Mushroom findings with some comments Champignons avec des commentaires

Journées Européennes du Cortinaire (JEC) Borgsjö, Suéde

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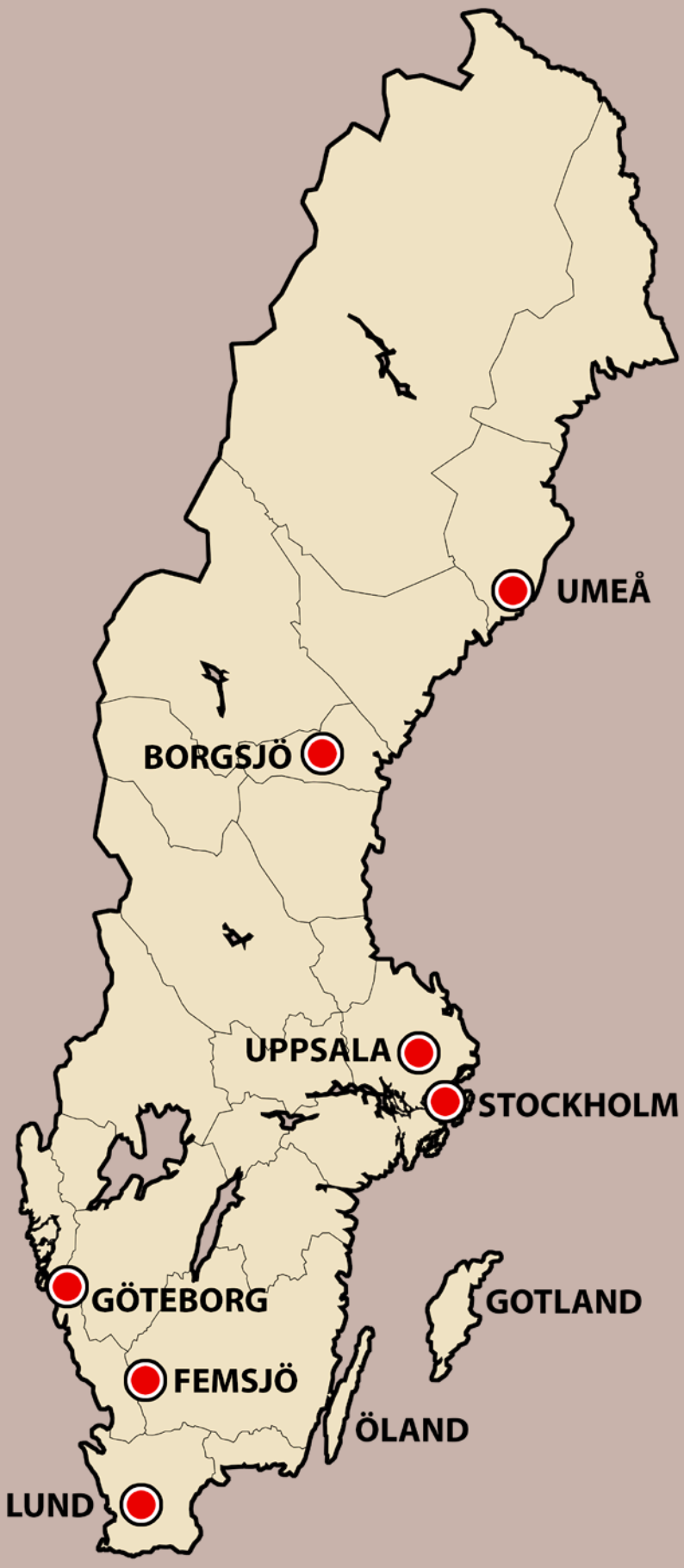
SCA

This report is attributed to Rolf Lidberg
which inspired many to study
the wonderful diversity of nature.

Content

An amazing rainbow over the beautiful landscape. Photo: Tatanya

Work in progress. Photo: Olga Morozova



Map of Sweden. Michael Krikorev.

Key words

Cortinarius

Mycorrhiza

Ecosystem service

European fungi meeting in Borgsjö

Culture and nature tourism

Northern calcareous coniferous forests

More knowledge about fungi species

Joy in finding rare species

Friendship

High quality of life

The texts in this report are written in one of the above languages.

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

Preface

Friends in the European *Cortinarius* family

This report is about a week in 2016 spent in Borgsjö parish, Ånge municipality, central Sweden, where 98 mycologists from 12 countries met and had fun together!

They shared the same interest for wonderful diversity in nature, for fungi and especially for the important ectomykorrhizal genus *Cortinarius*. The mycological result was good: 172 species of *Cortinarius*, see list of records in artickle at www.myko.se. A scientific article dealing with the most interesting records has been published in the JEC Journal. We want to document not only exciting records of northern "troll fungi", wool dyeing with mushrooms, but also the friendship and kind social atmosphere during the JEC week in Borgsjö. We also wanted to guide our European friends to interesting nature types in our beautiful home district in Jämtland and Medelpad with high mountains and deep valleys, rivers and idyllic forest brooks, deep mossy forests and open grazed meadows with exciting grassland fungi.

Nature conservation is often discussed during JEC meetings in different parts of Europe. Here in Sweden we just have started an interesting discussion about the production of a revised fungal redlist in 2020. About a third of the redlisted fungi are ectomycorrhizal species, often restricted to lime rich soils. We therefore also have some facts and thoughts in the report about nature conservation in Sweden, especially soil mushrooms in northern calcareous forests. The list of species found is a snapshot from 2017, where the old, often burnt, more open and grazed forests in the area slowly through the last hundred year were replaced with more closed spruce forests with thicker litter beds with less herbs and less blueberry. We do not know the long term effect on the ectomycorrhizal fungi, but we know that the production of timber will be much

Our work place. Photo: Olga Morozova

higher for every decade with more trees per hectare in Nordic forests and a warmer climate. With warmer climate there will be more extreme weather incidents. Today there is also an interesting discussion in Sweden about increasing the pine coverage and that of broadleaved trees, like birch, which will give a more open forests that better can resist heavy rains and severe storms. In the summer 2000 there was an enormous rain fall in Borgsjö and in central Sweden in general. The river Ljungan became like the Amazon! In 2011 and 2103 many old Picea dominated forests in Jämtland and Medelpad have fallen during heavy storms.

This report mostly contains texts in English and French but also some parts in German and Swedish.

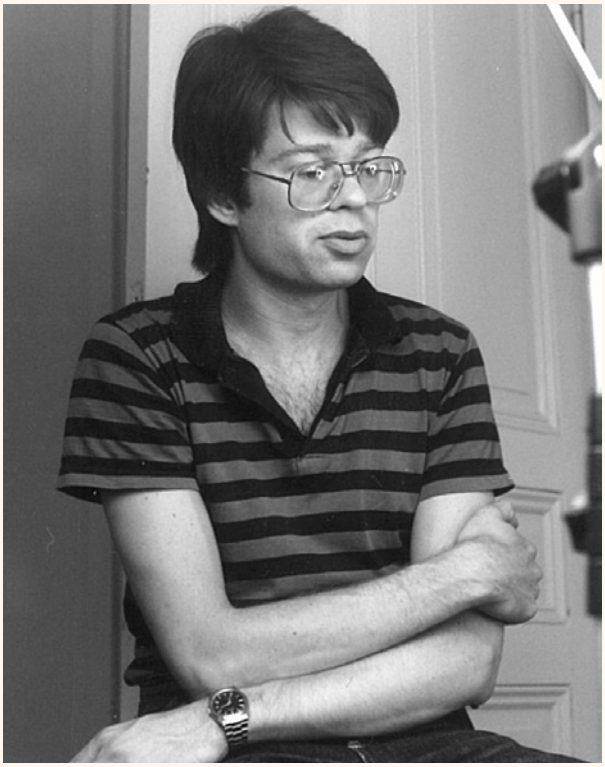
With the help of Google Translate you can transform and understand all texts. At www.myko.se and under the link JEC 2016 you find the inviting brochure in four languages that was published before the meeting, a beautiful and detailed excursion guide that everyone received when they arrived at Borgsjö and some other papers concerning the JEC meeting in Borgsjö. Thomas Læssøe improved the english text at an early stage but some new english text is not corrected by Thomas. Jaques Melot have improved the French text. Thanks to our dear friends Jacques and Thomas.

In 1982, the first fungus week took place in Borgsjö. The theme was *Cortinarius*. Among our leaders were the late professor Meinhard Moser, a well known Cortinarius expert. The young Tor Erik Brandrud was also with us. Meinhard and Tor Erik were a bit like father and son. Mushroom week in Borgsjö 1982 became the starting point for Cortinarius Flora Photographica (CFP) which, together with French "Atlas des Cortinaires", has given us a much deeper knowledge of Cortinarius in Europe. We were so glad to have André Bidault and Xavier Carteret among us, they are involved in Atlas des Cortinaire. One new species for science has got the name Cortinarius borgsjoensis, described by Tor Erik Brandrud.

Since 1982 we have arranged 16 mushroom weeks in Borgsjö with participants from almost all European countries.

There have been 16 mushroom weeks in Borgsjö 1982-2016 all organized at a completely voluntary basis. Most excursions have been made in calcareous coniferous forests, a forest type that the county councils in Jämtland and Västernorrland now give priority to when protecting valuable nature as nature reserves.

The mushroom weeks in Borgsjö are also part of a strongly expanding nature and culture tourism, which gives more and more jobs all over the country. Nature reserves like Jämtgaveln and information centres like Ånge



The young Tor Erik Brandrud in Borgsjö 1982.
Photo: Hjördis Lundmark

Hjördis Lundmark och Jan-Olof Tedebrand lär ut matsvamp vid senhöstutflykt till Åstön.

Naturum are important factors in a successful strategy for the growing visiting business. Borgsjö and Ånge have enormous hidden culture and nature pearls. The pilgrimage from Sundsvall to Trondheim attracts more and more hikers. We think that the local country board of Västernorrland together with Ånge municipal, EU and Trafikverket should invest in Ånge Naturum fora use as a centre for growing culture and nature tourism along the old pilgrimage road from Sundsvall in Sweden to Trondheim in Norway. The county governor Gunnar Holmgren should perhaps initiate such an investigation like the former county governor successfully initiated Skule Naturum in the northern part of the county.

Teamwork

We had skilful helpers and tour guides: John Granbo, Inga Lill Häggberg, Karin Kellström, Michael Krikorev, Bengt Larsson, Håkan Lindström, Bengt Petterson, Pe Sander, Håkan Sundin, Lennart Vessberg.

We also had great help from our friends in Borgsjö: Joel Andersson and Kent Sahlström at Erikslund Folkets Hus-förening, Sonja Martinson at Erikslund Ski Club, local computer expert Leif Edh, Eje Fröberg, Åke Nyhlén and others at Ånge municipality, Ulla-Britt Olsson in Borgsjö hembygdsförening, Borgsjö church guardmaster Fredrik Mattsson, Nadinka Gielen and her familly at Träporten inn, Katarina Dahl-Nilsson and others at Hussborg's mansion, Per and Åsa Ferdinandsen at hotel Mittlandia, Joel Grelz at Ljunganbladet, Carin Nilsson at Täljegården, Sara Stierna and her colleagues at Ånge Naturum, Roger and Ronny Sundin at the folkmuseum in Västanå. John Granbo and Per Sander at the County Board in Västernorrland, Bodil Carlsson and Ninni Nordlund at the Country Board in Jämtland , Michael Krikorev at The Swedish Species Information Centre, JEC President Oswald Rohner, Kaltes printing company were also of big help. We could not have organized the memorable week without contributions from our sponsors: County Boards of Jämtland and Västernorrland, SCA and Callans Trä. We will also thank Torkel Edenborg, who did the excellent layout of this report. The meeting was arranged by Sundsvalls Mykologiska Sällskap and Svampfärgarsällsakpet. We also had good help from our dear friends in Östersunds Mykologiska Förening.

"Large parts of Scandinavia, especially in the north, are still totally unknown as to their Agarics".

John Axel Nannfeldt, famous Swedish mycologist, wrote these words in his paper "The mycofloristical exploration of Scandinavia, especially Sweden" (Friesia 3, 1959). Thanks to all participants who have contributed to a better knowledge of *Cortinarius* and other fungi in northern taiga forests in Medelpad and Jämtland. Enjoy your reading!

Hjördis Lundmark and Jan-Olof Tedebrand

The planning committee in Borgsjö rococo church together with Saint Olof, highest protector of the JEC meeting. From left: Hans Andersson, Jeanette Södermark, Karl Soop, Jan-Olof Tedebrand, Hjördis Lundmark. Tor Erik Brandrud and Inga Lill Franzén are missing in the photo.

Erikslunds Folkets Hus, our work place. Photo: Olga Morozova

Préface

Bonjour nos amis de la famille européenne des Cortinaire

On oublie vite! C'est pour cette raison que nous avons tenu à publier un compte rendu des trouvailles mycologiques remarquables faites et à relater les rapports conviviaux entre les participants aux Journées qui se sont tenues à Borgsjö en 2016. Ce compte rendu est multilingue, comportant des textes en suédois, en français, en anglais et en allemand. Il a été revu par Jacques Melot (pour le français, hélas trop rapidement, les délais étant trop faibles) et Thomas Laessöe (pour l´anglais, partielle).

La première semaine mycologique de Borgsjö eut lieu en 1982. Cette semaine fut consacrée au genre Cortinarius. Parmi les personnalités présentes on comptait le professeur Meinhard Moser, un grand connaisseur des Corti-

Meinhard Moser, Rolf Lidberg, Siw Muskos, Johan Nitare and Stig Jacobson outside the inn Saint Olof in 1982.
Photo: Hjördis Lundmark.

naire. Le jeune Tor Erik Brandrud était également présent à la manifestation. Meinhard et Tor Erik étaient un peu comme père et fils.

Cette semaine mycologique fut le point de départ de la Cortinarius, Flora photographica (CFP) à qui l'on devra un approfondissement des connaissances dans le genre Cortinarius.

Au total, de 1982 à 2016, furent organisées seize semaine mycologiques à Borgsjö. Les membres de la Sundsvalls mykologiska sällskap (la société mycologique de Sundsvall) et de la Svampfärgarsällskapet (la société de teinture fongique) se sont beaucoup réjouis de la tenue des Journées européennes du *Cortinaire* à Borgsjö qui réunit une centaine de participants en provenance de douze pays en cette année 2016.

Les organisateurs, y compris les directeurs d'excursions, furent au nombre d'une vingtaine. Nous ont également aidé: Joel Andersson et Kent Sahlström de Erikslunds folkets husförening, Sonja Martinson du club de ski de Erikslund, également les informaticiens Leif Edh, Eje Fröberg, Åke Nylén et d'autres encore de la municipalité de Ånge, Ulla-Britt Olsson de la société historique de Borgsjö, le sacristain Fredrik Mattsson, Nadinka Gielen et ses collègues de l'auberge de Träporten, Katarina Dahl-Nilsson, Åse Ferdinandsen et ses collègues de l'hôtel Mittlandia, Carin Nilsson du Täljegården, John Granbo et Per Sander de l'administration du comté de Västernorrland, Bodil Carlsson et Ninni Nordlund de l'administration du Jämtland, Sara Stierna et ses collègues de Naturum Ånge, Roger et Ronny Sundin du musée de l'artisanat à Västanå, Michael Krikorev de Artdatabanken, Oswald Rohner, l'actuel président des J.E.C., et l'imprimerie Kaltes grafiska. À cela s'ajoute nos remerciements à nos mécènes sans la contribution desquels cette manifestation n'aurait pu se tenir à Borgsjö: l'administration du Jämtland, l'administration du Västnorrland, ainsi que les entreprises Svenska cellulosa AB et Bois de Callan (Callans Trä AB). Pour finir, nous remercions tous les participants pour les instants partagés en forêt et dans les lieux de travail. Bonne lecture!

Hjördis Lundmark et Jan-Olof Tedebrand

Speech At The Opening Ceremony

Åke Nylén

a leading politician in Ånge municipality

It feels quite special to stand here with you, partly because I have the greatest respect for your knowledge in the field and partly because I am very proud and happy that yo return to our municipality year after year.

Many years ago, I had the privilege of meeting Rolf Lidberg, one of the most impressive people I have met. A friendly man with a broad range of skills. At home I have a painting by Rolf, it represents my grandfather sitting and pimpering fish on the ice. Of course, my grandfather is depicted as a troll. It is amazing and pleasing that Rolf's spirit and enthusiasm live on, thanks to you, I think that Rolf is laughing a little extra in his heaven.

To me as common mushroom collector your work and interest means that I can also get knowledge and insight into the special conditions prevailing in the forests around Borgsjö in Ånge municipality.

As a local politician in a small inland municipality, with the desire for more jobs, it is a constant puzzle to create and maintain service to our citizens; the positive signals you and others give us are valuable. It allows us to welcome committed people who love what we who are living here love: our forests, marshes, seashores and steep slopes. In one way, one can say that the landscape has been formed by people who live here, sometimes a bit inaccessible, not seldom crumbling and quite often heartbreaking stony. But when you arrive, when you get close, it is beautiful and inviting, hospitable and a little cheery.

The municipality has changed for many years, the population has declined and there is a constant struggle to increase the number of jobs. Because Sweden has avoided wars and mass destruction in the last 202 years, the last one was a short war against Norway, we now have the opportunity to offer a sanctuary for people on the run. Today, the municipality has about 9500 inhabitants, where about 8 percent were born in another country. There is a great local commitment to welcome and help our new inhabitants, influences from outside are largely positive.

There is a lot of local history in the municipalities of the municipality, but last time there was an excavation around stone age finds at Eldsnäset in Haverö. Shortly after the glacier from the last ice age disappeared from Medelpad about 7500 b.kr., the sea was about 240 meters higher than today. The Ljungan valley and large parts of the Medelpad coast were under water. The camps on Eldnäsen were strategically located. The population had direct contact with the archipelago at sea, and further east to Finland via the fjord that existed, as well as west by following the Ljungan upstream towards the mountains and further towards the Atlantic coast.

Medelpads Flora (2010) by Rolf Lidberg and Håkan Lindström about the vascular plants became present every evening to person who made "the finding of today".

There is of course St: Olafleden, which runs from Selånger in Sundsvall to Sticklestad and Trondheim in Norway. One of the most famous cold springs along St.Olafsleden is located in Borgsö.

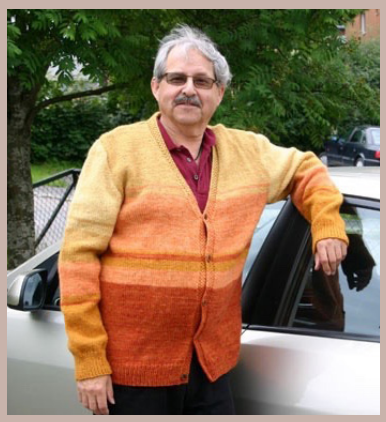
The big forests, yes the whole nature around us, hide treasures, and I wish you good luck in your search this week to find your bargain. Finding the treasures you are looking for that contribute to increased knowledge and insight into the funga. I think you agree with me when I say, it is good to never get fully learned, there is always more to explore. Curiosity is the applicant's best feature. I want to thank you all for being able to visit us, and I wish you good luck in your work during the week and with the massive work that follows after such a data collection.

Håkan Lindström vid skogsodlingen Rigåsen 1976. Photo: Lennart Vessberg

Siv Norberg, contact person for Mushroom Dyeing Society with *Hapalopilus nidulans* at *Salix caprea*. Photo: Jan-Olof Tedebrand

Franco Matli and Jeanette Södermark preparing delicious mushroom plates. Borgsjö 2010. Photo: Hjördis Lundmark

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



Hans Andersson

President Societé Mycologique de Teinturers

Hans Andersson 1951-2017, president of the Mushroom Dyeing Society talked about wool dyeing. Hans died in 2017 after a long time of sickness. We really miss our dear friend Hans. Photo: Hjördis Lundmark

Pirjo Kytövuori and Jeanette Södermark outside our working hall at Erikslunds Folkets Hus. Photo: Hjördis Lundmark

Jeanette Södermark

President of Sundvall Mycological Society
Summary of Speech at the Opening Ceremony

My name is Jeanette Södermark. I have been President of Sundsvall's Mycological Society for ten years. I am married to Tomas and we have a daughter named Alva. I work at the Employment Service and help unemployed people find new jobs. My free time is about sport like running and fungus forays.

I live with my family in Timrå at the Bothnian coast here in the landscape of Medelpad. There at Timrå we arranged the Swedish mycology week (mykologiveckan) in 2014 that became successful, see report at www.myko.se, link "Publikationer" and "Mykologiveckan 2014". There you will find a list of the 258 different species of *Cortinarius* that we found in the surroundings of Timrå. I myself found a rare agaric: Limacella vinosorubescens. "Sundsvalls Myko" teaches mushrooms at excursions once a week during the autumn. We usually have about 20-40 participants per excursion. We have also a Facebook page, managed by Jessica Andersson. Mushrooms are also socially important. At our fungus meetings here in Borgsjö we meet dear friends from all over Europe. With these words, I warmly welcome you to the JEC week 2016 in Borgsjö.

Monika Stridsman, head of National Forest Board, talk in 2014 at opening ceremony of SCA, Sörgraninge Mångfaldspark. Swedish Mycological Society made an interesting fungi inventory of sandy Pine heaths and old *Picea* forests in the Sörgraninge Mångfaldspark during the Swedish mycological week in Timrå 2014 guided by Magnus Andersson. Monica Svensson found the rare fungi *Mycocalia sphagneti* along a creek! Photo: Hjördis Lundmark.

