to be known by a variety of names, as the Finns, *Jotunit*, *Jatulit* and *Hiidet*, for instance. Later the Sámi migrated into the area – and Koskinen really did use the word “Sámi” alongside “Lapp”, maintaining that the word Lapp was the name given by the Finns to the reindeer-herding nomads that lived “in the far corners of the Finnish territory, in Lapland”. After the Sámi various other Finnic peoples came to Lapland, including the Karelians, the people of Häme and the Veps.⁶¹

The reasons why the leading historians were so concerned about conditions in Lapland were above all connected with the delimitation of boundaries in northern Scandinavia and the affinity between the Finnish and Sámi languages. The criticism raised by Koskinen and the other Fennoman scholars was chiefly levelled against the border negotiations held during the period 1825–52, in which Finnish interests were overlooked in spite of protests from the local people. In Koskinen’s opinion the agreement reached in 1826 with regard to the partition of the “*fellesdistrikt*”, the territory held in common in Northern Fennoscandia, was a serious injustice as far as “Finland and the Finnish Lapps” were concerned, and the blame for the closing of the border lay with Norway, which had laid aside the 1751 agreement regarding free passage over the border and in this way inflicted financial losses on the nomadic reindeer herders.⁶²

A further factor lying behind Koskinen’s concerns was the status of the Finnish language in the neighbouring countries. It was he who had sent his younger colleague David Skogman on an exploratory mission to the Finnish areas in northern Norway and in the Swedish province of Norrbotten in 1865, and his reports had merely confirmed Koskinen’s suspicions that the status of the Finnish language in those areas was in jeopardy. Intellectual circles in Finland were most critical of the fact that Norway’s ethnic policy discriminated against the country’s Finnish-speaking minority, and all in all, he was inclined to view the northern parts of Scandinavia from a cross-border perspective, treating not only the Sámi but also the Finns as inhabitants of the whole area known as Northern Fennoscandia and regarding the

61 Koskinen, Yrjö. *Oppikirja Suomen Kansan historiasta*. Helsinki 1869.

62 Koskinen, Yrjö. Suomalaisten uutis-asutuksesta Jäämeren rannikolla. *Kirjallinen Kuukausilehti* 3–5/1868, 91–92.

cultural boundaries in the region as being flexible in this respect. The Sámi, in his view, deserved all the support they could get, because they belonged to the same ethnic family as the Finns.

One highly significant work from the point of view of the construction of an image of Finland in the 19th century was *Finland framstäldt i teckningar* (Finland depicted in drawings), edited by Zacharias Topelius and published in 1845–52. This served in its time as a political manifesto on behalf of a consistent geographical entity to be known as Finland, a classic guidebook to the province. Topelius himself noted that, although the model had been taken from Sweden, this work was indeed the first of its kind. It was later published in Finnish under the title *Kuvia ja kuvaelmia Suomen maakunnista* (Pictures and scenes from the provinces of Finland, 1863–66) and re-edited later as *Maisemia Suomesta* (Landscapes of Finland, 1987) and *Maakuntien Suomi* (The Provinces of Finland, 1998). It was marketed as a book of Finnish history that included details of memorable places, towns and cities, and scenes of natural beauty.

The original work had a chapter entitled “The Lapps”, which began with the words, “*The Lapps have a sorry tale to tell of constantly having to make way for other peoples and having to back away as far as one can on human legs without being permanently engulfed in snow...*” The account goes on to speak of the ancient Sámi legends and to note that the Sámi themselves maintained that before them the area had been occupied by a still older people.⁶³

Topelius explains that the Lapps “*refer to themselves as Sámi, and do not answer to the name of Lapps, which, according to Castrén, originally denoted inhabitants of the very far north but which had become a derogatory term alluding to crude behaviour*”. Further light is shed on the relations between these two peoples by the remark that “*(the Lapps) themselves are honoured to be related to the Finns, but the Finns will scarcely admit to knowing them*”. Topelius also states authoritatively that “*if the Finns really belong to the Caucasian race, as natural scientists have recently assumed, and given that the Hungarians have long been known to belong to that race, whereas the Lapps, together with most of our related peoples in Northern Russia, belong to the*

63 Topelius, Zacharias. *Maakuntien Suomi 1–3* Helsinki 1998, 45. [1 edition 1845].



Finnish women have traditionally gone out to work as well as being responsible for bringing up the children and looking after the home. In this picture a mother is taking her twins for a walk on the island of Hailuoto in a cold wind and snowstorm. Photo: Riitta Supperi, 2016. ThisisFINLAND.fi.

Mongolian race, we have a paradoxical situation in which two peoples belonging to different races are claiming to be closely related".⁶⁴

The issue of the northern parts of the country and their inhabitants was also taken up towards the end of the 19th century by the newspapers, which were both gaining in popularity at that time and adopting the use of the Finnish language. Another factor that spread knowledge of northern regions among ordinary people was the occurrence of severe crop failures in the 1850s and the resulting national appeals for aid to be sent to the parts of the country affected by this. The administration of the Grand Duchy, on the other hand, had taken Lapland under its wing more promptly, as indicated by visits made to Tornio by G. Bonsdorff, director of the National Board of Medicine, and by the Emperor Alexander I himself, both in 1819. Data on the region were compiled by a Senate employee, C.F. Richer, in 1832, and by the statistician C.C. Böcker the following year.⁶⁵ Thus Lapland and its inhabitants had been fully integrated into the autonomous Grand Duchy of Finland by the end of the 19th century, appearing in its provincial reports, on its maps and in the planning of its regional policy.

64 Topelius 1998, 36, 48.

65 Lähteenmäki 2006a, 304.

3 Finland's access to the Arctic Ocean

One consequence of Finland's declaration of independence in 1917 was the initiation of an unprecedentedly systematic and wide-ranging programme of domestic research. The study of Russia, its language and its history gave way to an accent on Finland itself and its culture, economic life and aspects of its society both in the schools and universities and in the distribution of finance for academic research. At the same time, however, a need was recognised for broader international contacts, a challenge that was taken up by the government's Central Committee for Science, the main source of financing for research in those days, the Finnish Academy of Science and Letters (*Societas Scientiarum Fennica*), the universities and the learned societies. Under these conditions it was natural that the multidisciplinary study of the "Arctic" area of Petsamo that had been incorporated into the new state of Finland should have emerged as the major undertaking. Symptomatic of this was the decision taken as early 1921 to set up a *Finnish Centre for Arctic Research*⁶⁶ in Petsamo.

Nineteenth-century scholars involved in drawing up maps of the territory of Finland had already become convinced that the Arctic Ocean coast and the Kola Peninsula, together with areas of Karelia on the other side of the border, were "natural" parts of Finland. This view was based on the existence of ancient Finno-Ugric dwelling sites in the surroundings of Viipuri (Vyborg) and on the coast of the White Sea, and the subsequent migration of Finns to the Murmansk coast in the 19th century merely reinforced this notion of a "Greater Finland" that was expanding eastwards. The history professor and left-wing politician Väinö Voionmaa (1869–1947) observed in 1917 that "*Finland without Russian Karelia and the Kola Peninsula is like a loaf*

⁶⁶ The proposal was made by Alexander Luther, professor of zoology, at a meeting of *Societas pro Fauna et Flora Fennica*. See Löppönen, Paavo. Tutkimuspolitiikkaa itsenäisyyden ajan alun Suomessa. *Terra* 100/1 1988, 47.

of bread without its crust.⁶⁷ Voionmaa had made a study of the history of Greater Karelia, an area that he took to extend from Lake Ladoga to the Arctic Ocean,⁶⁸ and was engaged at that time in compiling a book on Finland's position within the Arctic sphere, for which purpose he had obtained a set of old maps of the border from the Russians. He was indeed the first Finnish scholar to emphasize Finland's northerly location, whereas most of his colleagues were insisting that it was above all a western country. Voionmaa looked on it as frighteningly northern, being located just as far north as Alaska, the southern parts of Greenland and Northern Siberia: "The Finns are people of the Arctic Circle, living amongst the ice and fire of the Far North."⁶⁹ In those days, in the 1910s and 1920s, tempers were frayed in the Nordic countries over the ownership of the Spitzbergen (Svalbard) Islands, and this was also reflected in Voionmaa's emphatic references to the north.

Could it also have been that the Sámi had sensed that they were on the verge of a modern era for the north? When the Finnish ethnographer Toivo Itkonen made a tour of Petsamo in 1913 one Sámi man told him of a strange vision he had seen when returning from tending his reindeer in the forests. It had been as if a huge two-storey building had risen up amongst the snow-covered trees and a bright light was shining from its many windows, but a moment later it was gone and all was dark again.⁷⁰

The incorporation of Petsamo into Finland in 1918 and 1920

The question of Finland's demand for a corridor to the Arctic Ocean which had been coming to the fore intermittently since the 1860s finally seemed to have been resolved on 1st March 1918, during the Finnish Civil War, when the leaders of Soviet Russia, V.I. Lenin, L. Trotski and J. Stalin, signed an agreement with the Finnish revolutionary leaders Edward Gylling and Oskari Tokoi which defined the boundaries in the north. This meant that Finland would be granted a narrow strip of territory in Petsamo, in accordance with plan drafted by Voionmaa.⁷¹ When the Reds were defeated in the

67 Voionmaa, Väinö. *Suomen uusi asema*. Helsinki 1919, 18–21.

68 Voionmaa's history of the Karelians of Finland, *Suomen karjalaisen heimon historia*, was published in 1915.

69 *Tuleva Suomi* 1918, 113.

70 Itkonen, T.I. *Lapinmatkani*. Helsinki 1991, 84.

71 Lähteenmäki, Maria. *Väinö Voionmaa. Poliitikko ja geopoliitikko*. Helsinki 2014, 130.



Map 2. The borders of Finland after 1944. Source: <http://www.maps-of-europe.net/maps-of-finland/> Accessed 10.10.2016.



The politician and history professor Väinö Voionmaa laid emphasis on Finland's northern character in his writings in the 1910s. Photo: The Labour Archives, Helsinki.

Civil War the Petsamo area reverted to Soviet Russian control, but the issue became a far more prominent topic of discussion in Finland as a result of the short period of ownership.

Around the same time, also in 1918, a group that included Finland's leading philologists and natural scientists published a survey of the Kola region of Lapland that advocated the incorporation of that area into Finland, while the professor of physics and right-wing politician Theodor Homén underlined the importance of making it clear that there were a large number of Finno-Ugric peoples living in the area beyond the Finnish-Russian border and that "*the time is at last propitious for bringing about a natural union of the Finnic lands and peoples located between the gulfs of the Baltic Sea and the White Sea and Arctic Ocean into a single powerful entity*".⁷² Meanwhile the expert on Finland's eastern border, Voionmaa, published two works on the subject, *Suomi Jäämerellä* (Finland at the Arctic Ocean, 1918) and *Suomen uusi asema* (Finland's New Status, 1919). He also played a major role in the negotiations between Finland and Soviet Russia over the Treaty of Tartu, signed in 1920, under which Finland was finally able to realize its dream of a corridor to the Arctic Ocean.⁷³ Given that the first person to propose to the Finnish authorities that a commercial port should be constructed at the estuary of the River Paatsjoki had been Jacob Fellman, vicar of Utsjoki in 1822, it could well be said that the aspirations of a hundred years had finally come true.

Voionmaa placed great emphasis in his books on Finland's historical rights of access to the Arctic Ocean coast. From "times immemorial" the Finns had migrated to the coast to fish, and some of them had settled in the coastal villages of Northern Norway in the 19th century to live by agriculture and ocean fishing. And that was not all, some Finns had also settled on the coast of the coast of Murman in Russia in Russia and had established a number of lively and economically viable villages on the Rybachiy Peninsula (Finn. Kalastajasaarento). These settlements had been visited by Finnish priests, and Finnish schools had been set up there. What is more, the Emperor Alexander II had himself promised Finland a land area on the Arctic Ocean coast in 1864, when Russia had taken possession of the land belonging to the Rajajoki munitions factory on the Karelian Isthmus. There had been renewed traffic between

72 Homén, Theodor. In September 1918 in Helsinki, in his introduction to the book *Itä-Karjala ja Kuollan Lappi suomalaisten luonnon- ja kielentutkijain kuvaamana*. Helsinki 1918, VII.

73 Lähteenmäki 2014, 145–204.

Petsamo and Finland in spring 1916 with the transportation of unusually large quantities of cotton from Kirkenes in Norway to Ivalo, Sodankylä and on to the railway terminal in Rovaniemi and from there to the south of Finland for use in the textile mills. The reason for this was that the transport route via the Baltic Sea had been cut off on account of the First World War. Inspired by this operation, however, work was begun on a 530 km "Arctic Highway" from Rovaniemi to the port of Liinahamari in Petsamo. This was in turn interrupted by the war, however, and the road was not finally completed until 1933.

In Voionmaa's opinion "*the whole nation and all the strata within it*" were by 1918 fully and unanimously convinced that the time had come for Finland to reach the Arctic Ocean.⁷⁴ In those politically restless times, however, it was the ultranationalistic persons who responded to the call, and two groups of volunteers set out, in spring 1918 and spring 1920, to annex the area to Finland by force, but were unsuccessful.

After protracted negotiations a narrow strip of land extending from the eastern border of the Inari district to the Arctic Ocean and bounded on its two sides by the rivers Luttojoki and Paatsjoki, which separated it from Norway and the Soviet Union respectively, was ceded to Finland in October 1920.⁷⁵ It was given the name Petsamo, which was derived from the Skolt Sámi word for a pine tree, *Piäccâm*. Finnish scholars had "discovered" the Skolts, a number of small Sámi groups practising the Orthodox religion who included most of the Petsamo area in the grazing lands that they used for their reindeer. Altogether Finland received three Skolt Sámi villages under the Treaty of Tartu, namely Suonikylä, Paatsjoki and Petsamo.

In terms of its physical geography the region lies on the boundary between the taiga and the boreal coniferous forest zone. The southern part of the area is predominantly forest, while the north is characterized by low, rounded fells and the Arctic Ocean coast has a barren taiga landscape. The most important thing for Finland was that the area provided an outlet to the ocean in winter, since the Gulf Stream kept the sea free of ice. In the course of time the Finns built a harbour at Liinahamari on the shore of the Arctic Ocean in 1931, while the village of Parkkina grew into an administrative centre and that of Salmijärvi, which was inhabited mainly by settlers from Central

74 *Tuleva Suomi* 1918, 92–93.

75 The corridor measured 200 km x 60 km and had a surface area of 10 470 km².

Lapland, became its commercial centre. Eventually certain minerals were discovered, of which nickel was the most important, and these played a significant role in guiding the attitudes of both politicians and scientists in matters concerned with Petsamo.

Where the 1920s were a time of enthusiastic building work in the Petsamo area, the 1930s were marked by industrialization and increasing international contacts. The first priority had been to increase the proportion of Finnish inhabitants, so that given a Finnish population of 600 settlers in 1882, the figure had risen to about 1500 by 1921, and by 1944 there were 5200 inhabitants altogether, of which over 90% were Finns. The most rapid growth in population took place in the period 1936–40, with the building of the Kolosjoki mining community, largely on the strength of migrants from Northern Finland. The indigenous inhabitants, the Skolt Sámi, were estimated to number about 400 persons in the mid-1920s.⁷⁶ People had been encouraged to move to Petsamo from other parts of Finland by passing a new land acquisition and settlement law in 1925 that favoured Finns, and also by opening Finnish schools, developing the harbour, linking the area to the Finnish postal and telegraph network, building a main road from Rovaniemi, completed in 1933, planning a rail connection, developing tourism and finally, initiating Aero Oy flights between Helsinki and Petsamo in 1940. The Finnish Air Force had made its first flight to Petsamo in 1925, but now the route was to be opened to passenger traffic.

At first the road to Petsamo, and indeed that to Lapland as a whole, required negotiating endless bogs, rivers and fells, and it was always necessary to make sure you had your identity card with you as it was impossible to go into the border zone in Lapland without one.⁷⁷ The teacher and author Ernst Lampén set off for these barren landscapes out of sheer curiosity, like so many others, in the summer of 1921, and wrote, aptly enough, "*no one would venture into these lonely highlands beside the Arctic Ocean just for the fun of it. Whoever points himself in that direction must be moved by the prospect of money or booty, or else he must have the fearless soul of a true explorer*".⁷⁸

76 Onnela, Samuli. Petsamon väestöhistoriaa. In: *Turjanmeren maa* 1999, 103–108.

77 Finnish Tourist Association's Round Trip No. 15, from Helsinki to Petsamo, 1932. See *Matkailureittejä Suomessa*. Helsinki 1932.

78 Lampén, Ernst. *Jäämeren hengessä*. Jyväskylä 1921, 5.

Merely the physical length of the journey called for stamina. Lampén first travelled by train to Rovaniemi, from where he continued his journey by post bus and several ferries to Sodankylä. From there the road north, constructed in 1916, led to the Sámi village of Vuotso, the inn at Tankavaara and eventually to the evidently prosperous village of Ivalo. That was where the road ended, and he had to continue his journey by boat down the Ivalo River and across Lake Inari to Virtaniemi on what was to become the Russian border. Normally it would have been possible to follow the Paatsjoki waterway route, but the local Finnish timber company had dumped a large quantity of logs in the river at that point, causing a blockage, so that it was necessary, with the assistance of Sámi bearers, to tramp along a cutting cleared in the forest (the route of the future road) as far as the old Finnish-Russian border at Nautsi.

In some places the government had managed to build huts for road builders, engineers, surveyors, border guards, nature lovers and explorers to rest and perhaps spend the night. The "Fatherland Cabin" was the highly appropriate name of one of these. From Nautsi the men were rowed by a local housewife for a further two-day journey to Salmijärvi in the heart of the Paatsjoki valley. This meant carrying their luggage along the shore at many of the larger stretches of rapids, particularly the mighty Jäniskoski and the picturesque Kolttaköngäs (Boris Gleb), while a man with a rope guided the boat through the worst of the passages. A week had passed by in no time on this transition from the beautiful rail terminal at Rovaniemi to the bitterly cold shores of the Arctic Ocean, but Lampén simply sighed as he recalled the words of August Ahlqvist's poem *Suomen valta* (The Power of Finland): "Now the river mouth on the northern shore is ours!", and realised that the day was about to dawn when Lapland and Petsamo would really become ours, not just constitutionally but in our hearts as well.⁷⁹

79 Lampén 1921, 151, 111.

The mining village of Kolosjoki on the tundra

Economic considerations were the Finnish government's first priority when moving into the Petsamo area. The area lay adjacent to the Kola Peninsula and had been an object of both scientific and economic interest for some time. The attention aroused by the Great Kola Peninsula Expedition of 1887 in the physical geography of the region was gradually broadened to include geological research and above all the local possibilities for exploitation, given that successful prospecting for ores had been going on since the 1860s at Kirkenes, only eight kilometres away on the Norwegian side of the border, and a mining company had been founded there in 1906. Further encouragement was also gained from the knowledge that the Russians had found evidence of ore deposits in the Petsamo area in the last three decades of the 19th century.⁸⁰

This led the Finnish government to sponsor extensive ore prospecting in Petsamo in the summer of 1921, as a consequence of which a rich vein of nickel ore was discovered beneath the fell of Petsamotunturi that later proved to be the largest of its kind in Europe. The first evidence of it was found by two young researchers, Alppi Talvia and Hugo Törnqvist, and more precise observations were made in fieldwork carried out the following summer under the direction of the geologist Hans Hausen, who noted the great extent of the deposit and published a comprehensive general account of the geology of Petsamo.⁸¹ The next field excursion to map the ore reserves of the region took place in 1924 under the direction of the state geologist Väinö Tanner (1881–1948), a versatile scientist who had first visited Lapland in 1903, on an expedition that had taken him as far as the coast of the Kola Peninsula. He had then returned to the region in 1910–12 and again in 1914–17 as a member of the Norwegian-Swedish Reindeer Grazing Commission, and the following year he had been engaged in ore prospecting in Swedish Lapland, mainly studying the iron ores of Pajala. In 1922 Tanner was once more in the north, having been appointed as a member of the Finnish-Norwegian Border Commission.⁸²

80 Tanner, Väinö. *Voideaanko Petsamon aluetta käyttää maan hyödyksi? Keinoja ja tarkoitusperiä*. Maatalousministeriön julkaisuja nro IX. Helsinki 1927, 7, footnote 1.

81 Hausen, H. *Über die Präquarttäre Geologie des Petsamo-Gebietes*. *Bulletin de la Commission Geologique de Finlande*. Helsinki 1926.

82 Susiluoto, Paolo, Suomen ajan ihmismaantiedettä Petsamosta. In: Tanner, Väinö. *Ihmismaantieteellisiä tutkimuksia Petsamon seudulta I. Kolttalappalaiset*. Helsinki 2000, 9–31.



Miners at the Kaulatunturi drilling site in Petsamo in 1934. Photo: Erkki Mikkola. Courtesy of the National Board of Antiquities.

In his evaluation of the surficial deposits of the Petsamo region Tanner noted that it had long ago ceased to be a virgin wilderness area, as the human presence had left indelible marks on it. Traces of handsome ancient forests and clumps of birch forest, all of which had been destroyed ages ago could be found in the principal river valleys of the region and on the Rybachiy Peninsula. In his opinion this meant that the forests had been devastated by human action, mostly in the 16th century, when there had been an Orthodox monastery functioning in Petsamo for a short time,⁸³ but also later when the forests all over the Kola Peninsula had been felled mercilessly for roundwood and fuelwood by Swedish, Norwegian, British and Dutch timber companies in the late 19th and early 20th centuries.⁸⁴

In view of his work as a geologist, Tanner concentrated his research into the surficial deposits on the minerals to be found in the ground, and it was under his guidance that diamond drilling was commenced in the Kolosjoki area in 1927 and continued until 1934, when the main responsibility for assessing the ore reserves was transferred

83 The monastery functioned during the periods 1533–1589 and 1886–1944, and has done so again since 1997.

84 Tanner 1927, 14–15; *The Barents Region. A Transnational History of Subarctic Northern Europe*. Lars Elenius, Hallvard Tjelmeland, Maria Lähteenmäki & Alexei Golubev (eds). Oslo 2015, 183.



to the *Mond Nickel Company*, a British-registered subsidiary of the *International Nickel Company of Canada (Inco)*, which had leased the rights over the Kolosjoki ore body from the Finnish government for a period of 50 years. To meet the requirements of Finnish law, exploitation of the deposit was also in the hands of a Finnish subsidiary of the same company, *Petsamon Nikkeli Oy*. The demand for nickel on world markets increased rapidly in the 1930s, as it was an essential additive in the high quality steel used for the weapons, ammunition, armour plating and engines produced by the armaments industry in many countries. It was on the strength of nickel that the Arctic region of Petsamo began to gain an industrial zone of its own.

Work on building the nickel mine and community of Kolosjoki under the direction of the Canadians began in 1937, once an access road had been constructed. Kolosjoki had still been a winter dwelling site of the Skolt Sámi beside the open fells at the end of the 19th century, but this had gradually slipped into disuse in the last years of Russian rule when a group representing another Finno-Ugric people, the Komi, came to the area from further east, settled in the Petsamo Fjord and began to graze their

huge herd of reindeer there. Similarly, migrants from Finland began to force the Skolts off their traditional lands.⁸⁵

In order to reach the ore deposit a 3 km tunnel had to be dug into the summit of the Kaulatunturi fell and a vertical mineshaft installed to allow the ore to be mined on five levels. Initially the ore had to be transported to the United States for smelting, but it was not long before *Inco* decided to build a smelter on site so that the material could be enriched to a 50% nickel concentrate. Meanwhile work had begun on the Jäniskoski Power Station some 80 kilometres away on the River Paatsjoki, to supply the mine with electricity.

An urban settlement was built at Kolosjoki for the several hundred miners and their families, starting out from a formal layout plan, followed by the building of streets and installation of water and electricity supplies and the provision of housing, a market place, a cinema, tennis courts, workshops and administrative buildings. Thus a whole area of apartment buildings designed by Finnish architects in the contemporary Functionalist style grew up during the years 1938–40. The flats themselves were well-appointed, with central heating, bathrooms and modern kitchens,⁸⁶ so that by the end of the decade the area came to be known as *Shanghai*.⁸⁷

The construction work was interrupted by the Winter War, precipitated by the Soviet incursion into Finland on November 30th 1939, which led to the destruction of ships, housing, public buildings and industrial sites, most of which were razed to the ground by the Finns themselves in the “scorched earth” tactics that they employed as they retreated in the face of the overwhelming numbers of Russian troops. When the people of Petsamo returned to their homes after the cessation of hostilities in March 1940 they found, however, that the mining community had survived the onslaught relatively well and it was not long before work there could be resumed. The first priority was to build a new smelter, as there was a huge demand for nickel in the countries still engaged in the Second World War. Also, the Soviet Union itself was now eager to be involved in the mining of nickel ore, which in turn gave rise to the Finnish-

85 Alavuotunki, Jouni. Petsamon historia yhteisalueiden jaosta ensimmäiseen maailmansotaan. In: *Turjanmeren maa* 1999, 49.

86 For more details on the nickel mines of Petsamo, see Vuorisjärvi, Esko. *Petsamon nikkeli kansainvälisessä politiikassa 1939–1944*. Helsinki 1989.

87 Vahtola, Jouko. Kaivostoimintaa Petsamossa. In: *Turjanmeren maa* 1999, 291.

Soviet “nickel crisis”. One factor that greatly influenced the military situation in the Arctic was the Norwegian capitulation to the Germans on June 6th 1940, whereupon the latter demanded that the British-registered Mond Company should supply them with nickel. Petsamo found itself at the centre of an extremely sensitive conflict between the major powers.

The German presence on the northern shores of Europe was to prove fatal for the geopolitical, economic and military status of Petsamo in its precarious location between Norway and the Soviet Union. In September 1940 the Finnish military commanders agreed to allow the Germans to transport material through Lapland from Petsamo to the ports of Southern Finland, and when Germany mounted its offensive against the Soviet Union in summer 1941 Finland signed a “comrades-in-arms” anti-Soviet cooperation agreement with them. This meant that the whole of Finnish Lapland from the area north of Oulu as far as Petsamo came under the jurisdiction of the Germany military. The civilian population was allowed to remain there and the Finnish authorities in Rovaniemi were responsible for them.

Construction work at Kolosjoki proceeded at a rapid pace and the smelter was completed by 1942. Most of the ore and concentrate was exported to Germany, and the Germans in turn built fortifications around the mine and its power station in order to protect their interests in this, the largest nickel ore deposit in Europe. Petsamo could not meet more than a small proportion of Germany’s demand for nickel in 1941, but once production had reached full capacity the mine gained significantly in importance. By 1943 ore from Petsamo accounted for 70% of that country’s nickel supplies, and the figure had risen to 87% by 1944. Some of the ore was shipped to Germany from the port of Kirkenes on the Norwegian side of the border.⁸⁸

88 On Petsamo during the war, see Vuorisjärvi, Esko. *Petsamon nikkeli kansainvälisessä politiikassa 1939–1944*. Helsinki 1989; Krosby, Hans Peter. *Nikkelidiplomatiaa Petsamossa 1940–1941*. Helsinki 1966; Uola, Mikko. *Petsamo 1939–44*. Helsinki 2012.

A railway connection to the Arctic Ocean

One essential requirement for the efficient economic exploitation of the Petsamo territory was the development of adequate transport connections by road and rail. The first plans for a railway network in Finland were laid down in the 1840s and the first lines were opened in the 1860s. The work of extending the network into Northern Finland had advanced as far as Oulu by 1886, Kemi and Tornio by 1903 and Rovaniemi by 1909, with branches from Tornio to Ylitornio completed in 1928 and from Rovaniemi to Kemijärvi in 1934. The idea of a rail connection with the Arctic Ocean was first raised by the Russian authorities in the last decades of the 19th century in the form of a line from Oulu to Murmansk, but the project never proceeded any further than the drawing board.⁸⁹

Realistic possibilities of success in the planning of a railway line to the Arctic Ocean began to emerge when Väinö Voionmaa, who perceived both the economic significance of the Petsamo region and the importance of achieving a more efficient railway system, became head of the transport department in the Senate (the government) led by Oskari Tokoi and ordered investigations to be made into the role of the Arctic Ocean in the future of the Finnish state. The result was a booklet compiled by the historian Gunnar Sarva entitled *Suomen pääsy Jäämerelle. Selonteko kysymyksen aikaisemmista vaiheista* (Finnish access to the Arctic Ocean: a report on earlier considerations of the issue, 1917). These plans for Finland were to a great extent spurred on by the completion in 1916 of the Murmansk railway, 1400 kilometres of track from St. Petersburg to the Arctic Ocean (now known as the Kirov railway), which was regarded as necessary during the First World War.

At the same time as these development plans were being drawn up the people of Lapland were nursing aspirations of independence from the vast province of Oulu, and the establishment of an administration of their own. This led a group of activists to meet in Kemi in May 1917 for the purpose of drawing up a petition to be addressed to the Senate. In the end, the political unrest of those times meant that provincial independence was postponed until much later, being achieved in 1938, but one of the leading activists, Vihtori Lähde, wrote an article in 1918 that was very much in the Voionmaa spirit: *Valtamerensatama välttämätön Suomelle* (An ocean port is

89 Tervonen, Antero. Petsamon liikenne. In: *Turjanmeren maa* 1999, 311.

essential for Finland).⁹⁰ Similarly, the German military command in Finland proposed the building of a railway northwards from Rovaniemi in summer 1918.⁹¹ All in all, the notion of a railway line to the Arctic Ocean was closely associated with maintenance of foreign trade under wartime conditions and the essential role to be played in this by a port on the Arctic coast, with direct access to the world's oceans.

A concrete proposal for the building of a railway to the Petsamo Fjord was placed before the Finnish Parliament in 1918, where it was discussed as a counter-proposal to those for a line to be built further into Finnish Karelia from Aunus to Jänisjärvi and for a line from Rovaniemi in Lapland into Norway. Likewise a proposal submitted to the Transport Committee in November 1920 made mention of a line extending to the Arctic Ocean coast. It was as a consequence of this that Jalmar Castrén, professor of constructional engineering at Helsinki University of Technology and later to become director-general of the Finnish Railways, published his paper *Petsamon radan taloudelliset edellytykset* (Financial requirements for a railway to Petsamo). In a statement made in September 1923 Castrén explained that of the three principal routes proposed for this railway the most advantageous would be that running from Rovaniemi to Kemijärvi and on via Sodankylä, Ivalo and Salmijärvi to Petsamo Fjord.

The second suggested route, from Tornio northwards up the Tornio River to Kolari and from there across the marshes of Pomokaira to Ivalo would have been a hundred kilometres longer and would have run through some of the most barren and isolated terrain in the whole region, and in addition it would have run too close to the border with Sweden at some points. The third route that had been outlined, running north from Rovaniemi beside the River Ounasjoki and from there eastwards to the villages of Unari and Sodankylä, would similarly have been economically less propitious than the Kemijärvi route.

In Castrén's opinion the positive benefits of the Petsamo railway were fairly limited. There would probably be enough traffic on the southern part to justify the line as far as Kemijärvi, but north of that point the volume of traffic would be minimal. He therefore concluded that the expected traffic into and out of Petsamo in the 1920s would not be sufficient to warrant the investment of about 800 million Finnish marks

90 Lähteenmäki, Maria. Kemin Lapin raunioilla. In: *Alueiden Lappi*. Rovaniemi 2006b, 67–69.

91 Uola 2012, 347.

in the harbour and its railway. In short, it was not worthwhile planning the conditions on which permission to go ahead with the project might be granted. He did note in his memorandum, however, that if the exploitation of Lapland's mineral resources were to develop on a sufficient scale the situation could alter as far as both the choice of route and its profitability were concerned.

