



Research group
MYCOLOGY
DEPARTMENT OF BIOLOGY
GHENT UNIVERSITY



International *Russulales* Workshop

Borgsjö, Sweden, August 26th – September 1st 2018

EXCURSIONGUIDE

This excursionguide belongs to:



Phone to service

Tourist office at Träporten inn: 0690–205 50

Acute sickness: 112

Handelsbanken Fränsta banking machine:
0690–69 11 70

Swedbank Ånge banking machine:
0690–69 11 70

Police: 11414

Ånge Health Center: 0690–156 50

Fränsta Health Center: 0691–25 10 00

Pharmacy Fränsta: 0771-450 450

Pharmacy Ånge: 0771-450 450

Dentist Ånge: 0690–155 25

Dentist Fränsta: 0691–363 60

Taxi Drakstaden: 060-12 34 56

Taxi Mitt: 0690–100 00

Excursionguide *Russulales*, Borgsjö 2018

This guide also available as pdf at www.myko.se

Text: Jan-Olof Tedebrand

Picture editor: Hjärdís Lundmark

About *Russula* determination: Slavomir
Adamcik

About *Russulales* workshops: Annemieke
Verbeken

Layout: Torkel Edenborg

Cover picture: Rolf Lidberg

Maps: Per Sander

Map at page 18: Mikael Krikorev

Editor: Sundsvalls Mykologiska Sällskap

Tryck: Kaltes Grafiska AB

Source at quotation: Excursion guide 2018,
Russulales, Borgsjö 2018

Facebook: myko, sundsvalls mykologiska
sällskap & svampfärgar sällskapet

Sponsors

Callans Trä AB

Länsstyrelsen Jämtland

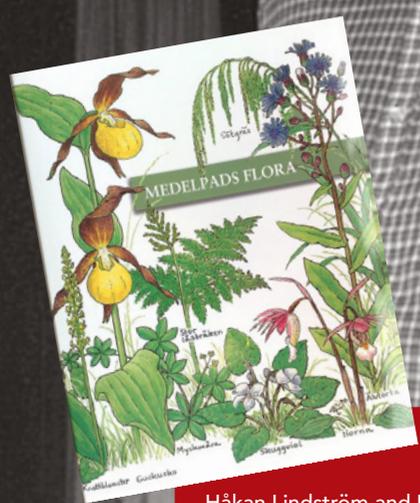
Länsstyrelsen Västernorrland

Maria och Erik Strangells stiftelse för djur-
och naturskydd

Naturskyddsföreningen Sundsvall-Ånge
SCA

© Sundsvalls Mykologiska Sällskap

Cover: Painting by Rolf Lidberg during workshop in Borgsjö 1997 with Mauro Sarnari, Annemieke Verbeken and others. Photo: Hjärdís Lundmark



Håkan Lindström and Rolf Lidberg at the first Cortinarius workshop in Borgsjö 1982.

This excursion guide is dedicated to Rolf Lidberg (1930–2005) and Håkan Lindström, (1950–2018) head authors of *Medelpads Flora* (2010) and friends at many exciting fungi excursions.

Medelpads Flora (2010) about the vascular plants of Medelpad. Wonderful paintings by Rolf of orchids and other plants. Detailed descriptions by Håkan of every plants special ecology just in Medelpad. The magnificent volume can be bought by Hjördis Lundmark for 10 euros.

Content

EXCURSIONGUIDE	1
Phone to service	2
Excursionguide <i>Russulales</i> , Borgsjö 2018	2
Key words	8
Welcome to the <i>Russulales</i> workshop in Borgsjö 2018!	10
Annemieke Verbeken about <i>Russulales</i> workshops	13
What is <i>Russulales</i> workshop in Borgsjö 2018 really about?	17
Sweden	18
Participants	19
Lactarius workshop 1-5/9 1997 in Borgsjö – some nostalgia	22
Daily program	32
Swedish species information centre	36
Excursion areas	38
Discover the magic of Mushroom dyeing	40
How to describe <i>Russulaceae</i> in field?	45
Province of Medelpad	50
Borgsjö parish	52
1 Västanå	52
2 The lake forest of Henri Romagnesi	52
<i>Russula</i> workshop with Henri Romagnesi at Borgsjö 1983	56
3 Borgsjö cemetery	58
Sniffing party at <i>Russulales</i> 2018	62
4 Borgsjö old historic yard and youth hostel (hembygdsgård)	63
5 Pilgrim road with holy spring at slope of Bergåsen	64
6 Lönnån	66
Lönnån – a hot spot for fungi and vascular plants	67
7 Swampy forest north of mount Bergåsen	68
8 Gammelbodarna nature reserve	68
9 Jämtgaveln nature reserve, a landscape of fires	72
10 Svartjärn, Jämtgaveln nature reserve	74
11 Rankleven nature reserve	75
12 Södra Sillre, stop 1	78
13 Södra Sillre stop 2	80
14 Ormberget northwest and southwest The <i>heterophylla</i> forest of Henri Romagnesi	82



15 Orråberget North, Husmyrbäcken-Husmyra	84
16 Råabäcken	87
17 Granboda, Skarpbäcken, Habitat protection area	88
18 Granboda, courtyard	88
19 Ensillre kalkbarrskog, nature reserve	90
20 West of Halmmyra (Ensillrebodarna)	91
21 Nedertjärnen, Balbodbäcken	93
22 Lombäcken, key biotope	94
23 Lombäcksheden and Harrån partly habitat protection area	94
Bengt Larsson and Håkan Sundin	98
24 Granbodåsen nature reserve	100
25 East of Bodåsen, habitat protection area	103
Interesting "Russula grisea" below old aspen trees at Granbodåsen	104
26 Kullbäcken-Markbäcken nature reserve	104
27 Kullen mountain pasture	110
28 Kullbäcken south of Kullen mountain pasture	112
29 Julåsen	114
30 Alby cemetery	116
31 Helvetesbrännan nature reserve	120
32 Dysjöberget nature reserve	120
33 Floberget nature reserve	122
Haverö parish	124
34 Forest east of Boflon	124
35 Björntjärn nature reserve	126
Torp parish	130
36 Tubbobäcken + forest west of Mörberget (habitat protection area)	130
37 Åsetjärnen	131
38 Forest north of Getberget	131
39 East of Långberget, habitat protection area	134
40 Sågåstjärn, Svartberget	136
41 Finnsjön, hard grazed grassland	136
42 Finnsjön, forest	138
Stöde parish	140
43 Stödesjön, delta area in the river Ljungan	140
44 Sönnasjöbergen nature reserve, "lövbränna" in Swedish	140
45 Högänge nature reserve	140
Alnö parish	142
46 Alnö cemetery	142
47 Pottäng	145
48 Stornäset nature reserve	146
49 Åssjöskogen, habitat protection area	147

Tuna parish	148
50 Torkarlsberget	148
Selånger parish	150
51 Siljeberget	150
Timrå parish	152
52 Indalsälven delta	152
Liden parish	154
53 Sundsjöåsen nature reserve	154
Province of Jämtland	156
Bräcke parish	160
54 Blektjärn nature reserve	160
55 Bräcke cemetery	160
56 Bodtjärnsbäcken	160
57 Grötingen	162
Brunflo parish	166
58 Slåtthornet nature reserve	166
Hällesjö parish	168
59 Djupdalsbäcken	168
Bodsjö parish	170
60 Sidsjö	170
Revsund parish	174
61 Tunsved nature reserve	174
Frösö parish	176
62 Andersön nature reserve	176
63 Fillstabäcken nature reserve	176
Ås parish	180
64 Tysjöarna nature reserve- the promised land of <i>Cypripedium calceolus</i>	180
Marieby parish	182
65 Nästmyren nature reserve, Fugelsta, meadow	182
66 Parks on limestone in the city of Östersund and on Frösö island	184
Lockne parish	190
67 Storvålen	190
Little <i>russulas</i>	193



Friendship

High quality of life

**Mycorrhiza connects
– important factor for life on earth**

***Lactarius* and *Russula* provide
important ecosystem services**

***Russulales* workshop in Borgsjö**

**More knowledge about ectomycorrhiza
species in northern forest**

Wool dyeing using mushrooms

Joy in finding rare species

Culture and nature tourism





Erikslunds Folkets Hus, our working site.
Photo: Olga Morozova



Welcome to the *Russulales* workshop in Borgsjö 2018!

Sundsvall Mycological Society has since 1982 arranged 16 mycology workshops in Borgsjö, often in collaboration with Karin Kellström, Lars Lundberg, Maj-Britt Sätthe and other friends of Östersund Mycological Society. A very exciting and stimulating broad social teamwork. We have also a close collaboration with Karin Andersson, Siv Norberg and others in "The Wool dyeing Society".



The Borgsjö Gate between the magnificent diabase mountains Rankleven and Öberget.
Photo: Sven Halling

We have studied mycorrhiza forming fungi, mostly in fascinating *calcareous coniferous* forests with *Hepatica nobilis* and earthworms from Borgsjö and Torp parishes in Medelpad to the forests on lime rock around Östersund in central Jämtland. We have also studied the special and threatened mycoflora at meadows in Medelpad and Jämtland treated in an oldfashioned way. We have invited mushroom researchers from all over Europe. We have got many mycological friends among amateurs and researchers. During 3 workshops we focused on *Cortinarius* with Tor Erik Brandrud as skillful and popular leader.

Håkan Lindström and Karl Soop held appreciated presentations at the *Cortinarius* table about "brown mushrooms" in *Cortinarius* subgenus *Telamonia* at almost every



Hjördis Lundmark and Jan-Olof Tedebrand at mushroom excursion. Photo: Håkan Sundin

workshop in Borgsjö since 1982, often assisted by Ilkka Kytövuori. Jacques Melot has commented extremely difficult taxonomic matters in *Cortinarius*. During 3 *Russula* workshops we invited researchers as Henri Romagnesi, Henning Knudsen, Juhani Ruotsalainen and Jukka Vauras. In 1997 we studied *Lactarius* together with Jacob Heilmann-Clausen, Mauri Korhonen, Ilkka Kytövuori, Annemieke Verbeken and Jan Vesterholt as invited scientific experts. We have also attended Nordic Mycological Congresses since more than 30 years, seen wonderful nature and established bonds of friendship with many mycologists. Social mycology is equal interesting as scientific mycology!

We will think of our finnish friends Pirjo and Ilkka Kytövuori, Eine and Mauri Korhonen, Juhani Ruotsalainen, Jukka Vauras when discussing *Lactarius* and *Russula* species out in the forests or in the working hall. We will also think of our local friends Håkan Lindström and Siw Muskos who can no longer join our organization team. We are so glad to meet old friends. Stig Jacobsson has visited Jämtland and Medelpad at many autumns. Together with Lars Lundberg, now 96 years of age, Stig has studied fungi in different parts of Jämtland, from the deep forests to the alpine heaths. We are also glad to meet *Russulales* friends from the far east: Yoshito Shimono, Kazako Shimono, Mako Sato and Hiroatsu Sato from Japan.

Annemieke Verbeken about *Russulales* workshops

In 2010, an international *Russulales* congress was organized by the Association des Mycologues Francophones de Belgique à Masseur (Belgium). This congress gathered hundred mycologists interested in the systematics and ecology of *Russulales* and had a well-filled program with lectures, field excursions, workshop-conferences, work in the microscopy room and an artistic session bringing together five very good water colour artists.

After this meeting we concluded that it is most important and instructive to be in the field and behind the microscope together with other *Russulales*-passionate people and to have intensive discussions about methods, characters, species delimitation etc. Therefore a core group of *Russulales* researchers decided to organize a biannual meeting in different locations in Europe in order to explore new areas and to bring together *Russulales*-oriented mycologists (both professional and amateurs) to focus on the observation of macro- and microscopical characters and exchange ideas concerning identification and identification tools. The first international *Russulales* workshop was held in Germany, Sondershausen, in august 2012, where we had the wonderful help of Felix Hampe, Robin Dost and Jesko Kleine as organizers. In 2014 we were in Slovakia, Jedľové Kostoľany, under the guidance of Slavomir Adamčík and his team. Two years ago, the workshop was organized in Piombino, Tuscany, Italy where we explored the Mediterranean *Russulales* thanks to the fantastic help and guidance of Umberto Pera, Mauro Bellucci and the local mycological associations.

The *Russulales* workshops brought together more than 130 mycologists from 4 different continents and were a boost for contacts and research exchange.

It is a logic step to plan his one in the northern part of Europe where such a particular diversity of *Russulales* occurs and where the mushrooms sometimes are larger than their ectomycorrhizal hosts. Borgsjö is a legendary place, almost a mycological pilgrimage. We can rely on a solid team of warm and friendly organizers who have good experience in guiding mycologists in their most wonderful kingdom of Scandinavian mycology.



Our county governor Berit Högman will open *Russulales* workshop sunday afternoon at 17 o'clock. Also we are interested in wool dyeing with mushrooms. At the tourist office at Träporten inn you can see mushroom coloured textiles in all fantastica rainbow colours. At saturday the 1th of september between 11-15 o'clock Margareta Byström, Hjördis Lundmark and Siv Norberg from the Musroom Dying Society will show mushroom dyeing for us and for local people living in the Ljungan valley and in Bräcke county.

Russulales workshop in Borgsjö 2018 is a stimulating teamwork between functionaires with their own special areasand the participants. Let's make *Russulales* 2018 a fine and memorable workshop. All participants will have a fine commented report home in their mail boxes as Christmas gift 2019!



An amazing rainbow over the beautiful landscape in Borgsjö: Mount Bergåsen, red cottages and the river Ljungan. Photo: Tatyana Svetasheva

We hope this fungi excursion guide will also be used after the *Russulales* workshop in 2018. Slavomir Adamcik, Herbert Kaufmann, Lars Ljungberg, Jacques Melot and Annemieke Verbeken have tried to correct the worst faults in the text. Annemieke has also put in some interesting comments. We apologize for all remaining faults in the guide.

The summer in Medelpad and Jämtland has been warm. Much rain has fallen since the 20th of July and we wish all of you good mushroom hunting.

Welcome to the Russulales workshop in Borgsjö 2018!

Sundsvall Mycological Society
Hjördis Lundmark **Jan-Olof Tedebrand**



Cortinarius Flora Photographica group at the *Cortinarius* workshop in Borgsjö 2003. From the left: Hans Marklund, Jacques Melot, Tor Erik Brandrud, Siw Muskos, Håkan Lindström. Photo: Hjördis Lundmark

What is *Russulales* workshop in Borgsjö 2018 really about?

Fungi are indispensable links in the eternal cycle of nature.

Some of them break down branches, trunks, leaves and other debris to forest soil. A large group of fungi like species in *Lactarius* and *Russula* have an intimate relationship with living plants, including our forest trees, forming ectomycorrhizal associations. Mushrooms provide important ecosystem services for the whole mankind.

The root system of a tree is enlarged a thousand times via the fungal hyphae and provides increased nutritional uptake. There may be 1-5 million root tips from the trees that are connected to the fungal network in the soil. Per square meter! This co-habitation is very important for the growth and well-being of trees and other plants. TED is a digital forum for scientific talks in the USA. See at TED Paul Stamets homage to the mushroom internet: www.ted.com, search for "six ways in which mushrooms can save the world" (text in various languages). Anders Dahlberg is our own "rock star" among Swedish mycorrhiza researchers. He has, during many workshops in Borgsjö, in a dramatic way and like an actor on the stage explained latest news from the research front about the underground forest network. The most eloquent star at the mycorrhiza researchers heaven is perhaps Suzanne Simard at University of British Columbia in Canada, who also gives TED speaks: http://www.ted.com/talks/suzanne_simard_how_trees_talk_to_each_other. Fungal networks are present in all ecosystems on earth. The boreal forests we will take you to are dominated by ectomycorrhizal trees and we walk on soil that is home to a huge network of mycelia connecting the trees and transferring nutrients from one tree to another.

***Cortinarius* Flora Photographica (CFP)**

Elias Fries (1794–1878) was particularly interested in *Cortinarius*, the largest ectomycorrhiza forming fungus genus in boreal forests and of vital importance for the circulation of nutrition and water in the northern forest ecosystem. In 1982, a venture began in Borgsjö. As a result "Cortinarius Flora Photographica" (CFP), an annotated photographic book consisting of five volumes, was published in four languages during 1989–2018. In 2016 the latest *Cortinarius* meeting took place in Borgsjö, see report: http://www.myko.se/wp-content/uploads/2014/05/Svamprapport_Borgsjo_2016.pdf. On pages 183-186 of this report, Herbert Kaufmann also describes with microscopical details his findings of 24 *Russula* species during the *Cortinarius* workshop in Borgsjö 2016.

You can buy CFP by Tania Böhning during *Russulales* workshop in Borgsjö.



Sweden

Sweden is situated in North-western Europe and has temperate, boreal and subarctic tundra ecosystems. Elias Fries, who lived 1794-1878 and is often referred as "the Father of Mycology", was born in Femsjö: a small village in southwestern Sweden. In 1979, the Swedish Mycological Association (SMA) was established in Femsjö. The promoters and initiators were artist Rolf Lidberg and troubadour Bengt Sändh. SMA currently publishes Svensk Mykologisk Tidskrift (SMT), earlier named Jordstjärnan. The editor of SMT is Mikael Jeppson, also an authority on gasteromycetes. SMA has just published Mikael's wonderful book about "Puffballs of Northern and Central Europe", see www.svampar.se

Participants



Belgium

Ronnie Boeykens
Eske De Crop
Glen Dierickx
Wim Dewitte
Omer van de Kerckhove
Ruben de Lange
Lynn Delgat
Nathan Schoutteten
Stephanie de Schrijver
Annemieke Verbeke



Italy

Francesco Bellu
Mauro Belluci
Bruno Brizzi
Ornella Comandini
Umberto Pera
Andrea Rinaldi



Japan

Yoshito Shimono
Kazako Shimono
Maki Sato
Hiroatsu Sato



Bulgaria

Pavel Nedelev and his sister



Finland

Tero Taipale



France

Jacques Melot



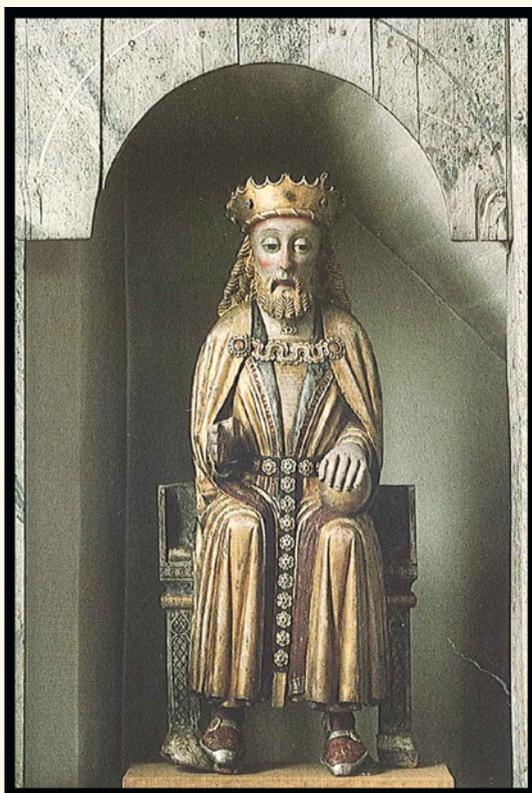
Germany

Hjördis Böhning
Tania Böhning
Robin Dost
Ursula Eberhardt
Felix Hampe
Jochen Girwert
Jesco Kleine
Mathias Lüderitz
Cathrin Manz
Kai Reschke



Greece

Ilias Polemis



Saint Olof in Borgsjö church, highest protector of Russulales 2018.



Machiel Noordeloos and a hulder (huldra in Norway, skogsrå in Sweden) at *Lactarius* workshop in Borgsjö 1997. The hulder has a name: Annemieke Verbeken. Photo: Siw Muskos



The Netherlands

Jorinde Nuytinck
Nathan Schouttelen



Norway

Per Marstad



Slovakia

Slavomir Adamcik
Miroslav Cabon
Sona Jancovicova



Spain

José Maria Traba-Velay



South Korea

Hyun Lee



Sweden

Leif Andersson
Anders Aronson
Margareta Byström
Rolf-Göran Carlsson
Inga Lill Franzén
Stig Jacobsson
Kurt Anders Johansson
Mats Karlsson
Herbert Kaufmann
Gunilla Kärrfelt
Bengt Larsson
Ellen Larsson
Bernt Linton
Lars Ljungberg
Hjördis Lundmark
Siv Norberg

Jan Olsson
Elisabet Ottosson
Bengt Petterson
Karl Soop
Kristoffer Stighäll
Anita Stridvall
Håkan Sundin
Tony Svensson
Maj-Britt Sâthe
Lennart Söderberg
Jeanette Södermark
Jan-Olof Tedebrand
Birgitta Wasstorp



Mauri Korhonen. Photo: Hjördis Lundmark

Lactarius workshop 1-5/9 1997 in Borgsjö – some nostalgia

Hjördis Lundmark, Nils Lundqvist, Olle Persson, Jan-Olof Tedebrand and Birgitta Wasstorp from Sweden participated 1996 in 13th Nordic Mycological Congress in Mekrijärvi, eastern Karelia. Mauri Korhonen and his friends had arranged an interesting program. In spite of dry weather we found *Lactarius rufus* and *Russula paludosa* at the *Pinus* heaths of Karelen. *Russula vinosa* dominated in *Picea* forest with blueberry. *Russula claroflava* was common in moist *Betula* woods. We also picked lot of cowberry. A group of *Lactarius picinus* at the exhibition table got another name next day: *L. fuliginosus*. Annemieke Verbeken talked about *Lactarius zonarioides* and related species in Europe. We invited Thea von Bonsdorff, Eine and Mauri



Mauro Sarnari with a beautiful Russula in Borgsjö 1997. Photo: Hjördis Lundmark





Mauri Korhonen *Russula* 1996. Photo Hjärdís Lundmark

Korhonen, Ilkka and Pirjo Kytövuori, Annemieke Verbeken, Maria Teresa Basso, Jan Vesterholt and others to join us at workshop 1997 in Borgsjö about *Hebeloma* and *Lactarius*. Mauri had in 1984 published his fantastic book "Suomen rouskot" about *Lactarius* in Finnish. Mauri had an exhibition of excellent mushroom paintings in Mekrijärvi 1996, refer to Hjärdís photo. Report: <http://www.myko.se/wp-content/uploads/2014/06/Borgsjö-1997.pdf>

Hot and dry summer

The summer of 1997 had been hot and dry in Borgsjö and in the rest of Sweden. A forest of 500 hectares burnt south of Ånge. Around one hundred of European *Cortinarius* fans gathered in the city of Härnösand in the province of Ångermanland at *Journées Européennes du Cortinaire*. Some of the participants like the Italian *Russula* expert Mauro Sarnari then went to *Hebeloma* and *Lactarius* workshop in Borgsjö.



Mauri Korhonen *Russula* 1996. Photo Hjördis Lundmark

Some rain had fallen in august further west in Bräcke and Östersund in the county of Jämtland. Everyone called out: go west! At the end of the week mushrooms also appeared in Borgsjö. We were 53 participants and met many of our dear friends like Thea von Bonsdorff, Machiel Noordeloos and Olle Persson. Mauri Korhonen was leader of *Lactarius* workshop with good help of Ilkka Kytövuori, Annemieke Verbeken and Maria Teresa Basso. Mauro Sarnari gave us many inputs about *Russula* and later on Mauro described some new *Russula* species in his *Russula* book based on material from his visit to Mid Sweden. Jan Vesterholt also talked about on *Hebeloma* species. Håkan Lindström and Karl Soop made well appreciated presentations every evening at the *Cortinarius* table, mostly about "brown mushrooms" in *Telamonia*. Jacob Heilmann-Clausen and Morten Christensen from Denmark every day came back from the west with full baskets. On friday afternoon Omer Van De Kerckhove showed some of his excellent aquarelles painted during the week. We had also



Mauri and Eine Korhonen, dear friends at *Lactarius* and *Russula* workshops in Borgsjö.
Photo: Hjördis Lundmark

some short slide shows in the nights. Annemieke Verbeken spoke for example about "Infrageneric classification of the genus *Lactarius*", Ilkka Kytövuori about: "Yellow species of the *aspideus* and *scrobiculatus* group" and Machiel Noordeloos about "Problems in brown *Lactarius* species".

The local newspaper had an article of several pages in their sunday paper about Maria Teresa, Rolf Lidberg and about *Lactarius* with many photos and wonderful paintings. Maria Teresa said in the article that she was impressed of the northern forests in the area and that she had found interesting "finnish *Lactarius* species never seen by me before. They were hidden in deep moss in old woods in Medelpad and Jämtland". *Lactarius* species are "so beautiful and quite fantastic" she said. Rolf



Lactarius lignyotus. Painting by Maria Teresa Basso. *L. lignyotus* has an oceanic distribution in mid Sweden: rather common near the bothnian coast, rarely found in forests with more continental climate between the bothnian sea and the atlantic ocean and then again more common in the western part of Jämtland. Many fungi have that kind of oceanic distribution in Medelpad and Härjedalen/Jämtland. *L. lignyotus* and 11 other *Lactarius* species, their ecology and distribution in Sweden is commented by Stig Jacobsson, Anita and Leif Stridvall in the journal *Jordstjärnan* 1991 (1): 45–63.



Bengt Petterson records today's fungus findings. Photo: Hjördis Lundmark



Lidberg translated from Italian to Swedish. He spoke Italian since he spent long periods studying orchids in Italy, especially Sicily. Maria Teresa and Rolf became friends and sent letters to each others. Maria Teresa, Omer van De Kerckhove, Rolf Lidberg and Erhard Ludwig made wonderful paintings of *Lactarius* during the *Lactarius* workshop in Borgsjö 1997.

Mauri Korhonen made a summary at friday evening, see page 8 of the report: "We have collected 40 species of *Lactarius* during the week. A high amount as there are no hazel or beech here in the Borgsjö area. All collections were also in good condition. We have seen almost all *Lactarius* species occurring in the area. A nice week". We found " *Lactarius utilis*" at many localities during the week. But Jan Vesterholt did not accept to separate *L. utilis* from *L. trivialis*. Funga Nordica (2012) includes *L. utilis* in *L. trivialis*. Mauri said that *L. vietus* may include several species. Jacob Heilmann-Clausen and Jan Vesterholt found in Jämtland 3 collections that they identified as *L. syringinus* (near *L. vietus*), a species described from Tjech Republic. *L. syringinus* was not accepted by Maria Teresa in her *Lactarius* book. Funga Nordica (2012) includes *L. utilis* in *L. trivialis*. All this illustrates that even in a relatively well-studied genus as *Lactarius* there are still unresolved questions.

Meantime we also found some *Lactarius* species in Jämtland and Medelpad not mentioned in Mauris list 1997. *Lactarius bertillonii* (now in *Lactifluus*) is found together with the orchid *Calypto bulbosa* in Ensillre kalkbarrskog, Borgsjö. The southern *Lactarius citriolens* is found in bogs with lime in Tysjöarna nature reserve, Jämtland. The alpine *Lactarius brunneoviolaceus* appears also under *Salix* like at the shore of Borgsjön. *Lactarius duplicatus* (= *lapponicus*) is found among *Aconitum* in rich forests along streams all the way to the bothnian coast. During good mushroom years *Lactarius pyrogalus* is common under hazel in eastern Medelpad and is found by Rolf Lidberg and Håkan Lindström at Hattberget in Liden parish, the most northwestern occurrence in Sweden for both hazel and *Lactarius pyrogalus*. *Lactarius camphoratus* is another more southern species that only appear near the bothnian coast in Medelpad and Ångermanland. *Lactarius porninsis* was found by danish mycologists (Henning Knudsen, Erik Rald) in 1986 under *Larix* in Siw Muskos homeforest at Torkarlsberget. Both varieties of *L. flexuosus* are found in Medelpad: var. *flexuosus* and var. *roseozonatus*. In 1997 we did not find two rather common *Alnus* species: *Lactarius obscuratus* and *omphaliformis*. *Lactarius lacunarum* is also found in Medelpad. Perhaps a group will go to Stornäset nature reserve near the sea at Alnön with vaste *Alnus*, *Betula*, *Salix* swamps at limestone, a hot spot for fungi.

Mauri also mentioned that we found much of *L. theiogalus* during the week, that *L. pilatii* (*i*) is common in Borgsjö in wet areas, and that we found all the northern yellow milked *Lactarius*.



Mycologists at *Lactarius* workshop in Borgsjö 1997: Inga-Lill Franzén, Siw Muskos, Magnus Källberg, Birgit Hagman. Photo: Kjell Olofsson

Mauri also pointed out that *L. sphagneti* is paler than *L. badiosanguineus* and has different ecology: *L. sphagneti* is found in wet places. *L. badiosanguineus* belongs to the *Lactarius* flora in calcareous *Picea* forests. Furthermore, we found the alpine *L. subcircellatus* under *Betula* at several places in Borgsjö during the week. Another nice record was *L. spinosulus* at the churchyard around Borgsjö church.

In 1998 Jacob, Jan and Mieke published "The genus *Lactarius*", volume 2 in the danish series "Fungi of northern Europe". In 1999 Maria Teresa published her magnificent volume "*Lactarius* Pers." in the serie "Fungi Europaei". Our insights in the genus and in species delimitation are still growing. In 2008 the milkcaps were split in *Lactarius* and *Lactifluus*, with relatively little nomenclatural consequences for the European milkcaps, since most of the species remain in *Lactarius* and only about a handful of them are recombined in *Lactifluus*. Some of the traditionally accepted and well-known species turn out to be a species complex hiding more than one species, this is e.g. the case for *Lactifluus volemus*. Exploration of good distinguishing features, ecological preferences and exact distribution areas is still needed for many species.



Group photo, *Hebeloma* and *Lactarius* workshop in Borgsjö 1997. Photo: Kjell Olofsson

At this *Russulales* workshop in Borgsjö, we will present the new volume of *Flora Agaricina Neerlandica*. Volume 7 deals about *Boletales* and *Lactarius/Lactifluus* in the Netherlands and neighbouring countries and is written by Noordeloos, Verbeke and Nuytinck.

A *Russula* week with Henning Knudsen took place in Borgsjö 1984. In 2001 Juhani Ruotsalainen and Jukka Vauras led us in the fascinating *Russula* world, see report: <http://www.myko.se/wp-content/uploads/2014/06/2001-Borgsjöveckan.pdf>. At page 16 in the report you can find a list of 70 *Russula* species found in 2001.



Daily program

■ SUNDAY 26/8

- 13.00–18.00** Hjördis Lundmark and Jeanette Södermark meet participants at Erikslunds Folkets Hus, will distribute folders with name slips, maps, preliminary excursion program monday-friday. You can also buy the magnificent volume *Medelpads Flora* by Rolf Lidberg and Håkan Lindström (10 euro) and Per Marstads book about Nordic *Russula* Species (20 euro). Jeanette Södermark guide to hotel Mittlandia.
- 17.00** County governor Berit Högman makes a welcome speech, tell about the beautiful county of Västernorrland and opens the *Russulales* workshop 2018 in Borgsjö.
- Evening** Later on in Sunday afternoon you can have dinner at Träporten inn until 20.00 or at Mittlandia hotel, find a working place at Erikslunds Folkets Hus, say hello to new and old friends. Closing of working hall at 23 o'clock.

■ DAILY PROGRAM MONDAY 27/8–FRIDAY 31/8

- 7.00** Opening of the working hall at Erikslunds Folkets Hus.
- 8.15–8.20** Short planning meeting with functionaires.
- 8.30** Excursion groups leave, bringing lunch packet.
- 14.00** Return to the working hall, group to Jämtland return 15.00–16.00.
- 15.00–16.00** After noon tea or coffee.
- 17.00–19.00** Dinner. Most people have dinner together at Träporten inn. They offer three alternatives: vegetarian food, fish or meat for a price of 120 Swedish crowns (10 euro). Hjördis has a list and you fill in your desires day by day and then Hjördis will give the list to Träporten inn before the dinner so they are prepared.
- 19.00–21.00** Evening the or coffee.



Erikslunds Folkets Hus, our working site. Photo: Olga Morozova

- 19.30** Short presentation of next days excursion goals, you can also read more detailed information about the localities in the excursion guide.
- 20.00–20.30** Presentation of interesting *Lactarius* and *Russula* species.
- 21.00** Talks some evenings (maximum 20–30 minutes). If you want to present a short talk, please contact Annemieke before the workshop.
- 23.00** Closing of working hall.

Wednesday at 08.30 group photo outside Erikslunds Folkets Hus

Correction

The price for staying at hotel Mittlandia does not include lunch packet which cost 10 euro per day.

Cultural events

At 16 o'clock tuesday afternoon those who want gather outside Erikslund's Folkets Hus. We will visit the Wood Carving Museum close to our working hall where the the rallaren (the navy) Gösta Sundin created very detailed models of life in the old farming society, always in a humerous way and with only knife and sandpaper. Along the old village road east of the wood carving museum there are also big, beautiful old wooden houses with ornate, decorative carvings.

At 16 o'clock on thursday afternoon those who want can gather outside our working hall. Then we visit Borgsjö church, the finest rococo church in Sweden and admire the old paintings and sculptures in the church. Of course we say hallo to Saint Olof (medieval wooden sculpture), highest protector of Russulales workshop in Borgsjö. We also visit the old folk museum (youth hostel) where baking of "tunnbröd" in big stone ovens will be demonstrated.

Of course you must look at exhibitions of nature at Ånge Naturum, Träporten inn. There you can also enjoy Hjördis Lundmark's and Siv Norberg's exhibition on mushroom dyeing. You can also visit the city of Sundsvall with famous stone houses and "kulturmagasinet" (library and museum) built after the city fire in 1888. Also the city of Östersund is worth visiting with its old folk museum Jamtli.

Banquet evening thursday at 19 o'clock

At 19 o'clock thursday evening a social evening (banquet) take place at Träporten inn (no payment, included in registration fee). Please tell Hjördis at the arrival sunday afternoon or latest at monday if you plan to join the social dinner (includes in participation fee) and also if you are allergic and have special wishes.

Short talks (max 30 minutes)

Monday evening 21:00

Slavomir Adamcik report about microcopy workshop on *Russula* in Slovakia during the spring 2018 andabout reliable field collection of *Russula*.

Friday evening 19:00

Summary. We have during the week written at flipover species found in *Lactarius* and *Russula* like we did in 1997. Annemieke Verbeken and Slavomir Adamcik make a short summary of the week and thank all participants and functionaires. Other talks will be announced at the beginning of the meeting.



Henri Romagnesi and Jacques Melot at Borgsjö cemetery in 1983. Photo: Siw Muskos

Flora Agaricina Neerlandica about *Boletales* and *Lactarius*

During the workshop a new volume of the FAN (in a completely new format) on *Boletales* and *Lactarius* (Noordeloos, Nuytinck, Verbeken) in the Netherlands and in West Europe will be presented, 800 pages and 550 colour pictures, part 7 in Flora Agaricina Neerlandica.

You can buy FAN from Annemieke Verbeken in Borgsjö.



Åsa Kryus and Mats Hjertsson tell about the collections at the Museum of Evolution in Uppsala for Jeanette Södermark, Hjördis Lundmark and others from Medelpad. Photo: Håkan Sundin

Swedish species information centre

The Swedish Species information Centre (Artdatabanken) at the Swedish University of Agricultural Sciences in Uppsala accumulates, analyses and disseminates information concerning species and habitats in Sweden.

At the home page, <http://artportalen.se>, you may find information concerning the known distribution of fungi in Sweden. Very popular in Sweden is to report findings of birds, butterflies, fungi and species of other groups to the Swedish Species Gateway (Artportalen). The Swedish



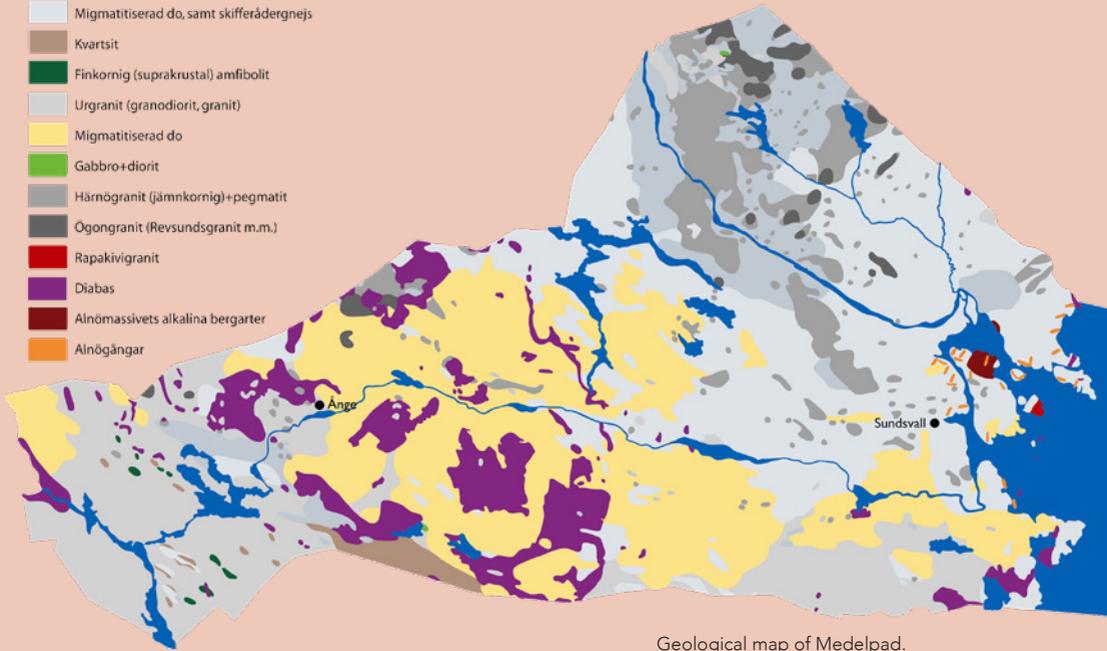
Elisabet Ottosson informing about The Swedish Species Gateway (Artportalen) when botanists from Medelpad in april 2018 visited the Swedish Species Information Centre in Uppsala.
Photo: Håkan Sundin

Taxonomy Initiative began in 2002 and actively remains a part of the Swedish Species Information Centre. This project is globally unique, aims to describe all Swedish multicellular species, which are currently around 60 000. National Red Lists concerning fungi are produced every five years, in close collaboration with the corresponding fungal redlist committee in Norway, chaired by Tor Erik Brandrud. The next redlist will be published in 2020.

Elisabet Ottosson, mycologist at the Swedish Species Information Centre, will join us some days in Borgsjö. In her doctor's thesis (dissertation) she studied fungi in dead wood with DNA-methods. In april 2018, Elisabet organized a visit to The Species information Centre for a group of botanists from Medelpad. We also visited The Museum of Evolution in Uppsala.



- Metagråvacka
- Migmatitiserad do, samt skifferådergnejs
- Kvartsit
- Finkornig (suprakrustal) amfibolit
- Urgranit (granodiorit, granit)
- Migmatitiserad do
- Gabbro+diorit
- Härnögranit (jämnkornig)+pegmatit
- Ögongranit (Revsundsgranit m.m.)
- Rapakivgranit
- Diabas
- Alnömassivets alkalina bergarter
- Alnöängar

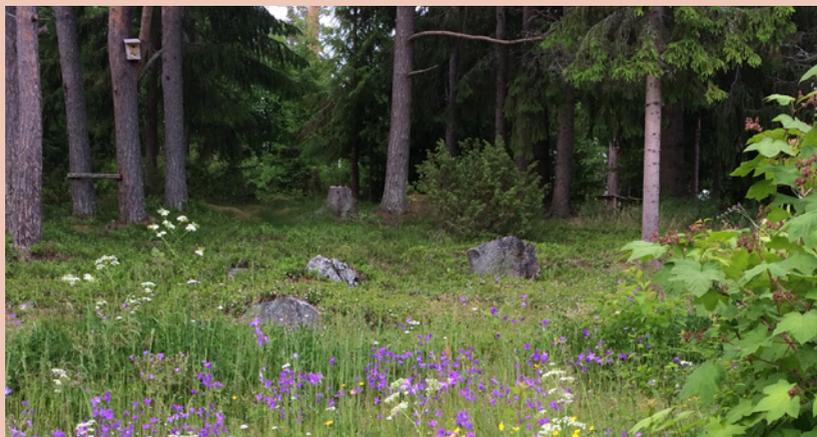


Geological map of Medelpad.

Excursion areas

The most common forest type in Sweden and in the excursion area is *Picea* forest (some *Betula* and *Pinus*) with blueberry in the ground layer ("blåbärsgranskog" in Swedish). We will mostly visit calcareous, herbrich *Picea* forests in mountain slopes ("ängsgranskog" in Swedish) for example Granbodåsen and Julåsen. *Picea* forests and fens of *Cyripedium* type like Tysjöarna is also interesting for rare species in Russulales like *Lactarius olivinus* and *Russula olivobrunnea*. *Picea* of good quality is also important for Callans Trä AB, the local saw mill that provides many jobs for people in the Borgsjö area.