Some facts about Borgsjö, Ånge and local forest industries

Borgsjö, Torp and Haverö are parishes in Ånge municipality in the landscape Medelpad in central Sweden. Ånge is situated along the river Ljungan about ten Swedish miles (100 km) from the city of Sundsvall at the Bothnian coast.

If you go twenty Swedish miles further westwards you will reach the fascinating high mountains in the landscapes Härjedalen and Jämtland with a very interesting and special alpine funga. The Swedish Mycological Society had a successful mycology week in 2006 among the high mountains of western Härjedalen, see report www.myko.se/publikationer/mykologiveckan 2006

Ånge has about 9500 inhabitants, just 3 per square kilometer. The Netherlands have more than 400 inhabitants per square kilometer! Many people from Germany, the Netherlands and other countries are now coming to Sweden and Ånge and start enterprises. Nadinka Gielen and her family, who owns the inn Träporten, are from the Netherlands. There are room for many more in Ånge that

Hygrocybe coccinea. Photo:Tatyana Svetasheva

is strategically situated along the popular route Sundsvall-Östersund-Tronndheim. Here in Sweden and in Ånge you will find kind people, a peaceful and high quality of life!

Naturum Ånge at Träporten is a tourist office. More and more people are hiking the pilgrimage from Sundsvall (Selånger) in Sweden to Trondheim in Norway and often stop at Ånge Naturum. This route is also called "the green highway" based on the many places for charging electric cars. The central point of Sweden (mountain Flataklocken) is situated in Ånge. The municipality commissioner Sten-Ove Danielsson (socialdemocratic party) is popular and knows almost everyone of the inhabitants of Ånge. Leif Edh, head of the political opposition, was of great help concerning IT and data at our JEC-meeting. Two large sawmills provide jobs for many people in Ånge: Callans Wood and Norrskog Wood Products. They are selling wood products to climate-smart constructions. Ten miles from Ånge and down at the Bothnian sea you will find the forest company SCA's factories: the sawmill Tunadal, Östrand pulp factory and the paper factory Ortviken. Sweden's largest industrial investment is now taking place at Östrand, which has an environmental profile and supplies electricity to the electric net.

Plans also for investments in a biorefinery at Östrand where rest products from the factory and from saw mills in the region will become green renewable products. With this investments Östrand will be part of the development towards a bioeconomy and a more sustainable society.

Nowadays more wood is produced in Sweden. Grazed and fire controlled forests with few trees per hectare have been replaced by forests with closer stands. Excellent research is under way at the Mid Sweden University in Sundsvall and other universities to create new advanced, climate-smart, energy and material efficiant high-tech products like nano cellulose from wood products. These new wood products can replace fossile plastic products that are very bad for the environment, not least in the seas. SCA have certified their forests according to Forest Stewardship Council (FSC), which means more long term sustainable forestry. SCA also try to compensate for certain planting of north american Pinus contorta and for fertilization with nitrogen in shaping so called "Mångfaldsparker" (ecological parks) with higher grade of respect for nature processes and for rare nature types and species. Creative methods are used in these parks to enhance the amount of dead wood and increase the number of broadleaved trees like aspen, birch and Salix caprea. Local mycologists and botanists take part in discussion groups that suggest measures to improve biological diversity in the ecoparks. Unfortunately, there are to many elks in northern Sweden. They eat almost any new aspen, pine and willow trees! That is a big probem not only for biodiversity. Pinus grows better than Picea in most soils. But elk hunting is also very popular in Ånge and in north Sweden! With warmer winters red deer and perhaps also wild boar will slowly expand northwards in to the forests of Ånge. Some facts about how warmer climate affect nature in Ånge and Sweden, see www.myko.se link J.E.C. 2016 and "Varmare klimat ger längre svampsäsong".

Cortinarius blattoi. Jämtland, Revsund sn, Tunsved, 23 augusti 2010. Photo: Kjell Olofsson

What was the european Mushroom Week in Borgsjö 2016 really about?

Mushrooms perform an important ecosystem service in the eternal cycle of nature. Mushrooms break down branches, trunks, leaves and other debris. A large group of fungi have an intimate relationship with living plants, including our forest trees.

The root system of the 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 per square meter that are connected to the fungus network in the soil! 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 of high Quality in the USA. See at TED the scientist Paul Stamets homage to the mushroom internet: www.ted.com , search for "six ways mushrooms can save the world" (text in different langu-

ages). Another fascinating eloquent star in the mycorrhiza researchers heaven is Susanne Simard at the University of British Columbia in Canada, who also give Ted speaks with very fascinating factds about the mushroom network: https://www.ted.com/talks/suzanne_simard_how_trees_talk_to_each_other

Anders Dahlberg is professor of mycology in Uppsala and our own star at the Swedish mycorrhiza researchers heaven. He is like an actor at the theatre when he talks about his favourite theme: the mushroom internet down in the forest soils. Anders held a most interesting lecture one evening: "DNA studies reveal *Cortinarius* as one of the most species rich and abundant genera in forests soils and of pivotal importance for carbon sequestration". Anders gave us the latest news from the research front about the "important jobs of underground forest workers". Here a short summary of talk given by Anders.

Anders said that 99 percent of the fungus biomass is down in the soil. Research in plant-fungus interactions has exploded in recent decades and very complex interactions occur in forest soils.

Suillus variegatus and *Lactarius rufus* often dominate above ground in Pinus forests, but down in the soil other species are dominant. Also a suite of corticioid fungi form mykorrhiza. Now you can take a soil sample, extract the DNA and identify all the species! Each species has its own DNA fingerprint. In 225 soil samples from Siljanfors in Dalarna 990 fungal species were detected via DNA, 98 of these were ectomycorrhizal. Most species were rare in the dataset. In pine forests the corticioid *Piloderma sphaeosporum* was the most common species. An ongoing national monitoring of fungi in Swedish forest soils indicate that *Cortinarius armillatus* and *C. caperatus* are among the most widespread and frequent species of *Cortinarius* in Sweden. There are more *Cortinarius* species in older forests, the same applies to *Russula*, compared to younger stands. Species of *Cortinarius* are also very frequent and important in younger forests. We have about 1200 ectomycorrhizal species in Sweden. We still know very little about how these fungi establish themselves in new places via their wind dispersed spores.

Drawing by Rolf Lidberg

Cortinarius is the largest ectomycorrhizal genus with about 410 currently known species in Sweden according to the Swedich Species Information Centre (see www.dyntaxa.se). The real number could be much higher perhaps about 900 species? Journées Européennes du Cortinaire (JEC) is a European association for those who like to meet and study *Cortinarius*. The JEC meeting in Borgsjö 2016 was successful with new finds for Sweden and maybe even for science. We contributed to an increased knowledge of biodersity in our northern forests, especially in the fascinating old coniferous forests on calcareous soil.

En quoi au juste la semaine mycologique européenne à Borgsjö en 2016 a-t-elle consisté?

Les champignons constituent une part importante des écosystèmes. Ils contribuent à décomposer les branches, les aiguilles, les feuilles et autres litières. Un grand groupe de champignons vivent en symbiose avec des végétaux supérieurs, entre autres avec nos arbres. Le système racinaire des arbres s'étend considérablement et fournit ainsi une source de nutriments accrue.

On peut dénombrer entre un et cinq millions de radicelles d'arbres par mètre carré qui s'entremêlent avec le réseau fongique dans le sol! Cette symbiose est très importante pour la croissance et l'épanouissement des arbres et des autres végétaux supérieurs.

Anders Dahlberg est professeur de mycologie à Upsal. Un soir, il fit un exposé passionnant sur « le travail important des acteurs souterrains de la forêt » dans nos sols forestiers. Les recherches concernant la symbiose des végétaux et des champignons a connu un brusque essor

Our work place. Photo: Karin Källström

durant ces dernières décennies. Maintenant il est possible d'extraire de l'ADN d'un échantillon de terrain et de nommer les champignons qui s'y trouvent. Chaque espèces a sa signature propre. Deux-cents-vingt-cinq échantillons de terrain de Siljansfors en Dalécarlie ont montré la présence de neuf-cents-quatre-vingt dix espèces de champignons, dont quatre-vingt-dix-huit espèces mycorhiziennes. La plupart des espèces sont rares. Dans les pinèdes, le champignon le plus commun est Piloderma sphaerosporum (syn. *Pil. croceum*). Les champignons mycorhiziens les plus courants sont quatre cortinaires, parmi lesquels *Cortinarius armillatus* et *Cortinarius caperatus*. Il y a d'autres cortinaires dans les vieilles forêts, et la même chose vaut pour les russules. Mais les cortinaires sont également importants pour les jeunes forêts. Nous ne savons pour ainsi dire rien de la manière dont les milliards de spores de l'atmosphère s'installent en un lieu nouveau.

Cortinarius est le plus grand genre de champignons mycorhiziens avec quelques 410 espèces répertoriées en Suède. Les Journées européennes du Cortinaire sont une association européenne réunissant les mycologues qui s'intéressent à ce genre et l'étudient. Les journées de Borgsjö en 2016 ont été l'occasion de découvrir des espèce nouvelles pour la Suède et peut-être même nouvelles pour la science. Nous avons contribué à améliorer la connaissance de la diversité du vivant dans nos forêts nordiques, plus particulièrement dans les vieilles forêts de conifères calcaires. Ceux qui le désiraient ont même appris la teinture des laines à l'aide des champignons. Les champignons reproduisent les couleurs propres de la nature! Non moins important furent les contacts humains sur les lieux de travail et en forêt. Ce fut aussi une forme de tourisme naturaliste. Pour de nombreux participants, ce fut un retour à une nature imposante. Ils ne sont assurément pas près d'oublier Ånge ni Borgsjö!

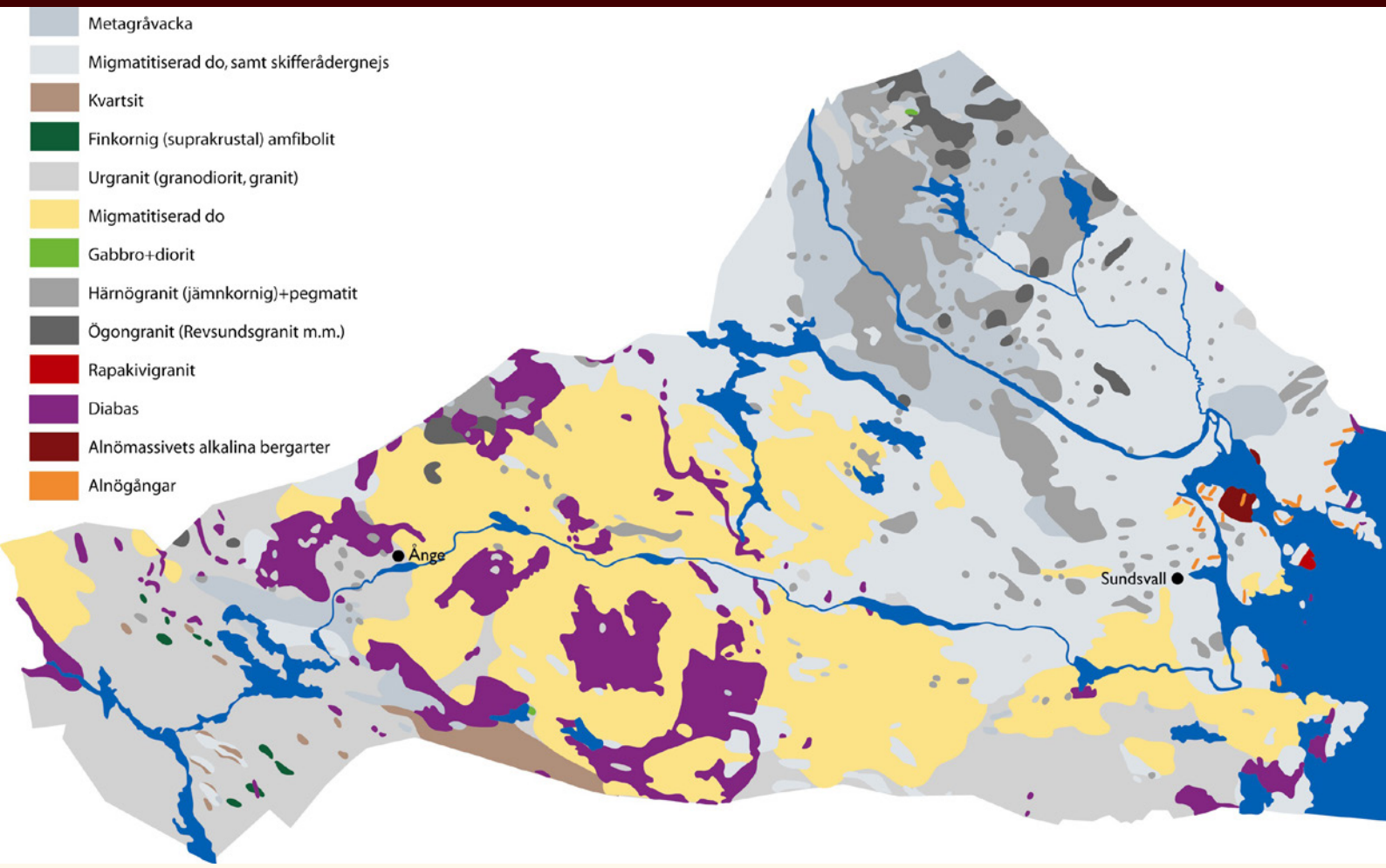
Landscape in Medelpad. View from Mount Vitterknulen and Skälsjön, Liden parish. Photo: Håkan Sundin

Edward O. Wilson om

Underjordiskt internet i våra skogar

Den världsberömde biologen Edward O. Wilson skriver i sin bok ”Livets mångfald”, översatt till svenska 1995 av Fredrik Sjöberg: ”De flesta växter, från mossor, ormbunkar till barrträd och örter, samarbetar med svampar som är specialiserade att ta upp kväve, fosfor och såväl oorganiska (enkla) som organiskt bundna näringsämnen från jorden. Mykorrhizasvamparna delar med sig av dessa livsviktiga ämnen till sin värdväxt som betalar igen med skydd och tillförsel av kolhydrater.

Det är troligt att just detta samarbete mellan svampar och gröna växter var en av förutsättningarna för att växter och djur lyckades lämna havet och kolonisera land för 450 till 400 miljoner år sedan. Den tidens öde, regnpiskade jord hade inte mycket att erbjuda organismer som var mer komplicerade än bakterier, primitiva alger och mossor. De tidigaste kärlväxterna var frö- och bladlösa former som ytligt sett liknade våra braxengräs och fräkenväxter. Genom att liera sig med svampar lyckades de få fotfäste på landbacken”. Alla växter har således mykorrhiza naturligt, lika naturligt som att vi människor har mikrober i våra mag- och tarmkanaler. Denna rapport handlar således även om det underbara gigantiska internet som finns nere i skogsmarken och där spindelskivlingar spelar en mycket viktig roll.



Geological map of Medelpad.

Skogsjorden består av svampar

Håkan Wallander, professor i markbiologi, skriver i boken ”Jord-funderingar om grunden för vår tillvaro” som utkom 2012 på Atlantis förlag: ”Svampar som lever i symbios med växternas rötter har varit mitt forskningsområde de senaste tjugo åren. De kallas mykorrhizasvampar och själva ordet mykorrhiza kommer från grekiskans myko som betyder ”svamp” och rhiza som betyder ”rot”.

Tunna svamphyfer har en oslagbar förmåga att tränga in i jordens alla skrymslen och vrår i sin jakt på nyttiga näringsämnen. De växer ut från växternas finaste rötter och förgrenar sig i komplicerade nätverk som också hjälper till att stabilisera markstrukturen. Jag brukar låta studenter betrakta en handfull jord från en mager tallskog under mikroskopet.

Överallt ser man de tunna hyftrådarna, varenda markpartikel är omspunnen av en svamp men trädens rötter får man leta efter. Ur en enda rotspets kan det växa ut hundratals meter svamphyfer och det brukar bli uppenbart att rötternas huvudsakliga uppgift är att föda svampen så den kan leta upp de näringsämnen som tallen behöver. I utbyte får svampen kolhydrater som tallen bildat genom sin fotosyntes. Det är därför denna symbios blivit så framgångsrik bland växterna. Så länge solen lyser har växterna gott om kolhydrater men ofta svårt att ta upp tillräckligt med mineralnäring som kväve och fosfor från marken. För de olika sorters svampar som finns i marken råder det däremot hård konkurrens om lättsmälta kolhydrater. Att vara direktkopplade till växternas fotosyntes ger mykorrhizasvamparna en enorm fördel när de ska interagera med andra organismer om utrymmet i marken. Tänkvärda ord, hälften av skogsjorden är gjord av nedbrutna svampar, ännu högre andel i gamla skogar! Mykorrhizasvampar bygger upp humuslagret! Vissa släkten som *Cortinarius* och *Suillus* har stor volym mykorrhiza.

Evidensbaserad praktisk naturvård utifrån senaste forskningsrönen borde idag vara en självklarhet, hur påverkas exempelvis mykorrhizasvampar och andra jordlevande arter av kvävegödsling? Håkan Wallanders bok är tyvärr slutsåld men kan sökas hos antikvariat. Boken finns dock på engelska: http: //www.springer.com/gp/book/9783319084572

Hygrocybe cantharellus. Photo: Olga Morozova

Hygrocybe psittacina. Photo: Olga Morozova

JEC präsident Oswald Rohner erzählt uns von JEC Borgsjö 2016

Borgsjö hat eine lange Tradition als Kongress-Ort für mykologische Tagungen. Seit 1982 haben 15 Tagungen stattgefunden. Die J.E.C. ist daher den beiden organisierenden Vereinen, der Mykologischen Gesellschaft von Sundsvall mit Jeanette Södermark als Vorsitzende und der Gesellschaft der Färber-Mykologen mit Hans Andersson als Vorsitzenden, sehr dankbar, dass unser 34. Kongress in der Heimat von Elias Magnus Fries stattfinden durfte.

Wir waren auch gespannt auf die Wälder, in denen bereits Meinhard M. Moser Cortinarien gefunden hatte. Wir wurden nicht enttäuscht: Die interessantesten Funde waren *C. (Phleg.) aureofulvus, C. (Phleg.) sulfurinus, C. (Tel.) caesioarmeniacus, C. (Tel.) fuscovelatus, C. (Tel.) fuscoperonatus und C. (Tel.) privignatus.* Täglich fand eine Fundbesprechung mit Tor Erik Brandrud als Experten statt. Neu war, dass die Tagesfunde anhand von Fotos, die Michael Krikorevs professionell aufgenommen hatte, per Beamer gezeigt wurden. Das ermöglichte allen Fundbesprechungs-Teilnehmern, den Ausführungen von Tor Erik zu den Fotos optimal zu folgen. In einem Aussenzelt im Freien wurden alle Funde bei idealer Temperatur ausgestellt, so dass man sie nochmals in Ruhe studieren konnte. An 3 Abenden fanden viel beachtete, sehr interessante Vorträge statt. Anders Dahlberg führte in die noch wenig erforschte Welt der Mykorrhiza ein, Tor Erik Brandrud referierte über die an Cortinarien reichen Waldarten von Borgsjö und Karl Soop stellte Cortinarien aus Neuseeland vor.

Im Tagungslokal hatte es für jeden Teilnehmer ausreichende Arbeitsflächen, was sehr geschätzt wurde. Von früh bis spät in die Nacht hinein wurde emsig gearbeitet, mikroskopiert, fotographiert und bestimmt. Wie das bei der J.E.C. üblich ist, herrschte ein freundschaftliches, kollegiales Verhältnis unter den Tagungsteilnehmern. Insgesamt waren 15 Nationen vertreten. Tagungen wie der 34. Kongress der J.E.C. in Borgsjö dienen dem Meinungsaustausch und sind wichtig für den Kontakt der Mykologen und Pilzinteressierten. Die Erforschung der Gattung Cortinarius ist ein länderübergreifendes Vorhaben. Daher ist es wichtig, dass die jährlichen J.E.C.-Kongresse stets in einem anderen europäischen Land durchgeführt werden.

Hauptverantwortlich für die Organisation der 34. J.E.C. – Tagung in Borgsjö waren Hjördis Lundmark und Jan-Olof Tedebrand. Ihnen und allen weiteren Helferinnen und Helfern dankt die J.E.C. herzlich für die bestens organisierte Tagung. Ohne grosse öffentliche finanzielle Mittel haben sie ehrenamtlich die Herausforderungen, die mit der Durchführung einer Tagung mit gegen 100 Teilnehmern verbunden sind, zur vollen Zufriedenheit aller gemeistert. In diesem Dank sind auch die vielen Exkursionsleiter eingeschlossen, die uns in ihre interessanten, cortinarienreichen Wälder geführt haben und uns an ihren Lieblingsplätzen Anteil haben liessen. Ein herzliches Dankeschön auch für das interessante Beiprogramm, das sehr geschätzt wurde. Insbesondere das Naturfärben von Woll- und Seidensachen mit Cortinarien war für viele Teilnehmer ein erstmaliges interessantes Erlebnis.