The discovery of Europe's largest deposit of nickel ore at Kolosjoki did indeed cause the railway project to be reconsidered, and once the mine had begun functioning in 1938 several bills were put before parliament with the aim of building the Petsamo railway. This led the Council of State to appoint a secret committee in April 1939 to consider the question and to put a bill before parliament in the autumn of the same year to the effect that the line should be built from Rovaniemi via to Sodankylä and on to Liinahamari. Parliament approved the bill, and the first stage to be planned was the building of the 140 kilometres of track from Rovaniemi to Sodankylä. Work on this was postponed, however, when the Winter War broke out towards the end of that year.

During the Continuation War of 1941–44 Petsamo was of considerable importance to the German troops at the front in Northern Finland as a base from which to mount their attack on Murmansk and to Germany in general as a source of nickel for the armaments industry. The commander of the German troops, Nikolaus von Falkenhorst, thus proposed to the Finns at the very beginning of that phase in the war, in summer 1941, that the railway should be built following the plans approved by parliament in 1939, i.e. from Rovaniemi to Sodankylä and on to Petsamo. Its main purpose was to be the transport of nickel ore out of Petsamo and the servicing of the German troops stationed there.

When the German wartime minister of munitions, Fritz Todt, visited Petsamo at the end of September 1941 he brought with him seven railway engineers to study the route chosen and the possibilities of building the line. The matter was also discussed in the German Ministry of Transport, where it was noted that the project would not be an easy one on account of the difficult terrain. The Germans were also planning a railway to Northern Norway at that same time, and only limited resources would be available for another project of the same magnitude. In October 1941 Hitler announced that the railway project would have to be postponed. A re-consideration in summer 1942 brought no change in the situation, and the Petsamo railway issue was raised for the last time when August Michahelles, the general frontline commander for the Finnish



Finnish border patrol jaegers at the front in Northern Finland in 1941. Photo: Courtesy of the National Board of Antiquities.

unit of the German *Organisation Todt* visited the Finnish National Railway Board in 1944. The project was abandoned and from then on the Germans concentrated on improving road connections with Petsamo.⁹²

The period of German influence on the history of Petsamo lasted precisely four years, and came to a close when the Continuation War between Finland and the Soviet Union ended in September 1944 and the Lapland War that broke out immediately after that ended with the last German soldier leaving Finnish territory in April 1945. Petsamo was occupied by the Russians during the Winter War of 1939–40, but it was returned to Finland under the terms of the peace negotiations. The Continuation War of 1941–44, on the other hand, meant the loss of Petsamo for the Finns, and from that time onwards Kolosjoki has been known by its Russian name, as the town of Nickel. If we ask how it came about that Finland lost Petsamo, the blame must be laid on its rich natural resources and its geopolitically sensitive location.

92 Tervonen, Antero. Petsamon liikenne. In: *Turjanmeren maa* 1999, 321; Uola 2012, 348–351; Elfvengren, Eero. Petsamo talvisodassa, and Korpi Kalle. Jatkosota Petsamossa. In: *Turjanmeren maa* 1999, 563–628.

Sustainable development in a vulnerable area

Not all the explorers came to the north in search of minerals or other ways of making money. One scientist who hiked through the northern boundary regions and brought his students there to study the vegetation was Kaarlo Linkola (1888–1942). Originally from eastern Finland, Joensuu, he became professor of botany at the University of Helsinki and was its rector in 1938–41. Above all, Linkola exercised a powerful influence on the choice of Finland's first nature conservation areas. The need for creating model conservation areas was appreciated from the very early days of the National Board of Forestry, founded in 1859, and concrete proposals for national parks were put forward by the polar explorer A.E. Nordenskiöld in the 1880s, on the model of the world's oldest such park, the Yellowstone National Park in the USA, which dates from 1872. The first conservation area in Finland, designated in 1916, comprised the fells of Malla at the intersection of the boundaries of Finland, Sweden and Norway close to Kilpisjärvi. Entry to the area was dependent on having a permit to carry out scientific investigations there.

Finland's first nature conservation laws were passed in 1923, after which the National Board of Forestry was given the task of drawing up a list of prospective conservation areas. This body turned to Linkola for advice, asking him to survey the areas of state-owned land in Northern Finland that had been proposed for this purpose. Linkola had previously been responsible for the chapters on vegetation in the book *Itä-Karjala ja Kuollan Lappi* (Eastern Karelia and the Kola region of Lapland, 1918), so that he was certainly knowledgeable when it came to nature in the north.

Linkola spent two months mapping the vegetation in Lapland in the summer of 1925, accompanied by students of his and by his brother, and a year later he submitted his proposal for setting up eight conservation areas in Northern Finland. These were the Pääskyspahta area near Salmijärvi and the Heinäsaaret area, both in Petsamo, the Pallas-Ounas and Malla fell areas and Pisavaara in Western Lapland, and the Oulankajoki area, the Kutsajoki area and Pyhätunturi fell area in Eastern Lapland.⁹³

93 Linkola, Kaarlo. Suunnitelma luonnonsuojelualueiden erottamiseksi Pohjois-Suomen valtionmailla. *Silva Fennica* 1/1926, 1–76. See <http://doi.org/10.14214/sf.a8382> Accessed 17.6.2016.

The Pääskyspahta area of Petsamo, which he terms as a “general conservation area” is described as an area of natural beauty with a magnificent natural cliff face and an abundant and luxuriant flora, a true tourist destination. As Norway had already set up a conservation area on the banks of the River Paatsjoki (Pasvikelva), it was Finland’s duty to designate one of its own and thus to extend the protection afforded to the local vegetation and the stark but impressive natural features of the Paatsjoki and Petsamo areas. Another site that merited special protection was the pair of islands known as Heinäsaaret (the Ainov Islands) located some 17 km off the coast of Petsamo. These had been famous for centuries on account of their rich bird population that equalled the world-famous avian fauna of Spitzbergen.

This bird population was in Linkola’s words quite unimaginably rich and vibrant: there were birds to be seen everywhere, on the ground and in the air, on the beaches and on the shallow coastal waters. Some had come individually, others in flocks, some were sitting, others flying around or floating on the water. You could hear their cries and squeals everywhere, often merging together in an intoxicating din. You could watch their entertaining movements all around you as they built their nests, searched for food and stole each other’s prey. There cannot be any man alive, Linkola reckoned when summing up his visit to Petsamo, who wouldn’t be attracted by the prospect of seeing this enormous natural drama being played out.

On the basis of Linkola’s suggestions the government drew up proposals for seven general conservation areas, or national parks, and four special conservation areas and placed these before parliament in the early winter of 1927. That parliament was nearing the end of its term of office, however, and did not have time to discuss the matter, so that the government had to present a new proposal to the next parliament in the autumn of the following year. But even so, the process of designating these eleven conservation areas did not go ahead as envisaged, as the High Court ruled that the state’s ownership of the land concerned was disputable in some instances. Thus the President of Finland refused to sign the bill into law and it expired in October 1929 with no further action taken. In spring 1930 the government appointed a new three-man Nature Conservation Committee under the chairmanship of the professor of business law Kyösti Haataja and with Linkola and K.A. Lohi, a parliamentary representative from Northern Finland, as the other members.

The committee visited the Pallas-Ounas fell area and the proposed conservation areas in the districts of Kemijärvi, Kuusamo and Kuolajärvi in August 1930 to familiarize

themselves with conditions there and to check on the proportions of the land in the hands of the various owners. It then submitted in the February of the following year a report in which it proposed that conservation plans should be abandoned in the case of extensive areas on the banks of the River Ounasjoki and around Lake Pallasjärvi, that the Malla conservation area should be altered so that the path reserved for the Swedes to pass through with their reindeer lay outside the park, that the Kutsa conservation area should be further reduced in size and that the meadows beside the River Oulankajoki from which the local farmers regularly cut hay should be excluded from the Oulanka National Park.

The Ministry of Education drafted a new bill on the basis of these proposals, but the government did not place this before parliament in spite of the fact that both the Supreme Court and the Supreme Administrative Court had given their approval for the creation of the nature conservation areas in 1932. One reason for this was that there had been considerable local opposition to the Petsamo area, where it was feared that they might strengthen the harmful populations of predatory birds and gulls. The Council of State was also informed of this directly by the Petsamo district council.

In spite of the considerable pressure that had arisen amongst natural scientists, no progress at all was made in creating nature conservation areas, even though the minister concerned had promised to bring the government's draft bill to the spring session of parliament in 1935. In his frustration at these delaying tactics, Linkola wrote an article for the magazine *Luonnon Ystävä* (Friends of Nature) in which he regarded it as totally inexplicable that the government should have failed to present the bill to parliament although it was known to be ready for this. Eventually the matter was delayed still further on account of parliamentary elections, and the law allowing for the creation of the nature conservation areas was finally passed at the last autumn session of parliament in December 1937 and signed by the President of Finland in February 1938.

The new law provided for six nature reserves and four national parks to be created on state-owned land. The nature reserves were those of Kutsa, Pisavaara, the Malla fell area, Pääskyspahta and Pummanki in Petsamo, and Hiisjärvi in Karelia. The national

parks were the Pallas-Ounas fell area, the Pyhätunturi fell district, Heinäsaaret islands in Petsamo and Storlandet (near the Porkkala area) in the Gulf of Finland.⁹⁴

Thus no less than three nature conservation areas came to be created in Petsamo: the Heinäsaaret National Park, tourist access to which was provided by the ship *Jäämeri* (SS. Arctic Ocean), the Pääskyspahta Nature Reserve on the banks of the River Paatsjoki and the Pummanki Nature Reserve on Kalastajasaarento (the Rybachiy Peninsula), which was renowned for its bird cliffs. At the same time, in May 1938, the Finnish Association for Nature Conservation was founded, and Linkola was duly elected as its first chairman, a capacity in which he served until his death in 1942.⁹⁵

Research among the Skolt Sámi

Ethnic relations in the Petsamo area, particularly the living conditions and rights of the Skolt Sámi, gained in prominence as topics of research from the 1910s onwards. Johan Evert Rosberg (1864–1932), professor of geography at the University of Helsinki, spent several summers doing fieldwork in Lapland and published his first paper on conditions in the north as early as 1891.⁹⁶ Later he wrote his doctoral thesis on the Bothnian Bay, the sea area at the northern tip of the Gulf of Bothnia, entitled *Bottenvikens finska deltan* (The Finnish delta of the Gulf of Bothnia, 1895), published *Lappi, an overall survey of the geography of Lapland* in 1911 in the Society for Popular Education series *Suomen maakunnat* (The Regions of Finland) and was responsible for the book *Petsamon maa* (The Territory of Petsamo) in 1919. He also wrote about explorations in Antarctica and attempts to reach the South Pole.⁹⁷ Rosberg was well acquainted with Lapland partly because he was a member of the Swedish-Norwegian Reindeer Herding Commission in 1914–17. In his survey of previous research carried out in Lapland he listed 33 major authors, whereas Kai Donner mentions hundreds of

94 The Law Governing the Establishment of Certain Nature Conservation Areas on State-owned Land, no. 83/1938.

95 Haapasaari, Matti. *Kaarlo Linkola*. See <http://www.kansallisbiografia.fi/kb/artikkeli/7105/> Accessed 16.6.2016.

96 Rosberg, J.E. Nordöstra Sodankylä. *Geografiska Föreningens tidskrift* 3/1–2 1891.

97 Vår sjunde värdsdel: utvecklingen af dess kartbild och kontinental form. *Terra* 25 1913, 237–259.

works in his bibliography of Lapland (1910).⁹⁸ It is evident from these, however, that the work carried out in previous centuries was concentrated predominantly on the western parts of the region and where the Sámi were concerned it laid emphasis on those groups that espoused the Lutheran faith, while less attention had been paid to the Orthodox Skolts.⁹⁹ Now the whole focus of the research was about to change, as the cutting edge of Finnish research into the Sámi came to focus on the Skolts, who had been baptised into the Orthodox Church by the monks of Petsamo in the 16th century and were looked on by the Lutheran Sámi as “brothers of the bears”, descendants of an alliance between a Lapp girl and a bear who had been brought up to live in the wilderness in harmony with nature.¹⁰⁰

The research came to be centred on three villages that had been incorporated into Finland when the new Finnish-Russian boundary was defined in 1920: Suenjel (Suonikylä), the lands of which had been divided by the border, and the Sámi villages, or *siida*, of Petsamojoki and Paatsjoki. The interest shown in this research was well reflected in the fact that Rosberg was able to persuade the Geographical Society of Finland to set up a Petsamo Committee, which functioned for the period 1926–31, and to resolve in 1925 to engage in “research in polar regions”. The society’s first polar expedition was intended to go to Franz Josef Land, but the project fell through for financial reasons and attention was turned to Lapland and Petsamo.¹⁰¹ All in all, Finland’s new status as a nation with access to the Arctic Ocean aroused much more interest in polar research and Arctic expeditions in general, as epitomized by the popular book for young people of school age *Naparetkeilijöitä – Kuvauksia uljaista miehistä ja heidän seikkailu-rikkaista matkoistaan maapallon autioimmille ja vaikeapääsisimmille seuduille* (Polar explorers – Tales of brave men and their eventful journeys to the world’s most deserted and inaccessible places, 1929).

98 Donner, K.R. Luettelo Pohjois-Pohjanmaata ja Lappia käsittelevästä kirjallisuudesta. Albumi I. *Jouko* 1910.

99 See Rosberg, J.E. *Lappi*. Helsinki 1911, 219–233. His list of 33 scientists who worked in Lapland began with Olaus Magnus and ended with Väinö Tanner, A.V. Granit and R. Malmberg.

100 Itkonen, Toivo. *Suomen lappalaiset vuoteen 1945*. Helsinki 1984 II, 364. (1. edition 1948).

101 Nickul, Karl. Petsamon tutkimus ja Suomen Maantieteellinen Seura. *Terra* 50:1–2 1938, 154–160; Löppönen, Paavo. Tutkimuspolitiikka itsenäisyyden ajan alun Suomessa: Suomen Maantieteellinen Seura ja Petsamo-tutkimus 1926–32. *Terra* 100 1988, 45–50.

Two of the people responsible for increasing people's knowledge of the Skolts were the teacher and folklorist Samuli Paulaharju (1875–1944) and the philologist Toivo Itkonen (1891–1968). Paulaharju became well-known for his accounts of the lives of the peoples of Finland in words, drawings and photographs, which he recorded together with his wife, the teacher and author Jenny Paulaharju, in the form of over 4000 pages of publications and a further body of 65,000 notes and observations that they left behind,¹⁰² mostly concerned with the inhabitants of the border regions of Finland, Karelia and Lapland¹⁰³ and the Finns living in Northern Norway and Sweden.¹⁰⁴

Paulaharju's book *Kolttain mailta* (From the Lands of the Skolts, 1921) was based on material that he had collected on three expeditions. His first encounter with the Skolts of Russia was in the summer of 1910, as a member of an expedition led by the engineer J.H. Luoma to clean up the Finnish-Russian border zone between Kuusamo and Paatsjoki. It was on this journey that he interviewed Ontrei Fofonov, who had lived most of his life close to the border with Finland. Paulaharju's second journey, in 1914, was sponsored by the Finno-Ugrian Society and the Antell Foundation and was centred on the Skolt villages of Nuorttijärvi and Suenjel, while the third, in spring and summer 1918, thus coinciding with the Finnish Civil War, took him to the Salla and Kuusamo areas. There he met with political refugees from Murmansk and obtained valuable information about conditions in the villages on the other side of the border. In addition, he had the opportunity in summer 1920 to interview a young man from the Skolt village of Akkala in Soviet Russia who was serving in the Lapland Border Guard.¹⁰⁵

Like Paulaharju, Toivo Itkonen was from an Ostrobothnian family, but his family moved to Inari in Lapland when his father became vicar there. The young Toivo then studied for his matriculation examination in Oulu before moving on to the University of Helsinki. Eventually he gained his doctorate with an analysis of the Sámi language entitled *Venäjänlapin konsonanttien astevaihtelu: Koltan, Kildinin ja Turjan*

102 Syrjö, Veli-Matti. *Samuli Paulaharju*. See <http://www.kansallisbiografia.fi/kb/artikkeli/6322/> Accessed 17.6.2016.

103 *Lapin muisteluksia* 1922; *Vanhaa Lappia ja Perä-Pohjaa* 1923; *Taka-Lappia* 1927; *Seitoja ja seidan palvontaa* 1932; *Tunturien yöpuolta* 1934; *Sompio* 1939.

104 *Ruijan suomalaisia* 1928; *Ruijan äärimmäisillä saarilla* 1935; *Kiveliöitten kansaa Pohjois-Ruotsin suomalaisseuduilta* 1937.

105 Paulaharju, Samuli. *Kolttain mailta*. Helsinki 1921, 5–6.

murteiden mukaan (Consonant gradation in the Skolt, Kildin and Turja dialects of the Sámi language of Russian Lapland, 1916). He then became the leading figure in research into the Sámi peoples in the period between the wars. Altogether he made nine journeys to the Sámi region of Lapland, resulting in the publication of his major work in two volumes *Suomen lappalaiset vuoteen 1945* (The Lapps of Finland up to 1945, 1948), which remained the authoritative work on this subject up until the rise of post-colonial Sámi research in the 1980s. Later he also published a dictionary of the Sámi language of the Skolts and the inhabitants of the Kola Peninsula, again in two volumes: *Koltan- ja kuolanlapin sanakirja* (1958). This latter project was at one stage seriously behind schedule but was brought to completion in a rather surprising fashion in that Itkonen was suddenly assigned a wartime assistant in the form of a prisoner-of-war named Maksim Antonov who was a Kildin Sámi from the Kola Peninsula and proved to be a highly skilful user of his native language.¹⁰⁶

The above-mentioned geologist Väinö Tanner also showed a considerable interest in the life and culture of the Skolt Sámi in the course of his subarctic explorations and emerged as perhaps the most significant Skolt Sámi researcher of his own times in Finland in addition to studying the economic aspects of exploiting the natural resources of the region. Tanner was the state geologist in charge of ore prospecting in Petsamo in 1924–31, after which he moved to the University of Helsinki to become professor of geography. He based his research into the Skolt Sámi on an extensive command of the relevant literature and thoroughgoing fieldwork, spending every summer from 1924 to 1927 among the Skolts, whom he regarded as the most advanced of all the northern peoples. Tanner's principal publication on this subject was his *Antropogeografiska studier inom Petsamo-området* (Anthropogeographical studies of the Petsamo district, 1929).

Tanner predicted a promising future for Petsamo, with stable settlement and a lively cultural life, provided an economic foundation could be created that would support the various cultures involved. Investments would have to be made in large-scale deep-sea fishing, efficient animal husbandry and rational reindeer herding practices. On the other hand, he still did not venture in the late 1920s to lay too much store by the mining industry, even though he had worked assiduously to promote it. On the cultural front, he differed from many other scholars in that he did not predict that the

106 Itkonen 1991, 17.

Skolts or any of the other Sámi groups would become extinct but was confident that with a better organized occupational structure and improved health services they would in time increase in numbers. At the same time he utterly rejected the notion that parts of Finland beyond the Arctic Circle should be protected “as some kind of sports arena for the Lapps and their reindeer”.¹⁰⁷

The Petsamo settlement law of 1925 had the effect of increasing migration to the area and led to a situation which was regarded as a threat to the unique culture and traditional occupations of the Skolt Sámi. The area of the ancient Paatsjoki siida in particular had begun to be occupied by large numbers of Finns from the mid-19th century onwards, while that of the Petsamojoki siida was coming under powerful Russian influence.¹⁰⁸ This had left Suenjel, the winter village of which had remained on the Russian side of the border in 1920, leading the Finnish government to build the new winter village of Suonikylä in 1927–30, as a culturally isolated place that had been studied less intensively and was indeed in need of protection.¹⁰⁹

The conservation measures taken at Suonikylä became a topic of intense discussion when the Society for the Promotion of Sámi Culture (Lapin Sivistysseura), founded in 1932, and in particular one of its active members, Karl ‘Kalle’ Nickul (1900–80) an engineer with the National Board of Survey, declared their opinion on the matter. Nickul was the son of an Estonian-German family who had moved from Estonia to Oulu on account of his father’s work as a gunsmith some time before their son Karl had been born. Nickul made his first visit to Central Lapland as a cartographer and inspector of the border zones in 1919 and he later undertook expeditions to all of Finland’s northern border areas. He had made dozens of journeys to Petsamo alone and had lived in Suonikylä for fairly long periods. Against a background of heightened controversy, Nickul approached the conservation question by objecting to all attempts to treat the Sámi culture as a museum piece and defending his views vigorously in public.¹¹⁰

107 Tanner 1927, 108.

108 Lampén 1921, 155–157.

109 See Lehtola, Veli-Pekka, *Nickul, rauhan mies, rauhan kansa*. Jyväskylä 2000, 31.

110 See Suenjel, kolttain maa. *Terra* 45/2 1933; Eräs Petsamokysymys. Suonikylän alueesta olisi tehtävä kolttakulttuurin suojelualue. *Terra* 47:2–3 1935; Suonikylän lappalaiskulttuurin vaaliminen. *Helsingin Sanomat* 1.11.1937; Petsamon kolttalappalaiset – eräitä näkökohtia heidän sijoittamiseensa. *Helsingin Sanomat* 26.6.1945.

The question of protecting the winter village of Suonikylä was still unresolved at the time when the Lapland War broke out and the whole population of Petsamo was evacuated to Ostrobothnia along with the rest of the inhabitants of Lapland in autumn 1944. Nickul's opinions on the conservation of the local culture nevertheless carried such weight and expressed such a degree of confidence in the future that the issue of the preservation of the Sámi culture and traditional sources of livelihood came to the fore once again in connection with the ethnic migrations that took place in the 1970s. The ethnographic writings of Nickul and the others who showed an interest in Lapland in the 1920s and 1930s shed light on the everyday lives of the ethnic groups concerned, their traditional celebrations, their occupations and their languages to a far greater extent than had the anthropologically and anatomically oriented line of investigation that had predominated in the 1870s,¹¹¹ which had been preoccupied with the skull dimensions and racial characteristics of the Sámi alongside those of the other Finnic peoples. Indeed, anthropological skull measurements were still being recorded diligently in Finnish Lapland even in the period 1928–34.¹¹²

When the Second World War came to an end Finland lost its overland connection to the Arctic Ocean and the population of Petsamo, including the Skolt Sámi, were re-housed in the villages of Sevettijärvi and Nellim close to the border with the Soviet Union in the administrative district of Inari. The living conditions of the approximately 600 Skolts housed in that area were regulated and guaranteed under a 'Skolt Law' passed in 1952. It had been estimated that there were about 2300 Sámi in Finland in 1930,¹¹³ which, given the country's total population at that time of 3.4 million, meant that they made up about 0.06%.

111 The use of skull sizes and forms for racial classification purposes alongside skin and hair coloration had been adopted in Europe in the early 19th century, and the science of racial craniology became firmly established and spread throughout the western countries, including Scandinavia, in the 1840s. Isaksson, Pekka & Jokisalo, Jouko. *Kallonmittaajia ja skinejä. Rasismien aatehistoriaa*. Helsinki 2005, 138.

112 Professor Yrjö Kajava studied Sámi skulls in 1924 on the strength of a grant from the Finnish Academy of Science and Letters. He had previously completed his doctoral thesis, *Beobachtungen an Schädelnähten bei Lappen*, in 1921. Later, in 1928–34, he measured the skulls of almost 800 living Sámi and 70 skulls of deceased individuals obtained from cemeteries; Others, including the priest and author Antero Warelus, are known to have ordered and collected skulls from various parts of Finland for ethnographic purposes. Isaksson & Jokisalo 2005, 153.

113 This figure includes about 1740 Sámi from Inari, Utsjoki and Enontekiö and 600 Skolts from Petsamo, as set out by Toivo Itkonen. Itkonen 1984 I (1948), 132.

All in all, research centred on Petsamo reached its peak intensity in the 1920s, principally on the strength of government funding, so that it was ascertained at the end of the decade that twelve government departments and ten learned societies were engaged in Petsamo projects and altogether 16 researchers received a record total sum of 120,000 Finnish marks for their work on this area. In addition, there were numerous societies and other instances sponsoring such endeavours. The researchers focusing their work on Petsamo included bedrock and peatland geologists, biologists, botanists, zoologists, anthropologists, folklorists, forestry researchers, linguists, archaeologists, and historians.¹¹⁴ The broad-scale scientific work involved in mapping the region nevertheless dwindled after the depression of the late 1920s and early 1930s, and the accent from that time onwards was on supporting the economy of the Petsamo area.

Pasi Tuunainen

The Finns – experts in winter warfare

Warfare and the environment in which it takes place are closely connected. The terrain places restrictions of its own on the directions in which it is possible to advance, and it also gives shape to the battlefield and affects the events that take place on it. It is also possible to make use of the terrain, the weather and the conditions in general to create an element of surprise, to achieve success, to improve one's own firepower or to minimize one's own losses. In these ways geographical factors, particularly infrastructure, topography, the cover offered by the terrain, trafficability and the presence of obstacles, have throughout history had a significant influence on the decisions made by military commanders, their operations plans and the ways in which they deploy their troops.

In Finland it is the conditions prevailing in winter in particular that impose restrictions on military operations, to the extent that one may well regard Arctic areas as more demanding environments in military terms than jungle, deserts or mountainous

114 Nickul, Karl. Petsamon tutkimus ja Suomen Maantieteellinen Seura. *Terra* 50 1938, 154–160; Löppönen, Paavo, Tutkimuspolitiikkaa itsenäisyyden ajan alun Suomessa. *Terra* 100/1 1988, 48–49.

regions. Troops that are unprepared for operating under winter conditions in the north can find themselves fighting two opponents at once, the actual enemy and the environment. In the worst case a failure to adapt to winter conditions can lead to a military catastrophe, although winter conditions have also been known to give one side an advantage if it is able to move about efficiently in the snow and can organize supplies for its troops. Success in military manoeuvres in the north in winter has been found to call for the appropriate degree of *cold knowhow*, which is something that the Finns are specialized in.

In many parts of the world hostilities have been suspended once winter has set in, whereas armies in Russia and the Nordic countries have repeatedly taken advantage of wintry conditions to mount attacks. In the military encounters that have taken place on Finnish soil during the independence period, i.e. the Winter War of 1939–40 and the Continuation War of 1941–44, the focus of military operations was in both cases on the border area between these two nations, chiefly on the Karelian Isthmus, where the terrain and the road network permitted the massive use of tanks. Here the Finns fought a largely defensive battle, whereas on the long front lines north of Lake Ladoga they were able to engage in more fluent manoeuvres, as they also did during the Lapland War against the Germans in 1944–45. All in all the Finns had five winters during the Second World War in which to gain experience of warfare under such conditions.

On the other hand, the Red Army detachments, which were poorly trained for warfare under winter conditions suffered from all the inconveniences imposed by the snow and cold, as did the German troops operating from bases in the north of Finland. The Finns succeeded in overcoming the terrain and the conditions very much better than their opponents because they had devoted time and energy during the interwar period to developing their equipment and armaments and polishing up their winter combat skills and forest warfare tactics. Many of the soldiers had previously worked as lumbermen, had an intimate knowledge of nature and were powerful skiers, all of which gave them a tactical advantage. Although the conscripts were not specifically taught how to survive in nature, their training was angled to some degree towards the effects of winter, the longest season in the year in Finland, on the mobility and functional capacity of individual soldiers.

Sledges pulled by reindeer were used for transport purposes, for instance, and reinforcements were brought to the front in horse-drawn sleighs. Even the field guns were mounted on runners, and regular weather reports were provided for optimal accuracy. All these preparations equipped the Finnish troops for fighting, moving about and camping in wilderness areas where there were no roads, and on the eve of the Second World War they were also trained in operating in the snow and ice of a subarctic forest terrain.

In both their military planning and its implementation the Finns were able to account for the effects of the terrain and the winter conditions in evening out the discrepancy in the balance of arms between the two sides. Northern and Eastern Finland were regarded as more exacting venues for warfare than the front further south, as the terrain in the more northerly border regions was judged to favour defenders who were able to move about actively. The Finns estimated that the Red Army would not be able to operate with such a powerful force on the northern front that it could have penetrated into the interior of the country through its sheer weight of numbers. In addition, the enemy's movements were expected to slow down as the supply lines became longer and the front became wider. The Red Army was also expected to attempt to make use of the existing roads, and therefore careful attention in operational planning was paid to nodes in the transport network and to railways. The plan was to stop the invaders in the boggy forests in the immediate vicinity of the border so that the various invading formations could not link up and unite forces.

In the predominantly forested terrain of the border regions it was essential for the Finns to adopt methods appropriate to forest warfare, which from a military perspective implied taking account of the limited visibility relative to open country, the difficulties in moving about, the restrictions on the effectiveness of firepower and the cover afforded by the forest vegetation. Although there were higher points that provided a view of the surrounding terrain, it would seldom be possible to observe what was going on in the dense forests in between these hills. On the other hand, the forest could be used to conceal the movement of troops, allowing surprise moves and guerrilla tactics. The Red Army had been trained to operate in open terrain, so that its attacks remained fragmentary in forest terrain, and the struggle to penetrate through the deep snow of the wilderness zone where there were no roads exhausted

its troops. This meant that the coordination of the two basic factors for combat, fire and movement, broke down. The Finns, however, looked on the forests as the best terrain through which to mount an attack, but movement called for a high level of training and experience.

Another advantage that the Finns had was their ability to entrench themselves. They would often establish their defensive positions in clumps of forest or on ridges, where they would have good observation and fields of fire. These positions were frequently protected by waterways or impassable mires. Target areas for machine-guns would then be defined by clearing strips of forest and protecting them with barbed wire entanglements. Some fortifications would also be protected with minefields, making skilful use of the landforms in order to retard the enemy's advance.

One problem affecting forest warfare was that the effectiveness of direct fire infantry weapons was dependent on the undergrowth and the density and thickness of the tree trunks, and a further problem was that the branches of the trees hampered the use of hand grenades and even small twigs could cause deflections in the flight paths of bullets. Since forest warfare often took place at close quarters, submachine guns were the best weapons. Heavy arms often proved inaccurate in forests, and shells would frequently explode in the trees. Weapons with a high-arcing ballistic trajectory, particularly easily manoeuvrable light mortars transported in *ahkios* (boat-hull deep snow toboggans or sleds) hauled by skiers, were especially well suited for forest battles under winter conditions.

Lakes and rivers in the vicinity of the front line were automatically of tactical significance as they were natural obstacles to any advance, and in many cases narrow passes, or defiles, provided consecutive naturally occurring defensive positions. An attacker would attempt to gain control of any bridges without damaging them, while the defenders would aim at destroying them as they retreated. Where the ice of the rivers or lakes could bear the weight of the attackers, the Finnish pioneers would set to work at night to mine the area or saw cracks in the ice. Attempts were also made to slow the enemy down by destroying dams or otherwise flooding the ice.

Although an even, dry pine forest terrain would constitute a natural avenue of approach, the best conditions of all were provided by the actual road network. There were very few roads in the northern border areas, however, and the ones that did exist were in poor condition. Thus motor vehicles could often only be used after considerable work had been done to improve the roads, and both sides did in fact do much to widen the existing roads and build parallel ones, branch roads and by-pass roads and to reinforce the bridges. The most important thing in the winter time was to keep the roads open by clearing the snow, and special detachments were charged with this work in conjunction with the civilian authorities. In areas where there were no roads that could be cleared of snow it was sometimes possible to make ice roads across the lakes or snow roads through the forests. In the internationally famous operation on the Raate road in January 1940, for example, victory was achieved very largely by virtue of a temporary supply road opened up over the lake ice.