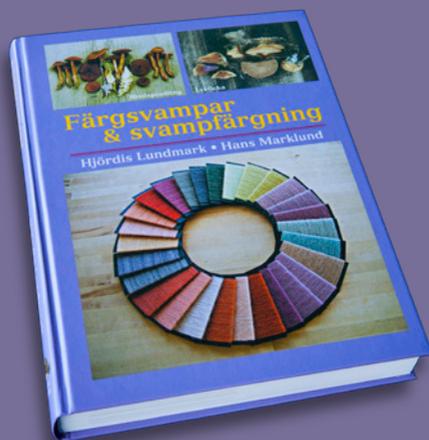
Dry calcareous *Pinus* forest on limestone or sand like Andersön and Lombäcksheden have their special *Lactarius* and *Russula* species. We will also visit moist *Alnus*, *Betula* and *Salix* areas along lakes and rivers. The Borgsjö valley is surrounded by 3–400 meters high mountains, often with high steep slopes like Rankleven ("sydväxtberg" in Swedish) with southern and sometimes alpine species. In shady, moist and herbrich



slopes north of the high mountains we find best areas for mushrooms in dry years. We also hope to make short stops at burnt areas near our excursions goals. In Jämtgaveln nature reserve areas have been burnt in 2015 and 2018 just near the forest road by John Granbo and his fellow workers at the County Board. If you want more details about birds, lichens, mosses, butterflies and other species groups in the excursion area, please talk to our guides Bengt Larsson and Håkan Sundin. At Ånge Naturum (at Träporten inn) Sara Stierna and her fellow workers also can tell about nature and culture in Ånge municipality. We have also in nordic nature kind creatures like trolls, huldurs and elves. Near old forest meadows like Granbodäsen and Kullbodarna you can meet "the small people" – vittran.

In order to plan our excursions for the *Russulales* workshop 2018, we focus on places with earlier findings of rare and interesting species in *Lactarius* and *Russula* g. We plan to have 3-4 excursion groups per day during *Russulales* workshop. We decide excursions goals at Sunday 26th of august when we know where to find fresh fruitbodies. The evening before the excursion, after the presentation of the excursion sites, you put your name at one group on the lists in the working hall, not more than 15 persons in any group. Please, respect this wish. Of course some participants, who now the excursion areas since earlier workshops, go by themselves.

The excursions start at 8.30 outside the working hall. Group number one drives away first, then group number two and so on. We have two guides per group, one guide drive fist, the other as last car. Every group chooses one or more persons two make a list of species found at every visited locality. Before leaving an excursion place the group gathers and species list is written. After the arrival back to our working hall all lists must be given to Jan-Olof who is responsible for the final report.



Discover the magic of Mushroom dyeing

Collecting mushroom is exciting and interesting but picking mushrooms for dyeing is magic!

The Mushroom-pigments gives all the beautiful colours of the rainbow, which the plants don't give. There is an endless range of colours depending on how much/little mushrooms, species of mushrooms and the quality of wool/silk you use.

The process is simple. The mushrooms boil in a dyepot of water, about 1 hour. When the mushrooms is sinking to the bottom of the dye pot it is ready for dyeing. Put in the Wool/silk, which has been mordant with Alum /creme of tartar and you get a very nice result.

Dyeing with plants is an old tradition. Mushroom colour-chemistry is a new knowledge. When the discovery of the mushroom colour chemistry was made in the middle of 1970, mushroom-dyeing was born.

Hjärdis Lundmark



Dermocybe, Cortinarius are perhaps the best colour mushrooms. *Cortinarius semisanguineus* has given the red colour. Photo: Tatyana Svetasheva



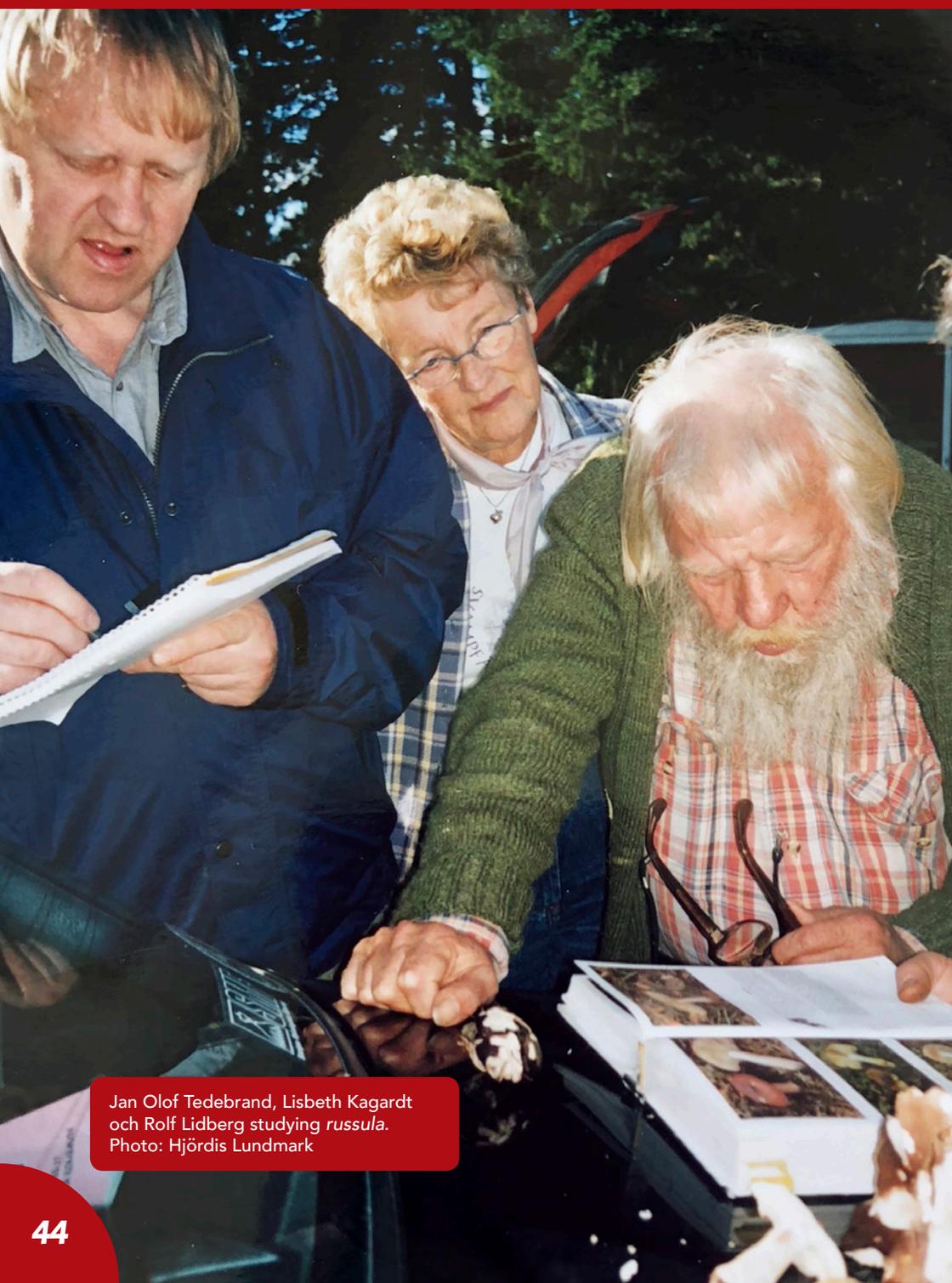
The Ikat is a Japanese technique that you dye multicoloured yarn with. Hjördis and Olga Morozova are talking about it. Photo: Tatyana Svetasheva



Inga-Lill Franzén shows her mushroomdyed silk scarf.
Photo: Tatyana Svetasheva



Mushroomdyeing at Hjördis Lundmarks home in Kyrkdal.
Photo: Berthold Lundmark



Jan Olof Tedebrand, Lisbeth Kagardt
och Rolf Lidberg studiyng russula.
Photo: Hjørdis Lundmark

Slavomir Adamcik:

How to describe *Russulaceae* in field?

Before deciding to make a description, identify a reason why to do it. The most common reason to describe *Russulaceae* is a difficulty to identify them in the field and need of microscopy for that. Photo may be very useful to document a general view of fungus, but some key characters (taste, odour) are not recorded on the image and, even, colours are modified.

Combining a brief description with photos may serve well to support identification of *Russulaceae*. The second reason to describe field appearance (macro-morphology) of *Russulaceae* is gathering of data for taxonomy. In light of current molecular research many of taxonomic novelties are introduced but little attention is paid to morphology. Newly recognised phylogenetic species reflects genetic nature of studied species and their evolution history; yet, their morphological delimitation often remains unresolved.

Compare to traditional morphological concept, phylogenetic results often lump or split species unpredictably and new morphological characters are desired. Even if traditional concept is congruent with the molecular data, sometimes the species limits are blurred by lack of data. In any case, when working with morphology, full and detailed descriptions from multiple collections, originating from distant areas and different habitats are welcome.

Photos

Photos do not show the full information required but still are powerful tool and might represent a useful source of data. They are often a shortcut to identify the species.

A good photo should show:

1. Fruiting bodies in young and mature stage.
2. A view of at least one individual showing hymenium in mature stage (with lamellae able to produce spore print), colour and surface aspect of the pileus cuticle, and also one individual cut longitudinally to show the colour change of the context.
3. A scale bar or an object allowing to identify dimensions.

Avoid:

1. Combining fruiting bodies collected in different places, always use only individuals expected to originate from a single mycelium; never use individuals that are not clearly the same species.
2. If your collection consists only of one or few fruiting bodies, make more photos in different views.
3. Sometimes too much lightness can hide structure of the surface, small colour spots may fade or surface structure can be invisible. Lamellae or surface, may look paler as they are, and the whole picture may be more blue or more yellow as in reality. Check your picture twice.

Brief descriptions

Brief descriptions are useful to support identification using a key. You can check the key and decide which characters are useful. Recommended is to record characters that are not displayed at photos : spore print, taste, odour.

Learning how keys to *Russulaceae* identification works may help to decide which additional characters are useful to record.

Full descriptions

To decide about morphological variability and delimitation of *Russulaceae*, all possible and available morphological characters are needed. Or, at least, a selection of many of characters that are consistently recorded for each collection of the studied species. Efficient way how to be consistent and remember to record all required characters is using description forms.

Some description form can be very elaborated like the one presented at *Russulales* news webpage by Dr. Buyck (http://www2.muse.it/russulales-news/tc_in_the_field.as). Some people may like shorter that are easily kept in herbarium envelopes together with the dried fungal specimen. Example of a smaller description form is on page 49.



Olle Persson was very fond of *Russulas*, dear friend for many Swedish mycologists, often visiting workshops in Borgsjö, often singing and playing old folk songs.
Photo: Hjördis Lundmark



Anybody may prepare and modify description form according to his personal preferences and to test it in field. There are several ways how to list characters in the description form.

1. Just a simple list of objects to be observed, e.g. pileus, stipe, lamellae edges, context.
2. Listing of all characters observed, e.g. pileus surface and cuticle peeling, stipe shape and interior, colour and profile of lamellae edges, odour and taste of context.
3. listing characters stages to be ready to select by checking of a box or circling a selected option, e.g. pileus viscid and shiny when dry or not viscid and matt when dry; stipe solid, stuffed, cavernate, hollow; lamellae edges entire, serrulate or irregularly dented.

Collecting of Russulaceae

To preserve Russulaceae fruiting bodies in a suitable stage for microscopy and DNA extractions:

1. Avoid unnecessary handling especially of lamellae.
2. Wrap fruiting bodies of each individual collection in aluminium foil or waxpaper.
3. Do not scratch surface of fruiting bodies with knife or other tools in effort to remove attached soil or litter particles, only gently clean the surface of a dirt.

Drying of herbarium specimens

Herbarium specimens became important source of DNA sequence data. The best way to dry specimens for molecular analysis is deep-freezing (lyophilisation), CTAB sampling (buffer) or drying in silica gel. The most common and yet convenient way how to dry Russulaceae is using food dryer (dehydrator). When deciding about the dryer type, choose one with temperature control, best temperature to dry fungi is 40 °C.

During drying, caps should be oriented with hymenium up, because cap cuticle may inhibit the evaporation of the moisture. However, moist and sticky cap cuticle may stick on the racks or papers. To avoid it, move the caps two-three times before they dry, or use fine mosquito mesh (sometimes provided by producer) cut in the shape of the racks.

Russula

Country and geographical location _____

Date _____ Collector _____

Associated plants _____

Pileus size _____

Margin striate at _____

Shape: lobate, long involuted, deep depressed, umbonate _____

Surface _____

Color near margin _____

Color near centre _____

Peeling _____ Thickness of flesh in half diameter _____

Stipe size _____

Surface _____ Color _____

Cortex _____ Medulla _____

Gills width _____ Lamellulae _____

Number on 1 cm near cap margin _____

Edge _____ Furcations _____

Color _____ Spore print _____

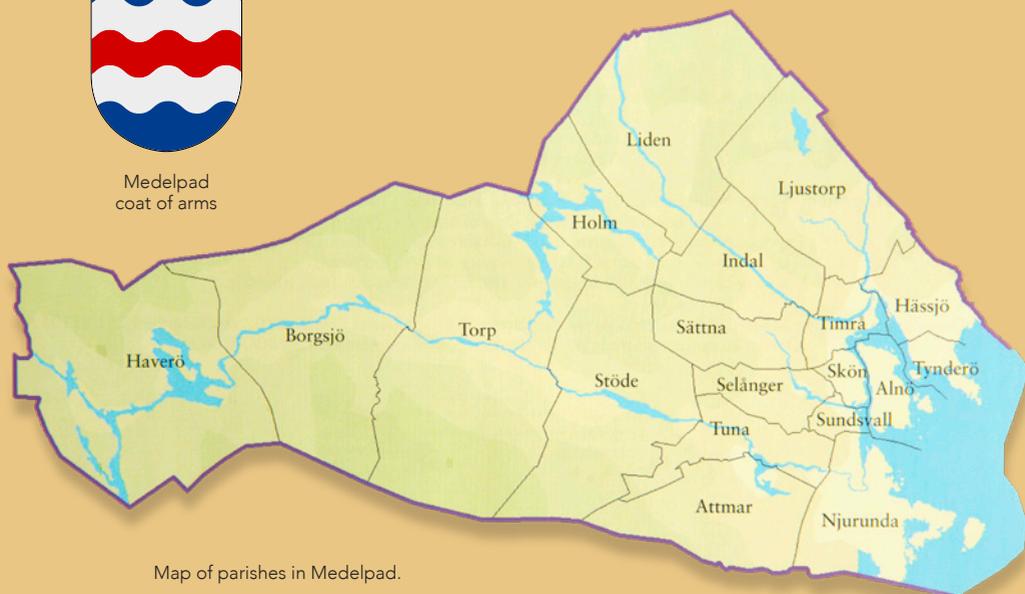
Flesh Taste _____ Smell _____

Consistency _____

Color change _____



Medelpad
coat of arms

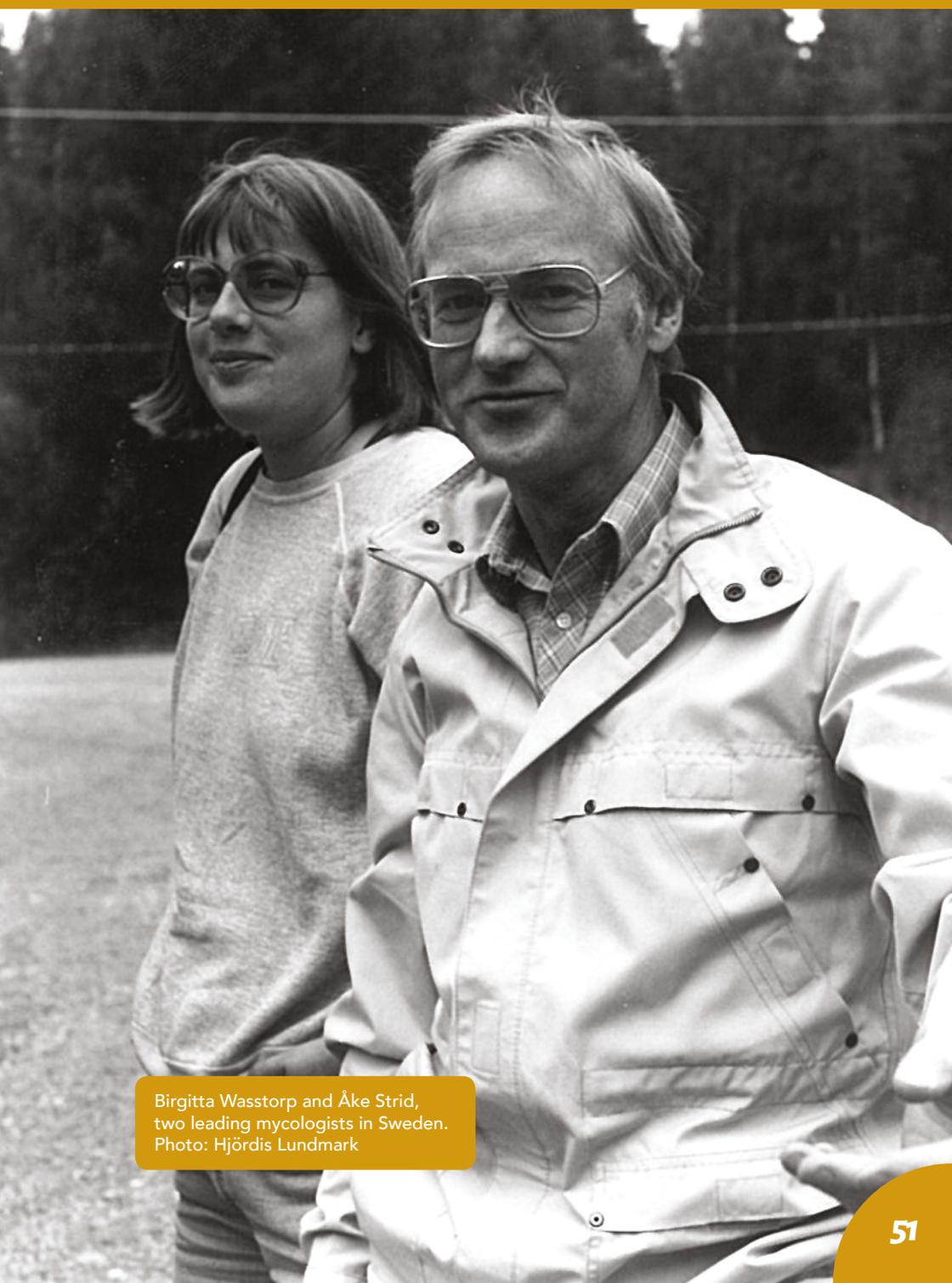


Map of parishes in Medelpad.

Province of Medelpad

Medelpad is a landscape that is wholly part of the county of Västernorrland. Medelpad borders in the south to Hälsingland, in the west to Härjedalen, in the northwest to Jämtland, in the north to Ångermanland and in the east to the Bothnian Sea.

Medelpad is one of Sweden's 25 landscapes, which has the 13th largest area, 13th highest population density and 16th largest population. Of Northern Sweden's nine landscape, Medelpad has the second smallest area, the sixth largest population and the second highest population density. The largest length in the east-west is 140 km, and the largest latitude in the north-south is 90 km.



Birgitta Wasstorp and Åke Strid,
two leading mycologists in Sweden.
Photo: Hjärdís Lundmark

Borgsjö parish

1 Västana

693534;1506537

Forest along the path south of our working hall down to the river Ljungan. *Populus tremula*, *Betula*, *Picea*, *Pinus*, *Salix*. Watch out for the train. *Lactarius spinosulus*, *Russula aquosa*, *atrorubens*, *consobrina*, *firmula*, *nitida*, *paludosa*, *rhodopoda*, *versicolor*, *vinosa*, *xerampelina*.

Also: *Albatrellus syringae*, *Cantharellus cibarius*, *Cortinarius argutus*, *uliginosus*, *Laccaria amethystina*, *Stagnicola perplexa*, *Tricholoma apium*, *focale*, *populinum*, *scalpturatum*

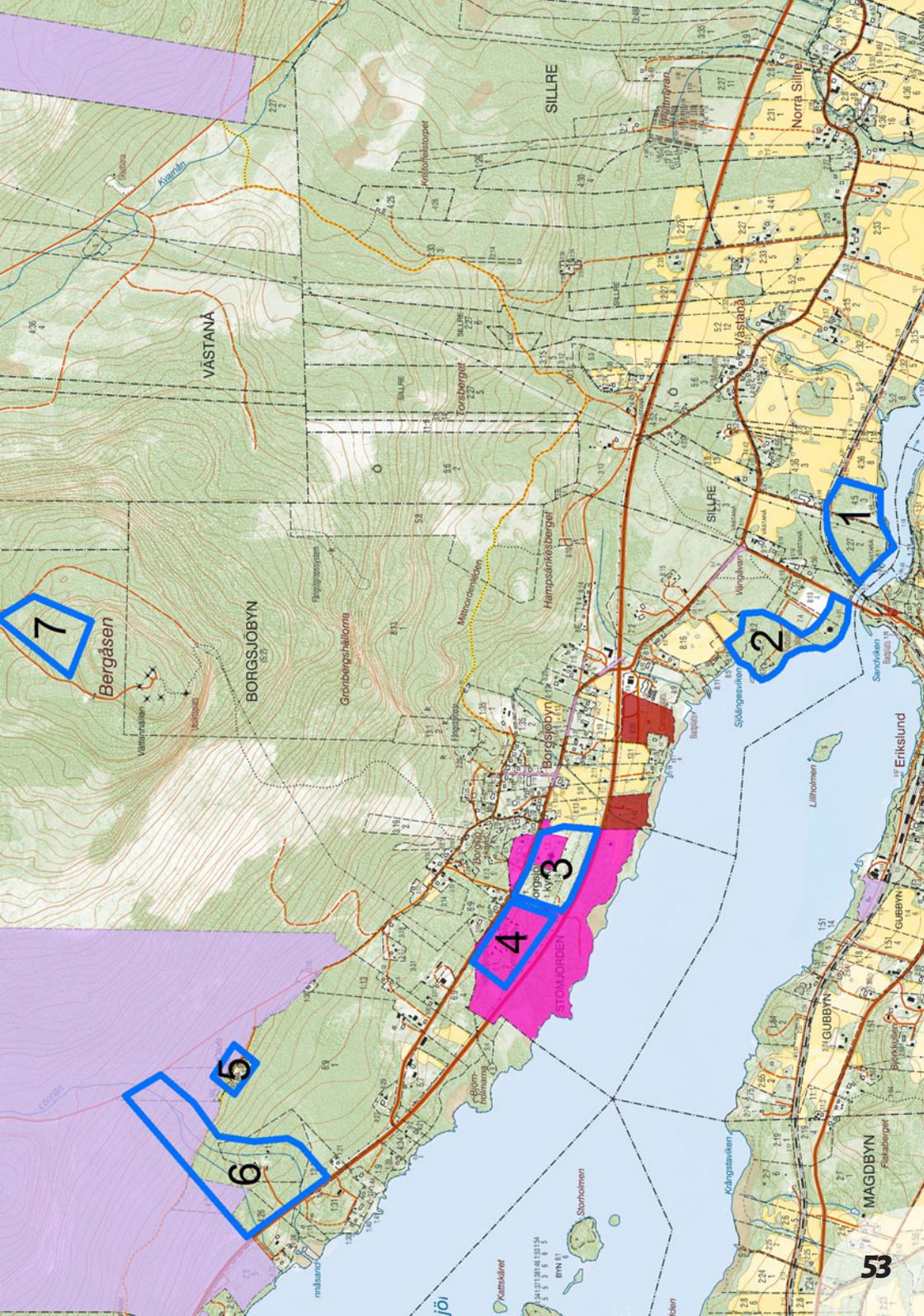
Comment: New type for *Tricholoma stans* from this forest, see danish book about Ridderhatte (Christensen-Heilmann-Clausen 2013, page 76 and 209).

2 The lake forest of Henri Romagnesi

6935635;1505988

Forest along the lake Borgsjön with *Alnus*, *Populus tremula*, *Betula* and *Viburnum opulus*. Also swamp area with *Salix*, dry *Pinus* forest near the bridge.

Henri Romagnesi walked 24/8 1983 the path north of the football ground to the lake shore. Henri was extremely delighted to find the small *Amanita friabilis* for the first time in his long life. In swamp area with *Salix* along the lake Ruben Walleyn found in 2001 *Lactarius brunneoviolaceus*, according to Funga Nordica (2012) an alpine *Lactarius* species. Also among *Russulas* there are alpine species occurring under *Salix* down to the bothnian coast. Henning Knudsen and Håkan Sundin found in road ditches 2014 *Russula laccata* under small *Salix triandra* at the shore of Indalsälven in Hässjö parish Medelpad. We also find *Russula laccata* in road ditches under other *Salix* bushes.



Bergåsen

VÄSTANA

BORG SJÖBYN

Grönbergshällorna

SILIRE

Borgsjöbyn

Stomlorden

2

1

4

3

5

6

53

jöi

Kungälv

Kungälv

MAGDBYN

Erikslund

GUBBYN

Magdby

Stomlorden

Kungälv



Håkan Lindström, Henri Romagnesi and Jan-Olof Tedebrand discuss a *Russula* species during workshop in Borgsjö 1983. Photo: Siw Muskos

Lactarius glycosmus, *lilacinus*, *L. obscuratus*, *representaneus*, *torminosus*, *trivialis*, *uvidus*

Russula maculata (= *globispora*, Lars Lundberg och Stig Jacobsson 1989), *medullata* (Jan-Ola Wimo-Henri Romagnesi 24/8 1983)

Also: *Antrodiella serpula*, *Coprinopsis pannucioides*, *Cortinarius lilacinopusillus*, *uliginosus*, *violaceus*, *Eutypa flavovirens*, *Gyrodon lividus*, *Mycena corticola*, *Paxillus filamentosus* (Henri Romagnesi and Jan-Olof Tedebrand 24/8 1983), *Psatyrella pannucioides*



Henri Romagnesi, Jacques Melot and Jan-Olof Tedebrand at Ormberget in Borgsjö 1983.
Photo: Herbert Kaufmann

Russula workshop with Henri Romagnesi at Borgsjö 1983

During the fall of 1982 Rolf Lidberg, founder of Sundsvall Mycological Society, stayed a long time in Paris. Rolf and Jacques Melot visited Henri Romagnesi at his place of research, a plain botanical library. Rolf spoke fluent french and invited Romagnesi to visit Sweden and Borgsjö the following fall. Around midsummer 1983 a letter with positive answer arrived from Paris together with a menu for the week. Henri wanted grilled beef every day with vegetables. Our innkeeper at Saint Olavs inn ordered moose meat from the local butcher. Henri arrived at Stockholm airport the 20th of August where Erik Malm and Birgitta Wasstorp met and drove him by car to Borgsjö in extreme hot summer weather. Henri had warm winter clothes with overcoat and scarf. Erik Malm had a gift for languages and spoke french. Siw Muskos also made a welcome speech in french. Rolf Lidberg informed the first evening in french about the special nature types of western Medelpad. Among the 20 participants were Jukka Vauras, Eine and Mauri Korhonen from Finland. Mauri collected and made photos of *Lactarius* species for his beautiful book about *Lactarius* in Finland. He taught us a northern *Lactarius* species in calcareous moist *Betula* forests that now has got the name *Lactarius flavopalustris*. Henri Romagnesi was very kind and put some of our *Russula* findings under his microscope. For several ours he studied a white

Russula from Mount Välliste in Jämtland, finally he said: "c'est une *aeruginea* très pale" (that is a pale *aeruginea*).

Stig Jacobsson commented many findings of *Russula* species from the *Russula* week with Henri Romagnesi in the journal *Jordstjärnan* 1984/1. Together with Anita and Leif Stridvall, Stig also presented facts about 14 *Russula* species, their ecology, frequency and distribution in Sweden in *Jordstjärnan* 1990 (2): "Den svenska utbredningen av några kremlearter". They discussed *R. aurata*, *caerulea*, *consobrina*, *cyanozantha*, *farinipes*, *illota*, *grata*, *lepida*, *mustelina*, *nigricans*, *ochroleuca*, *queletii*, *sardonina* and *virescens*. Stig will join us at *Russulales* workshop 2018.

The summer in 1983 had been extremely hot and dry in Sweden. We had to look for *Russulas* in shady slopes with tall herbs north of high mountains, in brook ravines and along wet fens. Two longer excursions were made to Sällsjö and Mount Välliste in the province of Jämtland where some more rain had fallen. In spite of the dry summer we found 38 *Russula* species. 51 collections in all of 32 species were deposited at Natural Historical Museum in Stockholm (S). Henri said that the nature in western Medelpad reminded him of Jura mountains in France. In 1983 After *Russula* workshop Henri Romagnesi traveled to Uppsala where Svengunnar Ryman presented to him Carl von Linnés farm Hammarby and the Linné garden. Then Åke Strid and Nils Suber showed the herbarium at Swedish Natural Historical Museum in Stockholm (S).

Nils Suber (1890-1985) was a famous and popular mushroom amateur who was very fond of the genus *Russula*. He sent two slides of *Russula* species to the *Russula* workshop in Borgsjö with Henri Romagnesi: *Russula urens* Romell from the same place in Karlberg palace park in Stockholm where Romell made his finding and *Russula adulterina* Fries from Drottningholm royal palace in Stockholm. Nils Suber also wrote about *Russula adulterina* in his book

"I svampskogen" (1950, 1968) and also in Swedish Mycological Societies journal *Jordstjärnan* 5, 1984: 37-39: "Två sällsynta *Russula*-arter". John Axel Nannfeldt then kindly commented Suber's writings about *R. adulterina* in *Jordstjärnan* 1985 (3) page 8-10: *Russula adulterina*-ett missbrukat namn". Nannfeldt's conclusion was that it is completely unclear what Fries meant by *Russula adulterina*. He also quoted Singer that "*Russula adulterina*" is two species: *R. piceatorum* in coniferous forest and *R. cinnamomicolor* (now *R. cuprea* according to Herbert Kaufmann) in deciduous forest.

3 Borgsjö cemetery

6936535;1505226

The biological diversity of fungi and other species groups at old cemeteries are worth more attention! Anita and Leif Stridvall for example have invented and written on the lichen flora at cemeteries. Borgsjö is one of the most beautiful rococo churches in Sweden. Old lawns with mostly *Betula*, but also some *Picea*, *Pinus*, *Quercus*, well invented during many workshops in Borgsjö. In addition there are meadows in a memorial grove in the western part with rich grassland fungi, article by Lindström, Nitare, Tedebrand and species list in the SMF journal *Jordstjärnan* 1992 (2).

Lactarius flexuosus, *necator*, *spinosulus* *Russula acrifolia*, *aeruginea*, *anatina* (Henning Knudsen 1984 (S)), *atroglauca*, *cremeoavellanea*, *chloroides*, *cyanoxantha* f. *peltereaui* (Henning Knudsen 1984), *delica*, *depallens*, *foetens*, *font-queri*, *gracillima*, *intermedia*, *lutea*, *medullata*, *pascua*, *pubescens*, *roseipes*, *scotica* (Herbert Kaufmann 2016), *subfoetens* (Henning Knudsen 1984 (S)), *violacea* (= *pelargonias* ss Ruotsalainen), *versicolor*, *violaceoincarnata* (found in 1995 by Ilkka Kytövuori and Hjärdís Lundmark under *Betula pendula* *Dalecarlica*)

Also: *Amanita flavescens*, *Boletus edulis*, *Helvella crispa*, *Mycena cyanorrhiza*, *stylobates*

Comment: Henning Knudsen and the swedish mycologist Olle Persson collected 24.8.1984 *Russula font-queri* at the mossy road side outside the cemetery. Along the path in front of the church also *Betula pendula* f. *dalecarlica* where Hjärdís Lundmark and Henning Knudsen found *Russula versicolor* 19.8.1984. At the western part and along the stone wall we almost every year find *Russula foetens* with special, good and strong smell of newly baked bread. *R. foetens* is part of a group of species in section *Ingratae*. We often find species in this section *Ingratae* under *Tilia* in parks like at Sättna church and Jacobsdals mansion in Sundsvall. We call them *Russula pectinatoides* but they perhaps constitute a complex of many species? The southern *Russula illota* with almond-scent was found by Hans-Gunnar Unger and a group of Sundsvall mycologists in deciduous, swampy forest at Stornäset nature reserve at the bothnian coast. Funga Nordica (2012) treats 13 species in *R.* section *Ingratae*, many with special scent.

Henri Romagnesi considered at his visit in Borgsjö 1983 that *R. foetens* and *R. subfoetens* is the same species with broad variation. Henning Knudsen meant



Håkan Lindström often gathered mushrooms, especially *Telamonia* species, at alpine heaths of Härjedalen, often together with his friend Håkan Sundin. This photo of Pierre Arthur Moreau is taken during the swedish mycological week in Härjedalen 2006.

at *Russula* workshop in 1984 that they are separate species and we found both species in Medelpad and Jämtland. John Axel Nannfeldt says in his article about *Russula* under *Betula* at his summer place (Svensk Bot. Tidskr. 80, 1986: 303–320) that he had microscoped about 30 swedish collections without finding any clear differences. According to Juhani Ruotsalainen *R. subfoetens* is a good species. Funga Nordica (2012) accepts both species.

Herbert Kaufmann describes findings of 24 *Russula* species with microscopical details and comments at pages 183–186 in a report from the Cortinarius workshop in 2016 *uk*: http://www.myko.se/wp-content/uploads/2014/05/Svamprapport_Borgsjo_2016.pdf Herbert found in 2016 following *Russula* species at Borgsjö cemetery: *Russula pascua*, *cremeoavellanea*, *atroglauca*, *scotica*.



Russula cremeoavellanea, Medelpad, Timrå parish, Sörberge cemetery 2014, Hjördis Lundmark, Lennart Söderberg, Jan-Olof Tedebrand. Photo: Hjördis Lundmark

During the middle of th 20th century, John Axel Nannfeldt (1904-1985) established a strong scientific mycological environment in Uppsala. Among other well-known and recognized mycologists from Uppsala are Lennart Holm, Nils Lundqvist and Svengunnar Ryman.

Gothenburg has also a strong mycological tradition and is the bakermat of John Eriksson and a group of researchers that became world-leading experts in wood-

inhabiting fungi, mainly *Corticaceae*. Today, Ellen Larsson, her students, and retired researcher Stig Jacobson (who made a PhD on *Pholiota*), work there.

In 1971-1980, John Axel Nannfeldt studied in detail the rich *Russula* flora at an old lawn of about 350 square meter with ten tall birches at the families summer house at Tolvfors near the city of Gävle in Eastern Sweden (Svensk Botanisk Tidskrift 80, 1986): <http://www.diva-portal.org/smash/get/diva2:1202478/FULLTEXT01.pdf>. Nannfeldt noted emore than 1150 fruitbodies of *Russula* on this lawn. The most frequent species was *R. velenovskyi* with some 360 fruitbodies. He found in totaly 16 species of *Russula* a: *aeruginea*, cfr *aurantiolutea*, *claroflava*, *cremeoavellanea* cfr *cuprea*, *delica*, *depallens*, *foetens*, *font-queri*, *gracillima*, cfr *lutea* var. *roseipes*, *pectinata*, *velenovskyi*, *versicolor*, *vesca*, *xerampelina* var.

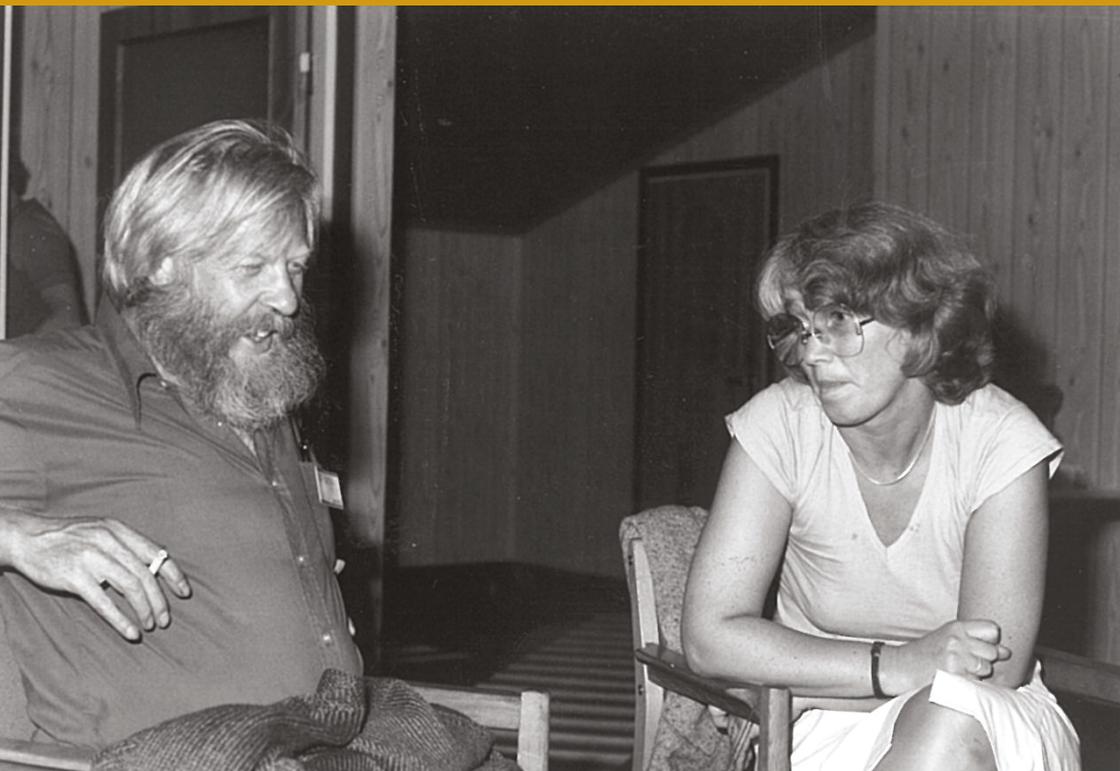
Nannfeldt also wrote about *Russula cremeoavellanea* (Svensk Botanisk Tidskrift 79, 1985). At that time *R. cremeoavellanea* was not known north of Gävle in Sweden. Birgitta Wasstorp found *R. cremeoavellanea* at Borgsjö cemetery about thirty years ago. Hjärdis Lundmark also found the speciesn at the cemetery in 2016 (det. Herbert Kaufman).

We know today that *R. cremeoavellanea* not strictly demands lime, but is favoured by it and is rather common at old lawns in parks, courtyards and cemeteries in the counties of Jämtland and Medelpad. Ruben Walley collected it below *Betula* at limestone soil in park at Frösö strand in the city of Östersund. Stig Jacobsson and Lars Lundberg, founder of Östersund Mycological Society, have collected "gul mandelkremlor" in mountain birch forest in Kall parish in western Jämtland.

Herbert Kaufmann reported in Svensk Mykologisk Tidskrift 37 (2) 2016 on 13 arctic-alpine *Russula* species found during the Swedish Fungus Foray in Hemavan, Lappland in 2015.

The most common *Russula* was *R. violaceoincarnata*. Herbert also describes *R. heterochroa* (photo from Hamrafället, Härjedalen), *laccata*, *nana*, *nuoljæ*, *pubescens*, *renidens*, *rivulicola*, *saleciticola*, *sapinea*, *scotica*, *subrubens* (= *chamitæ*) and *vinosordida*.

Russula cyanoxantha* var. *peltereaui is green from the beginning. Birgitta Wasstorp mentions this variety in her article on *Russula* in *Jordstjärnan* 1991 (1): "Bestämningsschema för kremlor.2"



Rolf Lidberg and Hjördis Lundmark at Saint Olofs inn 1982. Photo: Kjell Olofsson

Sniffing party at *Russulales* 2018

Ove Lennström, Swedish mycologist in Gävle, likes the smell of good wine and old cheese. Ove has collected various *Russula* species related to *Russula foetens*, sniffed and noted their different odours (the journal "Väx" 2016/3). The conclusion of Ove is that sniffing can be one of many ways of to determine a *Russula* species. In milkcaps also we know a great variety of smells that are often useful to recognize species, think about coconut, apple, *Levisticum lavas* or the strange smell of *Cossus cossus* in *L. hyssiginus*. We will have a specification "kind of smell" paper for *Russulales* species put at the exhibition table. In the final report we will summarize our adventures into the fascinating world of *Lactarius* and *Russula* smells!



Lake Borgsjö. Photo: Hjördis Lundmark

4 Borgsjö old historic yard and youth hostel (hembygdsgård)

6936671;1504975

Dry treads courtyard. Many european mycologists have stayed at the idyllic youth hostel during 16 fungi work shops in Borgsjö. 1982-2016. At one of the first mushroom workshops in Borgsjö we had our banquet evening here in the old building Hedlundska garden and served delicate *Hygrocybe punice* picked at the meadow Granbodåsen and cooked in white sauce. Old *Pinus* on dry calcareous soil, also *Populus tremula*, *Betula*, *Picea* in the forest around the youth hostel. Many grassland fungi. During the first workshops in Borgsjö we stayed at Saint Olofs inn and collected fungi in lawns there. *Lactarius necator*, *pubescens*, *torminosus*.

Russula. Ruben Walley found 18 *Russula* species (!) around the youth hostel in 2001 mostly on dry tramped courtyard: *aeruginea*, *betularum*, *cessans*, *chloroides*, *claroflava*, *cremeoavellanea* (Ruben Walley 2001, sporee 1V (a) b), *favrei*, *foetens*, *font-queri*, *globispora* (*Betula*, on dry soil, Ruben Walley, Gent, ”yellowing, slightly acid”), *gracillima*, *grisescens*, *lutea*, *nauseosa*, *postiana*, *rhodopoda*, *roseipes*, *vesca*. Also found: *Russula adusta*, *pelargonica*, *vinosordida* (Herbert Kaufmann 2016).

Also: *Camarophylloopsis hymenocephala*, *micacea*, *Cortinarius caesiostramineus*, *dolabratus*, *Limacella glioderma*

5 Pilgrim road with holy spring at slope of Bergåsen

6937580;1504475

Sandy old pilgrim road, rich forest around the road with *Betula*, *Picea*, *Pinus*. Saint Olof, protector of Russulales workshop, supposed to have walked here in July 1030 among the early *Russula* species e.g. *Russula roseipes*. Have a drink of holy water in Saint Olofs spring and make a toast on mushrooms and on friendship!