Die Association Journées Européennes du Cortinaire (J.E.C.) wurde 1983 in Bédarieux gegründet. Seither fanden 34 Kongresse in 10 verschiedenen europäischen Ländern statt, unter anderem 3 Kongresse in Schweden (Härnösand 1997, Mora 2007 und Borgsjö 2016). Die J.E.C. widmet sich ausschliesslich dem Studium und der Erforschung der Cortinarien. Nach Jahren mit wenig Aktivitäten wurde die J.E.C. unter dem Präsidium von Walter Pätzold (2011 …), Hornberg BRD, 1996 neu gegründet und neu belebt. Die J.E.C. ist ein französischer Verein. Sie ist im Registre des Associations des Tribunal d'instance de Strasbourg seit 30.09.1996 als Verein eingetragen. 1997 hatte der Vorstand beschlossen, jährlich auf den Kongress hin ein Journal herauszugeben. Seither sind die Hefte Nr. 0/1998 bis Nr. 18/2016 erschienen, die alle noch erhältlich sind. Die Molekulartechnologie hat auch in der Mykologie Einzug gehalten. 2008 setzte der Vorstand eine DNA-Gruppe ein. Systematisch werden einzelne Sektionen der Gattung Cortinarius sequenziert und die Ergebnisse im Journal des J.E.C. publiziert. Finanziert sind diese immer noch relativ teuren DNA-Analysen durch 4 Forschungsbeiträge des Schweizer Kantons Schwyz in Höhe von total CHF 19'000.00. Die Kongresse der J.E.C. haben zwar das Studium von Cortinarien zum Zweck. Aber ebenso wichtig sind in der J.E.C. die familiäre Atmosphäre und die zwischenmenschlichen Kontakte. Höhepunkt jeder Tagung ist der Gala-Abend mit einem Gala-Dinner, wo die Geselligkeit Vorrang hat. Das macht jede Tagung unvergesslich, auch diejenige von Borgsjö 2016.

Oswald Rohner, Präsident der J.E.C
www.jec-cortinarius.org

Our work place. Photo: Olga Morozova

Discours du président Oswald Rohner lors de la manifestation de Borgsjö en 2016

Borgsjö a une longue tradition de lieu de congrès mycologiques. Depuis 1982 s'y sont déroulés quinze congrès. Les J.E.C. sont par conséquent très reconnaissantes aux deux organisateurs de la manifestation de 2016, la société mycologique de Sundsvall, présidée par Jeanette Södermark, et la société de teinture fongique, présidée par Hans Andersson, que ces 34e Journées aient pu avoir lieu au pays de Fries.

Nous étions impatients d'explorer ces forêts dans lesquelles M. Moser avait récolté des cortinaires. Nous ne furent point déçus! Parmi les trouvailles intéressantes, nous citerons *Cortinarius (Phlegm.) aureofulvus, C. (Phlegm.) sulfurinus, C. (Tel.) caesioarmeniacus, C. (Tel.) fuscovelatus, C. (Tel.) fuscoperonatus et C. (Tel.) privignatus.* Tous les jours Tor Erik Brandrud fit un tour de table commenté. Une nouveauté fut que les tours de table s'accompagnèrent de projections de photographies prises le jour même par Michael Krikorev, photographe professionnel, et montrées à l'aide d'un vidéoprojecteur ce qui permettait aux participants de suivre au mieux les explications données. Les champignons furent exposés dans une tente, à l'extérieur, à une température optimale pour qu'on puisse les examiner à loisir tranquillement. Lors de trois soirées eurent lieu d'intéressants exposés. Anders Dahlberg nous introduisit au monde encore insuffisamment exploré des mycorhizes, Tor Erik Brandrud nous parla des forêts de Borgsjö riches en cortinaires et Karl Soop présenta des espèces de Nouvelle-Zélande. Les locaux mis à disposition des congressistes étaient vastes, ce qui fut très apprécié. Les participants travaillèrent assidûment, du matin à tard dans la soirée, à

Bengt Petterson give instructions. Photo: Olga Morozova

photographier, décrire et déterminer les espèces récoltées. Comme à l'accoutumée lors des congrès des J.E.C. régnait une ambiance cordiales et collégiale entre les participants. Quinze nations étaient représentées. Une manifestation telle celle de Borgsjö en 2016 favorise les échanges d'opinion et les contacts entre les mycologues. L'exploration du genre Cortinarius étant un projet international, il est important que le congrès annuel des J.E.C. ait lieu année après année dans un pays européen différent.

Hjördis Lundmark et Jan-Olof Tedebrand furent les responsables de l'organisation de notre congrès à Borgsjö. Qu'ils en soient chaleureusement remerciés, ainsi que tous ceux qui les ont aidés. Sans grand moyens financiers, ils sont parvenus à répondre aux exigences d'un tel congrès, à la grande satisfaction de tous. Dans ces remerciements, nous incluons les nombreux directeurs d'excursions qui nous ont guidés dans leur forêts riches en cortinaires et nous ont fait connaître leurs localités de prédilection. Merci également pour le programme accessoire, qui fut très estimé, tout particulièrement les techniques de teinture des laines et de la soie avec des pigments de cortinaires qui, pour de nombreux participants, fut une nouveauté captivante.

L'association Journées européennes du Cortinaire (J.E.C.) a été fondée en 1983 à Bédarieux. Depuis cette date eurent lieu trente-quatre congrès, dans dix pays différents, entre autres trois congrès en Suède (Härnösand, 1997, Mora, 2007 et Borgsjö, 2016). Les J. E. C. sont consacrées exclusivement à l'étude et à la recherche sur le genre *Cortinarius*. Après des années d'activité ralentie, les J.E.C. ont été rénovées sous la présidence de Walter Pätzold, à Hornberg, en 1996 et connurent alors un regain d'activité. Les Journées européennes du Cortinaire sont une association française. Elles sont inscrites au registre des Associations du Tribunal d'instance de Strasbourg depuis le 30 septembre 1996. En 1997 le conseil d'administration de l'association a décidé d'éditer un journal annuel. Depuis cette date, sont parus les numéro 0 (1998) à 18 (2016), lesquels sont encore disponibles. Les techniques moléculaires ont aussi fait leur entrée dans le journal. En 2008 le conseil d'administration a constitué un groupe s'occupant des questions de génétique moléculaire. Les sections du genre *Cortinarius* seront systématiquement séquencées et les résultats de ces recherches seront publiées dans notre journal. Ces études encore relativement coûteuses sont financées par quatre contributions du canton suisse de Schwyz à hauteur de 19 000 francs suisses. Les congrès de J.E.C. ont certes pour but d'étudier les cortinaires, mais tout aussi important sont l'ambiance familiale et les contacts entre participants. Le point culminant de chaque session est la soirée de gala avec un dîner où les contacts humains prennent le pas. Cela rend chaque réunion mémorable, et celle de Borgsjö en 2016 n'y échappe pas.

Oswald Rohner

Group Photo: Hans Andersson

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Entoloma fans in stormy weather at meadow in Jämtland.

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Admiring the rainbow. Photo: Olga Morozova

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Hans Marklund at his kitchen table. Photo: Hjördis Lundmark

Hans Marklund

– biolog, pedagog och fotograf

Vi var många som saknade Hans Marklund vid JEC-veckan 2016. Just när naturen började vakna till liv våren 2015 slocknade livsgnistan hos naturkonstnären Hans Marklund. Här följer några minnesord om denne konstnär, naturvän och kännare av Cortinarius.

Hans föddes 1937 i Glommersträsk, växte upp i Jörn, Västerbottens inland. Efter utbildning till biologilärare arbetade Hans och hustrun Barbro i skolvärlden. De kunde glädja sig åt barnen Erika och Emil och två barnbarn. Men den konstnärliga ådran tog över. Hans fotografiska bilder av natur och landskap finns i många böcker om konst och hemslöjd.

I början av 1980-talet startade Hans Marklund, Siw Muskos och Pelle Holmberg en kursverksamhet som med tiden blev utbildning av svampkonsulenter. Utbildningen inleddes på Hussborg i Ånge, flyttades till Statens Skola för Vuxna i Härnösand och övergick sedan till Umeå universitet. Hans och Pelle Holmberg gav ut ”Nya Svampboken”, vår mest spridda lärobok om matsvamp. Boken ”Färgsvampar & Svampfärgning” i samarbete med Hjördis Lundmark blev en annan uppskattad bok.

Hans var även med och startade Härnösands svampklubb. Tillsammans med Tor Erik Brandrud, Håkan Lindström, Jacques Melot och Siw Muskos gav Hans Marklund ideellt ut fem volymer av en fotoflora på fyra europeiska språk för att sprida kunskap om svampsläktet spindelskivlingar (Cortinarius), dessa viktiga underjordiska skogsarbetare som förser träd och växter med vatten och näring.

I september 2016 samlades alltså cirka hundra europeiska naturvänner i Borgsjö, Ånge för att under en vecka specialstudera just spindelskivlingar och lyssna på markforskares föredrag om naturens eviga kretslopp. De fem volymerna av *Cortinarius Flora Photographica* med Hans Marklunds bilder prydde givetvis en hedersplats vid Borgsjömötet.

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

Journées Européennes Du Cortinaire (JEC)

■ MEMBRES DU BUREAU 2016-2017

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Corsino Gutierrez, Espagne
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Excursion guide

All participants received at the arrival an excursion guidebook with facts and maps about all destinations, lists of some earlier interesting records of *Cortinarius* and also other fungi. The guide can also be found www.myko.se, link "JEC 2016". Each destination has a unique number. Torkel Edenborg, son-in-law of Hjördis Lundmarks, is credited for the very fine layout of the guide.

Guide d'excursion

Chaque participant a reçu une documentation comprenant un guide des excursions, des cartes et des informations détaillées sur tous les lieux pouvant être visités. On trouvera cette documentation également à l'adresse www.myko.se et JEC 2016

Excursions

MONDAY, LUNDI 29/8

Group 1, Tubbobäcken, V. Mörberget (57)

Bengt Larsson, Håkan Sundin

Group 2, Bodåsen O (51), Kullbäcken-Markbäcken (51 B)

Hans Andersson, Jan-Olof Tedebrand

Group 3, Floberget, (page 213 in the guide)

Michael Krikorev, Per Sander

Group 4, Nästmyren (Fugelsta) 121, Storvålen (126)

Bengt Petterson, Lennart Vessberg

TUESDAY, MARDI 30/8

Grupp 1, Åsetjärn (58), Sågåstjärn (63 B)

Bengt Larsson, Håkan Sundin

Grupp 2, Lombäcksheden (49) Granbodåsen (52)

Hans Andersson, Jan-Olof Tedebrand

Grupp 3, Dysjöberget, (page 212 in the guide)

Michael Krikorev, Per Sander

Grupp 4

Bengt Petterson: Andersön

Grupp 5 Kullbodarna (53), Granboda, Råabäcken, Granbodåsen (52)

Lennart Vessberg

WEDNESDAY, MERCREDI 31/8

Group 2, Jämtgaveln, Svarttjärn (18), Värsjön

Bengt Larsson, Håkan Sundin

Group 3, Julåsen (22)

Hans Andersson, Jan-Olof Tedebrand

Group 4, Rankleven

Michael Krikorev, Per Sander, Bengt Petterson åkte till kyrkogården och nornalokalen med några kompisar.

Cortinarius borgsjoeënsis. Photo: Hans Marklund

THURSDAY, JEUDI 1/9

Group 1, Tunsved (133)

Bengt Petterson

Group 2, Södra Sillre, björksumpskog (28 B)

Hans Andersson, Jan-Olof Tedebrand

Grupp 3, Orråsberget N (41), Husmyrbäcken

Bengt Larsson, Håkan Sundin

Grupp 4, Jämtgaveln

John Granbo, Michael Krikrorev

FRIDAY, VENDREDI 2/9

Group 1, Tysjöarna (130),

Bengt Petterson

Grupp 2, Ensillrebodarna, V. Halmmyran (46)

Bengt Larsson, Håkan Sundin

Grupp 3, Sidsjö (113)

Hans Andersson, Jan-Olof Tedebrand

The road to fairy tale. Photo: Tatyana Svetasheva

Abreviations and other Information/ Abréviations et des autres informations

F = Fältblankett.	A label used for mushroom collections at the exhibition with relevant data	Chamignons sur l'exposition avec papier
Natura 2000	EU network of protected areas	Le réseau européen des zones protégées
Naturreservat	Nature reserve	Reserve naturelle
sn = socken	Parish	Paroisse
UPS	**The Museum of Evolution Herbarium (Uppsala university)**	

Many common fungi have, after the introduction of DNA techniques, been split in several species. Mycena pura is nowadays considered to be at least 7 species! The genus Clavaria is now going to be split into atoms! In the following report we mainly follow the names used in Swedish Dyntaxa, www.dyntaxa.se

Les pluspart des noms scientifiques suivent swedish Dyntaxa, www.dyntaxa.se

Two scientific papers of *Cortinarius* findings during JEC meeting in Borgsjö are published in Journal des J.E.C. No. 19, 2017 (also at myko.se link JEC 2016):

Interessante Cortinarius-Funde der Journées européennes du Cortinaire 2016 in Borgsjö, Schweden, Geert Schmidt-Stohn, Tor Erik Brandrud & Bálint Dima *Liste des Cortinaires récoltés pendant les Journées européennes du Cortinaire à Borgsjö 2016 Jan-Olof Tedebrand, Tor Erik Brandrud & Bálint Dima.

Additions, corrections

Please let us know if you find wrong data in the report. We are also grateful for additional data. All data will sooner or later be entered in the Swedish database run by the Swedish species information centre (Artportalen): www.artportalen.se.

Giampaolo in deep virgin forest.
Photo: Olga Morozova

The shores of Borgsjön was open and grazed 100 years ago. Today covered with deciduous trees.
Photo: Hjördis Lundmark

1 Västanå, forest south of Folkets Hus (our work place) near the river Ljungan, Borgsjö sn, Medelpad

Excursion guide page 23

Forest south of our work place with *Betula, Picea, Pinus, Populus, Salix*, also *Pinus* at Ljunganåsen near the river.

Betula, *Picea*, *Pinus*, *Populus*, *Salix*. Earlier findings: *Cortinarius agathosmus*, *C. argutus*, *C. parvannulatus*, *C. uliginosus*. Also *Stagnicola perplexa* (C, UPS).

Forêt sud de la salle de travail avec *Betula, Picea, Pinus, Populus, Salix.Résultats antérieurs: Cortinarius agathosmus, argutus, parvannulatus, uliginosus. Aussi Stagnicola perplexa.*

Cortinarius trivialis ss CFP, F, *Populus*, Daniel Dvorak-Miroslav Beran

Hypomyces spadiceus, F, Daniel Dvorak-Miroslav Beran, det Kaatriina Bendiksen

Kuehneromyces mutabilis, F, Miroslav Beran

Pholiota alnicola, F, Daniel Dvorak

Pholiota tuberculosa, F, *Populus*, Daniel Dvorak

Russula versicolor, F, *Betula*, Miroslav Beran-Daniel Dvorak

2 Borgsjöbyn S, football ground, Borgsjö sn, Medelpad

Excursion guide page 23

Forests near the lake with *Betula, Picea, Pinus,Populus.*

Forest with *Alnus, Betula, Salix* at the lake shore with *Amanita friabilis, Cortinrius violaceus, Gyrodon lividus, Paxillus filamentosus.* Henri Romagnesi visited this river forest on

Esperance et André

En 2000, la Société mycologique de Suède (Sveriges mykologiska förening, en abrégé SMF, comme en France) s'est rendue dans les montagnes du Jura français. Trente membres de la société suédoise ont ainsi rencontré leurs homologues et amis français dans différentes parties du Jura, mais aussi en Savoie. Nous avons aussi rendu visite au Club mycologique et botanique de Meyzieu, près de Lyon, où Espérance et André Bidaud fait découvrir une énorme salle d'exposition, avec plus de huit-cent espèces exposées. Nous avons pu examiner Cortinarius xanthophyllus, un champignon que nous connaissons en Suède de l'île de Gotland ainsi que le télamonia Cortinarius scaurotraganoides. Espérance, la responsable du Club, et la délégation suédoise ont levé leur verre à l'amitié et à la mycologie. Il en reste de nombreux souvenirs de ces jours passés en compagnie des amis mycologues des montagnes du Jura et de Savoie.

Le jeune Andreas Lindström à l'exposition mycologique de Meyzieu en 2000. Son père, Håkan Lindström, a nommé une nouvelle espèce en son honneur: *Cortinarius andreae* (CFP E17). Photographie: Hjördis Lundmark.

24/8 1983. He was delighted to meet the little *Amanita friabilis* for the first time in his long life as a mycologist (S, herb Romagnesi). The local mycologists Carina Eriksson and Jan-Ola Wimo found here 2/9 1987 here in *Alnus incana* forest the southern, rare fungus *Coprinopsis pannucioides* together with Eef Arnolds and Erik Rald, (UPS), (E, Rald). Ruben Walleyn gathered the alpine species *Lactarius brunneoviolaces* under *Salix* in damp thickets in beach places of the Borgsjö lake.

3 Borgsjöbyn, Borgsjö sn, Medelpad

Excursion guide pages 24-26

Henri Romagnesis broadleaved forest, Henri Romagnesis feuillus.

Just near our working hall. Forest with *Alnus*, *Betula*, and *Salix* at the lake shore with *Amanita friabilis*, *Cortinarius violaceus*, *Gyrodon lividus* and *Paxillus filamentosus*. Also *Lactarius* and *Russula* species connected to *Alnus* and *Salix*. Nils Lundqvist collected in 1985 *Diatrype* (*Eutypa*) *flavovirens* immersed in bark of *Alnus incana*, the northernmost finding in Sweden according to www.dyntaxa.se. – a very common species further south.

Forêt avec *Alnus, Betula, Salix* sur le fleuve avec *Amanita friabilis, Cortinrius violaceus, Gyrodon lividus, Paxillus filamentosus*. Henri Romagnesi rendit visite à cette forêt fluviale le 24/8 1983. Il se rejouissait énormement d´y rencontrer la petite *Amanita friabilis* pour la première fois de sa longue vie de mycologue (S, *herb Romagnesi*). Les mycologues locales Carina Eriksson et Jan-Ola Wimo ont trouvé ici 2/9 1987 dans la forêt *d'Alnus incana* le champignon rare du sud *Coprinopsis pannucioides* avec Eef Arnolds et Erik Rald, (E, Rald). Ruben Walleyn a rassemblé *Lactarius brunneoviolaces*, un *Lactarius alpine*, sous *Salix* dans les endroits humides au bord du lac.

Eva Hauke, Otto Kowalenko and others visited 29/8 2016 locality 2 and 3 and noted: Le 29-8-2016 Eva Hauke, Otto Kowalenko et d'autres ont exploré les localités 2 et 3 et trouvé.

– Fungi and Nature Conservation in Sweden –

Swedish Species Project

The Swedich Species Information Centre (Artdatabanken) was approved by the Swedish Parliament in 2002 with the task to map all Swedish approximately 60,000 multicellular animals, fungi and plants. Since the project started, over 3,000 new species have been found, mostly insects. In the coming years inventories of some less known fungal groups will be carried out all over the country from the beech forests in Skåne to the alpine heaths of Lapland with many exciting results it the promise!

The Swedish species project consists of inventory and taxonomic research of poorly known groups, support for biological museums and the national key to the Swedish fauna, flora and funga:

Inventory of poorly known organisms. The Swedish species project supports targeted inventory efforts on poorly known organisms such as fungi and / or in poorly-known environments.

- Taxonomic research on poorly known species. The research and inventories supported by the Swedish species project have so far led to the discovery of approximately 3,000 new species in the country, of which about 1,000 species are completely new to science during the period 2002-2014.
- Support for biological museums. In order for material from ongoing research and inventories to be documented and preserved for the future and to make collections available in public databases and to strengthen the taxonomic competence of museums regarding poorly known organisms.
- To present and make available knowledge about Swedish species. Spreading of knowledge has taken place through the National Key (published as books on selected groups) and by publishing on website.

Species list

Aleuria aurantia
Amanita porphyria
Cortinarius armillatus
Cortinarius caperatus
Cortinarius collinitus
Cortinarius delibutus
Cortinarius gentilis
Cortinarius pholideus
Cortinarius rubellus
Cortinarius sanguineus
Cortinarius saturninus
Cortinarius triumphans
Cortinarius uliginosus, F, *Salix*, Eva Hauke, Otto Kowalenko, UPS
Cystoderma amianthinum
Fomtiopsis pinicola
Gomphidius glutinosus
Hygrophorus camparophyllus
Hygrophorus olivaceoalbus
Lactarius glyciosmus
Lactarius repraesentaneus
Lactarius torminosus
Lactarius trivialis
Lactarius uvidus
Leccinum variicolor
Lepista gilva
Lyophyllum connatum
Peziza badia
Piptoporus betulinus
Suillus luteus
Suillus variegatus
Tricholoma inamoenum

Comment, commentaire

Cortinarius uliginosus is excellent for dyeing and contains both yellow and red anthraquinone pigments. Hjördis Lundmark and Hans Marklund describes wool dyeing with C. uliginosus at p 194-195 in their book ”Färgsvampar och svampfärgning”.

Cortinarius uliginosus est un excellent champignon coloré contenant à la fois des pigments jaunes et rouges d’anthraquinone. décrivent la teinture de la laine avec *C. uliginosus* aux p 194-195 dans leur livre ”Färgsvampar och svampfärgning”.

Cortinarius uliginosus. Photo: Hjördis Lundmark

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7 Borgsjö cemetery, Borgsjö sn, Medelpad

Excursion guide page 27

The first Borgsjö weeks were held in the parish hall near the church. The cemetery is therefore well inventoried from 1982 onwards. The church, considered the most beautiful rococo church in Sweden, is surrounded by lawns and pastures and meadows planted with birch trees. The medieval wooden sculpture representing Saint Olof, protector of our JEC meeting, is in the nave of the church.

