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The history of the Finnish botanical exploration of Russian Lapland in 1861 and 1863

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The early Finnish expeditions to the Kola Peninsula were organised by the *Societas pro Fauna et Flora Fennica.* The first expedition, in 1861, was made by two separate teams. Petter Adolf Karsten and Nils Isak Fellman headed to the western part, and Gustaf Selin studied the southwestern coast and then also proceeded to the western part; Karl Emil Inberg, an entomologist, collected insects separately along the track from Kandalaksha to Kola. The second expedition, in 1863, with participation of Fellman, Mårten Magnus Wilhelm Brenner and Nils Johan Laurin, studied the coasts of the White and Barents Seas around the whole Peninsula. The historical background of these expeditions and their circumstances are described in detail and discussed. Literature sources and herbarium specimens are traced in order to produce precise maps and gazetteers of the expeditions. All these expeditions brought extensive collections of herbarium specimens of vascular plants, lichens and fungi, which laid the basis for the first systematic botanical inventory of the Kola Peninsula; algae, bryophytes and zoological specimens were also collected to some extent but not treated separately by the members of the expeditions.

Introduction

By the beginning of the 19th century, Russian Lapland was terra incognita in respect of its flora and vegetation, in spite of the pioneering observations made during the Russian Academic expeditions of 1768–1774, by Nikolai Ozeretskovski along the Barents Sea coast and at Kola town in 1771 and by Ivan Lepechin along the White Sea coast in 1772 (Taranovich 1934), aiming at extensive description of its natural history. They collected a number of botanical specimens that were sent to the Cabinet of Natural History in the Kunstkamera of the Imperial Academy of Sciences and Arts in Saint-Petersburg and still partly survived at the Komarov Botanical Institute (cf. Lipschitz & Vassilczenko 1968). These plant records were not completely published by the travellers, neither they were included into any later publication, save for a few mentions of very common plants in Ozeretskovski (1804).

With the incorporation of Finland into the Russian Empire in 1809, a way eastwards became open to Finnish botanists. In 1829 Jacob Fellman (1795–1875), who was a priest in northern Finland (Väre 2011), made the first extensive botanical collections from the Kola Peninsula, and compiled the first checklist of vascular plants of Russian Lapland (Fellman 1831). This publication became the first reference point in botanical studies on that territory.

In the 1830–1840s a few Russian scientists visited the territory and explored its plant and animal world. Two expeditions were directed by the Imperial Saint-Petersburg Academy of Sciences to the Russian North under command of Karl E. von Baer (1792–1876). The first expedition (with A. Lehmann as a naturalist collecting plants) entered the Kola Peninsula briefly in 1837 and spent a week in its eastern part (between Pyalitsa and Orlov, 2–8 July). A report published by this expedition mentioned a few plants (Baer 1837), and botanical collections were sent to the Botanical Museum of the Academy in St. Petersburg (Ruprecht 1864). The second expedition of Baer (with A. von Middendorff as a zoologist and Pankevich as a collecting assistant), in 1840, was concentrated largely on Russian Lapland and explored the sea coasts from Sosnovets to the Rybachiy Peninsula, and the western part of the inland (Sukhova & Tammiksaar 2015). This expedition brought mostly zoological collections and observations, without published contributions to botany (Raikov 1961), although some collections were also sent to the Botanical Museum (Ruprecht 1864). In 1839 Alexander von Schrenk (1816–1876), a plant collector of the Botanical Garden in St. Petersburg, made the first Russian botanical travel to the Kola Peninsula. Starting his way through Tuloma to Kola, Schrenk went eastwards and explored many parts of Russian Lapland; he compiled a catalogue of his plants, which, however, was left unpublished but its contents were incorporated into *Flora Rossica* (Ledebour 1841–1853). In the same year a small collection of plants was made and sent to the Botanical Museum in Petersburg by Wilhelm Boehtlingk (1809–1841), a geographer and geologist, who observed the coastal parts of the Kola Peninsula in 1839 and visited, among other territories, Turii Mys (Boehtlingk 1840). These explorers produced no separate botanical publications and made therefore little impact on further botanical studies in Russian Lapland. Their collections, when accessioned to the Botanical Museum in St. Petersburg, totalled 246 species of phanerogams, of which 3 species (*Arctophila fulva, Arctagrostis latifolia, Castilleja sibirica*) were published as new to Russian Lapland in the accessions report (Ruprecht 1841).

Wirzén (1837) pointed out that the Finnish Natural Area (the biogeographic East Fennoscandia) extends to Karelia and the Kola Peninsula, and this fact inspired Finnish botanists to include Russian Lapland and Karelia into their area of interest (Uotila 2012, 2013, 2018; Väre 2017). By that time the flora of these territories remained poorly studied (especially in comparison with the flora of southern Finland).

In years 1842–1844 Fredrik Nylander (1820–1880), then a graduate of the University of Helsinki, travelled to the north while working on his thesis for docentship and later for a PhD degree (Väre 2007, 2008). He visited many territories in Russian Lapland and reached as far as to Sviatoi Nos, the limit between the Barents and the White Seas, and further east to Ponoi. His expeditions resulted to a number of new discoveries that were published in Nylander's own contributions (Nylander 1843, 1844, 1846) and his correspondence to Elias Fries (1842a, 1842b, 1843, 1844), and his specimens were distributed as part of Elias Fries's exsiccata *Herbarium normale* (Väre 2007, 2008).

At the beginning of the 1860s, the *Societas pro Fauna et Flora Fennica* decided to organise expeditions to the eastern limits of the biogeographic Fennoscandia, in order to fill these gaps in the botanical knowledge for all kinds of plants, including cryptogams, and also animals (first of all, insects). The history and botanical outputs of these expeditions are the subject of the present contribution. The aims of this study are to reveal the history of the expeditions and to trace their specimens and precise routes, in order to allow for correct databasing of the herbarium specimens and the evaluation of scientific results of the expeditions.

Materials and methods

Time frame

We studied collections and historical materials of the Finnish expeditions to Russian Lapland, which were organised by *Societas pro Fauna et Flora Fennica* to bring back natural history specimens for the Botanical Museum and Zoological Museum of the University of Helsinki, in the years 1861 and 1863.

Study area

The expeditions were sent by the *Societas* for collecting botanical and zoological specimens in "Russian Lapland", which in those times was defined to include territories north of the Kem River and Lakes Kuittijärvet (now in Karelian Republic) until the Barents Sea shore (Nylander & Sælan 1859). On the way to Lapland the expeditions also studied parts of Russian Karelia, south of the Kem River. Later (Sælan et al. 1889) the floristic border between Lapland and Karelia was redefined and moved northwards to the Kanda River (now in Murmansk Region); the southern part of Lapland became part of Karelia as *Karelia keretina.*

In this study, we include localities visited and sampled by the expeditions strictly within *Lapponia rossica* as defined in Nylander & Sælan (1859). Most of this territory falls into present-day Murmansk Region of Russia, and a minor part belongs to Karelian Republic of Russia. Published records and herbarium specimens from other territories, referable to *Karelia rossica* as defined in Nylander & Sælan (1859), are not included in the present study.

We limited the study by the territory of *Lapponia rossica* because the major publications that resulted from the activities of these expeditions (Karsten 1866; Nylander 1866; Fellman 1869) were focused on that territory and excluded *Karelia rossica.*

Published sources

All publications by N. I. Fellman (Saelan 1916) were screened for historical information. Additional information, mostly of historical character, was obtained from contemporary newspapers, in which minutes of the *Societas* and other relevant announcements were regularly published (Isoviita 1980). The newspapers were examined through the electronic portal of the National Library of Finland (www.kansalliskirjasto.fi). Among these newspapers, *Helsingfors Tidningar, Helsingfors Dagblad* and *Finlands Allmänna Tidning* were most helpful. Some other historical background information was obtained from later reviews and compilations (Elfving 1921; Collander 1965; Wallgren 1996; Väre 2007, 2008, 2011; Rantala 2008, 2010; Uotila 2013). Biographical information was partly obtained from the list of alumni of the University of Helsinki (Autio 2003).

Herbarium collections

The herbarium collections of vascular plants, obtained in the course of the expeditions, were deposited in the Botanical Museum (now Finnish Museum of Natural History), University of Helsinki (H). These collections were traced and included in the database of floristic records of the University of Helsinki, Kastikka. Many specimens had been databased earlier (Uotila 2013) but several others were added in the course of this work. The database records were verified and corrected when necessary, and used for mapping the routes and deriving the statistical information. Localities of herbarium specimens were traced and refined using various maps from 18th–20th centuries and special literature with descriptions of sea coasts (Reineke 1843, 1850; Anonymous 1954), dictionaries of place names (Minkin 1976) and travelogues (Fellman 1869; Regel 1914; Rikkinen 1980; Väre 2007, 2008, 2011; Uotila 2013).

To ensure that the collection localities are traced and the specimens are databased with utmost accuracy, expedition routes were described precisely. Dates and geographical information were compiled in the tabular form, with information on original localities, corresponding present-day place names, collection dates, and georeferences. Routes of each group were mapped separately in order to show them unambiguously, thus replacing the imprecise maps published in Erkamo (1942) and Hiitonen (1958a).

History of the expeditions

Historical background

The history of Finnish botanical expeditions to Russian Lapland was intimately connected with the activities of the *Societas*, the leading Finnish scientific organization in natural history that also originally possessed and then curated the national collections of Finnish plants (Elfving 1921; Collander 1965; Wallgren 1996). The *Societas* planned research work on the flora and fauna of Finland and neighbouring territories, and also organised and funded many expeditions to collect botanical and zoological specimens.

When Alexander von Nordmann (1803–1866) became President of the *Societas* in 1849, he proposed ambitious plans to broaden the scientific scope of the *Societas* and to organise a big expedition to the northern part of East Fennoscandia, i.e. Eastern Karelia and the White Sea coast (Elfving 1921; Wallgren 1996). Nordmann supposed to lead this expedition, which would have consised of 8–10 scientists organised in two groups, heading from Uleaborg (now Oulu) and Sortavala eastwards to the White Sea and Arkhangelsk. However, the *Societas* had insufficient balance funds to cover the expenses of such an expedition; in the absence of any external funds, Nordmann proposed to use part of the capital of the *Societas*. This proposal was received with strong opposition, largely from the vice-president of the *Societas*, W. Nylander, which led to the resignation of Nordmann and the abandonment of the expedition plans (Elfving 1921; Wallgren 1996).

By the year 1860 the Finnish knowledge in vascular plants and fungi was summarised in Nylander & Sælan (1859), in which the distributional information was organised according to broadly defined provinces, namely *Lapponia rossica* and Karelia rossica in the northeast, usually without any further detailization. Fredrik Nylander contributed to this summary with the data from Russian Lapland. But even this knowledge was largely incomplete in the north, as evident from the absence of records of many species that logically should be present in that territory.

Figure 1. Petter Adolf Karsten, year unknown. Reproduced from Wittrock (1905).

Figure 2. Gustaf Selin, photo from 1860s. Reproduced from Anttila (1935).

Apparently it was the travels of Fredrik Nylander that eventually inspired his younger brother, William Nylander (1822–1899), a famous lichenologist, Professor of Botany at University of Helsinki (1857–1863) and President of the *Societas* (1859–1863), to resume the plans originally drawn by Nordmann and to set up an expedition to the Russian North in order to fill gaps in the knowledge of northern vascular plants but, first of all, that of cryptogams and especially lichens.

The year 1861: preparing for the first expedition

In February of 1861 the *Societas* announced the expedition to Russian Lapland, which was to be realised by a group of young students and postgraduates, who were awarded with a grant of 250 roubles. Since this sum (in other sources also indicated as 275 or 300 roubles), although amounting to two years' interest rate funds of the *Societas*, was not enough to fund the whole team, Nylander applied for a grant to the Consistory of the University, and promptly received (10 April: Arppe 1863) another sum of 300 roubles from the Henning foundation which was associated with the University (Hjelt 1904).

In April, five young and enthusiastic people were selected of those seven brave men who volunteered to participate: P. A. Karsten, G. Selin, K. E. Inberg, O. A. Heikel, and N. I. Fellman. With the increased budget of the expedition, it became possible to send this large team in order to cover more extensive areas and to bring more collections by dividing the expedition into separate groups and fixing different roles for each participant.

Petter Adolf Karsten (1834–1917) (Fig. 1), mainly known as a prominent mycologist, by that time already holding a degree of licenciate (1859) and seeking for a docentship, had a good experience in fieldwork in southern Finland. He was the only academic researcher in the team; other participants were students. Gustaf Selin (1836–1862) (Fig. 2), a relative of Elias Lönnrot who was the compiler of the first Finnish Flora in the Finnish language, at that time had an interest in both botany and zoology, and was supposed to collect botanical and zoological objects. By that time he had experience in field work in southern Finland, with a botanical paper in press (Selin 1861). Karl Emil Inberg (1838–1895) was an entomologist; already before receiving a degree of Candidate he was appointed a curator (amanuensis) of zoological collections but after obtaining a medical licence (1867) he switched to medical practice. Otto Axel Heikel (1835–1898), whose name appeared variously mistaken in some published sources, collected insects in southern Finland in the same province as Selin did, but Heikel prepared no separate publication of his own and obtained no university degree. His observations on dragonflies were much used in Hisinger (1861), in which also one description of a new species was published as contributed by Heikel (1861). Later Heikel moved to the USA for a job in engineering. Nils Isak Fellman (1841–1919) (Fig. 3), then only 20 years old, was the youngest in the team. His undeniable advantage and the reason for his interest in the expedition was the botanical work of his farther Jacob Fellman, already classical at that time, which he was about to continue.

Figure 3. Nils Isak Fellman, photo from early years. Reproduced from Wittrock (1905).

The team was divided in two groups, with completely separate routes and areas of investigation (Fellman 1869; Elfving 1921). The first group (Karsten and Fellman) was sent to collect in the western part of the Kola Peninsula, travelling from Oulu through Kuusamo, Kandalaksha and Imandra to Kola and then along the Barents Sea until the Norwegian border. These group had a clear emphasis on botany; Karsten was supposed to collect fungi and vascular plants, and Fellman intended to gather lichens and vascular plants, too. The second group was sent to the eastern part of the Peninsula, through Petrozavodsk and Lake Onega to the Solovets Islands, from which they were supposed to travel along the coasts of the White Sea and then the Barents Sea up to Kola. This task was clearly more demanding, and three participants (Selin, Inberg and Heikel) were sent there mostly for insects and vascular plants; among cryptogams, Selin was supposed to collect especially mosses. However, one of the presumed participants, Heikel, dropped from the list already in May, thus weakening the second group considerably.