Lactarius fuliginosus, *glyciosmus*, *lilacinus*, *mamosus*, *rufus*, *torminosus*, *trivialis*

Russula adusta, *aeruginea*, *formula*, *gracillima*, *vinosa*, *roseipes*, *turci*, *vinososordida*

Also: *Cortinarius aurantiomarginatus*, *aureopulverulentus*, *leucophanes*, *olidoamethysteus*, *uraceus*, *Inocybe maculata*, *Pholiota spumosa*, *Psatyrella rostellata*, *Tremiscus helvelloides*

Comment: In 1983 Mauri Korhonen collected *L. auriolla* Kytöv. in rich *Picea* forest near Saint Olof well and took a photo, see page 113 in the book "The genus *Lactarius*" (1998). During the *Russula* workshop with Romagnesi in 1983 Mauri also collected *Russula aurea* at slopes of Bergåsen, a southerly *Russula* found at about 15 localities in Medelpad in old *Picea* forest at calcareous soil. Siw Muskos has collected full baskets of *Russula aurea* at diabase in Västergård, Attmar parish, Medelpad. *R. aurea* is more common at lime stone around Östersund. Rolf Lidberg collected *Russula azurea* at the slopes of Bergåsen and made a painting, see below. *Russula azurea* is a more southern species and occurs under *Picea* in some warm mountains in Medelpad like Siljeberget in Selånger parish and here at Bergåsen in Borgsjö parish. Michael Krikorev has, on an old rotten *Picea* log at slope of Bergåsen, found the rare *Artomyces cristatus*, a species in Russulales! Today there are many clear cut areas at Bergåsen. After dry summer weather the sun exposed slopes of Bergåsen are almost empty of soil fungi.



Russula azurea
Bergsjö 13-9-95 leg HJL

Russula azurea, Borgsjö, Bergåsen, old *Picea* forest, leg Hjördis Lundmark 13/9 1995.
Painting by Rolf Lidberg



Mushroom lesson in the forest. Painting by Rolf Lidberg. Photo: Hjärdís Lundmark

6 Lönnån

6937595;1504179

Warm, southern, flooded slope around the brook Lönnån some hundred meters west of Saint Olavs spring in central part of the church village Borgsjöbyn. Mostly mossy calcareous *Picea* forest. *Ulmus glabra subsp. montana* and *Viburnum opulus* near the brook. *Cortinarius venetus* and *C. malicorius*, popular fungi for mushroom dyeing, along the brook. After dry summers no soil fungi at all along Lönnån!

Lactarius aspidus, badiusanguineus, deliciosus, deterrimus, flexuosus, fuliginosus, glyciosmus, helvus, leonis, lilacinus, necator, obscuratus, olivinus, pubescens, rufus, scrobiculatus, spinosulus, torminosus, vietus

Russula acrifolia, aeruginea, atrorubens, claroflava, clavipes, decolorans, emetica, favrei, firmula, foetens, lutea, nitida, ochroleuca, paludosa, queletii, sanguinea, turci, versicolor, vinosa, vinosordida

Also: *Amanita friabilis, Amphisphaerella xylostei, Clitocybe harperi, Cortinarius corrosus, detonsus, Geastrum pectinatum, Gyrodon lividus, Haploporus odor, Helvella oblongispora* (Jukka Vauras), *Leccinum cyaneobasileucum, Lyophyllum leucophaetum, Ramaria botrytis, Telephora penicillata, Tremiscus helvelloides, Tricholoma atosquamosum*

Comment: *Helvella oblongispora* has only two records in Sweden, the other in the County of Uppland. Photo and description at page 83 in finnish "Sienet ja metsien luontoarvot" (finnish flora about signal species for valuable nature).



Typical landscape along the river Indalsälven in Medelpad with high mountains, deep valleys and earlier salmon fishing. Painting by Rolf Lidberg. Photo: Hjärdis Lundmark

Lönnån – a hot spot for fungi and vascular plants

Tricholoma workshop in Borgsjö 11-15/9 1995 was in a top period for fungi after a warm and rainy autumn.

Rolf-Göran Carlsson, Kurt-Anders Johansson and Börje Fagerlind found a total number of 234 fungus species at an area of 4 hectare along Lönnån from the pilgrim road down to highway E 14: 50 *Cortinarius* species, 15 *Lactarius* species, 11 *Hygrophorus* species, 11 *Russula* species and 10 *Mycena* species!

See list of all findings of Rolf-Göran, Kurt-Anders and Börje at pages 40-42 in the report: <http://www.myko.se/wp-content/uploads/2014/06/Borgsjö-rapport-1995.pdf>

The forest along Lönnån has according to old maps been more open and grazed under earlier centuries. A saw mill has existed for a long time south of pilgrim road. The warm limerich mountain slope with high ground water, moist brook sides and the landscape history has formed the remarkable fungi society of today.

7 Swampy forest north of mount Bergåsen

6940098;1505526

Here in this swampy *Picea* forest Rudolf Maas Geesteranus and Thomas Læesøe were delighted in 1991 to find the beautiful *Mycena oregonensis* among *Aconitum septentrionale*, *Cystopteris montana* and flowering orchid *Epipogium aphyllum*. Further up you will reach the top of Bergåsen (498 meter above sea level) with a fine view of the Borgsjø valley.

Lactarius badiosanguineus, *Russula acrifolia*, *nauseosa* var. *laricina*
(leg Leif Örstadius, det Henri Romagnesi)

Also: *Collybia racemosa*, *Cortinarius sanguineus*, *Inocybe rivularis*

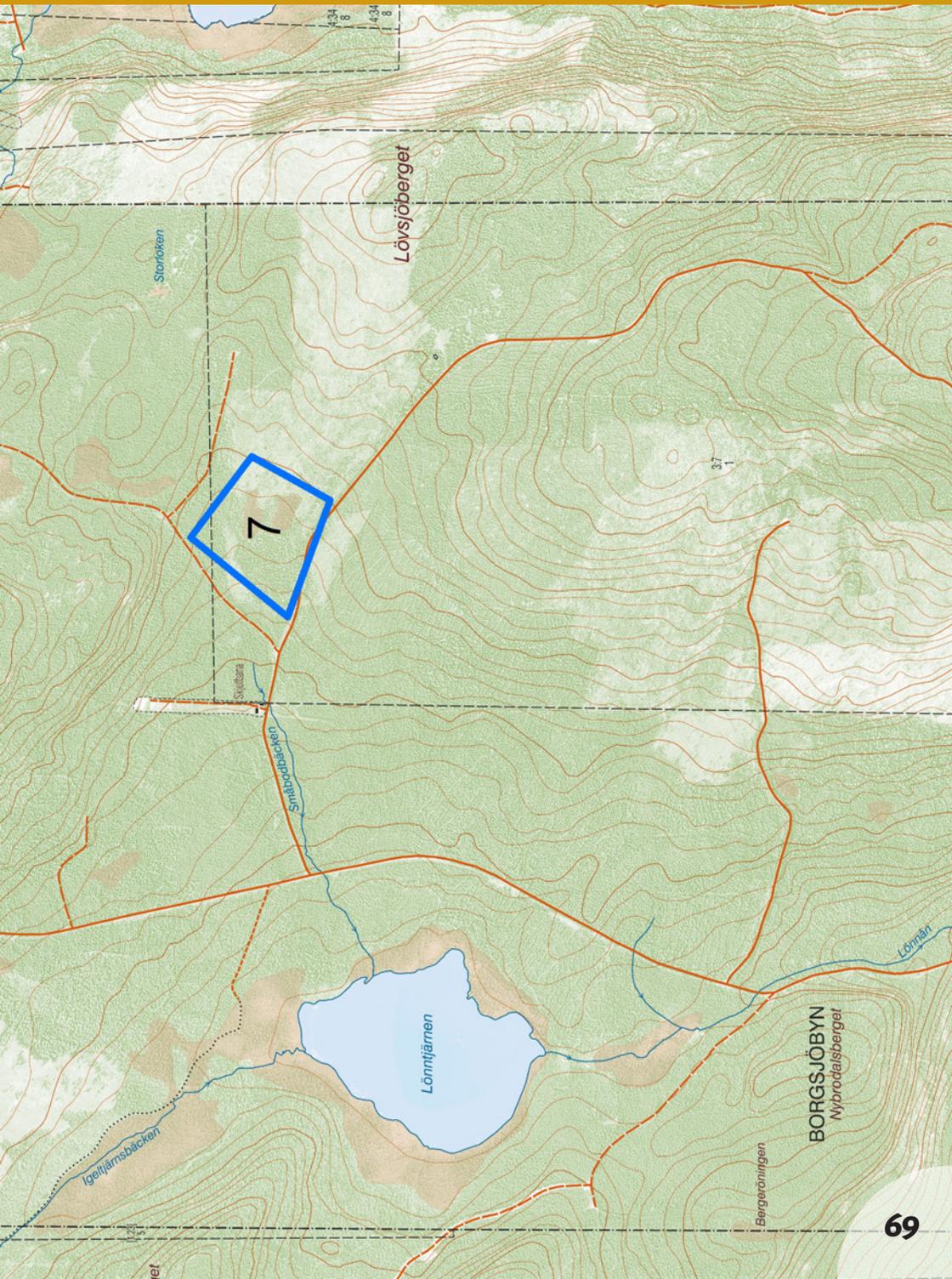
8 Gammelbodarna nature reserve

6939970;1501620

Old meadow with rich grassland funga, also rich *Picea* and *Pine* forest around the meadow. The mycoflora of several meadows in Medelpad, central Sweden, is summarized by Håkan Lindström, Johan Nitare and Jan-Olof Tedebrand in "Ångens svampar", *Jordstjärnan* 1992 (2), pp 3–54.

Lactarius badiosanguineus, *deterrimus*, *fennoscandicus*, *flexuosus*, *glyciosmus*, *terminosus*, *trivialis*, *vietus*, *zonarioides*. *Russula acrifolia*, *aeruginea*, *cessans*, *chloroides* var. *trachyspora* (Ruotsalainen), *consobrina*, *cremeoavellanea*, *delica*, *emetica*, *favrei*, *foetens*, *font-queri*, *nana* (meadow), *integra* (or *integriformis*), *olivascens*, *oreina* (meadow, Henning Knudsen), *persicina* (swamp forest, Jukka Vauras), *puellaris*, *roseipes*, *velenovskiyi*, *versicolor*, *velenovskiyi*, *vinosa*

Also: *Agaricus comtulus*, *Albatrellus syringae*, *Camarophylloopsis micacea*, *schulzeri*, *Cortinarius rusticus*, *Dermoloma josserandii*, *Echinoderma aspera*, *Fayodia leucophylla*, *Hygrophorus gliocyclus*, *Hygrocybe aurantiosplendens*, *Hygophorus persicolor*, *Inocybe malenconii*, *Lepista densifolia*, *Limacella illinita*, *Marasmius siccus*, *Melanoleuca subbrevipes*, *Multiclavula vernalis*, *Stropharia inuncta*, *Tomentella fibrosa*, *Trichoderma nybergianum*



7

Lövsjöberget

Storlöken

Svultåra

Småbäcksbäcken

Lönnträmen

Lönträmen

Bergsrönningen

BORGSJÖBYN
Nybrodalsberget



Bengt Larsson (at camera) guides to Gammelbodarna 2010. Photo: Anita Stridvall

Comment: The alpine species *Russula nana* and at times also *R. oreina* occur at fine old meadows near the bothnian coast. Meadows have some similarities with alpine heath. In 2010, Herbert Kaufmann explored the grassy border zone between the meadow and the Forest and discovered *Russula cessans* under *Pinus* and *Russula versicolor* under *Betula*. Herbert also visited Gammelbodarna in 2016 and found *Russula velenovskyi* at the edge of the forest with spruce and birch. All findings of *Russula* species by Herbert in the Borgsjö area in 2016 are reported with detailed microscopical facts for every species at pages 183-186 in the report from the workshop: http://www.myko.se/wp-content/uploads/2014/05/Svamprapport_Borgsjo_2016.pdf



Hans Andersson, former president of Mushroom Dyeing Society
Photo: Hjördis Lundmark

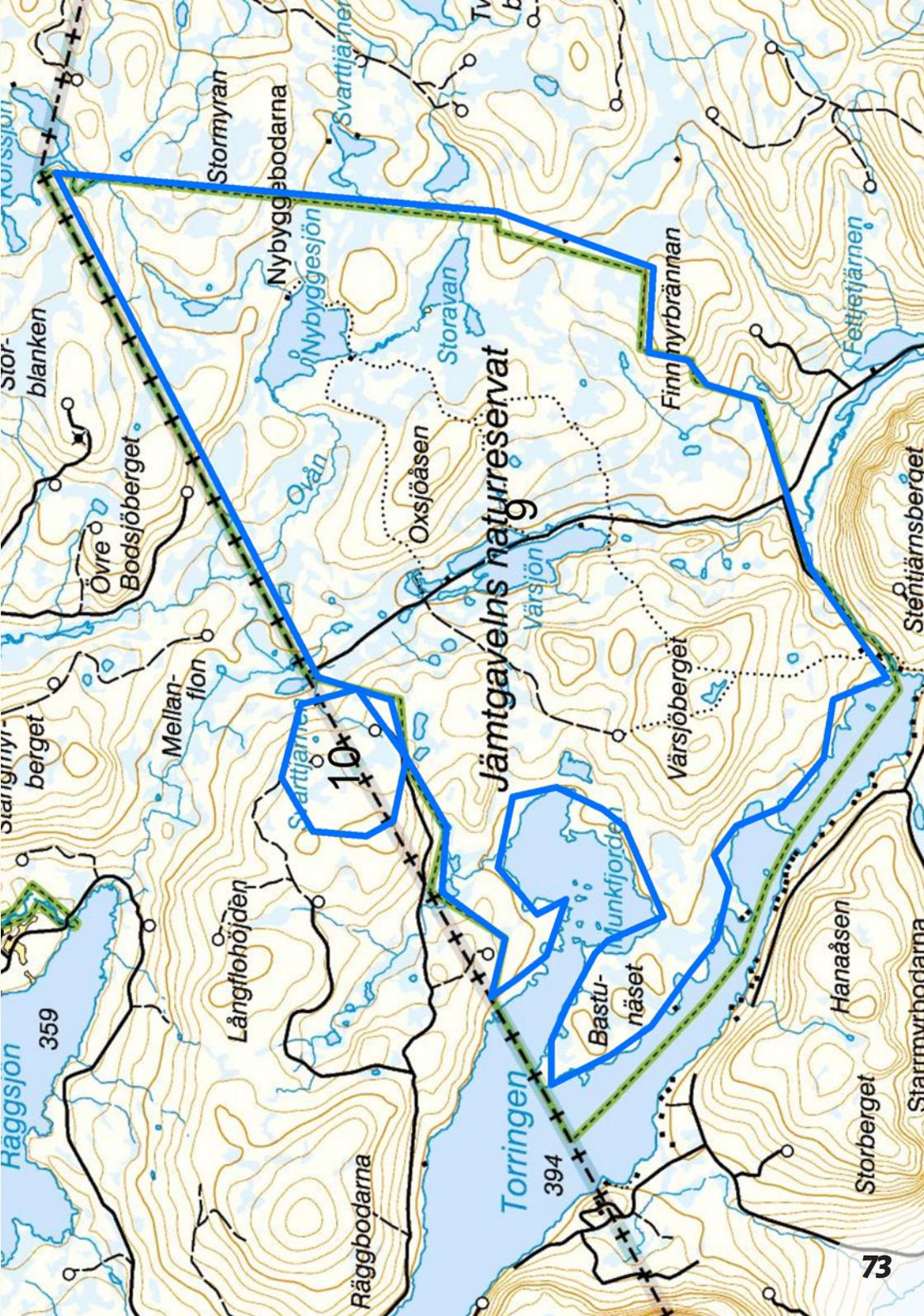


Ilkka Kytövuori, father to several northern yellow-milked *Lactarius* species and excellent field mycologist showing *Tricholoma colossus* at Vårsjöåsen in Jämtgaveln nature reserve in 1997. Photo: Hans Andersson

9 Jämtgaveln nature reserve, a landscape of fires

Jämtgaveln nature reserve with 3000 hectares of coniferous forests has burnt 64 times since 1364! A fascinating wilderness just 20 km north of our camp in Borgsjö with old blueberry *Picea* and *Pinus* forests. Fascinating are dead, large, burnt, standing silvery pines with the lichen *Letharia vulpina*. Bengt Larsson and Håkan Sundin, our skillful guides to Jämtgaveln, will stop at area along the forest road newly burnt by John Granbo and his tough fire group at the County Council of Västernorrland.

European Union (EU) is supporting a Life Taiga project in mid and northern Sweden aiming to burn forests in order to favour fire demanding species. In 2016



Jämtgavels naturreservat

the swiss mycologist Mohan Rolf here made an interesting finding of the rare *Sowerbyella cf rhenana* (praktskål in Swedish) and the material will soon be checked and sequenced by two specialists at cup fungi: Åsa Kruys and Karen Hansen. Bengt-Gunnar Jonsson and others at Mid Sweden University are carrying out research in Jämtgaveln about forest fires and dead wood. The group visit a real fungus hot spot at Svartjärn and also rich slopes of Vårsjöberget against Munkfjorden with among others the rare *Hygrophoropsis olida*.

10 Svartjärn, Jämtgaveln nature reserve

6953333;1503582

A north slope of moist *Picea* forest with the flowers *Goodyera repens* and *Moneses uniflora* and big ant hills. Also *Betula* and *Salix* and plenty of dead wood. Ilkka Kytövuori collected the rare *Tricholoma colossus* under *Pinus* at Vårsjöåsen. The rare *Ramaria primulina* has also been found here.

Lactarius aquizonatus, auriolla, badiosanguineus, deterrimus, fuliginosus, glyciosmus, hygginus, mammosus, representaneus, rufus, scoticus, subcircellatus, torminosus, trivialis, uvidus, vietus, zonarioides

Russula adusta, aquosa, atrorubens, claroflava, decolorans, fuliginosus, gracillima, grisescens, helodes, nitida (1997, Kurt-Anders Johansson, UPS), *paludosa, queletii, rhodopoda, tuomikoskii, vinosa*

Also: *Boletopsis leucomelanea, Clavaria fumosa, Cortinarius caesiocinctus, C. rusticus, Entoloma majaloides, Hebeloma syrjense, Hydnellum suaveolens, Hygrophorus inocybiformis* (Håkan Lindström 2001), *Lentinellus vulpinus, Mycena pseudocorticola, Ramaria primulina, Sarcodon fennicus, Sowerbyella cf rhenana* (now under DNA-test), *Spathularia rufa, Trichoderma nybergianum, Tricholoma dulciolens*

Comment: *Russula helodes* is a rare and little known species in moist *Picea* forest and swamp areas. The Swedish name is "myrkremla" (myr=bog), also found at Julåsen in Borgsjö during *Russula* workshop with Henning Knudsen in 1984. Håkan Lindström found *R. helodes* in Jämtland, Håsjö parish, Annamyran 1/9 2012 (UME). About ten findings in swedish Dyntaxa: <http://artfakta.artdatabanken.se/taxon/5875>



Mycologists at the top of Mount Hamrafjället in 2006: Hjalmar Croneborg (today president of Swedish Mycological Society), Stig Jacobsson, Ellen Larsson, Håkan Lindström, Anita Stridvall, Pierre-Arthur Moreau, Leif Stridvall. Håkan Lindström was very proud to find three *Russula* species with smell of herring at the alpine heaths of Hamrafjället: *Russula amoenicolor*, *chamitreae*, *oreina*.

11 Rankleven nature reserve

6933532;1507593

Famous botanical mountain since centuries with high dives of dolorite in the northeast. According to folklore the giant Ran lives at the mountain since thousands of years. Old mossy forest. *Alnus* and *Betula* near the open fields.

Southern plants like *Galium triflorum*, *Latyris vernus* and *Viola selkirkii* and also alpine plants like *Saxifraga adscendens*, *S. caespitosa* and *S. nivalis*. Rich oceanic lichen flora. Plenty of dead wood. The only known place until in Medelpad for the southern *Russula densifolia*: herbrich *Picea* forest, 26/8 1983, Stig Jacobsson (S). Birgitta Wasstorp collected in 1993 the rare *Sowerbyella densireticulata*, determined by Nils Lundqvist (S).

Lactarius aspidicus, aurantiacus, badiosanguineus, deterrimus, fuliginosus, glycosmus, lilacinus, necator, obscuratus, pilatii, pubescens, representaneus, rufus, scrobiculatus, sphagneti, spinosulus, theiogalus, torminosus, trivialis, zonarioides, uvidus, vietus, zonarioides

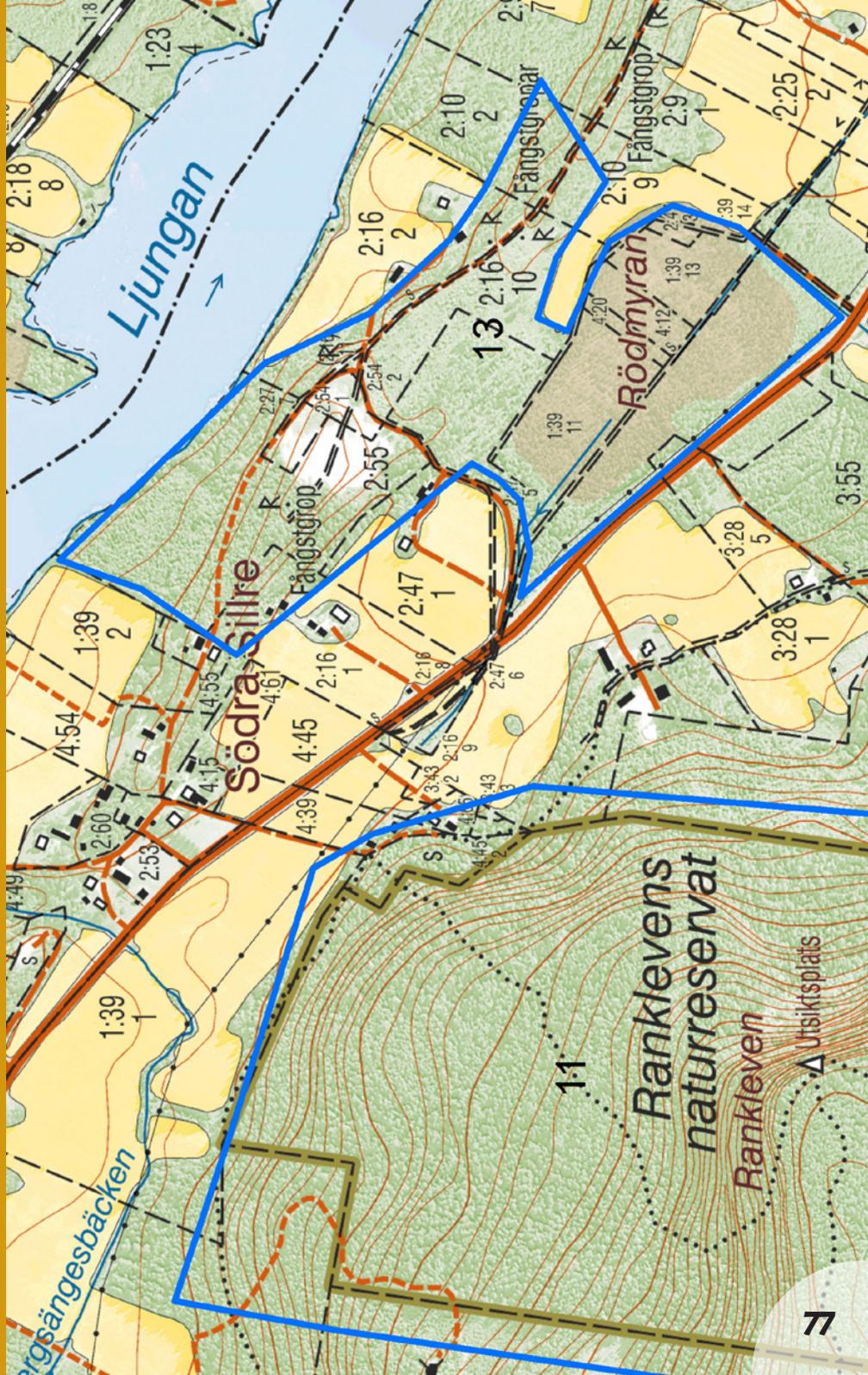
Russula adusta, aeruginea, aquosa, atroglauca, atrorubens, aurea, chloroides, citrinochlora, clavipes, consobrina, decolorans, emetica, favrei, delica, densifolia, firmula, foetens, gracillima, integra, intermedia, pallescens, paludosa, puellaris, pulchella, queletii, renidens, rhodopoda, sphagnophila group, rhodopoda, turci, vesca, vinosa, xerampelina ss lat.

Also: *Amanita battarrae, Bryoglossum rhemii, Camarops microspora, Cortinarius alborufescens, aureofulvus, dolabratus, malicorius, sanguineus, uliginosus, uraceus, Cystodermella adnatifolia, Heyderia abietis, Lentinellus castoreus, Leucogyrophana sororia, Leucopaxillus giganteus, Limacella guttata, Phlebia centrifuga, Pholiota subochracea, Russula aurea, Sowerbyella densireticulata* (leg Birgitta Wasstorp, det Nils Lundqvist), *Trichoderma nybergianum, Tricholoma fucatum, Verpa conica* (Christer Anderson)

Comment: *Russula citrinochlora* with olive green hat was found by Gunnel Holden at Rankleven in 2001, by then new for Sweden and was also found at Granbodåsen and Julåsen in Borgsjö, at all three localities in moist *Picea* forest with *Alnus incana* and *Betula*. Håkan Lindström has collected *R. citrinochlora* in the alpine region: Jämtland, Frostviken, Leipikvattnet, 8.8.2003 (UME). During a mycological week in western Härjedalen 2006

R. citrinochlora was found at Mount Hamrafjället (Herbert Kaufmann) and at Mount Torkilsstöten (Pierre-Arthur Moreau). Funga Nordica (2012) comment on *R. citrinochlora*: "Mycorrhizal in arc/alp areas with dwarf *Salix* e.g. *S. herbacea*, *S. glauca* and *Polygonum viviparum*, in hemibor.-bor. with *Betula* and *Picea* in moist forest".

Ruotsalainen and Vauras mean that northern findings of *Russula integra* can instead be *Russula integriformis* Sarnari. *R. integra* is a more southern species. Perhaps we have both species in Medelpad and Jämtland?



Ljungan

Södra Silire

Rödmyran

Ranklevs naturreservat

Rankleven

Utsiktsplats

7

12 Södra Sillre, stop 1

6934530;1507530

FUNGI SUECICI

Artnamn *L. sphaerulatus*

Svenskt namn _____

Landskap MPD Koordinat _____

Församling _____

Lokal/vägbeskrivning *Jämtsjö*

Substrat/biotop _____

Leg *1. 11/12* Datum *1. 2. 52*

Det *— 11 —* Conf _____

Wet *Betula* forest in thick *Polytrichum* bed, also *Populus* and *Salix*. *Russula renidens* common in swamp area with *Betula*. Also dry pine forest at Ljungan ridge and near the river. No map.

Lactarius badiosanguineus, deliciosus, deterimus, flexuosus, glyciosmus, helvus, necator, rufus, spinosulus, theiogalus, torminosus, uvidus, vietus

Russula aeruginea, aquosa, atrubens, badia, claroflava, clavipes, consobrina, decolorans, delica, favrei, firmula foetens, gracillima, nitida, paludosa, renidens, rhodopoda, roseipes, versicolor, vinosa, vinososordida, xerampelina

Also: *Acanthophyllum lividocaeruleum, Blasiphalia pseudogrisella, Cordyceps longisegmentis, Cortinarius bolaris* (single locality in western Medelpad), *Hygrophorus persicolor, Inocybe ambigua, Lappomyces muricatus, Ramaria apiculata*

Comment: In 2001 Jukka Vauras said that *Russula renidens* is common and typical in the Borgsjö area in swampy *Betula* forests. *Acanthophyllum lividocoeruleum* is a beautiful blue resupinate fungus collected in 2010 by Ellen Larsson and determined by Karl-Henrik Larsson.

Ellen also collected the rare *Inocybe ambigua* in deep ditch in the *Betula* forest. In 2010 Anita Stridvall tasted a dark red *Russula* under *Pinus* in the swamp area and said: mild, but ten seconds later she said: "slowly severely hot: *Russula badia*". During some falls like in 2003 there has been enormous amounts of *Boletus edulis* in the moist *Betula* forest. Our president Lisbeth Kagardt and others stood in the kitchen at Erikslunds Folkets Hus in 2003 and prepared *Boletus edulis* for the banquet evening.

Nils Lundqvist (1930–2017) graduated with an excellent thesis about dung fungi. Nils was a very kind, pleasant person. He was a dear guest at many workshops in Borgsjö often together with Olle Persson, another amusing and wellknown swedish mycologist. Nils found a new species for science at horse dung in Borgsjö: *Cercophora aggregata*. He has deposited hundreds of rust, smut and other small fungi at Stockholm herbarium (S) from the Borgsjö area. Here in the moist



Russula subrubens, a species in *Russula*, subsection *Xerampelinae*, Nacksta, Sundsvall, september 2017, under *Salix caprea*, leg Jan-Olof Tedebrand, det Herbert Kaufmann, conf. Slavomir Adamcik. Photo: Håkan Sundin

deciduous forest along the river Ljungan Nils collected in 1993 among others *Plasmopora pusilla* at *Geranium sylvaticum* and *Valsa salicina* at dead *Salix* branches.

In 2016 Olga Morozova collected here *Entoloma* species in moist *Betula* and *Salix* areas: *E.nidorosum*, *rhodopolium* coll., *sericatum*, *politum*. Francesco Bellu found in 2016 *Entoloma lividoalbum* and also *Hebeloma geminatum*, treated in "European Species of Hebeloma" (2015) with authors: Beker, Eberhardt, Vesterholt and not yet mentioned in swedish Dyntaxa. Tatyana Svetasheva found here in 2016 *Cortinarius gossypinus*, a species described by Håkan Lindström. Håkan writes in *Funga Nordica* (2012) about *C. gossypinus*: "rare in temp.-boreal zone, in *Salix* scrubs, at shores and along streams". Also description in *Cortinarius Flora Photographica* E 18. In 2016 Gunilla Kärrfelt collected here beautiful fruitbodies of *Cortinarius bolaris*, excellent for wool dyeing according to Hjördis Lundmarks and Hans Marklunds book on mushroom dyeing: "Färgsvampar och Svampfärgning" (new edition in 2018, Hjördis Lundmark has for sale).



Time for excursions. Photo: Hjärdís Lundmark

13 Södra Sillre stop 2

6933789;1508390

Moist forest in a slope on the north slope of Ljungan ridge, created by the inland ice. Both coniferous and deciduous forest. Also dry pine forest eastwards along the old path at Ljungan ridge. Here Siw Muskos have collected full baskets of edible *Russula elaeodes*.

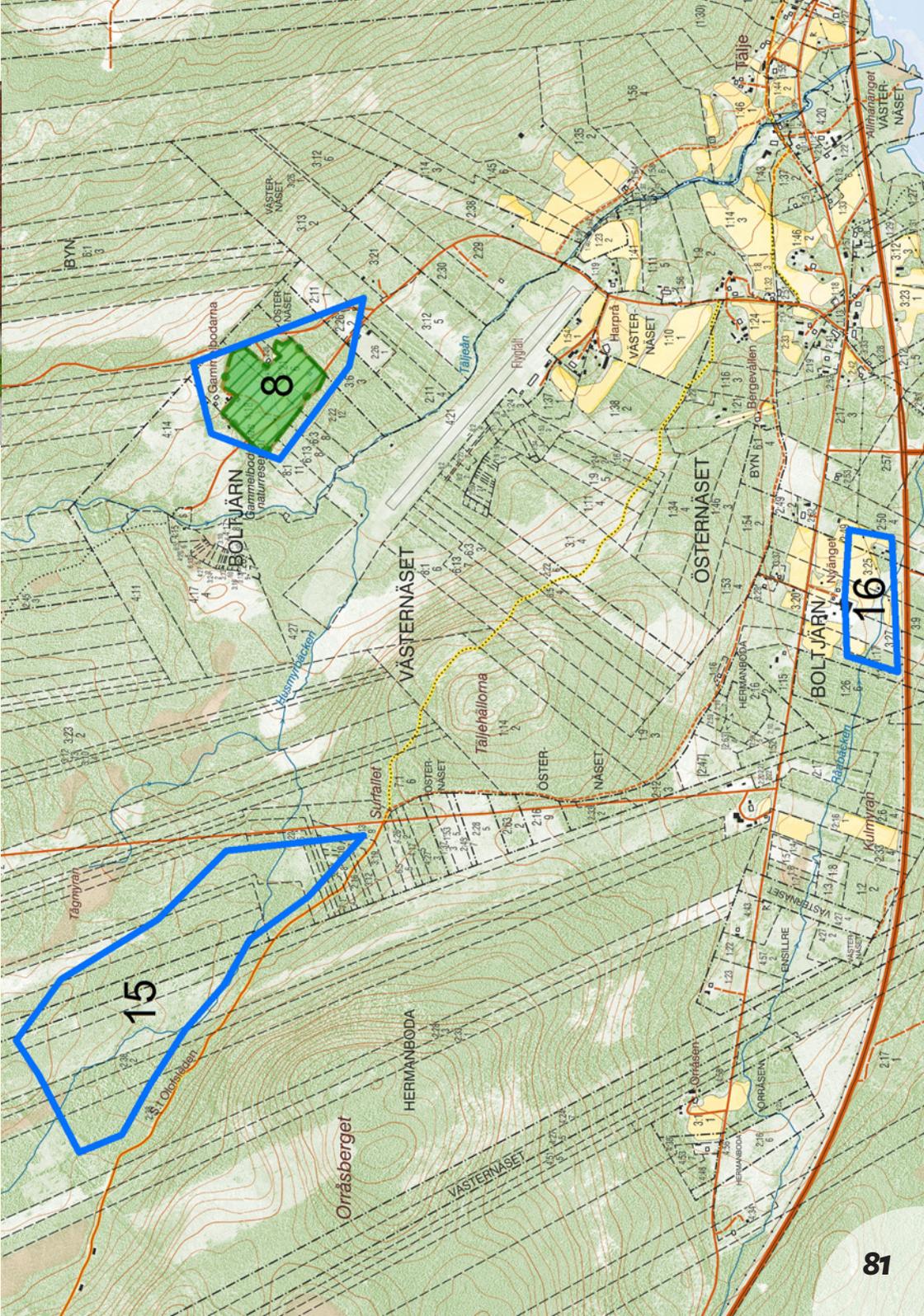
Lactarius fuliginosus, musteus, rufus, theiogalus, torminosus, trivialis, vietus

Russula aeruginea, claroflava, clavipes, consobrina, decolorans, depallens, foetens, fragilis, lutea, olivina, paludosa, rhodopoda, roseipes, turci, vinosa, xerampelina coll.

Also: *Cortinarius rusticus, uraceus, Hygrophorus karstenii, Inocybe griseoscabrosa, ochroalba, Marasimus siccus, Ramaria botrytis*

Comment: *Russula roseipes* is a rather common *Russula* in Medelpad and Jämtland under *Pinus* at rich soil at sandy heaths and boulder ridges, also in old courtyards and in parks like in Östersund at limestone plate. Per Marstad collected *R. roseipes* during *Russula* workshop 2001 in a park at Ångebadet in the center of Ånge (UPS).

Siw Muskos has picked full baskets with *Russula clavipes* (good for eating) under *Pinus* at Ljungan ridge during rainy years. *Russula clavipes* is bound to more rich *Pinus* forests in Jämtland and Medelpad. The most popular mushroom for eating in *R. subsection Xerampelinae* in the area is *Russula favrei*, common in herb-rich *Picea* forests.



15

8

16



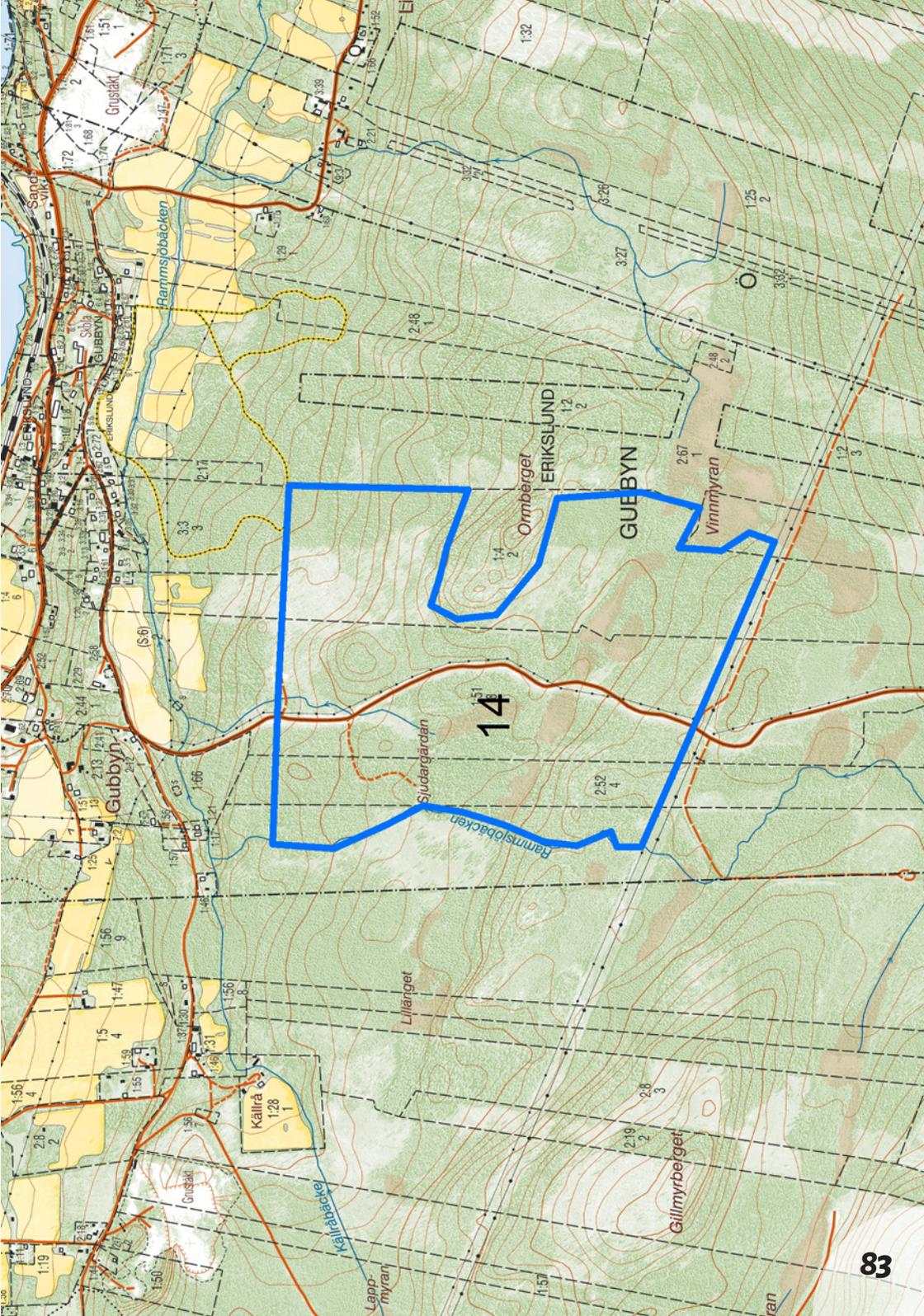
Russula exhibition. Photo: Hjärdís Lundmark

14 Ormberget northwest and southwest The *heterophylla* forest of Henri Romagnesi

1504823; 6933742

Parking at power line. Visit the forest at both sides of the road. First blueberry forest, then more herb-rich forest and further down the slope areas with *Sphagnum* and *Salix*.

Lactarius badiusanguineus, *deterrimus*, *flavopalustris*, *fuliginosus*, *glyciosmus*.
Russula atrorubens, *badiusanguineus*, *clavipes*, *decolorans*, *heterophylla* (leg Herbert Kaufmann and Henri Romagnesi 1983), *nauseosa* var. *laricina* (leg Birgitta Wasstorp 1983, det Henri Romagnesi), *postiana*, *vinosa*



Comment: Stig Jacobsson says about *Russula heterophylla* in Jordstjärnan 1984/1 page 19 that the species mostly occurs in southerly deciduous forest but was also found during Nordic Mycological Congress in Jämtland 1982 in coniferous forest at Andersön. Stig points out that this northern collections in calcareous coniferous forests had the typical pointed needles for *Heterophylla* but also differed in having a faint reaction with FeSO₄.

Henri Romagnesi was here 22/8 1983 together with Herbert Kaufmann, Erik Malm, Jacques Melot, Jan-Olof Tedebrand, Birgitta Wasstorp and others, see photo. Henri was very delighted to recognize *Lycopodium annotinum*. Erik Malm picked together with Henri Romagnesi a *Lactarius* species with white milk, turning lilac, that was identified as *Lactarius flavidus* Boud. Later it has been re-identified as *L. flavopalustris* Kytöv, a northern species in calcareous swampy forest under *Betula* and rather common in Borgsjö. In the same swampy forest Henri collected *Cortinarius subtortus*. Herbert Kaufmann and Lars Ljungberg visited the same forest slop 31/8 2016 and found among other things *Lactarius tuomikoskii*, *Russula atrorubens*, *clavipes* and *emetica*. Today there are many clearcut areas in the slopes of Ormberget.

15 Orråberget North, Husmyrbäcken-Husmyra

6940150;1499550

Rich old, moist *Picea-Betula* forest of *Cypripedium* type along the old and increasingly popular pilgrimage road to Trondheim in Norway with the reminders of Saint Olof. The number of pilgrims now is doubling every year. Erik Collinder tells in "Medelpads Flora" (1909) about a 3-6 decimeter heavy layer of loose chalk sludge (bog lime) from springs in the ground near Orråsen and along the former national road to Jämtland. Husmyra is a rich fen with *Carex appropinquata* and *Salix myrsinites*. Bengt Larsson and Håkan Sundin are guides.