Here in the church park and memorial grove (meadow) Carina Eriksson and Jan-Ola Wimo found *Entoloma rusticioides* (30/8 1993, det. Machiel Noordeloos). Henning Knudsen, the late Juhani Ruotsalainen, Jukka Vauras and Birgitta Wasstorp studied the rich *Russula* funga at the cemetery during several Borgsjö weeks and found for exemple *Russula anatina*, *R. cremeoavellanea* and *R. violaceoincarnata*. Arne Aronsen and Thomas Læssøe found interesting *Mycena* species here 1/9 1991. Thomas deposited in the Kew fungarium: *Mycena cyanorrhiza*, *M. leptocephala*, *M. mirata*, *M. polygramma*, *M. pura*, *M. stylobates* and *M. vulgaris*. Among *Cortinarius* records are *C. cyanites*, *C. hinnuleus* and *C. triumphans*. During the *Hygrocybe* week in 1987 Eef Arnold, Johan Nitare and Erik Rald found many species of *Camarophyllopsis*/*Hodophilus*, *Entoloma*

Eef Arnolds, Erik Rald, Johan Nitare and Jan-Olof Tedebrand at the Hygrocybe meeting in 1997. Photo: Kjell Olofsson

and *Hygrocybe* s.l. at the memorial grove, list in the SMF journal Jorstjärnan 1992(2).

The ectomycorrhial ascomycote genus *Helvella* is interesting and is now going to be revised. In a road ditch outside the cemetery the southern *H. crispa* along with the *H.lacunosa* s.l. can be found every year. *Helvella oblongispora* is found along Lönnån north of the cemetary. Thomas Læssøe has found *H. rivularis* at Granbodåsen in Borgsjö.

Near the church there is a pine plantation, where the ground is covered in horse manure. Leif Örstadius believes the forest is the best site for dung fungi in Europe. It is the type locality for two species: *Psathyrella scatophila*, collected by Leif Örstadius and *Cercophora aggregata*, collected by Nils Lundqvist. Roy Watling colllected many coprophilous mushrooms here during the *Conocybe* week in 1993.

Russula cremeoavellanea. Photo: Hjördis Lundmark

Roy gave details about the forest in his article in the journal of the Swedish Mycological Society, Jordstjärnan 1994/3.

During many workshops mycologists have visited Saint Olofs spring at the old road from the iron age at the slopes of mountain Bergåsen and in clear holy water a toast to fungi and friendship have been proposed!

Les premières semaines de Borgsjö ont eu lieu dans la salle paroissiale de l'église. Le cimetière est donc bien inventorié pour ce qui est de sa flore fongique. L'église rococo de Borgsjö est entourée de pelouses et de pâturages plantées de bouleaux ;la sculpture médiévale en bois représentant le Saint Olof, protecteur du congrès des J.E.C., en occupe la nef.

Ici, dans le parc de l'église et mémorial en général (pré) Carina Eriksson et Jan-Ola Wimo ont trouvé *Entoloma rusticioides* le 30-8-1993 (det. Machiel Noordeloos). Henning Knudsen, Henri Romagnesi, Juhani Ruotsalainen, Jukka Vauras et Birgitta Wasstorp ont, à plusieurs reprises, étudié les *Russulales* dans le cimetière de Borgsjö à l'occasion des semaines mycologiques. Birgitta trouvé *Russula cremeoavellanea* le 30-8-1993 (S). Arne Aronsen et Thomas Læssøe ont fait des récoltes intéressantes de Mycena le 1-9-1991. Les espèces suivantes ont été déposées par Thomas dans *K: Mycena cyanorrhiza, leptocephala, mirata, polygramma, pura, stylobates, vulgaris,* et de nombreuses récoltes de *Cortinarius, notamment C. cyanites, hinnuleus, triumphans.* Au cours de la semaine consacrée aux *Hygrocybe (1987),* Eef Arnold, Johan Nitare et Erik Rald ont trouvé de nombreuses espèces d'Entoloma et d'Hygrocybe au mémorial (liste dans Jordstjärnan, 1992, n° 2).

Près de l'église il y a une plantation de pins au sol recouvert de fumier de cheval. Leif Orstadius regarde cette forêt comme le meilleur lieu d'Europe pour les champignons

coprophiles. Il s'agit de la localité type pour deux espèces coprophiles nouvelles pour la science: *Psatyrella scatophila*, récoltée par Leif Orstadius, et *Cercophora aggregata*, récoltée par Nils Lundqvist. Roy Watling a rassemblé beaucoup de champignons coprophiles ici pendant la semaine consacrée au genre *Conocybe*, en 1993. Roy parle de cette forêt dans un article du journal de la société mycologique suédoise (1994, n° 3).

Species list 31/8 2016

Gunnel Avehag, Inga-Lill Franzén, Bengt Petterson
Amanita muscaria var. muscaria
Amanita vaginata
Clavaria vermicularis
Coartinarius triumphans, F, *Betula*, Bengt Petterson, conf Ilkka Kytövuori
Hygrocybe conica
Lactarius necator
Leccinum scabrum
Russula aeuruginea
Russula atroglauca, 30/8, Betula, Pinus, lawn, leg, det Herbert Kaufmann, HK 16009
Russula cessans, Pinus, lawn, leg, det Herbert Kaufmann, HK 16010a
Russula cremeoavellanea, 2/9, Betula, Pinus, lawn, leg, det Herbert Kaufmann, HK 160118
Russula gracillima
Russula foetens
Russula pubescens, Betula, Pinus, leg, det Herbert Kaufmann, HK 16008
Russula puellaris
Russula scotica, Betula, Pinus, lawn, leg, det Herbert Kaufmann, HK 160106
Tricholoma fulvum, F, Bengt Petterson

Saint Olof in Borgsjö church.

Comment, commentaire

Russula cremeoavellanea is common and typical under birch in parks and cemeteries here in Medelpad and Jämtland, also found in alpine birch forest in Jämtland, often but not always on chalk rich soil, see article about "*Russula* in Mid Sweden" in the journal "Jordstjärnan" 2002/3.

Both Herbert and Hjördis made fine collections of *Russula* species, see Herberts paper about *Russula* findings during JEC meeting at the end of this report.

Tuula found *Cortinarius alboamarescens* at Alby Cemetary and at Kew Garden!

Cemeteries with old trees are often good places for rare fungi. At the *Cortin arius* meeting in Borgsjö 2003 Tuula Niskanen and Kare Liimatainen found av small, white *Myxacium* species at the cemetary in Alby (Alby kyrkogård) in Borgsjö parish. They showed the collection to Tor Erik Brandrud and others but nobody had a clue. Now Tuula and others have described the species as *Cortinarius alboamarescens*. Tuula has also found the species in Kew Gardens outside London, where she currently work as a scientific mycologist!

Tatyana Svetasheva on an enormous Fagus log in Kaukasus, Russia. Photo: Anders Dahlberg

Tor Erik Brandrud and Balint Dima. Photo: Olga Morozova

Peaceful picture of Anders Dahlberg in old house at the youth hostel. Photo: Tatyana Svetasheva

Our excellent nature guide Per Sander tells about the landscape. Photo: Tatyana Svetasheva

Hygrocybe punicea. Photo: Annika Carlsson

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8 Borgsjö old historic yard and youth hostel, Borgsjö sn, Mpd

Excursion guide page 27

Here in the idyllic old folk museum and youth hostel many of JEC congress participants were staying. Lawns with old scots pine, coniferous and deciduous forests all around. The Belgian mycologist Ruben Walleyn found 19 *Russula* species in 2001 around the youth hostel: *adusta, aeruginea, betularum, cessans, chloroides, claroflava, cremeoavellanea, favrei, foetens, fontqueri, globispora, gracillima, griseascens, lutea, nauseosa, postiana, rhodopoda, roseipes, vesca.* Old tramped courtyard at limerich soil are also a paradise for meadow fungi. Johan Nitare and Eef Arnolds collected here in 1987: *Geoglossum atropurpureum, Hygrocybe subminutula, Hygrotrama foetens, H. hymenocephala, Ramariopsis crocea.* Nils Lundqvist was a dear friend and guest at many fungi weeks in Borgsjö. He collected many hundreds of mostly smaller fungi like rusts and smuts to the herbarium Stockholm (S). Nils found 15/9 1995

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

Hymenoschyphus scutula at dead *Tanacetum vulgare* here at the youth hostel. A list of Nils collections just during fungi week in Borgsjö 1995 is available at www.myko.se, link Publikationer – Borgsjörapporter and 1995 Borgsjö rapport, pages 37–38.

At one of the first mushroom weeks in Borgsjö we had our banquet here in the old building Hedlundska gården and served delicate *Hygrocybe punicea* cooked in white sauce and picked at the fine meadow Granbodåsen.

Elisabeth Nilsson and very big aspen log with the rare *Gyromitra sphaerospora*.

– Fungi and Nature Conservation in Sweden –

Anders Arnell and Britt-Marie Lindström arranged exciting meeting in 1996

During JEC meetings around Europe we often discuss how species in *Cortinarius* and other fungi are influenced by changes in the European landscapes and how to protect the finest nature areas with a rich and threatened fungus diversity. Perhaps it is of some interest to learn a little about fungi and nature conservation in Sweden. The Swedish model for forestry means that production and environment are equal in the law from 1994. In comparison with many other countries Sweden have rather limited areas with nature reserves, but environmental issues are part of all forestry practices. There has been interesting discussions in broad networks in the recent years and the government (social-democrats and the green party) will present an action plan for Swedish forests at the end of 2017.

On a cold winter day in 1996 the Ånge municipality and the County Board of Västernorrland hosted a meeting about saving the biological diversity in Ånge (Borgsjö is a parish In Ånge). The meeting took place at the idyllic St Olofs inn, where we stayed at the first Borgsjö weeks 30 years ago. Anders Arnell and Britt-Marie Lindström from the County Board in Västernorrland initiated the meeting and among participants were the skilful landscape botanists Rolf Lidberg and Håkan Lindström; also Bengt Larsson and Jan-Olof Tedebrand, the local owner of Callans Saw mill N Bo Callans, local people from the forest company SCA and the private forest owners organization Norrskog participated. Rolf started with saying that he was very satisfied that forest ditching now had stopped in the area and in Sweden in general. Rolf argued that many vascular plans and also many fungi are dependent on wet areas. Håkan Lindström then pointed out the high value of so called "ängsgranskogar": *Picea* forests on calcareous soil often in mountain slopes, where water moves close to the surface and *Hepatica nobilis* and tall herbs dominate. Gunnar Selling from the local office of Skogsstyrelsen (National Board of Forestry) in Ånge told us about the possibility to protect smaller areas as "biotopskydd" or "naturvårdsavtal". N Bo Callans got credit for protecting the first such small area in the entire Västernorrland county at Holkåsen in Borgsjö with old aspen on rich soil. SCA told us that they protect 5 percent of their forests in respect to nature values and also 5 percent as so called "hänsynsområden". Planting of fast growing North American *Pinus contorta* in some areas was at down side concerning biodiversity.

Today SCA and other big forest companies try to compensate for Pin*us contorta* by saving larger so called "eko-parks" across Sweden. Anders Arnell thanked at the end of the seminar that cold memorable winter day in 1996 all participants for giving talks and reminded us about the responsibility to preserve a healthy and species rich nature according to the convention on Biological Diversity signed by Sweden at the global conference in Rio de Janeiro 1992.

6952500 1502500

17 Slope of Mount Värsjö towards Munkfjorden, Jämtgaveln nature reserve, Borgsjö sn, Medelpad

Excursion guide page 35

Group 2, 31/8 2016

Guides: Bengt Larsson, Håkan Sundin.
Participants: André Bidaud, Esperance Bidaud, Miroslav Beran, Margareta Byström, Xavier Carteret, Daniel Dvorak, Lynn Delgat, Inga Lill Häggberg, Werner Jürkeit, Håkan Lindström, Bernt Linton, Viktor Papp, Birgitta Wasstorp, Lennart Vessberg, Jaap Wisman.

Species list

Bankera fuligineoalba
Cortinarius angelesianus, F, Håkan Lindström
Cortinarius biformis, F, *Pinus*, Håkan Lindström
Cortinarius claricolor
Cortinarius mucosus, F, *Pinus*, Håkan Lindström
Cortinarius quarciticus, Pinus, Håkan Lindström
Cortinarius tubarius, *Pinus*, Håkan Lindström, UPS
Cortinarius turmalis, F, *Pinus*, Håkan Lindström. Espèce connue précédemment sous le nom mal appliqué *Cortinarius sebaceus* Fr. L'interprétation moderne de *C. turmalis* est due à Jacques Melot.
Cortinarius vibratilis var. bresadolae (C. emollitus ss Lange in Brandrud et. Al. JEC 2012), F, *Pinus,* Håkan Lindström, det Ilkka Kytövuori
Hydnellum caeruleum
Lactarius torminosus
Leccinum vulpinum, F, *Pinus*, Håkan Lindström
Sarcodon fennicus
Tricholoma aestuans, F, *Pinus*, Håkan Lindström
Tricholoma focale
Xerocomus ferrugineus

6953333 1503582

18 A Jämtgaveln, Svarttjärn, Borgsjö sn, Mpd

Excursion guide page 35

Jämtgaveln is a popular, vast wilderness nature reserve in the north part of Borgsjö. Here you also find many traces from human activities in older times. The local historian Ivan Johnson made a fascinating report in 1996 about "Torringen och Jämtgaveln- en historisk studie" supported by the County Board and Ånge municipality. The forest fires in Jämtland have been studied by many forest researchers. Bengt-Gunnar Jonsson at Mid Sweden University in Sundsvall and his colleges have studied fungi on burnt wood in Jämtgaveln. Bengt Larsson and Gunnar Selling have guided many tourists and mycologists to Jämtgaveln.


JEC Borgsjö 2016
Collectio fungis
☐ Cortinarius Sowerbyella rhenana
☐ alia
Locus Brandplatz Nr. 3 Jämtgaveln
Biotop ☒ Pinus ☒ Picea
alia Wegrand
Dies 2. aug./sept. 2016
Leg. M. Rolf
Det. M. Rolf Conf.

The area around Svarttjärn, near the landscape border, is for some reason outside the nature reserve and is not a key biotope despite its very high nature values. We have studied mycorrhizal fungi in this fascinating biotope at many Borgsjö workshops. It can be described as old virgin, mossy conifer forest with scattered aspen and birch, and also with big fallen logs of both broadleaved and coniferous trees. A real fungus hotspot on rich soil and a popular excursion goal during Borgsjö workshops. In 2010 Berndt Oertel och Geert Schmidt-Stohn collected *Cortinarius caesiocinctus*. Doris Laber collected *C. spaghnophilus, Hygrophorus inocybiformis, H. karstenii* and *Lactarius auriolla*. *Cortinarius rusticus* and *Lactarius subcircellatus* are also found here.

> Forèt moussue de conifères. Ici en 2010 Berndt Oertel och Geert Schmidt-Stohn ont récolté *Cortinarius caesiocinctus*. Doris Laber ici recolté en 2010 *Cortinarius spaghnophilus, Hygrophorus inocybiformis, H. karstenii et Lactarius auriolla. Aussi Cortinarius rusticus* et *Lactarius subcircellatus.*

Group 2, 31/8 2016

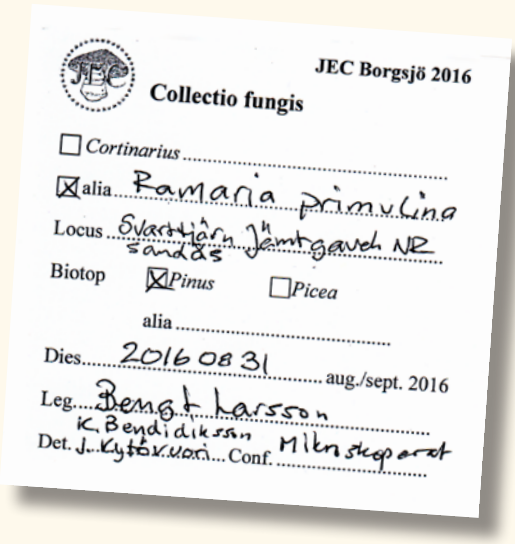
Guides: Bengt Larsson, Håkan Sundin.
Participants: André Bidaud, Esperance Bidaud, Miroslav Beran, Margareta Byström, Xavier Carteret, Daniel Dvorak, Lynn Delgat, Inga Lill Häggberg, Werner Jürkeit, Håkan Lindström, Bernt Linton, Viktor Papp, Birgitta Wasstorp, Lennart Vessberg, Jaap Wisman.

Species list

Bankera fuligineoalba, F, *Pinus*, D. Dvorak
Boletopsis leucomelanea, F, Lennart Vessberg, conf. Jan-Olof
Clitocybe nebularis
Clitocybe odora
Cortinarius angulosus, F, Picea-Pinus, det André Bidaud, Xavier Carteret
Cortinarius biformis
Cortinarius brunneus
Cortinarius caperatus

Ilkka Kytövuori visar stolt upp *Tricholoma colossus* vid gamla tallar på Värsjöåsen i Jämtgaveln 1997, enda fyndet hittils i Medelpad av denna praktfulla svamp. Photo: Hans Andersson

Cortinarius collinitus
Cortinarius colymbadinus, F, Lennart Vessberg, det. Ilkka Kytövuori. *L'interprétation moderne sous le nom C. colymbadinus* est due à Jacques Melot. L'espèce était connue précédemment sous le nom mal appliqué *C. isabellinus.* Elle a aussi été interprétée comme étant *C. zinziberatus,* au moins ss. Fries, qui n'est peut-être qu'un synonyme de *C. colymbadinus.*
Cortinarius croceus
Cortinarius delibutus
Cortinarius depressus (=adalberti), F, Picea-Pinus, André Bidaud
Cortinarius evernius, F, *Picea*, in sphagnum, Miroslav Beran
Coritnarius glaucopus
Cortinarius illuminoides Bidaud (= illuminus ss CFP), André Bidaud
Cortinarius laniger
Cortinarius ochrophyllus
Cortinarius odhinnii, F, *Pinus*, Håkan Lindström, UPS
Cortinarius pholideus
Cortinarius pinophilus, F, Lennart Vessberg, det Karl Soop
Cortinarius quarciticus, F, Lennart Vessberg
Cortinarius riederi
Cortinarius semisanguineus
Cortinarius stillatitius, F, *Picea*, Lennart Vessberg
Cortinarius talus, F, Pinus, André Bidaud, Xavier Carteret
Cortinarius traganus
Cortinarius trivialis ss CFP
Cortinarius turmalis, F, *Pinus*, Håkan Lindström. Espèce connue précédemment sous le nom mal appliqué Cortinarius sebaceus Fr. L'interprétation moderne de C. turmalis est due à Jacques Melot.