The year 1861: the first group (Karsten and Fellman)

Karsten and Fellman started from Oulu on 15 June and began botanical collections in present-day Karelia, close to the present border with Murmansk Region, when they crossed the Russian border on 22 June (Table 1). They decided to proceed more rapidly to the track leading through Kandalaksha and Imandra to Kola, thus sparing time for the target area. Karsten and Fellman covered the way from Kandalaksha in 5 days, focusing on Imandra and the territory north of that lake, having arrived at Kola on 29 June. After 5 days spent on Kola Bay they reached the Barents Sea coast, which they explored eastwards to Malyi Olenii Island, then westwards to Kitovaya Bay through Kildin Island, northwards over Rybachii Peninsula and finally back to Kola. This apparently demanding journey took a week. After the northern route, the expedition stayed for two weeks in Kola, taking ”diligent” excursions around the town for further collections. Karsten and Fellman took the way back as early as 30 July, ”for a number of reasons” (Fellman 1869). These reasons, apparently, included a shortage of funds (Uotila 2013). Collecting on the way, they reached Paanajärvi on 14 August and Oulu on 19 August, having spent only two full months for the whole enterprise.

The collecting activities of this group were uneven in various territories but both participants seem to have travelled and collected together. Vascular plants were collected in all but two localities that were visited by the group (Table 1).

Fellman (1869) estimated that the specimens collected by the first group in 1861 consisted of ”about 1300 species and varieties, including several ones that were new to the Finnish Flora and, among the cryptogams, a number of previously undescribed species”. He considered the results of that expedition quite satisfactory, although the route of his expedition went through the most explored areas of the Kola Peninsula (Fig. 4).

The year 1861: the second group (Selin and Inberg)

On 12 June Selin and Inberg arrived at Sortavala, then Finnish Karelia, where they started collecting activities. Travelling through Karelia, Selin made acquaintance with Alexander K. Günther (1828–1898), an apothecary in Petrozavodsk, who later became a member of the *Societas*, and found him an excellent and useful botanical collector. Günther accompanied Selin in excursions around the town of Petrozavodsk and gave him a valuable collection of interesting plants for the *Societas*. After that Selin and Inberg made an excursion to Kivach and Tiudia (northwest of Lake Onega, Karelia); from the latter place, on a marble quarry (at Belaya Gora village), they collected ”*Arabis petraea*” = *Arabidopsis lyrata* subsp. *petraea* (L.) O’Kane & Al-Shehbaz, which was new to East Fennoscandia. They continued northwards up to the Vyg River, from which they tried to reach the Solovets Islands in a pilgrim boat but failed and moved further to Kem in order to sail to the islands from that town. On the way a hunter gave them a lift and finally transported to the islands. Selin and Inberg stayed on the islands for two weeks, 11–25 July. It can only be guessed that they spent time in futile efforts to find a di-

Table 1. Route of Fellman and Karsten's travels to Russian Lapland and North Karelia in 1861. Biogeographical provinces follow Anonymous (1938).

Date	Locality as on labels	Former and present-day place name and status	Biog. prov.	lat	lon	Notes
Republic of Karelia						
22.06.1861	Soukelo	Sokolozero (lake), Soukelo (former village, now under Iova Water Reservoir)	Kk	66.409	30.722	
23.06.1861	Susijärvi	Sushozero (former lake, inundated by the Iova Water Reservoir)	Kk	66.593	31.179	
Murmansk Region						
[24.06.1861]	Knjäschaja guba, Knjäsha, Knäsä, Knjäscha	Knyazhaya (bay), Knyazhaya Guba (village)	Kk	66.876	32.491	no specimens of vascular plants were collected in this locality
25.06.1861	insula Voronja, Knäsa – Kantalaks	Voronii (island, in Severnyi Archipelago)	Kk	67.025	32.619	
25.06.1861	Kantalahti	Kandalaksha (formerly church village, now town)	Lim	67.133	32.426	
26.06.1861	flumen Niva	Niva (river)	Lim	67.187	32.469	
[27.06].1861	Jekostrof, Jokostrof, Jokostroff, Jokostrow	Yokostrov (former nomad camp of Saami people); Ekostrov (on modern maps, island and strait connecting two waterbodies on Lake Imandra)	Lim	67.582	33.050	the date was derived from the phenology of collected plants and the travel route
28.06.1861	Rasnavalok	Raznavolok (former village)	Lim	67.984	33.313	
29.06.1861	norr om Imandra	N of Imandra Lake	Lim	68.045	33.329	
29.06.1861	flumen Kurengi	Kurenga (river)	Lim	68.088	33.328	
29.06.1861	lacus Pulusosero	Permusozero (lake)	Lim	68.155	33.356	
29.06.1861	Maanselkä	Maaselkä (former nomad camp of Saami people)	Lt	68.207	33.314	
29–30.06.1861	pagum Kola, Kuolla	Kola (town)	Lt	68.883	33.016	
01–05.07.1861	sinus Kolaensis, Kola fjord, Kolskaja guba, sinus Kola	Kola (bay), Murmansk (fjord)	Lt	69.055	33.011	
05–07.07.1861	Olenji	Malyi Olenii (island)	Lm	69.252	34.718	
08–09.07.1861	Kildin	Kildin (island)	Lt	69.351	34.168	
09–10.07.1861	Kitoffka, Kitofka, Kitofska	Titovka (bay)	Lt	69.589	32.050	
11–12.07.1861	Subovi	Zubovskaya (bay)	Lt	69.796	32.514	on the map Fellman (1869) misplaced 'Subovi' at the location of Eina River
13–14.07.1861	sinus Kolaensis, Kola fjord, Kolskaja guba, sinus Kola	Kola (bay), Murmansk (fjord)	Lt	69.055	33.011	
15–17.07.1861	pagum Kola, Kuolla	Kola (town)	Lt	68.883	33.016	
18.07.1861	flumen Tuloma (prope Kola)	Tuloma (river)	Lt	68.809	32.701	
18.07–02.08.1861	sinus Kolaensis, Kola fjord, Kolskaja guba, sinus Kola	Kola (bay), Murmansk (fjord)	Lt	69.055	33.011	
02.08.1863	Kitscha prope Kola	Kitsa (river, at the mouth)	Lt	68.614	33.234	
02.08.1861	flumen Kurengi	Kurenga (river)	Lim	68.088	33.328	
[02].08.1861	Rasnavolok	Raznavolok (former village)	Lim	67.984	33.313	
02.08.1861	Imandra	Imandra (lake)	Lim	67.619	33.048	
03.08.1861	Sascheika	Zasheyek (formerly post station, now village)	Lim	67.403	32.561	

Table 1. cont.

Date	Locality as on labels	Former and present-day place name and status	Biog. prov.	lat	lon	Notes
03–04.08.1861	flumen Niva	Niva (river)	Lim	67.187	32.469	
[04.08.1861]	Kantalahti	Kandalaksha (formerly church village, now town)	Lim	67.133	32.426	no specimens of vascular plants were collected in this locality
04.08.1861	insula Polaschka prope Kantalahti	Palashka (island)	Lim	66.971	32.572	
04.08.1861	Kantalahti, Kantalaks	Kandalaksha (gulf)	Kk	67.025	32.619	
06–08.08.1861	Knjäschaja gubä, Knjäsha, Knäsä	Knyazhaya (bay), Knyazhaya Guba (village)	Kk	66.876	32.491	
10.08.1861	Koutajärvi	Kovdozero (lake)	Kk	66.773	31.775	
10.08.1861	Iiava	Iova (river)	Kk	66.665	31.386	
Republic of Karelia						
10.08.1861	Susijärvi	Sushozero (former lake, inundated by the Iova Water Reservoir)	Kk	66.593	31.179	
11.08.1861	Ruankoski prope Soukelo	former small village on the western side of Lake Ruvozero	Kk	66.467	30.806	

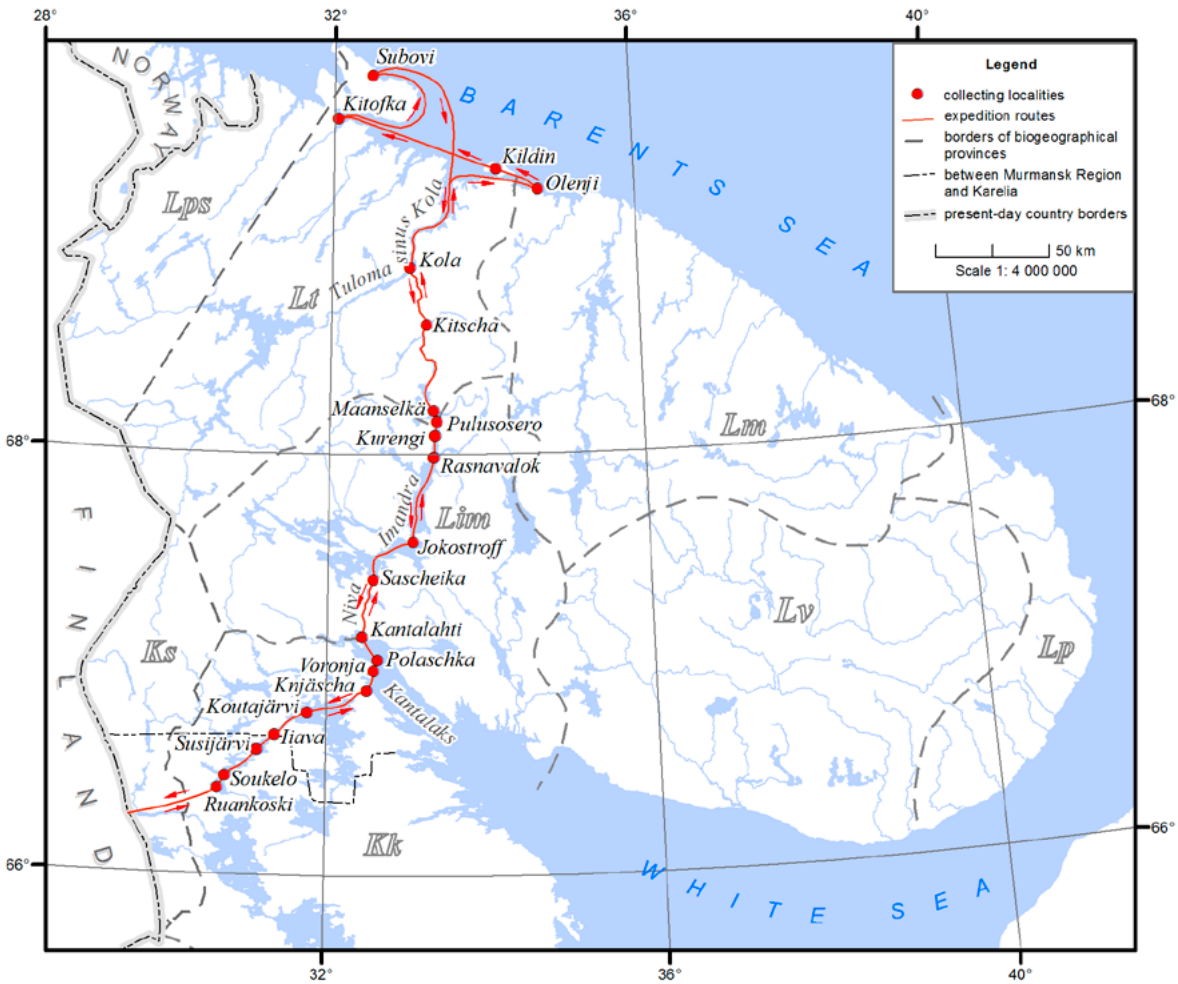

Figure 4. Finnish expedition (P. A. Karsten and N. I. Fellman) to the Kola Peninsula in 1861. Biogeographical provinces follow Anonymous (1938).

rect transport to the eastern coast of the Kola Peninsula, but this plan of the *Societas* was unrealistic since small rowing boats, which the travellers were about to use, cannot cross the broader parts of the White Sea because of stormy conditions. At the end of that period Selin became affected by hemoptysis, which, as he reported, was so long-lasting that it forced him to stay in Kem, to which they retired from the islands, and to hire a German doctor for a medical treatment.

This was a critical point in the expedition, as Inberg decided to part company with Selin and continue through the mainland to Kola alone. Inberg departed on 29 July, and travelled through Keret, Kandalaksha and then Imandra along the main road until Kola, and then back by the same way. Altogether, he spent only 2 weeks in the Kola Peninsula (Silfverberg 1988).

Nevertheless, Selin recovered quickly and proceeded towards the Kandalaksha Gulf only three days after (Table 2). When Selin arrived through the gulf at Umba village on 5 August, it was hopelessly too late to dream of going far east. He changed the original plan and intended to take a way to the interior of the Peninsula upstream the Umba River, but he had to cancel this idea, also hardly realistic because of extensive mires separating the upper reaches of the Umba River from the Khibiny Mts., which may have constituted the "completely unpredictable difficulties" mentioned by Selin (1869). Instead, Selin explored the southern coast of the White Sea between Umba and Varzuga villages (Fig. 5). On the way back he visited Turii Mys, currently a strictly protected area, and made the first botanical collections at that place, which is truly extraordinary in its plants (Andreev et al. 1978). Already at the end of August, Selin rushed through Kandalaksha to Kola. He reached the Barents Sea at the beginning of September and proceeded further north to Kildin Island, where he spent three days under extremely harsh weather of the northern autumn. On the way back he visited the Khibiny Mts., in mid-September, seeing snow on the higher peaks. In spite of the snow, he collected another novelty in the mountains, "*Potentilla nivea*" = *P. chamissonis* Hultén.

Table 2. Route of Selin's travels to Russian Lapland and North Karelia in 1861. Biogeographical provinces follow Anonymous (1938).