In the early winter the snow would not yet be sufficiently deep to hamper the movement of troops in areas where there were no roads, but as it became deeper motorized and mechanized troops came to be confined to the roads, which, given the nature of the road network, meant that the Red Army offensives were channelled in a direction parallel to the border and serious congestion frequently occurred at narrow chokepoints, which was one of the aims of the Finns' encirclement (Motti) tactics. Deprived of space in which to manoeuvre, the Soviet troops were only able to attack along narrow mobility corridors, which also meant that they were unable to deploy their full firepower. Thus the battles degenerated into separate engagements over individual points in the terrain. When hostilities were confined to the roadsides the Finns would establish their defensive positions beside the roads that the enemy would be most likely to use for an attack, whereupon the width, bearing capacity and traffic ability would give them a good idea of the striking power that might be expected in each case. This ensured that the Red Army offensives were repeatedly directed at the defending forces' strongest points.

The Finns' tactics were dictated by the principle that they would always be the underdogs. This was a matter of applying universal European tactical methods to northern conditions. Given that the Red Army acted according to preconceived formulas in the Finnish borderlands, the Finns attempted to be more creative, which

they succeeded in doing by taking advantage of the terrain and the cold weather conditions. Operating in the forests during the winter, they restricted themselves for the most part to the use of small-unit tactics, without any need for commanding large bodies of troops. This meant in practice that they were delegating authority to those in command of smaller units, in the spirit of the “mission tactics” (Auftragstaktik) based on trust which they had adopted from the Germans.

The prevailing conditions were also taken carefully into account by the commanders of the troops, who were expected to look after their men and ensure above all that they were not incapacitated by frostbite. They were not to be exposed to damp, cold winds or frost for too long at a time, but unfortunately these things could not always be avoided, and like their opponents, the Finnish soldiers did suffer from frostbite, especially during longer offensives, long-distance patrols. The instructions also warned commanders against overstressing their men, e.g. by changing the trail breaker who opened the skiing track sufficiently often and by allowing skiers to be towed by vehicles when possible.

One problem for the Finnish troops was that not all of them had sufficient winter clothing at the time when hostilities broke out towards the end of 1939. Some of the men had their own uniforms when they left for the front, but many of them were still in civilian clothes. On the other hand, it was also true that the warm clothes normally worn by lumbermen frequently provided better protection than a soldier's uniform. In any case, it was common for some items of civilian dress to be used alongside the military uniform if they had been found to be useful, e.g. long Laplander's beak boots. Various models of gloves with an allowance for the trigger finger were knitted, and snowsuits, or simply white sheets with a hole for the neck, were provided, which meant that all the men looked alike and blended in with the surrounding snow.

Winter conditions also meant that rest periods were essential for maintaining combat effectiveness. Tents, buildings or dug-outs heated by stoves allowed the men to sleep properly and dry their clothes, although they were also trained in constructing temporary shelters out of natural materials if necessary. The important thing when doing this was to be able to shelter from the wind, and in the case of tents or lean-to shelters to light a fire across the entrance. For this purpose it was common to light a

fire in a split log or a pile of logs, as Finnish hikers or hunters would do. The Finns also adopted “scorched earth” tactics in order to prevent the Red Army from making use of abandoned buildings. All in all, the supply chain gained in importance in winter, and the field kitchens followed the men wherever they went in order to satisfy their energy needs. Correspondingly, suitable portions had been devised, especially for the ski patrols. The wounded were evacuated as quickly as possible to prevent them from hanging about in the cold for any longer than was absolutely necessary.

Winter conditions also took their toll on the army’s equipment and weapons. The connections and power sources to be used with radios and other pieces of communications equipment were stretched to their limit under sub-zero conditions, as were all forms of lubricants, while the reliability of firearms was ensured by cleaning them constantly and oiling their moving parts with a mixture of paraffin and frost-resistant gun oil. The skills and knowhow required for winter warfare and for the commanding of units in general were to some extent guaranteed by the fact that many of the commanders at the front had acquired a good knowledge of the military geography of the border regions during peacetime, and further reconnaissance missions were carried out as required in order to assess the terrain and determine the influence of local conditions on the operational capabilities of the two sides. The freezing over of peatlands, lakes and rivers had the effect of extending the dimensions of the battlefield, and this was something that had to be taken into consideration when attempting to predict the enemy’s movements.

Although the Finns had few maps, especially of the northern part of the country, troop movements could be directed on the strength of local knowledge that had accumulated during exercises, particularly since many of the men were fighting quite literally on home territory. Also, it was sometimes possible to use local forestry workers or policemen as guides, and the Finns generally had access to new accurate fluid-type compasses.

The fact that the aggressor was road-bound meant in practice that the Finnish commanders were frequently able to seize the initiative and achieve a local superiority in numbers against a threatening enemy column and eliminate it separately. In this way the enemy’s leading formation could be halted by only a small Finnish

detachment at a favourable point in the terrain and the main body of the enemy troops could be isolated between lakes, peatlands or rocky outcrops by means of broader offensives or smaller flanking movements. This process of cutting off and isolating of the enemy forces were typical for these operations on the interior lines. The tactical mobility granted by the use of skis gave the Finns a notable advantage by allowing them to make surprise attacks on the enemy's flanks and rear.

Another factor that contributed to the Finns' success in winter warfare was the darkness of this season of the year, as it was possible to make use of the darkness and twilight to cover and conceal movements of troops and generate surprise attacks. When the weather was good for flying the enemy could take control of the air and pick out the tracks of skis from above, which was why the Finns preferred to move their troops in the twilight of evening. They could then send out patrols to eliminate the tracks or create additional ones to confuse the enemy.

In the end it was geographical factors that determined the scope for military operations under arctic conditions, and the Finns achieved success in the winter phases of the Second World War because they had prepared themselves thoroughly for this type of warfare and had plans that were realistic and could be carried through. At the same time, they were able to retain their capability for action under the harsh conditions and could respond to each situation in an appropriate manner.

References:

Hollanti, Juha. Pyrkimys yllätykseen – Maasto ja olosuhteet osana suomalaista taktista ajattelua ennen talvisotaa. *Sotahistoriallinen aikakauskirja*, Vol. 35, 2015, 126–157.

Tuunainen, Pasi. *Finnish Military Effectiveness in the Winter War 1939–1940*. Palgrave Macmillan. Basingstoke 2016.

Tuunainen, Pasi. New approaches to the study of Arctic warfare. *Nordia Geographical Publications – NGP Yearbook nr. 43. Special Issue East Meets North*. Edited by Maria Lähteenmäki & Alfred Colpaert. Oulu 2014, 87–99.

Tuunainen, Pasi. Training the US Army to Fight the Red Army in Winter – Former Finnish Officers and Military Knowledge Transfer from Finland to the United States during the Early Cold War, 1947–1964. *The Journal of Slavic Military Studies*, Vol. 29, Issue 1, 2016, 110–138.

4 Re-profiling the north

The termination of the Second World War left the Finns relieved that the hostilities were over and that they had succeeded in preserving their independence but horrified at the unreasonable reparations demanded of them under the peace treaty with the Soviet Union. Finland had lost almost 100,000 citizens in the war, the connection with the Arctic Ocean had been cut off by the ceding of the Petsamo area to the Soviet Union, and the country had also had to relinquish its second largest city, Viipuri (Vyborg), extensive areas of Karelia and a small strip of territory on the eastern border of Lapland. Altogether the country had had to forfeit about a tenth of its former surface area to the Soviet Union and correspondingly had had to re-house some 420,000 former inhabitants of that area in the remaining territory of Finland. But above all, it was facing unprecedented economic challenges, in that the Soviet government was demanding the payment within a few years of war reparations amounting to the formidable sum of about 300 million dollars¹¹⁵ in the form of products of the wood processing industries (houses, timber, pulp and paper), machinery, cables and sea and river-going ships. This sum was equivalent to about 13% of the nation's assets at that time.¹¹⁶ The need for reconstruction at home, the re-opening of trade relations and the intensification of activity in the branches of industry involved in the war reparations meant that Finland was forced in the post-war years to place the accent on the development of technology for Arctic regions and to exploit the water power and ore resources of the northern parts of the country.

115 In reality the sum was considerably greater, as the reparations were tied to the value of the US dollar in 1938.

116 Vesterinen, Jukka. *Suomen sotakorvaukset 1944–1952*. Helsinki 2012, 8.

Lapland on the rise

Finland's northernmost province, Lapland, had been to all intents and purposes utterly destroyed in the last phase of the World War, known as the Lapland War (1944–45), when the retreating German forces had set fire to all the main centres of population in the region. The town of Rovaniemi and all the villages beside the Arctic Highway that had led to Petsamo were in ruins, the roads had been mined and the bridges destroyed. It was estimated that about 70% of all the dwellings had been lost and the whole province would have to be rebuilt from 1945 onwards so that its people could return home from the places in the in Southern Finland and in Sweden to which they had been evacuated. In addition, a large volume of new labour would be needed in Lapland, since there was a shortage of timber and of lumbermen and the higher wages offered in the north would inevitably attract workers from elsewhere.

It was also necessary to re-brand and market the ruined province of Lapland in the eyes of Southern Finland and the world at large. In 1936, when the campaign to recognize Lapland as an independent province was at its height in the pre-war years, its people had arranged a spectacular Reindeer Week in the Kaisaniemi Park in the centre of Helsinki, erecting a village of Lapp tents, cooking and serving reindeer meat soup, singing their *joiku* incantations and displaying their handicrafts, their reindeer and their colourful Sámi costumes. The number of visitors during the week had exceeded all expectations, amounting to some 47,000. One newspaper reporter commented that the exhibition of reindeer products had been especially rich and striking. A film was also made of the event.¹¹⁷

In March 1947 a comparable event was arranged in Helsinki, but on a larger scale, and this time in a large Helsinki department store. Under the heading "Lapland on the rise", the people of Lapland were now marketing the north as a growth region of the future, an area of vast diversity in culture, natural resources and landscapes. At the entrance was a five-meter high pile of round logs, so that no one was left in any doubt that timber was the region's principal raw material and merchandise, although there were other sections featuring agriculture, hunting, fishing, reindeer herding, shipping and industry. The Kemi-Tornio district had been known of old as the industrial heart

¹¹⁷ Lähteenmäki 2006b, 71.

of the province. The exhibition also contained black-and-white photographs and statistics to illustrate the wartime destruction of Lapland, but these were offset by another section showing pictures of people busily engaged in reconstruction work, under the slogan “The people of Lapland will not give in”.

In addition to all these things, visitors were able to see something of Lapland’s future, as an inspiration for art and as a tourist destination. As in the pre-war Reindeer Week, the public were served reindeer soup, but now the guides had exchanged their Sámi dress for the Peräpohjola national costume. The ceremonial opening of the event, performed by President J.K. Paasikivi in the presence of Tage Erlander, prime minister of Sweden, and numerous ambassadors and high-ranking civil servants, was an impressive occasion, and it was clear that a concentrated effort was being made to launch Lapland on the international market. A booklet in three languages, *Lappi nousee* (Lapland on the rise), was produced for the exhibition, and two years later a new booklet was published, again in several languages, *Lappi eilen – tänään – huomenna* (Lapland – yesterday – today – tomorrow, 1949), again aimed at Finnish politicians and administrators and an international public.¹¹⁸

Thus Lapland began to take on a new profile as a nucleus and manifestation of the Finnish notion of the Arctic, but particularly prominent in its launching was the recognition of its multicultural significance. This was well reflected in the public debate that took place in the 1950s over how one should refer to the inhabitants of Lapland. One of the words suggested was *peräpohjalainen*, derived from the provincial name Peräpohjola (the people of Far Ostrobothnia), which emphasized the Finnish element among its inhabitants, since Rovaniemi was regarded as the northernmost settlement in Ostrobothnia and Lapland in the true sense began from there. In the end the preferred designation was *lappilainen* (Laplander) which incorporated the cultural legacies of both the Finnish and Sámi inhabitants. A good example of the use of this multicultural concept was a reader for schoolchildren entitled *Lapin oma kirja* (Lapland’s own book), published in 1952, which combined the Finnish and Sámi cultural aspects in equal proportions.

The economic situation in the northern part of Finland still looked good in the 1950s, but by the 1960s the growth in population together with the mechanization of forestry

118 Lähteenmäki 2006b, 71–72.

operations and the diminishing of their scope had generated unemployment in the region. It had already been estimated that timber was being felled in excess of the annual increment in commercial forests, and in view of overproduction in agriculture as well, the government was paying small farms to leave their fields uncultivated. The lack of work naturally gave rise to a huge wave of migration both to the towns and cities of Southern Finland and to Southern Sweden, resulting in the existence of colonies of expatriate Finns in all the main industrial centres in Sweden.¹¹⁹

The constantly increasing flow of young people away from the high birth-rate areas of the north to the population centres of the south was looked on as an alarming development as far as the future of the northern areas was concerned, and a new educational programme was introduced in an attempt to arrest this trend. Up to the late 1950s the whole of Northern and Eastern Finland was regarded as a cultural periphery and did not have any institutions of higher education of its own, so that all its potential talented tended to drift away from the region. This problem was resolved by the foundation of five universities during the years 1958–79. These have proved to be of enormous significance for both the cultural and economic development of the areas concerned, at the same time as the extension of the university network has served as an indication of the government's commitment to maintaining viable, creative and lively communities in the peripheral areas of the country.

Harnessing the great rivers

Other aspects of life in the northern areas to which especial attention was paid in addition to education were energy resources and industry. The consumption of electricity in Finland grew rapidly during the post-war modernization years, and especially in view of the loss of the River Vuoksi and the hydroelectric potential of numerous stretches of rapids in other parts of the ceded territories of Karelia to the Soviet Union in autumn 1944, the Finnish government and leading industrialists turned their attention to the great free-flowing rivers of Northern Finland. This was not the first time that there had been talk of harnessing these rivers for hydroelectric power, however, for a Rapids Committee had been set up in 1917 to examine the

¹¹⁹ There were a quarter of a million immigrants from Finland in Sweden by 1980, the majority of them young adults. Conversely, the population of Lapland, which had been 221,000 at its highest in 1967, was around 180,000 in 2016.

potential of the Oulu River in this respect. The project was deemed impossible at that time, however, because the laws governing waterway rights did not permit the closure of channels that supported populations of salmon or whitefish. The local industrialists and the governor of the province of Oulu at the time would not let the matter rest, however, and made repeated applications for permits to build hydroelectric power stations on the river. This led the Rapids Committee to reinvestigate the matter and eventually to conclude that the Oulu River was a possible site for electricity generation.

When the Finnish waterways legislation was revised in 1934, control over the country's lakes and rivers was largely centralized. A Waterways Committee was set up in Helsinki, and this accentuated the role of the central government in "important and urgent permit matters" at the expense of the provincial authorities.¹²⁰ The new law was ratified in 1937 and supplemented in certain respects in the early 1940s, making it possible to apply for interim permits for the building of hydroelectric installations. Thus no less than 61 such power stations were built in Finland on the strength of interim permits issued on account of the country's critical situation.¹²¹ The hydroelectric company Oulujoki Oy was founded in spring 1941 for the constructing of power stations on the Oulu River and the production of electricity by this means, and over the period 1949–58 there were six hydroelectric plants functioning at full capacity on the Oulu River that had been built during the war, partly employing women and prisoners as sources of labour and partly benefitting from job creation schemes for the unemployed.

Another river to be harnessed for electric power under the emergency legislation was the 550 km long Kemi River, the mapping of which, together with the surrounding land areas, was commenced immediately after the war, so that the first power station, at the mouth of the river, was completed in 1949. Construction work was intensified in 1954, however, when the state-run company Kemijoki Oy was created, and by the 1970s there were altogether 13 power stations functioning on that river. In addition, two extensive reservoirs were constructed on the upper reaches of the same river system, Lokka, decided upon in 1966, which became the largest man-made reservoir in Europe (427 km²) when it was completed a year later, and the smaller basin of

120 The amendments to the law on waterway rights were approved on 2.2.1934, Finnish Statute Collection 1934, no. 61, 171–172, and no. 62, 173–177.

121 Kuuskoski, Mauri. Muistikuvia vesilainsäädännön soveltamisesta vesivoiman rakentamisessa. *Vesitalous* 44 2003, 60–62.

Porttipahta, opened in 1970. These are located in the headwaters of the Rivers Kitinen and Luiro, tributaries of the Kemi River in the area between Sodankylä and Ivalo. Around 600 inhabitants, most of whom made their living from farming and reindeer herding, had to be evacuated from the area flooded for the building of these reservoirs.¹²²

Although the building of these reservoirs was justified principally in terms of ensuring a regular supply of water for the power stations, consideration was also given to the severe pressure for restructuring of the economy of the northern regions and the ensuing unemployment. One weekly magazine published in Helsinki wrote of conditions in Lapland in 1967 that it was suffering from "mass unemployment, shortages, indebtedness and the compulsory auctioning of property".¹²³ The President of Finland at the time, Urho Kekkonen, who was himself from a northern peripheral area, was openly in favour of harnessing the rivers of the north to meet the needs of industry, which meant in practise that these natural resources of the north became an essential resource pool for the industries of the south of Finland. It was estimated in 2003, for instance, that 60% of the energy generated by water power in Finland originated from the north,¹²⁴ and by 2010 Kemijoki Oy was producing approximately a third of all the country's electricity.¹²⁵

In a country with literally thousands of lakes and rivers, water power is naturally a highly significant source of electricity, although wind and solar power are coming to the fore nowadays as alternative sources in Finland, as elsewhere. Tightening climatic restrictions weigh in favour of clear, pollution-free water power, and it is also looked on as a means of guaranteeing the smooth functioning of society at large, by virtue of its regulatory function, its reliability and its competitiveness. It is also well dispersed over the country geographically, which again improves its reliability. Electricity supplies can be restored in 90% of all emergency situations by falling back on hydroelectric power.¹²⁶

122 See, for example, Kauhanen, Jouni. *Nöyryminen ympäristöpakolaiseksi. Lokan ja Porttipahdan tekojärvien sosiaalishistoria*. Private publication 2014.

123 *Suomen Kuvalehti* 1.4.1967, 22.

124 Säynätjoki, Pentti. *Suomen vesivoima pohjoismaisessa sähköntuotannossa*. Helsinki University of Technology. Espoo 2003, 24, 26.

125 See Kemijoki Oy www.kemijoki.fi Accessed 20.5.2016.

126 On the energy industry. See <http://energia.fi/energia-ja-ymparisto/energialahteet/vesivoima> Accessed 20.5.2016.



President Urho Kekkonen panning for gold at Tankavaara in Sodankylä in 1977. Photo: Christian Westerback. Courtesy of the National Board of Antiquities.

Gold from beyond the Arctic Circle

The loss of Finland's richest mineral deposit, the Kolosjoki nickel mine, to the Soviet Union at the end of the war was a severe blow. Prospecting for minerals had been going on in Lapland and elsewhere in Finland during the period of Swedish rule, from the 17th century onwards, and mapping had been continued after independence. Geologists still went round schools in the 1960s showing pupils how to distinguish ore stones from "fool's gold".

Systematic prospecting for gold in Lapland began in the 1830s, when the first indicative nugget of any size was discovered on the banks of the Kemi River. This discovery led the government to send three researchers to Siberia in 1845 to train as gold prospectors. The areas around the Kemi River failed to yield the desired results, however, and mapping was transferred to the rivers forming the Finnish-Norwegian boundaries, the Teno and Paatsjoki, but again without success.

Gold prospecting was nevertheless revived in 1868, and the first gold-panning statute was issued in 1870. By that time the focus of the prospecting had shifted to the Ivalo

River, following the discovery of a nugget by two seamen from Oulu who had been to the goldfields of California, and no less than 80 gold-panners were registered as working beside this river in the first year that the statute was in force, including some Russians and some women. The first actual claim made by a woman was recorded in the history books only in 1946. It was eventually the surroundings of the River Lemmenjoki, a tributary of the Ivalo River, that emerged as the prime gold-panning area, attracting hundreds of gold-diggers who built themselves huts and saunas on the river banks. In 1870 the government built a Gold Centre, Kultala, in the area to supervise and administer gold-digging in the whole of Lapland,¹²⁷ but no deposits that warranted more extensive gold mining operations were ever found in the area.

A new gold-panning area nevertheless arose at Tankavaara on the boundary between Sodankylä and Inari as the result of a discovery made in 1935, and this was converted into a tourist attraction with a museum and opportunities for gold-panning in 1969. The first Finnish Gold-panning Championships were held there in 1974 and the first World Championships in 1977. It would thus seem that gold-panning in Lapland ended up as no more than a museum piece, but that was not in fact the case: prospecting is still going on, even though the government ceased to take responsibility for it in the 1980s. The most significant development was in 1994, when foreign companies and individuals were granted access to Finland's mineral resources.

The best-known gold mine in this country in the 2010s is located on the Suurikuusikko gold deposit in Kittilä, the bidding for which was won in 1998 by a Swedish company, Riddarhyttan Resources Ab, which later, in 2005, sold its share to the Canadian firm Agnico Eagle Mining Ltd., which opened the Suurikuusikko Mine three years later. The mine is now highly productive and employs some 700 people. The managing director of Agnico Eagle Mining Finland Oy stated in February 2016 that "The production of a million ounces of gold is a significant achievement for the Kittilä mine, and the whole staff are proud of it". Given the current ore reserves and production levels, the mine can be expected to be functional until 2035. There is another gold deposit located beyond the Arctic Circle at Pahtavaara in Sodankylä, which was discovered in 1985, while the Kevitsa ore deposit, also in Sodankylä, similarly produces gold in addition to its principal minerals, copper and nickel.

127 Partanen, Seppo J. *Sankareita, veijareita ja huijareita. Lapin kullankaivajien tarina*. Helsinki 1999.

The new emergence of mining in the 1990s aroused a great deal of public discussion both for and against this branch of industry in view of its impact on the environment and on employment. The government has actively supported the various mining projects and has invested in related research through various government departments, the Academy of Finland and Tekes (the Finnish Funding Agency for Innovation). Many private funds and foundations have also been generous in their support for mining research.¹²⁸ All this has meant that Finland has developed a significant concentration of knowhow in this field which is divided between a number of universities, principally those in Helsinki, Eastern Finland and Oulu.

128 See, for example, the Academy of Finland programme *Mineraalivarat ja korvaavat materiaalit* (MISU 2014–2019). See www.aka.fi/MISU Accessed 20.8.2016; Also the Tekes programme *Green Mining 2011–16*. See <http://finlandinnovation.fi/greenmining/> Accessed 20.8.2016.

Annette Forsén

Icebreakers: Finland's flagships

Finland's location north of latitude 60°N means that the sea freezes over virtually every winter, causing difficulties for merchant shipping and for postal deliveries in the archipelago areas. Up until the 19th century goods were transported to Sweden via the Åland Islands, while passenger services to places further south in Europe, such as they were, operated in winter by horse-drawn carriage around the head of the Gulf of Bothnia to Sweden or else via St. Petersburg.

The situation altered in the 19th century, however, when the first metal-hulled steamships were introduced. The first iron-built paddle steamer was tested in England in 1802, and the first iron-hulled steamship driven by propeller and intended for crossing the Atlantic was built in 1843. Finland's first steamship, the *Ilmarinen*, intended for traffic on Lake Saimaa, was launched in 1833, but steamers continued to account for less than 20% of the country's merchant fleet up to the end of the century. Various technical improvements were achieved that extended the season for navigation, but they were unable to solve the problem of sea ice. Experiments

with vessels capable of forcing their way through ice were carried out in the United States in the 1830s, and a Russian ship named *Pilot* attempted to sail through ice in the 1860s, but the German *Eisbrecher I*, built in 1871, has been regarded as the first real icebreaker in Europe.

Industry began to flourish in Finland in the second half of the 19th century and the cessation of shipping for part of the winter began to pose serious problems for the country's export trade. The government attempted to improve the situation by financing the construction of a winter port at Hanko, on the southernmost promontory of the Finnish mainland. From there the transport network was extended inland by means of privately built railways.

A significant step forward was taken in 1878 when the ship-owner Carl Korsman opened a service to Stockholm with his propeller-powered ship *Express*. This was built for winter navigation, but even so it would get trapped in the ice from time to time and a channel would have to be cleared for it with dynamite, ice saws and pickaxes. Sometimes it was even thought best for the passengers to complete their journey by sleigh or by walking over the ice. Assistance for winter shipping was provided by the Bogskär lighthouse, completed in 1881. In the end, the *Express* ploughed its way through the icy seas for 16 winters and also attracted attention internationally. By the late 1880s there were ships equipped for winter conditions operating from Hanko to Sweden, Denmark and Great Britain.

Finland gained her first true icebreaker in 1890. The 48-meter-long ship, appropriately named *Murtaja* (Breaker) had been built in Sweden on German principles and had a single propeller powered by a 1600 hp steam engine. The fact that it was available to keep the port of Hanko open to shipping throughout the winter was a distinct advantage, as this significantly increased the volumes of timber and butter that Finland could export to Great Britain. *Murtaja* was not powerful enough to cope with thick ice, however, and its shape made it difficult to steer reliably on the open sea.

Pressures for improvements in winter navigation led the Senate to appoint a committee in 1895 to prepare the way for the purchase of a new icebreaker, and following its recommendations an order was placed in 1898 for an American-style

vessel built in England that was squarer at the bows than *Murtaja* and had propellers fore and aft. This icebreaker was given the name *Sampo*, taken from the *Kalevala*. The following year a group of ship-owners in Turku commissioned an icebreaker of their own from Germany, the *Avance*, which they later sold to the City of Turku. Soon new ships were ordered for various other ports. The *Tarmo*, built in 1907, was supposed to be the most sophisticated of all in its time, but it suffered from propeller problems.

With four icebreakers in operation it was possible to keep the ports of Hanko and Turku open throughout the winter and to extend the open season for a few others, and also to provide assistance for occasional fishermen or seal hunters who found themselves hemmed in by the ice. The main purpose of the icebreakers, of course, was to assist merchant shipping, but they were also made use of at times of crisis or war. In 1914, when the First World War began, they were requisitioned from the Finnish piloting service and placed under the command of the Russian Baltic Fleet. The winters during that war were especially severe, and these ships proved essential for both keeping channels open and transporting Russian troops. Finland was unable to regain control over its icebreakers directly after its declaration of independence in 1917, but *Sampo* was successfully diverted to Sweden the following spring, during the Civil War, and was used to assist the ships bringing Finnish jaegers trained in Germany back to Finland and vessels belonging to the German Baltic Division. *Tarmo* and *Murtaja* eventually fell into German hands and were involved in German military operations in Finland, *Tarmo* being used in the landing at Loviisa and *Murtaja* in the occupation of Helsinki. The icebreaker *Avance* was recovered from the Russians only in the early 1920s.

Three technically more advanced icebreakers were added to Finland's fleet in the period between the wars. *Voima* (Power) built in 1924 through German-Finnish cooperation had listing tanks to help it manoeuvre through the ice. *Jääkarhu* (Polar Bear), launched in the Netherlands in 1926, had three propellers to increase its power and an oil-fired steam engine to improve its range of operation. *Sisu* (Guts) was built in Finland and was more advanced than its predecessors, having a diesel-electric engine and being capable of operating under more Arctic conditions in the channels leading north towards the head of the Gulf of Bothnia.

During the Winter War (1939–40) and Continuation War (1941–44), the icebreakers were also used for opening up cracks in the ice to prevent the Russians from coming ashore, and also to some extent for firing on enemy personnel moving about on the ice or on their ships. *Sisu* was also used as a mother ship for submarines. In the end all the icebreakers survived the war, although not without mishaps. *Sampo* ran aground off Pori and *Tarmo* was fired on in Kotka harbour during the Winter War, and *Sampo* hit a mine in the Continuation War. Under the provisions of the interim peace treaty Finland was obliged to forfeit 25% of its merchant fleet to the Soviet Union, so that it came out of the war possessing five icebreakers, four of which were steam-powered.

Although Finland's first ice breakers were commissioned from abroad, as is evident from the above, future developments have led to a situation in which most of its icebreakers have been built in Finland. The first to be built entirely in this country was *Sisu*, in 1939, whereupon the Hietalahti shipyard in Helsinki emerged as the most important in the country. After that it was not until 1954 that Finland obtained a new icebreaker, *Voima*, together with three smaller vessels for use in the archipelago areas. This meant that the old steam-powered icebreakers could finally be written off.

Voima was particularly important for its builder, the Wärtsilä Company, as its four sister ships served to open the door to the Soviet market. Among others, the world's most powerful diesel-electric icebreaker, *Yermak*, and its two sister ships were built in Finland. The first icebreaker to be equipped with an alternating current generator was also sold to the Soviet Union. Another aspect of Finland's Arctic knowhow at that time, alongside the building of highly sophisticated icebreakers, was reinforcement of the hulls of oil tankers to enable them to travel through ice. The client in this case was the American oil company Exxon. This also led Wärtsilä to set up its own ice laboratory in 1969 and found an Arctic Research Centre of its own in 1982. This latter investment enabled Wärtsilä to become the first company in the world to build an icebreaker on the strength of experimental models. Finland updated its fleet of icebreakers in the 1980's with vessels operating on the a/c diesel-electric principle. During the 1990s the Helsinki shipyard developed the world's first electronic azimuth thruster system. The Rauma shipyard, on the other hand, was the first to build multipurpose icebreakers with a modern azimuth thrust propeller system that could travel in reverse. The 360° azimuth technique has subsequently been used in oil tankers and cruise ships, for instance.

Major changes in the ownership of shipyards have taken place from the 1990s onwards, and in Finland this means that even the Wärtsilä yards are under foreign ownership. The Helsinki yard was taken over by the Koreans at first and later by a Russian company.

Viewed from the perspective of the long history of icebreakers, the latest generation of research icebreakers may be said to have opened up new, more productive prospects for studying previously inaccessible Arctic regions and testing the most recent cold knowhow. Finland is without doubt one of the leading countries in the field of Arctic shipping.

References:

Laurell, Seppo. Jäänmurtajat ja talviliikenne. In: *Navis Fennica. Suomen merenkulun historia 3*. WSOY. Helsinki 1993, 184–199.

Pohjanpalo, Jorma. *100 vuotta Suomen talvimerenkulkua*. Helsinki 1978.

Remes, Mika. Jäänmurron suurvalta porskuttaa uuteen. *Tiede* 12.2.2013.

Turunen, Ari & Partanen, Petja. *Raakaa voimaa. Suomalaisen jäänmurtamisen tarina*. Helsinki 2013.



The icebreaker Sampo towing a freighter that had run aground off Porvoo in 1926. Photo: Courtesy of the National Board of Antiquities.

From war reparations industries to a maritime cluster

The war reparations to be made by Finland to the Soviet Union under the terms of the interim peace treaty of 1944 and the 1947 Treaty of Paris consisted mostly of machinery, other metal products, aircraft, ships and railway locomotives, but also included the establishment of whole companies, factories and power stations and the supplying of copper cables to the value of many millions of dollars. The organization and supervision of this on the Finnish side was placed in the hands of a 500-person War Reparations Commission, and the principal manufacturer of the machinery involved was the state metalworking company Valmet. The number of employees in the metalworking industry increased from 10,000 to 64,000 in 1944 alone, and in the end some 300 firms took part in supplying these products.¹²⁹ Altogether war reparations accounted for about 60% of the total production capacity of this branch of industry in the years concerned. The debt was paid off entirely by 1952, which meant that the years 1944–52 constituted a significant transition period in Finland's history both politically and economically (through the growth of the mechanical industries and the reconstruction work).