JEC Borgsjö 2016
Collectio fungis
☐ Cortinarius
☒ alia Ramaria primulina
Locus Svartkärn Jämtgaveln NR Sandås
Biotop ☒ Pinus ☐ Picea
alia
Dies 2016 08 31 aug./sept. 2016
Leg. Bengt Larsson K. Bendiksen
Det. J. Kytövuori Conf. Milnsteporat

Cortinarius vibratilis
Entoloma majaloides, u, *Pinus*, Margareta Byström, det Olga Morozova, UPS
Gomphidius roseus, F, Pinus, Birgitta Wasstorp + Suillus bovinus
Hydnellum aurantiacum, F, *Pinus*, Birgitta Wasstorp
Hydnellum pecki s. str. Picea, Daniel Dvorak
Hydnellum suaveolens, F, Lennart Vessberg
Hygrophorus camarophyllus, Pinus

Hygrophorus karstenii
Hyphoderma setigerum, F, Lennart Vessberg, det Daniel Dvorak, Viktor Papp
Lactarius aquizonatus, F, *Picea*, Lennart Vessberg, det Ilkka Kytövuori
Lactarius fuscus
Lactarius torminosus
Lactarius vietus
Leccinum scaber
Leccinum versipelle
Leccinum vulpinum
Ramaria primulina, F, *Pinus*, Bengt Larsson, det, mikroskoperad Katriina Bendiksen, Ilkka Kytövuori, UPS
Ramaria testaceoflava, F, *Picea*, Lennart Vessberg
Russula decolorans
Russula helodes
Russula paludosa
Russula vinosa
Sarcodon fennicus, F, Lennart Vessberg, conf Michael Krikorev
Sarcodon scabrosus, F, *Pinus*, Lennart Vessberg
Suillus bovinus, F, Birgitta Wasstorp, + Gomhidius roseus
Suillus flavidus, F, *Picea*, *Pinus*, Daniel Dvorak
Tricholoma dulciolens, F, *Picea*, *Pinus*, Miroslav Beran & Daniel Dvorak, conf Ilkka Kytövuori, UPS
Tricholoma fulvum
Tricholoma stiparophyllum, F, Birgitta Wasstorp
Tricholoma virgatum

Comment, commentaire

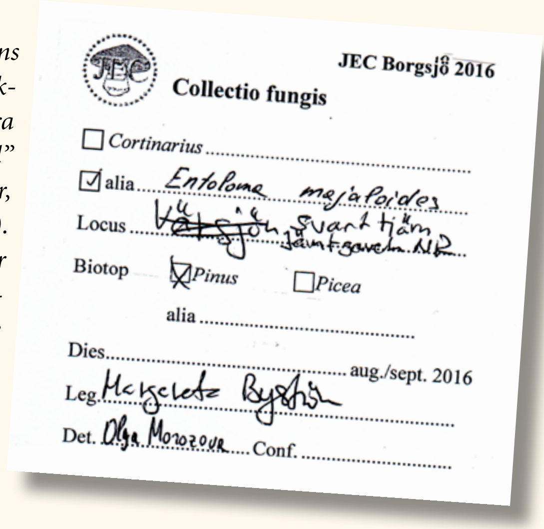
Ramaria primulina. Bengt Larssons finding of *R. primulina* at Värsjöåsen near Svarttjärn in Jämtgaveln reserve was interesting. Here at Värsjöåsen Ilkka Kytövuori has found *Tricholoma colossus*. We have many findings of Ramaria species in old calcareous forests in Jämtland and Medelpad, determined mostly by Ilkka Kytövuori and our Norwegian friends Egil and Katriina Bendiksen, see www.myko.se link Publikationer and Rapport från mykologiveckan I Timrå, pages 88-90. Jens H Petersen collected interesting *Ramaria* species at Julåsen in Borgsjö already in 1984. The mycological workshop in Borgsjö 1999 was about the genus Ramaria with Jens as ”leader of the show”. Jens presented then a list of 40 *Ramaria* species in the Nordic countries. Jens and Hjördis Lundmark has found the rare *Ramaria schildii* at Indal along Indalsälven in Medelpad. At the mycological Nordic congress at Gotland in 2011 Hjördis found an interesting Ramaria at Brucebo nature reserve north of Visby. Katriina Bendiksen has determined the collection, she says in a mail 27/10 2017: ”*Den sopp som Hjørdis fant på Gotland, er nok en ny art for vitenskapen. Vi har fått DNA-treff med Josef Christans materiale, to kollekter fra Bayern fra ”Bergfichtenwald” (to forskjellige steder, fra 1992 og 2009). Han kaller arten for Ramaria longispora, men den er ikke samme art som Ramaria longispora Marr & D.E. Stuntz (1974) - typemateriale fra Washington, USA, er undersøkt (også DNA). Vi må nok finne navn til vår europeiske art i samarbeid med Josef Christan, som har flere kollekter av den fra fjellbarskogene i Bayern (vi venter på tolkning av flere DNA-sekvenser av den - Christan-kollekter)!*”

We have never gathered *Ramaria primulina* before in Jämtland and Medelpad. *Ramaria prilulina* was described by Ron Petersen in 1986 and it is described and illustrated in the Norwegian journal Agarica 36 (2015) by Katriina Bendiksen, Ilkka Kytövuori, Mika Toivonen, Egil Bendiksen and Tor Erik Brandrud. They state that *Ramaria primulina* belongs to group *Ramaria lutea-R. flavoides* that mostly occur in sandy pine forest, with some records from southeastern Norway and from Östergötland to Lule Lappmark in Sweden.

Ramaria primulina a été décrite par R.E. Petersen en 1986 et traité dans l'article sur Ramaria dans le magazine norvégien Agarica 2015, Volume 36. Auteur: Katriina Bendiksen, Ilkka Kytövuori, Mika Toivonen, Egil Bendiksen, Tor Erik Brandrud. Ils disent que Ramaria primulina appartient au groupe Ramaria lutea-R. flavoides, poussent principalement dans la forêt de pins sablonneux, ont des résultats dans le sud-est de la Norvège et se trouve de l'Östergötland à la Lule Lappmark en Suède.

Russula helodes is a rare species in Sweden and mostly found in wet *Picea* forest.

Tricholoma dulciolens. Daniel and Miroslav made sensational finding of this rare *Tricholoma* species, well illustated in the Danish book "The genus Tricholoma" by Morten Christensen and Jacob Heilmann Clausen in the series Fungi of Northern Europe. The type locality is at Lombäcksheden in Borgsjö, collected in 1984 by Herbert Kaufmann. The author is our Finnish friend Ilkka Kytövuori. A similar *Tricholoma* has been named in honour of Ilkka: *Tricholoma ilkaii*, found at Eksta strand, Gotland and Uppland in Sweden and also in southern Norway. The record confirms the high value of the Svarttjärn area.



Balint Dima, Tor Erik Brandrud, Ilkka Kytövuori. Photo: Olga Morozova

Cortinarius sulfurinus. Photo: Tatyana Svetasheva

Egil and Katriina Bendiksen at Gotland 2011.
Photo: Hjördis Lundmark.

Cortinarius Flora Photographica And *Atlas Des Cortinaires* Cooperate in The DNA Era

The recognized number of *Cortinarius* species greatly varies depending on the morphological species concept accepted by classical authors. Currently, the two major monographs dedicated to the genus are *Cortinarius* Flora Photographica (CFP), which includes ± 300 species, mostly from northern Europe (Brandrud et al. 2014) and Atlas des Cortinaires (ADC), still on-going and which so far recognizes ± 2 500 species, varieties and forms, mostly from France (Bidaud et al. 2015). Swedish Dyntaxa [www.dyntaxa.se], have registered about 410 *Cortinarius* species in Sweden. The first great cooperation in the DNA era between France and North Europe was recently published in Persoonia 39 (2017) dealing with subgenus *Telamonia* sections *Bicolores* and *Saturninii*. A mycohistoric event! Authors: K. Liimatainen, X. Carteret, B. Dima, I. Kytövuori, A. Bidaud, P. Reaumaux, T. Niskanen, J.F. Armillati & J-M Bellanger.

6949865 1505487

18 B, Jämtgaveln nature reserve, Borgsjö sn, Medelpad

Excursion guide page 35

First stop, Forest burnt 13/6 2016.

Forêts brûlées 13/6 2016.

Group 4, 1/9 2016

Guides: John Granbo, Michael Krikorev.
List: Lennart Vessberg.
Participants: Arturo Baglivo, Mariella Barigelli, Egil Bendiksen Katriina Bendiksen, André Bidaud, Esperance Bidaud, Carmelina Boniello, Xavier Carteret, Barbara Cramer, Yngvar Cramer, Fabrizi Fabrizio, Mauro Faraoni, Donatella De Giorgi, Sandino Grilli, Rosella Ucchielli, Lennart Vessberg.

Species list

Cortinarius angelesianus, F, *Pinus*, burnt forest, Egil Bendiksen. Interprétation moderne due à Jacques Melot. Connu précédemment sous le nom mal appliqué *C. psammocephalus*, lequel s'applique en fait à une petite espèce (voir la photographie de la *Cortinarius*, Flora photographica
Cortinarius caperatus
Cortinarius croceus
Cortinarius mucosus, F, *Pinus*, burnt forest, Egil & Katriina Bendiksen
Cortinarius quarciticus
Cortinarius semisanguineus
Hygrophorus camarophyllus
Lactarius fuscus
Lactarius resimus, F, *Betula*, *Pinus*, moist depression near the road, Egil Bendiksen, det Ilkka Kytövuori, UPS
Lactarius rufus
Leccinum vulpinum
Lyophyllum shimeji
Sarcodon scabrosus
Suillus bovinus
Suillus variegatus
Tricholoma pessundatum, F, *Pinus*, burnt forest, Katriina Bendiksen

– Fungi and Nature Conservation in Sweden –

Forest fires – EU life taiga projekt – John Granbo – Niclas Bergius

In the hot summer 2014 vast areas burnt in the landscape Västmanland in Sweden. Today there is also an increasing interest in forest fires among forest researchers.

Forest fires are an important factor in northern coniferous forests. In older times in average 1 percent of the Swedish forest area was burnt over every year, which amounted to about 250,000 ha. Today about 1,000 ha is the average per year. More and more of the Swedish forest landscape is taken over by dense *Picea abies* and the needle beds are becoming thicker and thicker, herbs and blueberry are slowly diminishing in the darkness. Blueberries are important in the forest ecosystem not only for a generally healthy forests but also for many birds, insects, mushrooms and other organisms. But Swedish forests produce more and more wood in the dense forests. Warmer climate also give more growth in the future. Therefore, it is very important to set aside forests of high biodiversity value. Unfortunately, we loose the sunny, open *Pinus* forests with 4-600 trees per hectare, previously a common forest type in northern Sweden.

John Granbo is responsible for the management of nature reserves in the county of Västernorrland. EU Life Taiga is a EU-supported project to burn forests in northern Sweden 2015-2019 in order to favour species depending on burnt soil like some ectomycorrhizal fungi. Here in Jämtgaveln John Granbo and the County Board burn forests almost every year. According to rules in Forest Stewardship Council (FSC) a certain percentage of clear felled areas also should be burnt. The big forest company in mid and nother Sweden SCA has an expert in forest burning, Tomas Rydkvist. He is also burning areas in order to protect some rare plants like *Pulsatilla vulgaris*, a flower that do not survive in dense, dark forests with thick needle beds. The modern forests in Sweden have trees with high growth but many plants and fungi, dependent on forest fires and grazing, have a dark future and end up on red lists.

Niclas Bergius at the County Board In Västermanland initiated the exciting Life Taiga Project and says in Swedish Mycological Review 2014/2: "Prescribed burning- a first aid to fungi in forest ecosystems. One of the more dramatic changes in forest ecosystems during the last century is the decrease of forest fires. In 1850 more or less 1 percent of the forested area in Sweden was effected by fires every year. In recent years this area has decreased to less than 0.016 percent. As a consequence, thick layers of lichen, mosses and dense shrubby vegetation spread in the forests and the fructification of several fungi is impeded. A Life-Taiga project has been initiated by 15 Swedish County Boards (länsstyrelser). The 5-year project began in 2015 and a total of 2,200 hectares of *Pinus*-dominated forests will be subject to prescribed burning. The project that is intended to favour the biodiversity of forest ecosystems, is funded by the EU commission, the Swedish Environmental Protection Agency and the local County Board. The total budget exceeds 100 million SEK."

John Granbo est responsable de la gestion des réserves naturelles dans le comté de Västernorrland. EU Life Taiga est un projet visant à brûler des forêts dans le nord de la Suède 2015-2019.

La nature dans le nord de l'Europe et de nombreux champignons bénéficient de la combustion. Ici à Jämtgaveln John Granbo brûle presque tous les ans les forêts. Le grande entreprise forestièr SCA a un excellent expert à le feuillage forestier, Tomas Rydkvist, et il brûle aussi des zones pour certaines plantes rare comme Pulsatilla vulgaris.

X6941985;Y1504679

18 C, Jämtgaveln nature reserve, Borgsjö sn, Medelpad

Excursion guide page 35

Second stop near the way. Sandy forest, *Picea, Pinus. Forêt sablonneux, Picea, Pinus.*

Group 4, 1/9 2016

Guides: John Granbo, Michael Krikorev, Lennart Vessberg.
Participants: see 18 B.

Species list

Bankera fulgineoalba
Boletopsis grisea, F, *Pinus*, Lennart Vessberg, det Tor Erik Brandrud
Cortinarius porphyropus, F, *Betula*, *Picea*, *Pinus*, Lennart Vessberg, det Egil & Katriina Bendiksen
Selon Jacques Melot, le C. porphyropus de Fries est probablement appelé à l'heure actuelle C. subporphyropus.
Cortinarius turmalis, F, *Pinus*, Fabrizi-Faraoni
Tricholoma focale
Tricholoma shimeji, F, *Pinus*, Lennart Vessberg, det Tor Erik Brandrud
Tricholoma stans, F, *Pinus*, Lennart Vessberg

X6952396;Y1504176

18 D, Jämtgaveln nature reserve, Borgsjö sn, Medelpad

Excursion guide page 35

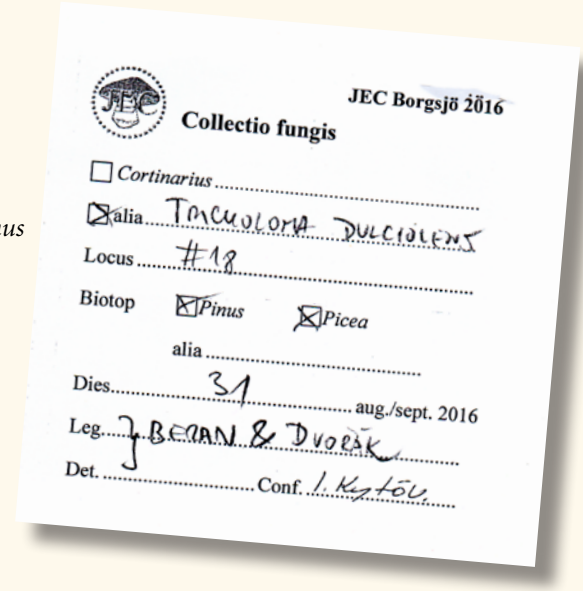
Third stop. Forest burnt approximately 2005. *Forêts brûlées environ 2005.*

Group 4, 1/9 2016

Guides: John Granbo, Michael Krikorev.
List: Lennart Vessberg.
Participants: see 18 B

Species list

Boletus pinophilus
Cortinarius leucophanes
Cortinarius pinophilus
Cortinarius porphyropus
Cortinarius semisanguineus
Cortinarius traganus
Hydnellum caeruleum
Hydnellum ferrugineum
Hypholoma capnoides
Laccaria proxima
Lactarius mammosus
Lactarius rufus
Leccinum vulpinum
Sowerbyella sp, F, brandplatz nr 3, *Picea*, *Pinus*, wegrand, Mohan Rolf, UPS
Suillus luteus
Suillus variegatus

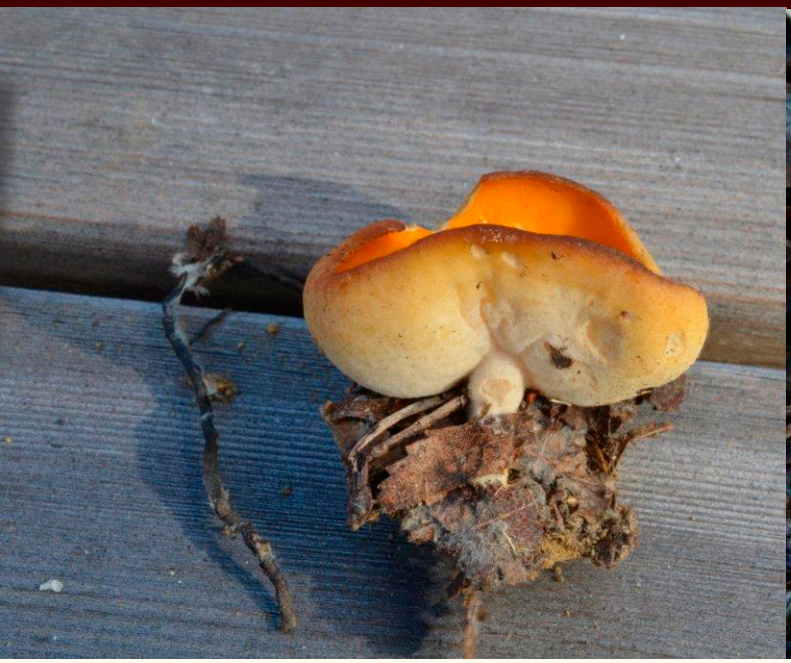

JEC Borgsjö 2016
Collectio fungis
☐ Cortinarius .....
☒ alia Tricholoma dulciolens
Locus #18
Biotop ☒ Pinus ☒ Picea
alia .....
Dies 31 aug./sept. 2016
Leg. J. Granbo & Dvořák
Det. ..... Conf. I. Kytövuori

Comment, commentaire

Sowerbyella sp. Mohan Rolf is a well known Swiss mycologist who has published several books on fungal microscopy. He collected next to the burn a species of *Sowerbyella*, that was displayed as S. rhenana. He wrote in an email: Mohan Rolf är känd mykolog i Schweiz som givit ut flera böcker om "Mikroskopering av svampar". Mohan samlade intill brandplatsen och i vägkanten en art inom släktet *Sowerbyella* som han lade upp med fältblankett på utställningen: Sowerbyella rhenana, en art som heter praktskål på svenska. Mohan skriver i mail 27/8 2017:

"Ich bin kein Asco-Spezialist. Normalerweise befasse ich mich mit Aphyllophoralen. In Borgsjö hatte ich leider keine Asco-Literatur dabei. Mit Hilfe eines Schwedischen Teilnehmers (leider kenne ich den Namen nicht, aber wenn ich mich richtig erinnere hatte er einen Bestimmungsschlüssel) haben wir den Fund als Sowerbyella rhenana bestimmt und auch mit dem Internet. Aufgrund der Sporen: Länge/Breite (Grösser als S. reguisii) und Ornament hat eigentlich der Schwedische Teilnehmer den Pilz mitbestimmt. Leider habe ich kein Exsikkat erstellt, weil ich den Fund an Name? abgegeben habe somit kann ich keine Nachkontrolle vornehmen. In der Schweiz habe ich meine Fotos an René Dougoud (der Spezialist für Ascos [ed.: Pezizales] in Europa) gezeigt und er hat mich auf S. reguisii aufmerksam gemacht. S. rhenana kommt im Laubwald (Fagus etc.) vor, S. reguisii im Nadelwald (Pinus etc.). Gerne sende ich dir meine Fotos unter "angefügt". Schau dir auch meine Website an, im Buch 3 Seite 235 habe ich S. rhenana dargestellt."

This highly interesting material was dried and deposited in in UPS. Åsa Kruys has examined the material micro-



Sowerbyella cf rhenana, Jämtgaveln. Photo: Rolf Mohan

scopically and also believes it represents S. reguisii that would constitute a new Swedish record. The paraphyes are straight unlike the hooked tip in S. rhenana. According to Moravec, who monographed the genus, S. rhenana has a higher spore ornament that S. reguisii. Åsa has been in contact with the Pezizales specialist in Stockholm, Karen Hansen (rijsmuseet) and they plan to sequence the material.

Koordinater

18 E, Jämtgaveln nature reserve, Borgsjö sn, Medelpad

Excursion guide page 35

Private excursion 2/9 2016. They visited areas near the forest way at Värsjöåsen.

Species list

Cortinarius collinitus, F, *Picea*, Erika Bühler-Holzer
Cortinarius albocyaneus, Betula, Erika Bühler-Holzer, DB 6142, Balint Dima seqv.
Cortinarius odhinnii, F, *Pinus* (sand), Erika Bühler-Holzer, det Jacques Melot
Cortinarius privignatus, F, *Picea*, Erika Bühler-Holzer, conf Karl Soop
Cortinarius rusticus, F, Erika Bühler-Holzer, conf Jacques Melot. Précédemment connu sous le synonyme non prioritaire *C. canabarba.*
Cortinarius stillatitius, F, *Betula*, *Picea*, *Pinus*,Vaccinium myrtillus, Erika Bühler-Holzer
Cortinarius turmalis, F, *Pinus*, Kowalenko-Hauke.

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22 Julåsen, forest near the meadows, Borgsjö sn, Medelpad

Excursion guide page 39

Classical excursion site during Borgsjö workshops high up in southern Borgsjö, where Finnish settlers burnt the forest and established about 400 years ago, an important part of the cultural heritage of Borgsjö and Ånge. Since 1982 we have investigated calcareous coniferous forests at Julåsen and have found an interesting funga of ectomycorrhizal species. Well inventoried, see list in excursion guide of 74 *Cortinarius* species collected under a long series of inventories from 1982 to 2016! During the same time we found 89 species of *Cortinarius* in similar forest north of Getberget in Torp parish. Anders Dahlberg and others list 302 *Cortinarius* species in Sweden and 214 found north of Dalälven (Svensk Bot. Tidskr. 2000 page 267-285). Today in 2017, www.dyntaxa.se recognize 410 *Cortinarius* species from Sweden. The total number of *Cortinarius* in Sweden may rise to a 1000 species (?) if further research is carried out.

We do not know how many species of *Cortinarius* that are able to recolonise in replanted clean cut stands. Trees left in swampy areas and along brooks and very small trees (some decimeters high) are the source of recolonization. There are also fine old meadow at Julåsen with interesting grassland fungi like *Clavaria zollingeri* and *Entoloma porphyrophaeum*. In 1984 Johan Nitare found *Geoglossum cf vleugelianum*, a species described by John Axel Nannfeldt (UPS). But Johan is uncertain today if this is a good species. We met Annica Carlsson and her co-workers working on

Ann Christin Suneson and Roy Watling, Julåsen 1993. Photo: Kjell Olofsson

the hay meadow. Annica is a key person for management of old non-protected meadows at the regional county office.

Here in the forests we have one locality for *Cortinarius anthracinus*, a southern species with few findings in northern Sweden. *Naucoria zonata* is found at a road side, the type locality is in Haverö parish west of Ånge. Thomas Læssøe has found the moss parasite *Bryoglossum gracile* at Julåsen and Leif Andersson has found *Cathatelasma imperiale*. Here at Julåsen also the type locality for *Tricholoma borgsjoeënse,* a black *Tricholoma* described by Stig Jacobsson and Siw Muskos in Mycotaxon 95: 195-200. For many years mycologists from many European countries came here to Julåsen so they once in their life could enjoy this remarkable *Tricholoma* species. During a long time we called it "*Tricholoma julåsenensis*" after the village Julåsen.