Date	Locality as on labels	Former and present-day place name and status	Biog. prov.	lat	lon
Republic of Karelia					
01.08.1861	Kem	Kem (town)	Kpoc	64.954	34.590
03.08.1861	Kantalaks (inter Kem et Keret)	southern shore of Kandalaksha Gulf	Kk	66.422	33.848
Murmansk Region					
06–08.08.1861	Umba	Umba (formerly church village, now small town)	Lim	66.677	34.304
08.08.1861	Kusräka	Kuzreka (village)	Lv	66.607	34.811
08.08.1861	Oleniza	Olenitsa (village)	Lv	66.470	35.332
09.08.1861	Kaschkarantsa	Kashkarantsy (village)	Lv	66.339	36.010
09–13.08.1861	Warsuga, Varsuga	Varzuga (formerly church village, now village)	Lv	66.398	36.590
14.08.1861	Kaschkarantsa	Kashkarantsy (village)	Lv	66.339	36.010
16.08.1861	Turja	Turii (cape and protected area)	Lim	66.537	34.504
16.08.1861	Jambruts	Khyamruchei (brook)	Lim	66.558	34.445
19–22.08.1861	Umba	Umba (formerly church village, now small town)	Lim	66.677	34.304
24–26.08.1861	Pore Guba	Porya Guba (village, now abandoned)	Lim	66.775	33.763
29.08.1861	byn Kantalahti	Kandalaksha (formerly church village, now town)	Lim	67.133	32.426
05.09.1861	Srednyi ad sinum Kolaensem	Srednyaya (small bay)	Lt	69.141	33.571
06–08.09.1861	insula Kildin	Kildin (island)	Lt	69.351	34.168
17.09.1861	Kipinä ad Imandra	Khibiny (Mts.), Imandra (lake)	Lim	67.7	33.2
22.09.1861	Kantalahti	Kandalaksha (formerly church village, now town)	Lim	67.133	32.426
22.09.1861	Kouta	Kovda (village)	Kk	66.694	32.861
Republic of Karelia					
27.09.1861	inter lacus Koutajärvi et Ruanjärvi	between Kovdozero (lake) and Ruvozero (lake): Iova (river), Tutozero (lake), Sushozero (lake); now all inundated by the Iova Water Reservoir	Kk	66.61	31.25

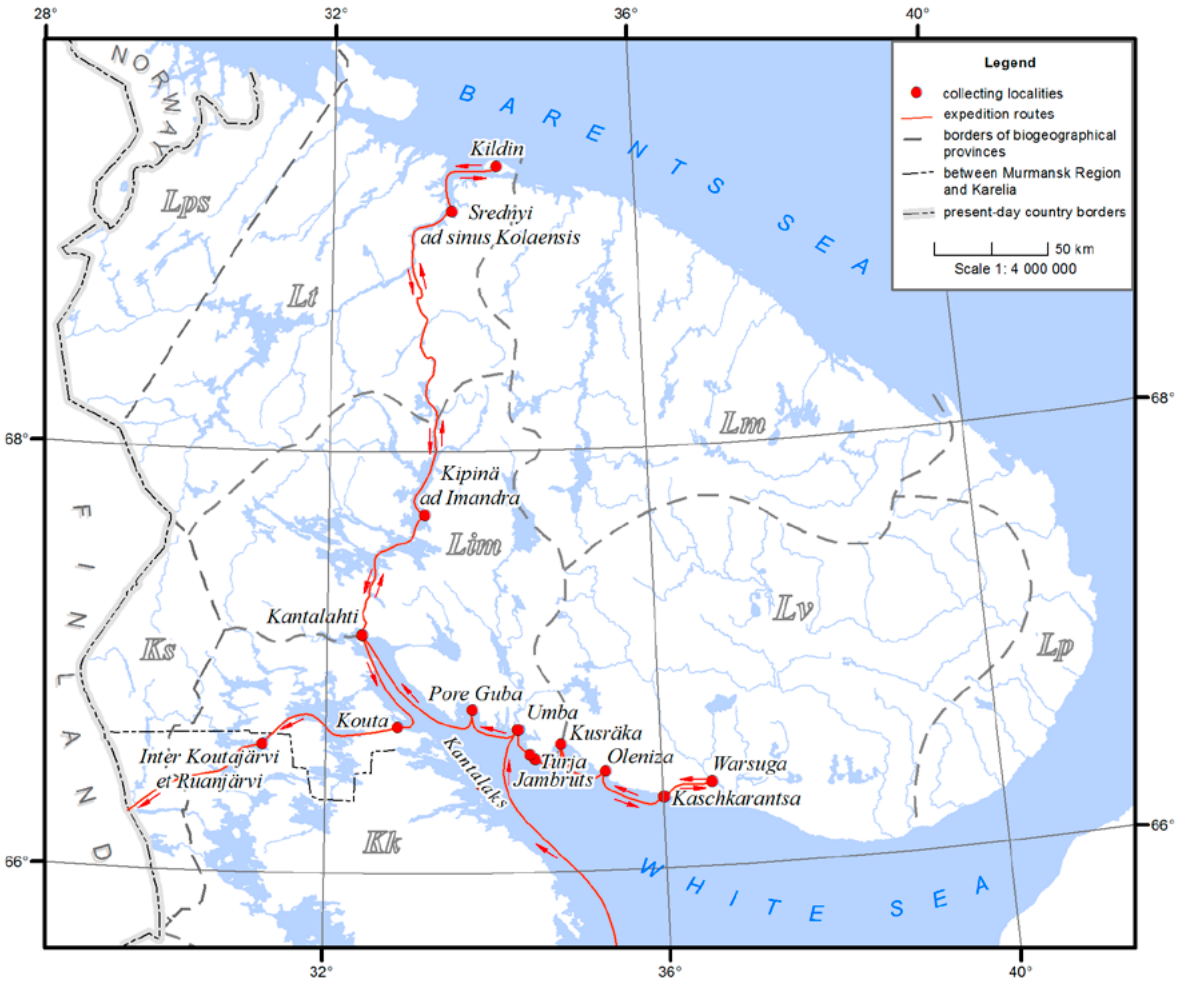

Figure 5. Finnish expedition (G. Selin) to the Kola Peninsula in 1861. Biogeographical provinces follow Anonymous (1938).

Apparently Selin faced to a number of significant difficulties on his way. They included inconvenient or unsuitable boats, difficulties with securing casual local transportation, linguistic barriers (he had to hire an interpreter, who accompanied him until his return to Finland: Selin 1869), uneasy communication with the locals (who were reportedly hostile to him: Anttila 1935), a significant disease (which was likely a symptom of tuberculosis), a harsh climate and a very stormy weather (Selin 1869) may have made him thinking of the expedition as continuous acute pain. He apparently did his best in discovering as many good plants as possible, observing the flora in the most complete way, but he understood the task of complementing the herbarium collections too literally and started collecting early on the way with every plant that was not in the list of collected specimens, and thus he shifted the emphasis from Lapland to Karelia and spent an excessive time on the way to the northern target. When Selin arrived at the Solovets Islands, the season had already been quite advanced, and his failure to observe the schedule was coupled to the absence of the planned transport – which was, however, not Selin's fault. Selin's attempts to compensate the failures by redirecting the expedition inland and extending the collecting season apparently were not accepted by his companions who expected that the largely unknown areas in the east of the Kola Peninsula should have been studied instead of making another effort in the west.

The years 1861–1863: processing specimens and preparing for the second expedition

Eventually all the participants succeeded to obtain extensive collections in all subjects of natural history. The collections were labelled and identified (or at least pre-identified) separately by each collector, and were submitted separately to the *Societas* as part of individual reports and for inclusion in the national Herbarium.

Karsten was the first to send 107 species of fungi and a minor portion (15 species) of phanerogams to the *Societas*, already by the first of October in 1861 (reported in Finlands Allmänna Tidning, № 237, p. 1, 11 October 1861), following by some lichens, 88 species of fungi and 50 species of phanerogams in mid-November of 1861 (Finlands Allmänna Tidning, № 285, p. 2, 06 December 1861), 195 species of fungi and 65 species of phanerogams in mid-May of 1862 (Helsingfors Dagblad, № 122, p. 2, 28 May 1862), 83 species of phanerogams and 2 species of ferns, and also some mosses in mid-October of 1862 (Helsingfors Dagblad, № 254, p. 1, 1 November 1862), then 107 species of phanerogams, 5 species of ferns and 6 species of fungi at the end of November of 1862 (Helsingfors Dagblad, № 285, p. 1, 8 December 1862), and, finally, 88 species of phanerogams, 75 species of mosses, 63 species of lichens and 158 species of fungi in mid-May of 1863 (Helsingfors Dagblad, № 114, p. 2, 20 May 1863).

Typically of those days, travel reports and scientific results of the expedition, written in the form of extensive accounts, were expected from the participants. The *Societas* noted in mid-May of 1862 that no travel report had been received but scientific contributions were expected for the forthcoming volume of Notiser, a scientific periodical of the *Societas.* Karsten was the first to prepare and submit for publication to the *Societas* his treatment of fungi and myxomycetes, based on his own collections, which included 425 species. The treatment (Karsten 1866) was very brief but duly critical, with a high level of novelty (4 new species and 2 new genera).

Among his phanerogams, Karsten (in Helsingfors Dagblad, № 254, p. 1, 1 November 1862) communicated two floristic novelties to the *Societas*: *Zostera angustifolia* Hornem., which had been reportedly misapplied for a slender form of *Z. marina* L. and was later included into that species as a variety by Fellman (1869), and *Erigeron elongatus* Ledeb., which had not been previously recognised in Finland and was subsequently reduced to a variety of *E. acris* L. by Fellman (1869).

Fellman prepared large collections of lichens in November of 1861 and in May of 1862, apparently because Nylander wanted to treat them as soon as possible. However, obviously, Nylander was not able to work with this collection until the next autumn when he returned to Helsinki from Paris after a year of his absence (Collander 1965). The lichen collection was remarkable in size, quality and taxonomic value. Nylander quickly proceeded with publication of taxonomic novelties based on this collection, including the harvests of all the three botanical participants. In mid-May of 1863 it was announced that 6 species of lichens collected by Fellman, one species collected by Karsten, and one collected by Selin were new to science (Helsingfors Dagblad, № 114, p. 2, 20 May 1863; Brenner 1896). Nylander published short articles (e.g. Nylander 1863) that included new species based on the specimens collected by this expedition.

Fellman read his travel report to the *Societas* on the last day of February of 1863 (Helsingfors Dagblad, № 54, p. 1, 6 March 1863). At the same time he presented his collections of phanerogams (327 species, including 103 species of monocots and 224 species of dicots) and ferns (18 species). Of these, 35 monocots and 120 dicots had not been present in the collections of the *Societas* from Russian Lapland (as checked against Nylander & Sælan 1859), and one species (*Sparganium hyperboreum* Laest. ex Beurl.) was reported as new to East Fennoscandia (in Helsingfors Dagblad, № 54, p. 1, 6 March 1863). Adding more specimens to the collections, in mid-May Fellman read another detailed report to the *Societas*, on collected specimens, with the final deposit of 38 species of phanerogams, 70 species of mosses and 209 species of lichens (Helsingfors Dagblad, № 114, p. 2, 20 May 1863).

Most misfortunate was the part of Selin's. Disappointed by the failure to reach the prescribed destination and, it seems so, by the unforgiveness of his colleagues, he had to apolo-

gise all the time, explaining the troublesome circumstances and presenting the accuracy and the aimed comprehensiveness of his collections as an excuse (Selin 1869). Personally Selin perceived his troubles during the expedition being so oppressive that quickly after returning back he decided to resign from the University, to leave botany and to turn studying agriculture in England, for which he immediately left until the next summer (Anttila 1935).

Having returned from England, in 1862 Selin processed his specimens and labelled them in the excessively accurate way, which Nylander characterised as "coquettish" (Elfving 1921). He wrote a report to the *Societas* (Selin 1869), addressed to Nylander, in which he explained that he understood his task literally as to fill the gaps in the list of herbarium collections of the Botanical Museum (Nylander & Sælan 1859) and for this reason he started from central Karelia with the intention to collect all, even the most trivial plants, which were missing in the list. In his opinion, this basic work would have opened way for the others to proceed with the geographic analysis and to facilitate future discoveries of more interesting things; alas, the latter was the very thing for which Selin was directed. He estimated (Selin 1869) that the number of new records in his collections was quite high: 210 species of vascular plants from Russian Karelia and 125 species from Russian Lapland; a published report of the *Societas* listed even more, 237 and 125 species, respectively. Two species were new to East Fennoscandia, "*Potentilla nivea*" and "*Arabis petraea*" (mentioned above, reported in Helsingfors Dagblad, № 285, p. 1, 8 December 1862). The total amount of specimens received from Selin was 290 phanerogams and 12 ferns from Russian Karelia and 191 phanerogams and 12 ferns from Russian Lapland (received in November 1862, reported as above), to which 11 species of mosses, 10 species of algae, 6 species of fungi and 67 lichens were added (received in May 1863, reported in Helsingfors Dagblad, № 114, p. 2, 20 May 1863).

Except for very few published novelties, Selin made other (unpublished) records and taxonomic observations that passed unnoticed or had not been appreciated by that time. For example, he collected a specimen of *Ranunculus acris* L. s.l. in Kildin Island, which belonged to the subarctic race of the species and was recognised by Selin as *R.* '*lanuginosaeformis*' sp. nov. in sched. This taxon was rejected and hence its name was not validly published by Fellman (1869) who mentioned this plant and its distinct characters but preferred to treat *R. acris* broadly, although he noted its high variability. Selin's taxon had been largely left unnoticed until Ovczinnikov (1937) and Tzvelev (1994, 2001) accepted *R. lanuginosiformis* as a segregate species occurring in Fennoscandia, East Europe and Siberia.

In spite of these good botanical harvests, Selin apparently was pressed for his failure to reach the target area. Besides, in 1862 he had got another trouble that became fatal. Selin was unlucky in love and, after breaking an engagement, on 2 October he shot a bullet in his head (Johansson 1919; Anttila 1935). Selin's letter to Nylander, which reported the results of his expeditions, was read at a meeting of the *Societas*, at the end of November, already posthumously.

Inberg presented his report to the *Societas* in April of 1863 (Helsingfors Dagblad, № 92, p. 1, 23 April 1863). Due to the short time spent in the Kola Peninsula, Inberg's collections of insects were rather small. In spite of their limited amount, these specimens were the first professional entomological collection from Russian Lapland (the second one after very few insects collected or observed by Jacob Fellman). No separate publication seems to have appeared on that subject, but Inberg's specimens were subsequently included into several taxonomic inventories published by Finnish entomologists (Silfverberg 1988). No botanical collections were delivered by Inberg to the *Societas*.

When counted from the published reports (Table 3), the collections of vascular plants brought by individual members of the expedition in 1861 were compatible, ranging between 300 and 400 species; however, Selin's part from Lapland was apparently smaller. As expected, Fellman placed another emphasis on lichens and Karsten collected fungi, whereas specimens of mosses were rather few in all individual collections.