JEC Borgsjö 2016
Collectio fungis

Cortinarius
 alia *Lactarius olivinus*

Locus *Orråberget N*

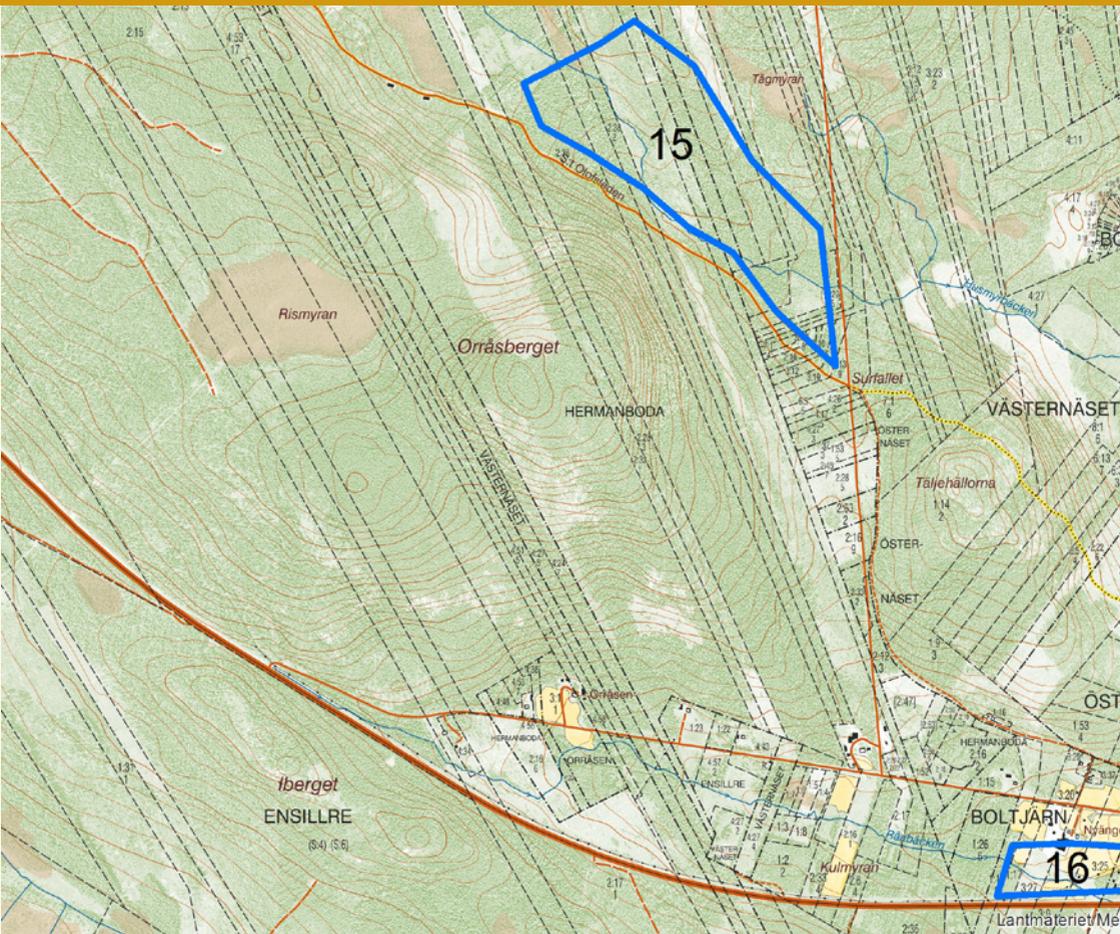
Biotop Picea Picea
alia *Betula Sedit*

Dies *1 aug./sept. 2016*

Leg. *B. Larsson*

Det. *B. Larsson* Conf.

Lactarius aquizonatus, *badiosanguineus*, *deterrimus*, *fennoscandicus*, *glyciosmus*, *lilacinus*, *mammosus*, *obscuratus*, *olivinus*, *rufus*, *scoticus*, *scrobiculatus*, *torminosus*, *trivialis*, *uvidus*, *vietus*



Russula aeruginea, atrorubens, claroflava, decolorans, favrei, firmula, foetens, fennoscandica, griseocens, nauseosa, paludosa, queletii, rhodopoda, vinosa, vinososordida, xerampelina

Also: *Albatrellus ovinus, Clitocybe albofragrans, Cortinarius sanguineus, septentrionalis, Galerina camerina, Gloeopeniophorella convolvens, Hapaplopilus nidulans, Hygrophorus hyacinthinus* (listed in 2010 by Anita Stridvall and Birgitta Wasstorp), *karstenii, Limacella guttata, Mycena oregonensis, Hypocrea nybergiana, Peniophorella guttulifera, Trichoderma nybergianum, Tricholoma olivaceotinctum*



Kjell Olofsson, Siw Muskos, Mauri and Eine Korhonen, Jukka Vauras at *Russula* workshop in Borgsjö 1983. Photo: Hjärdís Lundmark

Comment: Both *Russula vinosa* and *R. vinososordida* are found here north of Orråberget. *R. vinososordida* was described by Ruotsalainen and Vauras, common in Medelpad and Jämtland, cap brownish winered to redbrown with blackish or yellow spots in centre, not pruinose at the margin like *R. vinosa*, not reddening in the flesh, a bit sharp taste, also microscopical differences against *R. vinosa*. Lars Lundberg in Östersund, 96 years of age and grand old man among mycologists in Jämtland, claims that *R. vinosa* and *R. vinososordida* are somewhat confusing during excursions to demonstrate mushrooms for eating. *R. vinososordida* resembles *R. vinosa* but is not, according to Lars, a fine *Russula* for eating because of rather sharp taste.



"*Entoloma judithae*", now *E. araneosum* f. *robustum*. Photo: Siw Muskos

16 Råabäcken

6938135;1501560

Drive-in-meadow along highway E14 with the only place in the County Västernorrland for *Sesleria uliginosa*. Annika Carlsson at the county administrative board has refound the rare *Primula farinosa*. Also *Entoloma*, *Geoglossum*, *Hygrocybe* species. *Lepista densifolia*. The rare orchid *Malaxis monophyllos* in road ditch.

17 Granboda, Skarpbäcken, Habitat protection area

1496760;6939615

Fascinating swampy coniferous forest of *Cypripedium* type. Alpine plant *Thalictrum alpinum*. Our Italian friends Bellu-Turrini found in 2010 *Cortinarius alborufescens* sensu Brandrud, Kytövuori, Niskanen et al. The current name is *C. pearsonii* P.D. Orton according to Funga Nordica (2012). Hjalmar Croneborg and Johan Nitare found *Sarcodon fennicus* in ant hill in 2003.

Lactarius aquizonatus, pilatii, pubescens, scoticus (Olle Persson 30/8 1985), *trivialis, tuomikoskii, zonarioides*

Russula adusta, atrorubens, cessans, clavipes, decolorans, emetica, favrei, fennoscandica, font-queri, globispora group, grisescens (Jan-Ola Wimo 20/8 1983, det Henri Romagnesi), *mustelina* (Carina Eriksson 20/8 1983, det Henri Romagnesi), *gracillima, nitida, paludosa, roseipes, vinososordia*

Also: *Bankera violascens, Calocybe cerina, Cantharellopsis prescotii, Cortinarius alboglobosus, venustus, Geastrum pectinatum, Gyrodon lividus, Hydnellum suaveolens, Hygrophorus inocybiformis, Inocybe terrigena, Limacella guttata, Sarcodon fennicus, Tremiscus helvelloides*

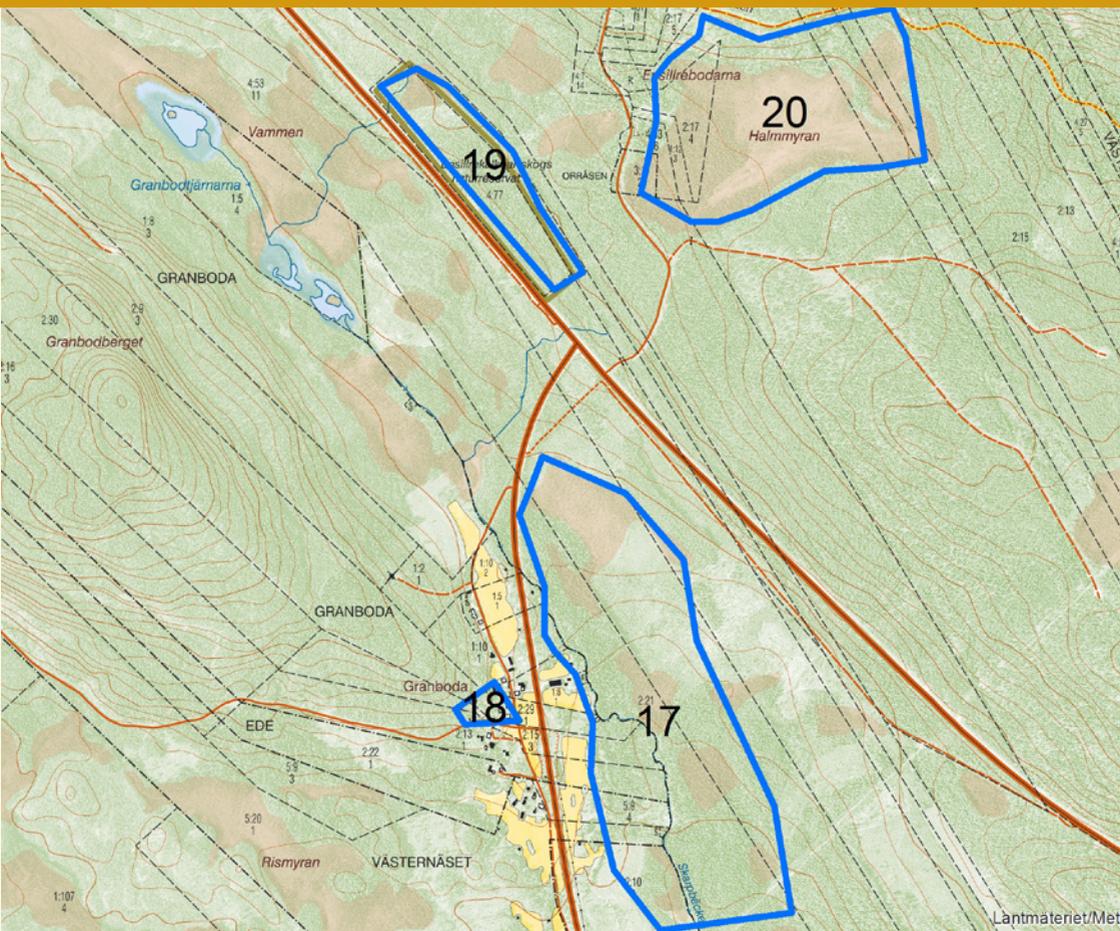
Comment: *Lactarius scoticus* is typical and common in exclusive, limerich fens in the provinces of Jämtland and Medelpad together with *Bovista paludosa*. *Russula fennoscandica* remind of *R. queletii* but not is not as red and sharp in taste. Mikael Krikorev has a photo of *R. fennoscandica*: http://svampguiden.com/art/visa/russula_fennoscandica.

18 Granboda, courtyard

6942364;1489255

Old grassland, *Betula*

Entoloma araenosum f. robustum f. nov., holotypus, found by Machiel Noordeloos 31 aug 1993. Machiel first named the collection "Entoloma judithae", a name proposed by the old farmer woman Judith Jonsson. Judith became a TV-star when she proposed the name *judithae* before TV-cameras!



Lactarius glyciosmus, necator, spinosulus, torminosus

Russula aeruginea, atroglauca, depallens, firmula, globispora group, gracillima, intermedia, lutea, medullata, nana, stenotricha, versicolor

Also: *Botrichonema polygoni* at *Bistorta vivipara* (Nils Lundqvist 1985, S), *Cortinarius alboglobosus*, *Bolbitius reticulatus*, *Clitocybe amarescens*, *Cortinarius alboglobosus*, *Hygrocybe fornicata*, *lacmus*, *pratensis*, *Stropharia albonitens*

Comment: Siw Muskos collected in 2001 *Russula medullata* at the courtyard, the name confirmed by Juhani Ruotsalainen and Ruben Walley. This is a difficult group of grey-greengreen *Russulas*.

19 Ensillre kalkbarrskog, nature reserve

6940825;1496599

A botanical paradise, most exclusive forest for vascular plants in Medelpad. Moist *Picea* forest with *Botrychium virginianum*, *Calypso bulbosa*, *Cystopteris montana*, *Epipogium aphyllum*, *Cypripedium calceolus*.

We have guided botanists from countries southwards who come here in the beginning of June to see *Calypso bulbosa* in flower once in their lifetime. The forest was partly destroyed by severe storms in 2011 and 2013 as were other entirely *Picea*-dominated forests in Medelpad and Jämtland. Today forest owners in Sweden now try to mix broadleaved trees among *Picea* to manage storms better. Ensillre kalkbarrskog place on a list of the fifty best "fungus hot spots" in Medelpad and Jämtland!

Lactarius aquizonatus, *bertillonii*, *deterimus*, *glyciosmus*, *mammosus*, *musteus*, *necator*, *olivinus*, *pilatii*, *rufus*, *scrobiculatus*, *torminosus*, *trivialis*, *vietus*, *Lactifluus bertillonii*

Russula aeruginea, *amethystina*, *aquosa*, *atrorubens*, *consobrina*, *decolorans*, *emetica*, *favrei*, *griseascens*, *olivascens*, *olivobrunnea*, *paludosa*, *puellaris*, *quletii*, *rhodopoda*, *vinosa*, *vinososordia*, *xerampelina* ss lato

Also: *Cantharellopsis prescottii*, *Cortinarius bovinus*, *harcynicus*, *oulankensis*, *suboenochelis*, *Cystoderma adnatifolium*, *Gyromitra longipes*, *Inocybe terrigena*, *Ossicaulis lignatilis*, *Pholiota lubrica*, *Tremiscus helvelloides*, *Tricholoma scalpturatum*, *viridilutescens*

Comment: *Lactifluus bertillonii* is a rare southern species that appears north to southern boreal zone in Finland and Sweden. Mauri Korhonen and Ilkka Kytövuori wrote in the journal *Jordstjärnan* 1987 (2): 45–48 about "Två arter av luden vitriska i Norden - *Lactarius vellereus* (Fr.) Fr. och *L. bertillonii* (Neuh. Ex Z. Schaeffer) M. Bon". *Russula olivobrunnea* always is found in the finest, calcareous, moist, old *Picea* forests sometimes together with the orchids *Cypripedium calceolus* and *Calypso bulbosa*. *Cortinarius oulankensis* in section Bovini is described in *Mycologia* 105 (4): pp 977–993 by Tuula Niskanen, Ilkka Kytövuori, Kare Liimatainen and Håkan Lindström.



Calypso bulbosa. Painting by Rolf Lidberg.

20 West of Halmmyra (Ensilrebodarna)

6940953;1497061

Moist coniferous forest. At the fen Halmmyra we have studied exciting orchids like *Dactylorhiza majalis*, *subsp. lapponica* together with Rolf Lidberg.

Lactarius *aquizonatus*, *aurantiacus*, *auriolla*, *badiosanguineus*, *detrerrimus*, *flexuosus* var. *glyciosmus*, *roseozonatus*, *rufus*, *scrobiculatus*, *torminosus*, *trivialis*, *vietus*. *necator*, *scrobiculatus*, *spinosulus*, *torminosus*

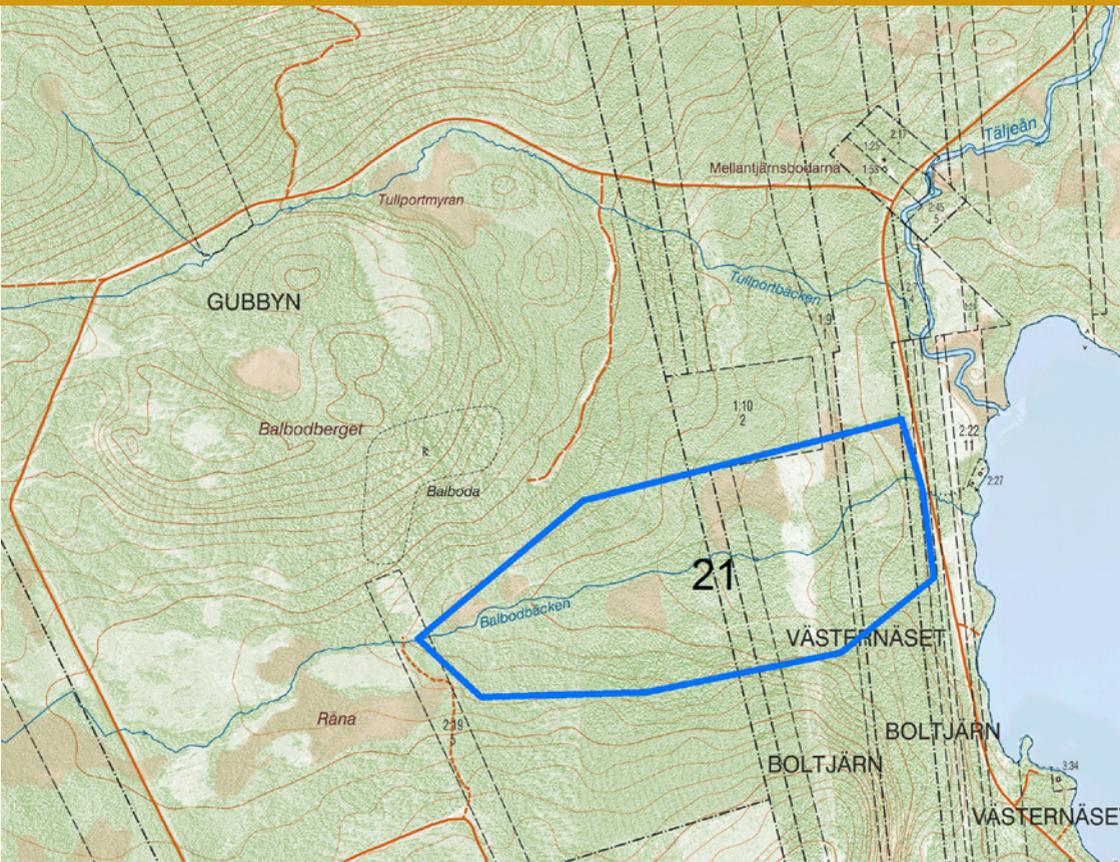
Russula *aeruginea*, *aquosa*, *consobrina*, *decolorans*, *emetic*, *favrei*, *grisescens*, *intermedia*, *olivobrunnea*, *paludosa*, *queletii*, *vinosa*, *xerampelina*



Trolls as harvesters along the river Indalsälven in Medelpad. Painting by Rolf Lidberg

Also: *Cantharellopsis prescottii*, *Cortinarius caesiocinctus, rusticus*, *Geoglossum glabrum*, *Gerronema brevibasidiatum*, *Hypocrea nybergiana*, *Inocybe nematoloma, terrigena*, *Tricholoma olivaceotinctum, viridilutescens*

Comment: *Anthracoidea heterospora* at *Carex nigra* and *A. kari* at *Carex dioica* (Nils Lundqvist 1985, S), *Geoglossum glabrum*, *Hygrocybe substrangulata*. At the fen Ensillremyran Leif Andersson found 4.9.1991 *Geoglossum sphagnophilum* (det Irene Andersson) and also *Gyroflexus brevibasidiatus*, a rare species in rich fens.



21 Nedertjärnen, Balbodbäcken

6943080;1499541

Protected moist areas in slopes along Balbodbäcken west of Nedertjärnen, also interesting moist areas west of Övertjärnen. Bengt Larsson and Håkan Sundin are guides.

22 Lombäcken, key biotope

6944409;1493648

Moist *Picea* wood along the creek Lombäcken with *Cypridium calceolus*, *Gymnadenia conopsea*, *Listera ovata* north of the popular pilgrim road and north of highway E14. Dutch *Cortinarius* lovers found in 2016: *Cortinarius multififormis*, *percomis*, *piceae*, *pseudoglaucopus*, *sulfurinus*, *varius*. Parking at the forest road a few hundred meters east of the creek.

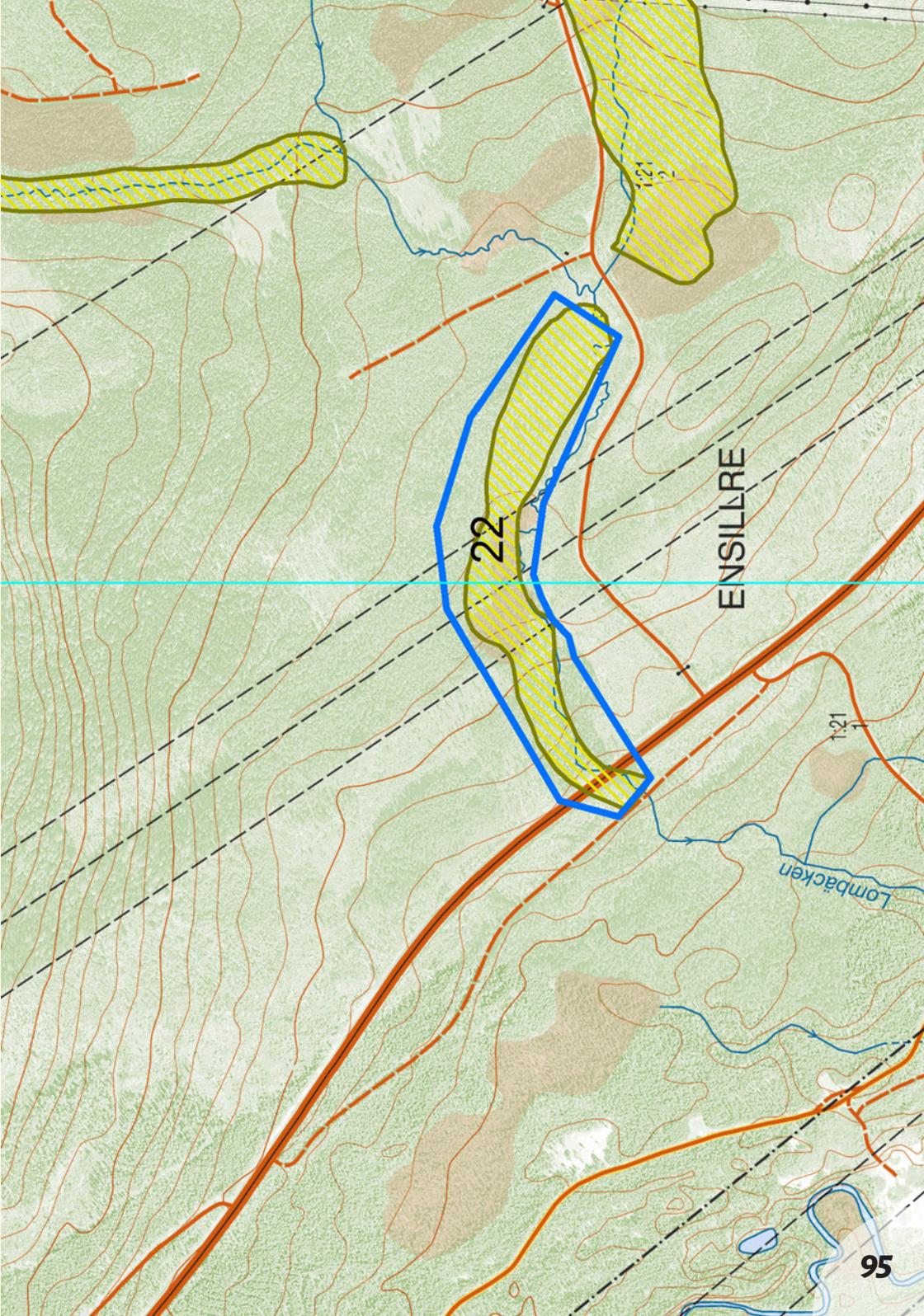
23 Lombäcksheden and Harrån partly habitat protection area

6993071;1493024

Rolf Lidberg, founder of Sundsvall Mycological Society, said: "Fungi at the nitrogen poor, calcareous, sandy pine heath at Lombäcken is the most exclusive we can show our friends from southern countries in Europe". Johan Nitare at the Swedish Forestry Board wrote about ectomycorrhizal fungi in sandy forests with Scots Pine in *Svensk Mykologisk Tidskrift* 37 (2) 2016.

The forest company SCA and the County council have plans to later on burn some part of Lombäcken heath. Mushroom researchers like Mauri Korhonen, Machiel Noordeloos and Roy Watling like the poor, sandy, calcareous heath, see photo. Also *Picea* at parts of the heath with more thick litter bed. Brook ravine along the creek Harrån with grey alder, birch, willow and plants like *Cardamine flexuosa* and *Lactuca sibirica*. In 1991 Birgitta Wasstorp found the rare *Mythicomycetes corneipes* along Harrån. Rich forests further west along Harrån. Bengt Larsson and Håkan Lindström has found the rare fern *Gymnocarpium dryopteris x robertianum* in the area. According to Bengt also rare and interesting butterflies near Harrån and near the old inn at Jämtkrogen. The old building Jämtkrogen is today moved to Borgsjö historic yard and youth hostel (hembygdsgården).

Well invented area (76 species of *Cortinarius*) during many workshops in Borgsjö, see mushroom findings at Harrån and Lombäcksheden in report: <http://www.myko.se/wp-content/uploads/2014/09/Harrån-JOT-April-2010-Rapport-svamp-Harrann-11.pdf>



22

ENSILLRE

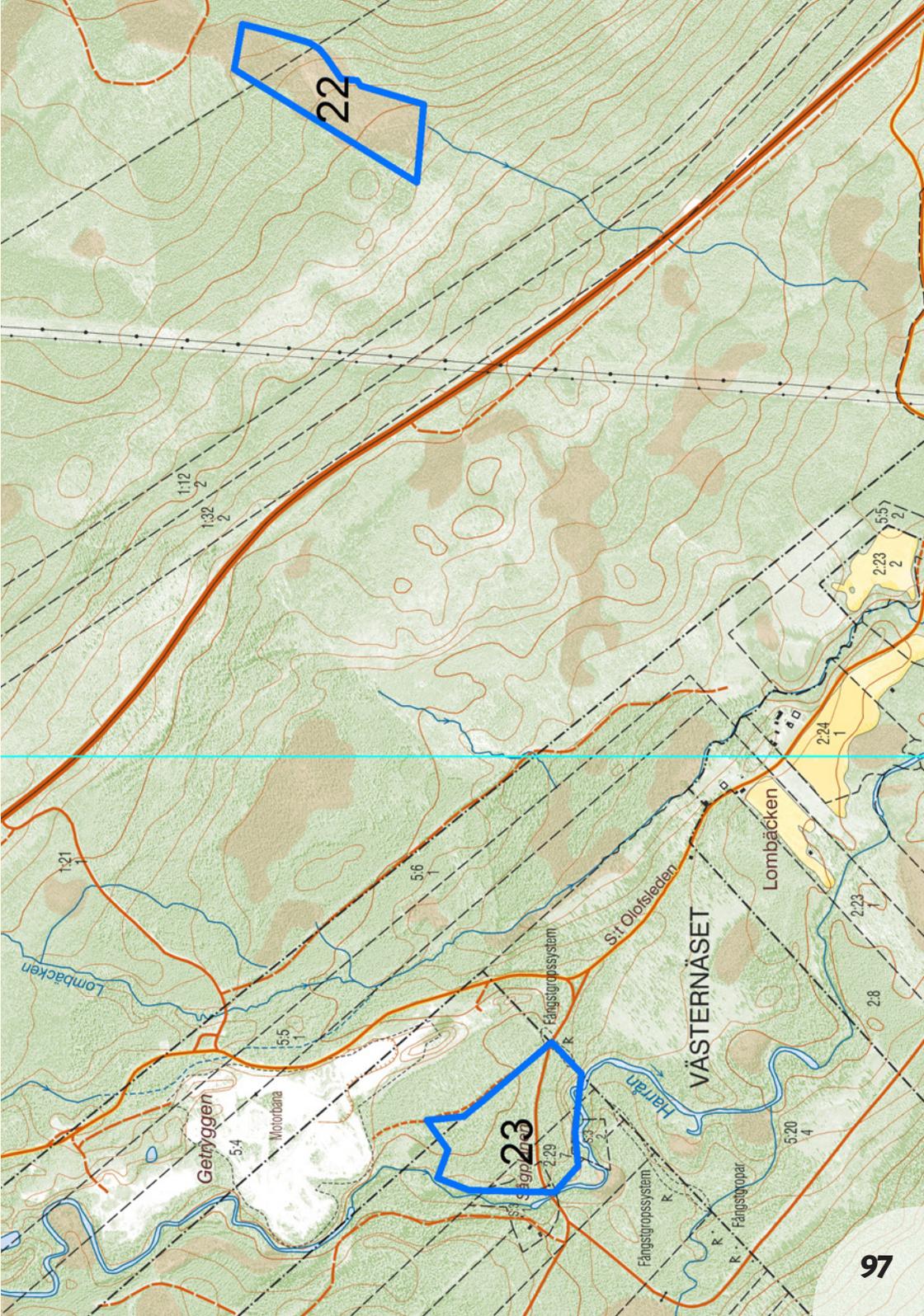
Lombäckens

Lactarius aquizonatus, deliciosus, deterrimus, fennoscandicus, glyciosmus, leonis, lilacinus, musteus, obscuratus, pilatii, pubescens, resinus, rufus, scrobiculatus, subcircellatus, torminosus, torminosulus, vietus, zonarioides. Photo of *L. lilacinus* in the book "The genus *Lactarius*" (1998) is from Harrån.

Russula acrifolia, aeruginea, aquosa, atroglauca, atrorubens, aurantioflammans, betularum, crassipes (roadside), decolorans, depallens, elaeodes, emetica, gracillima, grisescens, intermedia, integriformis, paludosa, puellaris, queletii, renidens, rhodopoda, roseipes, versicolor, vinosa, xerampelina

Also: *Amantia friabilis, Cortinarius arenatus, Entoloma sericatum, venosum, Galerina subclavata* (1995, Eef Arnolds, Gro Gulden), *Gymnopilus odini, Gyrodont lividus, Haploporus odoros, Hebeloma circinans, Hohenbuehelia unguicularis, Hydnellum auratile, Hygrophorus calophyllus (roadside), chrysodon, subviscifer, Hypocrea nybergiana, Inocybe melanopus, Mythicomycetes corneipes, Ramaria flavescens, safraniolens* (leg Siw Muskos, det Lennart Söderberg 2009), *Rugosomyces onychinus, Tricholoma focale, matsutake, sudum*

Comment: Type locality for *Cortinarius crassipes* and *Tricholoma dulciolens* described by Ilkka Kytövuori. Mauro Sarnari found *Russula intermedia* and *R. renidens* 3.9.1997. Both species described in 1994 by Routsalainen and Vauras: *Karstenia* 34: 21–34. *Clitocybe houghtonii*, leg and det Bellù-Turrini in 2010. *Lactarius musteus* is common in stony *Pinus* areas near the bothnian coast ("hällmarkstallskog" in Swedish) and also rather common in *Pine* heaths at inland parts of Mid Sweden. Here at Lombäcksheden *L. musteus* also grows in young *Pinus* forest. *Tricholoma matsutake* is popular for eating in northern Sweden. Neotype for *Tricholoma aestuans* from Lombäcken-Harrån, see danish book about *Tricholoma* (Christensen-Heilmann Clausen 2013, page 120 and 209).



22

23



Different *Russula*. Photo: Hjördis Lundmark

Bengt Larsson and Håkan Sundin

Bengt and Håkan guide together at *Russulales* workshop in Borgsjö. They can identify almost all creatures in the nature: birds, butterflies, lichenized fungi, mosses, vascular plants.

Bengt lives with his family in the orchid paradise in Borgsjö. He has good contact with local and national biologists and researchers. During the warm and sunny summer 2018, Bengt has made an inventory of butterflies (like *Lycaena helle*) at the request of Annika Carlsson at the County Board in Västernorrland. He reports many of his findings to The Swedish Species Gateway (Artportalen). Håkan Sundin lives at the coast in Medelpad together with Eva Sundin who is president of The Botanical Society in Medelpad. Håkan is member of the board and cashier in Swedish Botanical Society. He is also somewhat interested in soot fungi at *Carex* hybrids and has contact with Lars Ericson, professor emeritus at Umeå university, expert at smut fungi.



Machiel Noordeloos, Roy Watling and Mauri Korhonen at Lombäcksheden 1993. Photo: Kjell Olofsson

24 Granbodåsen nature reserve

69445;14902

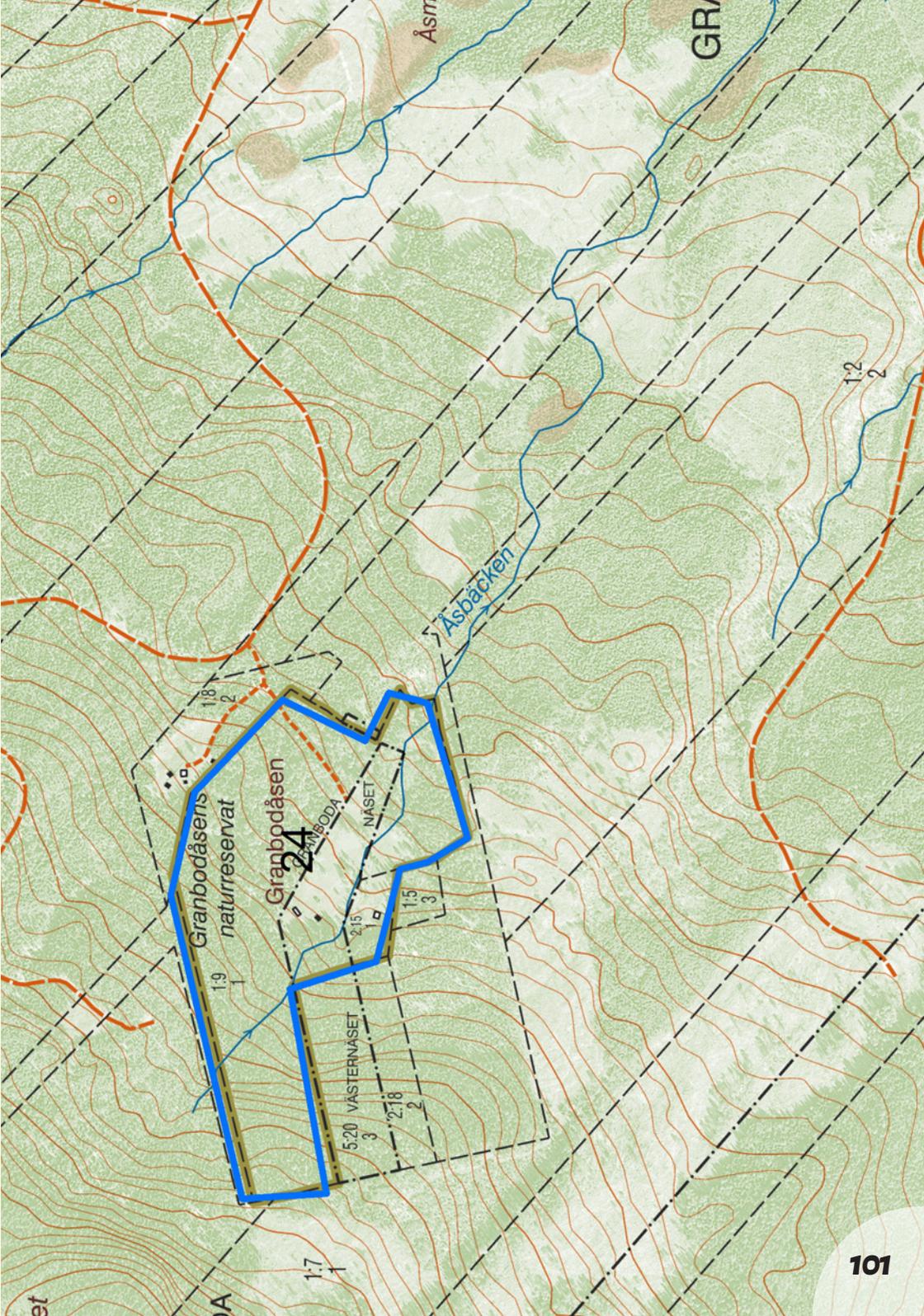
Grazed mountain pasture with about 30 species of *Entoloma* and about 20 species of *Hygrocybe*, also *Clavaria zollingeri* and *Pseudotricholoma metapodium*.

The old farmers Axel and Judith Jonsson participated during *Entoloma* workshop 1985 and *Hygrocybe* workshop 1987. Also herbrich grazed *Picea* forest. Much of big aspen trees below the meadow. *Alnus* fen along brook. Type locality of *Marasmiellus perforans* (Machiel Noordeloos 31/8 1993, Leiden). Many mycologists from countries southwards in Europe like the silence, stillness and view from the beautiful old meadow.

Lactarius aquizonatus, aurantiacus, badiosanguineus, deterrimus, flavopalustris, fuliginosus, glycosmus, lilacinus, mammosus, necator, obscuratus, pilatii, pubescens, rufus, resimus, scrobiculatus, scoticus (Ruotsalainen 1989), *spinosulus, theiogalus, torminosus, trivialis, vietus, zonarioides*

Russula acrifolia, adulterina (Herbert Kaufmann, mikrosk., 14300d), *adusta, aeruginea, aquosa, atroglauca, atrorubens, betularum, chloroflava, citrinochlora, chloroides var. trachyspora* (leg Birgitta Wasstorp 1983, det Henri Romagnesi), *chloroides* also collected in 2001 by Per Marstad, *clavipes, decolorans, delica, depallens, emetica, emetica var. longipes* (leg Birgitta Wasstorp 25/8 1983, det Henri Romagnesi), *favrei, firmula, foetens, fragilis, gracillima, cf grisea, grisescens, heterophylla, integriformis, intermedia* (under *Betula* at meadow, leg Stig Jacobson 1983, conf Henri Romagnesi, as *lundellii*), *lutea, nauseosa, nitida, olivascens, olivobrunnea, paludosa, pseudoaeruginea* (Herbert Kaufmann 24/8 1984, HK 840824), *puellaris, queletii, sanguinea, sapinea* (det Juhani Ruotsalainen 2001), *taigarum, versicolor, vinosa, vinososordida, vitellina*

Also: *Cathatelasma imperiale, Chamonixia caespitosa* (collected by Kers near the brook), *Cortinarius alboglobosus, borgsjoensis, fuscovelatus, ionosmus, pinigaudis, rusticus, talimultiformis, uliginosus, Dermoloma josserandii var. phaopodium, Entoloma madidum, pallens, Fayoida gracilipes, Geastrum pectinatum, Helvella rivularis, nigricans, Hygrocybe aurantiosplendens, punicea, Hygrophorus korhonenii, secretanii, Inocybe proximella, tjallingiorum, whitei, Microglossum viride, Naucoria striatula, Psatyrella fagetophila, lutensis, rostellata, umbrina, Pseudobaeospora cf pillodii* (Leif Andersson, Thomas Læesøe 1991), *Pseudotricholoma metapodium, Gyroflexus brevbisidiatus, Suillus flavidus, Toly pocladium longisegmentum*



Comment: Mauro Sarnari found *Russula olivobrunnea* 3.9.1997. Photo of *Lactarius spinosulus* at page 167 in the book "The genus *Lactarius*" dating from Granbodåsen during *Lactarius* workshop 1997. Håkan Lindström: "Trattkremlor (swedish for *chloroides/delica*) in Medelpad mostly seems to have a greenish reflex in their lamellas = chloroides."

Russula taigarum was described by Ruotsalainen and Vauras in *Karstenia* 30, 1990, found from the bothnian coast in Medelpad and Ångermanland to the alpine slopes in Härjedalen and Jämtland, most typical among *sphagnum* in old, *Picea*, blueberry forest. Leif and Anita Stridvall wrote about *R. taigarum* in the journal *Jordstjärnan* 1991 (1): 23–26.

25 East of Bodåsen, habitat protection area

6939937;1492650

The flower *Vicia sylvatica* adorns the road sides. *Betula*, *Picea*, *Pinus* in peat bogs. Big ant hills with *Cortinarius rosargutus*. Rich fens with the orchids *Cypripedium calceolus*, *Epipogium aphyllum*, *Gymnadenia conopsea*, *Listera ovata*. *Epipogium* often blossoms by the end of august in mushroom time.

We have, together with Ilkka Kytövuori and Mauri Korhonen, collected *Lactarius flavopalustris* at several places in moist *Betula* forests along the road. In good fungi years we found species in *Entoloma*, *Clavaria* and *Hygrocybe* in the rich fens. *Lactarius scrobiculatus* is typical fungus among *Hepatica nobilis* and orchids. Also four species of *Exobasidium*: *karstenii*, *pachysporum*, *rostrupii*, *vaccinia*.

Lactarius *aquizonatus*, *auriolla*, *deliciosus*, *flavopalustris*, *fuliginosus*, *glyciosmus*, *lilacinus*, *mammosus*, *obscuratus*, *rufus*, *scoticus*, *scrobiculatus*, *sphagneti*, *spinosulus*, *torminosus*, *trivialis*, *uvidus*, *vietus*

Russula *acrifolia*, *adusta*, *aeruginea*, *aquizonatus*, *aquosa*, *atrorubens*, *clavipes*, *decolorans*, *emetic*, *gracillima*, *griseascens*, *nauseosa*, *olivina*, *paludosa*, *puellaris*, *queletii*, *rhodpoda*, *sphagnophila*, *versicolor*, *vinosa*, *vinososordida*, *xerampelina* ss.str.