Ships were one important category of exports to the Soviet Union. Finland had had a strong shipbuilding industry in olden times, as it is known that wooden ships were built here in the 14th century. Later, especially in the late 18th and early 19th centuries, this productive branch of industry came to be concentrated in the northern seaports of Oulu and Raahе, and before long Finland had one of the largest merchant fleets of any nation in the world in proportion to its population, so that by the 1880s it amounted to 780 ships altogether, a half of which were ocean-going ones.¹³⁰ The construction of iron ships began around the same time, from the 1880s onwards, when the Russian government commissioned several light naval vessels from the yards in Turku and Helsinki. The First World War brought Finland large numbers of orders for ships, while the main shipbuilding projects in the early period of Finnish independence were the armoured coastal defence vessels *Väinämöinen* and *Ilmarinen*, named after characters in the *Kalevala*, built in 1929–33.

129 Vesterinen 2012, 81–83.

130 Leppälä, Kari. *Tervanpoltosta innovaatiotalouteen*. Helsinki 2012, 279–281.

In 1945 alone Finland handed over 105 ships, a floating dock and 15 barges to the Russians, to be followed a year later by a further 92 ships and 48 barges. Even in the last year of war reparations, 1952, another 67 ships had to be handed over, including one of the last training vessels, named the *Vega* after the ship in which A.E. Nordenskiöld sailed through the North-East Passage. Later, in the 1990s, the *Vega* returned to Finland to be re-fitted and a foundation was set up for its future maintenance. All in all, Finland had to supply the Soviet Union with about 500 ships of various kinds as war reparations, which necessitated a major expansion of the shipbuilding industry. One large shipyard, belonging to the company Oy Laivateollisuus Ab, was set up precisely for the mass production of war reparations schooners, one of which was named *Aamunrusko* (Dawn) in the hope that it would “bring a brighter future for Finland”.¹³¹

The production of ships for the Soviet Union continued on a commercial basis after the war reparations had been paid off, with the Wärtsilä, Rauma-Repola and government-owned Valmet shipyards functioning in this capacity from the 1950s up to the 1980s. Government involvement in the shipbuilding industry ended in the late 1980s, however, by which time production had largely moved over to ro-ro ferries and specialized craft such as research vessels and salvage vessels. From the 1970s onwards more orders began to come in from western countries, too, and production branched out into car ferries and luxury cruisers. The 1990s and 2000s were then the “golden age” of the cruisers at both the Turku and Helsinki shipyards, so that Finland was responsible for building many of the world’s largest car ferries, such as *Finnjet* (1977) and *Silja Serenade* (1990), while the cruiseships leaving the Turku yards, such as *Voyager of the Seas* (1999), *Freedom of the Seas* (2006) and *Oasis of the Seas* (2009), likewise ranked among the largest of their kind.

The changes that took place in the 1980s and 1990s were also reflected in the terminology, as it was no longer fashionable to speak of the shipbuilding industry but rather of the *maritime industries*. This conformed well to the transition from individual shipbuilding companies to a global network of overall suppliers and subcontractors, so that by the 2000s more than 75% of the value of the luxury cruisers had been outsourced. The total annual turnover of the Finnish maritime industries in 2014 was

131 Vesterinen 2012, 35–39, 50, 53, 55, 68, 104; *Navis Fennica. Suomen merenkulun historia 1*. Erkki Riimala (ed.). Helsinki 1993, 414.

8 billion euros, while the maritime cluster, a broader concept that included shipping and port facilities, had a combined workforce of some 50,000 people and a turnover of almost 13 billion euros.

The range of companies operating within the maritime industries has also diversified greatly in recent times, and the range of products has broadened to include screw propellers, icebreakers and other ships adapted to arctic conditions and the designing of these, multi-fuel diesel engines for ships, cargo handling and fire protection equipment and interior re-fitting projects. The customers are nowadays almost all of international standing, and almost a half of the industry's total production in the 2010s has consisted of luxury cruisers and car ferries, while the other half has been made up of freighters and offshore vessels.¹³²

The Finnish Meteorological Institute has also carried out a number of projects concerned with emissions from shipping, a sign that the maritime sector has undergone a transformation in many ways and that there is a need for new research-based information. Automated enforcement of emission restrictions and the adoption of advanced technology will alter navigation beyond recognition in the near future. In addition, the new commercial opportunities opening up in Arctic regions will attract more traffic to the Arctic Ocean. Also connected with climate change is the issue of the fine particles emitted by ships' engines. One particular cause of concern in Arctic regions is black carbon, or soot, which can accelerate climate change by hindering the reflection of solar radiation from the surface of the ice back into space. Increased shipping traffic in the Arctic is a growing problem, as it is predicted that black carbon emissions from this source will double by the year 2050. These issues are being addressed in Finland in a number of projects financed by Tekes and the Academy of Finland.¹³³

132 *Navis Fennica* 1993–94.

133 See, for example, Laivaliikenteen päästöjen tutkimus vaatii kokonaiskuvan hahmottamista. *Atmos* 4.5.2016. Interview with the researcher Hilikka Timonen.

Responsible climate research

As mentioned earlier, the initial stimuli for research into climates and the Aurora Borealis in Finland came from the International Polar Years of 1882–83 and 1933–34. The destination for the first Aurora Borealis excursion in 1882 was the Lappish village of Sodankylä, which thereby gained its observatory (known as Tähtelä), founded by the Finnish Academy of Science and Letters in 1913 and transferred in 1997 to the University of Oulu, for which it acts chiefly as a source of geophysical measurements. Also functioning in conjunction with this is the Meteorological Institute's Arctic Research Centre, which observes and studies interactions between the atmosphere and geospace. The observatory has measurement equipment in 19 localities in Finland and Northern Scandinavia, its principal field of activity being geophysics, i.e. research into the physical structure and functioning of the Earth and that part of space immediately surrounding it, e.g. the Earth's magnetic field, cosmic radio interference and radiation and magnetic pulsations. The observatory also has a seismometer for recording earthquakes and studies the Aurora Borealis.

The Tähtelä station is an internationally renowned centre for research which offers high-quality services for visiting groups and can provide them with a wide variety of data for comparison purposes. Systematic meteorological observations are available for its area based on measurements made at the ground surface and by dint of automated soundings, making it possible to construct vertical profiles for the most important meteorological readings, the chemical composition of the atmosphere and radiation conditions. Supervised soundings are made above all to coincide with international measurement campaigns, dozens of which are arranged at the station every year.

There are numerous towers and masts in the forested area around Tähtelä with equipment installed in them for measuring both direct and indirect solar radiation in a variety of frequency bands. There are also some active devices that send out microwave radiation and detect the signals reflecting back to them. By comparing the power of the radiation at different frequencies it is possible to gain indirect information on the properties of the snow cover and the frost in the ground or on trace gas concentrations in the atmosphere.

All in all, the Meteorological Institute's Arctic Research Centre in Tähtelä is a leading unit for the validation and study of satellite data from arctic and northern regions.

Measurements and investigations of this kind can be used for improving the usefulness of satellite-mounted instruments for monitoring the properties of snow and the snow cover on the Earth or for measuring greenhouse gas concentrations. This will help us to take a significant step forward in the use of remote sensing methods for studying climate change. Precise local measurements are necessary in order to verify the reliability of remote sensing data under varying climatic conditions.¹³⁴

The Finnish Meteorological Institute is also engaged in studying physical and chemical processes in the climatic system, their interaction relations and their feedback mechanisms, with particular emphasis on aerosols, clouds and radiation, snow, interactions between the atmosphere and the world's oceans and the various numerical methods available for the optimization of model parameters. A variety of models can be used in the research, ranging from small-scale microphysical models up to global climate models. Data from satellite-mounted instruments can be used for defining the properties of aerosols and clouds and the reflectivity of the Earth's surface.

The institute's meteorological research groups, on the other hand, concern themselves with weather models, meteorological applications, meteorological mapping and polar meteorology. Those specializing in the meteorology and climatology of polar regions mostly devote themselves to investigating meteorology, ice, snow, the seas and climate under cold conditions, in order to gain a better understanding of the physical processes, interaction mechanisms and climatic systems involved and to develop methods for modelling weather and climates. The observations used by Finnish scientists for these purposes are derived from field measurements made in both the Arctic and the Antarctic.¹³⁵

Finland's convenient location relative to the Arctic Circle has opened up excellent opportunities for all forms of space research.¹³⁶ Thus the universities have carried out extensive research into the development of miniature satellites and many kinds of instruments and parts for space vehicles. The European Space Agency (ESA) has

134 On Arctic surveying in Sodankylä. See <http://ilmatieteenlaitos.fi/arktiset-mittaukset> Accessed 15.7.2016.

135 For meteorological news. See <http://ilmatieteenlaitos.fi/tutkimustoiminta> Accessed 15.7.2016.

136 The global era in space research is regarded as having begun in October 1957, when the first man-made satellite, the Russians' Sputnik 1 was launched into orbit around the Earth.

been interested in establishing a space accelerator in Finland so that companies and scientists can make full use of their Arctic expertise and satellite knowhow. Again, the Academy of Finland has financed a number of major projects, such as the Centre of Excellence in Atmospheric Science (2014–19), which is employing more than 200 natural scientists to study the atmosphere and its interactions with various ecosystems. The research is based on a network of monitoring stations generating accurate data on energy and material flows between the atmosphere and nature. The unit is involved in measuring fine particles arising from forests, for example, as these take part in the formation of clouds and thereby affect the climate. Other objects of study include air quality and the connections between air pollution and the changing climate. All told, the unit's research extends from the molecular and cellular levels up to the global climate level.

The team has developed equipment for its own purposes, including particle counters and a technically advanced monitoring system known as SMEAR (Station for Measuring Ecosystem-Atmosphere Relations). The first station of this kind, a highly versatile meteorological screen, was set up in 1991 at the Lapland Research Station at Värriö, initially for the purpose of monitoring sulphur dioxide and other emissions classified as harmful emanating from the industrial complexes on the Kola Peninsula. In fact right from the first measurements the accent was not only on sulphur dioxide but also on ozone and the oxides of nitrogen, and it was not long before carbon dioxide and process of photosynthesis in pine trees were also being monitored. The measurements were similarly extended to include particles of natural origin before the end of the decade. One main purpose of these observations was to elucidate the interaction between the forests and the atmosphere, and the Värriö station is nowadays maintained jointly by the departments of forestry and physics at the University of Helsinki. In addition to Värriö, there are now SMEAR stations at Kuopio and at Juupajoki in Eastern Finland, and in Helsinki.¹³⁷

Climate research is not just an object of interest for scientists, for nowadays it implies information that must be made known to political decision-makers and managers in business and industry as well, if only because the warming of the climate within

¹³⁷ The institutions engaged in the project are the University of Helsinki, the University of Eastern Finland and the Finnish Meteorological Institute; See Allo, Mai. *Yhdessä ilmakehässä. Tieteen huipulle ydinturman jäljiltä*. Helsinki 2016; On Helsinki University's Värriö Research Station. See <http://helsinki.fi/metsatieteet/varrio/tutkimus/smear.html> Accessed 15.7.2016.

the present century will alter not only the environment in which we live but also the global flows of trade and logistics. Secondly, climate change may well bring with it new commercial opportunities. Agriculture and forestry, the energy sector, transport and communications and travel are all sectors in which warming of the climate may prove economically favourable for Finland in the coming decades. On the other hand, the scientists also warn us that the global markets may become more susceptible to sudden instability, and that for all of us climate change is fundamentally an ethical issue.¹³⁸

138 *Tutkimus antaa suosituksia arktisen alueen vastuulliseen kehittämiseen*. Valtioneuvoston tiedote, 7.3.2016; *Suomi arktisen alueen vastuulliseksi edelläkävijäksi*. Karoliina Pilli-Sihvola et al. (eds). Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 10/2016.

5 Communities opening up to the world

In the past researchers used to divide Finland into two regions, Nature Finland, comprising the eastern and northern parts of the country, and Culture Finland in the south and west, with the boundary between them starting at Lappeenranta in Southern Karelia and running northwards to Tornio. This dichotomy lay behind most of the political decisions and economic planning that took place until well into the post-war era. Nature Finland implied the existence of small farms gaining some of their income from forestry work and representing a considerable population resource, while Culture Finland implied concentrations of industry with the wealth and well-being that accompanied them.¹³⁹ Even in the period from the early 1950s to the late 1970s, however, active interventions by the government authorities, Parliament and especially President Urho Kekkonen had led to a policy of industrialization aimed at bringing the area of Nature Finland “up to the level of the rest of the country”, i.e. at breaking down the barrier between it and Culture Finland. Nowadays the majority of Nature Finland belongs to the Barents Euro-Arctic Region.¹⁴⁰

At the same time a process of ethnic mobilization arose in the north. Lapland and the Arctic and Subarctic areas of northern Europe form essentially a multicultural region, with the northernmost provinces of the countries concerned¹⁴¹ housing between them some 1.7 million people, of whom a couple of per cent are Sámi. Depending on how they are counted, there are estimated to be just over 70,000 Sámi living in the

139 See, for example, Viitala, Pentti. *Aluepolitiikka*. In: *Suomen kartasto*. Helsinki 1999, 86–89.

140 The Barents Euro-Arctic Region includes the Finnish provinces of Northern Karelia, Kainuu, Northern Ostrobothnia and Lapland.

141 These are the provinces of Lapland in Finland, Norrbotten in Sweden, Murmansk in Russia and Finnmark, Tromsø and Nordland in Norway.

Nordic countries and Russia,¹⁴² a large proportion of them in towns and cities further south rather than beyond the Arctic Circle. Over 60% of Finland's Sámi, for instance, live outside the designated home districts for these people. Northern Europe also has other cultural minorities, such as the Kvens (*Kveenit*, *Kvener*), people of Finnish descent living in Northern Norway, and the *meänkieliset*, the originally Finnish-speaking inhabitants of Northern Sweden.¹⁴³

All in all, substantial changes have taken place in the way of life of the communities of the north since the Second World War along with the growing influence of structural changes in the economy, political turbulence, education and research, the progress made in communications technology and the process of ethnic mobilization. All of these have helped to shape the towns and villages of the north, their cultures and the ways in which their people perceive the world at large. The Finns themselves are more internationally minded, European and westernized than they had ever been before the Second World War, and they are more aware of their possibilities for influencing local conditions than at any time in the past.

Ethnic mobilization of the Sámi

The European Union recognises the Sámi who inhabit the northern regions of Finland, Sweden, Norway and Russia as an indigenous people. In Finland there are about 3500 of these people living in their home area, i.e. the local government districts of Enontekiö, Utsjoki, Inari and the northern parts of Sodankylä, and a further 6400 living outside this area.¹⁴⁴ These areas together with the corresponding northern parts of the other Nordic counties form the "Sámi territory" (Fin. *Saamenmaa*, Sa. *Sápmi*).

In Finnish law a Sámi is anyone who regards him or herself as such, on condition that 1) he or she or at least one parent or grandparent learned Sámi as their first language,

142 Including approximately 40,000 in Norway, 20,000 in Sweden, 10,000 in Finland and 2000 in Russia.

143 Depending on how the figures are calculated, there are some 10,000–30,000 Kvens and about 30,000 *meänkieliset* people. The Sámi make up 0.1% of the population of Finland in 2016.

144 *Saamelaiset Suomessa*. Saamelaiskäräjät. See http://www.samediggi.fi/index.php?option=com_content&task=blogcategory&id=105&Itemid=174&lang=finnish Accessed 18.7.2016.

or 2) he or she is a descendant of someone who was recorded in the land, taxation or population register as belonging to the fell, forest or fishing Sámi, or 3) at least one of his or her parents was or could have been registered as entitled to vote in elections for the Sámi Delegation or Sámi Parliament.¹⁴⁵

The groups of Sámi can still be recognised in Finland according to the principal language that they speak: the Northern Sámi, Inari Sámi and Skolt Sámi. All of these varieties belong to the Fenno-Ugric family of languages and are related to Finnish, i.e. they have a common root from which proto-Sámi and Proto-Finnish were dialects that broke away from each other around 1000 BCE in a process that lasted several centuries.¹⁴⁶ The separate linguistic histories, cultural paths and forms of livelihood of the Sámi groups were sufficiently distinctive from the outset that these language boundaries still serve today to define distinct Sámi groups. Thus, prior to the mobilization of the Sámi referred to above, which led to their formation into a single cross-border ethnic entity, they did not look upon themselves as a single ethnic group but rather as a multitude of peoples and villages. On the other hand, the cultures of the Sámi peoples have proved so distinctive and resilient that not even centuries of pressure from a majority culture has been able to extinguish them. The Finnish influence throughout Lapland has nevertheless been so strong that only about a half of the Sámi in Finland nowadays speak Sámi as their native language.

A revival of the Sámi ethnic movement took place in Norway and Sweden at the end of the 19th century, leading to the formation of the first Sámi associations and Sámi newspapers, and the first cross-border meeting of Sámi was held in Trondheim, Norway, in 1917. In Finland, the special character of the Sámi culture and language began to be acknowledged in the 1920s and 1930s, inspiring Finnish activists belonging to the Society for the Promotion of Sámi Culture (Lapin Sivistysseura, 1932) to make extensive expeditions to Lapland and produce the classic works that have been discussed above. When the people of Lapland lost their homes and were living in exile in Ostrobothnia in 1944–45, the various groups of Sámi formed a joint ethnic organization, the *Sami Litto* (1945).

145 Laki Saamelaiskäräjistä 17.7.1995/974, 3§.

146 Aikio, Ante. Suomalais-saamelaisesta kantakielestä nykyiseksi saamelaiskieliksi. In: *Siddastallan. Siidoista kyliin*. Jukka Pennanen & Klemetti Näkkäljärvi (eds). Oulu 2000, 42.

The lively activity pursued by the Sámi community led in 1973 to the founding of the Sámi Delegation, which later changed its name to the Sámi Parliament in 1996 on achieving cultural self-government. The Parliament's principal function is thus to implement an independent Sámi cultural policy and ensure the preservation and development of their culture as that of an indigenous people. The geographical scope of this activity is coincident with the home area of the Sámi, and the relevant legislation stipulates that the authorities shall consult with the Sámi Parliament over all far-reaching or otherwise significant measures that could directly or in some special way impinge upon the status of the Sámi as an indigenous people. This concerns the development of legislation applicable to the Sámi, matters related to their language or its teaching and the issuing of land use or mining permits within the Sámi home area. In addition to this, the Skolt Sámi have a separate consultative body of their own, the Skolt Village Assembly, the law applying to which differs from that under which the Sámi Parliament operates in that it is concerned chiefly with the rights of the Skolt Sámi to their sources of livelihood and the Village Assembly is subordinate to the Ministry of Agriculture and Forestry.¹⁴⁷

The Sámi communities are nowadays an established part of the broader international circle of indigenous peoples. Closer collaboration within the Nordic countries developed soon after the Second World War, in 1953, when the first Three-Nations Sámi Conference was held in Jokkmok, Sweden. This laid emphasis on the Sámi rights to the use of natural resources and their own language and agreed on the founding of a Nordic Sámi Council in 1956. Later, in 1992, when they were joined by the Sámi of the Kola Peninsula, the word "Nordic" was dropped and it became simply the Sámi Council. Similarly, a Nordic Sámi Institute was founded in Kautokeino, Norway, in 1973, and subsequently the Giellagas Institute at the University of Oulu in 2001, both for the study and teaching of the Sámi language and culture. International collaboration with the other indigenous peoples was also intensified in 1976, when the Sámi Conference decided to apply for membership of the World Council of Indigenous Peoples. The Sámi in Finland have likewise been active in supporting the ILO Indigenous and Tribal Peoples Convention (Article 169), but so far Finland has not actually ratified this document.

147 Laki Saamelaiskäräjistä 17.7.1995/974 and Laki Saamelaiskäräjistä annetun lain 18c§:n muuttamisesta 1176/2015; Kolttalaki 24.2.1995/253.



A reindeer round-up in Sodankylä in the 1960s. Photo: Erkki Voutilainen. Courtesy of the National Board of Antiquities.

Ethnic mobilization does not always yield exclusively positive results, however, as it can sometimes give rise to new boundaries and internal disputes, as has been the case in some of the villages in the north of Finland with respect to the hierarchical relations between Sámi groups. Disputes arose in the first place regarding who was eligible to vote in elections for the Sámi Parliament, so that only 5800 persons, just over half of all those registered as being of Sámi descent, have been deemed eligible, including 93 people who were approved for inclusion in the voting list by the Supreme Administrative Court of Finland for the 2015 elections. Many Sámi disagreed with this solution, however, so that one person demonstrated the fact by turning the jacket of his Sámi national costume inside out and another asked for his name to be removed from the register of voters. In other instances there has been friction between the “city Sámi”, particularly the fairly large community living in the Helsinki area, and those remaining in the traditional Sámi areas of Lapland. The members of the northern community look on the migration of Sámi to the south as detracting from the idea that the Sámi Parliament should promote the cultural self-government afforded to the Sámi under the constitution, and it has been claimed, for instance, that their subjective right to a language and culture of their own ceases to apply outside their own home area, simply because such services would be impossible to implement. One “city Sámi” representative was nevertheless elected to the Sámi Parliament in 2015.¹⁴⁸

148 For examples of the extensive publicity given to this. See http://yle.fi/uutiset/kho_hyvaksyi_93_uutta_ihmista_saamelaisiksi/8341788 , http://yle.fi/uutiset/saamelaiskarajien_hallitus_hatakokoukseen/8342423 and http://yle.fi/uutiset/tassa_ov_at_saamelaiskarajat_20162019/8356979 Accessed 15.2.2016.

Alfred Colpaert

The changing face of reindeer herding

Reindeer herding is one of the oldest economic activities in the north, and it has been adapting and adjusting itself to the changes that have taken place in the economic structure of the region over the past centuries in the same way as the other sectors of the economy. The semi-domesticated reindeer in northern Europe descend from the wild mountain reindeer and were originally used as decoys for hunting wild reindeer, pulling sledges and carrying goods, bartering items in trade and sources of food and clothing. Reindeer herding became a profitable occupation in the north by the 18th century at the latest, whereupon the owners of large herds enjoyed considerable social prestige within their own area.

The first notable reform in the practice of reindeer herding took place in 1898, when a system of precisely regulated reindeer herding associations was introduced into Finland and the practice was restricted to their areas. The 19th century was in any case significant in the history of reindeer herding as it was then that the boundaries between Sweden, Russia, Norway and Finland were closed to the movement of reindeer, as a consequence of which certain grazing areas used by the Norwegians became available for use by the Finns, leading to a major expansion in reindeer herding in the Inari area, in particular. Similarly, the Great Partition of common lands among local landowners and the reorganization of the land holdings belonging to farms, when extended to northern Finland, had an impact on the system of reindeer herding in Finnish Lapland.

Reindeer herding is at present based chiefly on the Reindeer Herding Law of 1932 and its amendments passed in 1948, 1968 and 1990. Under this law the Ministry of Agriculture and Forestry should set a limit on the total number of reindeer permitted in each district based on the production capacity of the grazing areas. The limit will then remain in force for a period of ten years. The overall size of the reindeer herding area in Finland is 115,000 km², i.e. about a third of the country's total surface area, and it comprises the whole of the province of Lapland (with the exception of the towns of Kemi and Tornio and the rural district of Keminmaa) together with the northern

part of the province of Oulu. Its southern boundary runs from Kiiminki via Puolanka to Kuhmo.

Reindeer herding was a thriving occupation in the years following the Second World War, thanks to favourable climatic conditions and various innovations. The introduction of medication against parasites, the slaughtering of mostly calves instead of adults and supplementary feeding meant that the numbers of reindeer increased steadily until the early 1990s, when the number of reindeer after slaughter reached 250,000 animals, since the number has fallen to 200,000. Numbers of reindeer owners also diminished, from 7500 in 1990 and no more than 4500 in 2015. The steepest decline took place in the 1990s, since when the situation has levelled out somewhat.

The main problem has been the composition of the income obtainable from reindeer herding, which has altered dramatically since 2005, as the proportion of the sale price of the meat received by the reindeer herders has declined constantly while the proportion represented by compensation payments for the loss of reindeer to predators or in traffic accidents has risen. Since the costs of the transport involved in following the reindeer in the wild have increased at the same time, the sums earned by the herders have diminished. Nowadays most of the owners have less than 24 reindeer, and few have over 200. All in all the annual production of reindeer meat has levelled out at about two million kilos during the present decade.

Rapid and significant changes have taken place in the operating environment for reindeer herding since the turn of the millennium. Although the population of Finland as a whole is gradually drifting towards the large growth centres in the south, utilization of the natural resources of the north has been extending and intensifying all the time. Good examples of this are the Lokka and Porttipahta reservoirs that were built in the 1960s and 1970s and the harnessing of numerous stretches of rapids on the major rivers of the north. Similarly, where land use in the 1960s and 1970s was largely a matter of forestry, tourism and a few mines, the global "scramble for

the Arctic" has been visible in Finland, too, since 1990. The rise in the prices of raw materials has led to an unprecedented state of competition for the minerals of the north, and numerous new mines have been opened in the reindeer herding area.

Alongside these developments, tourist volumes in Lapland have been increasing and the nature of the region's tourism has altered from the traditional hiking and cross-country skiing enthusiasts of the 1980s to those looking for action and excitement in and around the downhill skiing centres. This mass tourism has also meant increasing volumes of goods and passenger traffic. One of the latest newcomers involved in the constant expansion of the infrastructure network is wind power, and again the construction of wind farms and their power lines and service roads has taken its toll on the grazing areas used by the reindeer. In addition, the change in society's attitude towards ecological and nature conservation measures has led to an increase in the populations of predators – to the annoyance of the reindeer herders. All these things have given rise to a host of individual changes in and around the grazing areas that can cumulatively prove highly significant, so that the environment in which the reindeer herders have to operate has altered greatly within a short space of time. The tourist centres nowadays are surrounded by firms arranging snowmobile and husky dog safaris, networks of routes for these and for cross-country skiing and other pursuits and sprawling areas of holiday accommodation, so that the representatives of the reindeer herding districts constantly have to negotiate and adapt their activities to the demands of this multitude of entrepreneurs and activities.

If each mine, reservoir, peat extraction site, wind farm or tourist centre is examined as an isolated instance in an environmental impact analysis, its advantages will in all probability outweigh its disadvantages, especially when assessed in financial terms. The problem for reindeer herding arises when the combined nuisances arising from the production of electricity, the volume of traffic and the amount of noise, combined with visual aspects, are taken into account. The activity centres are constructions that form vast networks and break up what used to be continuous areas of potential grazing grounds for reindeer.

A separate problem is the gradual decline in the numbers of reindeer owners. It is proving difficult to attract young people to take up this occupation, and although the

introduction of new technology would be no problem for young people, it is for older ones. The use of GPS collars on reindeer has caught on rapidly in recent years and has given rise to a new application, the “reindeer detector”, referred to by one herder as “the best invention since the snowmobile”. These collars enable the owner to trace the movements of the reindeer by means of a smart phone or computer, locate them easily for rounding up in spring and autumn and save considerably on fuel and travel times. Digitalization can be expected to advance still further in the future, leading to more innovations. Unmanned aerial vehicles, or drones, for instance, may prove cost-effective in the search for reindeer in the wild and in rounding them up.

Reindeer herding as a means of livelihood can also be examined from the viewpoint of its social sustainability. Although the majority of members of a reindeer herding association may only own a small number of reindeer, the association may play an important role in maintaining the viability of the occupation and of the remote areas in which it is practiced. The reindeer herders usually form a tightly-knit social network within their herding area, with the consequence that they help to keep that area inhabited. Many reindeer herders believe that their income from the work that they do is far more valuable to them as individuals and to the community than are the sums that they are paid in compensation.

Climate change is another of the challenges facing reindeer herding, and adaptation to it has become a part of everyday life. As the weather changes, so does the way the reindeer behave on their grazing grounds. It is impossible to know what the outcome of the current process will be, but we do know that there have been warm climatic periods before and the reindeer have survived them. The increase in extremes of weather may, however, point to some kind of change, as the reindeer will become more dependent than ever on food put out for them by man.

All in all, reindeer herding has proved to be a flexible and adaptable means of livelihood, and has demonstrated its ability to react favourably to technological innovations. Even the reindeer herding association system, created more than 100 years ago, has not proved static or restrictive, as it has been possible to alter the boundaries of the herding districts or combine districts where necessary. This flexibility, sustainability and openness will help the occupation to face the challenges

of the present and the future. The training provided has also proved adaptable to change. It is no longer enough to be able to throw a lasso, as a reindeer herder of today needs to know something about running a business, about negotiation skills, about the relevant legislation and about information technology. Thus, the reindeer herder of old has emerged in the course of time as a modern reindeer entrepreneur.

References:

Colpaert, Alfred, Kumpula, Jouko & Nieminen, Mauri, Poro, poronhoito ja laitumet. In: *Suomen kartasto*. Suomen Maantieteellinen Seura. WSOY. Helsinki 1999, 122–125.

Helle, Timo. *Porovuosi*. Maahenki. Helsinki 2015.

Kortesalmi, J. Juhani. *Poronhoidon synty ja kehitys Suomessa*. SKS. Helsinki 2007.

Lähteenmäki, Maria. *The Peoples of Lapland. Boundary Demarcations and Interaction in the North Calotte from 1808 to 1889*. Finnish Academy of Science and Letters. Helsinki 2006.

Nieminen, Mauri. *Poro*. BoD. Helsinki 2014.

Urho Kekkonen as an advocate for Eastern and Northern Finland

Urho Kekkonen, who was Prime Minister of Finland in 1950–56 and President from 1956 to 1982, was a great admirer of the natural environment of the north. He had been born in the remote forested northern part of Eastern Finland and had been brought up in modest economic circumstances. He nevertheless went to school in Kuopio, Lapinlahti, Iisalmi and Kajaani before entering the University of Helsinki in 1921 to read law. He had been to lumber camps with his father from the age of 12 onwards and he acquired a close love for and understanding of nature that lasted throughout his life. While studying in Helsinki he joined the Ostrobothnian Students' Association, which had roots going back to the corresponding association at the Turku Academy in the 1640s and counted among its earlier members such distinguished national figures as J.V. Snellman, J.L. Runeberg and Matthias Alexander Castrén. His active background in athletics took him to the Los Angeles Olympic Games of 1932 as leader of the Finnish team, and the following year, having been engaged in right-wing politics up to that time, he joined the Agrarian Party. He was elected to Parliament in 1936 and worked on the home front during the war as head of the Finnish Supplies Centre.

As Prime Minister in the early 1950s, Kekkonen showed a particular interest in supporting employment and economic development in his home province of Kainuu and in Lapland. He was an Agrarian Party representative for the province of Oulu in Parliament from 1945 to 1954 and also enjoyed widespread support in Lapland. It is significant that in its election manifesto of 1951 the Agrarian Party laid emphasis on "raising" living standards in Northern Finland to the level of those in the remainder of the country. The economic reconstruction of Northern Finland was also one of Kekkonen's main themes in the parliamentary election of 1954, and some of the other parties, in particular the left-wing Finnish People's Democratic League, which commanded widespread support in the north, demanded that positive steps should be taken towards industrialization of the north,¹⁴⁹ an alternative that had first been proposed by the Industrialization Committee in its report of 1951. The main practical outcomes of these regional policies were the opening of a pulp mill in Kemijärvi in 1965 and the Tornio Ferrochromium and Steel Works in 1968 and 1976, respectively.

149 *Pohjois-Suomen teollistaminen*. SKDL. Helsinki 1965.