In mid-May of 1863, Nylander announced at a meeting of the *Societas* (in Helsingfors Dagblad, № 114, p. 2, 20 May 1863) that the botanical collections of Selin, Karsten and Fellman,

Table 3. The amount of botanical collections delivered by the Finnish expeditions from Russian Lapland and North Karelia in 1861 (as reported to the *Societas pro Fauna et Flora Fennica*). Figures indicate the number of species as stated in individual reports. Selin's collections of vascular plants are counted separately for Karelia and Lapland.

	vascular plants	lichens	fungi	mosses	algae
Fellman	384	209	–	70	–
Karsten	350	65	360	75	–
Selin	302 + 203	67	6	115	10

when taken together, were "undoubtedly the most significant ever from the Arctic region". In order to continue these investigations, the *Societas* had again dispatched two expeditions eastwards, one to Eastern Lapland and another to the area of Lake Onega in Russian Karelia. In addition to the achievements of the previous northern expedition, another reason was to complement the collections by sampling in the eastern parts of the Kola Peninsula, which were missed by Selin. Fellman's treatment of vascular plants was deferred, and even more ambitious collecting activities were planned. As before, Nylander was successful in doubling the budget of the expedition by another grant from the Henning foundation (300 roubles, again), which was a firm proof of the great interest to this expedition.

Figure 6. Mårten Magnus Wilhelm Brenner, photo from 1864. Reproduced from Wittrock (1905).

The year 1863: the second expedition (Fellman, Brenner and Laurin)

In the summer of 1863, Fellman was accompanied to the Kola Peninsula by two younger students, M. M. W. Brenner and N. J. Laurin (Fellman 1864b). The main purpose of the expedition was collecting vascular plants and lichens in the eastern part of the Kola Peninsula.

Nils Isak Fellman by that time obtained (2 June 1862) a degree of Candidate in physics and mathematics and became the oldest and most experienced scientist in the new team. Mårten Magnus Wilhelm Brenner (1843–1930) (Fig. 6) was a botanist who worked mostly on vascular plants of Finland but also published on lichens. He worked for most of his life as a school teacher and then rector, and became most widely known for his extensive contributions to the Finnish *Hieracium s.l.* and *Taraxacum* (Collander 1965; Lundevall & Øllgaard 1999; Sennikov 2002). Nils Johan Laurin (1842–1904) was a student in botany but subsequently he obtained no university degree and made no published contributions; later he became a customs officer in Kemi, Finland. There was another person accompanying the expedition for technical matters, Niemelin, who was a garden trainee.

The purpose of the expedition was to bring more comprehensive botanical collections from the area. As before, Fellman was also supposed to make extensive collections of lichens for Nylander.

Departing from Helsinki on 24 May and travelling from Sortavala through Petrozavodsk, Kivach, Povenets and Suma, the team started collecting activities at Keret (Fellman 1864b) (Table 4), in present-day Karelian Republic and biogeographic province *Karelia keretina*, at that time at the southern limit of Lapland. Intending to observe the southern coast of the Kola Peninsula, they were forced by the locals to leave the vicin-

Table 4. Route of Fellman, Brenner and Laurin's travels to Russian Lapland and North Karelia in 1863. Biogeographical provinces follow Anonymous (1938).

Dates	Locality as on labels	Former and present-day place name and status	Biog. prov.	lat	lon	Notes
Republic of Karelia						
27–28.06.1863	Keret, Kieretti	Keret (former church village, now abandoned)	Kk	66.279	33.565	
29.06.1863	holme i Kantalahti mellan Keret och Umba; Kantalahti, 20 verst från Keret	an island in Kandalaksha Gulf between Keret and Umba, in Kem-Ludy Archipelago	Kk	66.422	33.848	
Murmansk Region						
30.06.1863	Umba	Umba (formerly church village, now small town)	Lim	66.677	34.304	
01.07.1863	Turii, Turij, 7 verst O. om Umba	Turii (cape and protected area)	Lim	66.537	34.504	
[03–03.07].1863	Kusomen	Kuzomen (village)	Lv	66.287	36.865	
04–05.07.1863	Tschavanga, Tjavanga, Tsevanga	Chavanga (village)	Lv	66.109	37.758	
06–07.07.1863	Tetrina	Tetrino (village)	Lv	66.061	38.244	
08.07.1863	Pjalitsa, Pjälitza	Pyalitsa (village)	Lp	66.191	39.521	
09.07.1863	Babja	Babya (bay)	Lp	66.391	40.306	
10.07.1863	Krasni Scholk, Krasnij-schjolk, Krasnojsolki	Krasnye Shelya (cape)	Lp	66.672	40.934	
10.07.1863	Kislaja Guba	Kislokha (bay)	Lp	66.841	41.225	
10.07.1863	Kusmin nos	Kuzmin (cape)	Lp	66.882	41.253	
11.07.1863	Ponoj	Ponoi (former church village, now abandoned)	Lp	67.076	41.124	
11–19.07.1863	Ponoj, flodmynning	Ponoi (river), at the mouth	Lp	66.986	41.280	
20.07.1863	Karabelnij nos	Korabelnyi (cape)	Lp	66.974	41.304	
21–28.07.1863	Ponoj	Ponoi (former church village, now abandoned)	Lp	67.076	41.124	
30.07.1863	Triostroff	Tri Ostrova (islands)	Lp	67.106	41.403	specimens were probably collected both on the islands and the adjacent mainland
30.07.1863	4 verst norr om Karabelnij nos	Goryainov (island)	Lp	67.018	41.367	
31.07.1863	Orlov, promontorium Orloff	Orlov (cape), Tersko-Orlovskii (lighthouse)	Lp	67.199	41.328	
31.07.1863	Katschkowa, Katschkova	Kachkovka (bay)	Lp	67.459	40.986	
01.08.1863	Panfelofka, Panfelefka	Panfilova (bay)	Lp	67.556	40.952	
03–05.08.1863	Lumbofski, Lumbofskij, Lumbovski	Lumbovka (nomad camp of Saami people, now abandoned)	Lp	67.843	40.270	Lumbovka was formerly situated on the western side of Lumbovskaya Bay (Reineke 1850)
06.08.1863	Sapadnivolok, Sapadnij volok, Sapadnjenavolok	cape on the northwestern side of Lumbovskaya Bay (forming Zapadnaya Bay)	Lp	67.839	40.301	
07.08.1863	Svjätoinos, Sviätoinos, Svätoinos, Svætoinos, promontorium Sanctum	Svyatoy Nos (cape)	Lp	68.156	39.743	
07.08.1863	Jokonga	Yokanga (formerly nomad camp of Saami people, later village, abandoned)	Lm	68.001	39.702	
11.08.1863	Kljätnich, Kletni, Kletnich	Klyatny (cape)	Lm	68.195	39.137	
[11–12.08].1863	Ladogina	Ladogina (former nomad camp of Saami people, abandoned)	Lm	68.304	38.776	

Table 4. cont.

Dates	Locality as on labels	Former and present-day place name and status	Biog. prov.	lat	lon	Notes
12.08.1863	Warsina	Varzina (bay)	Lm	68.363	38.364	
[12–13].08.1863	Harlofka	Kharlovka (village, abandoned)	Lm	68.781	37.312	
13.08.1863	Charlov	Kharlov (island)	Lm	68.810	37.335	
13.08.1863	Baraschiha	Barashikha (former nomad camp of Saami people, abandoned)	Lm	68.903	36.893	
13–17.08.1863	Kildin	Kildin (island)	Lt	69.351	34.168	
18.08.1863	Kolskaja guba, sinus Kola, sinus Kolaensis, Kola fjorden	Kola (bay), Murmansk (fjord)	Lt	69.055	33.011	
18–19.08.1863	pagum Kola, Kuolla	Kola (town)	Lt	68.883	33.016	
20.08.1863	inter Sonkoj (Schonga) et Kitscha	between Shonguy (brook) and Kitsa (river) along Kola River	Lt	68.691	33.134	
20.08.1863	Kitscha prope Kola	Kitsa (river, at the mouth)	Lt	68.614	33.234	
21.08.1863	Murdosero	Murd-ozero (lake)	Lt	68.450	33.153	
21.08.1863	Pulosero	Pulozero (lake)	Lt	68.358	33.295	
22.08.1863	Imandra	Imandra (lake)	Lim	67.619	33.048	
22.08.1863	ön Wysokij i Imandra	Vysokii (island in Imandra Lake)	Lim	67.773	33.140	
22.08.1863	Jekostrof, Jokostrof, Jokostroff, Jokostrow	Yokostrov (former nomad camp of Saami people); Ekostrov (on modern maps, island and strait connecting two waterbodies on Lake Imandra)	Lim	67.582	33.050	
23.08.1863	Niva	Niva (river)	Lim	67.187	32.469	
[23.08].1863	Kantalahti	Kandalaksha (formerly church village, now town)	Lim	67.133	32.426	
24.08.1863	Knäsä, Knjäschaja, Knäschaja guba, Knjäschaja gubá	Knyazhaya Guba (village), Knyazhaya (bay)	Kk	66.871	32.395	
[25.08].1863	lacus Koutajärvi	Kovdozero (lake)	Kk	66.773	31.775	
26.08.1863	Kallikarajoki	brook near Kalikorva Mt.	Kk	66.705	31.546	
26.08.1863	Tuttijärvi	Tutozero (lake)	Kk	66.703	31.475	
Republic of Karelia						
26.08.1863	Susijärvi	Sushozero (former lake, inundated by the Iova Water Reservoir)	Kk	66.593	31.179	
26.08.1863	Ruanjärvi, Ruankoski	Ruvozero (former lake, inundated by the Iova Water Reservoir)	Kk	66.512	30.981	
[26.08].1863	Soukelo	Sokolozero (lake), Soukelo (former village, now under the Iova Water Reservoir)	Kk	66.409	30.722	

ities of Umba and therefore spent little time for the Turii Mys. Perhaps for this reason, its extraordinary local endemic, *Taraxacum leucoglossum* Brenner, was not collected by Magnus Brenner; it was already 50 years later when he received its specimens from his son, Widar Brenner (Brenner 1915).

Proceeding along the southern coast, the expedition observed extensive flat sandy areas up to the village of Pyalitsa, where rocks were popping to the sea again. Except sandy places, the coast was largely forested with birch and spruce but was devoid of pine. Further eastwards the forest stepped off the coast, leaving place for tundra, although trees and the forest vegetation could be found in any place that was sheltered from winds as far as at Ponoi.

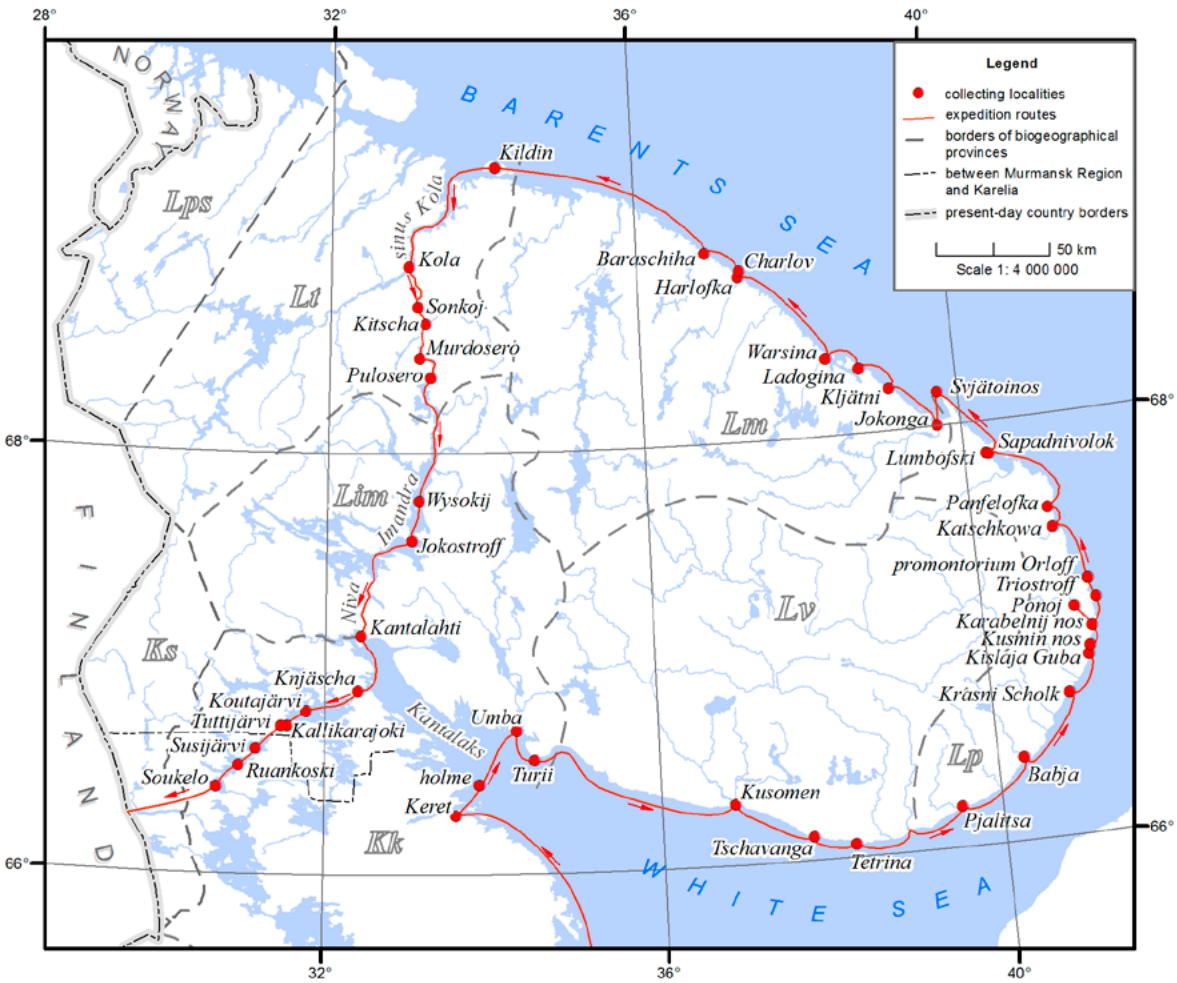

Figure 7. Finnish expedition (N. I. Fellman, M. M. W. Brenner and N. J. Laurin) to the Kola Peninsula in 1863. Biogeographical provinces follow Anonymous (1938).