Also: *Cantharellus lutescens* (popular for eating), *Cortinarius huronensis*, *jonimichelliae*, *sanguineus*, *venustus*, *Entoloma affermineus*, *Hygrophorus percolor*, *Steccherinum collabens*, *Tremiscus helvelloides*, *Tricholoma atosquamosum*

Comment: *Cortinarius jonimichelliae* is named after the Canadian folk singer Joni Mitchell, one of Håkan Lindströms favorite artists.

26 Kullbäcken-Markbäcken nature reserve

6941467;149165

Herbrich and in spring flooded forests along forest creeks with *Aconitum septentrionale* and *Hepatica nobilis*, rich fens and marshes with willow trees, calcareous *Pine* forest, different kinds of dead wood. The composition of the rich and special soil fungi today is a result of earlier centuries with more open and grazed forests. Forest grazing was common in every rural village in Jämtland and Medelpad until about 1950.

Kristin Lindström at the County council has been with us, showed old maps and told about land use in the area the last 250 years that has affected today's fens, forests and today's fungi composition. About 80 *Cortinarius* species found in

Interesting "*Russula grisea*" below old aspen trees at Granbodåsen

During *Russula* workshop with Henri Romagnesi in 1983 Birgitta Wasstorp found a group of "*Russula grisea*" 25/8 below big aspen trees at Granbodåsen.

The collection was much discussed. Romagnesi proposed three different names in the evening talks: *R. grisea*, *anatina*, *medullata*. Someone said *parazurea*. Romagnesi finally said that species in the group around *aeruginea-grisea* needed to be more checked in the future. Stig Jacobsson described the collection in his report in Jordstjärnan 1984/1 with micro and macro details, colour of the spore print and so on. Stig's conclusion was that either of proposed names fully matched the collection from Granbodåsen. Stig wrote "*R. aeruginea* suits best of species in the group according to FeSO₄ reaction and micro characters but differences between species in the group are small and overlapping more or less" (Herbert Kaufmann later determined this collection as *R. medullata* ss Kühner).

Herbert Kaufmann has described and keyed 19 species belonging to section *Heterophyllae* known from Sweden in Svensk Mykologisk Tidskrift 28 (3): 21-69, 2007.



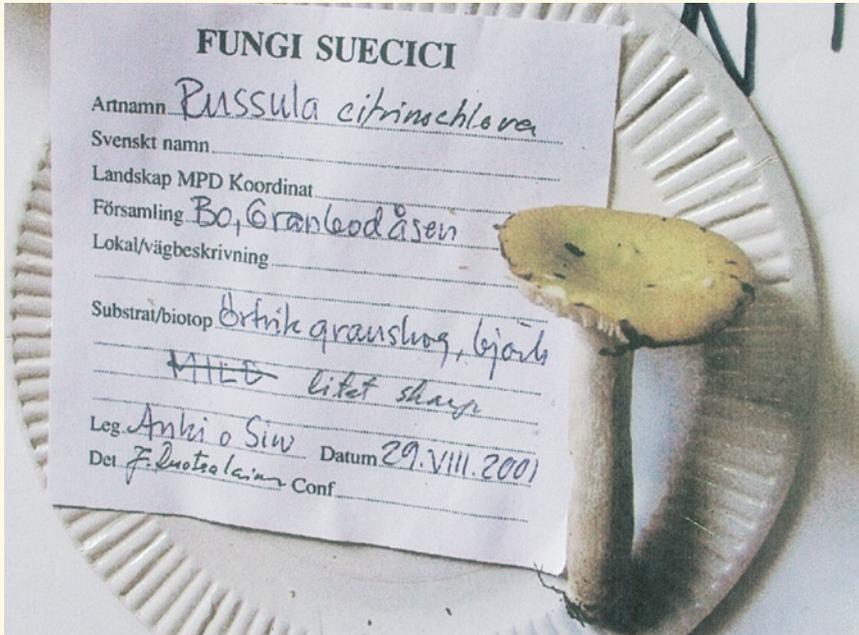
Hygrocybe punicea is common at Granbodåsen. Photo: Annika Carlsson. Annika is meadow expert at the County Board of Västernorrland and often visit fine, old meadows in summertime together with local botanists.

FUNGI SUECICI 129	
Artnamn	<i>Lactarius utilis</i>
Svenskt namn	
Landskap MPD Koordinat	
Församling	BRÄCKE
Lokal/vägbeskrivning	SJÄNDAN
Substrat/biotop	
Leg. <i>M. Korhonen</i>	Datum 1.12.1997
Det. <i>M. Korhonen</i>	Conf

the reserve, every *Cortinarius* species has its own special ecological niche here. Thanks to the nature reserve all mycorrhiza fungi can continue to have their fascinating "underground internet" even in the future. But the effects of disturbance by forest grazing and forest fires will slowly disappear. That is a common problem in the future for nature conservation in northern forests that result in less *Pinus* and more *Picea*.

Lactarius aquizonatus, auriolla, badiusanguineus, citriolens, deterrimus, fennoscandicus, leonis, lilacinus (Bellu), mammosus, olivinus, pubescens, rufus, scrobiculatus, subcircellatus, torminosulus, torminosus, trivialus, uvidus, vietus, zonarioides

Russula adulterina, chloroflava, decolorans, gracillima, inetegriformis, queletii, paludosa, puellaris, queletii, rhodopoda, vinosa



Russula citrinoclora, Granbodåsen 2001, photo at exhibition: Hjördis Lundmark

Also: *Amylocystis lapponica*, *Clitocybe alnetorum* (Bellu), *Cortinarius aureofulvus*, *caesiocinctus*, *caesiostramineus*, *fuscovelatus*, *harcynicus*, *oulankensis*, *sanguineus*, *venustus*, *violaceocinereus*, *Craterellus cf sinuosus* (Lindström, Tedebrand), *Gomphus clavatus* (common in enormous rings along the forest creeks), *Hebeloma geminatum* (Bellu), *syrjense*, *Hygrophorus hedrychii*, *karstenii*, *Hygrophoropsis olida*, *Naucoria geraniolens* (Bellu), *Ossicaulis lignatilis*, *Sarcodon fennicus*, *Tricholoma atroscquamosum*, *olivaceotinctum*

Comment: The name *Russula adulterina* has been much discussed in Sweden. Funga Nordica (2012) says: "in coniferous forests, especially with *Picea*, distribution and frequency poorly known due to confusion with related species, but occurring in hemiboreal-boreal zone".

Russula adulterina belongs to a group of related species, perhaps modern DNA studies can bring more light on this and other different groups in the genus *Russula*. Some of our collections in different groups during *Russulales* workshop 2018 shall be investigated molecularly and the DNA results will be compared with early type collections in herbariums.



A mysterious forest troll.
Photo: HJördis Lundmark



Entoloma atrocaeruleum. Photo Olga Morozova. Olga is curator at the Mycological Herbarium at Komarov Botanical Institute in St Petersburg, Russia. Together with Machiel Noordeloos, Tor Erik Brandrud and his norwegian team, Olga is now digging deeper and deeper into the exciting secrets of *Entoloma* our most species rich fungi genus at old meadows and pastures. *Entoloma* species have often fantastic colours! Kai Reschke from Frankfurt university will collect at meadows during *Russulales* workshop, please give your *Entoloma* findings to Kai.

Rolf Lidberg, Håkan Lindström and others in Medelpad have been specially interested in vascular plants and fungi at old meadows.

Entoloma workshop with Machiel Noordeloos in 1985 resulted in 49 species of *Entoloma* at old meadows and pastures in Jämtland and Medelpad. Ten species were new for Sweden. We have also been interested in nature conservation concerning old meadows and have a good collaboration with Annika Carlsson at the county council. Together with Machiel Noordeloos in the Netherlands, Tor Erik Brandrud and other norwegian mycologists, Olga Morozova is now digging, with DNA-methods, deeper and deeper in the beautiful and fascinating world of *Entoloma*, the most speciesrich genus at old grasslands and also of great importance for nature conservation in the culture landscape. Olga is also a dear friend for us in Sundsvall Mycological Society, we keep contact at facebook and in other ways.



A troll admires the orchid *Calypsa bulbosa*. Painting (and self portrait) by Rolf Lidberg.

27 Kullen mountain pasture

6942325;1489604

Beautiful and vast forest meadow with enormous outlook, grazed by horses and sheeps with species of *Clavaria*, *Entoloma*, *Geoglossum*, *Hygrocybe* in colours of blue, yellow, red during the autumn. Olga Morozova, Machiel Noordeloos and Lennart Vessberg found interesting *Entoloma* species here in 2016: *E. anatinum*, *clandestinum*, *mutabilipes*, *scabrosum*, *weholtii*.

In 2016 Gunilla Kärrfelt found the rare *Pholiota lundbergii* (det. Machiel Noordeloos) at roadside here at Kullbodarna, named in honour of Lars Lundberg, founder of Östersund Mycological Society.



Machiel Noordeloos and Gunilla Kärrfelt at Kullbodarna in 2016. Photo: Lennart Vessberg

Lactarius deterrimus, glyciosmus, torminosus, trivialis

Russula queletii

Comment: Kullbodarna is well grazed and lacks litter bed of old grass and ferns that is common on some hay harvested meadows and bad for meadow funga. Annika Carlsson and her fellow workers at the County Board in Västernorrland have started burning some fine meadows in order to favour fungi, vascular plants, butterflies and other biological diversity.

28 Kullbäcken south of Kullen mountain pasture

6942190;1489112

Swampy *Picea* forest and fens along the creek Kullbäcken south of the forest meadow with *Aconitum septentrionale*, *Daphne mezereum*, *Hepatica nobilis*, *Moneses uniflora*, *Rhamnus frangula*.

Lactarius aquizonatus (leg Morten Christensen 4/9 1997, det Maria Teresa Basson), *auriolla*, *badiosanguineus*, *deterrimus*, *flavopalustris*, *glycosmus*, *leonis*, *lilacinus*, *mamosus*, *olivinus*, *pubescens*, *rufus*, *scoticus*, *scrobiculatus*, *torminosulus*, *torminosus*, *trivialis*, *tuomikoski*, *utilis*, *uvidus*, *vietus*, *zonarioides*

Russula acrifolia, *aeruginea*, *aquosa*, *atrorubens*, *fennoscandica*, *gracillima*, *grisescens* (Siv Muskos and Ruben Walley 2001), *nana*, *olivobrunnea*, *postiana*, *puellaris*, *queletii*, *rhodopoda*, *versicolor*, *vinosa*

Also: *Cantharellus lutescens*, *Cortinarius malicorius*, *sanguineus*, *Gomphus clavatus*, *Hebeloma atrobrunneum*, *Leccinum palustre*, *Lentaria dendroidea*, *Leptoporus mollis*, *Multiclavula mucida* (aspen log over the creek), *Spathularia flavida*, *Tremiscus helvelloides*

Comment: *Lactarius torminosulus* is common in Jämtland and Medelpad under *Betula nana*. Maria Teresa Basso tells in "Lactarius Pers." (1998) about collections 4.9.1997 from Kullbäcken and also from Sidsjö, Jämtland below *Betula nana* and *B. pubescens*. Photo in the Danish book "The genus *Lactarius*" (1998) is from Skärkdalen south of Ljungdalen, Härjedalen. *Lactarius leonis*, *scrobiculatus* and *Russula acrifolia* are typical in a fascinating nature type in Medelpad and Jämtland: old calcareous, moist *Picea* forest, often along brooks. *Gomphus clavatus* is rather common in the area along forest brooks like Kullbäcken, Markbäcken and Harrån in enormous fairy rings. *Russula nana* grows with *Polygonum viviparum* at Kullbäcken meadow but also in moist *Betula* forest along the brook.

Russula olivobrunnea is typical for the finest calcareous moist *Picea* forests in Jämtland and western parts of Medelpad and Ångermanland. We call this beautiful *Russula* for "guckuskokremla" because it often appear with *Cypridium calceolus* (guckusko in Swedish).

29 Julåsen

692502;1501371

FUNGI SUECICI 186

Artnamn *Lactarius aspidius*

Svenskt namn _____

Landskap MPD Koordinat _____

Församling _____

Lokal/vägbeskrivning *Julåsen*

Substrat/biotop *damp Picea forest
under Salix caprea*

Leg *MF Noordeloos* Datum *5.9.97*

Det *M. Vesterbø* Conf *me*

Old finnish settlement from 1620 high up in the mountains about 20 kilometers south of the Borgsjö valley. Burn-beating formed the forests in the finnish marks during earlier centuries. Burn-beating was also common in older times around farmer villages down in Borgsjö valley. Aspen, birch and willow trees were common after fires in older times.

Meadow at Julåsen with among others *Clavaria straminea*, *zollingeri* (found 2003 by Anita Stridvall), *Crinipellis scabella*, *Entoloma*

porphyrophaeum, *E. prunuloides*, *E. scabrosum*, *Hygrocybe aurantiosplendens*, *punicia*, *Russula nana*, *oreina*. Because of very late flowering redlisted *Gentinanella campestris* hay harvesting will be performed in september by Annika Carlsson at the county administrative board and her fellow worker Patrik. But of course some fungi can appear among long grass and herbs especially in more dry areas near the road. Well invented, earlier grazed and burnt woodland, now old *Picea* dominated (some *Betula*, *Pinus*, *Salix*) forest with findings of 74 species of *Cortinarius* 1982–2016.

Lactarius aspidius, *badiosanguineus*, *deterimus*, *flexuosus*, *fuliginosus*, *glyciosmus*, *hysginus* (Bellu 2010), *hysginoides* (Ilkka Kytövuori 5/9 1997), *lilacinus*, *mammosus*, *necator*, *picinus* (Birgitta Wasstorp), *pubescens*, *representaneus*, *resimus*, *rufus*, *scrobiculatus*, *sphagneti*, *subcircellatus*, *theiogalus*, *torminosus*, *trivialis*, *tuomikoskii*, *uvidus*, *vietus*

Russula adusta, *aeruginea*, *aquosa*, *atroglaucia*, *atrorubens*, *betularum*, *citrinochlora*, *claroflava*, *clavipes*, *consobrina*, *cremeoavellanea*, *decolorans*, *delica*, *emetica*, *favrei*, *formula*, *gracillima*, *helodes* (Henning Knudsen 1984), *heterophylla* (Henning Knudsen-Håkan Lindström 1984, S), *integra* (Bellu 2010), *intermedia*, *medullata*, *nitida*, *olivaceoviolascens*, *olivobrunnea*, *paludosa*, *puellaris*, *queletii*, *renidens*, *rhodopoda*, *turci*, *vinosa*

Also: *Agaricus semotus*, *Amanita olivaceogrisea*, *Cathatelasma imperiale* (leg Leif Anderson), *Collybia fodiens*, *Cortinarius privignipallens*, *Entoloma caesiocinctum* (in sphagnum, Machiel Noordeloos), *Haploporus odoratus*, *Hebeloma aanenii* (Bellu



Rolf Lidberg and Nils Suber. Photo: Hjärdís Lundmark

2010), *Hydnellum mirabile*, *suaveolens*, *Hygrophorus persicolor*, *purpurascens*, *Inocybe casimiri*, *castanea*, *Leccinum variicolor*, *Lepista densifolia*, *Marasmius scorodoni*, *Mycena capillaripes*, *urania*, *Neobarya parasitica*, *Psatyrella jacobsonii*, *pertinax*, *Ramaria botrytis*, *Tricholoma olivaceotinctum*, *Typhula lutescens*

Comment: Machiel Noordeloos and Annemieke Verbeke found in 1997 plenty of *Lactarius aspidius* in the swamp area under a big, old *Salix caprea* with smelling *Haploporus odoratus* on the trunk. Machiel also found *Entoloma caesiocinctum* in sphagnum. Jan Vesterholt was glad to find *Hebeloma syrjense*, Hjärdís Lundmark has found *Cortinarius anthracinus* at Julåsen, a good fungus for wool dyeing, see page 151 in the book "Färgsvampar och Svampfärgning" (Lundmark, Marklund 2018). Anita and Leif Stridvall visited forests at Julåsen 27 and 29 of august 2003 and made a list of 153 fungi species including 50 species in *Cortinarius*! Birgitta Gahne, Stig Jacobson and Håkan Lindström helped with determination of some *Cortinarius* species.

Lactarius hygionoides is a rare boreal species with about 15 observations in Sweden growing under *Betula*, *Picea* and *Salix*. Maria Teresa Basson also collected *L. hygionoides* 1997 east of Storklacken in Haverö parish, Medelpad. *Lactarius subcircellatus* is common below *Betula nana* in alpine areas but is also rather common under *Betula ssp.* in Borgsjö and Haverö parishes, Medelpad. Maria Teresa mentions in her book "Lactarius Pers" (1998) three collections in 1997 from Haverö parish: east of Storklacken, north of Linåsen, Torrflonäs.

A habitat protection area (biotopskydd) at Julåsen with *Tricholoma borgsjoeense* has fallen down by severe storms. It is described by Stig Jacobsson and Siw Muskos.



Russula aurantioflammans, Alby cemetery 2001. Photo at exhibition: Hjärdís Lundmark

30 Alby cemetery

6932320;1483670

***Pinus* park on rich, sandy soil. Moist *Picea* forest north of the cemetery with *Alnus*, *Betula*.**

Lactarius aquizonatus, deliciosus, deterrimus, glyciosmus, lilacinus, musteus, obscuratus, pubescens, rufus, scrobiculatus, sphagneti, torminosus, uvidus, vietus



Alby

Torsgrödan

Tors hamn

Ljungan

Badpl.

3064

drottspl.

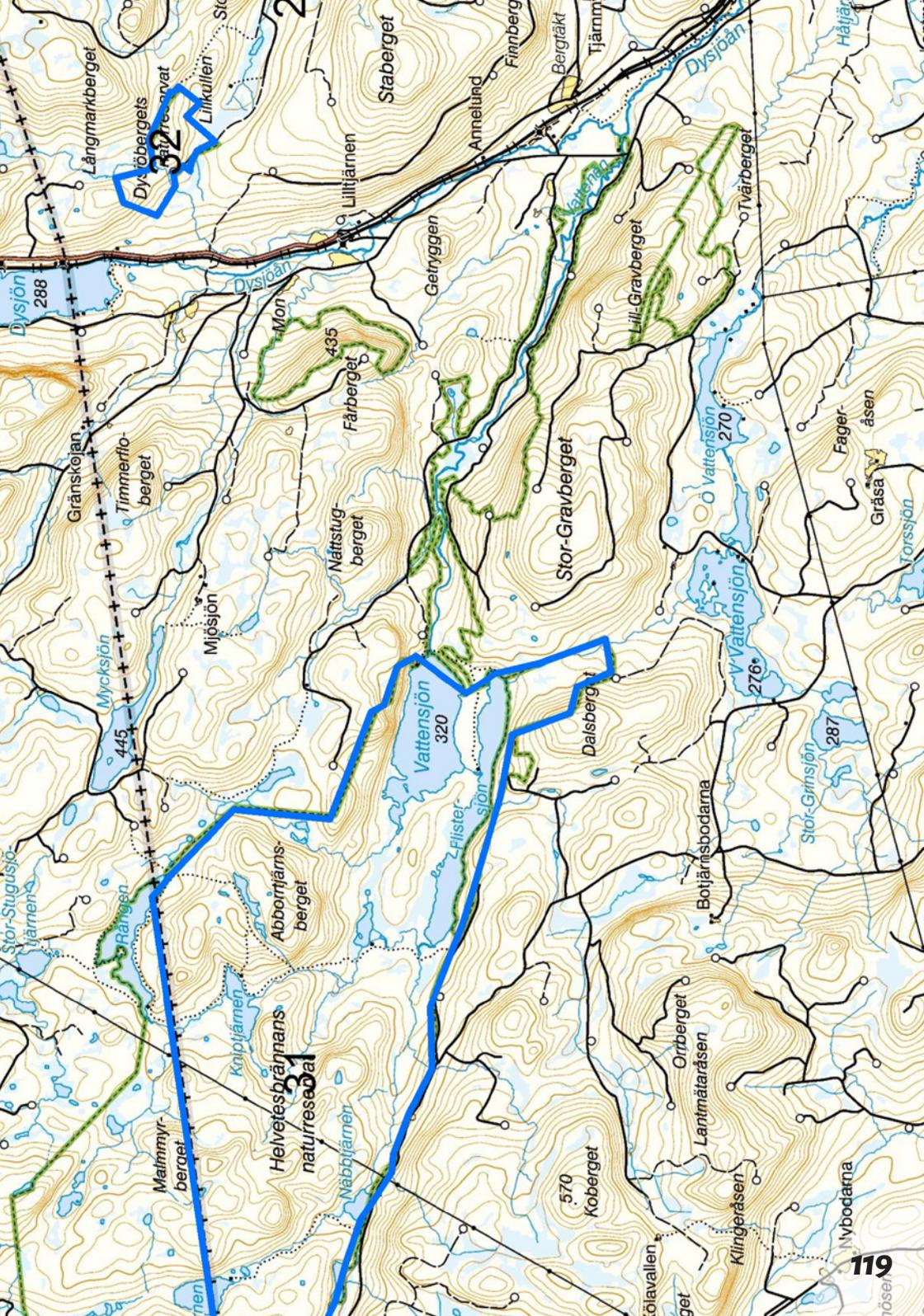


Håkan Lindström at forest meadow, Rigåsen, Liden parish 1976. Photo: Lennart Vessberg

Russula adusta, aeruginea, aurantioflammans, cessans, clavipes, decolorans, favrei, gracillima, lutea, paludosa, puellaris, roseipes, versicolor, vinosa

Also: *Cortinarius ionophyllus, leucophanes, semisanguineus, subbalaustinus, Hebeloma radicosum, Hydnellum caeruleum, Hygrophorus persicolor, Pholiota lubrica, Ramaria eosanguinea, Sarcodon scabrosus*

Comment: During the *Russula* workshop 2001 big, beautiful fruitbodies of *Russula aurantioflammans* were collected below *Betula* in the church park. Tuula Niskanen collected in 2003 the rare *Cortinarius alboamarens* at the cemetery, a small white *Myxaciium*. Anita Stridvall and Stig Jakobson found in 2010 *Cortinarius ionophyllus* and *Gomphus clavatus* in the *Picea* forest north of the cemetery.



31 Helvetesbrännan nature reserve

The dry, stony reserve is 3400 hectare and burned in the big fire year 1888 when cities like Sundsvall and Umeå burned. *Pinus* dominate but aspen, birch and willow cover southern slopes of Aborrtjärnberget and Vattensjöberget. A silver pine (dead grey standing pine tree) started growing in the year 1080! Johan Uebel from the county council led a memorable mushroom foray in 2001 when 92 fungi species were found. Necessary to have skillful guide in the rocky wilderness.

Lactarius deterrimus, flexuosus, rufus, torminosus, trivialis, vietus

Russula aeruginea, atrorubens, claroflava, clavipes, paludosa, vinosa

Also: *Cortinarius heterocyclus, septentionalis, Haploporus odorus, Hohenbuhelia mastrucata, Lyophyllum decastes, Phellinus pini, Phellodon niger*

32 Dysjöberget nature reserve

6943734;1486455

The County Board in Västernorrland created this nature reserve in 2014. Just visited once by mycologists at *Cortinarius* workshop 2016. Dysjöberget is situated a few kilometers from the old forest meadows Granbodåsen and Kullbodarna.

In older days farmers from the village Boltjärn grazed their cows, goats and sheep at Dyberget in summertime. The forest of the rocky area burnt in 1888 and is today dominated by old *Betula*, *Pinus*, *Populus* and *Salix*, a so called "lövbränna" in Swedish, a common nature type in older times when northern forests were formed by forest fires. Today's dominating *Picea* forests in the excursion area are a result of cutting away deciduous trees for firewood the last 100 years, especially during both world wars. During a period deciduous trees were also eliminated with herbicides.

Lactarius deterrimus, glycosmus, lilacinus, mammosus, pubescens, rufus, uvidus

Russula atrorubens, decolorans, griseocens, paludosa



Dysjöberget, rocky old aspen and birch forest that burnt in 1888. Photo: Bengt Larsson

Also: *Cortinarius jotunae ined.*, *psedofallax coll.*, *Leccinum cyanobsileucum*, *vulpinum*, *Phellinus populicola*

Comment: Today too many elks eat young pine trees and also young aspen and salix bushes, an problem both for forest production and biological diversity. But strong resistance among hunters to reduce the amount of elks. Elk hunting is very popular as social event in rural parts of Sweden.

33 Floberget nature reserve

529123;692347

FUNGI SUECICI

Artnamn *Lactarius sphagneti*

Svenskt namn

Landskap MPD Koordinat

Församling *Borgsjö*

Lokal/vägbeskrivning *Jullåsen*

Substrat/biotop

Leg *Martin Kallsten* Datum *9/10/05*

Det Conf

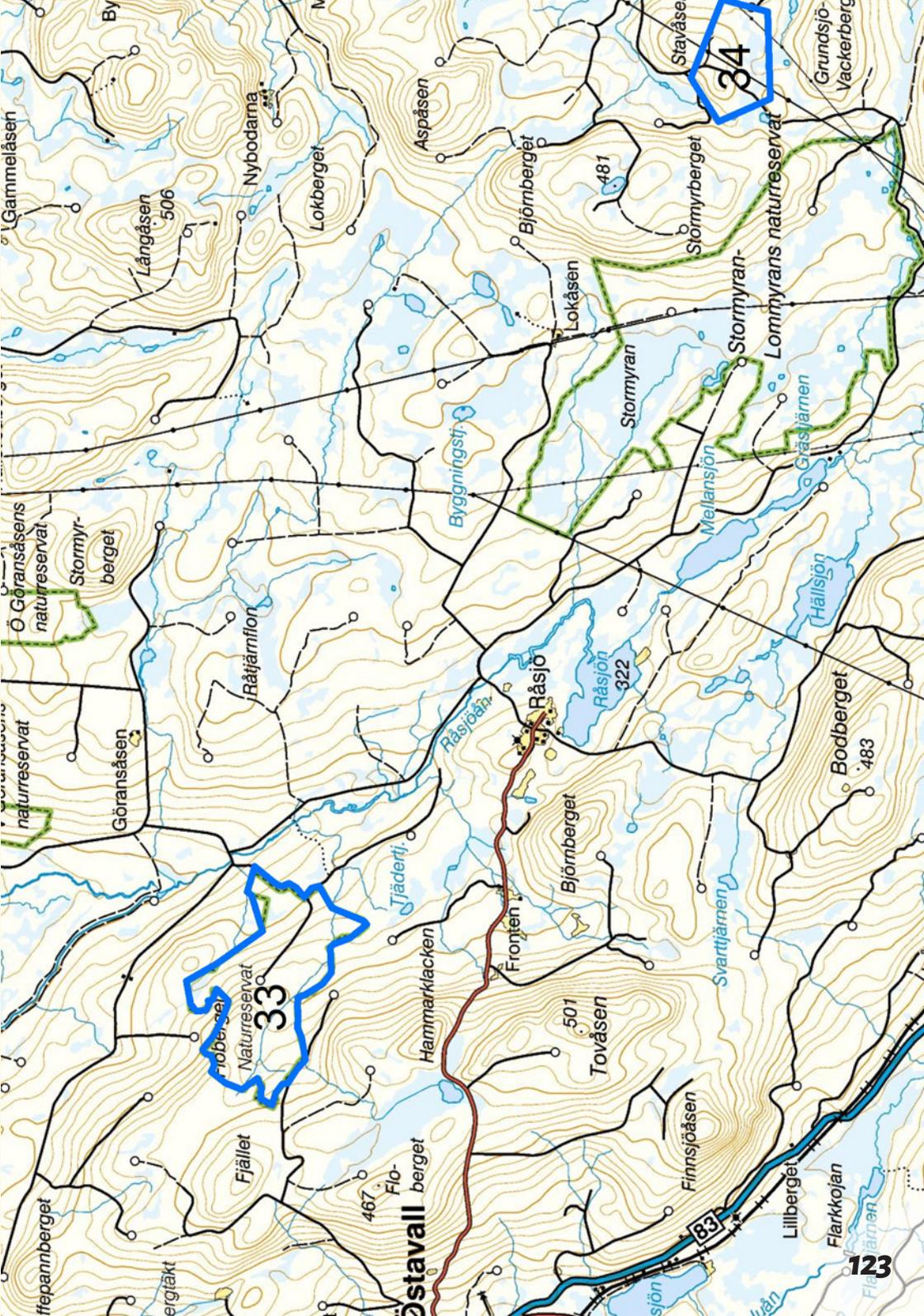
Picea, many big old *Aspen* trees, also *Betula* and *Salix*, moist areas along forest brooks. Rather difficult to walk in the reserve because of many fallen trees. Just visited once at workshop 2016.

Lactarius deterrimus, *glyciosmus* (roadside), *leonis*, *lilacinus*, *pubescens*, *representaneus*, *theiogalus*, *torminosus* (roadside), *trivialis*, *tuomikoskii* (det Ilka Kytövuori), *uvidus*, *vietus*

Russula atrorubens, *clavipes*, *claroflava*, *decolorans*

Also: *Xanthoporus syringae* (roadside), *Clitocybe hydrogramma*, *Cortinarius caesioarmeniacus* (Balint Dina seqv.), *uliginosus*, *umbrinolens*, *Hygrophorus korhonenii*, *Hypocrea nybergiana*, *Leccinum albostipitatum*, *varicolor*, *versipelle*, *vulpinum*, *Pholiota lundbergii*

Comment: *Pholiota lundbergii* is described by Stig Jacobsson in honour of *Lars Lundberg*, founder of Östersund Mycological Society. It seems to live from wood remnants of decayed wood and to be a rare species with just ten dots in northern Sweden at Swedish Dyntaxa. Found in Borgsjö parish at Kullbodarna and here at Floberget.



33

Fjället

Naturreservat

34

Stavåse



The forest east of Boflon is also a paradise for *Telamonia* species. Håkan Lindström has named *Cortinarius andreae* (CFP E 17) after his son Andreas, here at fungi exhibition at Meyzieu, France in 2000. Photo: Hjördis Lundmark.

Haverö parish

34 Forest east of Boflon

6934768;1476808

Boflon is a fen with *Pedicularis sceptrum-carolinum*. East of Boflon there is a rich moist *Picea* forest in a north slope about 420 above sea level, today protected by the forest company Sveaskog with the beautiful orchid *Epipogium aphyllum*, *Cystopteris montana* and many interesting fungi. People lived here at a small crofters holding at state land until hundred years ago. Perhaps the forest road is too bad for regular cars but OK for minibuses.





Hapalopilus rutilans gives a beautiful purple color. Dyed and photographed by Hjördis Lundmark.

Right: Siv Norberg, contact person for Mushroom Dyeing Society with *Hapalopilus rutilans*. Photo: Jan-Olof Tedebrand



Lactarius aquizonatus, auriolla, badiosanguineus, citriolens, deterrimus, fennoscandicus, foetens, fragilis, glyciosmus, gracillima, griseascens, hysginus, olivobrunnea, necator, pubescens, queletii, resimus, rufus, scoticus, scrobiculatus, sphagneti, spinosulus, theiogalus, torminosus, trivialis, tuomikoskii, uvidus, vesca, vietus

Russula adusta, aeruginea, aquosa, atrorubens, consobrina, decolorans, delica, emetica, favrei, fennoscandica, fragilis, gracillima, griseascens, olivobrunnea, paludosa, puellaris, rhodopoda, vinosa, vinososordida

Also: *Agaricus semotus, Arrhenia lobata, Cortinarius andreae, malicorius, rosargutus (ant hill), rusticus, sanguineus, venustus, Entoloma juncinum, lividocyanulum, Fayodia bisphaerigera, Hebeloma syrjense, Hemimycena pseudolactea, Hygrophorus karstenii, H. persicolor, Inocybe terrigena, Leocarpus fragilis, Limacella guttata, Lyophyllum fumosum, Melanoleuca grammopodia, Multiclivula vernalis, Mycena amicta, Naucoria zonata, Onygena equine, Otidea propinquata, Pholiota heteroclita, Pseudographis pinicola, Ramaria botrytis, Skeletocutis amorpha, Thelephora palmata*

Comment: Erhard Ludwig found *Naucoria zonata* below *Alnus* and *Salix* in a ditch at the forest road in 1996 and made a painting. Anita and Leif Stridvall found *N. zonata* again in 2003. At visit in 2003 some people filled their baskets with *Cortinarius sanguineus* for dyeing wool! *Lactarius scoticus, vietus, Inocybe terrigena* and *Melanoleuca grammopodia, Russula griseascens* are frequent in the slopes with rich fens. *Lactarius citriolens* is southerly with few findings in the northern taiga region.

35 Björntjärn nature reserve

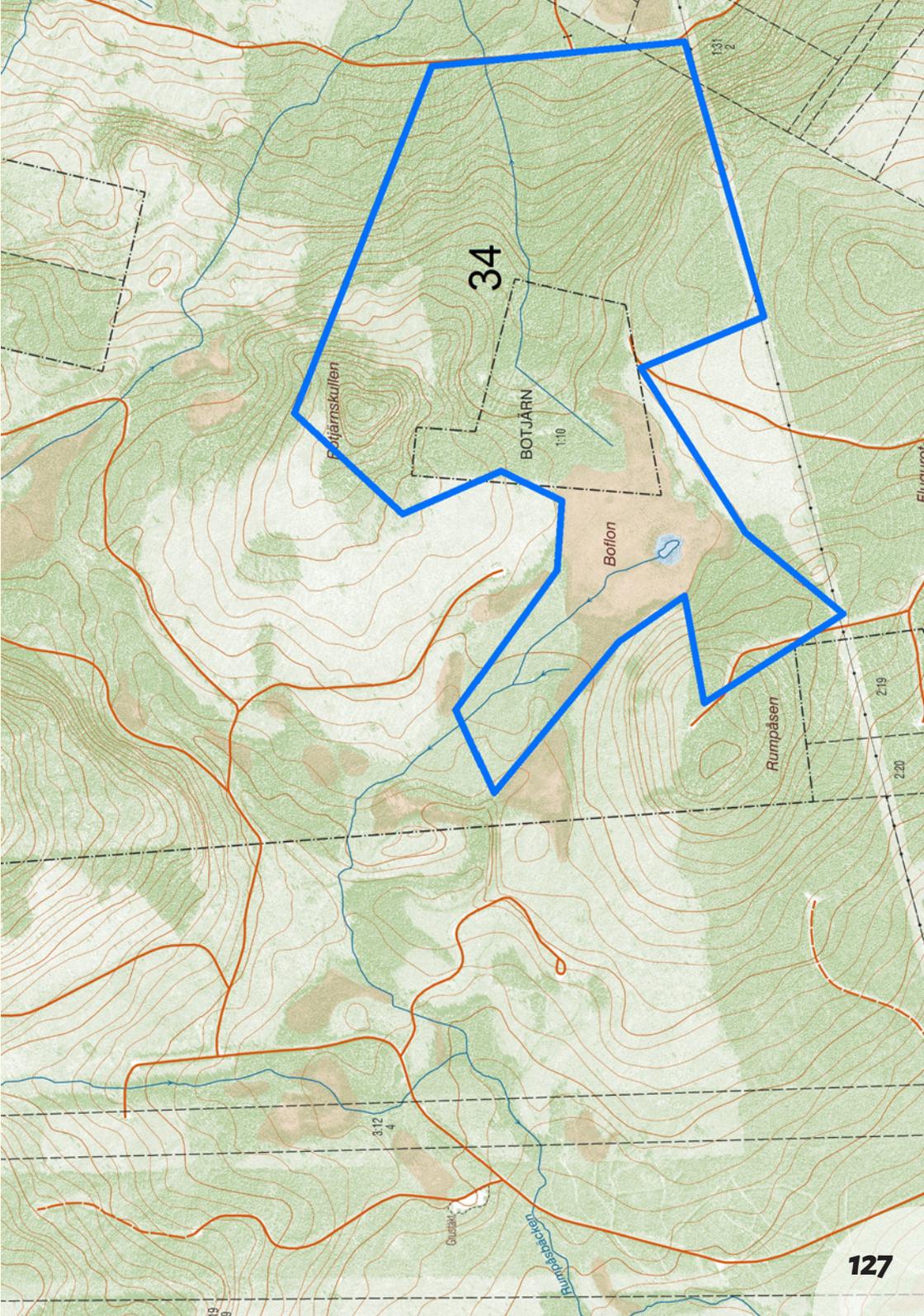
504474;6932386

Virgin forest, 300 years old *Picea*, also 4–500 years old *Pinus*. Type locality for the rare corticioid fungi *Phlebia ryvardeenii*

Lactarius deterrimus, mammosus, rufus, torminosus, trivialis, tuomikoski

Russula aquosa, atrorubens, decolorans, griseascens, nitida, paludosa, rhodopoda, taigarum, vinosa

Also: *Cortinarius bataailliei, fervidus, leucophanes, sanguineus, venustus, Cystoderma ambrosii, Onnia leporina, Ossicaulis lignatilis, Skeletocutis odora*



34

Foljårnskulfen

BOTJÄRN
1:10

Boflon

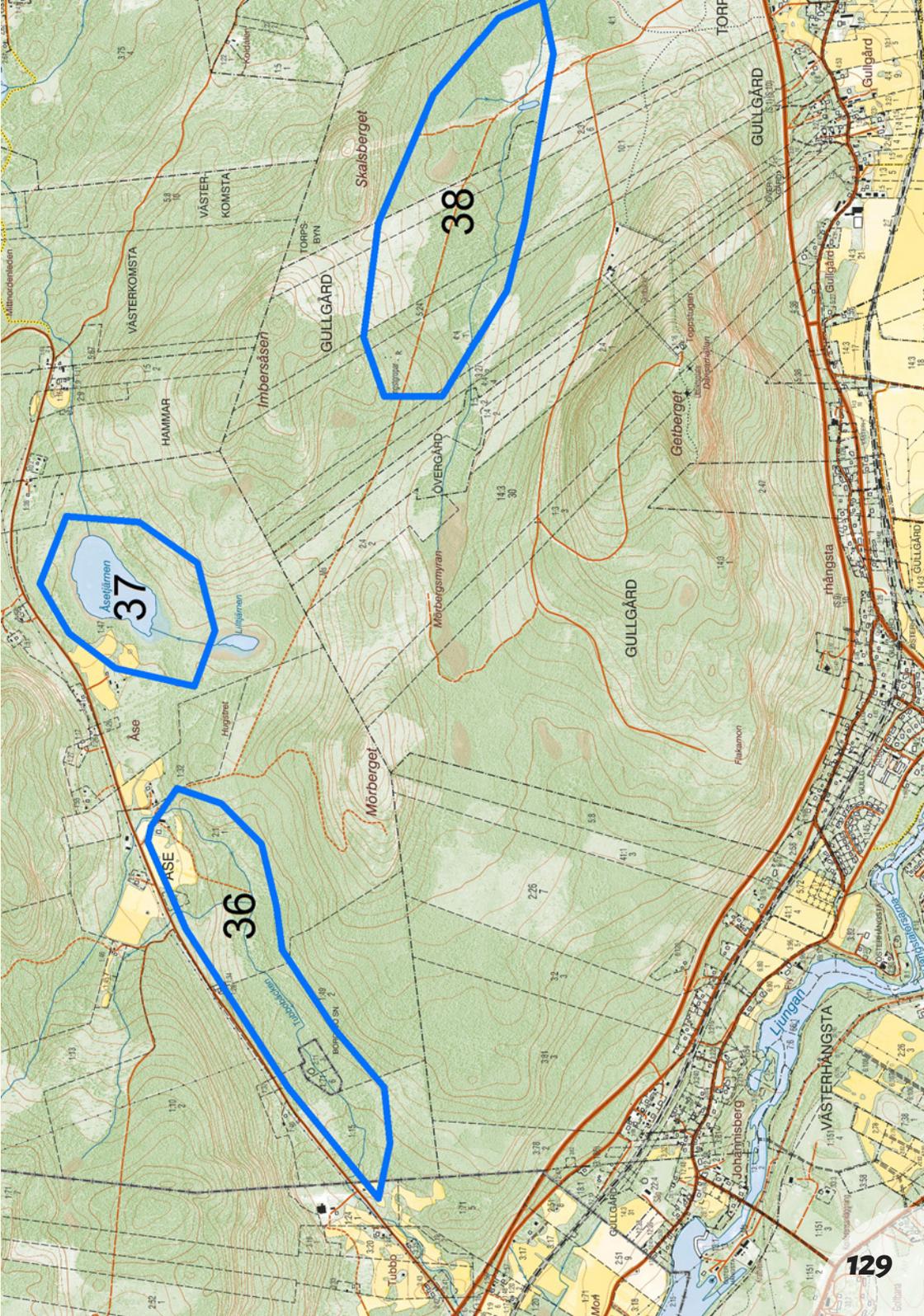
Rumpåsen

Gåsbak

Långvassån



The colourful mycologists Stig Jacobsson and Jacques Melot, Borgsjö 2003.
Photo: Hjördis Lundmark



37

36

38

Torp parish

36 Tubbobäcken + forest west of Mörberget (habitat protection area)

6933916;1512039

Moist brook area with *Alnus*, *Picea*, *Salix* and many small soil fungi demanding lime and nitrogen (*Lepiota* society). Also rich *Picea* forest along Tubbobäcken and swamp areas west of Mörberget with *Circaea alpina*, *Cypripedium calceolus*, *Viburnum opulus*. Plenty of dead wood, 40 species of *Polyporales* found in 1986 together with Leif Ryvar den. The rich moss flora has been checked by Tomas Hallingbäck, Bengt Larsson and Sofia Lundell.