In his own political speeches Kekkonen himself began to call for a *comprehensive national programme* for the development of the north of Finland, which meant more efficient utilization of the region's timber resources, the construction of hydroelectric power stations, exploitation of mineral ores and the concentration of industry in the vicinity of the power stations.¹⁵⁰ Kekkonen's numerous visits to the backwoods of Kainuu and Lapland, often to places beyond the reach of the road network, endeared him to the local people, and both as prime minister and as president he would ski through those remote areas, go fishing there, meet with the inhabitants and open new factories. Acts that especially went down in history included projects that he set in motion while serving as prime minister for the construction of six roads in Kainuu that are still referred to by the local people to this day as "Kekkonen's roads". There were also some cases in Lapland of roads being built in places that he had visited. He also maintained a lively correspondence with people in Northern Finland which gave him a good feel for what was going on in the region politically and economically and conferred on him the profile of an advocate for Nature Finland amongst the political and economic elite of the capital.¹⁵¹

When the outdoor-minded president set out on his long skiing excursions on the fells of Lapland he would be followed by his *train of skiers*, an entourage of well-established or emerging politicians and civil servants, leading administrators in the province of Lapland and industrial magnates. Altogether he made more than twenty of these large-scale excursions into various parts of Lapland, including a number in the Saariselkä wilderness area on the boundary between the districts of Sodankylä and Inari, so that it was only natural that this same area should have eventually been designated as the Urho Kekkonen National Park. Another area of importance to him was the Saivaara fells in Kilpisjärvi, where he would go to ski almost every winter, and where a plaque was unveiled in his honour on the occasion of his 80th birthday. The original plan had been to erect a Kekkonen Monument there, but the idea was opposed by both the reindeer herders of the area and a large number of nature conservationists.¹⁵²

150 Kekkonen, Urho. *Onko maallamme mättiä vaurastua?* Helsinki 1952.

151 Kekkonen, Urho, Pohjois-Suomen rakentaminen. See <http://www.doria.fi/bitstream/handle/10024/9213/TMP.objres.1870.html?sequence=1> Accessed 25.7.2016.

152 The plaque, designed by the artist Pentti Papinaho, was unveiled in 1980.

When one earlier president, P.E. Svinhufvud, had visited Inari and the Petsamo area in 1935 he was presented with a petition urging him to do something to improve the status of the Sámi, as a consequence of which one of the people who handed him the petition, Jouni Aikio from Lemmenjoki, was invited by the president to visit him in Helsinki. Thus, when he went to the capital for the Reindeer Weeks arranged by the Lapland Provincial Council the following year he visited the presidential palace, where he also met Urho Kekkonen, then Minister of Justice, and Kaarlo Hillilä, mayor of Rovaniemi, who was later to become governor of the Province of Lapland. President Svinhufvud began by asking him what it felt like to be living “behind God’s back”. “Ah”, Aikio replied, “it all depends, you know, on which way God is facing”. This first meeting with Kekkonen led to many return visits by the later to Lemmenjoki,¹⁵³ and resulted in Kekkonen gaining the reputation of pandering to the interests of the reindeer herders by urging the development of legislation to protect their source of livelihood. The first Law governing Reindeer Herding had been passed in 1932.

Eastern and Northern Finland were close to Kekkonen’s heart, and he did all he could through the authority, means and attitudes that he could muster as a politician to promote the well-being of those regions. The report on the Committee for the Industrialization of Northern Finland was submitted in 1951, and a number of *regional development laws* were passed at various stages over the period 1966–93 and *regional policy laws* after that. The change of name says something of the alteration in the attitude adopted towards the marginal areas of the country in the course of time. During the 1980s conditions in the north improved because of the general prevalence of economic growth, whereas the recession in the 1990s and the economic crisis that began in 2008 hit the northern parts of the country particularly hard.

The manner in which regional policies are evolved has changed greatly since the days of Kekkonen, so that the initiative in the 2010s tends to lie with the regions themselves, and these policies also apply in a much wider geographical context than in earlier times, above all in that they operate in the framework of the EU definition of a sparsely populated area. There are innumerable monitoring and lobbying organizations in Brussels that look after the interests of specific groups, and one of

153 Kitti, Jouni. *Urho Kekkonen, Lappi ja saamelaiset*. See [http://jounikitti.fi/suomi/ihmiset\(ukkekkonen.html](http://jounikitti.fi/suomi/ihmiset(ukkekkonen.html) Accessed 23.7.2016.

these is the *East and North Finland EU Office*. The purpose of which is to monitor EU politicians, legislation and developmental trends, to influence these where possible and to bring the particular features of these areas and the knowhow that they possess to the attention of the European Commission, the European Parliament and other major executive bodies. The office creates and maintains powerful contacts with EU institutions and other collaborative bodies based in Brussels, while at the same time serving as a link between actors from Eastern and Northern Finland and providing them with carefully focused advance information on the topics of EU programmes and the interests of EU politicians.¹⁵⁴

Research into marginal areas in the north

One thing that was deemed essential in order to raise the economy and culture of Nature Finland to the same level as the rest of the country was to extend university education further north. Thus the University of Oulu opened its doors in 1958, those of Kuopio and Joensuu in 1969 and the University of Lapland in 1979. The aims of these universities were couched in strongly regional terms, i.e. their departments were expected to concentrate on studying their own region. The Karelian Institute in Joensuu, founded in 1971, places emphasis on cross-border regional studies, the multidisciplinary Arctic Centre established at the University of Lapland in 1989 specializes in Nordic-Russian research into Arctic regions, and the Thule Institute and the Giellagas Institute, were opened in 1995 and 2001, respectively, in order to strengthen the “northern” research profile of the University of Oulu.

What, then, have historians been studying with regard to Nature Finland? For a long time during the 20th century the pejorative connotations attached to the north in the context of humanistic and sociological research served to emphasize the geographical and cultural location of Subarctic and Arctic regions on the edge of Europe or the globe (denoting them as *frontiers* or *borderlands*), being remote places (on the *periphery*), occupying border areas (as opposed to *core* areas or *heartlands*) or serving as *hinterlands*. Over the last couple of decades, however, attitudes towards the north have altered radically on account of the new economic prospects that

154 East and North Finland EU Office. See <http://www.northfinland.fi/> Accessed 26.7.2016.



Santa Claus greeting a little boy in Helsinki Market Place in 1961. Photo: Erkki Voutilainen. Courtesy of the National Board of Antiquities.

have opened up and the ethnic mobilization of the indigenous peoples, and this has been reflected in the research carried out, as evidenced by the programme for the most recent International Polar Year (IPY) in 2007–08. The ugly duckling of earlier descriptive works (the peripheral north) has become a swan standing for a “white paradise” (the modern Arctic).¹⁵⁵

The geographical-historical line of research pursued from the 1970s onwards has given rise to numerous general historical accounts of the circumpolar region, culminating in *The North Calotte* (2005), a cross-border history of Northern Europe, and *The Barents Region. A Transnational History of Subarctic Northern Europe* (2015), a comprehensive publication derived from a broad-based multidisciplinary research project. From a purely Finnish point of view the most significant general descriptions of the north to have been produced since the Second World War have been the series *Pohjois-Pohjanmaa ja Lappi 1–5* (Northern Ostrobothnia and Lapland 1–5, 1954, 1973, 1983–84), the historical work *Faravidin maa* (The Land of Faravid, 1985) and the four-part series *Lappi* (Lapland, 1983–85).¹⁵⁶ These formed a basis for the adoption of more restricted research topics from the 1980s onwards, covering religious behaviour in Lapland, mythology, various aspects of economic life, the gold-panning culture, migrations, education, wartime experiences, northern art and local history.

The general works listed above follow structurally the traditional model for local or regional histories that has been observed from the days of the “Father of Finnish History”, professor H.G. Porthan, in the late 18th and early 19th centuries. They provide a good picture of the early natural history, archaeology, population movements, indigenous peoples and flora and fauna of the northern regions, the history of their conquests and of polar expeditions in general, the northern regions belonging to specific countries and the vulnerability of the regions’ ecosystems. In the case of Finnish Lapland the most recent of these general accounts are the collected volume *Lappi. Maa, kansat, kulttuurit* (Lapland, the territory, its peoples and their cultures, 2003) and an abridged travel guide *Terra Ultima* (2006).¹⁵⁷

155 Latreille, Francis. *White Paradise. Journeys to the North Pole*. New York 2006.

156 *The Barents Region. A Transnational History of Subarctic Northern Europe*. Lars Elenius, Hallvard Tjelmeland, Maria Lähteenmäki & Alexey Golubev (eds). Oslo 2015; *The North Calotte. Perspectives on Histories and Cultures of Northernmost Europe*. Maria Lähteenmäki & Päivi Maria Pihlaja (eds). Inari and Helsinki 2005.

157 Massa, Ilmo & Snellman, Hanna (eds.). *Lappi: Maat, kansat, kulttuurit*. Helsinki 2003; Lähteenmäki, Maria. *Terra Ultima. A Short History of Finnish Lapland*. Helsinki 2006.

Another powerful branch of Arctic research has involved an ethnohistorical or ethnocultural approach, which in the case of Northern Europe implies work concerned with the Sámi and the main source of livelihood characteristic of the north, reindeer herding. The first and highly significant step in this direction was taken by Toivo Itkonen in his two-part work *Suomen lappalaiset vuoteen 1945* (The Lapps of Finland up to 1945, 1948), and the next stage was marked by the opening of the open-air Sámi Museum in Inari in 1959. This was modernized and re-opened in 1998 under the name *Siida*, with a Visitor Centre of Metsähallitus¹⁵⁸ functioning alongside it. The museum has also produced a history of the Sámi of Northern Scandinavia entitled *Siiddastallan. Siidoista kyliin* (Siiddastallan: From Lapp communities to modern Sámi life, 2000), followed more recently by a number of books about the culture and sources of livelihood of the Sámi, such as *The Saami, A Cultural Encyclopaedia* (2005). A lot has also been written about reindeer herding, of which perhaps only the general work *Poronhoidon synty ja kehitys Suomessa* (Origins and Development of Reindeer Herding in Finland, 2008) needs to be mentioned here.¹⁵⁹ A number of studies have also been made of the problems associated with the land ownership situation and the land rights of an indigenous people.¹⁶⁰

As far as regional histories are concerned, scholars were attracted by the microhistorical approach and methodology, particularly from the 1970s onwards. They reminded people that local communities and regional actors not only reflect the general, national history but they also produce and study local and regional histories of their own, in their own image and from their own perspectives. Many later scholars have also emphasized a local point of departure when studying northern regions as opposed to a regional history dressed up in the “straightjacket” of the official national history. Regional historians tend to create, intentionally or unintentionally, a personality or individuality for an area, which has been regarded as a topical and

158 Finnish state enterprise that administers the state-owned land and water areas.

159 Itkonen, T. I. *Suomen lappalaiset vuoteen 1945 1–2*. Helsinki 1948; *Siiddastallan. Siidoista kyliin*. Jukka Pennanen & Klemetti Näkkäläjärvi (eds). Oulu 2000; Lehtola, Veli-Pekka, *Saamelaiset*. Inari 1997; Kortessalmi, J. Juhani. *Poronhoidon synty ja kehitys Suomessa*. Helsinki 2008; *The Saami. The Cultural Encyclopedia*. Ulla-Maija Kulonen, Irja Seurujärvi-Kari & Risto Pulkkinen (eds). Helsinki 2005.

160 See, for example, *Kysymyksiä saamelaisten oikeusasemasta*. Kokko, Kai T. (ed.). University of Lapland, Rovaniemi 2010; Joona, Tanja. *ILO Convention No. 169 in a Nordic Context with Comparative Analysis: An Interdisciplinary Approach*. University of Lapland, Rovaniemi 2012; Enbuske, Matti. *Vanhan Lapin valtamailla*. Helsinki 2008; Korpijaakko, Kaisa. *Saamelaisten oikeusasemasta Ruotsi-Suomessa. Oikeushistoriallinen tutkimus Länsi-Pohjan Lapin maankäyttöoloista ja -oikeuksista ennen 1700-luvun puoliväliä*. Helsinki 1989; Kylli, Ritva. *Saamelaisten maa-oikeustutkimus – kun historia kohtaa politiikan. Ennen ja nyt 1* 2007.

relevant feature both politically (favouring democracy and regional policy) and from a research point of view (regional studies, urban history, ethnohistory) in the period since the Second World War. One reason for these analyses of the special features of places has been that many of the areas studied have been seen to be far older historical entities than the in places surprisingly young nation-states. Thus the cross-border region known as Lapland, for instance, is a much older arena for human interaction than the states of Finland, Sweden and Norway, even though it was only officially designated as the home area of the Sámi in the 1980s.

Another branch of historical research that has emerged alongside these more traditional ones in recent years is that which employs an interdisciplinary approach to evaluate the feelings aroused by regions, boundaries and places, i.e. experiences gathered through all the senses have been examined to find “the feeling of the north”. There has been romantic talk of “the taste of the Arctic” and of its special visual features “as perceived by the eye”. It has been said, for instance, that it is never dark in the north; there are only different shades of light. On the other hand, much has been made of the outstanding beauty of the cold and the *scent* of ice. The geographer Yi-Fu Tuan has emphasized that each locality has its own *sense of place*, but no single seamless identity. A sense of place can be ephemeral, of course, like a scent, but it can also be deep and lasting, as in the case of a person’s relationship to his or her home area. There are also other branches of research, such as gender studies among northern communities, environmental history, Arctic tourism, which began in the 1850s and is still growing, and the history of the indigenous peoples of the Arctic, which have gradually gained in prominence within historical studies. Other popular fields of study are the history of the militarization of the northern regions and related security policy issues, although works dealing with Arctic warfare have tended to focus on dramatic episodes in the First and Second World Wars and the Cold War.

Technology at the spearhead of research

The turn of the millennium marked a crucial point in the development of Finnish science and technology policy. Back in the 1970s Finland was one of the more modest countries in terms of its science policy, but by the 2000s it had risen rapidly to possess one of the most advanced science and technology policies of any European nation. The change can be traced back to 1973, when the country’s chief source of funding

for science, the Academy of Finland, was made directly responsible to the Ministry of Education, and thereby in the last resort to the government. This was by no means accepted without criticism, and various instances expressed serious concern over the loss of academic freedom.

The victor in this battle over science policy, however, was the Ministry of Trade and Industry, which was particularly responsible for the funding of technological research, as this increase in its prestige led to the creation of Tekes, the Finnish Funding Agency for Innovation, in 1983 and the re-naming of the Council for Science as the Council for Science and Technology in 1987. The historian Allan Tiitta has drawn attention to the very abrupt nature of this transition into the age of technology, industrial innovations and international competition: in the face of structural changes in the domestic economy and an external energy crisis a distinct choice was made to invest in technology rather than to channel funds towards improving the quality of life and working for greater social justice. This was also reflected in an increase in private funding for technological research.

The next major recession, in the early 1990s, similarly increased the support provided for technology-based research, and innovation became the by-word of the times, which meant that the influence wielded by Tekes grew still further. By the late 1990s the accent was on cooperation between research and businesses, an approach that gained support from the unparalleled international success of the telecommunications company Nokia, making Finland one of the countries making the highest investments in research in the world.¹⁶¹ Now, in the 2010s, the demand that research should be of practical relevance to society at large has become more pressing than ever, and there is plenty of funding for technology and the natural sciences and also strategic funding for certain branches of research and centres of excellence in the social sciences, such as education and immigration. The humanities, on the other hand, have tended to lose out in the competition for state funding in recent years, so that individual foundations and funds specializing in these fields have increased in importance, just as they had been central to the implementation of academic research up until the 1960s.

161 Tiitta, Allan. Tiede- ja teknologiapolitiikka Suomessa. In: *Sivistyksen ja tiedon Suomi*. Ville Pernaa & Allan Tiitta (eds). Suomen eduskunta 100 vuotta. Helsinki 2007, 278–281.

The majority of the Finnish funding provided for Arctic research nowadays goes to the “cold-how” branches of the natural and biological sciences, so that when the first steps were taken in funding Arctic research, with the Academy of Finland announcing a call for applications in 2013–14, its governing body decided to make grants totalling 15.7 million euros for work in this field, the vast majority of which, about 90%, went to projects centred on the natural sciences or on business and economics. The second series of applications, ARKTIKO 2014–18, led to support being provided for 20 projects, again predominantly in the natural sciences, while Tekes was financing the technologically oriented *Arctic Seas* project to the tune of 100 million euros. When examining these decisions it becomes perfectly clear that the Finnish system of government-controlled funding for academic research has been directed specifically towards the “hard” branches of science and that the conditions upon which grants are made incorporate a large measure of financial interest on the part of the government in commissioning the research concerned. On the other hand, in addition to this “top-down” approach, a good deal of work has also been carried out at the instigation of local and regional instances.

It is not surprising, of course, that the principal countries in the world that are engaged in Arctic research are the USA, Canada and Norway, while Great Britain and Germany should also be included if we consider Antarctic research as well. Russia has up to now not performed at the level that one might expect in view of its size and the extent of its Arctic territory. Of the Nordic countries, Finland, Sweden and Iceland bring up the rear, their contributions to the funding of Arctic research having developed much later, only during the 2000s. It is also noticeable that the majority of the Arctic research in the Nordic countries is taking place in the large universities in their capital cities, even though their northern universities have tried hard to profile themselves as having expert knowledge in this field.

Altogether, about 18% of the scientific papers concerned with the Arctic region published in 2009–11 were produced in the Nordic countries, and it is quite clear which branches of science are responsible for this work in all the countries concerned, in that about 40% deal with the earth sciences and 30% biology. These subjects achieve their greatest dominance in Iceland (90%), and Russia (83%), and it would also seem that Finland is tending in this direction. The proportion of the work devoted to the social sciences and the humanities is at most about 7% in all the Nordic countries and in the larger countries, and it is particularly interesting that Finland has produced

the most papers of all in these fields.¹⁶² The Finnish multidisciplinary scholars have established excellent networks in all the Arctic countries and have also widened their circle of contacts to other universities in Europe and ones that are specialized in circumpolar research, including those in China and Japan.

Talk of the north in a vein that would be of interest to both politicians and researchers came to the fore in connection with the initiation of the “Rovaniemi process” in the late 1980s and gained momentum when Sweden and Finland joined the EU in 1995. In the new situation that prevailed in the 1990s Finnish Lapland became the new northern boundary region of Europe, and also part of a vital zone in terms of security policy, neighbour to a NATO country, Norway, and to the new Russian Federation. This even inspired the historians to open the borders to Russia and to the rest of the world. This was set down on paper as a programme of political and economic goals in 2010, when it was published as Finland’s Arctic Strategy. That was a time of optimism with regard to the future and the opening up of new possibilities internationally, so that it may be referred to as the “Age of the Global North”. Science gained its international credentials rapidly at the beginning of the 1990s, while on the political front the reconstruction of relations and networks at the end of the Cold War, when the Soviet Union had collapsed, got under way in the west quite rapidly and in a mood of optimism.

As has been seen throughout this book, science cannot be neutral, nor can it be restricted to the production of basic data, but rather, in the 20th century, and still more so as a consequence of the re-territorialization of politics in the early 21st century, science no longer comes before politics but politics precedes science.¹⁶³

162 Arctic strategies and Arctic research 2013. See www.NordForsk.org Accessed 2.8.2016; Lähteenmäki, Maria. Arktinen käänne politiikassa ja tutkimuksessa. *Ennen ja Nyt* 2 2015. See <http://www.ennenjanyt.net/2015/08/arktinen-kaanne-politiikassa-ja-tutkimuksessa/> Accessed 9.9.2016.

163 See Sörlin, Sverker (ed.). *Science Geopolitics and Culture in the Polar Region – Norden Beyond Borders*. Ashgate, London 2013, 1–19.

6 Finland and sustainable development

The Finns have lived for thousands of years chiefly on the products of nature, obtaining their food, their building materials and all the necessities of life in the north from the forests, mires, waters and fields and from the fells of Lapland. At these latitudes it was the seasons of the year that determined the rhythm of human life and the annual cycle of nature, and also the larger-scale variations in the weather, and it was on the basis of natural phenomena that future events were predicted and past occurrences explained. Urbanization, industrialization and the associated reliance on mechanically operating clocks began to shape the pace and customs of the lives of the Finns some 150 years ago, and at the same time the modern notion of nature conservation that had arisen in the western countries first began to gain support in Finland, mainly on the strength of discussions that had taken place elsewhere rather than from any serious concern regarding the state of the environment at home.

It may well be said that the early interest in conservation sprang largely from nationalism and national romanticism: it was essential for the Finns to protect their own fatherland on all fronts. It is not surprising therefore that the leading scholars and writers of the day, men such as Zacharias Topelius and Elias Lönnrot, argued elegantly on behalf of protecting nature in Finland.¹⁶⁴

Where the nature conservation ethic in the late 19th century was characteristic of the activities of scientists and local history and customs enthusiasts, it aroused the interest of broader echelons of society following Finland's declaration of independence in 1917. One major factor that influenced interactions between human being and

164 Pentikäinen, Juha. Metsä suomalaisten maailmankuvassa. In: *Metsä ja metsänviljaa*. Pekka Laakkonen & Sirkka-Liisa Mettomäki (eds.). Helsinki 1994: Myllyntaus, Timo. Ympäristöhistorian näkökulma. In: *Ympäristökysymys. Ympäristöuhkien haaste yhteiskunnalle*. Ilmo Massa. & Rauno Sairinen (eds). Helsinki 1991; Massa, Ilmo. *Pohjoinen luonnonvalloitus. Suunnistus ympäristöhistoriaan Lapissa ja Suomessa*. Tampere 1994.



Young women in national costume at Koli in Northern Karelia. Photo: Courtesy of the National Board of Antiquities.

nature during that period was the growth in tourism. The 1920s and 1930s were the golden age of domestic travel in Finland, a time when the peripheral parts of the country, Petsamo, Lapland and Karelia, and also the largest towns, gained their first travel guides, introductory films and tourist routes.

The triumphal march of the nature conservation ideal

The Finnish nature enthusiasts gained their inspiration for the founding of organizations and the creating of conservation areas from abroad, in that Germany's first conservation area was established in the 1830s and the world's first national park, the Yellowstone National Park in the USA, was opened in 1872. The beginning of the following century was marked by the appearance of numerous writings by scientists in which they emphasized the importance of nature conservation, and these coincided with the founding of environmental offices or agencies in many countries. The first restricted nature reserves were set aside in Sweden in 1909 and this was followed in Finland, which been observing closely the progress of conservation in other western countries, by the declaration of the Malla area as a conservation area in 1916.

It must be noted, however, that restrictions had been placed on the felling of forest areas in Finland for timber or for swidden (slash and burn) cultivation on economic grounds prior to that time, in addition to which a cultural and aesthetic garden movement had reached the country during the 19th century, leading to the creation of “crown parks” in Imatra in 1842 and Punkaharju in 1843. In fact some forest areas in Punkaharju had been placed under a preservation order as early as 1802. Similarly, scientists had formed associations related to the conservation ethic at a relatively early stage, *Societas pro Flora et Fauna Fennica*, founded in 1821, being one of the country's oldest scientific societies. The Finnish Geographical Association, founded in 1887, played a major part in the history of nature conservation when its founder, Dr. Ragnar Hult, raised the issue to the level of general public discussion in 1890 by emphasizing the assistance that the forest sciences could gain from this approach. The Finnish economy in the age of industrialization was heavily reliant on the country's forest reserves, and for this reason great importance was attached to forest science as the newly independent nation was beginning to devote increasing attention to forest management. Later it was laid down in the nature conservation legislation that areas could be set aside as either strict nature reserves, for scientific purposes, or else national parks, for the benefit of the general public. Thus nature conservation to meet the needs of science was an aspect of the Finnish discussions on the subject from the end of the 19th century onwards.¹⁶⁵ One forum for such discussions was the scientific journal *Luonnon ystävä* (The Friends of Nature).

The nature conservation ideal was also disseminated throughout the country to a great extent by the schools, where natural history clubs were formed, the first local natural history society being founded in Kuopio in 1887. Progress was also made at the governmental level, with the creation by the Senate (government) of a Protective Forest Committee in 1907, and the approval of the country's first nature conservation legislation in 1923. It is interesting, however, that the definition of nature conservation in this connection was somewhat ambiguous, the emphasis being on protection of the *national landscape*, although account was also taken of the needs of science, recreational uses of the countryside and the close relation between human being and nature. At the same time the law provided for the appointment of the country's first official in this field, a Supervisor of Nature Conservation, the first occupant of the

¹⁶⁵ Ahonen, Sanna. *Mitä on suojeltu, kun on suojeltu luontoa? Käsitehistoriallinen tarkastelu suomalaisesta luonnonsuojelusta välillä 1880–1983*. See <http://ethesis.helsinki.fi/julkaisut/maa/limno/pg/ahonen/mitaonsu.html> Luettu 2.8.2016.

post being the director of the Korkeasaari Zoo, Rolf Palmgren, whose book on this topic, *Luonnonsuojelu ja kulttuuri* (Nature Conservation and Culture, 1922), provides an excellent description of the thinking that prevailed on the subject at that time, an account of its early history and a discussion of its impact on society at large.

It was during the 1920s and 1930s that people first became aware of their relation with nature, but this was also a time of ever-increasing exploitation of nature resources. Widespread felling of the forests in Northern and Eastern Finland continued as lumbering operations intensified, and at the same time the major rivers came to be harnessed for hydroelectric power. But concomitantly with this, the numbers of wage-earners were increasing, working methods were being rationalized and new regulations regarding both work safety and holidays were introduced, leading to an increase in leisure time. This in turn led to greater pressure on natural environments as places of recreation, for the picking of berries and mushrooms, hiking and lighting campfires, recreational fishing and hunting and spending the summer in country cottages. It was not until the 1960s, however, that more precise thinking emerged on how recreational use might affect nature in Finland, and it was at that time that the combination of this and the economic utilization of natural resources prompted more direct action on the part of the conservation organizations.

These problems were now being raised for public discussion. People were arguing openly and vociferously for more efficient forestry methods, and in the light of this the concept of nature conservation was also extended, so that it no longer referred only to the protection of natural formations or wilderness areas but also encompassed *cultural forms of nature* and *ecosystems*. Meanwhile the new information available on worldwide pollution problems and the potential exhaustion of many natural resources brought a new concept of *environmental conservation* to the fore. The principal evaluation of the history of Finnish environments and source of inspiration for young researchers was Sven-Erik Åström's *Natur och byte. Ekologiska synpunkter på Finlands historia* (Nature and exploitation. Ecological perspectives on the history of Finland, 1978), which told of the interaction between human socioeconomic activity and nature.

Thus the process, initially one of conservation, that had lasted over a century became much more of a societal and political issue. Particularly in Northern Finland, where most of the conservation areas were located, there was much criticism of the government's excessive zeal in protecting wilderness areas and reindeer grazing

areas. One manifestation of this was the establishment of the organization known as the Greens as a political party in 1980, and the incident that gave rise to the Kojjärvi Movement, in which conservationists who had chained themselves to trees clashed with the police and details of the incident were broadcast to the whole nation through the media. There were also disputes and clashes between protesters and the local people in other places around that time, and in Lapland, for instance, the locals tended to look on conservationists as “gents from the south” who had no idea how much the measures they were talking about would harm people’s sources of livelihood. Similarly, the timber companies regarded the conservation measures as unreasonable from the viewpoint of their raw material requirements and competitive potential, while the forest owners were concerned about their rights.

Eventually, with the end of the Cold War and the rise of a new interest in the Arctic, a fresh wave of conservationism was engendered by discussions on the need to preserve biodiversity and on the ethics of nature conservation in general.¹⁶⁶

All in all, scholars are apt to distinguish three categories of motivation for nature conservation: the desire to protect nature in an unspoiled state, to look after landscapes or to make rational and sparing use of natural resources. Other motives observable from the very beginning have been the needs of science and the conservation of landscapes of cultural or national significance. Interest in the recreational use of natural environments increased steadily from the 1920s onwards, while ecological and economic motives began to gain emphasis in the 1960s.¹⁶⁷

The notion of an environmental way of life appeared in writing at the very beginning of the new millennium, referring to a way of life which takes account of the use made of energy and natural resources, environmental loading and individual interpretations placed on the environment or narratives arising out of it. It has been suggested that the concept of an everyday environmental policy should entail the

166 See, for example, Borg, Pekka. *Ihmisten iloksi ja hyödyksi – Vastuun luonnonsuojelupolitiikkaa rakennemuutos-Suomessa*. Forssa 1992; Rannikko, Pertti. *Ympäristötietoisuus ja ympäristöriidat*. In: *Näkökulmia ympäristösosiologiaan*. P. Jokinen, T. Järvikoski & P. Rannikko. Turku 1995, 65–91; Ahonen, Sanna. *Mitä on suojeltu, kun on suojeltu luontoa? Käsitehistoriallinen tarkastelu suomalaisesta luonnonsuojelusta välillä 1880–1983*. See <http://ethesis.helsinki.fi/julkaisut/maa/limno/pg/ahonen/mitaonsu.html> Luettu 2.8.2016.

167 See, for example, Kalliola, Reino. *Miten luontoamme suojellaan?* *Metsälehti* 18.2.1954; Kalliola, Reino. *Luonnonsuojelun käsite*. *Suomen Luonto* 2–3, 1968.

mutual coexistence of a “large-scale” environmental policy dictated by the public authorities and “small-scale” policies chosen by individuals. This implies that the experiences, ways of life and cultural changes undergone by ordinary citizens should form an integral part of those people’s environmental policy activities. Environmental policy as a whole should incorporate within it a clear understanding that individual behaviour involves an element of choice and that these choices are of significance for the environment.¹⁶⁸

Finland possessed 40 national parks on January 1st 2017, the last of which, the Hossa National Park in Kainuu, was opened on that date in honour of the Centenary Year. The largest in area (2860 km²) is the Lemmenjoki National Park in Lapland, which was founded in 1956. A national park is required to be at least 1000 km² in area and should be of significance as a place of natural beauty or in other respects for the increasing of people’s knowledge of nature or interest in it. In addition to these national parks, Finland also has 19 strict nature reserves intended for scientific use and almost 500 other smaller conservation areas such as wetlands, patches of ancient forest or water areas known for their seal populations. Apart from actual scientific work, conservation areas can be made use of for more general teaching purposes, as exemplified by the increasing popularity of “history trails” leading to natural monuments, rock paintings or old dwelling sites, fishing or hunting grounds, lumber camps or gold-panning areas. A total of 69 sites of this kind have been identified to date (as of 2016), and these are being developed jointly by those responsible for tourism, nature conservation and commercial interests. Most of these historical sites are to be found in the eastern and northern parts of the country.

Metsähallitus, the government department that administers the national parks and other conservation areas, is inclined to summarize the current state of the relationship between human being and nature by appealing to the health-promoting abilities of a natural environment: *“Nature is one of the best sources of relaxation and refreshment. You can move about in nature in many different ways, enjoy the scenery and the sounds and fragrances and observe the plants and animals and the other wonders of nature.”*¹⁶⁹

168 Massa, Ilmo. *Arkielämän ympäristöpolitiikka*. Blogi 4.3.2010. See <http://yhteiskuntapolitiikka.blogspot.fi/2010/03/arkielaman-ymparistopolitiikka.html> Accessed 2.8.2016.

169 *Luonnossa liikkuminen*. Metsähallitus. See <http://www.luontoon.fi/aktiviteetit> Accessed 5.8.2016.