The travellers found Ponoi very rich in botanical objects, and spent the total of 18 days to explore its natural treasures, regretting only the need to proceed further along the northern coast of the Kola Peninsula in order to complete the tasks. Fellman (1864b) admitted that his best collections from that expedition originated from Ponoi, and his impressions and observations are well in line with the current knowledge on the botanical value of this place (Kozhin et al. 2018).

Further on, the expedition observed the northern coast, visiting most of the populated places and spending more time at Lumbovka and in Kildin Island. Having reached Kola town, the travellers proceeded back through Lake Imandra to Karelia, with a longer stop at Knyazhaya Guba, collecting plants until the last day of the expedition (Fig. 7).

The years 1863 and 1864: processing the collections

The expedition of Fellman, Brenner and Laurin brought considerable botanical harvests. In a month after leaving Karelia, still on the way back to Helsinki, from Oulu, Fellman sent (on 19 September) his travel report as a letter to William Nylander. In this report Fellman described the route of the expedition and the main features of

the landscape and vegetation, and provided brief lists of new and most characteristic plants from the territory. This report shows a strong knowledge of Fellman's on the plants of Lapland, and also his ability to proceed with the identifications very rapidly, mostly already in the field.

Among new records, the report contains one nomenclatural novelty: *Saxifraga comosa* "Poir.", i.e. *S. comosa* (Retz.) N.I.Fellm. (based on *S. stellaris* var. *comosa* Retz.) = *Micranthes foliolosa* (R.Br.) Gornall (based on *Saxifraga foliolosa* R.Br.). A full nomenclatural account of this species will appear elsewhere (in prep.).

The report was published originally in French (Fellman 1864b), and then quickly translated from reprints into German by the editors of *Flora* (Fellman 1864c) and into English by the editors of *The Quarterly Journal of Science* (Fellman 1865). This clearly shows a great interest of European botanists in the flora of Eastern Lapland, which had been so poorly studied that the first regular collections of the year 1863 were received as sensation. For the purposes of plant nomenclature and precise bibliography, the dates of effective publication of these versions of the report are as follows: French version – May 1864 (Leussink 1985), German version – 16 Jul 1864 (imprint), English version – Oct 1865 (imprint).

In November of 1863 Fellman and Brenner presented to the *Societas* three plants that were new to East Fennoscandia. According to the report published in Helsingfors Dagblad (№ 267, p. 1, 17 November 1863), these were *Paeonia anomala* and *Gypsophila fastigiata*, as well as "a strange northern form of *Trientalis europaea*."

Fellman presented a report on the expedition at the meeting of the *Societas* on 12 March of 1864 (Helsingfors Dagblad, № 73, p. 2, 31 March 1864). On that occasion, he also demonstrated a seed of "*Mimosa scandens*" = *Entada gigas* (L.) Fawc. & Rendle, which was found in Kola. Seeds of this plant, whose native distribution is the tropical parts of Central America and Africa, have been known to drift long distances on ocean currents. Records of such drift seeds are frequent along the Atlantic coast of Norway (Alm & Nelson 2004), and saami people used them as snuff-boxes already in the 19th century (Alm 2003).

At the same meeting, Fellman demonstrated the first fascicle of his exsiccata of vascular plants of Russian Lapland, *Plantæ Arcticæ Exsiccatæ*. These exsiccata (Fellman 1864a) were completed in May of 1864 and distributed to several foreign botanical institutions. This was the first collection of vascular plants from the Kola Peninsula that was distributed broadly and became accessible to European (and even American) botanists. The collection consisted of 370 numbers and was much appreciated and cited in various taxonomic publications.

For some reason, the number of specimens collected in 1863 was not included in minutes of the *Societas* that were published in 1863–1865.

On 30 May 1864 Fellman was promoted for a master's degree. By that time he prepared his main botanical work, a synopsis of vascular plants of Russian Lapland, which listed 517 species. In this work, Fellman summarised the knowledge obtained during the expeditions of 1861 and 1863, and made due references to the works of his predecessors, first of all his father (Fellman 1831) and Fredrik Nylander (1843, 1844, 1846). However, Fellman made no reference to *Flora Rossica* (Ledebour 1841–1853), which included citations of plant records made by Schrenk, and therefore he partly obscured the value of his work in respect of new records.

After a few years of delay, Fellman's synopsis was supplied with a detailed description of the vegetation and discussions on the plant geography of the Kola Peninsula, and published (Fellman 1869) as part of the contributions from the expeditions.

On request of William Nylander, Fellman actively collected lichens also during the expedition of 1863. This became a special task; as a result, he brought rich collections to Helsinki which were quickly passed for treatment to Nylander. Nylander described some new taxa on the basis of this collection (e.g. Nylander 1864a, 1864b, 1865), and eventually published a synopsis of lichens of Russian Lapland (Nylander 1866). The number of undescribed lichen species collected by Fellman in 1863 was 13 (Brenner 1896). Many specimens of this collection (224 numbers) were distributed as exsiccata, *Lichenes arctici* (Fellman 1864d), issued under the name of collector's but identified by Nylander. The exsiccata bear the date 1865 but they were published and distributed late in 1864 because their first review (Stizen-

berger 1865) was written for a journal on 24 Dec 1864.

The exsiccata had no index, and their specimens were accompanied with paper slips on which only the title and the geographic origin (*Lapponia orientalis*) were printed, whereas numbers, species names and authorities were handwritten (Sayre 1969). For this reason these exsiccata cannot be treated as effectively published for the purposes of plant nomenclature, and no lichen names appearing there were validly published (McNeill et al. 2012).

However, a few new combinations from these exsiccata were validly published prior to Nylander's treatment. When Stizenberger (1865a, 1865b) wrote a review of this work, he included an abridged list of lichen names, of which a few were eventually new. Since the names were accompanied by citations of taxonomic authority, serving as indirect references to the basionym, these were validly published. Nylander should be accepted as the nomenclatural author of these new combinations, according to Art. 46. The two reviews published by Stizenberger are identical; of these, the text published in *Flora* (Stizenberger 1865a) has priority because the relevant journal's issue was printed on 28 February, whereas the review in *Hedwigia* (Stizenberger 1865b) was printed later, in August. The complete contents of Fellman's lichen exsiccata were published much later (Lynge 1915) and have no nomenclatural bearing because the relevant nomenclatural novelties were already published in Nylander (1866).

Results and Discussion

The botanical collections of the Finnish expeditions to the Kola Peninsula in 1861 and 1863 were rich. Although the main set of these collections was acquired by the Botanical Museum of the University of Helsinki, and was therefore not widely accessible in the 19th century, representative sets of vascular plants and lichens were distributed (Fellman 1864a, 1864d) to several institutions and became the first internationally known collections from Russian Lapland.

However, the herbarium labels from these expeditions (Fig. 8), typically brief, were not satisfactorily accurate – perhaps except for the calligraphic handwriting of Selin's. Precise dates were missing on most of the labels, and even collecting years were partly confused while the labels were copied by curators. Place names were partly obscure and illegible, leaving room for errors in citations and databasing. Biogeographic provinces were used inconsistently and according to older versions of the biogeographic division of East Fennoscandia (for details, see Uotila 2013). Besides, although a map with main collection localities was provided in Fellman (1869), the localities were not always precisely and accurately shown on the map. Altogether, these difficulties made the use of the collections challenging.

Using some dated specimens as reference, we traced the precise routes of all the three expeditions, and we localised their collection sites with utmost accuracy available, using the historical descriptions of the Kola Peninsula. Place names visited by the expeditions were recorded from the labels of vascular plant specimens, and their original spelling (as used on the labels) was matched with present-day names; changes in the status of inhabited places or their abandonment were also noted. When collecting dates were not directly recorded from labels but inferred from the route, the dates were cited in square brackets. Assignment of collection places to biogeographic provinces was made using the latest Finnish version of the scheme (Anonymous 1938). The resulting Tables 1, 2 and 4 provide the technical background for correct databasing of the herbarium specimens collected by the Finnish expeditions to the Kola Peninsula in 1861 and 1863, which will facilitate the analysis of their scientific results.

Difficulties are especially great in deciphering labels of Fellman's exsiccata, on which precise collecting dates (day and month) are lacking. Moreover, labels of his lichen exsiccata bear no locality information. These missing data can now be traced: localities with the use of original or transcribed labels from lichen specimens kept at H (Fig. 9), and dates from the present publication (Tables 1, 2 and 4).

The main botanical results of these expeditions (in vascular plants) were published in Fellman (1869), which was a description of the vegetation and an annotated synopsis of the flora of the Kola Peninsula. This work became widely known and served as a reference source on vascu-

Figure 8. Original labels of herbarium specimens collected by members of the Finnish expeditions to the Kola Peninsula in 1861 and 1863.

First row: M. M. W. Brenner (*Armeria arctica* Cham. Panfelofka, 01 August 1863, M. Br. (H 418693); *Zostera marina* L. Knäsä, 24 August 1863, M. Br. (H 223671); *Aconitum lycoctonum* L. Lp, Tetrina, 07 July 1863, M. Brenner (H 798848)).

Second row: N. I. Fellman (*Poa remota* Fr. var. *congesta* Ångstr. Ponoj, 27 July [1863] (H 690296); *Alnus glutinosa* var. *pubescens* [identification written by J.P.Norrlin] Lapponia orientalis, ad sinum Kolaënsem, 17 July 1861 (H 60306)).

Third row: P. A. Karsten (*Actaea spicata* Rasnavolok ineunte, [02] August 1861 (H 797752); *Zostera marina* L. / *Zostera angustifolia* Hornem. Mare Album, Knäsä Guba, 08 August 1861, Karsten (H 223674)).

Fourth row: G. Selin (*Cotoneaster vulgaris* Turja, 16 August 1861 (H 381528); *Aconitum lycoctonum* Oleniza, 08 August 1861 (H 798840); *Actaea spicata* L. Mare Album, Lapp. Ross., Umba (ad oram merid. peninsulae lapp.), 07 August 1861, G. Selin (H 797748)).

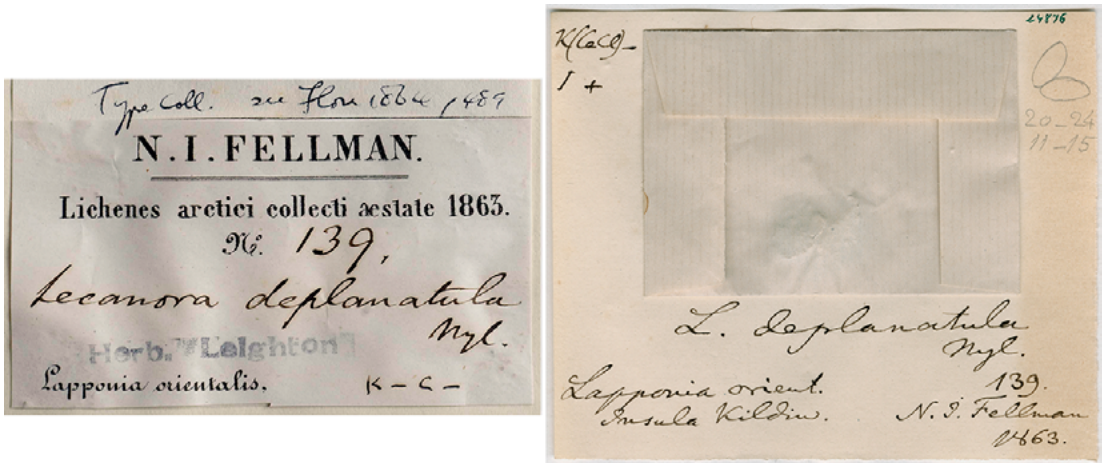

Figure 9. Labels of *Lecanora deplanatula* Nyl. from Fellman's Lichenes arctici no. 139.

Left: printed label from the herbarium of William Allport Leighton, handwriting of W. Nylander (BM 001107747). Reproduced from Natural History Museum (2014).

Right: handwritten label from the herbarium of W. Nylander (H-NYL 24876), copied by himself (H 9508258). Note the locality "insula Kildin" present on the right-hand label only. Courtesy of the Botanical Museum, University of Helsinki.

lar plants of the Kola Peninsula for a century, until *Flora of Murmansk Region* (Gorodkov 1953–1954; Pojarkova 1956–1966) was published (Hiitonen 1958b).

However, the first publications of the expeditions, aiming at bringing the most essential information quickly to the broad public, appeared in now-forgotten letters to journals (Fellman 1864b) and the *Societas pro Fauna et Flora Fennica* (Selin 1869). In order to revive the interest to these letters and to make them easier to access by the Russian botanical audience, the primary users of this information, we included Russian translations of these letters into the present review as Appendices I and II. To reach a broader audience, Selin (1869) was also translated into English and included here as Appendix III. A detailed analysis of botanical records appearing in these letters will be published shortly elsewhere.

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Appendix I. Russian translation of Fellman (1864b), originally in French. Also available in German as Fellman (1864c) and in English as Fellman (1865).

Ботаническое общество Франции, заседание от 27 ноября 1863 года.

Месье д-р В. Нюландер (W. Nylander) зачитал нижеследующую выдержку из письма, которое он получил от месье Фелльмана (Fellman)[1]:

Письмо месье Н.-И. Фелльмана месье Вильяму Нюландеру, о ботаническом путешествии по восточной Лапландии

Отправившись[2] из Сортавалы 1 июня (1863 года), мы прибыли в Петрозаводск лишь 5 июня из-за плохого состояния песчаной дороги, которая разделяет эти два небольших города[3]. В Петрозаводске нам пришлось ждать три дня нашего паспорта (т.е., подорожной), после чего, сопровождаемые месье Гюнтером (Guenther), фармацевтом этого города, и нашими товарищами, месье Симмингом (Simming) и Куллхемом (Kullhem) из Университета Хельсинки, мы проделали наш путь к северу вплоть до Кивача, где эти два путешественника оставили нас, чтобы исследовать западную часть озера Онега. Затем мы направились к Повенцу и достигли деревни Сума на южном побережье Белого моря.