The forest with *Tricholoma borgsjoeënse* is protected as "biotopskydd", but partly fell in the severe storm in 2013. The monotone old forests of *Picea abies* in mid Sweden are of about the same age and nearly without broadleaved trees that are taken away by thinning. Many of thise monotone *Picea* forests fell by hard storms in 2011 and 2103. A revenge from nature! The best *Phlegmacium* site in Medelpad at Alnö island outside Sundsvall, Åssjöskogen, with *Cortinarius dalecarlicus* and other rare phleggs also fell down in the severe storm in 2013. There is an interesting discussion now in Sweden about how to form forests in the future with warmer climate, less ground frost, more heavy rains and storms and more severe insect attacks. Here in Medelpad forest owners organisations and forest companies together with researcher at Mid Sweden University in Sundsvall are looking at methods to preserve the forests in the future without devastating attacks from bark beetles.

Other interesting findings at Julåsen: *Amanita olivaceogrisea, Cathatelasma imperiale, Entoloma caesiocinctum* (forest, in *Sphagnum*, Noordeloos), *Haploporus odorus, Hydnellum mirabile, Hygrophorus purpurascens, Lactarius hysginoides (*Ilkka Kytövuori*), L. picinus* (Birgitta Wasstorp), *L. resimus, L. subcircellatus, L. tuomikoskii, Lepista densifolia* (Stig Jacobson*), Psatyrella jacobsonii, Ramaria botrytis, Russula helodes (*Henning Knudsen*), R. citrinochlora, R. medullata* & *Tricholoma olivaceotinctum.* In 1997 Machiel Noordeloos and Annemieke Verbeken found plenty of *Lactarius aspideus* under an old enormous *Salix caprea* with well smelling *Haploporus* on the trunk.

Forêt de conifères au sous-bois luxuriant. Bien inventoriée, voir liste dans le guide d'excursion de 74 espèces Cortinarius récoltées de 1982 à 2016. Julåsen est aussi la station type de *Tricholoma borgsjoeënse*, décrit par Stig Jacobsson et Siw Muskos dans Mycotaxon, 95, p. 195-200. La forêt avec *Tricholoma borgsjoeënse* a été dévastée par la tempête en 2013.

Painting by Rolf Lidberg. Gift from the artist to Siw Muskos at her 60th birthday.

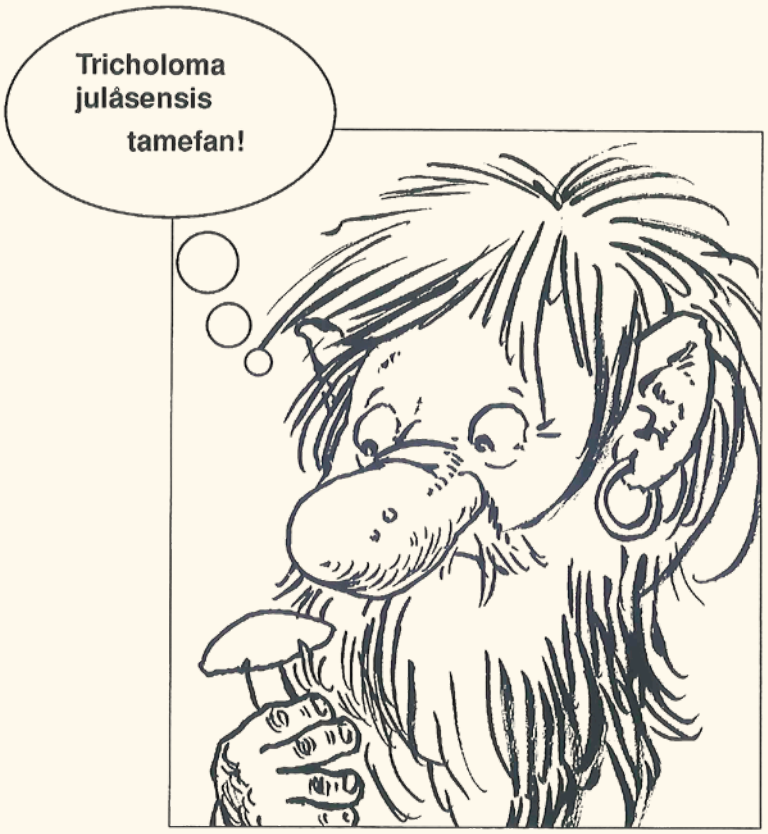
Autres champignons intéressants à Julåsen: *Amanita olivaceogrisea, Cathatelasma imperiale, Entoloma caesiocinctum (forêt, sphagnum, Machiel Noordeloos), Haploporus odorus, Hydnellum mirabile, Hygrophorus purpurascens, Lactarius hysginioides (Ilkka Kytövuori), L. picinus (Birgitta Wasstorp), L. resimus, L. subcircellatus, L. tuomikoskii, Lepista densifolia, Psatyrella jacobsonii, Ramaria botrytis, Russula citrinochlora, R. medullata, Tricholoma olivaceotinctum.*

Group 3, 31/8 2016

Guides: Hans Andersson, Jan-Olof Tedebrand.
Participants: Arturo Baglivo, Mariella Barigelli, Francesco Bellu, Bart van der Berg, Gerhard Botzler, Carmelina Boniello, Marjo Dam, Nico Dam, Nicola de Donnantonio, Mauro Faraoni, Fabrizio Fabarizi, Donatella de Giorgi, Sandino Grilli, Helmut Grünert, Renate Grünert, Gunnar Hensel, Doris Laber, Peter Laber, Carl von Linné, Gisela Lockwald, Karin Pätzold, Geert Schmidt-Stohn, Inge Somhorst, Karl Soop, Willem Stouthamer, Ulla Täglich, Rosella Ucchielli, Mirjan Verkampf.

Species list

Amanita muscaria, F, Hans Andersson
Amanita porphyria, Francesco Bellu
Arrhenia epichysium, *Betula* dead wood, F, Nico Dam
Boletus edulis
Clavulinopsis corniculata, meadow, F, Arturo Baglivo
Clitocybe phyllophila, Francesco Bellu
Coprinopsis atramentarius, Francesco Bellu
Cortinarius armillatus
Cortinarius brunneus
Cortinarius callisteus
Cortinarius caperatus, F, Hans Andersson
Cortinarius clarobrunneus
Cortinarius collinitus
Cortinarius flos-paludis
Cortinarius glandicolor,F, *Picea*, Doris Laber, det Ilkka Kytövuori, UPS
Cortinarius glaucopus, "grühne forme"
Cortinarius illuminus, Francesco Bellù. Interprétation moderne due à Jacques Melot. Connu auparavant sous le nom *C. dilutus* (interprétation de Moser). *Cortinarius*



Tricholoma julåsensis. Self portrait by Rolf Lidberg.

laniger, Doris Laber
Cortinarius limonius
Cortinarius malachioides (C. jotuni ined., sect.Riederi), Doris Laber, Karin Pätzold
Cortinarius multiformis, Francesco Bellu, Karl Soop. Interprétation moderne due à Jacques Melot.
Cortinarius papulosus, F, *Picea*, Karl Soop, Det Jacques Melot, Conf Tor Erik Brandrud
Cortinarius paragaudis, Francesco Bellu, Karl Soop, Conf Jacques Melot
Cortinarius percomis
Cortinarius pluvius, F, *Picea*, Doris Laber
Cortinarius privignatus, Francesco Bellu, SSt 16-037, GenBankNummer MF139757, BD seqv.
Cortinarius privignipallens, leg+foto Helmut Grûnert, SSt 16-038, Balint Dima seqv. DNA nr 1277
Cortinarius quarciticus
Cortinarius raphanoides
Cortinarius riederi, Doris Laber
Cortinarius sanguineus
Cortinarius semisanguineus, Doris Laber
Cortinarius sommerfeltii, F, *Picea*, Karl Soop
Cortinarius stillatitius
Cortinarius cf subrugosus, Karl Soop
Cortinarius subtortus, Francesco Bellu, ”multo”
Cortinarius trivialis ss. CFP
Cortinarius vibratilis
Cystoderma granulosum
Cystoderma jasonis, Francesco Bellu
Entoloma rhodopolium ss lato, Francesco Bellu
Fomitopsi pinicola
Gomphidius glutinosus, F, Hans Andersson
Gymnopilus penetrans, Francesco Bellu
Hebeloma aanenii, Francesco Bellu
Hebeloma incarnatulum, Francesco Bellu
Hebeloma syrjense, F, *Picea*, Karl Soop, UPS
Hygrophorus olivaceoalbus, Francesco Bellu
Hygrophorus persicolor, Francesco Bellu
Hygroporus piceae coll., Francesco Bellu
Lactarius deliciosus, F, *Pinus*, Gisela Lockwald
Lactarius rufus, F, Gisela Lockwald
Hygrophorus olivaceoalbus
Hypholoma capnoides
Laccaria laccata
*Lactarius badiosanguineus,*Francesco Bellu
Lactarius deterrimus
Lactarius glyciosmus
*Lactarius hysginus;*Francesco Bellu, Doris Laber
Lactarius mammosus, Francesco Bellu
Lactarius picinus, F, *Picea*, Ulla Täglich, UPS
Lactarius pubescens, Francesco Bellu
Leccinum scabrum
Lactarius utilis, Francesco Bellu
Lactarius trivialis, Francesco Bellu
Lactarius vietus, Francesco Bellu
Leccinum variicolor
Leccinum versipelle
Mycena epipterygioides, Francesco Bellu
Mycena galericulata
Paxillus involutus
Phellinus chrysoloma, *Picea* wood, F, Nico Dam
Rhodocollybia fodiens
Suillus variegatus
Russula aeruginea, F, Hans Andersson
Russula atrorubens, Doris Laber
Russula claroflava, F, Hans Andersson
Russula consobrina
Russula decolorans
Russula firmula, Francesco Bellu
Russulta integra, Francesco Bellu
Russula paludosa, Doris Laber
Russula rhodopoda
Stropharia hornemannii, Doris Laber
Suillus luteus, F, Hans Andersson
Thelephora palmata
Tricholoma inamoenum
Tricholoma virgatum
Tubaria confragosa, Francesco Bellu

Balint Dima undersöker svampars DNA

Svampforskaren Balint Dima har undersökt DNA hos många arter inom *Cortinarius* och *Entoloma* som vi samlade.

Numera kan även amatörer sända intressanta och svårbestämda svampar för DNA-analys till olika firmor för en kostnad av 200 kr per kollekt! Författarinnan Kerstin Ekman skriver i boken ”Livets väv”, ”Nu kommer forskare och välter blomsterkungen Linnés system. Likheterna ligger på mikronivå. De är genetiska. I Elsa Beskows Blomsterfesten i täppan var Brännässlan en häxa och djupt antagonistisk till den vackra och ädla rosen. Men nu har dom blivit släkt. Häxa och jungfru är outrotligt sammanflätade av ett system. Ett nytt system”

Comments, commentaire

Hebeloma aanenii described by H.J. Beker, J. Vesterholt & U. Eberhardt in Persoonia 35: 111 (2015).

Mycena epipterygioides. Arne Aronsen and Thomas Læssøe published in 2016 at beautiful book about “The genus *Mycena* s.l.” (can be ordered from www.svampe.dk search under “Svampetryk”. They consider epipterygioides as a variant of M. epipterygia and write: “ If collected material from pine woods show any greenish tinges, it should be checked against *M. epipterygia var. epipterygioides* that has 2-spored basidia” They have also delicious photos which show greenish fruitbodies.

Russula integra is a southern species in Sweden. *Russula integriformis* Sarnari is more common In middle and northern Sweden. For more discussion and photo of *R. integriformis*, see Jordstjärnan 2002/3, +“Släktet *Russula* (kremlor) i Mittsverige, Lindström-Lundmark-Tedebrand-Wasstorp”, pages 19-20.

Thelephora palmata is rather common in mossy forests in middle Sweden. It has an unpleasat smell, but it is popular for wool dyeing according to the book “Färgsvampar och Svampfärgning” by Hjördis Lundmark and Hans Marklund. It gives blue-bluegreen colours.

6939935 1501500

25 Gammelbodarna nature reserve, ”Backmans ängar”, Borgsjö sn, Medelpad

Excursion guide page 41

Old meadow with many grassland fungi.

Among earlier findings: *Camarophyllopsis schulzeri, Conocybe huijsmanii, Dermoloma josserandii var. josserandii, Entoloma velenovskyi, Fayodia leucophylla, Hygrocybe aurantiosplendens, Limacella illinita, Melanoleuca subbrevipes, Stropharia inuncta.*

Ancien pré avec de nombreuses espèces d’Entoloma et d’Hygrocybe.

Hygrocybe ceracea
Hygrocybe chlorophana
Hygrocybe coccinea
Hygrocybe conica
Hygrocybe pratensis
Hygrocybe psittacina

Bengt Larsson (vid kameran) guidar till Gammelbodarna 2010. Photo: Anita Stridvall

6939970 1501620

26 Gammelbodarna, Borgsjö sn, Medelpad

Excursion guide page 41

Forest around the nature reserve

Coniferous forest in lime rich soli around the meadow
Forêt de conifères sur sol calcaire riche.
1/9 2016

Species list

Herbert Kaufmann, Lars Ljungberg
Cortinarius lucorum
Russula cessans, Pinus, grass, leg, det Herbert Kaufmann, HK 16028
Russula foetens
Russula velenovskyi, Betula, Picea, border zone to meadow, leg, det Herbert Kaufmann, HK 16027
Russula versicolor, Betula, Picea,leg, det Herbert Kaufmann, HK 16026

6933532 1507593

28 A Rankleven nature reserve, Borgsjö sn, Medelpad

Excursion guide pages 43-44

Nature reserves like Rankleven are of great importance in the Swedish strategy for nature conservation.

Nature reserves like Rankleven are of great importance in the Swedish strategy for nature conservation. Some groups of fungi mostly occur in old forests, including some rare species, that are of great value as a source for re-colonization of the surrounding landscape. The local County Boards in Sweden have instructions from the The Swedish Environmental Protection Agency to shape and create "green corridors" in the landscape where rare species can survive and also function as gene banks (islands) in the landscape from where they can spread. We have found many exciting fungi at Rankleven. In 1993 Birgitta Wasstorp found the rare *Sowerbyella densireticula*, determined by Nils Lundqvist (S). It fruited on the needle layer in rich *Picea* forest. It was a magical moment when Birgitta showed us the big and beautiful collection! In 1989

Our popular guides to Rankleven:

Per Sander from the Local County Board, Michael Krikorev at the Swedish Species Information Center

Per Sander worked at the local County Board in the region Västernorrland in 2016. He was among others responsible for "Åtgärdsprogram för hotade arter" (action program for threatened species).

From the autumn 2017 Per works as head of the team that deals with nature conservation at the local County Board in Jämtland. Per has created very good relations with local botanists and other people in the countryside. He used to participate in mushroom work shops in Borgsjö and is an estimated excursion leader. Michael Krikorev also have good contact with people all over the country. Micke is employed at The Swedish Species Information Centre (Artdatabanken) at the Swedish University for Agriculture at SLU in Uppsala. He also publish books about fungi and is often seen in Swedish television talking about fungi and delicate mushroom dishes. We all enjoyed Michaels photos of rare *Cortinarius* species in the evenings, some of them in this report.

Christer Andersson found *Verpa conica* at Rankleven, one of three findings in Medelpad, the others are in the Alnö limestone area.

Rankleven is a botanically interesting mountain with 350 meters high dives of dolerite, many southern plants *like Lathyrus vernus, Galium triflorum, Viola selkirkii* and also alpine plants like *Cerastium alpinum, Myosotis decumbens* and *Saxifraga adscendens*. Aged forest of conifers, deep precipices on diabase. *Cortinarius* records include: *C. aureofulvus, C. dolabratus, C. rusticus,C. salor, C. uraceus* and *C. venustus*. Other interesting fungi: *Pholiota subochracea, Russula citrinochlora, R. densifolia, Sowerbyella densireticulata* and *Verpa conica.*

> Montagnes botaniquement intéressants avec 350 métres de haut precipice de dolérite, plantes du sud (*Lathyrus vernus, Galium triflorum, Viola selkirkii*) et plantes alpines (*Cerastium alpinum, Myosotis decumbens, Saxifraga adscendens*). Forèt âgée de conifères, précipices profondes sur diabase. *Cortinarius: aureofulvus, dolabratus, rusticus, salor, uraceus, venustus.* D'autres champignons intéressants: *Pholiota subochracea, Russula citrinochlora, R. densifolia, Sowerbyella densireticulata, Verpa conica.*

Group 4, 31/8 2016

Guides: Michael Krikorev, Per Sander.

Participants: Magnus Andersson, José Cadinanos Aquirre, Josep Ballará, Egil Bendiksen, Katriina Bendiksen, Erika Bühler, Augusto Calzada, Rosa Maria Andrés Carbajal, Anders Dahlberg, Roel Douwes Eva Hauke, Jean-Marc Hügli, Otto Kowalenko, Ilkka Kytövuori, Pirjo Kytövuori, Gunilla Kärrfelt, Rafael Mahiques, Masja van der Meer, Josiane Bocherens Mingard, Rolf Mohan, Imre Rimóczi, Giampaolo Simonini, Tatyana Svetasheva, Monika Weber.

Species list

Agaricus apruptibulbus, F, barrförna, *Picea*, Gunilla Kärrfelt
Agaricus sylvicola
Albatrellus ovinus
Amanita muscaria
Amanita porphyria
Armillaria borealis
Artomyces pyxidatus
Boletus edulis
Calocera viscosa

4

hatt o fot torra (möjl. hatt) slemmig i väta)

luket: honung

smak: mild

hattkött vitt, hatthud gul m. bruna fläckar

" : gult under hatthinnan

hatthinna lätt avdragbar

strimplik naude valk runt foten

Timrå, Lögdö bruk 790923

(TEB) C. hasii

Today = Cortinarius metarius

Siw Muskos 1979

Chalciporus piperatus
Chroogomphus rutilus
Clavariadelphus truncatus
Clitocybe diatreta, F, *Picea*, oligotrophic *Picea* dominated forest in deep moss
Egil & Katriina Bendiksen, UPS
Clitocybe nebularis
Clitocybe odora
Collybia tuberosa, F, *Picea*, *Pinus*, Tatyana Svetasheva
Cortinarius alborufescens, F, *Betula*, *Picea*, *Pinus*, Tatyana Svetasheva. Interprétation moderne due à Jacques Melot, reprise dans la *Cortinarius*, Flora photographica. Admet plusieurs synonymes non prioritaires: *C. pearsonii, C. cremeolaniger, C. lanigeroides,* etc.
Cortinarius alboviolaceus
Cortinarius armeniacus, F, *Betula-Picea-Pinus*, Tatyana Svetasheva, det Tor Erik Brandrud, Balint Dima, Jacques Melot
Cortinarius alboviolaceus, F, Erika Bühler-Holzer, conf Balint Dima
Cortinarius armeniacus, F, Tatyana Svetasheva, det Tor Erik Brandrud
Cortinarius armillatus
Cortinarius bivelus
Cortinarius brunneus
Cortinarius caperatus
Cortinarius collinitus, F, *Picea*, *Pinus*, Katriina Bendiksen (larger spores)
Cortinarius croceus, F, Betula-Picea, Hauke/Kowalenko
Cortinarius cyanites coll., F, *Betula, Picea, Pinus,* Rosa Maria Andrés Carbajal, det Antonio Cadinados Aguirre
Cortinarius disjungendus, F, *Picea-Pinus-Betula*, Ilkka Kytövuori
Cortinarius flexipes, F, Betula-Picea, Kowalenko/Hauke. Interprétation moderne due à Jacques Melot, venant remplacer le synonyme C. paleiferus, autrefois aussi C. paleaceus (nom mal appliqué).
Cortinarius gentilis, F, Tatyana Svetasheva, det Tor Erik Brandrud
Cortinarius hinnuleus coll., F, Betula, Erika Bühler-Holzer, conf Balint Dima
Cortinarius lepidopus, F, Magnus Andersson, det Egil Bendiksen, UPS
Cortinarius lucorum, Interprétation de J. E. Lange, reprise par Jacques Melot dans la Cortinarius, Flora photographica
Cortinarius metarius
Cortinarius mucosus
Cortinarius multiformis
Cortinarius paragaudis, F, *Picea*, Karl Soop, det Ilkka Kytövuori
Cortinarius pholideus, F, Betula, Eva Hauke, Otto Kowalenko
Cortinarius quarciticus, F, *Picea-Pinus,* Katriina Bendiksen
Cortinarius raphanoides, F, *Picea, Pinus, Populus,* Erika Bühler Holzer, conf. Tor Erik Brandrud, Balint Dima
Cortinarius septentrionalis, F, UTM 33V 0549100, 6932269, *Betula, Picea, Populus,* field layer dominated by Vaccinum myrtillus (terrain dominé par Vaccinum myrtillus), Katriina Bendiksen, sp. Amygdaloid, 11.7-13.3x 5.7x6.7 my
Cortinarius subtortus
Cortinarius tortuosus, F, swamp forest (*forêt marécageuses*),*Picea*, Karl Soop, det Tor Erik Brandrud
Cortinarius traganus
Cortinarius trivialis ss. CFP
Cortinarius venustus, F, *Picea*, Tatyana Svetasheva, det Tor Erik Brandrud. Interprétation due à Jacques Melot, qui avait d'abord déterminé cette espèce sous le nom C. calopus (nom jadis mal appliqué par J. Favre à ce qui est devenu C. solis-occasus).
Cortinarius violaceus coll., F, Populus, Magnus Andersson
Cortinarius cf vitiosus, Picea, Tatyana Svetasheva, det *Balint Dima*
Fomitopsis rosea
Gomphidius glutinosus
Gymnopilus picreus
Hebeloma crustuliniforme
Helvella elastica, F, Magnus Andersson
Helvella lacunosa
Helvella macropus
Hericium coralloides, F, Mohan Rolf
Hydnum repandum
Hygrophorus camarophyllus
Hygrophorus erubescens
Hygrophorus hedrychii
Hygrophorus karstenii
Hygrophorus piceae
Laccaria proxima
Lactarius aurantiacus
Lactarius badiosanguineus
Lactarius deterrimus
Lactarius fuliginosus
Lactarius lilacinus
Lactarius necator
Lactarius pilatii
Lactarius rufus
Lactarius tabidus
Lactarius torminosus
Lactarius trivialis
Lactarius vietus

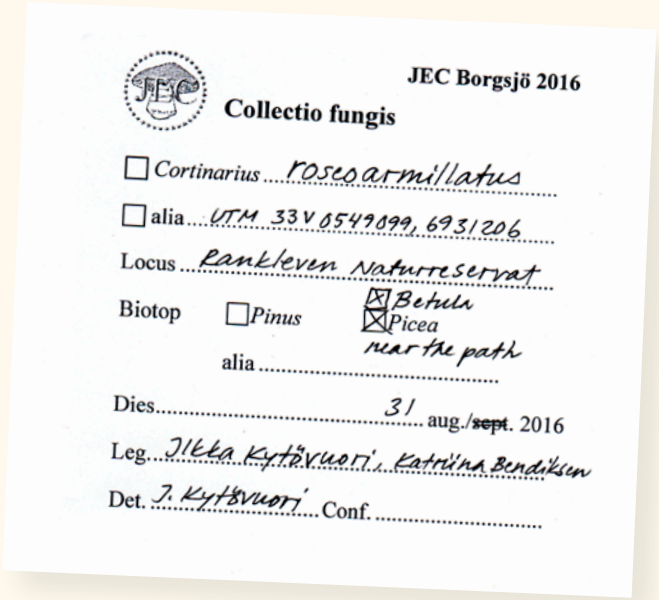
Leccinum scabrum
Leccinum versipelle
Lyophyllum rancidum
Melanoleuca strictipes, F, *Betula, Picea*, Lars G Ljungberg
Mycena pura
Paxillus filamentosus
Paxillus involutus
Pholiota astragalina, F, gräs i vägkant, Gunilla Kärrfelt
Pholiota scamba
Rhodocollybia maculata
Russula aeruginea
Russula atroglauca, F, *Picea*, Egil och Katriina Bendiksen
Russula chloroides
Russula clavipes
Russula consobrina
Russula decolorans
Russula pulchella, F, *Betula*, Egil Bendiksen, conf Birgitta Wasstorp
Sarcodon imbricatum
Stropharia albonitens
Stropharia hornemannii
Suillus bovinus
Suillus variegatus
Tricholoma aestuans
Tricholoma flavobrunneum
Tricholoma frondosae
Tricholoma inamoenum
Tricholoma stiparophyllum
Tricholoma virgatum
Volvariella gloiocephala

Comment, commentaire

Chalciporus piperatus is according to recent studies a likely parasite on *Amanita muscaria*.