Lactarius badiosanguineus, *deterrimus*, *fuliginosus*, *glyciosmus*, *lilacinus*, *obscuratus*, *olivinus*, *parazurea* (Doris Laber), *queletii*, *rufus*, *sanguinea*, *scoticus*, *scrobiculatus*, *theiogalus*, *torminosus*, *trivialis*, *vietus*

Russula aeruginea, *atrorubens*, *badia*, *claroflava*, *consobrina*, *decolorans*, *delica*, *favrei*, *firmula*, *gracillima*, *lutea*, *olivobrunnea*, *paludosa*, *parazurea*, *queletii*, *taigarum*, *versicolor*, *vinosa*

Also: *Amanita friabilis*, *Chrysomphalina chrysophylla*, *Clavaria fumosa*, *Clitocybe harperi*, *phaeophthalma*, *Cordyceps gracilis*, *Cortinarius aureopulverulentus*, *fervidus*, *harcynicus*, *ionosmus*, *venustus*, *Crepidotus kubickae*, *stenocystis*, *Echinoderma dysthales*, *pseudoasperula*, *Geastrum fimbriatum*, *Hygrophorus chrysodon*, *korhonenii*, *persicolor*, *subviscifer*, *Leccinum piceinum*, *Marasmius siccus*, *Melanophyllum echinatum*, *Mycena oregonensis*, *Onnia leporina*, *Ramaria gracilis*, *Rhodocybe nitellina*, *Rhodonía placenta*, *Sowerbyella radicata*, *Steccherinum collabens*, *Thelephora palmata*, *Tremiscus helvelloides*, *Trichoderma nybergianum*, *Tricholoma atrosquamosum*

Comment: Doris Laber found *Russula parazurea* at Tubbobäcken. Key to bluegreen-green species in section *Heterophyllae* in Funga Nordica (2012). Anita and Leif

Stridvall collected during mycological week in Härjedalen 2006 a beautiful collection of *Russula ionochlora* in alpine *Betula* forest at Djupdalsvallen. Herbert Kaufmann has several times written about species in section *Heterophyllae*, see for example Svensk Mykologisk Tidskrift 2007 (3) pages 21–69. Very exciting to hear latest news about section *Heterophyllae* in Borgsjö 2018, perhaps after DNA-studies of type collections!

Neotype for *Tricholoma inamoenum* from Tubbobäcken, see danish book about *Tricholoma* (Christensen-Heilmann-Clausen 2013, pages 188 and 210)

37 Åsetjärnen

15134;69346

Picea, *Alnus-Salix* marshes with *Amanita friabilis* and the orchid *Microstylis monophyllos*.

Lactarius badiosanguineus, *deterimus*, *rufus*, *scoticus*, *scrobiculatus*, *theiogalus*, *torminosus*, *trivialis*, *uvidus*

Russula acrifolia, *adusta*, *aeruginea*, *betularum*, *claroflava*, *decolorans*, *emetica*, *firmla*, *griseocens*, *nitida*, *paludosa*, *queletii*, *xerampelina* ss.lat.

Also: *Amanita friabilis*, *Cantharellus lutescens*, *Cortinarius eburneus*, *Dialonectria episphaeria*, *Durella atrocyanea*, *Entoloma sarcitulum*, *Geoglossum glabrum* (in sphagnum with the orchid *Hammarbya paludosa* and *Hygrocybe strangulata*), *Hypoxylon salicicolum*, *Inocybe paludinella*, *Ostropa cinerea*, *Lentinellus vulpinus*, *Psathyrella chardroderma*, *Spooneromyces velenovskyi*

38 Forest north of Getberget

15143;69329

Picea, *Pinus*, also moist areas with *Alnus* and *Salix*, visited during 16 mycological workshops in Borgsjö 1982 - 2016. *Cyripedium calceolus*. At Getberget also the only place in Medelpad for another beautiful orchid: *Epipactis atrorubens*. Hitherto 89 different *Cortinarius* species collected and identified. Henri Romagnesi was happy in 1983 to find *Bankera violascens*. Ilkka Kytövuori collected in 1995 the rare *Leucopaxillus subzonalis*.

Lactarius badiosanguineus, deterrimus, fennoscandicus, fuliginosus, glyciosmus, lilacinus, necator, pubescens, rufus, scoticus, scrobiculatus, sphagneti, spinosulus, subcircellatus, torminosus, trivialis, tuomikoskii, turci, uvidus, vietus, zonarioides

Russula adusta, aeruginea, aquosa, atrorubens, claroflava, consobrina, crassipes, decolorans, depallens, emetica, favrei, fennoscandica, firmula, foetens, fragilis var. knautii (det Henri Romagnesi), *gracillima, cf grisea, griseascens, integra, nauseosa var. laricina* (Leif Örstadius 22/8 1983, det Henri Romagnesi), *nitida, olivaceoviolascens, olivascens, paludosa, puellaris, queletii, renidens, rhodopoda, roseipes, sapinea* Sarnari (in moist spruce forest, leg och det Jukka Vauras, Gent), *sphagnophila, turci* (22/8 1983 Stig Jacobsson, det Henri Romagnesi), *versicolor, vinosa, vinososordida, xermapelina ss lat.*

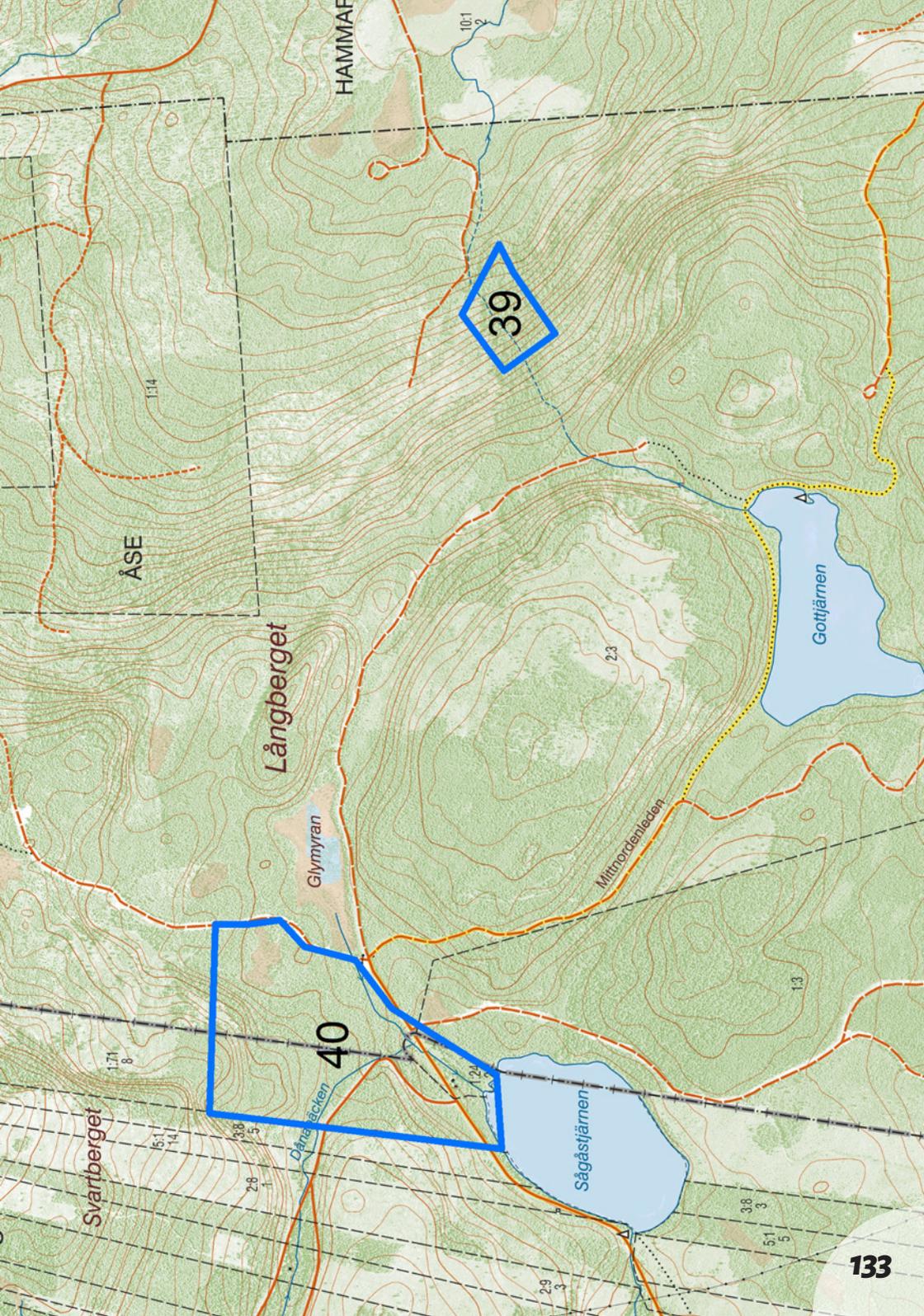
Also: *Amanita friabilis, Cordyceps gracilis, Ceriporiopsis balanae, Cortinarius caesiocinctus, venetus, venustus, violaceocinereus, Clitocybe phaeophthalma, Cordyceps gracilis, Geastrum pectinatum, Hebeloma syrjense, Heyderia abietis, Hygrophorus chrysodon coll., korhonenii, subviscifer, Inocybe terrigena, Leucopaxillus subzonalis* (1995, Ilkka Kytövuori), *Mycena oregonensis, pelianthina, Psatyrella pertinax, Pseudobaeospora celluloderma* (Laessöe 1991), *Trichoderma nybergianum, Tricholoma olivaceotinctum, scalpturatum*

Comment: Henri Romagnesi determined several collections as *Russula fragilis var. knautii* Sing. during *Russula* workshop in 1983. Stig Jacobsons writes about the collection from Getberget in Jordstjärnan 1984/1 page 18: "The fruitbodies were red violet with almost black center and remind the macroscopy of *R. atrorubens*. The spores had low warts in similarity to *fragilis*, but Singer, who described *Knautii* as an own species, says that *Knautii* have powerful outgrowth from the spores (as *emetica*) and mostly appear in *Fagus* forest".

During *Russula* workshop with Henning Knudsen in 1984 the same *Russula* got the name *Russula olivaceoviolascens* and was the most common *Russula*. At last we just called it "Ove"!

Russula sapinea was described by Mauro Sarnari who participated in the Borgsjö workshop in 1997. A little known *Russula*, just three finds in the swedish Dyntaxa, www.dyntaxa.se from northern Sweden. According to Funga Nordica (2012) rare in rich *Picea* forest.

At Getberget and in almost every forest around Borgsjö we also find "Lactarius utilis", nowadays included in *L. trivialis*, and thus not mentioned in this guide.



39

40

HAMMAR

ÅSE

Långberget

Glymyran

Gottjärnen

Mittnorranleden

Sågåstjärnen

Svarberget

Damaåcken

Photo of *Russula crassipes* in Per Marstads booklet about Nordic *Russula* species and also at Anita and Leif Stridvalls homepage: <http://www.stridvall.se/fungi/gallery/Russula?page=4>

Anita says in a mail on 3/1 2011 that ”*R. crassipes* is described by Routsalainen and Vauras, resemble *R. queletii*, has colours in red-violet and fading with age. The smell is not like *queletii*, sharpe taste, with *Picea* and perhaps not so demanding of rich soil as *queletii*. We first found *crassipes* in 1988 and have 60 findings in our database”.

Pseudobaespora celluloderma at Getberget is according to Swedish Dyntaxa the only finding in Sweden. During the Swedish mycological week 2014 in Timrå, Medelpad

Thomas Læesøe found *Pseudobaespora paulochroma* at the lime rocks of Långharsholmen (C-TL14222, photo) outside Alnön. Leif Andersson and Thomas Læesøe has also found a reddish-violet species in *Pseudobaespora* among tall herbs at Granbodåsen with the preliminary name *P. pilodii* (many species are now described by Bas in genus *Pseudobaespora*).

39 East of Långberget, habitat protection area

About 300 meter long and 60 meter broad brook valley. Rolf Lidberg noted in 1991 interesting plants like *Actaea spicata*, *Circaea alpina*, *Daphne mezereum*, *Epipogium aphyllum*, *Galium triflorum*, *Lactuca muralis*, *Lathyrus vernus*, *Platanthera bifolia*, *Viola mirabilis*, *selkirkii*. Much dead wood.

Bengt Larsson has guided many mycologists to this area. During a *Mycena* workshop with Rudolf Maas Geesteranus Arne Aronsen, Ernest and Valery Emmet and Thomas Læesøe found 5.9.1991 following *Mycena* species were found in the ravine (5.9.1991): ***acicula*, *amicta*, *epipterygia*, *flavoalba*, *galericulata*, *haematopus*, *laevigata*, *metata*, *oregonensis*, *pterigena*, *pura*, *rubromarginata*, *sanguinolenta*, *speirea*, *stipata*, *vulgaris*.**

Lactarius deterrimus, *fennoscandicus*, *vietus*



Siw Muskos -83

Mycena oregonensis. Painting by Siw Muskos

***Russula* acrifolia, aquosa, atrorubens, aurea, favrei, firmula, nitida, queletii, vinosa**

Also: *Cortinarius colus, sanguineus, septentrionalis, Entoloma depluens, Mycena oregonensis, Phellinus populicola, punctatus, Pholiota lubrica, Pluteus romellii, Tremischus helvelloides*

Comment: *Russula aurea* a more southern species, found at about 15 localities in Medelpad in old *Picea* wood at calcareous soil but also in rich hazel grove (Siljeberget, Selånger parish). More common in similar habitats at the limestone plate in Jämtland.

40 Sågästjärn, Svartberget

69367127;1511699

Moist *Picea* forest, marshes with *Alnus-Salix*.

Lactarius deliciosus, deterrimus, glyciosmus, lacunarum, mammosus, necator, obscuratus, representaneus, rufus, scrobiculatus, theiogalus, torminosus, trivialis, uvidus

Russula aquosa, atrubens, betularum, clavipes, formula, gracillima, grisescens, nitida, paludosa, vinosa, xerampelina

Also: *Amanita friabilis, Boletus edulis, Clavaria argillacea* var. *sphagnicola, Cortinarius colus, septentrionalis, Datronia stereoides, Hebeloma atrobrunneum, infundibulicybe costata, Hygrophorus korhonenii, Mycena mirata, Otidea brunneoparva, Pholiota lubrica, Tricholoma olivaceotinctum*

Comment: Most old and wellknown *Russula* species like *Russula xerampelina* are nowadays classified as a group of closely related species. They just now are waiting in the mycologist's waiting rooms and laboratories for evaluation resulting in fresh, new names.

41 Finnsjön, hard grazed grassland

15177;69151

Today hard grazed meadows in a distant farm high up in the mountains where finnish settlers that arrived 400 years ago. But fine meadows down by the lake with *Nardus stricta*.

Roy Watling said in 1993 that Finnsjön reminded him of the highlands in Scotland. Machiel Noordeloos collected on august of 29, 1985 a species new for science: *Entoloma pratulense* (L, holotype). *Pratulense* means "growing at small meadows". In a bed of *Nardus stricta* down by the lake Machiel also collected *Entoloma kervernii*. *Lactarius pubescens* under *Betula* in wet places. Jan Vesterholt found *Entoloma caeruleum*, determined at place by Machiel. Roy Watling found in 1993 *Conocybe magnicapitata, pseudopilosella* and *Coprinus narcoticus*. Lennart Vessberg and Jan-Olof Tedebrand has found the beautiful *Clavaria zollingeri* in an area with *Gentianella campestris* and *Hygrocybe punicea* and *Lepista luscina*. *Camarophyllopsis schulzeri* was also found. A group visited Finnsjön during *Lactarius* workshop 1997. Kurt-Anders Johansson found *Entoloma ameides* and *Russula velenovskyi*.



Russula roseipes. Photo: Hjördis Lundmark

42 Finnsjön, forest

15177;69153

FUNGI SUECICI

Artnamn *Russula seridens*

Svenskt namn _____

Landskap MPD Koordinat *Santland*

Församling *Bålejö*

Lokal/vägbeskrivning *Sidsjö W*

Substrat/biotop *at a few, mixed forest with Betula*

Leg. *Jukka Vuoris* Datum *27.8.2000*

Det. *N* Conf. _____

Herbrich *Picea* wood at diabase.

Lactarius badiusanguineus, deterrimus, glycosmus, hysginus, lilacinus, necator, pubescens, representaneus, scrobiculatus, scoticus, torminosulus, torminosus, uvidus, vietus, zonarioides

Russula cinnamomicolor Krombh., *consobrina, decolorans, delica, emetica, favrei, firmula, globispora coll., puellaris, rhodopoda, velenovskyi, vinosa, xerampelina*

Also: *Cortinarius biformis, cupreorufus, percomis coll, tortuosus, venustus, Hygrophorus korhonenii, Sistotrema confluens*

Stöde parish

43 Stödesjön, delta area in the river Ljungan

15405;69226

Alnus, Populus tremula, Aspen, Betula, Willow. Easily accessible by path.

44 Sönnasjöbergen nature reserve, "lövbränna" in swedish

15446;690996

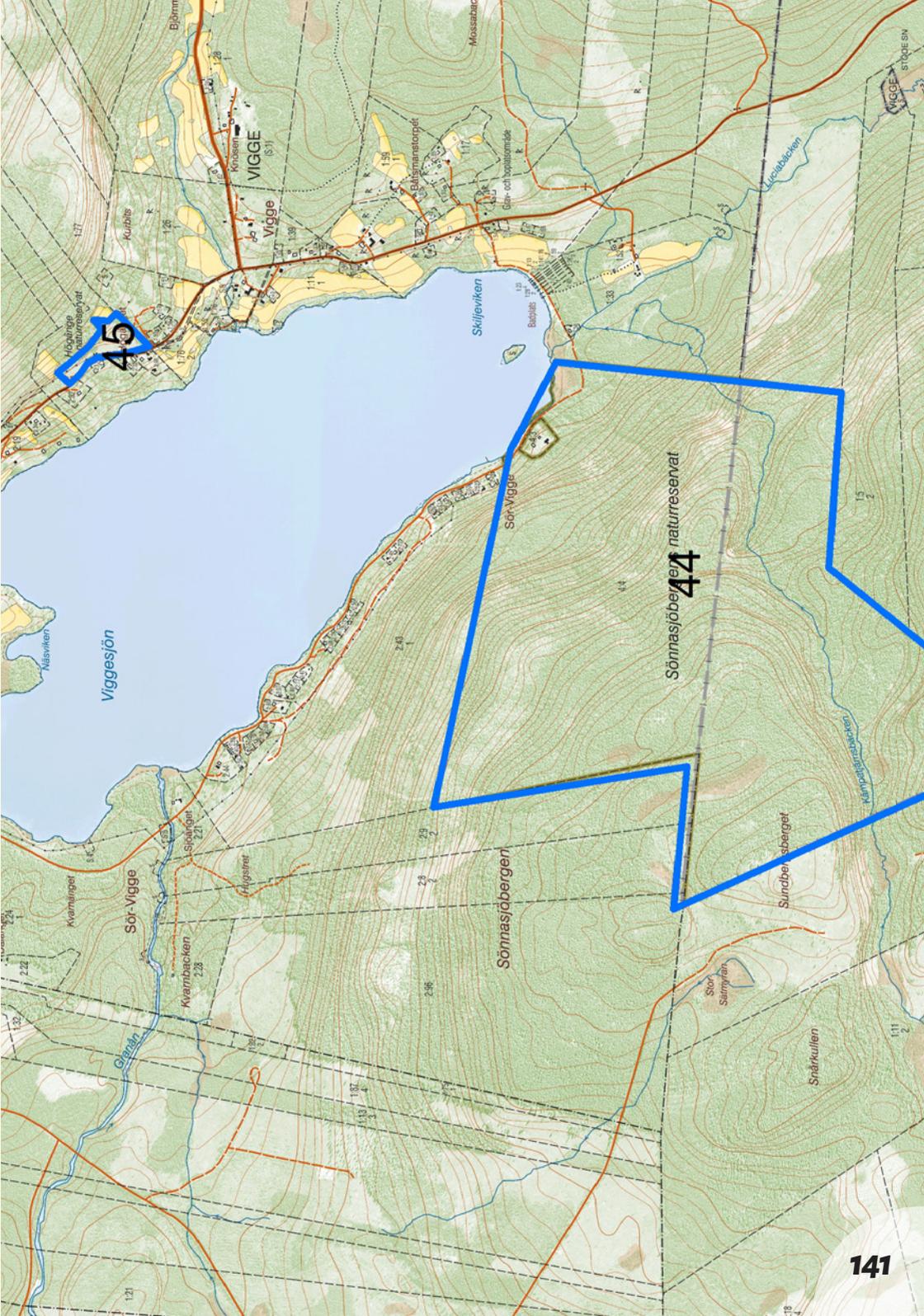
Old aspen and birch on diabase, burnt in 1888. In summertime you can sniff the fragrant *Haploporus odorus* and *Platanthera bifolia*. Also *Picea* wood. Old *Pinus* at parking place at the sandy beach.

Håkan Lindström and Jan-Olof Tedebrand made an inventory of mushrooms at request of Per Simonsson at the County Board, report of all findings presented 1990 in the journal "Natur i Norr". *Latarius resimus* was common under birch. *Russula aurea* was found and also the rare *Sarcodon leucopus*. Rolf Lidberg filled several "Konsumkassar" (plastic bags from the food shop Konsum) in the "lövbränna" with chantarelles.

45 Högänge nature reserve

15456;69119

Meadow at diabase. Grassland fungi such as *Hygrocybe punicea*, *spadicea*, *Pseudotracheloma metapodium*, *Russula nana*. Birgitta Gahne found 1989 *Inocybe calida* at the meadow, a rather common species together with *Polygonum viviparum* at old meadows.



Viggesjön

45

VIGGE (S 3)

Skilleviken

Sör-Vigge

Sömnasjöberget naturreservat

44

Sömnasjöberget

Sundbergsberget

Snäckkullen

Stor Särnyttån

Alnö parish

Alnö is an island in the Baltic sea outside Sundsvall with meadows and forests at vulcanic limestone.

Many findings of southern and rare fungi like *Cystolepiota moelleri*, *Disciseda candida*, *Hymenogaster griseus*, *Lepiota pseudolilacea*, *Limacella vinosorubescens* (Bergeforsen 2014, Jeanette Södermark), *Melanophyllum eyrei*, *Russula olivobrunnea*, *violeipes*, *virescens*. Siw Muskos has found *Mycena sudorella* (det R.A: Maas Geesteranus) at Slädbäcken, the only finding in Europe. During a national mycological workshop in Timrå 2014 we studied the special mycoflora in forests and grazed grasslands at limestone together with many experts and found rare and interesting fungi, see report: http://www.myko.se/wp-content/uploads/2014/05/Svamprapport_web.pdf

46 Alnö cemetery

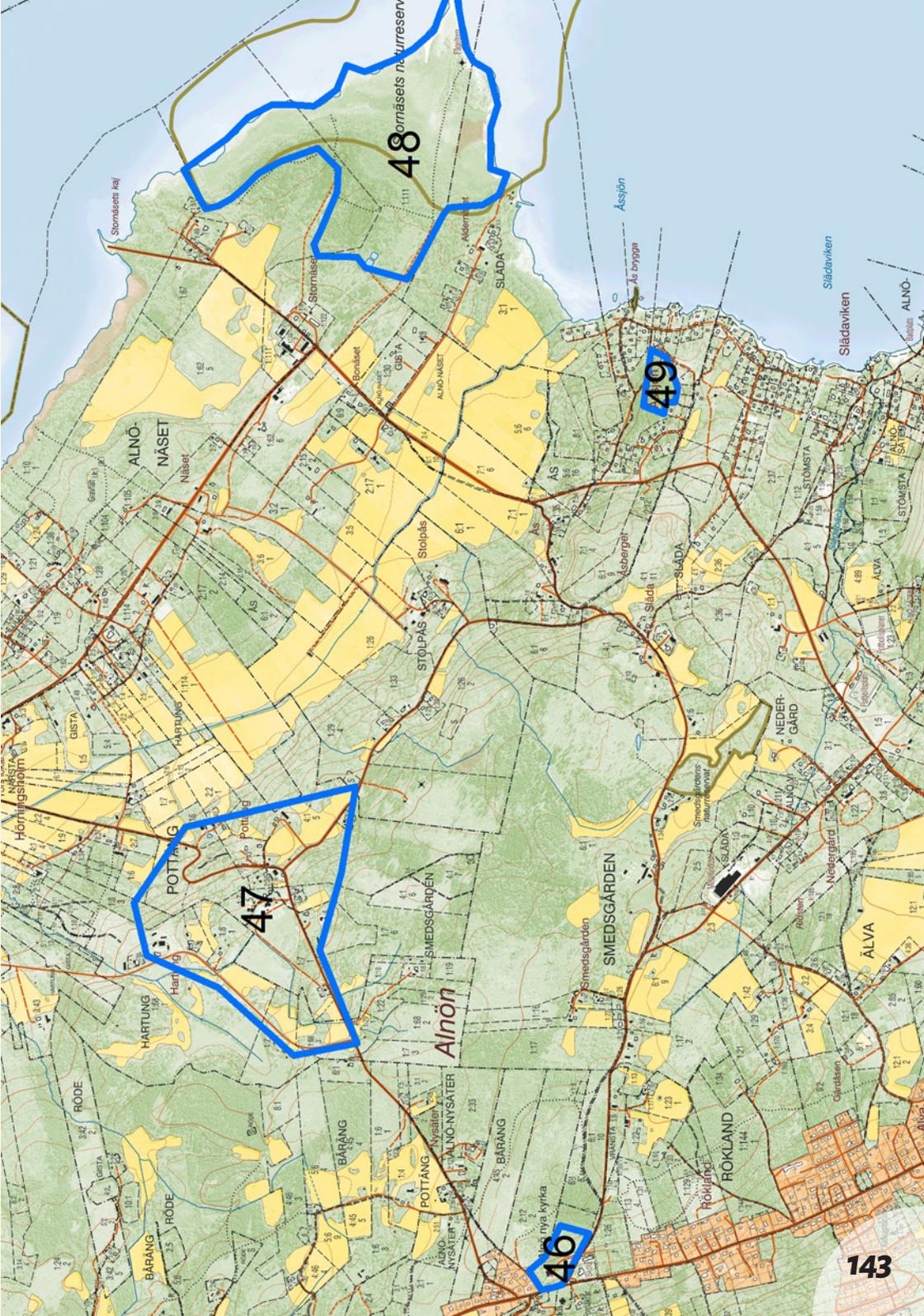
6926873;623811

Park around the church, limestone, with *Betula*, *Pinus*, *Tilia*. *Lactarius deterrimus*, *mammosus*, *pubescens*

Russula anthracina, *nauseosa*, *queletii*, *roseipes*, *sanguinea*, *subterfurcata*, *virescens*

Also: *Inocybe lanatodisca* (det. Ellen Larsson), *Mycena pseudopicta* Lange

Comment: Hjördis Lundmark has collected the southern food mushroom *Macrolepiota procera* at Alnö cemetery. Henning Knudsen and Danish mycologists found in 1986 the southern *Russula virescens* under *Tilia*. Siw Muskos also found some exciting *Russulas* under *Tilia* at Alnö cemetery which were sent to Juhani Ruotsalainen for examination, among others a form of *Russula anthracina* that Juhani determined as *var. carneifolia*. Under *Tilia* Siw also found a *Russula* reminding of *R. parazurea* and Juhani had a suggestion: *R. subterfurcata* Romagnesi, see photo at page 323 in Mauari Sarnaris book about *Russula*. Herbert Kaufmann deals with *R. subterfurcata* in his study of *Russula* species in section *Heterophyllae* (Svensk Mykologisk Tidskrift 28 (3): 21–69, 2007). Herbert point out at page 22 that coming DNA-analysis is needed to reveal all the exciting secrets in *Heterophyllae*.



48 områsets naturreservat

47

46

49

143



Siw Muskos and Juhani Ruotsalainen at *Russula* workshop in Borgsjö 2001.
Photo: Kjell Olofsson

Such a study has been made by Ursula Eberhardt. Several southern *Russula* species are found near the sea and in the limestone area around Alnö. Herbert Kaufmann collected in 2014 *Russula odorata* in park under *Quercus* at Ävike bruk, Tynderö parish. Mats Karlsson and Nils Otto Nilsson found *Russula violeipes* at Stornäset nature reserve in 2014 in swamp areas at limestone. Siw Muskos found *Russula sardonica* under *Pinus* in sandy heath at Bergafjärden in Njurunda parish, Medelpad (det Stig Jacobsson).

Russula subterfucata. Medelpad, Alnö church, under *Tilia* at lawn on limestone.



Russula subterfurcata. Alnö cemetery 9/8 2000, leg Siw Muskos, det Juhani Ruotsalainen.
Photo: Siw Muskos

47 Pottäng

6927438;625804

Sheep grazed pastures and *Alnus-Picea* forests at limestone. A real hot spot for rare and southerly fungi. The county council have taken away trees and bushes and the land owners are doing a fine job with sheep grazing. Just a few mycological visits and many more exciting fungi remains to be found. Stefan Grundström has done an inventory of species rich meadows in the northern part of Alnö island. Sundsvall municipality have together with the County Board plans to start an exciting project in order to strengthen the various nature values in forests and meadows in the limestone area at Alnö and adjacent areas. Somewhat of Gotland and Öland with many rare and southern species.

Lactarius glyciosmus, lilacinus, obscuratus, scrobiculatus

Russula firmula

Also: *Amphisphaerella xylostei* (Nils Lundqvist), *Calocybe constricta*, *Cystolepiota seminuda*, *Entoloma tjallingiorum*, *Hygrocybe colemanniana*, *Hygrophoropsis rufa*, *Hygrophorus hyacinthinus*, *Lepiota griseovirens, poliochloodes* (OULU), *subalba*, *Lyophyllum leucophaetum*, *Melanophyllum eyrei, haematospermum*, *Mycena polygramma*, *Pholiotina teneroides* (=percineta, Gro Gulden 1995), *Psatyrella fatua*, *Trichodermella constricta*

48 Stornäset nature reserve

6927019;628810

Moist and grazed deciduous forests and grassland at limestone along the sea with *Alnus*, *Betula*, *Salix*. Vaste wet marshes with the rare orchid *Microstylis monophyllos* and plenty of dead wood.

Leif Örstadius has collected many species of *Psatyrella* here for example *P. effibulata* and *P. rigidipes*. Also a paradise for *Pluteus* species. In 1995 Maarit Kaukonen and Ilkka Kytövuori found *Pluteus chrysophaeus* (VU, vulnerable, at Swedish red list). *Sarcoscypha austriaca* common in springtime and the popular mushroom fungi *Calocybe gambosa* in early summer.

Lactarius deterrimus, glyciosmus, lilacinus, necator, obscuratus, pubescens, scrobiculatus, scoticus, sphagnetii, theiogalus, torminosus, vietus

Russula aeruginea, alnetorum, atrorubens, betularum, cessans (Henning Knudsen, Hjärdís Lundmark 1986), *chloroides, claroflava, delica, depallens, fennoscandica, font-queri, fragilis, gracillima, intermedia, nitida, parazurea, queletii, subrubens, velenovskyi, violeipes* (Mats Karlsson, Nils-Otto Nilsson 2014), *xerampelina*

Also: *Ascotremella faginea, Clavicornia taxophila, Cortinarius americanus, Amanita friabilis, Calyptella capula, Clavaria falcata, Clavicornia taxophila* (*Alnus* litter, belong to *Russulales*), *Clitopilus hobsonii, Conocybe apala, Cortinarius americanus* (Håkan Lindström), *Daedaleopsis confragosa, Echinoderma jacobii* (Ellen Larsson, Mikael Jeppson), *E. pseudoasperulum, Entoloma tjallingiorum, Gyrodon lividus, Hemipholiota heteroclita, Hygrocybe colemanniana, Inocybe oblectabilis*, (Ellen Larsson, Stig Jacobsson), *salicis, Leccinum duriusculum, schistophilum, Lepiota*

griseovirens, *Marasmius limosus*, *Melanotus phillippisii*, *Peziza limnaea*, *Pholiota limonella* (Kill Persson det Stig Jacobsson), *Pluteus thomsonii*, *Typhula corallina*, *Verpa conica*

49 Åssjöskogen, habitat protection area

627558;6926024

Old *Picea* at volcanic limestone. A hot spot for fungi, the best locality in Medelpad for species in *Cortinarius* subgenus *Phlegmacium*. The forest partly fallen down in severe storms.

Lactarius badiosanguineus, *deterrimus*, *femoscandicus*, *rufus*, *scrobiculatus*, *torminosus*, *tuomikoskii*, *trivialis*, *vietus*

Russula acrifolia, *adulterina*, *aeruginea*, *albonigra*, *atrourubens*, *decolorans*, *delica*, *favrei*, *firmula*, *integra*, *leonis*, *nitida*, *nauseosa*, *olivascens*, *olivobrunnea*, *postiana*, *queletii*, *sanguinea*, *taigarum*, *turci*, *velenovskii*, *vinosa*, *xerampelina* ss. lat.

Also: *Boletopsis leucomelanea*, *Cortinarius dalecarlicus*, *diosmus*, *caesiocinctus*, *corrosus*, *fuscoperonatus*, *napus*, *Echinoderma echinacea*, *jacobi*, *Hygrophorus persicolor*, *H. subviscifer*, *Hysterangium coriaceum*, *Lepista irina*, *Psatyrella hirta*

Comment: According to Juhani Ruosalainen and Jukka Vauras *Russula integra* is a southern species in Finland and Sweden and is replaced in the north of *Russula integriformis*. At Swedish Dyntaxa *R. integra* is very common south of Dalälven but also dots in northern Sweden. *R. integriformis* has only 3 finds in Medelpad and 3 dots in Jämtland, one dot in Uppland and one find in western Sweden. The spores of *R. integriformis* are smaller than of *R. integra*. *R. integra* also has isolated, high, pointed warts. *Russula integriformis* is described by Mauro Sarnari who collected the species in moist *Betula* forest at Jämtland, Oviken parish, Borgen, 2/9 1997 (Sarnari). Also found by Mauro Sarnari at Medelpad, Lombäcken, 1997 (Sarnari). Jukka Vauras collected *R. integriformis* 30/8 2001 at Jämtland, Brunflo parish, Österböle in herbich spruce dominated forest (Vauras 17519). Hans Marklund found *R. integriformis* 1997 together with Sarnari at Ångermanland, Hemsön, Kallsjöbäcken (HN 317–97).

Tuna parish

50 Torkarlsberget

69171;15637

The home forest of Siw Muskos. *Betula* park, also forest with *Larix*, *Picea*, *Pinus*. Type locality of *Hebeloma monticola* Vesterholt collected by Siw Muskos.

Lactarius deterrimus, flexuosus, fuliginosus, lacunarum, glyciosmus, hysginus, lacunarum, necator, porninsis, rufus, scrobiculatus, spinosulus, theiogalus, torminosus torminosus, trivialis, vietus

Russula adusta, aeruginea, aquosa, antillaris in ed., aquosa, atroglauca, atrorubens, aurantioflammans, chloroides var, trachyspora, clavipes, cremeoavellanea, decolorans, favrei, firmula, foetens, gracillima, intermedia, lutea, olivascens, olivina, pelargonica, velenovskyi, versicolor, vesca, vinosa, violaceoincarnata, xerampelina coll.

Also: *Clitocybe squamulosa, Cortinarius malicorius, septentrionalis, Inocybe obscurobadia, Suillus clintonianus, Thelephora palmata, Tricholoma psammopus*

Comment: In 2001 Margareta Byström and Siw Muskos led an excursion to Torkarlsberget near the city of Sundsvall. The area around Sundsvall had in mid august 2001 received 146 mm rain under a single day! Normally the area get about 70 mm under all august. *Russula violaceoincarnata* from Torkarlsberget was determined by Juhani Ruotsalainen and is described from Greenland by Knudsen and Borgen. Our first finding of *R. violaceoincarnata* by Ilkka Kytövuori and Hjärdis Lundmark at Borgsjö cemetery. According to Juhani *violaceoincarnata* is a common species below *Betula* in Finland and Sweden. Ruben Walley deposited part of the collection from Torkarlsberget in Gent.

A Danish group of 8 mycologists looked for fungi at Torkarlsberget 24.8.1986 together with Siw Muskos. In forest with old *Larix* trees they found *Lactarius porninsis* (herb and photo Erik Rald). Another rare *Larix* species, *Suillus cavipes*, was collected in 1995 by Elisabeth Wedin at Stora Laxsjön, Ljustorp parish, Medelpad.



Staffan Åström, president of Jämtland Botanical Society, and Jan-Olof Tedebrand admires *Catathelasma imperiale* at 59 Djupdalsbäcken 12/8 2018. Photo. Håkan Sundin

Selånger parish

51 Siljeberget

613150;6923564

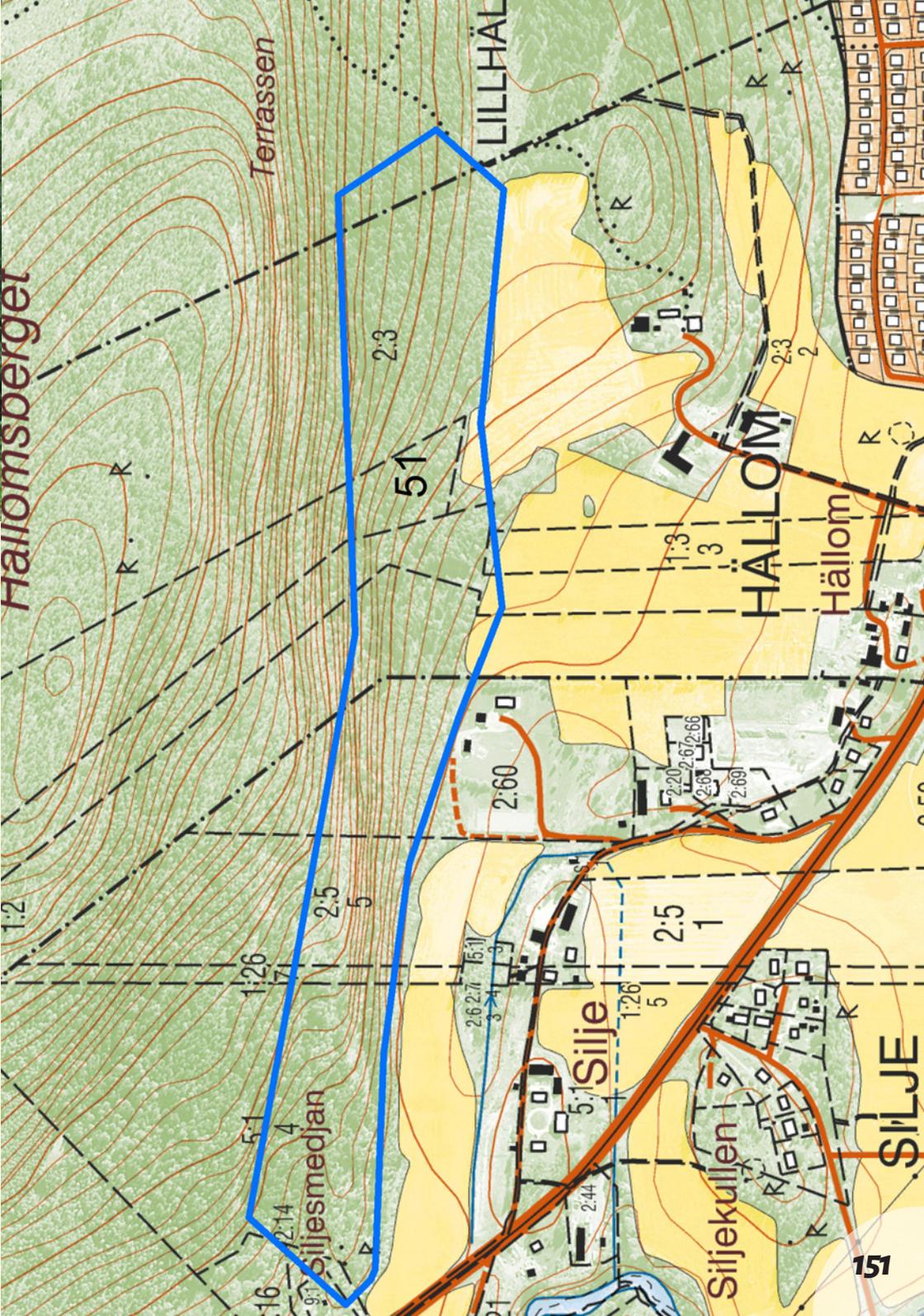
Corylus, Picea, Pinus, Tilia

Lactarius badiosanguineus, chloroides, deliciosus, deterrimus, fuliginosus, glyciosmus, mammosus, musteus, necator, pyrogalus, scrobiculatus, torminosus, uvidus

Russula adusta, aeruginea, atrorubens, aurea, azurea, clavipes, decolorans, favrei, firmula, globispora/maculata, intermedia, nauseosa, olivascens, paludosa, postiana, pumila, pyrogalus, queletii, sanguinea, turci, vesca, vitellina

Also: *Clavulina incarnata, Cortinarius aureofulvus, C. caesiolammellatus, C. metarius, Clavaria fumosa, Clavulina incarnata, Cordyceps militaris, Elaphomyces muricatus, E. papillatus, Geastrum minimum, Hydnobolites cerebriformis, Lycoperdon rupicola, Marasmius wynneae, Mycena mirata, M. picta, Otidea bufonia, Resupinatus striatulus, Sarcoscypha austriaca*

Comment: *Russula pumila* is a more southern species but common under *Alnus* in the limestone area around Alnön and also in some warm slopes like Siljeberget.



Hällomsberget

Terrassen

LILLHÄLL

HÄLLOM

Hällom

Silje

Siijesmedjan

Siijekullen

SILJE

1:50,000

151



Henri Romagnesi, Rolf Lidberg, Siw Muskos, Carina Eriksson (Jutbo) outside St Olofs inn 1982.
Photo: Hjördis Lundmark.