Мы были вынуждены отказаться от замысла направиться к Архангельску, главным образом из-за значительных затрат, которых бы потребовала эта поездка, а также из-за трудностей пути от Архангельска к Кольскому полуострову. Нам благоразумно посоветовали придерживаться западного побережья Белого моря, поскольку постоянные северные ветра не позволили бы кораблям зайти в порт Архангельска и заставили бы их ожидать лучшего времени. Позже мы встретились с одним человеком, который потратил два месяца, чтобы добраться до Святого Носа (*Promontorium sanctum*). На западном побережье мы были менее зависимы от ветров. Тем не менее, летом ветра были встречными, а с середины июля нам еще и очень досаждал дождь, так что несколько дней были полностью потеряны для наших дел. Сначала мы были заперты встречным ветром в течение десяти дней в Суме[4], бесплодном месте, где не было никакого занятия ботаникам. 20 июня мы достигли Соловецких островов, которые нам пришлось посетить, потому что губернатор Архангельска должен был прислать нам паспорт для своей губернии[5]. Как оказалось, этот документ прибыл туда прежде нас, благодаря милостивому посредству месье Арсеньева, губернатора Петрозаводска.

[1)]Месье Н.-И. Фелльман (N.-I. Fellman), сын ботаника, которого часто цитирует Ледебур во *Flora Rossica*, в сопровождении месье П.-А. Карстена (P.-A. Karsten) в 1861 году совершил ботаническое путешествие по восточной части русской Лапландии.

[2)]Месье Фелльмана сопровождали месье М.-М.-В. Бреннер (M.-M.-W. Brenner) и Н.-Й. Лаурин (N.-J. Laurin), студенты Университета Хельсинки, и один ученик ботанического сада этого же университета.

[3)]Расстояние по прямой составляет примерно 50 лье. Сортавала находится в Финляндии к северу от Ладожского озера, Петрозаводск (главный город Олонецкой губернии) в русской Карелии к западу от Онежского озера.

[4)] Сума – это деревня, расположенная на широте 64°, в низком заболоченном месте, у одноименной реки, в одном лье от ее впадения в Белое море.

[5)]В России новый паспорт требуется для каждого департамента (губернии). Лапландский полуостров является частью Архангельской губернии.

От Соловецких островов мы отплыли в Кемь, на западное побережье Белого моря. Затем вдоль побережья мы достигли Керети, деревни на широте 66° 18′, располагающейся на одноименной реке, где мы начали наши сборы прямо в день нашего приезда, 27 июня, который был, так сказать, первым днем нашей научной работы. От Керети мы пересекли Кандалакшский залив (по-фински *Kantalahti*) прямо до Умбы[6], находящейся на южном побережье лапландского полуострова. Там местные жители применили нешуточные угрозы, чтобы заставить нас удалиться как можно скорее. Поэтому мы вынуждены были спешно покинуть это негостеприимное место, которое, тем не менее, показалось нам очень интересным, и мы продолжили свой путь на восток, останавливаясь не более чем на один или два дня, чтобы как можно скорее достичь Поноя, что мы и сделали 11 июля. Южный берег лапландского полуострова представляет мало интереса, поскольку он низкий, песчаный и, как следствие, весьма скудный, начиная от Умбы или, если сказать более точно, от Турьего[7]. В некоторых местах, как, например, у Кузомени, деревни в устье реки Варзуги, можно увидеть настоящие песчаные пустыни.

[6)]Умба – русская деревня, жители которой живут рыбной ловлей, также как и жители всех побережий Белого моря; земля здесь не возделывается нигде, кроме как на западном берегу, где в небольшом количестве выращивается картофель.

[7)]Турий – это маленький полуостров примерно в 6 лье к востоку от Умбы; к западу от нее берег гранитный, окруженный многочисленными скалистыми островками. К востоку от Турьего этот берег плоский и песчаный до самой Пялицы (66° 10′), где он снова начинает подниматься; вода у берега мелкая, острова и бухты отсутствуют. У Пялицы встречаются глины, но пески преобладают; тем не менее, скалы можно увидеть тут и там. Леса южного берега образованы березой и елью; сосна (*Pinus silvestris* L.), по-видимому, хуже переносит приморский климат и отступает все более и более по направлению к внутренней части полуострова по мере нашего продвижения на восток; это заключение справедливо по отношению ко всем древесным породам в целом, хотя особенно близко подходит к сосне. Уже у Пялицы берег оголен и только в половине лье от берега можно найти лес из редкой и кривой березы. Первые ели появляются на расстоянии только одного лье, и на несколько большем расстоянии они образуют сплошной лес. Это дерево достигает 25 футов в высоту и 2 футов в диаметре. Сосна, напротив, отсутствует на береговой части полуострова, которую нам удалось исследовать; местные жители сообщили, что встречали ее на расстоянии двух лье от моря. Шренк сообщал, что сосна достигала Сосновца, но с очевидностью исчезла, поскольку лапландцы, населявшие это место, уверяли, что ни единого ствола сосны там не находилось. В морском заливе под названием Кислая губа (между Пялицей и Поноем) я забирался на высоту, достаточную для того, чтобы увидеть лес, но в пределах видимости обнаруживалась лишь голая пустыня. Растительность этой пустыни состоит большей частью из *Cladonia, Stereocaulon, Platysma nivale* и *Empetrum nigrum*; на переувлажненных местах растут небольшие кустарники, образованные *Salix glauca* и *S. phylicifolia*. Такие места, лишенные деревьев, называются тундрой. Baer выделяет лишайниковую тундру (где преобладают лишайники) и моховую тундру (где изобилуют мхи, особенно сфагновые и политриховые), то есть, другими словами, сухую и увлажненную тундру. В сухой тундре присутствуют, помимо уже названных растений, *Arctostaphylos alpina, Calamagrostis neglecta*, разные *Festuca* и т.д. Увлажненной тундре свойственны *Carex ampullacea, Eriophorum angustifolium, E. vaginatum, E. alpinum* и т.д. Я хотел бы отметить, что в понижающихся участках лапландского полуострова деревья можно обнаружить в любых местах, где они могут быть защищены от ветра. Так, неподалеку от деревни Поной я видел деревья по меньшей мере 10 футов высотой, но несколько дальше вглубь материка они гораздо более высоки. На перешейке, который соединяет Рыбачий полуостров с материком, месье Bœthlingk еще обнаружил в глубоком ущелье березы, от 20 до 25 футов высотой и от 7 до 14 дюймов в диаметре, несмотря на широту, приближающуюся к 70°. Даже в тундре встречаются стелющиеся особи *Betula nana, Salix glauca* и *Juniperus communis*. К северу от Поноя берег становится все более и более скалистым, хотя в общем он все еще довольно низок. Там и тут (например, у Лумбовского) можно еще увидеть песчаные берега, которые характерны для южного (терского) берега. На северном берегу (мурманском) такие берега можно встретить редко, как у Варзиной, Харловки и Гавриловой; этот берег также довольно низок, постепенно повышаясь лишь к норвежской границе, но достигая не более чем 1000–1500 футов. Более высокие горы в восточной Лапландии не встречаются, кроме как у озера Имандра, но и наивысшая вершина Хибин едва превышает высоту 3000 футов.

Окрестности Поноя[8], которые предоставили в наше распоряжение относительно богатую растительность, обеспечили нас занятиями на восемнадцать дней и задержали бы нас еще дольше, если бы наши планы исследования побережья Северного Ледовитого океана не обязывали нас к продолжению пути. Ведь именно с Поноя происходили наши лучшие сборы. От этого места мы медленно двинулись вдоль северного побережья лапландского полуострова и достигли Колы 17 августа.

Сезон был уже слишком поздним, а погода – слишком неблагоприятной, чтобы позволить нам продолжать путь до Wardœhus [Vardøhus], в Норвегию, как нам весьма хотелось бы. Не более возможно было бы направиться назад, к Поною и Керети, поскольку мы не забывали, что русские (мурманские) рыбаки, которые в течение лета нередко курсируют вдоль берега между

[8)]Поной – это река длиной от 80 до 100 лье; в 2 лье от ее устья располагается деревня с тем же названием. Берега реки возвышенны и местами покрыты роскошной растительностью. На самих берегах можно увидеть *Aira alpina*, *Juncus glaucus*, *J. castaneus* и элегантную *Aster sibiricus*; далее крупными экземплярами растут *Ligularia sibirica*, *Hedysarum obscurum*, *Cineraria campestris* и *Veratrum Lobelianum*. На еще большем отдалении находятся *Aconitum lycoctonum* и *Senecio octoglossus*, которые в некоторых местах достигают высоты человеческого роста и скрывают у своего подножия прелестную *Gentiana nivalis*. Над этой зоной изящных растений возвышаются группы нескольких видов *Salix*, между которыми *Vicia silvatica* образует заросли, которые трудно преодолеть. *Daphne Mezereum* достигает там трех футов высотой. После преодоления, не без трудностей, этой приречной растительности, мы достигли скал; взобравшись на них, мы оказались поражены величественным зрелищем. Среди скал видны огромные группы великолепной *Paeonia anomala*. Над ней привлекает взгляд симпатичная *Viscaria alpina*. Посреди этой прекрасной природы мы почти забыли, что находились за полярным кругом. Странно было то, что *Calluna vulgaris* не оказалась на Поное; по-видимому, она отсутствовала и во всем тундровом регионе; я потерял ее из виду в Пялице и обнаружил снова уже только к югу от Колы. – От Поноя я совершил экскурсию на 6 лье вглубь материка, но не заметил ничего такого, чего бы я не видел прежде. Местность была ненаселенная, и на протяжении 30–40 лье, если не больше, не нашлось ни одного ее обитателя. Деревня Поной населена наполовину русскими, наполовину лапландцами, и две эти нации живут там вместе по-братски. На южном берегу полуострова население полностью русское. Лапландцам же пришлось оставить лучшие места более могущественным соседям и удовольствоваться тундровыми пустынями и речками. В летнее время лапландцы из внутренних частей русской Лапландии отправляются к берегу Баренцева моря для рыбной ловли. С приближением сурового сезона они отступают к своим деревням для зимовки. Русские лапландцы разводят много меньше северных оленей, чем это делают шведские или финские лапландцы; их главным источником пропитания служит рыбная ловля. Оленьего молока на полуострове не пьют и сыра не едят, хотя они составляют приятную и весьма важную пищу в финской и шведской Лапландии. Тем не менее, не все лапландцы восточной Лапландии отправляются летом на берег моря; поскольку лапландцы западной части (которые называются *Kiwi-Lappalaiset*, горными лапландцами, то есть обитателями горной Лапландии) остаются на протяжении всего года у своих озер и рек; они более бедны, чем остальные. Русские, которые населяют южный берег, имеют, помимо северных оленей, еще и коров и овец. Лапландцы весьма любят табак, использование которого у русских старой веры (староверцев), напротив, считается серьезным грехом; они не позволяют людям курить в домах. Пристрастие к самогону является общим для обоих народов. В одной деревне, насчитывающей шестьдесят семей, по словам одного из производителей этого товара выпивают в год 1000 ведер (почти 13000 литров). Каким бы невероятным ни казалось это сообщение, оно не может быть преувеличением, потому что я встречал людей, уверявших меня, что они выпивали от одного до двух литров самогона в день, и при этом я видел их за работой. – К нашему удивлению, ни лапландцы, ни русские (которые каждый год почти на четыре месяца становятся моряками) все же не знают иного способа навигации, кроме как держаться ближе к ветру, и не имеют представления об искусстве лавирования.

Колой и Святым Носом, готовятся покинуть эти места в середине августа, так что в конце этого месяца мы не нашли бы и одной живой души на протяжении ста лье[9].

Уже приближалась осень, и деревья сбрасывали листья; по этой причине мы должны были подумать о возвращении по кратчайшему пути, то есть прямо на озеро Имандра и Кандалакшу. Отправившись из Колы 23 августа, мы достигли финской границы у Паанаярви второго сентября. Считая от нашего выезда из Хельсинки, мы проделали путешествие в 700 лье, из которых две трети были пройдены на лодке и в основном против ветра. Расстояние от Керети до Колы, вокруг лапландского полуострова, составляет около 225 лье.

Мое намерение состояло в том, чтобы провести несколько дней в изучении высоких гор, которые возвышаются у озера Имандра, но – увы! – было слишком поздно, уже выпал снег и покрыл всю землю.

Что касается наших сборов, мы были вполне удовлетворены, хотя мы и испытывали затруднения из-за нехватки бумаги, чтобы высушить растения.

Наши главные приобретения для Ботанического музея Хельсинки были следующими: *Poa caesia* Sm. (с Поноя), *Eriophorum callithrix* Cham. (Поной), *Luzula hyperborea* R. Br. (обычно в восточных частях полуострова), *Gentiana tenella* Rottb. (Поной), *Astragalus oroboides* Hrnm. (у Святого Носа), *Paeonia anomala* L.[10] (Поной), *Cochlearia officinalis* L. (Кильдин), *Gypsophila fastigiata* L. (найдено месье Laurin у озера Имандра).

Среди наших прочих покрытосеменных я упомяну следующие: *Triticum violaceum* Hrnm., *Catabrosa latifolia* Fr., *Eriophorum russeolum* Fr., *Carex arctophila* F. Nyl., *Zannichellia polycarpa* Nolte (из Колы), *Luzula parviflora* Ehrh., *Juncus castaneus* Fr., *J. biglumis* L., *J. glaucus* Whlnb., *Veratrum album* var. *Lobelianum* Brnh. (очень обычно по всему побережью, от Керети до Варзиной, в 15 лье к западу от Святого Носа), *Chrysanthemum arcticum* L., *Pyrethrum bipinnatum*

[9]Рыба вылавливается в больших количествах и поставляется в континентальные районы России. Примерно 400 кораблей располагаются ежегодно в этой области, и все они осенью направляются в Архангельск, где к середине сентября открывается большая ярмарка. Огромное количество рыбы, поставляемой мурманчанами, далеко не удовлетворяет потребностей русского населения, поскольку по крайней мере такое же количество соленой рыбы ввозится каждый год из Норвегии. Больше всего на лапландском побережье вылавливается трески. В удачные годы, как было в 1861 году, рыбу скупают по цене 80 сантимов за 20 килограммов; в менее благоприятные годы, как, например, в этом году, 20 килограммов могут стоить до 2 франков, что считается крайне высокой ценой. Мурманчане всегда уверены в успехе своей рыбной ловли, потому что они применяют магическую силу, вера в которую у них непоколебима. Магия, как они думают, способна не только вызвать большее изобилие рыбы, но и повернуть рыбу от сетей врагов. Одним из наиболее важных элементов в магических обрядах является землистая субстанция, называемая росный ладан, которая продается в церквях. Обязательно требуется, чтобы каждый рыбак носил при себе некоторое количество этого вещества, хотя бы и небольшое. Я имел возможность принять участие в одном из таких магических обрядов. В кусочке дерева вырезали углубление на манер чаши и положили туда несколько кусочков древесного угля; посыпав уголь небольшим количеством росного ладана, совершавший обряд проносил чашу под развешенными сетями, приговаривая шепотом какие-то заклинания и время от времени энергично сплевывая. Церемония закончилась определенными пожеланиями, после чего заклинатель заверил, что в рыбе недостатка не будет. Желая узнать что-нибудь об этом загадочном действии, я спросил, не мог бы он рассказать мне о нем, на что он согласился, хотя и не без сомнения и только после выражения своего неудовольствия моим праздным любопытством к серьезному действию, которому я стал свидетелем. Все это магическое действие сводится к обращению к святым Петру и Павлу, чтобы они приманили рыбу в сети такого-то и такого-то (здесь необходимо упомянуть имя рыбака); естественно, плевки имеют крайнюю важность в этом действии и не должны быть забыты.