Tricholoma frondosae with *Populus tremulae* is an example of a southern mushroom at Rankleven, see Danish book "The genus Tricholoma" by Morten Christensen & Jacob Heilmann-Clausen pages 104-105. They write that *Tricholoma frondosae* probably is two species.

> *Tricholoma frondosae* sous Populus tremulae est un exemple de champignons du sud de Rankleven ;voir livre danois « Ridder Hatte » par Morten Christensen et Jacob Heilmann-Clausen, p. 104-105. Ces auteurs écrivent que le nom *Tricholoma frondosae* recouvre probablement deux espèces.


JEC Borgsjö 2016

Collectio fungis

☐ Cortinarius ...roseoarmillatus...

☐ alia ...UTM 33V 0549099, 6931206...

Locus ...Rankleven Naturreservat...

Biotop ☐ Pinus ☒ Betula ☒ Picea near the path

alia .....

Dies ...31... aug./~~sept~~. 2016

Leg. ...Jikka Kytövuori, Katriina Bendiksen...

Det. ...J. Kytövuori... Conf. .....

6934530 1507530

28 B, *Betula*-Salix, swamp forests along the river Ljungan, Södra Sillre, Borgsjö sn, Medelpad

Excursion guide page 43

Moistly *Betula* areas with *Polytrichum*, also *Populus* and *Salix*. Sandy *Pinus* forest near the river Ljungan and along Ljunganåsen.

Mostly *Betula* areas with *Polytrichum*, also *Populus* and *Salix*. Sandy *Pinus* forest near the river Ljungan and along Ljunganåsen. Earlier findings: *Acantophyllum lividocaeruleum, Elaphocordyceps longisegmentis*, *Hygrophorus persicolor, Inocybe ambigua* and *Russula roseipes*. Gunilla, Karl and Tanya said: "very much mushrooms here"! Stig Jacobsson and Siw Muskos has found *Marasmius siccus* at Ljunganåsen. During certain *Boletus edulis*-years the moist *Betula* forest is full of fruitbodies of this popular edible fungus. Lisbeth Kagardt and Franco Matli picked enormous amounts of *Boletus edulis* during the *Cortinarius* week in 2003. Franco and others then stood in the kitchen and prepared them for the banquet!

Russula renidens is also frequent here in swamp areas with *Betula* in good autumns. During Borgsjö 2010 the Swedish mycologists Ellen Larsson and the late Kjell Olofsson found *Inocybe ambigua* in a deep ditch in *Betula* forest, an *Inocyce* species that Ellen never had seen before.

Nils Lundqvist collected here in 1993 *Plasmopora pusilla* at *Geranium sylvaticum* and *Valsa salicina* at dead *Salix* branches.

Lactarius scrobicularus. Photo: Tatyana Svetasheva

Wednesday evening 31/8 2016

Egil Bendiksen is a Norwegian professional mycologist that has a keen interest in fungal diversity in relation to successional forest stages. Which fungi easily establish themselves in recent plantings? Which fungi do only produce fruitbodies in old growth forests? Which fungi depend on long continuity? Egil started off with *Cortinarius armillatus*, one of five species in sect. *Armillati*, that is restricted to *Betula* in both middle aged and old stands. The closely related *C. paragaudis* is most often seen in *Vaccinium myrtillus Picea* forest but also in montane birch forests. Egil also talked about *C. roseoarmillatus* that has a rose coloured veil and grows with *Betula* and *Picea*. It was recorded today at Rankleven, new to Sweden.

André Bidaud talked on *C. acerbiformis*. Balint Dima told us that *C. acerbiformis* is closely related to C. *xanthocephalus* Orton. André even mentioned *C. angulosus* Fries that grows with *Betula* and *Pinus* and he also mentioned *C. ochrophyllus*.

Tor Erik made comments on a nice collection of *C. lucorum* that often occurs in big groups with *Populus*. He furthermore mentioned *C. pseudofallax coll*., a species complex with small fruitbodies that occurds with *Salix* and *Populus*. He also mentioned *C. malachioides* that Doris Laber and Karin Pätzold found today on Julåsen. The find of the day was *C. roseo-armillatus* that Ilkka and Katriina collected at Rankleven. Ilkka is the author of *C. roseo-armillatus*!

Verpa conica. Photo: Håkan Sundin

Bétulaies humides avec *Polytrichum*, ainsi que *Populus* et *Salix*. *Pinède sablonneuse* près de la rivière Ljungan. Le seul endroit de la paroisse de Borgsjö où l'on trouve *Cortinarius bolaris,* un excellent champignon pour la teinture des champignons. *Aussi Acantophyllum lividocaeruleum, Elaphocodyceps longisegmentis, Hygrophorus persicolor, Inocybe ambigua, Russula roseipes.* Selon Gunilla, Karl et Tanya: "Endroit remarquablement riche en champignons"!

Bétula humide avec *Polytrichum*, aussi *Populus et Salix*. Pinus au fleuve de Ljungan. Le seul endroit dans la paroisse de Borgsjö pour Cortinarius bolaris, un excellent champignon pour la teinture des champignons. Aussi *Acantophyllum lividocaeruleum, Elaphocodyceps longisegmentis, Hygrophorus persicolor, Inocybe ambigua, I. ochroalba, Russula roseipes.* Gunilla, Karl et Tanya a dit: champignons très ici"*!*

Group 2, 1/9 2016

Guides: Hans Andersson, Jan-Olof Tedebrand.
Participants: Josep Ballara, Francesco Bellu, Augusto Calzada, Rosa Maria, José Antonio Cadinados, Andrés Carbajal, Nicola de Donnantonio, Eva Hauke, Inga Lill Häggberg, Otto Kowalenko, Gunilla Kärrfelt, Rafael Mahiques, Olga Morazova, Machiel Noordeloos, Giampaolo Simonini, Karl Soop, Tatyana Svetasheva

ENTOLOMA GROUP

Olga Morozova, field number, photo, herbarium Leiden
145. *Cortinarius porphyropus* (Ph, LE)
146. *Entoloma nidorosum* (Ph, LE)
148. *Entoloma sericatum* (Ph, LE)
150-152. *Entoloma politum* (Ph, LE, seq)

Marasmius siccus. Painting by Siw Muskos.

Species list

Amanita crocea
Amanita fulva
Amanita muscaria
Amanita porphyria
Amanita rubescens f. rubescens, F, *Betula, Picea,* Gunilla Kärrfelt
Ampulloclitocybe clavipes
Armillaria borealis, Francesco Bellu
Boletus edulis
Clitocybe odora
Chroogomphus rutilus
Cortinarius acutus
Cortinarius alboviolaceus, common, commun, F, Karl Soop
Cortinarius alnetorum, F, *Alnus-Salix,* Tatyana Svetasheva, det Tor Erik Brandrud, conf Ilkka Kytövuori
Cortinarius anomalus, F, Betula, Kowalenko/Hauke
Cortinarius armillatus
Cortinarius barbatus, Karl Soop. Ce nom a été réintroduit par Jacques Melot en remplacement de *C. cristallinus.*
Cortinarius bivelus, common
Cortinarius bolaris, F, Betula, Gunilla Kärrfelt
Cortinarius camphoratus, F, *Betula-Picea*, Eva Hauke-Otto Kowalenko
Cortinarius caperatus, common, commun
Cortinarius cyanites s. str., F, *Betula-Picea*, Rosa Maria Andrés, det Ilkka Kytövuori
Cortinarius delibutus, Karl Soop
Cortinarius evernius group, Karl Soop
Cortinarius laniger
Cortinarius lepidopus, F, *Betula, Salix,* Tatyana Svetasheva, Det Tor Erik Brandrud
Cortinarius lucorum, many around old aspen
Cortinarius ochrophyllus
Cortinarius papulosus
Cortinarius pholideus, F, Eva Hauke-Otto Kowalenko
Cortinarius gossypinus, Tatyana Svetasheva, sequencated by Baling Dima
Cortinarius porphyropus, F, *Betula, Salix,* road border (en borde de chemin), Olga Morozova, conf. Tor Erik Brandrud
Cortinarius quarciticus, F, *Betula, Pinus*, Eva Hauke, Otto Kowalenko, Det Håkan Lindström
Cortinarius raphanoides, very common in Polytrichum under *Betula* (très commun dans le Polytrichum sous *Betula*).
Cortinarius semisanguineus
Cortinarius septentrionalis, F, *Betula*, Tatyana Svetasheva, det Tor Erik Brandrud
Cortinarius spilomeus
Cortinarius suberi, Gunilla Kärrfelt, det Karl Soop
Cortinarius traganus, F, Eva Hauke-Otto Kowalenko
Cortinarius triumphans, F, *Betula*, Eva Hauke, Otto Kowalenko
Cortinarius trivialis ss CFP, F, *Betula*, Eva Hauke, Otto Kowalenko
Cortinarius verbatus ss Brandrud ?, Karl Soop
Entoloma politum, u, *Alnus, Salix,* Olga Morozova, Tatyana Svetasheva, det Machiel Noordeloos, UPS
Entoloma lividoalbum, Francesco Bellu
Entoloma nidorosum
Entoloma rhodopolium coll.

Entoloma sericatum, F, *Alnus, Salix*, Tatyana Svetasheva
Fomes fomentarius
Fomitopsis pinicola
Gomphidius glutinosus
Gymnopus confluens, Francesco Bellu
Hebeloma geminatum, Francesco Bellu
Hydnellum ferrugineum
Hydnum rufescens coll., F, Hans Andersson
Hygrocybe conica
Inocybe geophylla
Inocybe leiocephala, *Francesco Bellu*
Inonotus obliquus
Laccaria laccata
Lactarius flexuosus, *Francesco Bellu*
Lactarius glyciosmus
Lactarius pubescens
Lactarius torminosus
Lactarius trivialis
Leccinum aurantiacum
Leccinum holopus in sphagnum
Leccinum scabrum
Leccinum variicolor
Leccinum versipelle
Leotia lubrica, F, *Alnus, Betula, Salix*, Tatyana Svetasheva, (UPS)
Lycoperdon pyriforme
Paxillus involutus
Phellinus igniarius
Phellodon melaleucus, F, *Picea*, Gunilla Kärrfelt
Phellodon tomentosus
Pholiota mutabilis
Piptoporus betulinus
Rhodocollybia maculata
Russula adusta
Russula aeruginea
Russula albonigra
Russula claroflava
Russula clavipes
Russula decolorans
Russula favrei
Russula gracillima
Russula intermedia, Francesco Bellu
Russula paludosa
Russula pubescens
Russula versicolor, mixed forest, leg, det Herbert Kaufmann, HK 16024
Russula vinososordida, coniferous forest, leg, det Herbert Kaufmann, HK 16025
Russula vitellina, Francesco Bellu
Suillus luteus
Tricholoma equestre, Francesco Bellu
Tricholoma fulvum
Tricholoma portentosum
Tricholoma saponaceum

The first Cortinarius week in Borgsjö 1982. A young Jacques Melot. Photo: Hjördis Lundmark

Tricholoma stiparophyllum, Francesco Bellu
Tricholoma virgatum
Tricholomopsis decora
Tricholomopsis rutilans, F, Hans Andersson, det Daniel Dvorak
Tricholoma stiparophyllum

Comments, commentaires

Cortinarius bolaris. Gunilla Kärrfelt's collection of the southern species *C. bolaris* was interesting, the only known site in western Medelpad. Excellent for wool dyeing according to Hjördis Lundmarks and Hans Marklunds book about mushroom dyeing: "Färgsvampar och Svampfärgning" (2009).

C. bolaris était intéressante, le seul lieu connu de l'ouest Medelpad. Excellente champignon de couleur selon Hjördis Lundmark et le livre de Hans Marklund sur les champignons teinture.

Cortinarius gossypinus. Tanya put fruitbodies at the exhibition table as *C. cf. pilatii*. Balint Dima has now sequenced the material and it turned out to be *C. 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 steams". Also description in *Cortinarius* Flora Photogaphica E 18.

Hebeloma geminatum is treated in "European Species of Hebeloma" (2015) with authors: Beker, Eberhard, Vesterholt.

Pine forest.

Tor Erik Brandruds presentation on monday evening 29/8 2017:

The Cortinarius rich forest types of Borgsjö

Tor Erik is familiar with the forest types in Medelpad and Jämtland after having acted as leader of Cortinarus workshops in Borgsjö 1982, 2003, 2010 and now 2016.

Here just some short notes from his interesting lecture on "The *Cortinarius* rich forest types of Borgsjö". The local mycologists Bengt Larsson and Håkan Sundin contributed with fine photos of the different forest types. The most common forest type inSweden is *Picea* and *Pinus* forests with blueberry in the ground layer. We, of course, visited such blueberry forests during the meeting, but most of our localities had lime in the soil.

First Tor Erik described *rich, calcareous, herb rich Picea forests*, with f.ex *Cortinarius caesiocinctus* s.l., found today, very beautiful, probably a complex with 3 species. Granbodåsen is a good example of a *rich mossy, low herb type*, with *C. blattoi* as typical species. Andersön with *C. pini* is a good example of *rich dry, calcareous Pinus forest*.

At Borgsjö we have *oligotrophic Picea forests*, a mossy rich taiga forest with many *Telamonia. Old growth Picea forest,* with for example *C. borgsjoeense* and "troll species" like *C. rusticus* and C. venustus, also *Tricholoma borgsjoeense*, are also found in the Borgsjö area. Lombäcksheden, with for exemple *C. phrygianus* and *C. pinophilus*, is an example of a *sandy dry, Pinus forest*.

After Tor Erik's talk Machiel Noordeloos gave a brief lecture on the genus *Entoloma* and his first visit to Borgsjö in 1985, where 48 *Entoloma* species were found in old meadows - ten species were new to Sweden. Today the *Entoloma* researchers use molecular methods. Machiel ended his talk with saying that our friend Olga Morozova is a very talented *Entoloma* researcher.

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

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32 Ormberget SV, Henri Romagnesis heterophylla forest, Borgsjö sn, Medelpad

Excursion guide page 46

Coniferous forest with *Betula*, swamp areas.

Herbert Kaufman, Lars G. Ljungberg, 31/8 2017.

In 1983 Henri Romagnesi collected *Russula heterophylla* here together with Birgitta Wasstorp, Herbert Kaufmann, Erik Malm, Jacques Melot and others. Henri was very delighted to recognize *Lycopodium annotinum*! Erik Malm picked together with Henri Romgagnesi 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 forests under *Betula*. In the same swampy forest Henri and his swedish friends collected *Cortinarius subtortus*, determinated by Jacques Melot. Herbert Kaufmann and Lars Ljungberg visited the same forest 31/8 2016 during JEC-meeting.

Forêt de conifères avec bouleaux, zones marécageuses. Ici Henri Romagnesi a recueilli *Russula heterophylla* le 22-8-1983 avec Birgitta Wasstorp, Herbert Kaufmann, Erik Malm, Jacques Melot et d'autres. Henri était ravi de reconnaître *Lycopodium annotinum*. Erik Malm a cueilli avec Henri Romagnesi une espèce de *Lactarius au lait blanc tournant au lilacin: Lactarius flavidus Boud.* Aujourd'hui, le nom de cette espèce est *Lactarius flavopalustris Kytöv.*, une espèce nordique des forêts marécageuses calcaires venant sous *Betula*. Dans la même forêt marécageuse Henri et ses amis suédois on trouvé Cortinarius subtortus. Herbert Kaufmann et Lars Ljungberg ont visité la même forêt le 31–8-2016 pendant les Journées du *Cortinaire*.

Species list

Cortinarius lepidopus, F, *Betula*, *Picea*, *Pinus*, Lars G Ljungberg, det Tor Erik Brandrud
Cortinarius pholideus
Cortinarius sanguineus
Cortinarius semisanguineus
Lactarius tuomikoskii, F, *Picea*, *Pinus*, Lars G Ljungberg
Melanoleuca grammopodia,F, Lars G Ljungberg
Russula atrorubens, Betula, Picea, Pinus, leg, det Herbert Kaufmann, Hk 16022
Russula clavipes, Picea, Pinus, leg, det Herbert Kaufmann, HK 16023
Russula emetica
Tubaria confragosa

– Fungi and Nature Conservation in Sweden –

Northern calcareous coniferous forests

Most forests in Sweden are of the blueberry type and their ectomycorrhizal fungi are rather common from south to north in Sweden. Most of the ectomycorrhizal species on the red list are from calcareous areas in Sweden: the big islands in the Baltic sea (Öland and Gotland), some mountains in the landscape Västergötland, northern Uppland, but also central Jämtland and western parts of Medelpad (Borgsjö) and Ångermanland.

The National Board of Forestry and Johan Nitare has published a magnificent book: "Signalarter-Indikatorer på skyddsvärd skog. Flora över kryptogamer" with fine photos of species in *Ramaria* and in *Cortinarius* subgenus *Phlegmacium* that are typical for the best old, calcareous, coniferous forests. *Cortinarius blattoi* and *C. pini* are among the fascinating and rare *Cortinarius* species from the limestone areas in Jämtland and surrounding areas with lime-rich soil transported by ice from the the limeplate. *Russula olivobrunnea* is also typical for the finest old calcareous forests. *Gomphus clavatus* also demand rich old forest that we observed at Kullbäcken nature reserve.

Typical for the best forests are also the magnificent lady slipper orchid *Cypripedium calceolus*. We saw on the fantastic forest reserve Tysjöarna hundreds of groups with faded *Cypripedium*. Bengt Larsson has found the rare *Gyromitra longipes* among the orchid *Calypso bulbosa*.

Calypso bulbosa. Painting by Rolf Lidberg.

During 16 mycological Borgsjö workshops 1982-2016, we have collected and studied *Cortinarius* and other ectomycorrhizal genera in northern calcareous forests together with friends and good experts. Håkan Lindström and Karl Soop have during fascinating talkshows learnt us the dark secrets of brown *Telamonia* species. Tor Erik Brandrud has been leading several *Cortinarius* workshops. Our dear friend Ilkka Kytövuori has been of good help. Ilkka lives in Helsinki and is world champion in discovering, picking and determining the most rare *Cortinarius* species, an amusing and fascinating mycologist!