Irmeli Mustalahti

From forestry to a forest-based bioeconomy

Climate change and the transition to a bioeconomy are posing new challenges for the administration and utilization of natural resources, in that modern policies in this respect are designed to encourage administration at several levels and the devolution of decision-making within a network of actors of various kinds. These policies with regard to natural resources are regulated in the arenas of international politics, with the consequence that the outlines of a country's environmental policy are determined jointly by national and international actors. The nations of Europe, for instance, have already moved over from national to transnational natural resource policies in which they are committed to common goals, laws and statutes. The aims of international and transnational forest policies, for instance, – within both the United Nations and the European Union – are to promote interaction, dialogue between the various networks of actors and participation in the forest policy arenas, in addition to which the interaction that has already been achieved is manifested in various influential coalitions that are dedicated to pursuing interests of their own.

It has become common in the European context to use the term *bioeconomy* when speaking of the development of innovations for replacing non-renewable natural resources with renewable ones, and Finland was one of the first countries to publish its own bioeconomic strategy, doing so in 2014. Recently, bioeconomic strategies have been criticized on the grounds that they are based on the assumption of limitless resources and the optimistic notion that (bio)technology can promote sustainable economic development without any negative repercussions for the environment. It is indeed the case in Finland, too, that, in spite of the criticism voiced by researchers and the environmental organizations, the bioeconomy is looked on as an opportunity to establish a sustainable “green” economy and a new means of achieving continuous economic growth. Consequently the role of the bioeconomy in restoring economic growth is emphasized in Finland's current forest legislation and in the implementation of the national forestry programme.

Contrary to the situation elsewhere in Europe, when the Finns speak of a bioeconomy they frequently mean specifically *forest based bioeconomy*. Actors in the forestry

sector such as the Ministry of Agriculture and Forestry, the unions representing forestry actors and the forest owners' organizations have openly discussed transition to a bioeconomy, whereupon this forest based bioeconomy is understood as implying the production of biofuels and the further processing of wood pulp to advanced products, given that the large forest companies are prepared to make the investments necessary for doing this. It is hoped, too, that this emphasis on forest based bioeconomy will challenge the small and medium-sized companies within the forest cluster to join in the political discussion regarding the existing forest-based bioeconomy and its strategies and programmes. As it is, the dialogue concerning investments and innovations has taken place principally between the giant companies and there has been little talk of the sufficiency of resources or of the directing of resources to the various actors.

There should be more discussion about matters such as the true impact of the forest based bioeconomy on employment and wages, and about the kinds of actors that are best equipped for promoting sustainable growth at the national level. Similarly the extent to which the decisions made by actors in this field impinge on the diversified use of the country's forests, their management and their conservation, is also an open question. There have been no proper discussions of this kind concerning the bioeconomy in Finland to date, chiefly because our economic thinking has been taken up with the current recession and the need to establish powerful coalitions to protect the interests of the market-oriented actors in the forest sector. This situation is not unique to the bioeconomy but applies generally to the participatory and reactive capacities of administrators and decision-makers. Although a multi-level administration should act in accordance with democratic values, promoting discussion, community spirit and an open society, the power of decision and the prerogative over discussion would appear to rest with the political and economic networks.

Recent research has called attention to the bioeconomy discourse taking place in Finland and the efforts of the networks of actors to influence the current bioeconomy strategy and forest based bioeconomy. The Finnish bioeconomy strategy encourages

interaction between citizens and dialogue between actors and decision-makers in the bioeconomy. In practical terms, however, multi-level discussions concerning the bioeconomy in Finland are a good example of rigid political control and an evident alliance of politicians and other groups of actors behind the process of promoting the bioeconomy.

It is impossible to ignore the citizens' participation and voices at all levels when setting out to promote the forest based bioeconomy, as is also the case with the recycling economy. However, it is a different matter what kind of participation is to be encouraged and what participation is needed if one wishes to develop forest based bioeconomy strategies and programmes at the transnational, national and local levels. Researchers are apt to speak of "ladders" and "levels" when referring to degrees of participation, and it has been seen that the inviting and achieving of significant participation can be challenging for both the people's representatives and the administrators in the field of natural resources. It is clear, however, that a bioeconomy cannot be a socially acceptable "green" economy without citizens' participation and dialogue among administrators. At the same time it is necessary to ensure a peaceful labour situation and sufficient resources in the private sector. It would then be possible to direct citizens' panels towards the promotion of democratic decision-making processes.

Public discussion of the bioeconomy issue to date has emphasized Finland's desire to restrict the greenhouse effect at the same time as support has been shown for a forest-based bioeconomy. In Western Europe (notably in Denmark, Germany, the Netherlands and France) the bioeconomy and recycling economy have challenged governments to revise their environmental policies, the everyday practices of their environmental administrations and their concepts of the sustainability of their natural resources. Likewise, Finland's revision of its forest policies, legislation and administration has been aimed at responding to local conditions and at the same time to the challenges of climate change. It has become evident that the transition to a forest based bioeconomy will affect both our natural resources and the sustainability of their use and the protection of biodiversity, and the policy that has been selected has reflected the views and interests of both the forest owners and ordinary citizens. If the planned investments in a bioeconomy in Finland come to pass, the amount of timber required by the forest industries might be more than half again relative to the

current amount, and it will not be possible to import timber to meet this requirement, so that the Finnish forest owners will have to be prepared to supply industry with more timber.

Present-day forest owners do not necessarily see their forests as timber production units, but rather they have a wide range of values and attitudes with regard to the sale of timber. The fact of owning forest does not turn someone into a forestry expert who automatically has the needs of the bioeconomy in mind, but instead a balanced transition to the bioeconomy will require broader and franker discussions of sustainable development from the twin viewpoints of society and the environment. An open discussion of these matters taking all sets of values into consideration would help to promote interaction between forestry professionals, actors in the forest based bioeconomy, citizens' activists, forest owners and administrators. A modern administration should not attempt to direct the use of natural resources through policies, laws and statutes but should be flexible in supporting actors, forest owners and companies of all kinds in their day-to-day exploitation of forest resources and in the management and protection of their forests. But this kind of interactive, multi-level, reactive administration calls for a strong network for providing guidance, advice and support, and above all a network that has the ability and the desire to accept and respect values and attitudes that are linked to nature itself.

References:

Sustainable Growth from bioeconomy. The Finnish Bioeconomy Strategy. Ministry of Labour, Helsinki 2014.

Kleinschmit, D., Arts, B., Giurca, A., Mustalahti, I., Pülzl, H. & Sergent, A., Longing Towards Sustainability: Integrating Environmental Concerns in the Bioeconomy Discourse. *International Forestry Review* 2016. In print.

Mustalahti, I., Matschoss, K. & Hyle, M., Vuorovaikutteinen hallinto ilmastokysymyksissä – Kansalainen keskiössä. *Ympäristöpolitiikan ja -oikeuden vuosikirja VIII* 2015. University of Eastern Finland, 387–404.

Mustalahti, I. & Kusmin, J., Uusia haasteita metsäsektorin, metsänomistajien ja kansalaisyhteiskunnan vuorovaikutteisudelle. *Ympäristöpolitiikan ja -oikeuden vuosikirja VX* 2016. University of Eastern Finland, 243–264.

Rask, M., Worthington, R. & Lammi, M., *Citizen Participation in Global Environmental Governance.* Earthscan. Routledge, London and New York 2001.

Struve's chain extended to the Arctic Ocean

The desires of human being to control their environment and to acquire a knowledge of its workings that would be of benefit to them merely increased as advancements were made in science in the 19th century, and the topics of interest took on new spatial dimensions, as witnessed by the rise of auroral studies and the events of the International Polar Year in 1882–83. Another event of this kind was the construction of a chain of triangulation points across Eastern Europe from the Black Sea to the Arctic Ocean.

It had been known since the days of Isaac Newton (1687) that the Earth was a mandarine-shaped quasi-sphere, being somewhat flattened at the poles, but even by the early 19th century no precise measurements of this effect had been made. The triangulation method of surveying, using fixed points and forming triangles, had been invented in the Netherlands around the time of Newton and was available for assessing both horizontal distances and vertical heights. The method was based on the principle that if the distance between two points of a triangle was known, the lengths of the other two sides could be calculated from this and the angles between the given line and those leading to the third point. Thus greater distances could be measured by proceeding from one triangle to the next across the terrain in question, the one essential requirement being that the new point should be visible from both of the existing ones, so that a chain of triangles was formed.

The surveying project concerned here, which took its name from astronomer Friedrich von Struve, was initiated by Tsar Alexander I of Russia, who gave it his personal support, as also did a group of Swedish astronomers. Measurement of the chain began in 1816 and the whole chain, 3000 km in length and employing 258 basic triangles, 265 basic points and 60 auxiliary points, was completed in 1855. At the time when it was set up the chain ran entirely through Russia and Finland, although nowadays the same line involves points located in ten countries.¹⁷⁰ The men working on the project had to travel across uninhabited terrain, often with no roads, sometimes proceeding on foot, on skis, on horseback, by reindeer sleigh or sometimes by boat. Each fixed point was established by drilling a hole in the bedrock, filling it with lead and marking the point at ground level with a brass plate.

170 In Norway, Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine.

There had been one previous triangulation project in Finland, carried out in the Tornio Valley in 1736–37 by a group led by the French mathematician Pierre de Maupertuis, with the express purpose of proving Newton’s model for the shape of the Earth and its flattening at the poles.¹⁷¹ Thus Struve’s surveyors were in effect following in the footsteps of Maupertuis, in addition to which the results obtained from his chain enabled the publication of a general map of Finland in 1873.

A third triangulation project was begun in 1919, soon after Finland had become independent, and was not completed until 1987. In the course of almost 70 years, thousands of military servicemen, tower builders, lighting men, surveyors and others were engaged in carrying out the measurements. In the end, the last triangulation tower was built in 1986, at approximately the same time as the triangulation method was superseded by satellite technology. In Finland Struve’s chain linked the northern and southern triangulation chains together for over a hundred years, right up to the 1960s, when the whole country was finally covered by the National Board of Survey’s triangulation network. Nowadays measurements are made with GPS satellite-based positioning devices and the triangulation points and towers are left as valuable reminders of our scientific and technological heritage. But this is not all; Struve’s chain is also of considerable geohistorical value, as it has united the peoples of Europe from the Black Sea to the Arctic Ocean for almost 200 years.¹⁷² The triangulation towers built after Finland gained her independence were a part of the landscape virtually throughout the 20th century and were popular as vantage points for many decades.¹⁷³

Struve’s chain is also historically significant as, when 34 of its fixed points were together accepted as a UNESCO World Heritage Site in 2005, this became the first such site to stretch across the territories of several countries. The Finnish part of the site comprises six points: Svartvira, Puolakka and Porlom II in Southern Finland, and Tornea, Avasaksa and Stuur-oivi in Lapland. All told, 83 of the 265 fixed points in the chain lie in the territory of Finland, 31% of the total.

171 Pihlaja 2009.

172 See <http://www.maanmittauslaitos.fi/toiminta/organisaatio/historia/struven-ketju> Accessed 10.5.2016.

173 Puupponen, Jyrki. *Kolmiomittauksen historia*. See http://maanmittaustieteidenseura.fi/maanmittaus/2009_1_puupponen.pdf Accessed 10.5.2016.



A skier at the Levi Skiing Centre in Kittilä in 2015. Photo: Maria Lähteenmäki.

Other Finnish sites on the UNESCO Heritage List are the medieval Old Town of Rauma and the Bronze Age stone burial mounds for 40 corpses at the village of Lappi near Rauma, both in the western part of the country, the fortress of Suomenlinna off the coast of Helsinki, built in the 1750s, the Verla mechanical pulp and board mill in Kouvola, dating from the 1870s, and the wooden church at Petäjavesi, completed in 1764, both in Central Finland.¹⁷⁴ In addition, the Kvarken Archipelago in the Gulf of Bothnia off Vaasa is ranked as an extension of the Swedish Höga Kusten UNESCO World Heritage Site. All these places are popular tourist destinations nowadays.

174 *Struven ketju*. Metsähallitus. See <http://www.metsa.fi/maailmanperintokohteet> Accessed 5.8.2016.

Travel, ecotourism and history trails

The American economic magazine *Forbes* listed Finland among the world's most attractive summer holiday destinations in 2016, while Finnish Lapland has already reached the top rank among Christmas holiday venues and the *Financial Times* has placed Helsinki among Europe's most interesting cities for the future. The *Forbes* columnist justified his "Best places to go" choice on the grounds of the country's "almost 188,000 lakes, pure water and enchanting remoteness"; looking on it as an innovative and corruption-free country where individual freedoms and property rights are respected. All in all, Finland is described as "a beautiful and alluring alternative to Europe's tourist hordes".¹⁷⁵ It was visited by a total of some 7.4 million people in 2015, with a further 1.3 million transit passengers passing through Helsinki-Vantaa Airport. The largest numbers of tourists came from Russia, Sweden and Estonia, followed by Germany and Great Britain, but there were also increasing numbers from China and Japan.¹⁷⁶

Tourism has been a consistently expanding branch of industry, both economically and culturally, since the 19th century in Finland and also internationally. Individual travellers and explorers had mapped the world's navigation routes and polar regions and described the communities living in the north between the 16th and 19th centuries, but it was only towards the end of the 19th century, with the appearance of steamships and railways and the availability of more information on distant lands and their exotic inhabitants through the medium of newspapers, maps and the highly popular travel books and guides that mass tourism really began in the northern parts of Europe. It was then that the "Land of the Midnight Sun" in the north of Europe, together with the Alaska and Klondike goldfields began to attract tourists as well and for the first time created a market region for Arctic tourism. As if to herald the advent of mass tourism in the northern waters of the European continent, a ship carrying 24 passengers arrived at Nordkapp on the Arctic Ocean coast in summer 1875 on a tour organized by the London travel agents Thomas Cook & Son.

175 Good news from Finland 15.1.2016. See <http://www.goodnewsfinland.com/forbes-finland-among-2016-s-best-places-to-visit> <http://www.goodnewsfinland.com/forbes-finland-among-2016-s-best-places-to-visit/> Accessed 10.8.2016.

176 Visit Finland 26.4.2016. See <http://www.visitfinland.fi/news/suomessa-vieraili-74-miljoonaa-matkailijaa-vuonna-2015> Accessed 10.8.2016.

It was around this time, too, that organized tourism was introduced into Finland, with the founding in 1887 of the Finnish Tourist Association, the principal purpose of which was to develop travel within the country. This was indeed achieved by the 1920s and 1930s, with peripheral regions of natural, unspoiled beauty such as Lapland and Karelia proving highly attractive to visitors who wished to enjoy nature. Another important aspect was the country's towns and cities, where the accent was on history and culture. This tourism also had a political dimension, as it was thought desirable to make the border regions better known throughout the country and thereby link them more firmly to the central areas under the unstable conditions prevailing at the time. Some attention was paid even at this early juncture to international advertising, and travel guides, films and brochures were produced in a variety of languages. The tourism sector was modernized in 1973 with the creation of the government-administered *Matkailun Edistämiskeskus* (the Centre for the Promotion of Tourism).

Outdoor winter activities in Finnish Lapland have been very popular ever since the modern slalom skiing centres of Levi in Kittilä, Ylläs in Kolari, Saariselkä on the boundary between Sodankylä and Inari and the Luosto-Pyhätunturi fell area between Sodankylä and Pelkosenniemi were developed in the 1980s. These are now huge settlements of pine-log cabins that have replaced ancient Lapp villages. The Levi Ski Resort, for instance, was built at Sirkka, which in the 1970s was still a typical remote Lapland village with a steadily declining population of a few hundred people. Now it is the largest winter holiday centre in Finland and lives the life of a town. It hosts international slalom competitions, and is the northernmost venue on the alpine world cup circuit, with events that are televised worldwide. In 2012 over a million tourists from abroad and 1.4 million from Finland were registered as having had accommodation in Lapland, the largest numbers having come from Great Britain, Germany, Norway, France and Russia. Visitors tend to name as the most attractive features of Lapland the natural environment of the north and the peace and quiet that they were able to find there.¹⁷⁷

The earliest holiday centres to exist in Lapland were the Pallastunturi fell area in Muonio (where a hostel was opened in 1934), the Hetta (1935) and Kilpisjärvi (1937) areas of Enontekiö, and the areas of Salla (a ski slope opened in 1937) and Inari (a hostel in 1937) further east. A high-class hotel known as Pohjanhovi was opened

177 *Lapin matkailu*. Lapin liitto. See <http://www.lappi.fi/lapinliitto/lapin-matkailu> Accessed 10.8.2016.

in the capital of Lapland, Rovaniemi, in 1936, and a ski slope on the adjacent hill of Ounasvaara in 1937. Further north, the Petsamo region became extremely popular with tourists from abroad, so that where some 200 people a year visited the villages on the Arctic Ocean coast in 1925, the number had risen to 14,000 by 1936.

The Second World War and the reconstruction work that followed meant that tourism did not recover until the 1960s, when additional factors that favoured tourism in Lapland were seen to be its northerly location, the proximity of international borders and the related opportunities for through traffic between the Soviet Union and Sweden or Norway. Earlier attractions such as the light summer nights and the dark winters still offered unique opportunities for visitors, of course, as did the open landscapes, the numerous unpolluted waterways and the unspoiled nature and unique vegetation of the wilderness areas. In addition, a new factor that was reckoned to appeal to visitors was the Sámi culture, to which very little attention had been paid previously.¹⁷⁸ The real rush to visit the tourist destinations of Lapland occurred only in 1984, however, when the first Concorde aircraft brought tourists from abroad to Rovaniemi.¹⁷⁹

Attempts have nevertheless been made to restrain tourism in the sensitive northern area of the Arctic by means of international regulations and recommendations. In 2005 the United Nations Environmental Programme (UNEP) and the World Tourist Organization (UNWTO) drew up a list of twelve principles for sustainable tourism which lay emphasis on protecting the quality of the environment, taking account of cultural, historical and social values when making crucial decisions, respecting the principles of a sustainable economy and ensuring that visitors acquire positive, safe and enjoyable experiences of nature when travelling in Arctic areas.

Even before this, in 1995, the World Wildlife Fund (WWF) had set up an Arctic programme for developing guidelines for travel in the north which underlined the importance of developing forms of tourism that were in general terms suitable for Arctic areas.

The markets for tourism are highly fragmented nowadays, and the same may be said of research into tourism. Landscape tourism, sports and fishing tourism, ecotourism,

178 *Lapin matkailututkimuksia I* (1968). See Timonen, Olli. Matkailu. In: *Lappi tänään*. WSOY. Helsinki 1971, 215–230.

179 Lähteenmäki, Maria. *Terra Ultima. A Short History of Finnish Lapland*. Helsinki 2006c, 118–122.

political tourism, crisis area tourism and historical and cultural tourism are all forms that can be encountered at northern latitudes, the most recent trends in nature tourism in the north having favoured ecotourism and exploitation of the historical and cultural heritage of each locality. In concise terms ecotourism made be said to imply efforts to ensure the sustainable use of nature resources, the preservation of the characteristic features of natural environments and a proper balance between tourist activities and nature. Ecotourists may be assumed to be especially interested in nature in wilderness areas and environments that are in a natural state, and local environments, communities and cultures will inevitably play an important role in providing touristic experiences for such people.¹⁸⁰ It seems that the majority of the world's tourism will be of the ecotourism kind by 2020, with the consequence that it will provide employment for hundreds of millions of people on a global scale.

Although ecotourism is one of the most rapidly growing trends in the sphere of travel at the present time, it is still in its infancy in Finland. Research has indicated that organizers of nature tourism in Finland look on ecotourism as an environmentally friendly activity which provides support for nature conservation and aims at minimizing the consumption of natural resources by recycling, saving on energy, using environmentally acceptable means of transport and supporting local businesses and producers of goods, whereas the concepts of environmental education and sustainable socio-cultural development have remained highly indeterminate up until very recent times. There has for a long time been a conflict in Finland between the values represented by nature tourism on the one hand and the forest industries on the other, but the situation has altered radically in the last few years as Metsähallitus, the organization responsible for our nature conservation areas, has set out boldly to implement the principles of sustainable tourism in its work.¹⁸¹

One essential aspect of ecotourism is the identification, maintenance and development of historical sites that embody elements of our cultural heritage. Finland's nature conservation areas contain about 3000 ancient monuments of various kinds, as well as other changes in the landscape that date back to prehistoric times,

180 *Ekomatkatiluyrittäjän käsikirja*. See <http://wordpress.reilumatkailu.fi/wp-content/uploads/2012/01/Ekomatkatiluyritt%C3w%A4j%C3%A4n-k%C%A4sikirja.pdf> Accessed 10.8.2016.

181 Kalliola, Reino. *Matkailu ja retkeily luonnonsuojelun näkökulmasta*. *Suomen Luonto* 13 1954, 9–22; Ikonen, Hanna. *Perceptions of Ecotourism*. Lapin ammattikorkeakoulu 2012. See <http://publications.theseus.fi/handle/10024/39158> Accessed 10.8.2016; *Kestävän matkailun periaatteet*. Kansallispuistot, luonto- ja historiakohteet sekä maailmanperintökohteet. Metsähallitus. See <http://www.metsä.fi/documents/10739/a841a17b-9116-438d-8fda-c1b99dba3488> Accessed 10.11.2016.

such as clearings in the forests made for grazing purposes or for swidden cultivation, old footpaths and cart tracks and trapping sites. In addition, there are about 70 sites of historical interest, including Kultala, the meeting place built for gold-panners beside the Ivalo River at the time of the Lapland Gold Rush and the Hauensuoli rock paintings off Hanko from the 15th century that have been interpreted as a “seamen’s visiting book”. A closer connection was forged between the nature reserves and history trails in 2014, when responsibility for 29 valuable cultural heritage sites such as castle ruins and Stone Age dwelling sites was transferred from the National Board of Antiquities to the nature services department of Metsähallitus. The Finns have a great interest in history and they are also seriously committed to nature conservation, so that these prehistoric sites give visitors a real sense of joy and well-being while at the same time offering opportunities for businesses, bringing money into the local economies and giving the places concerned a good reputation.

Historical sites are of great importance to people living in their vicinity, as they form part of these people’s daily life, childhood memories and local identity. Research has even shown that some people visit their local historical sites as much as several times a week. A historical landscape, natural surroundings and time spent in agreeable company have all been shown to aid relaxation and put one in a good mood. Visitors are reported above all to have felt that excursions in natural environments have done much for their psychological well-being.

One interesting phenomenon from the perspective of Finland’s deep-seated sense of history is the Lights On! project (2015–18) for constructing a network of historical tourist venues in Finland and Estonia that highlights the routes followed by the early Finns on the peninsula that became their home and thereby places emphasis on the fascinating past of this north-eastern corner of the Baltic Basin. Similarly, the area of the Scandinavian Green Belt through which the Finnish-Russian border runs has also yielded numerous history trails, e.g. those visiting the stones that mark the 16th-century Swedish-Russian boundary as defined in the Treaty of Täyssinä, the 19th-century imperial fishing cabin at Langinkoski in the Kymi Valley or the Skolt lands occupied by the refugee population from the village of Suonikylä in the 1940s.¹⁸²

182 Häyrynen, Urpo. Luonnonsuojelualueet ja luonnonmuistomerkit. In: *Ympäristönsuojelu* 2. R. Ruuhijärvi & U. Häyrynen (eds). Tampere 1984, 141–206; *Kulttuuriperintökohteet Metsähallituksen alueilla*. See <http://www.metsa.fi/kulttuuriperintökohteet> Accessed 10.8.2016. *Historiakohteet*. Metsähallitus. See <http://luontoon.fi/historiakohteet> Accessed 10.8.2016.

Henna Haapala

Finland as a herald of environmental conservation

The international activity that took place in the Arctic region over the centuries consisted largely of voyages of discovery, expeditions, trading in natural resources and communication between the groups of original inhabitants. It was only during the Second World War that a military interest began to be shown in these areas, and similarly international interest in protecting the environment of the region was aroused only in the early 1990s.

By the latter stage the increased human activity in the Arctic had become a matter of some concern, as the natural environment there was known to be extremely susceptible to human influence and the damage it could cause was likely to be of long duration and expensive, if not actually irreversible. Finland was a prime mover in this initiative, calling a meeting of eight Arctic nations (Finland, Sweden, Norway, Denmark, Iceland, Russia, Canada and the United States) to draw up a conservation strategy for the region which was then approved at the first meeting of ministers of the Arctic region in Rovaniemi in 1991. This document acknowledged that global environmental problems had caused excessive loading on the environment of the Arctic areas and recognised the responsibilities that the Arctic nations had for reducing the levels of pollution. Four basic approaches were defined for dealing with the problem: monitoring and evaluation of the state of the Arctic environment, protection of the Arctic flora and fauna, prevention of environmental catastrophes in the Arctic and protection of marine environments in the Arctic. The indigenous peoples of the region were involved in this work from the outset.

On the basis of this collaborative network and its content an Arctic Council was set up at a meeting held in Ottawa, Canada, in 1996 to serve as an intergovernmental forum for environmental conservation and the improvement of living conditions for the indigenous peoples and other inhabitants of the Arctic in accordance with the principles of sustainable development.

One of the major worries regarding the Arctic environment was, and continues to be, pollution, especially by environmental toxins that are neither produced nor used in the region but enter it through long-distance transport in air streams or sea currents. It is pointed out in reports published by the Arctic Council that the region's inhabitants are affected mainly by the *long-distance transport* of polluting substances coming from outside the area through the medium of persistent organic compounds that circulate in nature and its fauna. This exposure has been less marked in Finland than in those parts of the Arctic where the inhabitants are reliant on the animal life of the Arctic Ocean for their diet.

When Finland held the chairmanship of the Arctic Council in 2000–02 it took an active part in placing information about the state of the environment in the Arctic before international discussion forums, the current object of interest in which was at that time the achievement of an international agreement on environmental toxins, an agreement that was finally signed in Stockholm in 2001. This agreement forbade or restricted the global production, use and emission of 12 persistent organic compounds, and its effect has been that concentrations of these compounds have in many cases begun to decrease. Certain other substances have been added to the list later. The monitoring of such substances is still of importance today, however, as industry is constantly putting new chemicals on the market and we still do not know enough about the possible toxic effects of the newer ones.

The chairmanship of the Arctic Council is due to fall to Finland again in May 2017, and it must be said that environmental matters have not declined in importance in any way since the last time. Climate change is now a significant factor in the Arctic region as it is likely to affect the livelihoods and welfare of the population and the state of the environment throughout the region and the north in general. Scientists are of the opinion that climate change will take place twice as rapidly in the Arctic than anywhere else in the world, and consequently implementation of the Paris agreement and the measures laid down in it is of great importance for the future of the region.

The aim of the Paris agreement is to restrict the rise in the global mean temperature to well under 2°C and to attempt to keep it below 1.5°C. In addition, it recognizes the need for adaptation to climate warming and for directing finance towards carbon-neutral and climatically sustainable development. The agreement came into force in November 2016.

There are many other global trends that are likely to affect the Arctic environment as well as climate change, however, in particular the increased demand for raw materials, the rapid development of new technology and the search for new areas in which natural resources can be exploited. Members of the United Nations approved a new set of sustainable development aims and a programme of action based on these, known as *Agenda 2030*, in 2015, and these aims, too, provide a global framework for management of the processes of change affecting the Arctic. Similarly, there are other international agreements to put into effect and special features of the Arctic region to take into account that will provide notable opportunities for improving the state of the environment in the Arctic and the living conditions for its inhabitants. These include the UN Convention on Biological Diversity (1992), the UN Convention on the Law of the Sea (1982), the Stockholm Convention on Persistent Organic Pollutants (2001), the Minamata Convention on Mercury (2013), the International Code for Ships Operating in Polar Waters (2015) and the Arctic Search and Rescue Agreement (2011) and the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (2013), the last two having been negotiated by the Arctic Council.

One key structure for collaboration in Northern Europe on Arctic matters is the Barents Euro-Arctic Council, to which the northern regions of Finland, Sweden, Norway and North-West Russia all belong. This organization was founded in 1993 with the aim of promoting stability and sustainable development in the Barents Region. Since Finland is located at the centre of this region it is natural for the Finns to emphasize cross-border cooperation in environmental matters. The rapid nature of the climate change that has occurred in the northern regions has called for joint action to both attenuate this trend and adapt to its consequences. Implementation of the plan for reacting to climate change in the Barents Region and the drawing up of regional climatic strategies for the provinces of the Barents Region were the principal areas of cooperation during Finland's most recent chairmanship of the Barents Euro-Arctic Council in 2013–15.

The unique, unpolluted nature of the north is a vital resource for the inhabitants of the region and for their economic activity, and the rapid environmental changes brought about by climatic warming require more attention to be paid than ever before to the state of the region's environments and the connections between them, across national boundaries. Particularly important are the ecological corridors along which species can move from one area to another as the climate alters. Finland has concentrated its efforts on cooperation among the northern regions for the development of a network of nature conservation areas in the Barents Region and for the creation of a *Fennoscandian Green Zone* of conservation areas in Finland, Russia and Norway. Finland also attaches importance to water boundaries, as it has considerable lengths of its boundaries with all its immediate neighbours running along rivers and across lakes and it is probable that climate warming will affect the management and use of these. In fact, Finland has a long history of cross-border collaboration in these matters, beginning on its border with Russia in 1964 and continuing with Sweden in 1970 and Norway in 1980. Further collaboration has taken place in the context of the Barents Region in connection with monitoring in the basin that incorporates Lake Inari and the River Paatsjoki, since the latter crosses the boundaries between Finland, Russia and Norway.

All in all, Finland has played a major role in Arctic nature conservation over the last thirty years or so and is now a familiar participant in the construction of international collaboration between parliaments or citizens' organizations and in the raising of environmental issues of concern to the whole northern region and the seeking of solutions to these.

References:

English, John. *Ice and Water: Politics, Peoples and the Arctic Council*. Allen Lane/Penguin. London 2013.

Kaukokulkeutuvat ympäristömyrkyt Suomen pohjoisilla alueilla (LAPCON). Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 33. Helsinki 2016.

The Barents Region. A Transnational History of Subarctic Northern Europe. Lars Elenius, Hallvard Tjelmeland, Maria Lähteenmäki & Alexey Golubev (eds). PAX. Oslo 2015.

The Independent Barents Observer. See <http://thebarentsobserver.com/en> Accessed 12.8.2016.

The sauna emoji epitomizes Finland

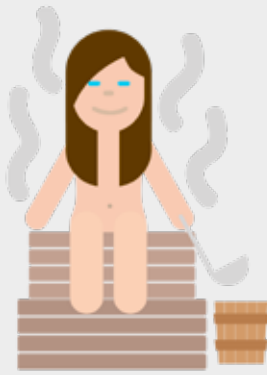
If nature has taken care of the Finns' mental health and helped them to understand the meaning of life, then the same has been true of the sauna, which is a part of the life of every Finn. Sauna is not solely a feature of life at a summer cottage on a lake shore, as urbanization has brought saunas into the towns and cities, into apartment blocks, terraced houses, small one-room flats and official residences. Finnish embassies all over the world will have a sauna where visitors are entertained whether they like it or not. Aptly enough, the word "sauna" is an ancient proto-Finno-Ugric one that is documented as an everyday word and concept in its own right from the beginnings of the written Finnish language in the mid-16th century.

It is similarly not at all surprising that Finland has persuaded the international Unicode Consortium to approve a sauna emoji for its collection, together with an image of a pair of woollen socks, alluding to the country's historical and cultural legacy.¹⁸³ The Finnish Ministry of Foreign Affairs has been a pioneer in this means of image branding, and Finland has been the first country in the world to apply for and be granted emojis, or "smileys" of its own.¹⁸⁴ This will help to spread information about the sauna throughout the world, as the Unicode palette of emojis belongs to the default settings of all smart phones and other applications.