Timrå parish

52 Indalsälven delta

6933143;1626441

Alnus, Betula, Picea, Salix

Lactarius deterrimus, glycosmus, necator, pubescens, theiogalus, torminosus, trivialis, vietus

Russula aeruginea, claroflava, depallens, pubescens, queletii

Also: *Cortinarius cremeolaniger, septentrionalis, Antrodiella niemelae, Daedaleopsis confragosa, Daldinia petriniae, Deconia crobula, Flammulina elastica, Graddonina coracina, Leptosporomyces septentrionalis, Marasmius setosus, limosus, setosus, siccus, wynneae, Mycena flaccescens, Pholiota subochracea, Ramaria eomorpha, Rhodocybe parilis, Tectella patellaris, Trametes versicolor, Typhula gyrans, Verpa bohemica*

Liden parish

53 Sundsjöåsen nature reserve

6946977;595910

Betula, Picea, Pinus, Populus, Salix in moist river slopes of river Indalsälven with *Aconitum septentrionale*. Big aspens. Per Sander led a group to Sundsjöåsen 13/9 2014, they found many rare fungi like *Cortinarius murinascens*, *C. roseoarmillatus*, *C. talimultiformis*, *Gymnopilus bellulus*, *Gymnopus terginus*, *Hemimycena nitriolens*. Necessary to have guide from the County Board because of locked forest road in to the reserve.

Lactarius aurantiacus, *aspideus*, *deterimus*, *flavopalustris*, *fuliginosus*, *glyciosmus*, *helvus*, *hysginus*, *lacunarum*, *lilacinus*, *necator*, *omhaliformis*, *rufus*, *theiogalus*, *torminosus*, *trivialis*, *vietus*, *zonariodes*

Russula aeruginea, *atrorubens*, *claroflava*, *claroflave*, *decolorans*, *pallescens*, *paludosa*, *postiana*, *pubescens*, *rhodopoda*, *vinosa*

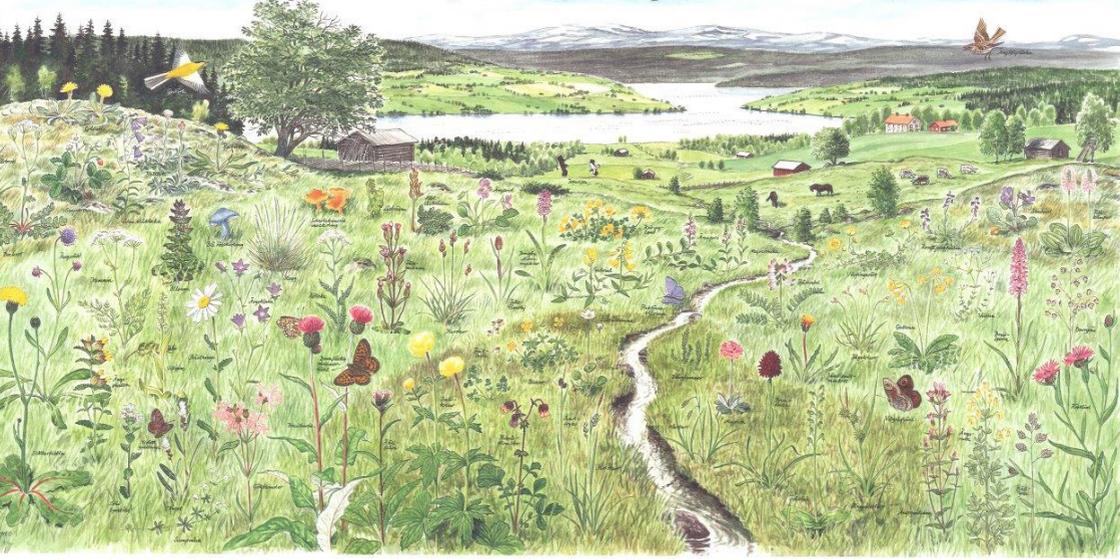
Also: *Boidinia furfuracea*, *Cortinarius crassus*, *C. harcynicus*, *imbutus*, *murinascens*, *roseoarmillatus*, *rosargutus*, *rusticus*, *talimultiformis*, *Crepidotus suberrucisporus*, *Dendrocorticium polygonoides*, *Echinoderma echinacea*, *Entoloma placidum*, *Gymnopilus bellulus*, *Gymnopus terginus*, *Hemimycena nitriolens*, *Hymenoscyphus albopunctus*, *Junghuhnia collabens* *Marasmius siccus*, *Melanoleuca excissa*, *Ramaria corrugata*, *eumorpha*, *Typhula olivascens* (on *Mattheuccia*), *Uncinula adunca*

Comment: *Russula pallescens* is closely related to *Russula farinipes*, a more southern species in deciduous forest. *R. pallescens* was described by Karsten in Finland and is rare, mostly under *Picea*, from the bothnian coast in Medelpad to the alpine tree border in Härjedalen and Jämtland. Also in alpine areas with *Betula nana* and dwarf *Salix*. Tor Erik Brandrud and Birgitta Wasstorp found *R. pallescens* at Mount Välliste, Jämtland in 1983. Jukka Vauras collected *R. pallescens* at Parteboda, Borgsjö during *Russula* workshop 2001 (TURA).

Russula pubescens is common in alpine areas with mountain birch in Härjedalen and Jämtland but also rather common with *Betula* down to the bothnian coast.



Ångerna och hagens växter i Jämtlands län



“Fagert är landet som blev vår lott och arvedel”. Painting by Nils Forshed showing the old landscape in the province of Jämtland.

Province of Jämtland

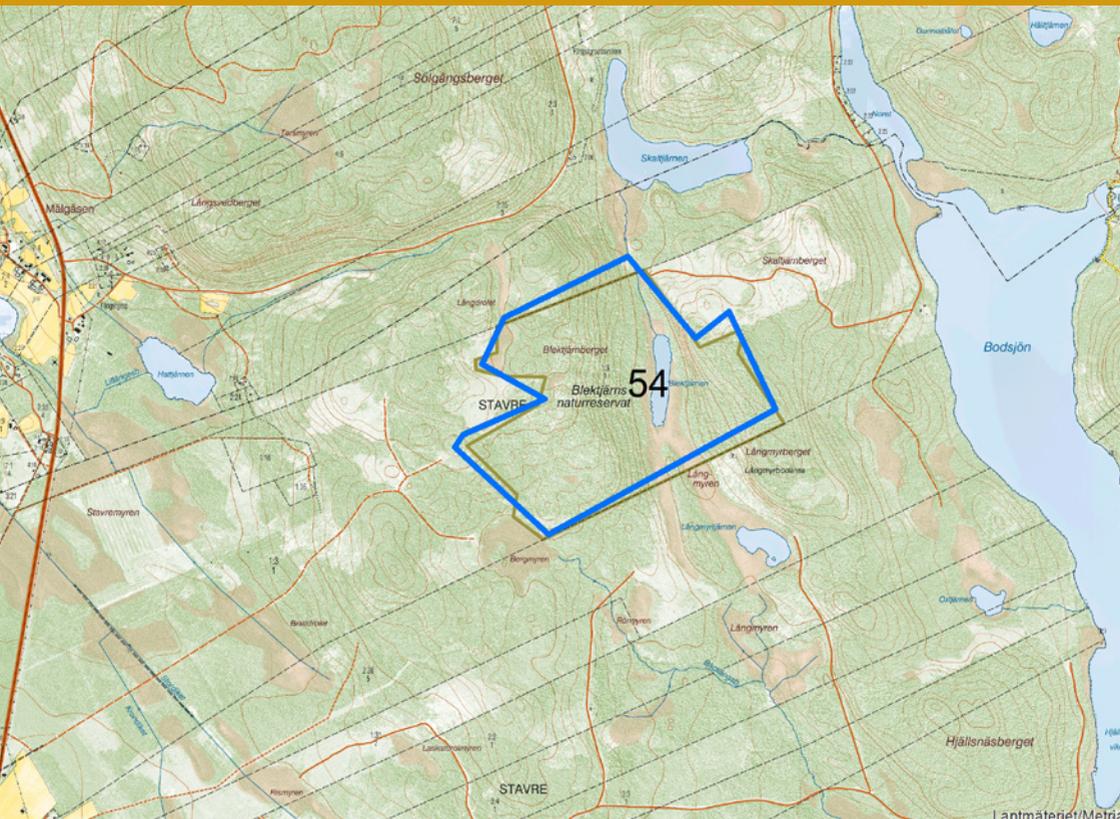
Bengt Petterson made at pages 154–192 in excursion guide 2016 detailed maps and descriptions in Swedish of many localities in Jämtland: http://www.myko.se/wp-content/uploads/2016/06/Utflyktsguide_2016_korrektur_5.pdf

The province of Jämtland has the largest area with limestone bedrock in Sweden and the largest population in Europe of the beautiful and magnificent orchid *Cypripedium calceolus*. Here we find many rare, lime demanding ectomycorrhizal fungi in *Picea* forests with *Hepatica nobilis* and the moss *Rythidiadelphus triquetrus*. But the investigation of mykorrhiza species at the limestone plate in Jämtland have just started. Holotype for the new species *Tricholoma bryogenum* is from mossy forest type in Brunflo parish, collected during *Lactarius* workshop in Borgsjö 1997. The Nordic Mycological Congress 1982 took place at Birka college for adult education near Östersund. Andersön was visited by steamship. As often dry wheather and few mushroom findings around the city of Östersund. A visit 100 kilometers to the west and to alpine, more rainy areas as Mount



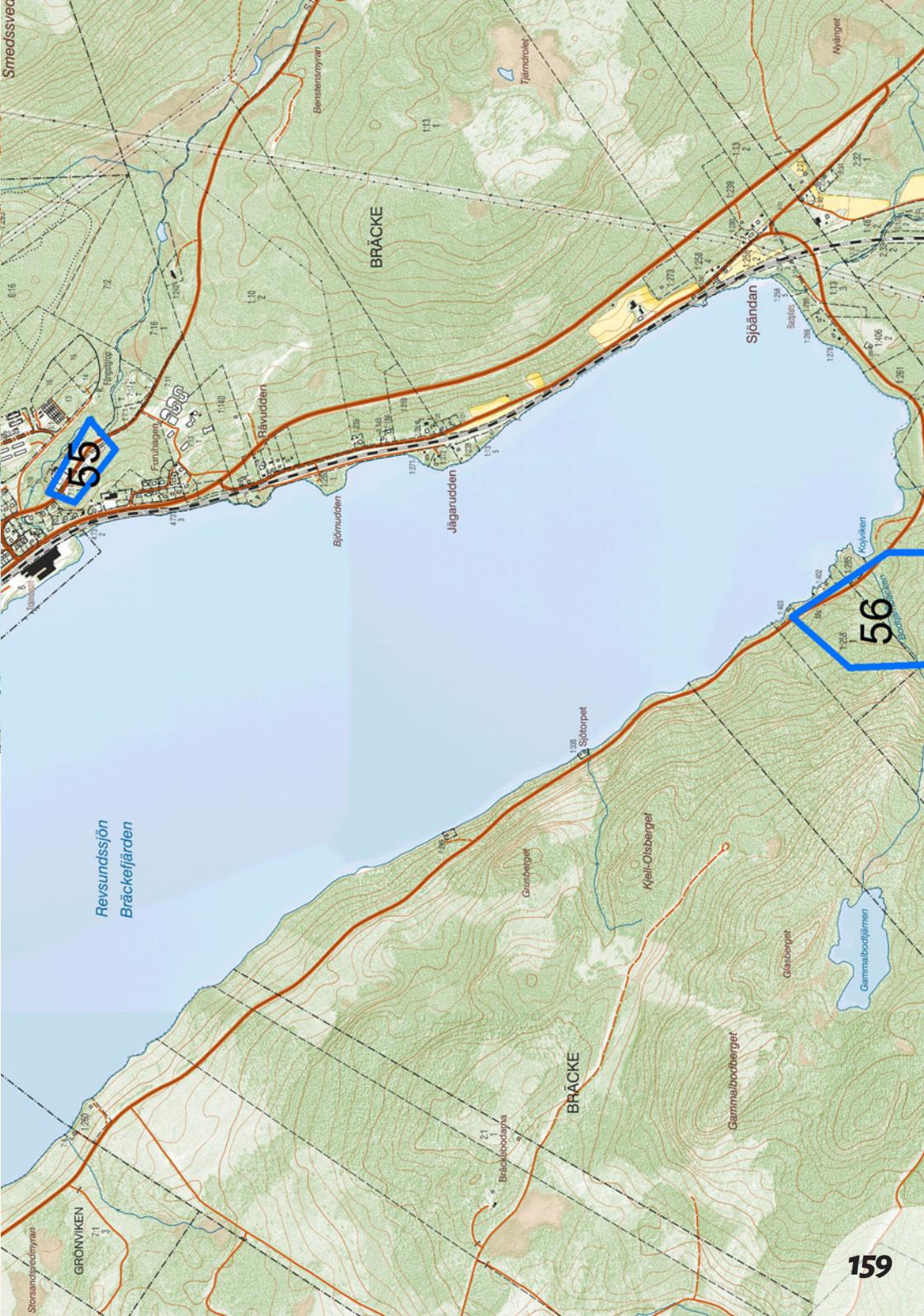
Cypripedium calceolus.
Painting by Rolf Lidberg





Välliste gave more result with *Lactarius citriolens*, *L. salicis-herbaceae*, *L. salicis-reticulatae*, *Russula font-queri*, *postiana*.

In 1984 Lars Lundberg and his friends in Östersunds Mykologiska Förening (ÖMF) arranged the Swedish mycological week at Edsåsdalen, ten swedish miles west of Östersund with Stig Jacobsson and Svengunnar Ryman as leaders. The fine mushroom forests at Sällsjö village were also visited. ÖMF celebrated their first ten years in 1987 by inviting among others Håkan Lindström and Hans Marklund to talk about *Cortinarius*. During three days *Russula* was also studied with Herbert Kaufmann as leader with many interesting findings like *R. heterophylla* and *R. parazurea*. *R. globispora* was common under birch in the parks of Östersund. Perhaps Lars Lundberg can join us during excursion to Storvålen or Tysjöarna if the parks in central Östersund are empty of mushrooms.



55

56

Revsundssjön
Bräckefjärden

Bräcke parish

54 Blektjärn nature reserve

1477815;6970635

Picea, *Pinus* forest, moist areas with *Cypripedium calceolus*, old aspen. Bengt Petterson has made a map and description in page 168 in former guide: http://www.myko.se/wp-content/uploads/2016/06/Utflyktsguide_2016_korrektur_5.pdf

55 Bräcke cemetery

6959260;1480480

Park with old *Pinus*.

Lactarius deliciosus, *pubescens*

Russula acrifolia, *adusta*, *cessans*, *densifolia*, *gracillima*, *roseipes*, *sanguinea*

| Also: *Hygrocybe helobia*, *Inocybe melanopus*, *Tricholoma scalpturatum*

56 Bodtjärnsbäcken

6956317;1480368

Brook ravine in north facing slope towards the lake Revsundssjön. *Alnus*, *Betula*, *Picea*, *Salix*. Plants like *Moneses uniflora* and *Cicerbita alpina*. Old *Picea* forest around the ravine.

Lactarius aquizonatus, *badiosanguineus*, *deterrimus*, *fuliginosus*, *glyciosmus*, *leonis*

lilacinus, *mammosus*, *pubescens*, *representaneus*, *rufus*, *scoticus*, *scrobiculatus*, *torminosulus*, *torminosus*, *trivialis*, *tuomikoski*, *uvidus*, *vietus*.





Lisbeth Kagardt, president of Sundsvall Mycological Society 1994-2009. Photo: Hjördis Lundmark

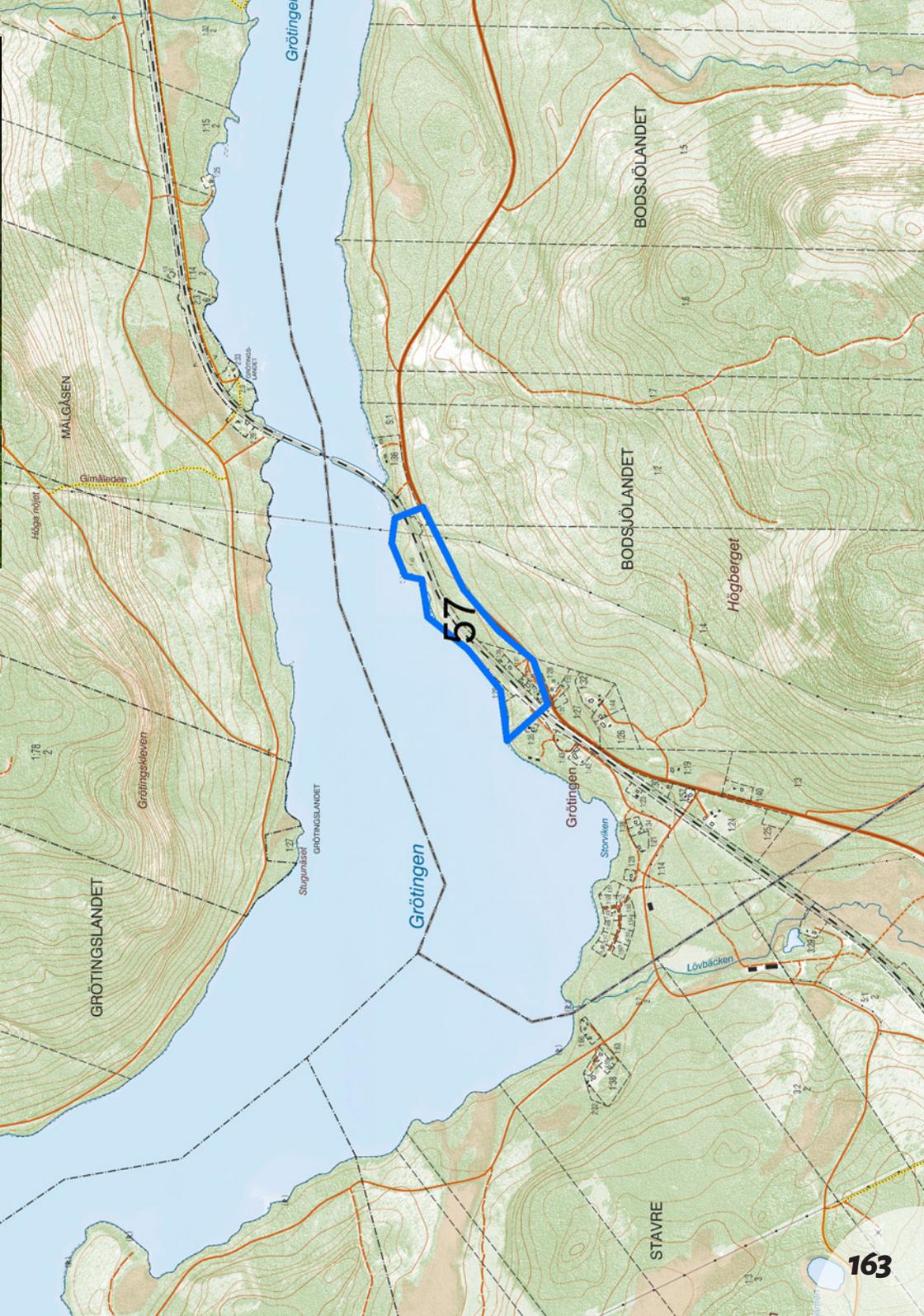
Russula consobrina, claroflava, decolorans, delica, depallens, favrei, gracillima, griseascens, olivaceoviolascens, olivina, paludosa, puellaris, vinosa

Also: *Collybia impudica, Cortinarius claricolor, cupreorufus, diosmus, fervidus, malicorius, percomis coll., pluvius, sanguineus, tabularis, venustus, Collybia pudica, Lepiota castanea, Tricholoma sulphureum*

Comment: During Lactarius workshop 1–5/9 1997 the Borgsjö valley was nearly empty of fungi after an extremely dry and hot summer. But in Jämtland more rain had fallen. A group visited Bodtjärnsbäcken and Sidsjö 4/9. Ilkka Kytövuori, Maria Teresa Basso and others found 19 species of Lactarius at Bodtjärnsbäcken! Down in the ravine big groups of *Lactarius lilacinus* under *Alnus*!

57 Grötingen

Mostly *Betula* forest. Jacob Heilmann Clausen collected *Lactarius resimus* here 5.9.1997, see photo at page 117 in the book "The genus *Lactarius*, Fungi of Northern Europe, Vol. 2" (1998).





Review of today's fungus findings.
Birgitta Wasstorp make notes.
Photo: Hjärdöis Lundmark





Bengt Pettersson has been our excellent guide to fungus hot spots in Jämtland during many workshops in Borgsjö. Photo: Hjärdís Lundmark

Lactarius aquizonatus, necator, resimus, torminosus

Russula claroflava, gracillima, lutea, mustelina, versicolor

Also: *Clitocybe strigosa, Cortinarius bivelus, porphyropus, septentrionalis, subbalaustinus, Tricholoma scalpturatum*

Comment: Håkan Lindström lead a group o Grötingen during the *Lactarius* workshop 1997 (Ilkka Kytövuori, Nils Lundqvist, Kjell Olofsson, Jacob Heilmann-Clausen, Doris and Peter Laber) to Grötingen and also to a moist forest along Gimån, page 23 and 25 in the report. They found at Grötingen the brown, mild *Russula mustelina*, a southern species, rare at inner parts of north Sweden, more common along the bothnian coast in Medelpad. *Russula mustelina* was found by Carina Eriksson and Henri Romagnesi at calcareous soil at along Skarpbäcken, Granboda village in Borgsjö 20/8 1983, the only finding of *R. mustelina* in Borgsjö parish. Herbert Kaufmann includes photo and description of *mustelina* from Sundsvall, Östtjärn 1982 in his article about section *Heterophyllae* (Svensk Mykologisk Tidskrift 28 (3): 21–69, 2007).

The german mycologist Erhard Ludwig is now preparing a book about *Lactarius* and *Russula*. He want part of a cap of a dried specimen of *L. resimus* in order to make microscopical drawings. Good if we can help our friend Erhard!

Brunflo parish

58 Slåtthornet nature reserve

6994100;1454430

Old coniferous forest near highway E 14 about five km southeast of Brunflo village, earlier grazed with nice paths. *Actaea spicata*, *Cypripedium calceolus*, *Cystopteris montana*, *Daphne mezereum*. Visited only once by mycologists during Borgsjö workshop in 2003

Lactarius deterrimus, *trivialis*, *zonarioides*

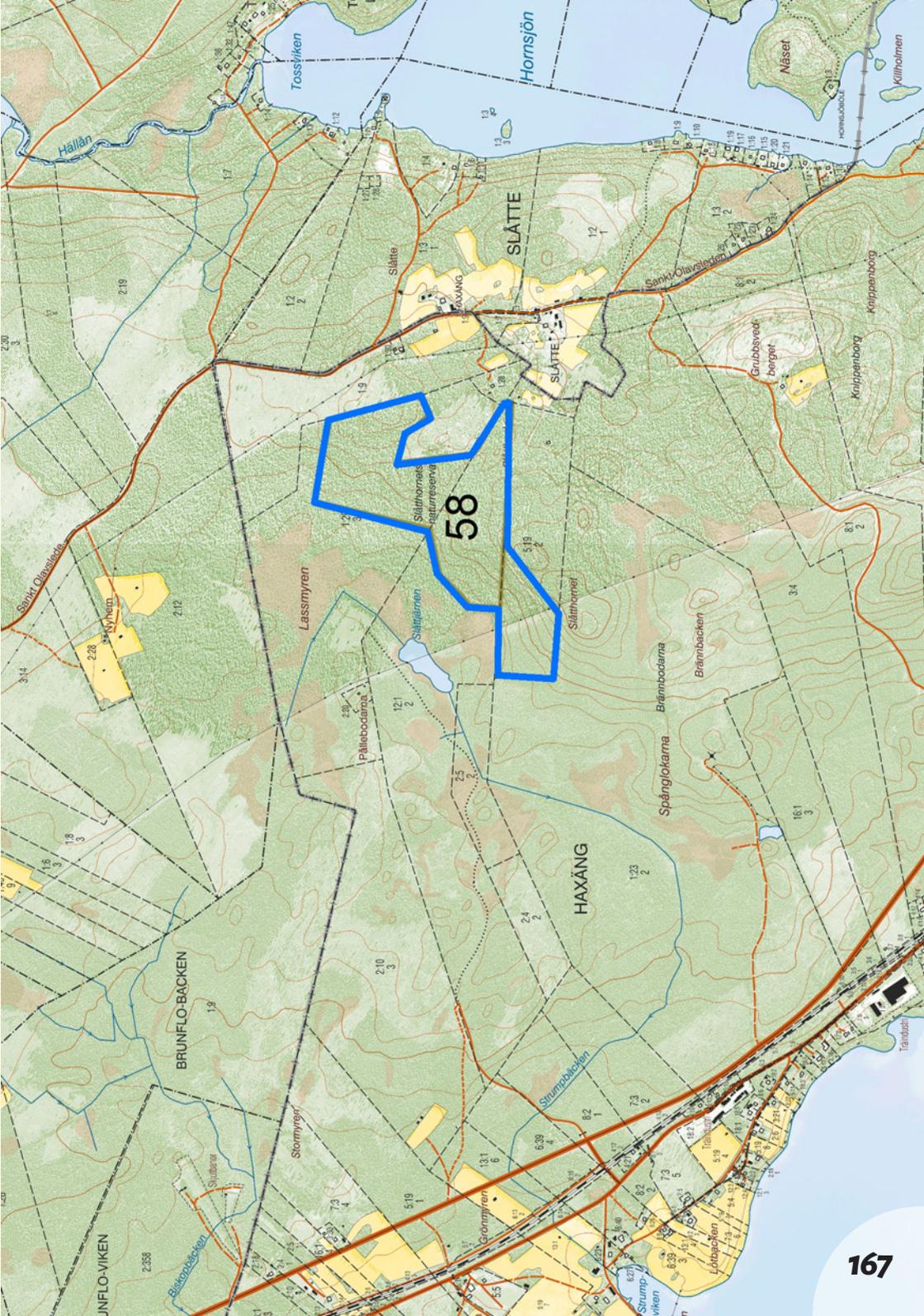
Russula adusta, *acrifolia*, *aurea*, *atrorubens*, *betularum*, *chloroides* (Herbert Kaufmann 10027, S), *clavipes*, *delica* (Herbert Kaufmann 10026, S), *firmula*, *foetens*, *fragilis*, *gracillima*, *heterophylla* (HK), *integra*, *intermedia*, *medullata*, *olivascens*, *olivobrunnea*, *parazaurea*, *queletii*, *vinososordida*, *Tricholoma fucatum*

Also: *Agaricus sylvaticus*, *Albatrellus subrubescens*, *Chrysomphalina chrysophylla*, *Cortinarius malicorius*, *mussivus*, *percomis*, *pini*, *russus*, *sanguineus*, *venustus*, *Hydnellum auratile*, *Hygrophorus atramentosus*, *Phellinus populicola*, *Ramaria eosanguineam*, *flava sensu lato*, *gracilis*, *karstenii*, *magnipes*, *rubrievanescens*, *testaceoflava*, *Trichoderma nybergianum*

Comment: Interesting findings of species in *Ramaria* and *Russula* during the only visit to Slåtthornet in 2003, both genera are now object for exciting research with DNA-tests and many new data.

Russula chloroides and *R. delica* are close, *chloroides* have close lamellas with greenish tint and is more common in Sweden than *delica*. A collection from Granbodåsen in 1983 was determined by Henri Romagnesi as *chloroides* and collections from Sällsjö in Jämtland

1983 also got the name *chloroides* by Romagnesi. We also see *Russula chloroides* at alpine heaths with *Dryas octopetala* and *Betula nana* for example at Hamrafjället, Mittåklappen and Torkilsstöten in Härjedalen together with alpine *Russulas* like *Russula dryadicola*.



Hällesjö parish

59 Djupdalsbäcken

1506825;6961655

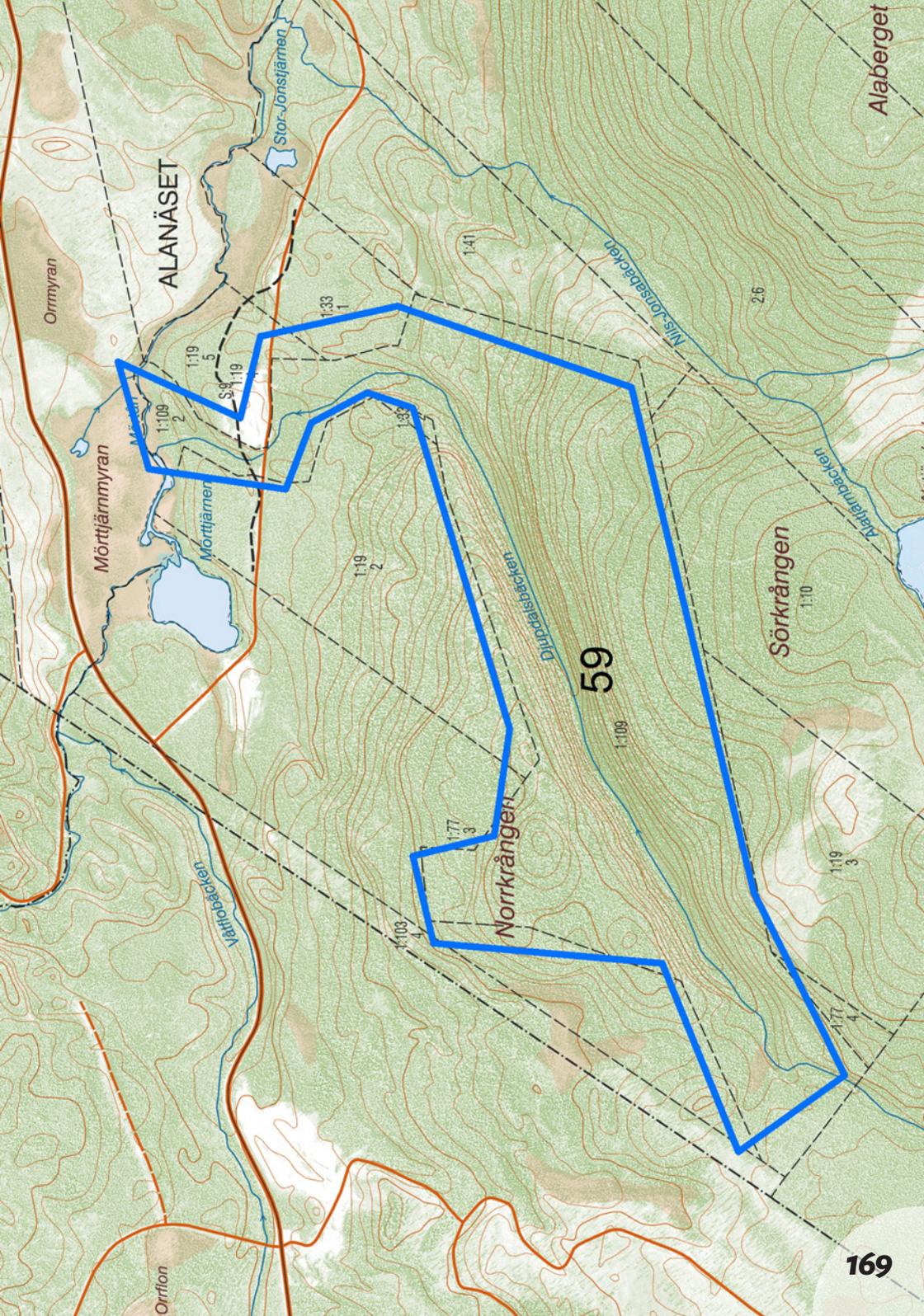
Fascinating deep, moist 1.5 km long ravine with herbrich virgin forest. *Picea* forest with *Alnus*, *Betula*, *Salix*. Vascular plants as *Aconitum septentrionale*, *Cystopteris montana*, *Daphne mezereum*, *Epipogium aphyllum*, *Hepatica nobilis*. *Poa remota*, *Ranunculus lapponicus*, *Viola selkirkii*. *Haploporus odoratus* at 12 big *Salix caprea* spread a smell of perfume in the ravine. Thousands of *Diplazium sibiricum*, a rare eastern fern from the russian taiga grows along the brook.

Håkan Lindström was guide to Djupdalsbäcken during Borgsjö workshop in 1999 and presented to Birgitta Gahne, Nils Lundqvist, Birgitta Wasstorp and others a theory why the eastern fern *Diplazium sibiricum* exist here: a special more continental climate down in the deep ravine. The group found in 1999 many big groups of the rare and magnificent fungi *Catathelasma imperiale* ("kejsarskivling" in Swedish) among *Diplazium*. Our guide will be Mats Dynesius, researcher in ecology and mosses at Umeå university.

Lactarius aquizonatus, *badiosanguineus* (common), *rufus*, *scrobiculatus* (common), *terminosus*, *zonarioides*

Russula olivascens (=postiana), *queletii*, *rhodopoda*, *roseipes*, *velenovskyi*

Also: *Catathelasma imperiale*, *Cortinarius agathosmus*, *fervidus*, *malicorius*, *rubellus*, *venustus*, *Hohenbuhelia mastrucata*, *Hydnellum aurantiacum*, *Hygrophorus karstenii*, *Pholiota lubrica*, *Thelephora palmata*, *Tricholoma virgatum*



ALANÄSET

Ormyran

Mörttjärnmyran

Valköbacken

Norrkrången

Sörkrången

Alaberget

Stor-Jonsjärnen

Nils-Jonsbacken

Björndalsbacken

Klätterbacken

59

Bodsjö parish

60 Sidsjö

6958192;1466138

113 a Sidsjö; Stuguberget, Pine dominated

1466215; 6958645 (600 m)

113 b Sidsjö; Smååkrarna/O/

1465700; 6958750 (500 m)

113 c Sidsjö; Smååkrarna/SO/

1465555; 6958435 (250 m)

113 d Sidsjö; Sidsjöån/N/, western part

1465410; 6958235 (250 m)

113 e Sidsjö; Sidsjöån/N/, eastern part

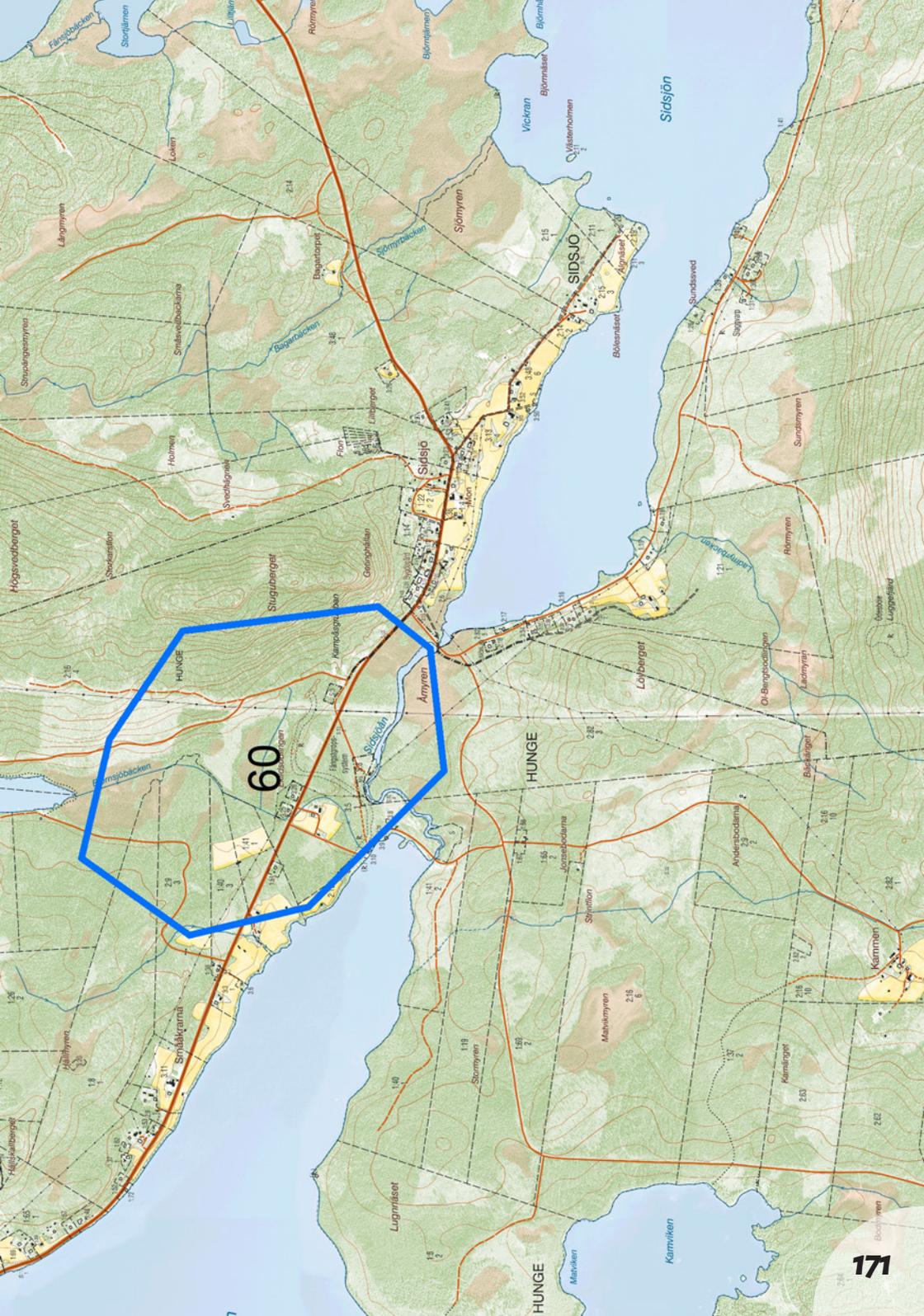
1465980; 6958260 (300 m)

We often go here because it often rains more here than down in the Borgsjö valley.

Moist *Picea* forest with *Betula*, also fen with *Cantharellus lutescens*, a popular fungus for food in Sweden. Dry *Pinus* heath and *Alnus-Salix* along the river.

Lactarius aquizonatus, auriolla, badiosanguineus, deliciosus, deterrimus, fennoscandicus, flavopalustris, fuliginosus, glyciosmus, helvus, leonis, mammosus, musteus, necator, obscuratus, olivinus, pubescens, representaneus, resimus, rufus, scoticus, scrobiculatus, theiogalus, torminosus, torminosulus, tuomikoskii, trivialis, tuomikoski, uvidus, vietus, zonarioides

Russula acrifolia, adusta, aeruginea, anthracina coll., aquosa, atrorubens, betularum, claroflava, clavipes, consobrina, decolorans, depallens, emetica, gracillima, griseocens, integriformis, nauseosa, nitida, ochroleuca, olivascens, olivobrunnea, paludosa, queletii, renidens, rhodopoda, robertii Sarnari, roseipes, sanguinea, taigarum, versicolor, vesca, vinosa, vinososordida, xerampelina ss lat.



60



Maria Teresa Basso och Rolf Lidberg, Borgsjö 1997. Photo: Hjärdís Lundmark

Also: *Agaricus semotus*, *Albatrellus syringae* (roadside), *Bankera violascens*, *Boletopsis leucomelanea*, *Cantharellus lutescens*, *Conocybe huijsmannii*, *Coprinus acuminatus*, *Cortinarius arenatus*, *aureofulvus*, *bataillei*, *leucophanes*, *flavipallens* (Balint Dima seqv.), *malicorius*, *papyzon*, *privignipallens* (Balint Dima seqv.) *rusticus*, *sanguineus*, *septentrionalis*, *solis-occasus*, *uliginosus*, *venustus*, *Hebeloma circinans*, *Inocybe malenconii*, *muricellata*, *Hypocrea nybergiana*, *Limacella guttata*, *Melanoleuca stridula*, *Rhodocybe hirneola*, *Tremiscus helvelloides*, *Tricholoma orirubens*, *squarrulosum*

Comment: The group leader Lisbeth Kagardt, Ilkka Kytövuori, Maria Teresa Basso and others found 22 species of *Lactarius* and 17 species of *Russula* at Sidsjö 4/9 1997. At visit 2016 Birgitta Wasstorp found lots of *Craterellus lutescens*, a popular eating mushroom in Sweden.



Demonstration of mushroom dyeing and exhibition at a folk museum.
Photo: Hjördis Lundmark

Revsund parish

61 Tunsved nature reserve

1463180;6982945

FUNGI SUECICI 133

Artnamn *Lactarius scoticus*

Svenskt namn _____

Landskap MPD Koordinat 69°26'00" / 15°14'00"

Församling _____

Lokal/vägbeskrivning *Get berg*

Substrat/biotop _____

Leg *HJK* Datum 2/4-97

Det _____ Conf _____

Picea, *Pinus*, also *Alnus*, *Betula*, *Populus*, *Salix*.
Cyripedium calceolus. Visited by a group during *Lactarius* workshop 1997 and also in 2010 and 2016.

Lactarius aurantiacus, *badiosanguineus*, *deterimus*, *fuliginosus*, *flexuosus*, *glyciosmus*, *pubescens*, *scrobiculatus*, *theiogalus*, *trivialis*, *uvidus*, *vietus*

Russula aurea, *cessans*, *cyanoxantha*, *olivina*, *olivobrunnea* (Herbert Kaufmann 2016), *puellaris*, *queletii*

Also: *Cortinarius blattoi*, *caesiocinctus*, *crassisporus*, *ectypus*, *fuscoperonatus*, *piceae*, *sanguineus*, *solis-occasus*, *Haploporus odoratus*, *Helvella crispa*, *Hydnellum auratile*, *Hygrophorus purpurascens*, *Hypocrea nybergiana*, *Infundibulicybe geotropa*, *Leccinum melaneum*, *Lepista densifolia*, *Ramaria botrytis*, *eosanguinea*, *karstenii*, *subtilis*, *suecica*, *testaceoflava*, *Sarcodon martioflavus*, *Tricholoma frondosae*



Öster-Andsjön

Tursvedberget

ANVIKEN

Tursved 61-turreservat

Brännängesberget

Pilgrimstad

Anvikbäck

Mickelstorpet

Hälbergs

Revsundssjön

Kyrkjuvadden

175

Frösö parish

62 Andersön nature reserve

7005351;1430418

Old *Pinus* at limestone, also *Picea*.