[10]Этот вид был неправильно назван *Paeonia intermedia* C. A. Mey. в работе Fr. *S. V. Sc.*, p. 555. У растений с Поноя коробочки обычно в числе пяти, некоторые по три; их листья – также, с очевидностью, листья *P. anomala* L.

Sm., *Ligularia sibirica* Sm., *Cineraria alpina* L., *Senecio nemorensis* var. *octoglossus* Ledeb., *Aster sibiricus* L. (у Поноя и Зашейка близ Имандры), *Valeriana capitata* L., *Myosotis sparsiflora* Pohl, *Polemonium pulchellum* Bunge, *Gentiana nivalis* L., *G. rotata* Schlecht., *Castilleja pallida* Kunth, *Pedicularis verticillata* L. (обычно от Чаваньги, в средней части южного берега полуострова, до Гавриловой, примерно 15 лье к востоку от Кольского залива), *Pedicularis sudetica* Willd. (от Поноя до Святого Носа), *Pinguicula villosa* L., *Androsace septentrionalis* L.[11] (Умба, Поной), *Armeria arctica* Cham. (близ Поноя), *Ranunculus lapponicus* L. (Кереть), *R. hyperboreus* Rottb., *R. pygmaeus* Whlnb., *R. samojedorum* Rupr. (он, по-видимому, приближается к *R. hyperboreus*), *Thalictrum kemense* Fr. (Кереть), *Th. rariflorum* Fr. (Пялица), *Eutrema Edwardsii* R. Br. (редок на Поное), *Draba hirta* L. (довольно обычен), *Helianthemum vulgare* Gaertn. (близ Умбы), *Melandrium apetalum* (L.), *Arenaria ciliata* L. (от Поноя до Святого Носа), многие *Saxifraga* и среди них *S. comosa* Poir., *Cotoneaster vulgaris* Lindl. (вплоть до Поноя), *Sanguisorba polygama* F. Nyl., *Sibbaldia procumbens* L., *Hedysarum obscurum* L. (от Умбы до окрестностей Святого Носа), *Phaca frigida* L., *Polygonum bistorta* L., *Oxyria digyna* Hill, *Koenigia islandica* L. и т. д. Среди видов, новых для восточной Лапландии, можно упомянуть *Veronica officinalis* L., *V. Chamaedrys* L., *Littorella lacustris* L., *Subularia aquatica* L., *Brassica campestris* L., *Raphanus Raphanistrum* L., *Callitriche autumnalis* L., *Hippuris maritima* Hell.

Северный берег лапландского полуострова в целом характеризуется следующими высшими растениями: *Calamagrostis stricta* Hartm., *Catabrosa latifolia* Fr., *Glyceria distans* Whlnb., *Poa pratensis* var. *alpigena*, *Elymus arenarius* L. (который настолько обилен у Варзиной, как будто бы он там культивировался), *Carex rigida* Good., *Juncus trifidus* L., *Allium sibiricum* L., *Matricaria inodora* var. *phaeocephala* Rupr., *Hieracium alpinum* L., *H. murorum* L., *Campanula rotundifolia* var. *alpicola* Hrtm., *Diapensia lapponica* L., *Selinum tataricum* (Fisch.), *Haloscias scoticum* (L.), *Ranunculus acris* var. *pumilus* Whlnb., *R. hyperboreus* Rottb., *R. pygmaeus* Whlnb., *Erysimum hieracifolium* L., *Cochlearia anglica* L., *C. arctica* Schlecht., *Silene acaulis* L., *Stellaria crassifolia* Ehrh., *S. humifusa* Rottb., *Cerastium alpinum* L. et var. *glabratum* Whlnb., *Saxifraga nivalis* L., *S. stellaris* L., *Rhodiola rosea* L., *Lathyrus maritimus* Big., *Oxycoccus microcarpus* Turcz., *Phyllodoce caerulea* Bab., *Oxyria digyna* Hill, *Salix reticulata* L., *S. herbacea* L., *S. polaris* Whlnb. Однако, некоторые из этих видов также были найдены и на южном берегу, как, например, *Allium sibiricum*[12], *Cochlearia anglica*, *Erysimum hieracifolium*, *Oxycoccus microcarpus*, но не все из этих растений там столь же обычны или характерны. На южном берегу находятся, среди прочих, следующие виды, которых я не видел на северном берегу, а именно: *Luzula pilosa* Willd., *Maianthemum bifolium* DC., *Veronica officinalis* L., *Lonicera coerulea* L., *Androsace septentrionalis* L., *Ranunculus polyanthemos* L., *Viola tricolor* L., *V. epipsila* Ledeb., *V. palustris* L., *Polygala amara* L, *Cotoneaster vulgaris* Lindl., *Vicia sepium* L., *V. silvatica* L., *Orobus vernus* L., *Sanguisorba polygama* F. Nyl., *Aconitum lycoctonum* L., *Oxycoccus palustris* Pers., *Arctostaphylos officinalis* Wimm., *Calluna vulgaris* Salisb. и т.д. На болоте у Тетриной (на южном берегу) я нашел *Eriophorum russeolum* Fr. совместно с *E. vaginatum* L. и *E. capitatum* Host. Что касается *Actaea spicata*, то была отмечена только ее форма *erythrocarpa* Turcz. *Sorbus aucuparia* была найдена там и тут по всей восточной Лапландии, даже на Кильдине (на широте 69°). В Кислой губе я собрал *Catabrosa algida* Fr., на Поное – *Poa sudetica* var. *remota*

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[11]Согласно C. Hartman (Skand. Flora), это растение не было повторно найдено в Лапландии со времен Линнея.

[12]Я упомяну, как особо заслуживающее внимания, что *Allium sibiricum* встречается у Умбы на болоте, в сообществе с *Eriophorum angustifolium* и т.д.

Fr. У Кандалакшского залива, также как и у Кольской губы, была обнаружена *Atriplex patula* var. *hololepis* Ledeb., *Fl. ross.* III, p. 726 (lusus 2, *A. tatarica* Koch, *Syn. Fl. Germ.* ed. 2, p. 701), которая, по-видимому, была названа *A. nitens* Reb. у Fries, *S. V. Sc.*, p. 556; ее прицветники часто рассечены вплоть до основания[13].

Zostera marina найдена по всему западному берегу Белого моря; мы наблюдали время от времени ее кучи, выброшенные морем на берег.

Что касается ольхи, то я встречал в восточной Лапландии только *Alnus pubescens* Tausch; она исчезает к северу от Поноя, где еще были обнаружены несколько маленьких кустов, и появляется снова близ Кольской губы. То же относится и к ели, которая повсюду оказалась принадлежащей к *Pinus Abies* var. *medioxima* W. Nyl.[14] или *obovata* Rupr. *P. Abies*, довольно типичная форма, растет только между Кандалакшей и Куусамо. Вдоль берега встречается *Betula tortuosa* Ledeb.; во внутренней части Кольского полуострова – *B. alba* L.

В общей сложности я собрал примерно триста видов высших растений и двадцать видов папоротников. Среди последних, я упомяну *Asplenium crenatum* Fr. (из Поноя и Соукело), *Botrychium lanceolatum* (Gmel.) Rupr., *Crypt. vasc. Ross.*, p. 33 (*B. rutaceum* Moug., *St. Vog.*, n. 901), *B. matricarioides* Willd. (найденный у Колы месье Бреннером). На всем лапландском полуострове я не смог обнаружить какого-либо *Isoëtes* или какую-либо харовую водоросль. Это еще не была широта Кандалакши (67°), когда я обнаружил *Isoëtes echinospora* DR. в озерах Суси-ярви и Руан-ярви, но я заметил, что дно озер на севере, между Кандалакшей и Колой, каменистое или галечниковое, и что в восточной и северной частях полуострова близ берега не имеется озер достаточной протяженности. Что касается лишайников, я отмечу странную бедность этими растениями, которая характеризует флору восточных частей полуострова. Отсутствие лесов может оказаться главной тому причиной. Большинство видов встречаются на земле. *Siphula ceratites* (Whlnb.) и *Thamnolia vermicularis* Ach. нередки в тундре по северному берегу начиная от Поноя, в то время как я встретил *Baeomyces placophyllus* Ach., *Alectoria ochroleuca* и *A. nigricans* (Ach.) и на северном, и на южном берегах. *Nephroma expallidum* Nyl. часто встречается по всему полуострову; я даже отметил его близ Руан-ярви, с южной стороны. Этот лишайник растет главным образом среди мхов, но я также собирал его на земле и на камнях; плодущим я его имею только из Колы. У реки Ииава была еще встречена *Peltigera polydactyla* Hffm., но не *P. horizontalis*. Я также упомяну *Sticta linita* Ach., *Parmelia sulcata* (Tayl.), *Parmelia saxatilis* и *physodes*, довольно частые в плодах, а также *P. prolixa* (Ach.), *Pannaria nigra*, *Squamaria gelida*, *Lecidea arctica* Smmrf., *L. stenotera* Nyl.[15]

Улеаборг, 19 сентября 1863 года.

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[13] Наше лапландское растение никоим образом не может быть соединено с *A. nitens* Reb., образцы которой из России я видел в гербарии Стевена.

[14] Эта разновидность *Pinus Abies* L. (*Abies excelsa* DC.) отличается чешуями ее шишек, которые суть тупые и цельные; она очень распространена в Финляндии. Некоторые ботаники ошибочно принимали ее за *P. orientalis* L. Форма из восточной Лапландии мало отличается от *Picea obovata* Rupr., которая имеет шишечные чешуи еще более тупые, чем у финской формы (*medioxima* W. Nyl.). Частые переходы соединяют эти формы, зачастую с очевидностью различные, с типом *Pinus Abies* L.

[15] Некоторые новые виды лишайников, собранные на той же территории месье Фелльманом во время его путешествия 1861 года, уже были описаны месье В. Нюландером (W. Nylander) в журнале *Flora* (год 1863, n° 20).

Appendix II. Russian translation of Selin (1869), originally in Swedish.

Приложение

Вышеупомянутое письмо Селина к профессору В. Нюландеру, в той части, которая приемлема для публикации, следует ниже:

Гельсингфорс, 5 августа 1862 года.

Высокочтимый господин профессор.

«Моей основной задачей было восполнение пробелов в коллекциях Музея, но, при взгляде на Список флоры в *Herbarium Musei fennici*, я увидел, что наиболее примечательное было уже собрано, в особенности из Русской Лапландии. Таким образом, я должен был собирать и тащить с собой по длинному пути через Олонец – Колу – Кильдин и Куусамо наиболее тривиальные вещи из 2 или даже 3 различных флористических областей, поскольку по прибытии в Соловецкий монастырь я обнаружил, что он находится за пределами финской флористической области на приложенной к Списку карте, поэтому я и подумал, что было бы надежнее всего, пока я ожидаю «подорожную»[1] из Архангельска, собирать и гербаризировать все, что попадается мне на пути, пусть даже и то, что было уже известно из русской Лапландии или Карелии, уже потому что я был не уверен, к какой области эти острова могут принадлежать и даже вообще могут ли они относиться к нашей флористической области, что мне казалось известным до моего отъезда из Хельсинки. Тот факт, что коллекции из каждой территории были неполными, мне представился вполне естественным, когда я посетил те же территории в различные сезоны, и на любой из них продолжительное время потребовалось даже на само путешествие. Поскольку теперь эта рутинная работа – а иначе я и не могу назвать это бесконечное собирание и гербаризирование самых обыденных вещей – уже проделана, те, кому выпадет судьба посетить эти места, станут более свободными и смогут обратить все свое внимание на общие признаки растительности, а также и на более благодарные поиски более редких растений. Моим единственным утешением является то, что мои ботанические коллекции получились наилучшего качества и что большинство образцов находятся в таком состоянии, что их не приходится стыдиться.

После этого маленького, подающего надежду вступления я перехожу к самому предмету, т.е. к краткому отчету о путешествии и его результатах. Как только я настиг Инберга в Сортавале и мы закончили наши сборы, 12 июня мы начали собственно само наше путешествие. 14 июня мы прибыли в Олонец, где мы провели день, чтобы получить нашу «подорожную», и затем 17 июня в Петрозаводск, где мы также ждали с той же целью. Здесь мы также познакомились с аптекарем Гюнтером, который в течение некоторого времени собирал местных насекомых и растения и в чьей компании мы совершили экскурсию в окрестностях города. Я просмотрел и определил его растения; в его лице мне удалось найти работника для нашего финского Музея. Его коллекция бабочек была блестящей. Письмо, которое он написал еще прошлой осенью, но которое было вручено мне только теперь, я прикладываю к своему отчету. Я на письмо ответил, но ответа от него пока не получил. Из Петрозаводска мы направились к северо-западу, к водопаду Кивач и к мраморным каменоломням у Тивдии. Там неделю мы ждали паспорта для человека, которого мы наняли в качестве переводчика и который сопровождал меня всю дорогу до Улеаборга. Из Тивдии мы отправились в Повенец, куда мы прибыли 1 июля, после чего путешествовали почти вдоль границы, проведенной на карте в *Herb. Mus. Fenn.*, и также вверх по реке Телекин-

[1)] Проездной документ.

ской до Выгозера и через него до водопада Воицкого, который образовался на реке Выг близ места ее вытекания из озера. После очередного, но небольшого ожидания была куплена лодка, на которой мы отправились по могучей и суровой реке к деревне Сорока на Белом море.