In early times the Finns made their saunas in holes in the ground or in turf huts, which were superseded in time by "smoke saunas", wooden buildings with a hearth covered by a huge pile of stones, the fire being allowed to burn out and the whole space ventilated thoroughly before bathing. Brick-built stoves which could be heated from the outside became more common in the late 18th and early 19th centuries, to be followed by factory-made sauna stoves in the 1950s and later electric sauna stoves. The most recent innovation, which appeared in the 1990s, is the infra-red sauna, where instead of throwing water on stones to produce heat and steam, infra-red radiation is used to heat the room to about 50°C. The usual temperature for taking a sauna is 60–80°C, except for sauna yoga, when it should be somewhat lower.

183 Wells, Georgia. Everything You Need to Know About Finland – In Four Emojis. Nordic country is first to lobby to have a national symbol added to smartphones. *The Wall Street Journal* 11.11.2016. See <http://www.wsj.com/articles/finland-thinks-your-phone-needs-an-emoji-for-disrobing-in-the-sauna-1478791249> Accessed 11.11.2016.

184 See <http://itunes.apple.com/fi/app/finland-emojis/id1061373303?1=fi&mt=8> Accessed 11.11.2016.



The Sauna emoji launched by the Finnish Ministry of Foreign Affairs in 2016. Photo: ThisisFINLAND.fi.

In olden times the sauna was a sacred place for the Finns, a place where one cast spells to drive evil spirits away so that one could be in peace and undergo a ritual cleansing. It was also the custom to leave gifts for the spirit of the sauna, usually the sauna elf. For many people the sauna was a multi-purpose building, as it was also used for treating the sick, for cupping and blood-letting and for giving birth. The Finns still acknowledge the old adage that “if sauna, alcohol and tar can’t cure you, nothing will”. On top of all this, it was common to use the sauna for smoking meat and for brewing beer.

Until well into the 1980s it was also common for most major political decisions affecting our society to be taken in sauna. Since women were only occasionally involved in making such decisions, the men would sit in sauna thinking over, negotiating and deciding upon the state of the nation and its future. President Urho Kekkonen, for instance, would march many a responsible official into the sauna of his residence at Tamminiemi and they would come to an appropriate decision. As more women began to appear in government circles, political bodies and company management positions these “sauna party networks” came in for some severe criticism, but the habit has never disappeared completely from the Finnish sauna culture.

The fact that the Finns always go to sauna naked is something that may horrify many foreigners. Sauna is traditionally not an erotic place for the Finns, and sexual harassment is not permitted there. Nakedness is perfectly natural when we are in sauna, and we have been accustomed to it since we were babies. It was still quite natural in rural or factory communities in the early 20th century to go to mixed saunas, and these were to be found everywhere, but later it became normal for the members of a family to go to sauna together but otherwise there would be separate times or for boys and men on the one hand and girls and women on the other.

Nowadays, in the 2010s, the variety of saunas available is enormous. Wherever a Finn goes, the first thing he will do is build himself a sauna. Thus there are now wilderness saunas, riverboat saunas, swimming bath saunas, hotel saunas, gymnasium saunas, spa saunas, trailer saunas for towing behind your car and a vast array of summer cottage saunas in which the bathing routine includes a jump into the lake, into the snow or through a hole in the ice. Proximity to nature is one of the joys of a Finnish sauna, along with beating yourself with a bunch of birch fronds and enjoying a cool, refreshing drink afterwards.

Sibelius as a builder of the national identity

The Finns' close relation to nature can also be seen in their music. Landscapes and their flora and fauna are to be seen in all their diversity in Finnish folksongs: the moon and stars, rocks and hills, valleys and fells, bears and deer. A whole repertoire of patriotic songs was consciously built up from the 19th century onwards to serve the purposes of the growing nationalist movement and they tend to express great love for the fatherland, as is the case with these words written by J.H. Erkkö in 1883 which were taught to schoolchildren until well into the 20th century, to be sung to the tune of an old folksong:

"You are our land, beloved Finland,
a wonderful land of sheer delights!
On every cape, in every gully, on every isle
I could build a home of my own...

Rise up, rise up as one man
To ensure Finland's happiness
The work of a moment can affect
Our homeland and the whole world
For a thousand years to come..."¹⁸⁵

185 "Olet maamme, armahin Suomenmaa/ ihanuuskien ihmemaa!/Joka niemeen notkohon saarelmaan/
kodin tahtoisin nostattaa...Kaikki, kaikki' ylös yhtenä miehenä nyt/Suomen onnea valvomaan!/Hetken työ
tuhat vuosihin vaikuttaa/Isänmaahan ja maailmaan..."

Finnish popular music owes much to the powerful allusions to nature that are to be found in our folk songs, for their tales of love, of moments of happiness and the sorrows of parting are set within a framework of surging rapids, the silence of an uninhabited wilderness, the hum of life in a birch forest and the crashing of waves on a sea-shore. The romanticism that surrounded the log-floaters of the 1950s turned the lumbermen of Lapland and Eastern Finland into film stars and the dare-devil heroes of ballads. The only time that Finland has won the Eurovision Song Contest was in 2006, when Mr. Lordi, himself from Lapland, put Lapland and Finland on the pop music map with a specifically northern identity, performing with a Lappish “four-winds” hat on and waving the blue-and-white Finnish flag when he was declared the winner.

Classical music, and above all the symphonies and tone poems of Jean Sibelius, have been making a deep impression on the minds of people in the north and painting the landscape of the Finnish soul in broad brushstrokes for over a hundred years now. As a young composer, Johan Julius Christian (Janne, or Jean) Sibelius (1865–1957) was a typical product of the neo-romantic and nationalist age, but from 1903 onwards he directed his interests towards European classicism and by the 1920s he had adopted a more synthetic mode of expression. His works nevertheless convey a powerful sense of reinforcing the Finnish national identity, which is not surprising in view of the fact that his most creative period coincided in time with the conception of the Finnish nation and state in the late 19th and early 20th centuries, when the autonomous state of Finland was attempting to maintain a staunch independent stance in the shadow of the new Pan-Slavist aspirations manifested by Russia.

Sibelius composed seven symphonies over the interval 1899–1924, works which many Finns imagine to be descriptive of the country’s natural landscapes and the political unrest affecting it at that time. It is certainly the case that Sibelius was a political individual, as manifested by the fact that he completed his orchestral work *Finlandia*, under the title *Finland awakens*, in 1899, just as the Russians were embarking on their first round of acts of repression, which lasted until 1905. His purpose was that this work, alongside those of other artists, should express support for freedom of expression in the Finnish-language newspapers of the day. In the same way many other compositions of his may be seen to hark back to Finnish history and the *Kalevala* legends. The work that made him famous internationally was nevertheless his melancholy *Valse triste* of 1904. On the other hand, Sibelius has proved remarkably flexible where the vagaries of Finnish history are concerned. As Vesa Sirén has aptly observed in his studies of the composer’s life and music, he

has been regarded at various times as progressive, conservative, nationalistic and cosmopolitan. His family was Swedish-speaking but he received his schooling entirely in Finnish. He nevertheless maintained that he had been pro-Swedish as a young man up to the time when he became acquainted with Finnish-speaking nationalists in the 1890s. He thus became in effect a bridge-builder between the warring factions in the language dispute that raged at that time. Likewise, he composed his *Jääkärien marssi* (March of the Jaegers) in 1917, but appalled at the outbreak of the Civil War in January 1918, he was not prepared to wave the flag for either side. Finally, after the Second World War had come to an end, he emerged as a respected celebrity of the re-united Finnish nation and was able to declare generously that all the social classes were equally close to his heart.¹⁸⁶

186 Sirén, Vesa. Sibelius. Kansallismielinen kosmopoliitti. In: *Tämä maa. Itsenäisen Suomen sata tarinaa*. Tuula Kousa (ed.). Helsinki 2016, 76–79.

7 Finland – a globally integrated Arctic country

Many European nations realized around the turn of the millennium that the Arctic Region could well become the continent's most promising object of new investment, and by 2015 there were already projects planned for the Barents Euro-Arctic Region alone to the value of some 140 billion euros. This importance attached to the north was particularly felt to be an opportunity for Finland, which certainly wanted its fair share of that region's economic potential, although it was not only a matter of self-interest, as it was hoped that this would benefit the whole of the European Union, within which Finland aspired to the role of the *leading northern member state*. At all events, it was felt in Northern Europe that the EU was apt to place too much emphasis on its southern, Mediterranean regions and to ignore the climatic and economic challenges facing the north. The discussions entered into Finland, on the other hand, tended to concentrate on the need for all member states to pull together for the common good. One major Finnish economic organization announced that it was time Finland close its ranks in order to "achieve our own slice of the sustainable Arctic economic activity, since our country should aim at showing the way for a northern policy within the EU".¹⁸⁷

187 *Suomi tarvitsee pohjoisen tahtotilan*. Press release from the Confederation of Finnish Industries, 30.3.2015.



Asian tourists on a frosty day in Helsinki in 2015. Photo: ThisisFINLAND.fi.

Finland as the standard-bearer for the EU in the Arctic

The activation of cross-border, transnational cooperation in the Arctic was closely connected with the internal upheavals that took place in the Soviet Union in the 1980s and the re-birth of Russia in 1991, in connection with which one should not overlook the speech made by Mikhail Gorbachev in Murmansk in October 1987, in which he declared the Arctic Region a *peace zone*. This idea soon began to bear fruit, for within the same year Gorbachev held a meeting with US President Ronald Reagan in Reykjavik in a spirit of *détente*. Soon afterwards, in 1989, Finland announced an initiative for the protection and sustainable development of the fragile Arctic environment that led to the first ministerial-level meeting of representatives of eight Arctic nations in Rovaniemi in 1991. The approval of an Arctic environmental strategy on that occasion marked the beginning of what came to be known as the Rovaniemi Process, a period in the history of the Arctic Region marked by cooperation, negotiation and the promotion of peace and stability. An Arctic Partnership between Finland and Russia was officially ratified in 2010, the idea being that it should comprise both political dialogue and practical cooperation between companies, officials of both countries, researchers and regional actors.

Thus the Finns of today – with just the same systematic precision as their forefathers had when casting their nets into the freezing waters in the hope of huge catches of fish – have spread their virtual tentacles around the coasts of the Arctic and to a great extent within that area as well. One turning point in the nation's history, as also in its orientation with regard to the Arctic, took place in 1995, when, following a referendum, Finland became a member of the European Union. Sweden did so at the same time, but Norway continued to opt out. In terms of defence policy the Nordic Countries were divided as of 2016, in that Norway, together with Denmark and Iceland, had joined the North Atlantic Treaty Organization (NATO) at its inception in 1949, whereas Sweden and Finland had become members of its Partners for Peace programme.

Although Finland's decision to join the European Union had been justified mainly on economic and security grounds, it was also a historic moment for the EU itself as it meant that it was extending its territory beyond the Arctic Circle for the first time. This fact was to lead to a radical alteration in its policy towards Northern Europe, as it aroused an interest in Arctic affairs at the programme level, on account of a growing interest in the Arctic both within the Nordic Countries and among other EU member states, the problems of climate change, the economic and military significance of the northern areas and the previous supranational regional policy initiatives that had arisen within the European Community. Under such conditions the European Union had an excellent opportunity to assume a more active role in Arctic affairs.

The fact that the EU took Arctic affairs onto its agenda at all tells us something of its new, more active international role in regional matters: it was no longer content with extending its policies to matters concerning the northern parts of its member states, but rather it was prepared to act on a more global scale, over an area comprising the whole Northern Hemisphere. This marked an enormous change in perspective for the whole organization, for prior to this the European Community had quite clearly regarded northern areas as peripheral and of little significance. It was only Greenland that was on the agenda at all, from 1973 onwards when Denmark joined the European Community, and when that relationship came to an end with Greenland's secession in 1985.

The fact that areas lying beyond the Arctic Circle fell within the scope of the EU's jurisdiction and activities when Finland and Sweden joined in 1995 confers a special role on these countries, one of acting in the background to strengthen the awakening of EU interest in Arctic issues, and Finland was perhaps more active than its neighbour in this respect on account of its proximity to the new Russia. Indeed, the easternmost

point of the EU continent was now in Finland, in the district of Ilimantsi in Northern Karelia. The result was that the Prime Minister at the time, Paavo Lipponen, put forward a proposal for a *Northern Dimension* programme for the EU at a Nordic conference in Rovaniemi in 1997, implying a new emphasis on cooperation between Russia, the Baltic States and the EU and the further development of a policy for northern areas. The situation was a very unusual one: a small and quite new member state was advocating a reform which would affect the external relations of the whole union.

In April of that same year Lipponen had written to Jacques Santer, then chairman of the Commission, proposing the creation of a strategy for a Northern Dimension in EU policy, and this had elicited a favourable reply. The proposal was therefore presented to the EU Summit Meeting in Luxembourg in December 1997, and the minutes of the Council of Europe contained the observation that Finland had submitted a proposal to this effect and that the Commission had been asked to produce an interim report on the matter for the Council's 1998 meeting. Eventually the Northern Dimension theme passed through the European decision-making process in 1999, when Finland held the presidency of the European Union for the first time. During the country's second presidency, in 2006, the Finns were able to continue their pressure for an Arctic policy through the EU notion of an Arctic window.¹⁸⁸ Finland's active stance in this matter won it the reputation of carrying an Arctic banner in the EU.¹⁸⁹

Activation of Arctic issues was also to be seen on the other side of the Atlantic. A connection with Europe in this matter had already been forged, since at the same time as Russia, Norway and Iceland had been designated as participants in the Northern Dimension in addition to the EU, the United States and Canada were invited to be present as observers. As an Arctic country itself, Canada had arranged a conference of Arctic nations in Ottawa in 1996 which had led to the founding of an Arctic Council as a high level forum for the governments of eight Arctic states and a major actor and coordinator in the region. This eventually came into being as one outcome of the *Rovaniemi process*. Meanwhile, the most northerly regions of Europe had entered into closer mutual cooperation and, at the instigation of the Norwegians, had founded the *Barents Euro-Arctic Council* in 1993, with the EU Commission as a member alongside the Nordic Countries and Russia. Geographically, the territory covered by

188 Heikkilä, Markku. *Pohjoinen ulottuvuus*. Ministry of Foreign Affairs. Helsinki 2006, 16–18; Northern Dimension policy framework document. Adopted in Helsinki 24th November 2006.

189 Diana Wallis, deputy speaker of the European Parliament. *Kaleva* 4.2.2010.

this body accounted for the northern parts of Finland, Sweden and Norway together with the Kola region and the Karelian, Nenets and Komi republics within the Russian Federation. The provinces of Finland involved in this cooperation are Kainuu, Northern Ostrobothnia, Lapland and North Karelia.¹⁹⁰

Many researchers see the year 2007 as having been crucial for the activation of EU interest in the Arctic, as it was then that the union published its report, or *Blue Book*, outlining its policy with regard to international shipping in the region. It was also in that same year that Professor Artur Chilingarov, a member of the Russian Academy of Science, took a Russian flag made of titanium under the North Pole using a Finnish-built submarine. In the following year, 2008, the EU Parliament approved a resolution regarding its administration in the Arctic region,¹⁹¹ and this initiative was backed up by the Commission in winter 2012 with the publication of a new assessment of the EU's interests in the Arctic.¹⁹² Since then the European Parliament has produced numerous declarations and programmes referring to cooperation in the Arctic region, chiefly with the Arctic Council and in connection with issues such as energy, the regulation of shipping, environmental challenges and research. A total of around 200 million euros out of the EU budgets for 2002–12 was set aside for Arctic research.¹⁹³

From a Finnish point of view, however, the EU was frustratingly slow in defining its *Arctic Way* over the period 2008–10.¹⁹⁴ This was not unexpected, of course, since only a small proportion of the EU administrators and the over 700 members of the European Parliament would have had any inkling of what the northern regions were like.¹⁹⁵ They were indeed still virtually unknown territory around 2010 as far as the nucleus of the EU was concerned. Finland's first Ambassador to the Arctic, Hannu Halinen, nevertheless took it upon himself to stress the central role that the EU should have in formulating policies with regard to this region and to insist that Finland be

190 On the long history of the Barents Region, see *The Barents Region. A Transnational History of Subarctic Northern Europe* 2015.

191 European Parliament resolution of 9th October 2008 on Arctic governance.

192 See, for example, Njord, Wegge. The EU and the Arctic: European foreign policy in the making. *Arctic Review on Law and Politics*. Vol. 3/1 2012, 7–8.

193 *Arktinen kutsuu. Suomi, EU ja arktinen alue*. Markku Heikkilä & Marjo Laukkanen. University of Lapland, Rovaniemi 2013, 65.

194 Foreign Minister Erkki Tuomioja at the Academy of Finland symposium *Arctic Know-how as Strength* in Helsinki, 18.3.2015.

195 Njord, Wegge. The EU and the Arctic: European foreign policy in the making. *Arctic Review on Law and Politics*. Vol. 3/1 2012, 15.

prepared to take the initiative in such matters, to bear the overall situation in mind at all times and to be bold in taking independent action.¹⁹⁶ After protracted discussions the EU was accepted by the Arctic Council as an observer member at its meeting in Kiruna, Sweden, in 2013.

The role of the EU as a venue for negotiations has become a more prominent one as geopolitical tensions in the region have increased. The commissar responsible for foreign relations and security policy recognised this fact when commenting in spring 2016 that the EU wished to act in cooperation with the circumpolar nations and other interested parties, including Russia. She was of the opinion that Arctic policy is a good example of an area in which international cooperation can be implemented in a constructive fashion even under difficult conditions.¹⁹⁷ Gorbachev's view of the Arctic as a peace zone has only been confirmed in the present unstable world situation.

Much has continued to be said about the Arctic Region around the tables of the European Union, in Russia and the Nordic Countries and in other international forums, business negotiations and defence alliances. The Nordic Countries have raised the issue in the Nordic Council (founded in 1952) and with the Nordic Council of Ministers (1971), and are firmly committed to the consideration of issues that concern this unique and barren but vulnerable region and to improving the living conditions of its people and supporting their social and cultural development. Among other things, the Nordic Council announced a Green Growth Initiative in 2011 that consisted of 26 separate projects¹⁹⁸ and intends to carry out an Arctic Cooperation Programme in 2015–17 with the aim of ensuring sustainable development in four areas of life: population, sustainable means of livelihood, the environment and climate, and education.¹⁹⁹

In parallel with these actions, there are a number of organizations within the European transnational Sápmi area that are devoted to improving the lot of the indigenous population of the north, including the Finnish-Norwegian-Swedish *Parliamentary Council* (founded in 2000), in which Russia is an observer, and the

196 Finnish Ambassador Hannu Halinen at the Academy of Finland symposium *Arctic Know-how as Strength* in Helsinki, 18.3.2015; *Arktinen kutsuu* 2013, 65.

197 *Kaupalehti* 27.4.2016.

198 Finnsson, Páll Tómas. Green Growth Initiative moves economies toward a greener future. *Green Growth*. September 2016. See <http://nordicway.org/> Accessed 9.9.2016.

199 *Pohjoismaiden ministerineuvoston arktinen yhteistyöohjelma vuosiksi 2015–2017*. See <http://www.norden.org/fi> Accessed 9.9.2016.

national *Sámi Parliament*. The fact that the Arctic has come to the fore in global political and economic discussions has been all to the good as far as the indigenous peoples are concerned, as they have at last been able to make their voices heard. The Sámi organizations in Finland have placed particular emphasis on the need to ratify the ILO agreement on indigenous peoples (Article 169), which is intended to ensure that indigenous and tribal peoples are treated on a par with other groups within the population and to prevent the demise of their cultures or languages. In other words, the agreement obliges signatory governments to safeguard the cultural, linguistic, social and economic status of all such peoples.²⁰⁰

Finland published its first *Arctic Strategy* in 2010, a historic event above all on account of the fact that the country was declared by its government for the first time to be “an Arctic country in its entirety”. The strategy was elaborated further in 2013 and in 2016. The 2013 version had already drawn attention to the environment, the sustainable exploitation of natural resources, the economic potential of the northern regions and the need to develop transportation and infrastructure and to ensure a good life for the indigenous peoples and northern communities. This version had already given a clear signal as to the fact that Finland’s interests in the north were primarily of an economic nature, although relations with other Arctic countries and international bodies also formed an important part of the strategy.²⁰¹ One might well say that Finland’s Arctic policy during the new millennium has been an extension of its foreign policy, and it is certainly the case that over the period 2010–13 the President of Finland, the Prime Minister, the Foreign Minister, Parliament, all the political parties, the various ministries, the regional administrations, the *Finland’s Arctic Advisory Board* appointed in 2010, scores of companies, researchers at all of the country’s 14 universities and those responsible for funding research have confidently and with one voice professed their belief in the future of the Arctic Region.²⁰²

200 *Pro 169*. See <http://pro169.org/> Accessed 10.9.2016.

201 The other Arctic nations published their own Arctic strategies at around the same time: Norway in 2006, Denmark and Russia in 2008, Canada, Iceland and the USA in 2009, and Sweden in 2011; On these strategies, see Heininen, Lassi. *Arktisen alueen muuttuva geopolitiikka ja valtioiden arktiset/pohjoiset strategiat ja politiikat*. In: *Jäitä poltellessa. Suomi ja arktisen alueen tulevaisuus*. Tampere 2011, 37–64.

202 For instance, speeches by President Sauli Niinistö in 2010–13. See www.presidentti.fi/ Accessed 25.2.2016; Speeches by Foreign Minister Erkki Tuomioja in 2010–13. See www.formin.finland.fi/ Accessed 25.2.2016; *Arctic Finland – puheenvuorot 2011–2012*. See <http://www.arcticfinland.fi/FI/Keskustelu/2010-2012> Accessed 2.8.2016.

The Finnish government also outlined its political goals with regard to the Arctic in its platform published in 2015: strengthening of multi-centre collaboration in the Arctic Region,²⁰³ participation in formulation of the European Union's Arctic policy, and improved publicity for Finland's Arctic knowhow.²⁰⁴ This was followed in autumn 2016 by a further updating of the country's Arctic Strategy in order to place more emphasis on the development of business and technology: "*The new opportunities opened up through the growing importance of the Arctic Region will be exploited for the benefit of employment and well-being in Finland.*" In accordance with this programme, Finland will promote stability and security, environmental conservation, the well-being of the indigenous peoples and sustainable development in the Arctic operational sphere and will seek to strengthen the focus of the EU on Arctic matters.²⁰⁵

In the opinion of politicians and company executives, Finland should take a firmer grip on the "*frozen potential*" offered by the Arctic Region and should be more proactive in its bilateral, Nordic and EU relations. Then it will have a real chance of establishing itself as a node for logistics, communications and Arctic *big data*.²⁰⁶ Finland should also seize upon its opportunities in fields such as the tourist industry. The competitive position of the ski resorts of Central Europe is likely to alter as climate change progresses, and if people in Europe want to continue with their downhill and cross-country skiing 25 years from now they may have to rely on Nordic ski resorts. It can be conjectured that the ski centres of Lapland will have good chances of success in such a situation. Transport projects will be an important aspect of Arctic infrastructure improvement, and the government will assess the viability of such communication options as the "North-East Cable", the wireless Arctic Region network and the construction of a tunnel between Helsinki and Tallinn.²⁰⁷

Although the image of northerliness has emerged as a major element in Finland's Arctic Strategy, it is quite another matter how the average citizen of Helsinki, Tampere

203 Between the Arctic Council, the Barents Region and the Nordic countries and in bilateral relations.

204 The platform of Juha Sipilä's cabinet 2015. See <http://valtioineuvosto.fi/sipilan-hallitus/hallitusohjelma> Accessed 25.2.2016.

205 *Hallituksen linjaus arktisen strategian päivityksen painopisteistä*. Communiqué of the Government strategy session 26.9.2016.

206 Paavo Lipponen, Jyri Häkämies and Prime Minister Juha Sipilä at the launching of the publication *Pohjoinen tahtotila*, 30.3.2015; Lipponen, Paavo. *Arctic development opportunities*. April 2016.

207 The North-East Passage undersea cable would extend from Japan and China through the Bering Straits and along the Arctic coast of Russia to the Kola Peninsula and from there to Great Britain. See, for example, *Helsingin Sanomat* 23.11.2016; Ilmastomuutos. Talous. Nyt. *Atmos* 8.2.2016. Interview with the researchers Adrian Perrels and Karoliina Pili-Sihvola.



The Arctic Bar at Helsinki-Vantaa Airport in 2014. Photo: Maria Lähtenmäki.

or Eastern Finland will react to the idea of being an “Arctic inhabitant”. The grandiose nationalistic image of Finland as a predominantly “western” country that has been built up since the 19th century has now been very firmly internalized even by the political and economic elite, as witnessed by the statement of the “brand image” committee appointed by the Prime Minister and headed by former Nokia CEO Jorma Ollila in 2010 to the effect that Finland’s public image and national reputation still placed it as a significant part of the western world, a fact that should continue to be emphasized in future international business dealings and foreign policy and tourism forums.²⁰⁸ This proposal for a revival of the old brand image was buried almost as soon as it appeared, to be replaced by the Northern Dimension and a new construct based on an Arctic identity. It is symptomatic of this that the Foreign Minister observed in 2012 that it had come as a surprise to many Finns just how broad and diverse Finnish *snow-how*, i.e. Arctic technology and related knowledge and skills, had proved to be.²⁰⁹

In this centenary year the people of Finland look upon themselves as geographically a *northern* country but culturally a *western* one. Many of them have realized that the “Arctic” has altered its position in the world and has come down from the Arctic Circle to the latitude of Helsinki’s Senate Square. It is well-known that the magnetic north is capable of moving, but so, apparently, is the political north.²¹⁰

208 *Tehtävä Suomelle*. Helsinki 2010; *Helsingin Sanomat* 17.10.2010.

209 *Arctic expertise in Finland*. Ministry of Foreign Affairs, Helsinki 2012, 1.

210 See, for example, Kalliokoski, Matti. Pohjoinen vaihtoi jälleen paikkaansa. Column in *Helsingin Sanomat* 1.4.2015.

Jukka Tuhkuri

A land hemmed in by ice

Located as it is in the north-eastern corner of the Baltic basin, Finland is an Arctic country whose ports are iced over in winter, so that its industries and foreign trade would never have been able to develop as they did during the 20th century without the Finns' skills in winter navigation and Arctic marine technology. Having to live with the Baltic ice cover has left Finland with a wealth of both scientific and technical knowhow with regard to ice.

There are altogether 23 ports on the coast of Finland that are kept open in winter, the largest of them being Sköldvik, Helsinki and Kotka. It is important to bear in mind that about 80% of global freight by weight and over 70% by value travels by sea. Correspondingly, customs statistics show that over 90% of Finnish exports in 2015 and almost 80% of imports were carried by ship. This is a challenging situation for a country that is hemmed in by ice in winter.

The Baltic Sea usually freezes over first at the tips of the Gulf of Bothnia (in the area known as the Bothnian Bay) and the Gulf of Finland in November and the ice melts in the spring sunshine of May. As winter advances the ice cover increases in both thickness and extent, so that in an average winter the whole of the northern Baltic Sea is frozen over at some stage, although winters can vary greatly in their intensity so that there have so far been several successive mild winters in this area in the 2010s. In any case, the thickness of the ice in the Bothnian Bay usually reaches about half a metre even in mild winters.

The shallow coastal waters are the first to freeze over, forming a narrow zone of immobile fast ice. Further out into the open water it is drift ice that forms, i.e. occurrences of level ice, rafted ice, ridged ice and ice floes that move about under the influence of winds and sea currents, so that stretches of open water may occur between them in places. Where the ice field exerts pressure it may push the ice up into ridges that can be several metres high and extend downwards into the water for more than 20 metres. The movement of the ice can also give rise to thick layers of

brash ice. These latter effects, pressure from the ice field, ice ridges and brash ice, can cause substantial difficulties for shipping.

Finnish ice research has branched out in two major directions, studying sea ice either from an engineering or a geophysical perspective. It was in 1899 that the shipbuilding engineer Robert Runeberg, son of the Finnish national poet J. L. Runeberg, set out to study the resistance effects of ice on the movement of a ship and to calculate the power required to break the ice and propel the ship forward. Runeberg had studied in England and France, specializing in steam engines and icebreakers, and was destined to become one of the leading designers of icebreakers in the Nordic countries. Among other things, he designed Finland's first steamship to be reinforced for use in ice, the *Express*, which was built in a Swedish shipyard in 1877. He also opened a technical consultant's office in St. Petersburg in 1881 under the name *Bureau Vega*, after the ship used by his friend A. E. Nordenskiöld and acted as a Finnish commissar at the World Exhibitions in Paris in 1898 and 1900.

The main issue raised by Runeberg in his writings still remains relevant today, namely that the ideal icebreaker should be able to cut its way through thick ice with the minimum of effort, although another technical element to be borne in mind is the pressure exerted by the ice on the ship's hull, i.e. an icebreaker should be designed in such a way that the ice will not penetrate its hull. Another thing that it is important to bear in mind is the load exerted by moving ice on fixed marine structures such as lighthouses, channel markers, the pillars of bridges or (nowadays) the towers of wind turbines. These things are amazingly poorly understood even today.

Geophysical ice research attempts to understand and predict such things as the movements and thermodynamics of the ice cover on the Baltic Sea. In this respect climate warming and the reduction in the amount of ice on the Baltic Sea having increased both the importance and the complexity of ice research.

The chief common denominator that unites geophysical ice research with its counterpart in engineering is, of course, the sea ice itself. Academic research is interested in such questions as how ice breaks, how cracks propagate in it, how ice ridges form, how they are structured and how this structure alters in the course of the winter. It is also important to consider the role of snow, as this has an insulating effect and can influence the growth of the ice cover. If water seeps onto the surface of the ice, for instance, snow ice will form. Sea ice is a complex material that typically exists close to its melting point and is composed of ice crystals interspersed with salt, saline water and air bubbles. The properties of sea ice are inherently dependent on its salinity and temperature.

Ice research is a challenging field for the analyst, too. Sea ice has to be studied in situ, i.e. frequently under cold, dark and windy conditions. Samples have to be taken with a chainsaw or coring device and have to be transported by snowmobile, helicopter or ship. What is more, ice samples have to be examined in the cold, so that the ice researcher must be willing to wear the thickest possible winter clothes even for laboratory work. Finnish ice researchers are internationally oriented and are used to joining multinational teams working in the Arctic Ocean or Antarctica in addition to the Baltic Sea, and although experimental work occupies a major role, theoretical work and numerical modelling are also essential.

Where an understanding of, and adaptation to, the great scientific upheaval of recent decades, climate change, is required, the Finns' are respected for their level of "cold knowhow" and long experience in the Arctic.

References:

Finlandssvenska tekniker. Ed. Henry Ericsson. Vasa 2003.

Härö, Erkki. *Höyrykoneiden avulla lentoon*. Suomen Höyrykoneyhdistys. Helsinki 2004.

Pohjanpalo, Jorma. *100 vuotta Suomen talvimerenkulkua*. Merenkulkuhallitus. Helsinki 1978.

Ramsay, Henrik. *Jääsaarron murtajat – Suomen talvimerenkulun historiaa*. WSOY. Helsinki 1949.

Towards a Brave New North

Viewed from the perspective of Finland's Arctic and northern regions and those situated far away from the capital, the act of becoming part of the wider entity known as the European Union was a highly significant step. The European Community's internal policy (so-called *new regionalism*) that had commenced in the 1970s, in which the power of regional decision-makers should be emphasized at the expense of national ones where regional matters were concerned, was still in force when Finland joined the union in 1995. Finland's northern and eastern border regions also benefitted from the new regional support measures offered by the EU under its Northern Sparsely Populated Areas (NSPA) programmes.²¹¹

Finland's essential motives in increasing its Arctic cooperation have been in broad outline economic. The former Prime Minister and herald of the Northern Dimension, Paavo Lipponen, has recalls that the expectations in the early 2000s with regard to the Arctic Region and its natural resources reached the level of *hype*. Great hopes were placed in *offshore* activities, and especially exploitation of the oil and gas reserves of the Barents Sea. It was at that stage that both the countries of the Arctic Ocean coast and the other northern lands, and also the European Union and many of its member states, but also more distant powers such as Japan and China, were drawing up their own Arctic strategies.