Lactarius deliciosus, deterrimus, scrobiculatus

Russula atroglauca, aurea, densifolia, firmula, olivina, queletii, roseipes

Also: *Albatrellus subrubescens, Cortinarius aureofulvus, aureopulverulentus, caesioarmeniacus, caesiocinctus, cupreorufus, diosmus, fuscoperonatus, mussivus, pini, pseudodiabolicus, rubrovelapes* (new for Sweden 2010), *russus, squamulopercomis* in ed., *violaceorubens, violaceomaculatus, Hydnellum auratile, Hygrophorus atramentosus, Hypocrea nybergiana, Ramaria safraniolens, Sarcodon fuligineo-violaceus, Tricholoma apium, aurantium, olivaceotinctum, Volvariella reidii*

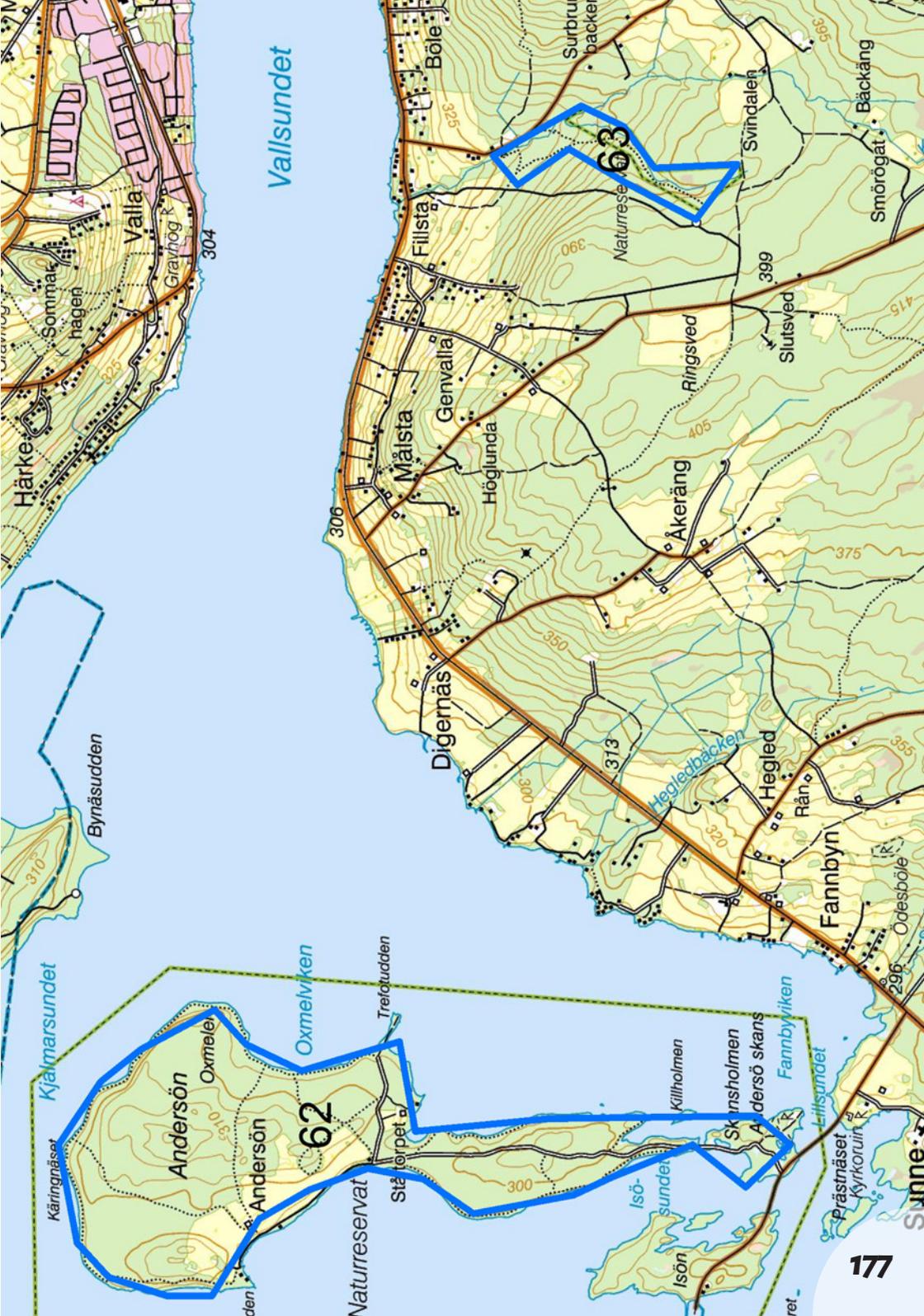
Comment: Bengt Petterson has divided Andersön nature reserve in 20 different areas, see page 156–159 in the excursion guide 2016: http://www.myko.se/wp-content/uploads/2016/06/Utflyktsguide_2016_korrektur_5.pdf

63 Fillstabäcken nature reserve

1436400; 7003950 (600 m) Fillstabäcken/V/7004525; 1436570

Lime from springs during 5000 years. The orchid *Ophrys insectifera* in july together with *Cortinarius inexpectatus*, also rare *Cortinarius* species in *Bovini* group: *anisochrous, fuscobovinaster, oulankensis. Inocybe tricolor* is found in Sweden here and at Kinnekulle in Västergötland.

Lactarius badiosanguineus, deliciosus, deterrimus, olivinus, pubescens, rufus, scrobiculatus, torminosus, zonarioides



Vallsundet

Kjalmarsundet

Oxmelviken

Isösundet

Fannbyviken

Andersön

Andersön

62

63

Härke

Valla

Gravhög

304

Digemäs

Mälsta

Genvalla

Höglunda

Hegledbacken

Hegled

Fannby

Rån

Odesböle

296

296

296

296

296

296

306

306

306

306

306

306

306

306

306

306

306

306

306

306

306

306

306

306

Surbru
backen

Naturreservat

Ringsved

Åkeräng

Slutsved

399

399

399

399

399

399

399

366

366

366

366

366

366

366

366

366

366

366

366

366

366

366

366

366

366

366

366

Svindalen

Bäckäng

Smörogat

366

366

366

366

366

366

366

366

366

366

366

310

310

310

310

310

310

310

310

310

310

310

310

310

310

310

310

310

310

310

310

375

375

375

375

375

375

375

375

375

375

375

375

375

375

375

375

375

375

375

375

405

405

405

405

405

405

405

405

405

405

405

405

405

405

405

405

405

405

405

405

496

496

496

496

496

496

496

496

496

496

496

496

496

496

496

496

496

496

496

496

519

519

519

519

519

519

519

519

519

519

519

519

519

519

519

519

519

519

519

519

566

566

566

566

566

566

566

566

566

566

566

566

566

566

566

566

566

566

566

566

596

596

596

596

596

596

596

596

596

596

596

596

596

596

596

596

596

596

596

596

636

636

636

636

636

636

636

636

636

636

636

636

636

636

636

636

636

636

636

636

666

666

666

666

666

666

666

666

666

666

666

666

666

666

666

666

666

666

666

666

696

696

696

696

696

696

696

696

696

696

696

696

696

696

696

696

696

696

696

696

726

726

726

726

726

726

726

726

726

726

726

726

726

726

726

726

726

726

726

726

756

756

756

756

756

756

756

756

756

756

756

756

756

756

756

756

756

756

756

756

786

786

786

786

786

786

786

786



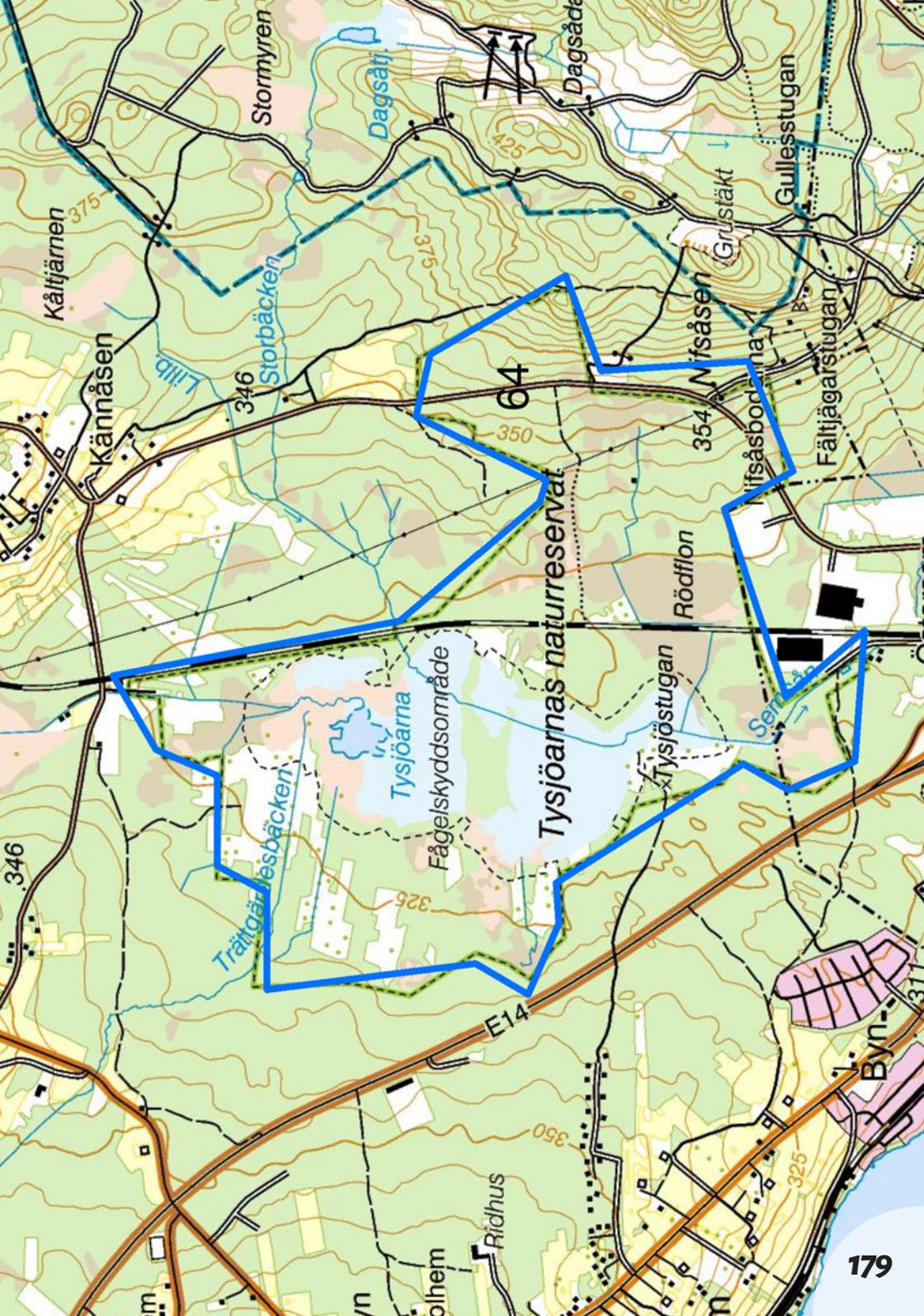
Jeanette Södermark cleans mushrooms for drying. Photo: Hjördis Lundmark

Russula acrifolia coll. (Ruben Walleyn 2001, Gent), *aeruginea*, *densifolia*, *integriformis* (herblich *Picea*-dominated forest on calcareous soil, Ruben Walleyn, Gent), *lutea*, *olivascens*, *queletii*, *roseipes*, *zonarioides*

Also: *Agaricus augustus*, *Boletopsis leucomelanea*, *Catathelasma imperial*, *Clitocybe geotropa*, *Cortinarius anisochrous*, *fuscobovinaster*, *inexpectans*, *oulankensis*, *pini*, *russus*, *Hebeloma circinans*, *monticola*, *Hygrophorus gliocyclus*, *persicolor*, *purpurascens*, *Inocybe melanopus*, *tricolor*, *Ramaria fennica*, *Sarcodon lundellii*, *Sarcosphaera coronaria*, *Tricholoma atosquamosum*, *aurantium*, *borgsjoeense*, *fucatum*, *olivaceotinctum*

Comment: Tuula Niskanen, Ilkka Kytövuori, Kare Liimatainen and Håkan Lindström described in *Mycologia* 105 (4) pp 977–993 three *Cortinarius* species in section *Bovini*: *C. anisochrous*, *fuscobovinaster*, *oulankensis*. They all appear at Fillstabäcken. Anki Suneson has found a huge fruitbody of *Boletopsis leucomelanea* under *Picea* and on lake marl, about half a meter in diameter.

Neotype from Fillstabäcken for *Tricholoma fucatum*, see Danish book about *Tricholoma* (Christensen-Heilmann-Clausen 2013, pages 96 and 209).



64 Tysjöarna nature reserve- the promised land of *Cypripedium calceolus*

14424;70142

Information from County Council: <https://www.lansstyrelsen.se/download/18.6ae610001636c9c68e574f8/1527077279012/Tysjöarna%20engelska.pdf>

Bengt Petterson has also done a detailed map with descriptions and coordinates at page 162–163 in former excursion guide: http://www.myko.se/wpcontent/uploads/2016/06/Utflyktsguide_2016_korrektur_5.pdf

Tysjöarna has the largest area with lake marl (bog lime) in Europe, area of 90 hectares and about 25 meter thick deposit with loose chalk sludge from springs in the ground. Tysjöarna is a hot spots for ectomycorrhizal fungi and vascular plants at the lime plate. The promised land of *Cypripedium calceolus*! Thousands of this magnificent orchid blossoms in groups all over the visited forest slopes in the middle of june. *Cypripedium* grows also like weeds along the Kännåsen road with *Primula farinosa* in the ditches. The most beautiful road side in Sweden! *Ophrys insectifera* and a number of 16 orchid species are found in the reserve. The popular *Cantharellus lutescens* is very common. By a visit 2016 with a group of mycologists 51 found species of *Cortinarius* were found. At Tysjöarna 1999 Siw Muskos gave elkdung to Nils Lundqvist and in the evening he determined three dung species: *Lasiobolus papillatus*, *L. macrotrichus* and *Pseudoomphophila cervaria*.

Lactarius badiusanguineus, *citriolens* (Ilkka Kytövuori 2016), *deterrimus*, *glyciosmus*, *pubescens*, *rufus*, *scrobiculatus*, *scoticus*, *scrobiculatus*, *theiogalus*, *torminosus*, *trivialis*, *vietus*, *zonarioides*

Russula adusta, *consobrina*, *decolorans*, *gracillima*, *maculata coll.*, *nauseosa*, *queletii*



Beautiful evening sky. Photo Hjördis Lundmark

Also: *Conocybe elegans*, *Cortinarius*, *flavipallens* (Balint Dima seqv.), *fuscovelatus*, *infractiflavus* (Balint Dima seqv.), *luteobrunnescens*, *oulankensis*, *violaceorubens*, *viridivelatus*, *Entoloma korhonenii*, *Haploporus odoratus*, *Melanoleuca cognata*, *grammopodia*, *stridula*, *Tricholoma argyraceum*, *scalpturatum*

Comment: According to Funga Nordica *Russula maculata* is a southern species. Here in mid and northern Sweden we have instead *R. globispora* under *Betula*, many findings in the parks of Östersund. *R. maculata* has redish cap while *globispora* is faint yellow. The spores are also different. Mieke Verbeken and others now have studied and revised *maculata* group. We will hear exciting latest news during *Russulales* workshop 2018 in Borgsjö! *Lactarius citriolens* is bound to *Betula* at calcareous soil and was found by Ilkka Kytövuori at Tysjöarna in 2016. Also found under mountain birch in western Härjedalen, Jämtland and Lappland.



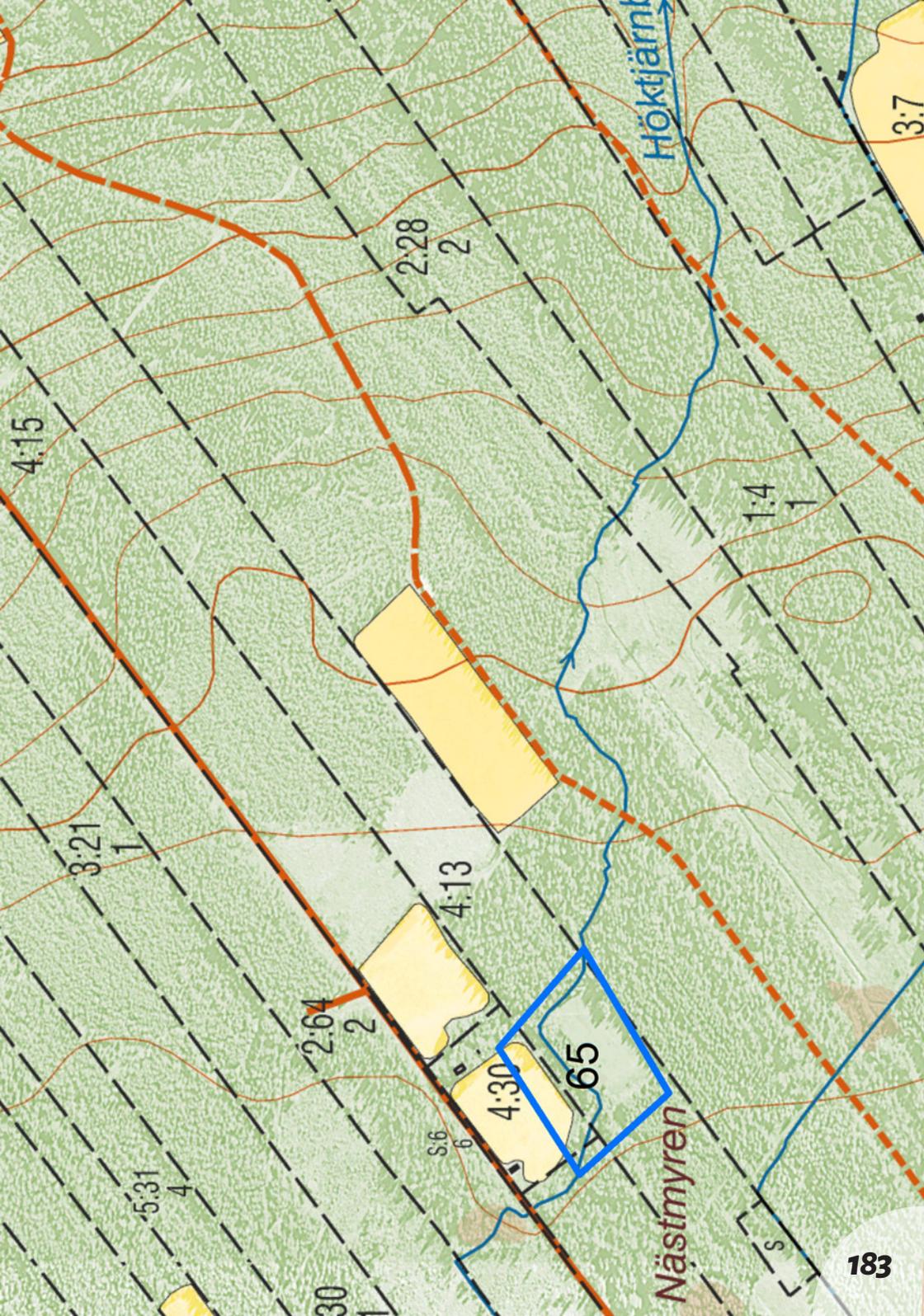
Mountain pasture (fäbod in Swedish) in Jämtland. Photo: Ninni Nordlund

Marieby parish

65 Nästmyren nature reserve, Fugelsta, meadow

6999816;1444536

Magnificent meadow with *Nigritella nigra* and *Taraxacum crocodes*. Rich grassland funga with *Entoloma caesiocinctum*, *clandestinum*, *Stropharia inuncta*. *Picea* wood at limestone around the meadow with *Cortinarius diosmus*, *Lactarius vietus*. In Fugelsta village also big, old, limestone quarry down by Storsjön with *Picea* and *Salix* in and around the quarry. No mycological investigation.



Höktjärnen

3:7

2:28

4:15

1:4

3:21

4:13

2:64

4:30

5:31

65

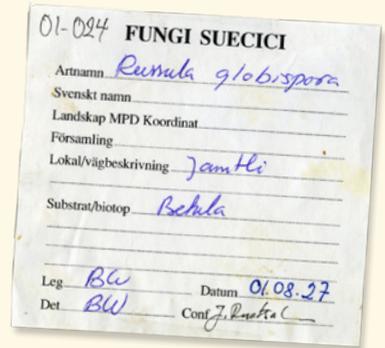
Nästmyren

183

66 Parks on limestone in the city of Östersund and on Frösö island

Old parks often have a rich *Russula* funga. Lennart Söderberg found 41 *Russula* species in Ramlösa park, Helsingborg, Skåne county in south Sweden (Jordstjärnan 1999, 20: 6–19).

If rain has fallen and fungal fruitbodies appear we will look for *Lactarius* and *Russula* species in the parks on limestone in central Östersund and at Frösön. *Inocybe erubescens* is found at a cemetery in the centre of Östersund. Jan Vesterholt found in 1997 *Entoloma violaceozonatum* in park outside the hospital in centre of Östersund, the only finding in Sweden. Lars Lundberg, founded Östersunds Mykologiska Förening 40 years ago. Lars lives in central Östersund, is now 96 years of age and got in 2017 the golden knife, the most prestigious prize a Swedish mycologist can receive. Perhaps Lars can join us in the parks of Östersund in company with Karin Kellström, today president of ÖMF. We pray for much rain resulting in fruitbodies of exciting *Russula* species in the parks of Östersund!



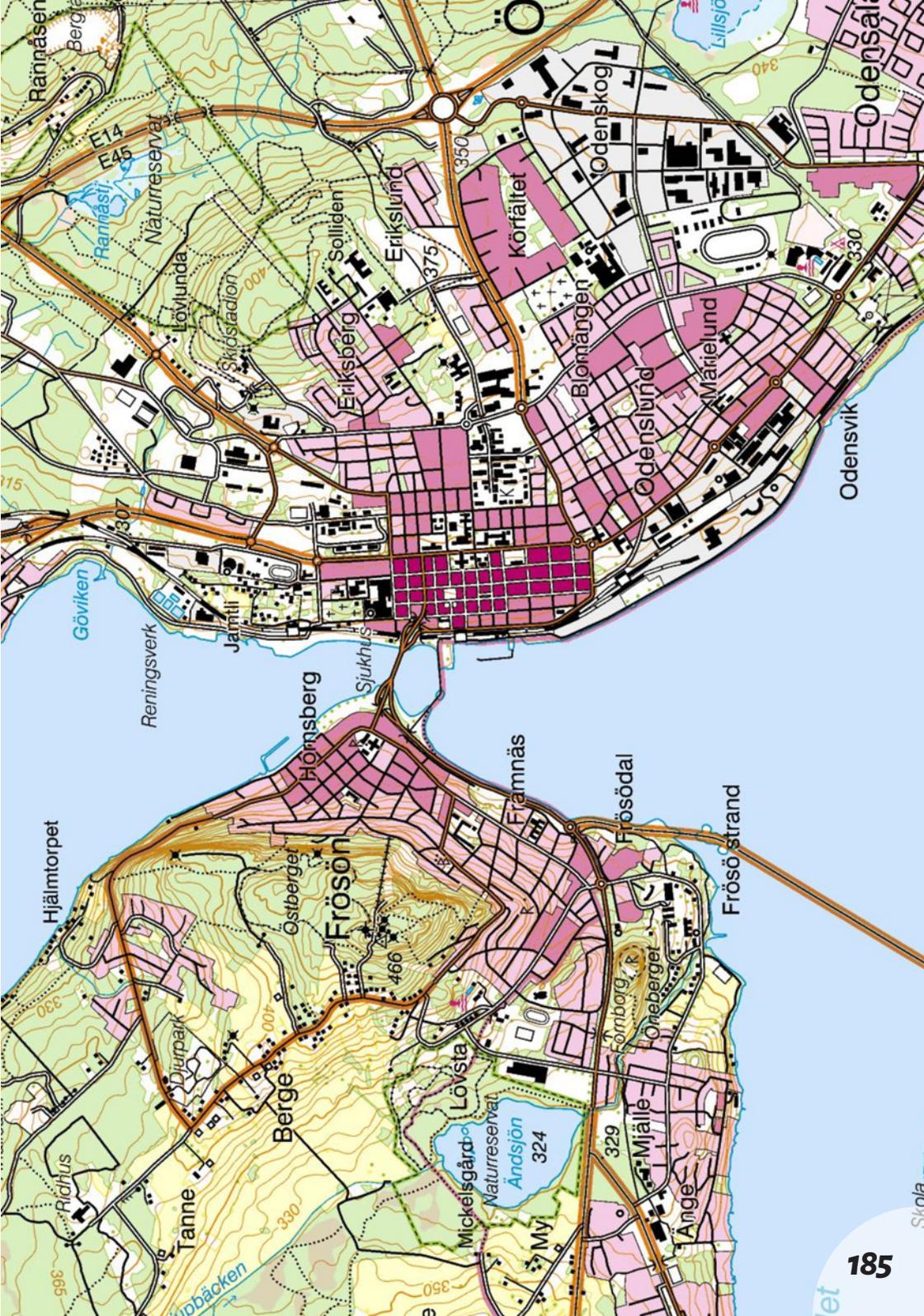
Betula park at the museum Jämtli

Birgitta Wasstorp and others found 2001 *Russula aurantioflammans*, *depallens*, *globispora coll.*

Björkbackaparken

Karin Kellström, president of Jämtland Mycological Society has studied Lars Lundbergs note books. Lars Lundberg and Stig Jacobsson visited 30.8.1990 Björkbackaparken in eastern part of Östersund centre with *Betula*, *Picea*, *Pinus* and found: *Amanita flavescens*, *muscaria*, *Conocybe lacteal*, *Inocybe rimosa*, *Marasmius oreades*, *Melanophyllum grammopodia*, *Russula aeruginea*, *depallens*, *farinipes*, *Tricholoma album*

Russula aurea





Russula aurea. Photo: Lars Lundberg



Parks at Frösövallen and Frösö Strand

Ingrid and Lars Lundberg participated in the *Russula* workshop 2001. They guided to Frösövallen and Frösö strand 27/8 2001, mostly *Betula* but also *Picea* and *Pinus*. In the group also Håkan Lindström, Juhani Ruotsalainen, Jukka Vauras, Ruben Walley, Birgitta Wasstorp. They found and determined following *Russulas* in the parks of Frösövallen and Frösö Strand:

FUNGI SUECICI	
Artnamn	<i>Russula aurantioflammas</i>
Svenskt namn	
Landskap MPD Koordinat	
Församling	
Lokal/vägbeskrivning	Jämtli
Substrat/biotop	Betula
Leg	BW
Det	BW
Datum	01.08.27
Conf	

Russula aurantioflammas, aurea, cessans, cremeoavellanea, depallens, elaeodes, font-queri, globispora, integriformis, medullata, nauseosa, olivascens, pelargonia, puellaris, queletii, sapinea

Comment: Håkan Lindström also collected *Russula sapinea* at Frösövallen in august 2005 and have deposited the collection in herbarium UME. Dyntaxa has only 3 dots in Sweden: <http://artfakta.artdatabanken.se/taxon/248739>

Herbert Kaufmann in mail 23.6.2018: "I have 3 collections of *R. sapinea* in my herbarium *R. sapinea* HK870809, Jämtland, Andersön P-plats och stuga, 1987–08–09 and HK06027 Härjedalen, Hamrafället 2006–08–19, first determined as *R. puellaris* and HK15008a, Lycksele Lappmark, chapel Voitajaur, grass under *Betula* and *Picea*, 2015–08–19."

Herbert Kaufmann write about "Kremlefynd i Hemavans fjälltrakter-en rapport från Mykologiveckan 2015" in Svensk Mykologisk Tidskrift 37 (2) 2016, p. 13–28. He describe in detail with excellent photos the following alpine-northern *Russula* species: *heterochroa, laccata, nana, nuoljae, pubescens, renidens, rivulicola, salecticola, sapinea, subrubens, vinososordida, violaceo-incarnata*. Some of this *Russulas* will hopefully be found during *Russulales* workshop in Borgsjö 2018 because many alpine *Russula* species also occur at meadows or below *Betula* and *Salix* in the Borgsjö area.



Maj-Britt Sâthe and Lars Lundberg at fungi exhibition 2004 in the city of Östersund.
Photo: Birgit Ström

Park and forest at Sommarhagen

The famous composer and nature friend Wilhelm Peterson-Berger (1867–1942) lived here with wonderful view at the high alpine mountains. Sommarhagen is one of the most genuine and beloved Swedish places.

Lactarius zonarioides

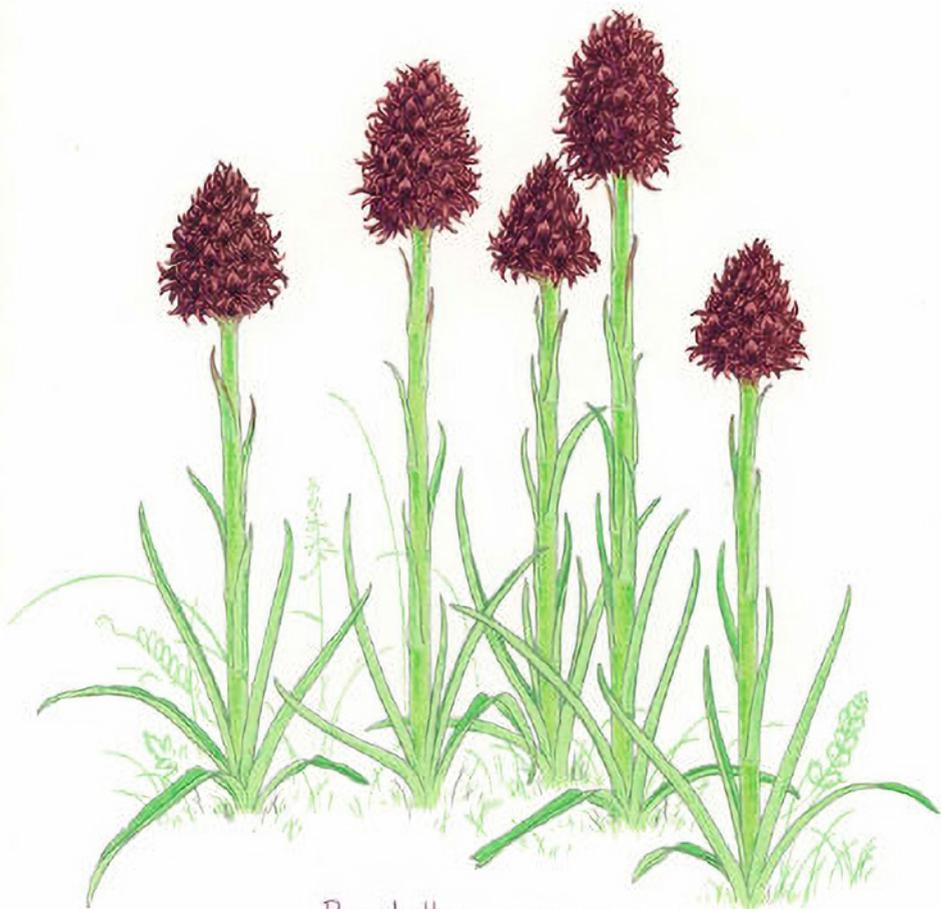
Russula aurea, firmula, foetens, pelargonia, fulvograminea

Also: *Tricholoma fucatum* (Lars Lundberg)

Comment: *Russula fulvograminea* Ruotsalainen, Sarnari & Vauras, *Populus-Betula*, leg G. Le Jeune, det. Juhani Ruotsalainen, First record for Sweden, colours as in typus (Riv. Micol. 1997:99), sporee 1V cd, Ruben Walley, Gent

Rannåsen north of Östersund

Håkan Lindström visited Rannåsen several times in 2006 at the request of the County Council in Östersund, once together with Lars Lundberg, and found among other things: *Lactarius badiosanguineus, deliciosus, zonarioides, Russula olivascens, olivobrunnea, roseipes, Tricholoma aurantium*.



Brunkullan
Nigritella nigra (L.) Rchb. fil.

HC II/IX

Rolf Lidberg-74.

The orchid *Nigritella nigra*. Painting by Rolf Lidberg

Lockne parish

67 Storvålen

1446600;6991200

a Meadow

1446600; 6991200 (150 m)

b Forest

1446860; 6991850 (300 m)

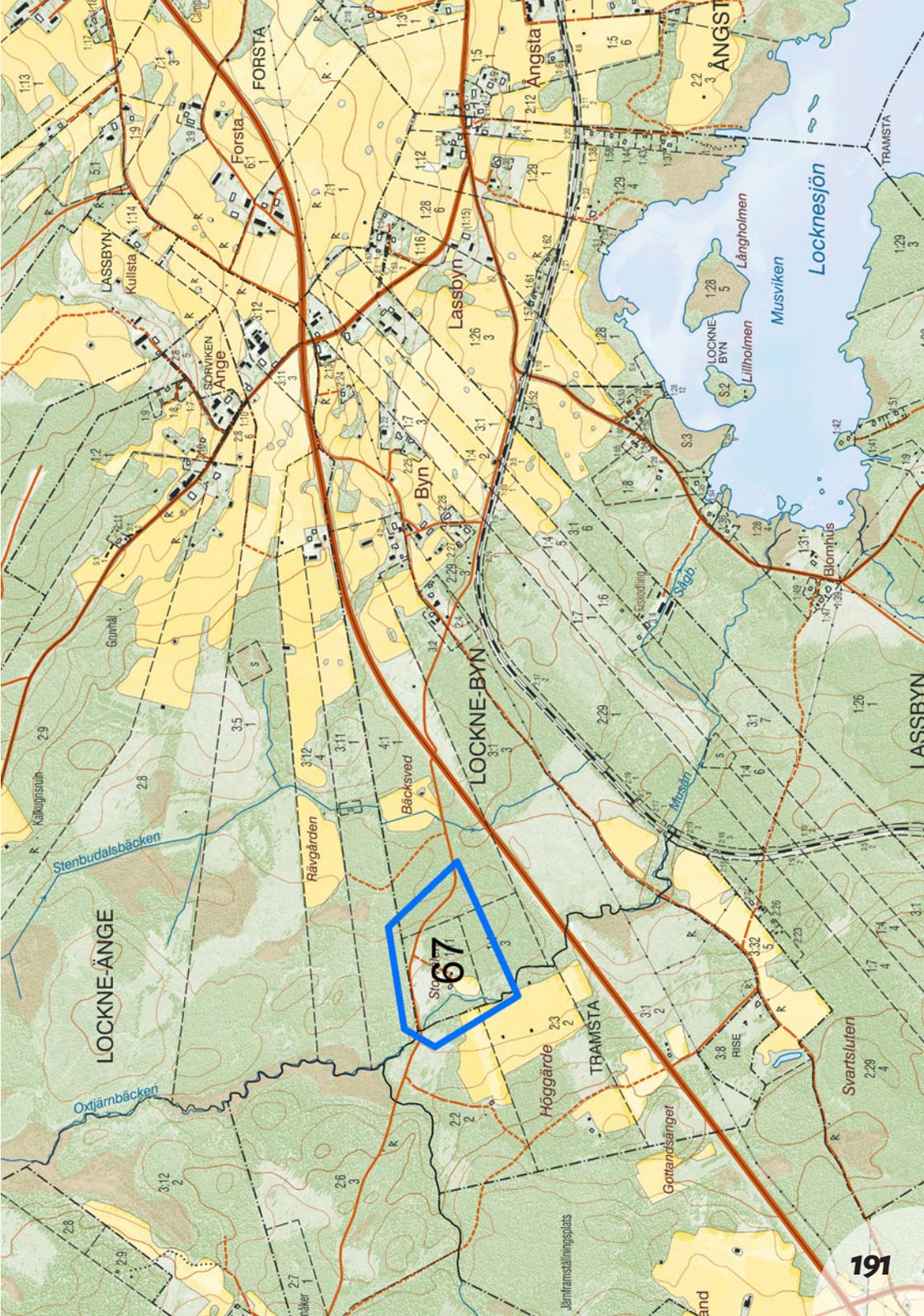
c Forest

1447255; 6991120 (300 m)

Mossy *Picea* forest at limestone. Grazed meadow with *Nigritella nigra* and thousands of *Gentianella campestris* (some white plants). The old mossy *Picea* forests east of highway E45 (the village Byn) are also very interesting with many rare mycorrhiza fungi according to Bengt Petterson. Good parking place just near E45.

Storvålen was visited in 1997 by Leif Andersson, Rolf-Göran Carlsson, Jacob Heilmann-Clausen, Erhard Ludwig, Jan Vesterholt and others. They found 145 fungi species, 20 *Entoloma* and 16 *Hygrocybe* species, two new species for Nordic countries: *Entoloma ianthinum* at the meadow and *Arpinia fusispora* along the small brook near the meadow. *Arpinia fusispora* has got the Swedish name "huldreskål". Huldra (or vittra) is invisible forest creatures in old folklore and related to "troll". Perhaps we get contact with this kind creatures during our fungi excursions. Lars Lundberg informed in 1997 the land owner of the high nature value of the grazed meadow at Storvålen and he was proud to possess such a fine meadow.

Lactarius quieticolor was interesting finding at Storvålen 7.9.1997. We find *L. quieticolor* only in calcareous forests in the provinces of Jämtland, Medelpad and Ångermanland. Mikael Jeppson has written about *Lactarius quieticolor* and other Nordic *Lactarius* species in sect. *Deliciosi* in Svensk Mykologisk Tidskrift 28 (2): 27–37, 2007. Photo of *Lactarius zonarioides* at page 133 in the Danish book "The genus *Lactarius*" is from Storvålen in 1997.



67

Sig

During *Lactarius* workshop in 1997 Jacob Heilmann Clausen collected " *Lactarius syringinus*" below *Betula* and *Picea* at Storvålen and photo was published in the book "The genus *Lactarius*, Fungi of Northern Europe, Vol. 2" (1998) with comment: "We recognize *L. syringinus* as a distinct species although it is quite similar to *L. vietus*. It differs in having much stouter fruitbodies and a more vividly coloured cap, which is often zonate and only slightly pallescent. Apparently the *vietus* complex is in need of revision. *L. pilatii* differs in habit, it has more dull colours, and its macrocystidia are slightly narrower than those of *L. syringinus*. *L. subcircellatus* and *L. hyginooides* have unchanging milk, a less acrid taste and longer macrocystidia." Maria Teresa Basso participated in *Lactarius* workshop in Borgsjö 1997 and she comment *L. syringinus* at pages 130–131 in her magnificent volume about *Lactarius* (1998) and say that *L. syringinus* not differ so much from *L. vietus*. Funga Nordica (2012) has not *L. syringinus* at all. Apparently the *vietus* complex need revision. We are really looking forward at the new magnificent volume about *Boletus* and *Lactarius* (Noordeloos-Nyutinck-Verbeken) in the serie *Funga Agaricina Neerlandica* that will be presented during *Russulales* workshop in Borgsjö 2018.

Lactarius aquizonatus, badiusanguineus, deliciosus, deterrimus, flexuosus, fuliginosus, glycosmus, hyginooides, mammosus, necator, pubescens, quieticolor, rufus, scrobiculatus, torminosulus, torminosus, uvidus, vietus, zonarioides. Photo of *L. fuliginosus* from Storvålen in the danish book "The genus *Lactarius*".

Russula adusta, aeruginea, aquosa, atrorubens, aurantioflammans, cessans, chloroides, delica, favrei, fennoscandica, firmula, foetens, gracillima, lutea, nauseosa, olivascens, paludosa, postiana, queletii, renidens, roseipes, sapinea, versicolor, vinosa, vinososordida

Also: *Boletopsis leucomelanea, Boletus edulis, Camarophylloopsis micacea, Cathatelasma imperiale, Clavaria purpurea, Cortinarius corrosus, malicorius, sanguineus, uraceus, venustus, Boletopsis leucomelanea, Entoloma chloropolium, xanthochroum, Hebeloma sinapizans, Hygrophorus secretanii, Inocybe terrigena, Limacella guttata, Marasmius siccus, Sarcodon martioflavus, Stagnicola perplexa, Tricholoma atrosquamosum, olivaceotinctum, sulphureum*

Comment: Juhani Ruotsalainen and Jukka Vauras found *Russula sapinea* Sarnari at Storvålen in 2001 and wrote at field paper "herbrich forest with mainly *Picea*".



Little russulas

Melody: Little boxes...



Little Russulas on the hillside-Little Russulas made of brittle-brattle.

Little Russulas, Little Russulas-Little Russulas, all the same.

Oh, there're green ones-and there're yellow ones-and there're red ones, and there're purple ones-but they're all made of brittle-brattle and they all key out the same.

First you peel them, then you print them-and you taste them, and you measure them-then scratch them with your fingernail-just to see if they will stain-Then you put them on the microscope and count up all the tiny things-Then you look'em in Ray Fatto's book-and they all key out the same.

Little Russulas on the hillside-Little Russulas made of brittle-brattle.

Little Russulas, Little Russulas-Little Russulas, all the same.

You can look'em up, you can look'em up, you can throw'em up against a hardwood tree-But there're all made of brittle-brattle-and they all key out the same.



Sarcodon imbricatus *Cantharellus sanguinolentus* *Tricholoma palmatum* *Cantharellus pinnatisporus* *Cantharellus cibarius* *Cantharellus cretensis* *Cantharellus mediodiurnus* *Boletus abroomei* *Cantharellus uliginosus* *Hypholoma*
fulvum *Boletus*
lyophilus

Painting by Rolf Lidberg.
 Gift from the artist to Hjördis Lundmark
 at the international Mushroom Dyeing Congress
 in Härnösand 1995