После короткой задержки в этом месте и провалившейся попытки отправиться на Соловецкие острова на паломнической лодке, которой пришлось повернуть обратно из-за своей ветхости и перегрузки, мы решили отправиться на своей лодке вдоль берега моря до Кеми и оттуда до монастыря. Решение было без промедления выполнено, но на полпути мы встретили яхту, направлявшуюся на восток, хозяин которой согласился взять нас до монастыря, куда мы и прибыли 11 июля. В монастыре мы задержались до 25-го, когда мы направили нашу маленькую лодку снова через море в Кемь. Под конец нашего пребывания в монастыре случилась неприятность: у меня началось кровохарканье. Кровотечение было продолжительным и заставило меня оставаться в постели в Кеми, где мне пришлось вызвать немецкого врача. Поскольку было непонятно, как долго мне придется задержаться в Кеми, и поскольку Инберг хотел вернуться домой по возможности в августе, было решено нам расстаться, поле чего Инберг отправился 29 июля в Колу и вернулся оттуда через Кандалакшу и Куусамо. Тогда я продал плохо сделанную и неповоротливую лодку и продолжил путешествие на весельной шлюпке до Керети (66° 18› с. ш.), от которой я направился 6 августа через залив в Умбу (34 1/5° в. д.), где одноименная река впадает в море. Моим намерением было пройти вверх по этой реке до ее истоков и через полуостров до Колы, но когда совершенно непреодолимые затруднения встали на пути этого плана, я отправился далее на восток вдоль морского берега до Варзуги, где впадала еще большая река. Оттуда я повернул назад и вернулся после посещения нескольких мест на побережье в Кандалакшу, 29 августа. Поскольку сезон был давно уже поздний, я поехал через Имандру в Колу, куда я прибыл 1 сентября, и оттуда еще дальше на Кильдин, где я провел 3 дня, 6–8 сентября, при погоде настолько ужасной, насколько можно себе вообразить. По возвращении я совершил восхождение на Хибинские тундры 17 сентября. Там мне не посчастливилось выбрать дорогу, на которой оказались 3 препятствия в виде обвалов, через которые мне удалось перебраться на противоположную сторону. Мои намерения поискать наивысшую вершину стоили мне трудного перехода по уже заснеженным хребтам, и мои надежды были обмануты снова и снова, поскольку с каждой вершины, на которую я забирался, я обнаруживал другую, которая казалась еще более высокой. И все же я достиг гребня, который казался превосходящим прочие, и был вознагражден самым прекрасным видом на Имандру. Однако единственным достижением на всем этом восхождении было обнаружение *Potentilla nivea*. В Кандалакше я был задержан легким расстройством пищеварения и прибыл в приход Куусамо только 3 октября.

В Финский Музей я отослал в общей сложности 485 семенных растений и папоротников, сборы которых ранее отсутствовали из конкретных территорий, а именно 210 из русской Карелии (включая 28, которые я обнаружил в гербарии Гюнтера, и которые, я надеюсь, будут новинками; это большей частью те растения, которые цветут поздно и которые я не имел возможности собрать самолично во время моего путешествия), 125 из русской Лапландии и 150 из Соловецкого монастыря. Среди них имеются *Potentilla nivea* и *Arabis petraea*, последний из них из русской Карелии, новые для нашей флоры. Далее я перечислю виды, наиболее интересные в отношении географии растений или по другой причине.

Среди примечательных *Carices* из русской Карелии были: *C. Buxbaumii*, *C. paradoxa*, *C. capillaris* и *C. norvegica*, и из русской Лапландии: *C. rariflora*, *C. panicea* и *C. filiformis*, а также *C. stellulata* из Соловков. *Lemna gibba* (Kr. [2]), *Paris qvadrifolia*, *Majanthemum bifolium* (Lr. [*]),

[2)] Kr. означает, что растение найдено в русской Карелии; Lr. – что оно собрано в русской Лапландии.

Cypripedium Calceolus, *Corallorhlza innata*, *Listera ovata* & *Coeloglossum viride* (Kr.), *Listera ovata* также из Соловков и *Coeloglossum* вплоть до Кильдина, из которого я также имею *Hieracium saxifragum* и *Mulgedium alpinum*; *Galium Mollugo*, *Stenhammaria maritima* и *Thymus serpyllum* (Kr. & Lr.), *Polemonium pulchellum* Bunge (Kr.), примечательный своим коротким ростом, липкостью, железистым опушением, сильным и неприятным запахом, *Linaria vulgaris*, *Veronica longifolia* и *Bartsia alpina* (Lr.), *Melampyrum nemorosum* (Kr.), *Glaux maritima* (Lr.), *Plantago media* (Kr.), *Haloscias scoticum* (Lr. & Kr.), *Pimpinella Saxifraga*, *Nymphaea alba* и *Nuphar luteum* (Lr.), *Ranunculus hyperboreus* (Kr.), *Trollius europaeus* (Lr.), *Aconitum lycoctonum* (Kr. & Lr.), *Actaea spicata* (Lr.), *Corydalis solida* (Kr. Günther), *Arabis hirsuta* (Kr.), *Hypericum quadrangulum* (Lr.), *Silene inflata* (Lr.), *Stellaria nemorum* (Kildin), *Sagina nodosa procumbens* (Lr.), *Saxifraga nivalis* (Kr.), *Sedum acre* (Lr.), *Cotoneaster vulgaris* (Lr.), *Rosa karelica* (Kr.), *Potentilla Tormentilla* (Lr.), *Spiraea Ulmaria* (Lr.), *Lathyrus maritimus* (Lr.), *Orobus vernus* (Lr. & Kr.), *Vicia sepium* & *Trifolium pratense* var. *villosum* (Lr.), *Polygonum amphibium* и *Empetrum nigrum* (Lr.), *Daphne Mezereum* (Lr. & Kr.), *Urtica urens* (Lr.), *Polypodium Dryopteris* (Lr. & Kr.), *Woodsia ilvensis* (Lr.), *Asplenium viride* & *trichomanes* (Kr.), *Struthiopteris germanica* (Kr.). Кроме того, я доставил из русской Лапландии несколько примечательных видов, которые там были уже собраны, напр., *Selinum tataricum*, *Cenolophium Fischeri*, *Hedysarum obscurum*, *Sanguisorba polygama*, *Aster sibiricus* и т. д. Хотя я не надеюсь на свои лишайники, я возлагаю небольшие надежды на мхи.»

Appendix III. English translation of Selin (1869), originally in Swedish.

Appendix

The aforementioned letter from Selin to Prof. W. Nylander, abridged as appropriate for publication, follows below.

Helsingfors, 5 August 1862.

Dear Professor,

«My main task was filling the gaps in collections of the Museum but, while reading the list of flora in the *Herbarium Musei fennici*, I noticed that the most remarkable plants had been already collected, especially from Russian Lapland. Therefore I had to collect and carry the most trivial things from 2 or even 3 floristic regions along the long way through Olonets – Kola – Kildin and Kuusamo; I say 3 regions because at my arrival to the Solovets Monastery I realised that it is situated outside the Finnish floristic region on the map appended to the *Herbarium Musei fennici*. For this reason I thought that it would be most reasonable, while waiting for my travel permit to arrive from Arkhangelsk, to collect and press everything that I meet on my way, even those plants that had been known from Russian Lapland and Karelia, already because I was not certain to which floristic region these islands belonged and even should they be treated as belonging to our floristic area at all, although I believed that this question had been resolved before my departure from Helsinki. I realised that our collections from each territory were inevitably incomplete when I visited the same territories in different seasons, and a long time was required to work on any of them or even to travel to the destination. Since now this routine work – I think ”routine” is the only word that is apt to characterise this endless gathering and preservation of the most trivial things – has been already done, those on whom the lot falls to visit these places will be less burdened and will be able to direct their attention to the general features of the vegetation, as well as to more rewarding searches for rarer plants. My only consolation is in the fact that at least my botanical collections are in the best condition and most of my specimens may not bring shame to me.

After this slightly encouraging introduction I come to the main point, namely to my brief report on the travel and its results. Since I met Inberg in Sortavala and we finished our preparations, we started our main travel on 12 June. We arrived to Olonets on 14 June and spent a day there while waiting for our travel permit, and then came to Petrozavodsk on 17 June, to wait for the same reason. In Petrozavodsk we became acquainted with Mr. Günther, an apothecary, who had collected for some time local insects and plants, and who accompanied us in excursions around the town. I examined and identified his plants, and managed to hire him as a contributor to our Finnish Museum. His collection of butterflies was splendid. Attached to this report is a letter of him, which he wrote already last autumn but gave me only now. I responded to the letter but so far no answer has yet been received. From Petrozavodsk we directed northwest, to the waterfall of Kivach and the marble quarries of Tiudie. That was a week of waiting for the passport for a man whom we hired as an interpreter and who accompanied me all the way until Uleaborg. From Tiudie we went to Povenets, having arrived there on 1 June, and then we travelled along almost the whole border drawn on the map in the *Herbarium Musei fennici*, and also upstream the River Telekina up to Vygozero and further until the waterfall of Voyatz, which occurs on the Vyg River near its discharge from the lake. After another, though shorter, period of waiting we bought a boat, by which we came down along the mighty and fierce river to the village of Soroka at the White Sea.

After a short break in this place and a failed attempt to sail to the Solovetsk Islands by a pilgrimage boat, which has to turn around for its ruggedness and overload, we decided to go by our own boat

along the sea coast up to Kem and then to the monastery. This decision had been immediately realised but half-way to the place we had met a yacht that was sailing eastwards, and its owner took us to the monastery, to which we arrived on 11 July. We held up in the monastery until 25 July, and then set through the sea by our small boat to Kem again. By the end of our stay at the monastery I unpleasantly fell with hemoptysis. It lasted quite a while and forced me to stay in bed in Kem, where I called for a German doctor. Since it was uncertain how long I would have to stay in Kem and Inberg wanted to return home possibly in August, we decided to part and Inberg departed on 29 July to Kola and returned from there via Kandalaksha and Kuusamo. Then I sold our heavy boat, poorly constructed and awkward to row, and continued the travel on a rowing boat until Keret (66° 18' N), from which I directed on 6 August through the bay to Umba (34 1/5° E), where a river with the same name falls to the sea. My intention was to go up this river until its source and then across the Peninsula to Kola; having met completely unpredictable difficulties while attempting to follow this plan, I travelled further east along the coast to Warsuga, where a larger river was flowing once again. At that point I turned back and returned to Kandalaksha on 29 August, after visiting a few places along the coast. As the season was already quite advanced, I went through Imandra to Kola, to which I arrived on 1 September, and further on to Kildin, where I spent 3 days, 6–8 September, in the roughest weather one can imagine. On the way back I climbed the Khibina tundra on 17 September. Thereby I made an unfortunate choice of the road, which was in three places interrupted with rockfalls, which I had to take over in order to reach the opposite side. My intentions to find the highest summit costed me a difficult walk across the ridges which were already covered by snow, and my hopes were betrayed again and again when every next peak which I climbed upon revealed another one that looked even higher. Nevertheless I had reached the ridge that seemd to overtop the others, and was rewarded with the most beautiful view over Imandra. However, the only real gain on this ascent was the discovery of *Potentilla nivea*. In Kandalaksha I was delayed with some nausea and arrived to the parish of Kuusamo only on 3 October.

Altogether I have sent to the Finnish Museum 485 phanerogams and ferns, of which specimens were absent from particular territories, namely 210 from Russian Karelia (including 28, which I found in the herbarium of Günther and which, I hope, will turn out to be novelties; these are mostly late-flowering plants, which I had no opportunity to collect in person during my own travels), 125 from Russian Lapland and 150 from the Solovets monastery. Among these are *Potentilla nivea* and *Arabis petraea*, the latter from Russian Karelia, which are new to our flora. Below I will list the species that are most interesting in respect of plant geography or for some other reason.

Among notable species of *Carex* from Russian Karelia were: *C. Buxbaumii*, *C. paradoxa*, *C. capillaris* and *C. norvegica*, and from Russian Lapland were: *C. rariflora*, *C. panicea* and *C. filiformis*, as well as *C. stellulata* from the Solovets Islands. *Lemna gibba* (Kr. [1]), *Paris qvadrifolia*, *Majanthemum bifolium* (Lr. [*]), *Cypripedium Calceolus*, *Corallorhlza innata*, *Listera ovata* & *Coeloglossum viride* (Kr.), *Listera ovata* also from the Solovets Islands and *Coeloglossum* up to Kildin, from which I also collected *Hieracium saxifragum* and *Mulgedium alpinum*; *Galium Mollugo*, *Stenhammaria maritima* and *Thymus serpyllum* (Kr. & Lr.), *Polemonium pulchellum* Bunge (Kr.), which is remarkable because of its short growth, stickiness, glandular pubescence and strong unpleasant smell, *Linaria vulgaris*, *Veronica longifolia* and *Bartsia alpina* (Lr.), *Melampyrum nemorosum* (Kr.), *Glaux maritima* (Lr.), *Plantago media* (Kr.), *Haloscias scoticum* (Lr. & Kr.), *Pimpinella Saxifraga*, *Nymphaea alba* and *Nuphar luteum* (Lr.), *Ranunculus hyperboreus* (Kr.), *Trollius europaeus* (Lr.), *Aconitum lycoctonum* (Kr. & Lr.), *Actaea spicata* (Lr.), *Corydalis solida* (Kr. Günther), *Arabis hirsuta* (Kr.), *Hypericum quadrangulum* (Lr.), *Silene inflata* (Lr.), *Stellaria nemorum* (Kildin), *Sagina nodosa procumbens* (Lr.), *Saxifraga niva-*

[1] Kr. denotes the plants found in Russian Karelia, and Lr. denotes those collected in Russian Lapland.

lis (Kr.), *Sedum acre* (Lr.), *Cotoneaster vulgaris* (Lr.), *Rosa karelica* (Kr.), *Potentilla Tormentilla* (Lr.), *Spiraea Ulmaria* (Lr.), *Lathyrus maritimus* (Lr.), *Orobus vernus* (Lr. & Kr.), *Vicia sepium* & *Trifolium pratense* var. *villosum* (Lr.), *Polygonum amphibium* and *Empetrum nigrum* (Lr.), *Daphne Mezereum* (Lr. & Kr.), *Urtica urens* (Lr.), *Polypodium Dryopteris* (Lr. & Kr.), *Woodsia ilvensis* (Lr.), *Asplenium viride* & *trichomanes* (Kr.), *Struthiopteris germanica* (Kr.). Besides, I brought from Russian Lapland a few remarkable species, which have been already collected there, e.g. *Selinum tataricum*, *Cenolophium Fischeri*, *Hedysarum obscurum*, *Sanguisorba polygama*, *Aster sibiricus* etc. Although I don't trust the value of my lichens, I place my little hopes in my mosses.»