Commissioned by the Confederation of Finnish Industries, Lipponen published his *Pohjoinen tahtotila. Suomen edellytykset arktiseen talouskasvuun* (in Eng. *The Strategic Vision for the North. Finland's prospects for economic growth in the Arctic region*) in March 2015. This lists ten recommendations for Finland's state of will:²¹²

1. The Prime Minister's responsibility for decision-making in matters of Arctic and northern policy should be strengthened and the coordination and administration of northern affairs improved.

211 The NSPA is collaborative and lobbying network representing the sparsely populated areas of Northern Europe, which includes seven provinces of Finland: South Savo, North Savo, North Karelia, Kainuu, Central Ostrobothnia, Northern Ostrobothnia and Lapland together with the northern provinces of Sweden and Norway. The total area has a population of 2.2 million, an average of less than 5 inh./km², where the average for Europe as a whole is 112 inh./km².

212 See <https://ek.fi/wp-content/uploads/A-Strategic-Vision-for-the-North.pdf> Accessed 9.9.2016.

2. Finland's aim should be to achieve a leading position in the EU's Arctic and northern policy.
3. The role of companies in the preparation of Arctic and northern policies should be strengthened, and these policies should be national ones in the sense that all companies in Finland should be taken into account.
4. A clear strategy should be set out for how Finland can promote infrastructure projects that are of value to it within the EU. At the same time steps should be taken to improve the accessibility of Northern Finland as far as both industry and tourism are concerned.
5. Finland should be developed into a global node for logistics, telecommunications and *big data*.
6. Closer Nordic cooperation should be fostered at the ministerial level, with emphasis on energy issues. All the Nordic Countries should improve their competitive potential and participate actively in developing EU energy markets.
7. The Finns' knowledge of foreign languages should be improved, with special reference to Swedish, in order to take full advantage of the Nordic labour market.
8. A common programme should be drawn up at the prime ministerial level for removing barriers from the Nordic region's internal boundaries.
9. The northern universities should be strengthened and cooperation developed between them. The target should be the creation of an internationally competitive University of the Arctic.
10. A data bank should be set up for the use of companies and entrepreneurs, with the aim of gathering project information and providing advisory services, especially at the tendering and initiation phases in projects.

As is evident from the above list, the intention was that research and the economy should be interleaved much more closely in terms of Finland's Arctic policy in the future. The emphasis in this survey was quite clearly on business and industry, and the same was true of another report, *Kasvua pohjoisesta* (in Eng. *Growth from the North*), also published at the beginning of 2015 but commissioned by the Finnish government.²¹³

This set out to trace what "sustainable growth" Finland, Norway and Sweden could achieve in their Arctic areas. The working group included a committee set up by the Prime Ministers of these countries that comprised one member from each. Significantly, the members were an expert in economics from Helsinki, the administrative head of the northern region of Sweden and the rector of a university in the north of Norway. Four potential "driving forces for growth" were set out in the resulting report:

1. Liquid natural gas and renewable energy, under Norwegian leadership.
2. "Green" mining, under Swedish leadership.
3. Further development of tourism, under Finnish leadership.
4. Ice and cold climate knowhow, as a triple-spearheaded project.

The Finnish politicians were satisfied with these goals, and one former Prime Minister commented in January 2015 that Finland had already done a lot of work towards an accommodation between mining and tourism, and added "*Affairs in the north will not develop favourably simply through pondering over them in the capital cities in the south: they will have to be carried forward through collaboration between actors in the north itself. Our task from now on will be to ensure that people address these matters and start on carrying them forward*".²¹⁴

213 See <http://vnk.fi/julkaisu?pubid=3622> Accessed 9.9.2016.

214 *Growth from the North*. Prime Minister's Office. Publications 1/2015; The committee consisted of Risto E.J. Penttilä from Finland, Magdalena Andersson from Sweden and Anne Husebekk from Norway.

Another organization that has devoted itself energetically to ensuring a business orientation in Arctic affairs was the Nordic Arctic Business Council, a consortium of representatives from 20 Nordic companies who are seeking an improvement in their operating conditions in the Arctic region. Their programme is one of promoting economic development in the north and emphasizing environmental safety there, and it attaches particular importance to investments that will ease the movement of persons, goods, services and information and to collaboration aimed at improving the regulations, standards and procedures that apply to their business activities. The council also supports measures by which skilled labour can be recruited for the Arctic region, and has close connections with the Arctic Economic Council (AEC), which has representatives from eight Arctic countries and the indigenous peoples of the region. This body, too, aims to promote sustainable business activity, economic development and the adoption of the best procedures, technical solutions, standards and other necessary information for working in the Arctic.²¹⁵

All in all, the Finns have cast their nets repeatedly in the freezing cold waters of both politics and research over the last ten years. The great Arctic invasion is a reality and Finland is ready to set out on the path that leads towards this new concept of the north and of the world order that lies ahead, which will be challenging in its unpredictability but more interactive than heretofore, and certainly different.

215 *Confederation of Finnish Industries*. See www.ek.fi Accessed 10.9.2016.

Hannu Halinen

The emergence of an Arctic strategy

It has sometimes been said that people living in the south and people living in the north can be distinguished by how they understand snow and ice: for those in the south snow and ice are frozen water, whereas for those in the north water is melted snow and ice.

International law has no generally applicable definition of the Arctic. Its boundaries – when it is necessary to draw boundaries, e.g. when concluding binding agreements – have to be drawn with a particular purpose in mind, leaving the parties to the agreement with some say in defining the areas concerned.

In the case of Finland's Arctic strategies the government has quite unambiguously set out from the assumption that the whole country lies within the Arctic region. They justify this above all on the grounds of climate and physical conditions, and the fact that Arctic research and its applications take place throughout the country: all the Finns have "cold knowhow" in their bones.

The motto of Finland's first Arctic Strategy, published in 2010, was that *It is natural for Finland as an Arctic country to be an actor in the Arctic region*. This strategy as a whole was focused on foreign relations, examining Finland's role as an actor in Arctic affairs both regionally and globally. In principle, Finland looks on Arctic issues as regional ones, but ones that have global implications and points of contact. International collaboration is the keystone of Finland's Arctic policy, and the growing strategic and economic importance of the Arctic is seen as strengthening Finland's position in the world. Within this international forum Finland wishes to emphasize the distinctive features of the Arctic region: its environmental issues and the risks attached to them.

Only two years after publishing this strategy the government decided to set about preparing a new one, to be put together carefully in the course of two evening sessions at the Prime Minister's official residence. From the outset, the crucial issue was the contradiction between conservation of the natural environment in the

Arctic on the one hand and the increasing human presence and the desire to exploit the region's natural resources on the other. Although there is no permanent or perfect solution to be found to this dilemma, the scenario projected by the Finnish government is a groundbreaking document by comparison with the strategies put forward by other countries and actors: *Finland is a dynamic Arctic actor capable of reconciling the commercial opportunities offered by the Arctic with the boundary conditions imposed by its natural environment through the medium of international collaboration.*

Finland's role in the Arctic rests on four pillars: an *Arctic country – Arctic knowhow – sustainable development and knowledge of the environmental boundary conditions – international collaboration.* The aim, therefore, is to promote factors that support growth and competitiveness in the Arctic while respecting the Arctic environment.

The main purposes of the 2013 Arctic Strategy were to thoroughly update the previous strategy and to draw up a new programme for implementing its scenarios and goals. Where the previous document had been produced by a relatively small group of civil servants, this new one was the product of a working group in which all branches of the administration were represented (in practice based on a network of those responsible for Arctic affairs in the various ministries). In addition, numerous spokespersons for interested parties were consulted and the preparatory work was followed closely by the Advisory Board on the Arctic Region and the permanent secretaries of key ministries.

The strategy contains proposals for more than a hundred measures for attaining the goals laid down for various sectors, measures that serve as good examples of the ways in which the government's scenarios could be achieved in practice. These goals and measures should not simply remain dead letters on paper, therefore the above-mentioned network of persons responsible for Arctic affairs in the ministries was charged with monitoring progress in this respect under the supervision of the Advisory Board on the Arctic Region. In order to achieve concrete results, instances have been named as being responsible for particular measures and the network uses a special matrix for monitoring the progress achieved, the timescale on which it is achieved and the resources required. Many of the goals have already been fulfilled,

while others require longer time intervals and prioritization within future budgetary frameworks (and some others, especially those involving international cooperation, are in the nature of a continuous process of exercising influence). It should also be remembered that other instances may be involved in the work in individual cases, e.g. local authorities, businesses, unions and citizens' organizations.

Finland lays emphasis on a comprehensive approach to Arctic issues, including discussions as to how interaction and unanimity can be promoted among the various Arctic actors such as political decision-makers, businesses, researchers and the region's population. On the instigation of the Prime Minister's Office and the Academy of Finland, the International Institute for Applied Systems Analysis (IIASA) in Vienna has embarked on a broad-based international project for using systems analysis to create models and scenarios for promoting the general wellbeing of Arctic actors.

The changes that may take place in the Arctic are still largely unpredictable, and increasing amounts of discussion and research are needed. The Centenary of Finnish Independence in 2017 and the Finnish chairmanship of the Arctic Council that coincides with it provide a natural framework for re-examining and updating our Arctic Strategy.

Finland has played a pivotal role in developing the concept of the Northern Dimension as an instrument for collaboration between the European Union and Russia in Northern Europe. Footprints will remain in the snow in Northern Europe as in the more remote areas of the Arctic, and discussions over where the Northern Dimension and the Arctic Dimension meet and in what respects they differ will doubtless continue.

Epilogue: From smoke saunas to solar winds

Our long journey in time through Finland's Arctic history is now complete, and all that remains is to draw attention to seven outstanding elements that are descriptive of the country's northern character:

1. *Location*: The polar location of their nation-state, north of the 60° line of latitude, has fundamentally dictated, regulated and given meaning to all the activities pursued by the Finns, however mundane, in matters of settlement, politics, economics, social behaviour, art and science. The boundary conditions imposed on the country by its geographical location, including the coldness of the climate, the short summers and the long winters, have been, and continue to be, a prominent aspect of the Finns' image of themselves, their history and the image which they choose to project of their own country.
2. *Climate*: Since the Finns of ancient times had to adapt to the cold as soon as they came to these northern regions, the knowledge required for this adaptation, popularly referred to nowadays as *snow-how or cold-how*, has been refined to its extreme in Finland. During the 18th century, when the first scientific societies were founded, it was to Lapland that the European scientists studying the flattening of the Earth at the poles set out with their theodolites. In the 19th century research into the Aurora Borealis became a specialization for the Finns along with the international interest shown in the topic, while the Finnish-born A.E. Nordenskiöld ploughed through the icy waters of the North-East Passage to gain himself a place in the gallery of Arctic heroes. Many Finnish navigators and specialists in ice formation have subsequently followed his example. By the 20th century it was the

achievements of technology in atmospheric and space research that brought us international recognition.

3. *A close relationship with nature:* The Finns are fundamentally rural people who live close to nature, and their society underwent urbanization comparatively late by European standards, only from the late 19th century onwards. The call of the wilderness areas, unspoiled nature, cottage life, sauna baths on the shores of thousands of lakes and the experience of winter swimming attract millions of Finns to the countryside every year and help to maintain their relationship with nature. They feel that nature has a relaxing, strengthening, healing and inspiring effect on them. Nature conservation began in Finland at the end of the 19th century, as it did elsewhere, so that the first conservation area was designated in the 1910s and the first national parks in the 1930s. Now, in 2017, Finland has 40 national parks, 19 strict nature reserves, 170 peatland conservation areas and 473 other statutory nature conservation areas.
4. *Forest and water resources:* Finland lived on its forests and their many wild products such as game, berries, mushrooms and fish until well into the 19th century, whereupon systematic felling of the forests, the new sawmills and eventually also pulp and paper mills came to occupy the river banks and lake shores, although the forests, in combination with small-scale farming, continued to support Finnish families in the countryside for a long time to come. This situation continued, in fact, up until the 1960s, when efforts were made to industrialize the northern parts of Finland through specific regional development and regional policy laws, especially during the presidency of Urho Kekkonen (1956–82). Some time before that, however, the great rivers of the north, which had previously served as routes for floating logs down to the coast, were harnessed to meet industrial energy needs.
5. *The ethic of technology and information:* The knowhow possessed by the Finns was not restricted to the development of the forest industries, the damming of rivers and the construction of reservoirs. For the people of this land that was enclosed by the sea came to specialize in shipbuilding at a very early stage, and by 1890 they had branched out into icebreakers. In this field, too, they showed their typical nationalistic fervour in naming their

ships after characters in the *Kalevala*, so that it was not long before *Sampo* and *Väinämöinen* were ploughing physically through the icy seas of the Gulf of Finland opening the way to places in the south and west while at the same time melting the ice in a psychological sense with respect to the major centres of the European scientific world. The real global pathfinder in this sense was nevertheless something much smaller, the mobile phone, as the Nokia Corporation began its conquest of the world's telecommunications networks in the 1960s and launched its digital GSM phone on the market in 1991. Later, after the turn of the millennium, Finnish companies embraced still newer technologies such as computer games, as epitomized by Rovio (with their *Angry Birds*) and Supercell, and also small-sized satellites and robot cars, which have become known through the world.

This Finnish success story represents a form of human capital generated by a broad-based, democratic school system in which girls and boys are gathered together in the same classroom. The earliest schools known to have existed in Finland were in the 13th century, and a wider system of church schools was established in the 17th century. Elementary schools were founded throughout the country under a statute issued in 1866 and general compulsory education was introduced in 1921. Finally, the whole country moved over to a comprehensive school system in 1972–78. The OECD Programme for International Student Assessment (PISA), which commenced in the 1990s, has demonstrated that the Finnish school system provides first-class teaching by international standards and achieves corresponding results. The fact that standards of gender equality in Finland and the other Nordic Countries are among the best in the world derives from the early juncture at which women were able to participate in political decision-making. Finland's women were the first in Europe and only the third in the world gain the right to vote, in 1906. They were the first in the whole world to be allowed to stand for election to their national parliament, so that no less than 19 women were elected to Finland's first unicameral parliament in 1907, a half of them being representatives of the working class. Correspondingly, women were allowed to participate in the important sphere of local government following the reforms of 1917.

6. *The culture of the north*: The earliest evidence of Finnish and Sámi culture, as obtained from rock paintings and archaeological, historical

and linguistic discoveries, point to communities observing an ancient polytheistic religion and with a cultural heritage derived from nature that was passed on orally from one generation to the next. The Roman Catholic Church spread to Finland in the 12th century and Lutheranism began to impinge on the still largely “pagan” populace in the 16th century. The ancient religions were proscribed by law in the following century and the drums used by the Sámi were destroyed.

Following the transfer of Finland from allegiance to the Swedish crown to the status of an autonomous entity within the Russian Empire in 1809, new perspectives gradually appeared in the nation’s cultural life, so that from the first half of the 19th century until the 1940s it was dominated by trends in literature, painting, architecture, pottery and chinaware, furniture making and music that remained close to nature and were inspired by the *Kalevala*. The best known examples of the music of that period are the works of Jean Sibelius. By the 1930s at the latest, however, the national romanticism of the mainstream culture had gradually become more international and more modern, as was particularly evident in architecture, where the works of Alvar and Elissa Aalto and Eliel Saarinen came to the fore on the world stage.

7. One quite essential factor in the process of creating a Finnish nation and shaping the direction of its cultural image from the 19th century up until the mid-20th century was the role played by the contributions of experts on past ages, i.e. historians, and representatives of other disciplines connected with the nation or its society, i.e. scholars in the humanities. It was they who built the foundations and constructed the concept of a cultural and political entity by the name of Finland during the 19th century. Similarly, one of the most significant proponents of the notion of a northern dimension at the beginning of the 20th century was a professor of history, Väinö Voionmaa. Now, in the 21st century, it would seem that the role of creators of the country’s image that once belonged to *the historians and social scientists* has been taken over by the *technocrats*.



Finland's future as an Arctic country rests with the spread of intellectual activity and new scientific discoveries to all the strata within society. Photo of Helsinki University Library in 2015. Photo: ThisisFINLAND.fi.

Suitable words to close this present work, which sets out to emphasize the importance of an appreciation of history, can be found in the opening address by Finland's Prime Minister, Juha Sipilä, at the NordArc2016 Symposium at the House of the Estates in Helsinki on 5th September 2016: "*I wish to emphasize here that Finland is an Arctic country, by which I mean in its entirety Arctic country.*" Tens of thousands of years have elapsed since our ancient ancestors cried out with joy as they came ashore in this remote, northerly hinterland where the forests buzzed with game and the waters abounded in fish and seals. Although their reactions are separated historically from that voiced by Sipilä in terms of time, place and space, the evaluations have two things in common: they both imply *a cold climate* and they both express an element of *hope*. The bearded hunters clad in furs and skins and the 21st-century politician in his suit and tie both perceived the potential that lay in the cold climate, and they were both gazing ahead in time far more than just a week, a month or even a year. Both had visions of Finland that extended for decades or even centuries into the future, and that is how it should be, for over a long period of time one can see and understand so very much more.

Selected list of literature

Ahonen, Sanna. *Mitä on suojeltu, kun on suojeltu luontoa? Käsitehistoriallinen tarkastelu suomalaisesta luonnonsuojelusta välillä 1880–1983*. Ks. <http://ethesis.helsinki.fi/julkaisut/maa/limno/pg/ahonen/mitaonsu.html> Accessed 2.8.2016.

Alueiden Lappi. Ed. by Maria Lähteenmäki. Lapin yliopistopaino. Rovaniemi 2006.

Arktinen kutsuu. Suomi, EU ja arktinen alue. Eds by Markku Heikkilä & Marjo Laukkanen. Lapin yliopisto & Eurooppatiedotus. Rovaniemi 2013.

Castrén, M.A. *Tutkimusmatkoilla pohjolassa*. WSOY. Helsinki 1967. (*In Swedish Nordiska resor och forskningar*). (1. edition 1852).

Donner, K.R. Luettelo Pohjois-Pohjanmaata ja Suomen Lappia käsittelevästä kirjallisuudesta. Albumi I. *Jouko* 1910.

East meets North. NGP Yearbook. Eds by Maria Lähteenmäki & Alfred Colpaert. Special Issue. *Nordia* 43:1/2014.

Enbuske, Matti. *Vanhan Lapin valtamailla*. Bibliotheca Historica. Suomalaisen Kirjallisuuden Seura. Helsinki 2008.

Faravidin maa. Pohjois-Suomen historia. Ed. by Kyösti Julku. Pohjoinen. Oulu 1985.

Growth from the North. Prime Minister's Office. Publications 1/2015.

Heikkilä, Markku. *Pohjoinen ulottuvuus*. Ulkoasiainministeriö. Helsinki 2006.

Homén, Theodor. *East Carelia and Kola Lapmark: described by Finnish scientists and philologists*. Sällskapet för Finlands geografi, Helsingfors 1921. (In Finnish *Itä-Karjala ja Kuollan Lappi suomalaisten luonnon- ja kielentutkijain kuvaamana*).

Isaksson, Pekka & Jokisalo, Jouko. *Kallonmittaajia ja skinejä. Rasismien aatehistoriaa*. Like. Helsinki 2005.

Itkonen, T.I. *Lapinmatkani*. WSOY. Helsinki 1991.

Itkonen, T.I. *Suomen lappalaiset vuoteen 1945 1–2*. WSOY. Helsinki 1984 (1. edition 1948).

Ivalo, Santeri. *Kustaa IX:n Jäämeren politiikka*. Helsinki 1894.

Johdatus saamentutkimukseen. Eds by Ulla-Maija Kulovesi, Juha Pentikäinen & Irja Seurujärvi-Kari. Tietolipas 131. Suomalaisen Kirjallisuuden Seura. Helsinki 1994.

Junila, Marianne. *Kotirintaman aseveljeyttä. Suomalaisen siviiliväestön ja saksalaisen sotaväen rinnakkaiselo Pohjois-Suomessa 1941–1944*. Bibliotheca Historica 61. Suomalaisen Kirjallisuuden Seura. Helsinki 2000.

Jäitä poltellessa. Suomi ja arktisen alueen tulevaisuus. TAPRI. Tampere 2011.

Kasvua pohjoisesta. Miten Norja, Ruotsi ja Suomi voivat saada aikaan kestävää kasvua arktisella alueella? Publications 1/2015. Prime Minister's Office. Helsinki 2015.

Kauhanen, Jouni. *Nöyrytyminen ympäristöpakolaiseksi. Lokan ja Porttipahdan tekojärvien sosiaalhistoria*. Omakustanne 2014.

Kekkonen, Urho. *Onko maallamme malttia vaurastua?* Helsinki 1952.

Korpijaakko, Kaisa. *Saamelaisten oikeusasemasta Ruotsi-Suomessa. Oikeushistoriallinen tutkimus Länsi-Pohjan Lapin maankäyttöoloista ja -oikeuksista ennen 1700-luvun puoliväliä*. Lakimiesliiton kustannus. Helsinki 1989.

Kortesalmi, J. Juhani. *Poronhoidon synty ja kehitys Suomessa*. Suomalaisen Kirjallisuuden Seura. Helsinki 2008.

Koskinen, Yrjö. Suomalaisten uutis-asutuksesta Jäämeren rannikolla. *Kirjallinen Kuukausilehti* 3–5/1868, 91–92.

Koskinen, Yrjö. *Oppikirja Suomen kansan historiasta*. Suomalaisen Kirjallisuuden Seura. Helsinki 1869.

Kotilainen, Juha & Colpaert, Alfred. Repositioning Finland as an Arctic country. *Nordia* 43:1/2014, 11–18.

Krosby, Hans Peter. *Nikkelidiplomatiaa Petsamossa 1940–1941*. Kirjayhtymä. Helsinki 1966.

Kylli, Ritva. Saamelaisten maa- ja metsätaloustutkimus – kun historia kohtaa politiikan. *Ennen ja nyt* 1 2007.

Lappi 1–4. Ed. by Martti Linkola. Karisto. Hämeenlinna 1983–85.

Lappi tänään. WSOY. Helsinki 1971.

Laukkanen, Marjo & Heikkilä, Markku. *Arktinen kattaus*. Lapin yliopisto & Eurooppatiedotus. Rovaniemi 2016.

Lehtola, Veli-Pekka. *Saamelaiset*. Kustannus-Puntsi. Inari 1997.

Leppälä, Kari. *Tervanpoltosta innovaatiotalouteen*. BTJ Finland Oy. Helsinki 2012.

Lipponen, Paavo. *The Strategic Vision for the North. Finland's prospects for economic growth in the Arctic region*. (In Finnish *Pohjoinen tahtotila. Suomen edellytykset arktiseen talouskasvuun*). Elinkeinoelämän keskusliitto. Helsinki 2015.

Lähteenmäki, Maria. *Kalotin kansaa. Rajankäynnit ja vuorovaikutus Pohjoiskalotilla 1808–1889*. Suomalaisen Kirjallisuuden Seura. Helsinki 2004.

Lähteenmäki, Maria. Kemin Lapin raunioilla. In: *Alueiden Lappi*. University Press. Lapland University. Rovaniemi 2006c.

Lähteenmäki, Maria. Scholars Discover Local History. The Case of North-East Lapland in the 18th century. *Polar Record*. Vol 48, Issue 3, 2012, 291–303.

Lähteenmäki, Maria. *Terra Ultima. A Short History of Finnish Lapland*. Otava. Helsinki 2006b (In *Finnish Terra Ultima. Matka Lapin historiaan* 2006).

Lähteenmäki, Maria. *The Peoples of Lapland. Boundary Demarcations and Interaction in the North Calotte from 1808 to 1889*. Finnish Academy of Science and Letters. Helsinki 2006a.

Lähteenmäki, Maria. *Väinö Voionmaa, poliitikko ja geopoliitikko*. Suomalaisen Kirjallisuuden Seura. Helsinki 2014.

Lönnrot, Elias. *Kalevala*. Suomalaisen Kirjallisuuden Seura. Helsinki 1999 [1. edition 1835].

Lönnrot, Elias. *Matkat 1828–1844*. Helsinki 1981.

Löppönen, Paavo. Tutkimuspolitiikkaa itsenäisyyden ajan alun Suomessa. *Terra* 100/1 1988.

Massa, Ilmo & Snellman, Hanna (eds). *Lappi: Maat, kansat, kulttuurit*. Suomalaisen Kirjallisuuden Seura. Helsinki 2003.

Metsä ja metsänviljaa. Eds by Pekka Laakkonen & Sirkka-Liisa Mettomäki. Kalevalaseuran vuosikirja 73. Suomalaisen Kirjallisuuden Seura. Helsinki 1994.

Muinaisuutemme jäljet. Suomen esi- ja varhaishistoria kivilaudelta keskiajalle. Eds by Georg Haggren, Petri Halinen, Mika Lavento, Sami Raninen & Anna Wessman. Gaudeamus. Helsinki 2015.

Navis Fennica. Suomen merenkulun historia. Ed. by Erkki Riimala. WSOY. Helsinki 1993.

Nickul, Karl. Petsamon tutkimus ja Suomen Maantieteellinen Seura. *Terra* 50:1–2, 1938, 154–160.

Niemelä, Jari. *Lääninlampureista maaseutukeskuksiin*. Suomen Historiallinen Seura. Helsinki 1996.

Nyysönen, Jukka. *“Everybody recognized that we were not white”: Sami identity politics in Finland, 1945–1990*. University of Tromsø. Tromsø 2007.

Näkökulmia ympäristösosiologiaan. Eds by Pekka Jokinen, Timo Järvikoski & Pertti Rannikko. Turun yliopisto. Turku 1995.

Partanen, Seppo J. *Sankareita, veijareita ja huijareita. Lapin kullankaivajien tarina*. Edita. Helsinki 1999.

Paulaharju, Samuli. *Kolttain mailta: kansatieteellisiä kuvauksia Kuollan-Lapista*. Kustannusosakeyhtiö Kirja. Helsinki 1921.

Pedersen, Steinar. Lappekodisillen i Nord 1751–1859. *Diedut* 3 2008.

Pelaudeix, Cécile, Faure, Alain & Griffith, Robert (eds). *What holds the Arctic together?* L’Harmattan. Paris 2012.

Pihlaja, Päivi Maria. *Tiedettä Pohjantähden alla*. Bidrag till kännedom av Finlands natur och folk 181. Helsinki 2009.

Pilli-Sihvola, Karoliina et alia. *Suomi arktisen alueen vastuulliseksi edelläkävijäksi*. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 10. Helsinki 2016.

Rikkinen, Kalevi. *Suuri Kuolan retki 1887*. Otava. Helsinki 1980.

Rosberg, J.E. *Lappi*. Kansanvalistusseura. Helsinki 1911.

Ruotsala, Helena. *Muuttuvat palkiset. Elo, työ ja ympäristö Kittilän Kyrön paliskunnassa ja Kuolan Luujärven poronhoitokollektiiveissa vuosina 1930–1995*. Kansatieteellinen Arkisto 49. Helsinki 2002.

Schefferus, Johannes. *Laponia*. Karisto. Hämeenlinna 1979 (1.edition 1673).

Siddasstallan. Siidoista kyliin. Toim. Jukka Pennanen & Klemetti Näkkäläjärvi. Pohjoinen. Oulu 2000.

Sörlin, Sverker (ed.). *Science, Geopolitics and Culture in the Polar Region – Norden Beyond Borders*. Ashgate. London 2013.

Suomen kartasto. Suomen Maantieteellinen Seura. WSOY. Helsinki 1999.

Tanner, Väinö. *Ihmismaantieteellisiä tutkimuksia Petsamon seudulta I. Kolttalappalaiset*. Suomalaisen Kirjallisuuden Seura. Helsinki 2000 [1. edition 1927].

Topelius, Zacharias. *Maakuntien Suomi* 1–3. Helsinki 1998 [1. edition 1845].

The Barents Region. A Transnational History of Subarctic Northern Europe. Eds by Lars Elenius, Hallvard Tjelmeland, Maria Lähteenmäki & Alexei Golubev. PAX. Oslo 2015.

The Cambridge history of Scandinavia. Ed. by Knut Helle. Cambridge University Press. Cambridge 2003.

The North Calotte. Perspectives on Histories and Cultures of Northernmost Europe. Eds by Maria Lähteenmäki & Päivi Maria Pihlaja. Kustannus-Puntsi & History Department, University of Helsinki. Helsinki 2005.

The Saami. The Cultural Encyclopedia. Eds by Ulla-Maija Kulonen, Irja Seurujärvi-Kari & Risto Pulkkinen. Suomalaisen Kirjallisuuden Seura. Helsinki 2005.

Tiitta, Allan. Tiede- ja teknologiapolitiikka Suomessa 1970–2006. Teoksessa *Sivistyksen ja tiedon Suomi*. Ville Perna & Allan Tiitta. Suomen eduskunta 100 vuotta. Edita. Helsinki 2007, 278–281.

Tommila, Päiviö (ed.). *Suomen tieteen historia*. WSOY. Helsinki 2000.

Turjanmeren maa. Petsamon historia 1920–1944. Eds by Jouko Vahtola & Samuli Onnela. Petsamo-seura. Rovaniemi 1999.

Tämä maa. Itsenäisen Suomen sata tarinaa. Ed. by Tuula Kousa. Verbatum Oy. Helsinki 2016.

Uola, Mikko. *Petsamo 1939–44.* Minerva. Helsinki 2012.

Voionmaa, Väinö. *Suomen uusi asema. Maantieteellisiä ja historiallisia peruspiirteitä.* Porvoo 1919.

Voionmaa, Väinö. *Suomi Jäämerellä.* Edistysseurojen kustannus oy. Helsinki 1918.

Vuorisjärvi, Esko. *Petsamon nikkeli kansainvälisessä politiikassa 1939–1944.* Otava. Helsinki 1989.

Välimäki, Jussi. *Yliopistot keskiajan sosiaalisena innovaationa. Kasvatus ja Aika 3* 2015.

Ympäristökysymys. Ympäristöuhkien haaste yhteiskunnalle. Eds by Ilmo Massa & Rauno Sairinen. Helsinki 1991.

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Footprints in the Snow explores and evaluates Finland's status as an Arctic country over a long historical time-span. Although practically the whole of the country's population of 5.5 million are living between the latitudes of Hanko (59°48'N) and Nuorgam (70°05'N), it is only with the general increase in international interest in the Arctic in recent decades that the *essentially northern character* of Finland has been decisive for the country's image. The clearest indication of this has been the publication of the Finnish Government's *Arctic Strategy* in 2010, which refers to Finland in its entirety as an Arctic country for the first time in its history.

The country's Arctic and Subarctic flora and fauna, its long, dark, cold winters and its short, warm summers have obliged the Finns to adapt to these harsh conditions over the millennia and have made them into internationally recognized specialists in cold knowhow, so that they have been able to transform inconveniences such as the ice, snow and darkness into economic and cultural opportunities of which they can be proud, now and in the future.

The author of this work, Professor **Maria Lähteenmäki**, is a celebrated historian who has specialized in cross-border studies in the north, mostly concerning Lapland, the Barents Region and Northern Fennoscandia, and also the communities living in the Finnish-Russian border zone, i.e. in Karelia, on the Karelian Isthmus and in the Baltic region.



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