The JEC week became a unique inventory of ectomycorrhizal fungi in fascinating orchid forests in western Medelpad and at the limeplate in central Jämtand. The finest sites are already or should be protected as nature reserves, "biotopskydd" or "naturvårdsavtal". Many forests rich in rare species can be managed so spores can spread from the old forests to new forests. The Swedish Forestry Board has also begun to inform about methods without clearcut-logging that in the future, with some state support, could be of real interest to many forest owners. A recent report is published by Swedish Agricultural University (SLU) in Umeå: "Hyggesfritt skogsbruk - en kunskapssam- manställning från Sverige och Finland" by Mats Hannerz, Annika Nordin & Timo Saksa. SLU, Umeå 2017. The conclusion is not surprising that forest without clear cut areas can be good for biological diversity not least since old forests favour many wood-inhabiting fungi. There are also many ectomycorrhizal species like *Hygrophorus inocybiformis* that we mostly find in very old forests. See also Magnus Anderssons exciting text at the end of this report about rare ectomycorrhizal fungi from some old calcareous forests in the landscape Gästrikland and Jämtland.

Lennart Vessberg. Photo: Olga Morozova

Gunilla Kärrfelt. Photo: Olga Morozova

Machiel Noordeloos. Photo: Olga Morozova

Mycena oregonensis. Painting by Siw Muskos.

6940150 1499550

41 Orråsberget N, Husmyrbäcken, Borgsjö sn, Medelpad

Excursion guide page 53

Old calcareous coniferous wood with *Betula* in moist areas along the very old pilgrimage road to Jämtland.

Earlier findings: *Cortinarius imbutus, C. luteo-ornatus, C. malicorius, C. rubellus, C. septentrionalis. Also Clitocybe albofragrans, Galerina camerina, Hygrophorus hyacinthinus, Hypocrea nybergiana, Lactarius badiosanguineus, L. fennoscandicus, L. scoticus, Mycena oregonensis* and *Tricholoma olivaceotinctum*. Bengt Larsson led a flower excursion to this botanical paradise in summer 2017, see www.medelpadsbotaniska.se and "rapporter" and "orkidévandring".

Vieille forêt de conifères avec *Betula humide. Récoltes antérieures: Cortinarius imbutus, luteo-ornatus, malicorius, rubellus, septentrionalis. Aussi Clitocybe albofragrans, Galerina camerina, Hygrophorus hyacinthinus, Hypocrea nybergiana, Lactarius badiosangunieus, L. fennoscandicus, L. pilatii, L. scoticus, L. tuomikoskii, Mycena oregonensis et Tricholoma olivaceotinctum.*

Group 3, 1/9 2016

Guides: Bengt Larsson, Håkan Sundin.

Participants: Gunnel Avehag, Bart van den Berg, Margareta Byström, Anders Dahlberg, Marjo Dam, Nico Dam, Roel Douwes, Lynn Delgat, Inga-Lill Franzén, Håkan Lindström, Bernt Linton, Masja van der Meer, Josiane Bocherens Mingard, Beran Miroslav, Inge Somhorst, Willem Stouthamer, Maj-Britt Såthe, Birgitta Wasstorp, Mirjan Veerkamp.

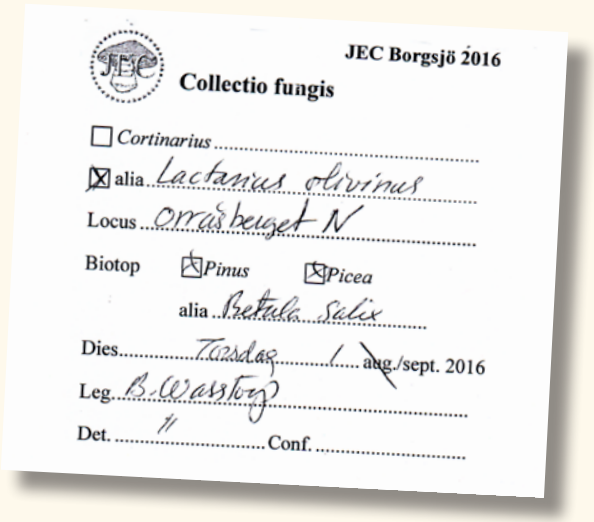
Species list

Albatrellus ovinus
Amanita muscaria var. regalis, *Betula*, *Picea*, Birgitta Wasstorp
Baeospora myosura
Cantharellula umbonata
Chalciporus piperatus
Chroogomphus rutilus
Collybia confluens
Cortinarius alboviolaceus, F, Gunnel Avehag
Cortinarius armillatus
Cortinarius bivelus
Cortinarius brunneus
Cortinarius caperatus
Cortinarius cinnamomeus
Cortinarius collinitus
Cortinarius croceus

Cortinarius moenne-loccozii. New to Denmark and found during the Nordic Mycological Congress in Jylland 2017. Photo: Jens H Petersen

Nordic mycological congress in Denmark 2017

Every second year a Nordic Mycological Congress take place in one of the Nordic countries or in Estonia. Last autumn in 2017 the congress was in Jylland in peninsular Denmark with about 50 participants. Head organizers were Thomas Læssøe, Jens Petersen, Anne Storgaard and Margot Nielsen with much help from Henny Tang Lohse. The young aspiring German mycologist Hjördis Böhning also participated and she made a fine painting of *Russula*. We visited *Fagus* forests, coniferous forests of *Abies* and *Picea*, grazed areas and sand dunes. There was also discussions about a new edition of the book Funga Nordica. The latest edition of FN was published in 2012 and is out of print. Next Nordic congress will be in Norway 2019.


JEC Borgsjö 2016
Collectio fungis
☐ Cortinarius .....
☒ alia Lactarius olivinus
Locus Orråsberget N
Biotop ☒ Pinus ☒ Picea
alia Betula Salix
Dies Torsdag 1 aug./sept. 2016
Leg. B. Wasstorp
Det. " Conf. .....

Cortinarius decipiens
Cortinarius delibutus, F, *Betula, Picea*, *Pinus*, Birgitta Wasstorp
Cortinarius flabellus
Cortinarius flexipes
Cortinarius gentilis
Cortinarius delibutus
Cortinarius glandicolor, F, *Betula, Picea. Pinus*, Birgitta Wasstorp
Cortinarius glaucopus
Cortinarius laniger, F, *Betula, Picea*, *Pinus*, Birgitta Wasstorp
Cortinarius lepidopus
Cortinarius ochrophyllus, F, *Picea,* Maj-Britt Såthe
Cortinarius pholideus
Cortinarius porphyropus
Cortinarius raphanoides, F, *Betula*, Maj-Britt Såthe
Cortinarius roseorarmillatus, Betula, Picea, Marjo Dam, det Nico Dam
Cortinarius rubellus
Cortinarius rusticus
Cortinarius sanguineus
Cortinarius scaurus
Cortinarius septentrionalis
Cortinarius solis-occasus. Ce nom recouvre probablement deux espèces voisines, au moins dans les pays du Nord (J. M.).
Cortinarius sphagnophilus, F, *Betula* forest, *Picea*, purple in stipe (pied pourpré en dedans), Roel Douwes
Cortinarius spilomeus, F, *Picea,* Maj-Britt Såthe
Cortinarius stillatitius
Cortinarius talus, F, *Betula, Picea*, Maj-Britt Såthe
Cortinarius testaceofolius
Cortinarius trivialis
Cortinarius venustus, *Picea, Betula*, Birgitta Wasstorp, conf Håkan Lindström, common, sveral more collections at the exhibition table from Orråsberget (plusieurs autres récoltes sur la table d'exposition d'Orråsberget)
Entoloma byssisedum, F, Inga-Lill Franzén
Fomitopsis pinicola
Fuligo septica
Ganoderma applanatum
Gomphidius glutinosus
Hebeloma velutipes
Helvella lacunosa
Hygrophorus agathosmus
Hygrophorus piceae
Hygrophorus pustulatus
Inocybe geophylla
Kueheromyces mutabilis
Lactarius aquizonatus
Lactarius badiosanguineus, F, *Betula, Picea, Salix,* Birgitta Wasstorp, UPS
Lactarius deterrimus
Lactarius fennoscandicus
Lactarius lilacinus, F, *Alnus, Betula, Picea,* Birgitta Wasstorp, UPS
Lactarius obscuratus
Lactarius olivinus, F, *Betula, Picea, Pinus, Salix*, Birgitta Wasstorp, UPS
Lactarius scrobiculatus
Lactarius torminosus
Lactarius trivialis
Lactarius vietus
Leccinum percandidum, *Betula*, Bernt Linton
Leccinum scabrum
Leccinum variicolor
Leccinum versipelle
Marasmiellus perforans
Mycena epipterygia
Mycena galopus
Mycena galericulata
Mycena pura
Pholiota astragalina, *Betula, Picea, Pinus,* Birgitta Wasstorp
Pholiota flammans, F, *Betula, Picea, Pinus,* Birgitta Wasstorp
Pholiota spumosa
Russula favrei
Russula fennoscandicus
Russula nauseosa
Russula queletii, Betula, Picea, Pinus, Birgitta Wasstorp
Russula paludosa
Russula vinososordida
Stropharia hornemannii
Suillus variegatus
Tricholoma fulvum
Tricholoma inamoenum
Tricholoma vaccinum
Tricholoma virgatum
Tricholomopsis decora, F, *Picea*, Inga-Lill Franzé
Tubaria confragosa, F, *Betula* wood, Maj-Britt Såthe
Xerocomus ferrugineus, F, *Picea*, Masja van den Meer

The first Cortinarius week in Borgsjö 1982. Rolf Lidberg and Hjördis Lundmark at St Olofs inn. Photo: Kjell Olofsson

Comment, commentaires

Läroverksläraren Erik Collinder skriver I "Medelpads Flora" (1909) att "ren kalkbleke anträffas i myrmarker längs stora landsvägen, nära Orråsen och längre västerut som ett 3-6 dm tjockt kalklager, avsatt från en ständigt flödande källa. Området låg fordom längs riksvägen mot Jämtland". Källan är idag uppmärkt norr om nuvarande pilgrimsleden (mittnordenleden).

Tor Eriks and Michaels talk show monday 29/8 2016

Tor Erik made comments on interesting collections and Michael showed beautiful photos every evening, a very appreciated moment. Here just some short notes from the "Tor Erik and Micke show" monday evening. First Tor Erik talked about the *Cortinarius croceus*-group. *Cortinarius norvegicus* is not surprisingly described from Norway. *Cortinarius collinitus* only occurs with *Picea*. The *defibulati*-group has a honey smell. The *subtortus*-group. In Phlegmacium. A nice collection in the group *Turmalis* was made today, with a beautiful rose coloured stem base. The *Calochroi* is a vast, difficult group. *Cortinarius aureopulverulentus*, with yellow veil, often fruits on ant hills. *Cortinarius metarius (f.d barbarorum)* from typical limerich coniferous forests, is pinkish on the the bulb and with lilac gills. *Cortinarius* pini, found today at Andersön, has a slightly fibrillose cap, bluetinged gills – a rare species in Norway and Sweden. Nice collections of *C. pinophilus* were made at the Lombäcks-heath - a northern species on sandy pine heaths. *Cortinarius leucophanes* is more pure white than C. pinophilus and with blue gills when young. Many findings of *C. rubellus* were made today. Then Tor Erik talked about the *Leprocybe* section. *Cortinarius phrygianus* was found at Lombäcksheden. Michaels photo was quite beautiful.

Egil Bendiksen gave a very interesting talk on *C. rubrovelapes*, new to Sweden, found today by Egil and Katriina at Andersön in Jämtland. Egil showed a fine photo of *C. rubrovelapes*, stembase violet and with red veil. Egil and Katriina has described *C. rubrovelapes*. Then Tor Erik turned to subgenus *Telamonia*. *Cortinarius venustus* is a northern, "troll" or "huldra" species with lilac stembase and a sweetish smell. *Cortinarius rusticus* is also northern, described from Finland by Karsten. It has grey hair like a wolf! *Cortinarius diosmus* was found in Jämtland today, a *Telamonia* on calcareous soil. *Cortinarius urbicus*. Ilkka also found a *Cortinarius* species today that may be new to science.

Fungi of today:

C. phrygianus, collected by Roel Douwes, price: the book Medelpads Flora, (*Flora of Medelpad*) by Rolf Lidberg and Håkan Lindström.

Comment, commentaire

Leccinum percandidum is said to be a white form of Leccinum versipelle according to Funga Nordica (2012). In 1993 we hade a Leccinum workshop at Borgsjö with Roy Watling as leader. He had a talk "*Leccinum*- one or one hundred and two species"?

Cortinarius porphyropus. Photo: Olga Morozova

– Fungi and Nature Conservation in Sweden –

Habitat protection areas and nature conservation agreements – suitable for small fungus hot spots

Gunnar Selling from the local office of the National Board of Forestry in Ånge led in 2003 during the *Cortinarius* workshop in Borgsjö an excursion to an exciting orchid forest, where *Calypso bulbosa* has been found near the old "fäbod" Ensillrebodarna. Among participants were Anders Dahlberg and Hjalmar Croneborg from Artdatabanken in Uppsala, Johan Nitare from Skogsstyrelsen, Håkan Lindström, landscape botanist and Per Simonsson, ecologist at the big forest company SCA. Gunnar showed a wet, limerich coniferous forest, where he had arranged so called "naturvårdsavtal" with the forest owner. "Naturvårdsavtal" och "biotopskydd" are two methods for Skogsstyrelsen to protect smaller areas - very suitable for small fungus hot spots! Gunnar believes that "naturvårdsavtal" is cheaper for the state than "biotopskydd". Every 20-30 year selected trees are taken out from the protected area, and the result is continuity in tree cover and in the future more open forests with more broadleaved trees. The nature experts that September day 2003 also talked about bad things with continuity forestry in some calcareous forests: more soil damages by forest machines during mild winters in the future, more *Heterobasidion annosus* that already is a problem in fertile *Picea* forests in middle Sweden and less dead, large logs, since the biggest trees are taken out. Following Gunnars presentation a very interesting discussion broke out on how to manage in the future the finest forests with *Cypripedium* and *Calypso* and "fungus hot spots" with many rare and red listed ectomycorrhizal fungi. There is a need of a book with a list of the best "fungus hot spots" in every Swedish landscape!

Exhibition of paintings and stones by young mycologist Hjördis Böhning. Photo: Hjördis Lundmark

1496760 6939615

43 Granboda, Skarpbäcken, Borgsjö sn, Medelpad

Excursion guide page 55

Habitat protection area (biotopskydd).

Herbert Kaufmann, Lars G Ljungberg. 1/9 2017
Rich forest along a creek with *Cypripedium calceolus* and the alpine plant *Thalictrum alpinum*. In 2001 Doris Laber picked *Cortinarius cremeolaniger* here and in 2010 Francesco Bellu-Gianni Turrini picked *C. alborufescens* sensu Brandrud, Kytövuori, Niskanen et al. The current name is *C. pearsonii* P.D. Orton according to Funga Nordica (2012). Here also *C. harcynicus, C. alboglobosus, C. rusticus, C. subbalaustinus and C. venustus* occur. Other fungi along the creek: *Cantharellopsis prescotii, Hygrophorus inocybiformis* (Eef Arnolds and Ilkka Kytövuori), *Lactarius moseri, Russula vinososordida.*

Forêt riche le long d'un ruisseau avec *Cypripedium calceolus* et la plante alpine *Thalictrum alpinum*. Ici Doris Laber en 2001 a récolté une espèce qu'elle a déterminé Cortinarius cremeolaniger Orton, et Francesco Bellù et Gianni Turrini en 2010 ont récolté en 2010 ce qu'ils ont déterminé sous le nom de *C. alborufescens Imler*. Jacques Melot a établi que *C. pearsonii et C. cremeolaniger* sont synonymes de *C. alborufescens Imler*, qui a priorité et est donc le nom correct de l'espèce. Ont encore été trouvé ici: *Cortinarius harcynicus, alboglobosus, rusticus, subbalaustinus, venustus. Autres champignons le long du ruisseau: Cantharellopsis prescotii, Hygrophorus inocybiformis (Eef Arnolds et Ilkka Kytövuori), Lactarius moseri, Russula vinososordica.*

Species list

Clitocybe ditopus
Cortinarius collinitus
Cortinarius glandicolor
Cortinarius croceus
Cortinarius gentilis
Cortinarius mucosus
Cystoderma jasonis
Hygrophorus agathosmus
Hygrophorus camarophyllus
Limacella guttata, F, *Betula, Picea*, Lars G. Ljungberg
Panus conchatus
Russula emetica

Cortinarius phoeniceus. Photo: Hjördis Lundmark

6940825 1496599

45 Ensillre kalkbarrskog, nature reserve, Natura 2000, Borgsjö sn, Medelpad

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Ensillre kalkbarrskog is well suited to be a list of the fifty best fungus hot spot areas in Medelpad and Jämtland!

A botanical paradise close to Ensillrebodarna, where farmers used to graze cows and sheep. We have guided botanists from countries southwards in Europe, who come here in the beginning of june to see *Calypso bulbosa* in flower once in their lifetime! Partly destroyed by hard storms in 2011 and 2013 like many other entirely *Picea*-dominated forests in mid Sweden. It will be very interesting to see how the storm-made openings will influence flora and fungi during the coming years. There will certainly be more broadleaved trees like *Betula* and *Salix* in the wet more light and open areas, where *Calypso bulbosa* is growing. For forest owners storms are very bad and even catastrophic leading to insect attacks. But for nature, storms, heavy rains like in 2000 here at Ånge, are a good thing.

Enomous rains created floods along books and rivers with fallen trees and much disturbance and floods of sand and soil. Such disturbances are bad news for the forest owners, but open up the forests and favour many species. The amount of dead wood increased as a consequence of the severe storms in 2011 and 2013. Ensillre kalkbarrskog certainly will fit on a list with the fifty best fungus hot spot areas in mid Sweden!

In 2010 Francesco Bellu and Gianni Turrini found *Cortinarius pearsonii* (= *alborufescens*). Ilkka Kytövuori also found two species of section *Bovini*: *C. bovinus* and *C. oulankensis*, recently described in Mycologia 105 (4): pp 977-993 by Tuula Niskanen, Ilkka Kytövuori, Kare Liimatainen and Håkan Lindström. Other *Cortinarius* among the orchids *Calypso* and *Cypripedium*: *C. herpeticus*, *C. septentrionalis*, *C. sphagnophilus*, *C. subbalaustinus*, *C. suberi*, *C. suboenochaelis* and *C. venustus*. Also at this botanical paradise: *Lactarius olivinus*, *Cantharellopis prescotii*, *Gyromitra longipes* (see Bengt Larssons photo), *Inocybe terrigena*, *Lactarius bertelonii*, *L. olivinus*, *Ossicaulis lignatilis*, *Russula olivobrunnea*, *R. vinososordida*, *Tremiscus helvelloides* and *Tricholoma viridilutescens*.

Un paradis botanique près de Ensillrebodarna où les agriculteurs avaient des vaches jusqu'à 1920, en partie ravagé par une forte tempête en 2013. Il s'agit de la plus calcaire

Lombäcksheden

Type locality for *Cortinarius crassisporus* and *Tricholoma dulciolens*, both collected by Ilkka Kytövuori. *C. crassisporus* is described in Index Fungorum no 21, published 19/11 2014 (ISSN 2049-2375). Here you can see how to write if you want to describe a new species for science and became famous and immortal:

Cortinarius crassisporus Kytov., Niskanen & Liimat., sp.nov. IF550867

Type: Sweden, Medelpad, Borgsjo, Lombacksheden, rich spruce forest with *Pinus* and some deciduous trees, 11 Sept 1995, I. Kytovuori 95-1085 (H, holotype; NY, isotype). GenBank No. KP165554. Diagnosis: *Pileus* 40-130 mm, hemispherical, then broad convex to almost plane, sometimes with a low and broad umbo, very finely fibrillose, dark reddish brown to reddish brown, hygrophanous. Lamellae moderately spaced to almost distant, at first pale brown, later strong brown, adnexed to emarginated. Stipe 70-115 mm long, 9-25 mm thick at apex, 20-40 mm at base, almost bulbose, whitish silky fibrillose. Universal veil at first white, soon becoming partially pale brown, forming a couple of broad, incomplete girdles on the stipe. Basal mycelium white. Context in pileus brown, in stipe at first pale brown, marbled *hygrophanous,* later brown at base. Odor of lamellae indistinct. Exsiccata*: pileus* brown with a weak pinkish tint and blackish brown centre. Basidiospores 10.7-12.2-13.6 x 7.5-8.3-9.1 um, av.= 11.4-13.0 x 8.1-8.7 um, Q= 1.36-1.47-1.58, Qav.= 1.47-1.55 (140 spores, 5 specimens), (ellipsoid to) broadly ovoid to almost subglobose, thick-walled, finely to fairly finely verrucose, somewhat more strongly at apex, very strongly dextrinoid. Lamellar trama hyphae pale yellow in MLZ, smooth. ITS sequence (GenBank KP165554, holotype) distinct from the other members of *Cortinarius subgenus Telamonia.* Deviating from the other species of the subgenus in the ITS region by more than 15 substitutions and indel positions. Ecology and distribution: In Picea dominated forests on calcareous soil, sometimes in less eutrophic forests (one on an ant hill and one in a burnt forest), in middle to northern boreal zone, rare, often scanty. Producing basidiomata in late summer and early autumn. Known from Northern Europe and U.S.A., Alaska. Additional specimens: Finland, Kainuu, Suomussalmi, Raate, in the three-year-old forest fire area on the hill between Jannevaara and Pyoriaisenvaara in the frontier zone, *Picea* dominated burnt, intact old-growth forest, 5 Aug 1995,

Siw Muskos and Anki Suneson at the Vivsta heath in Timrå parish. Photo: Hjördis Lundmark

T. Laine & P. Rahko 699, F032227 (OULU), GenBank No. KP165555. Finland, Pera-Pohjanmaa, Kuusikkokivalo, ant hill, 9 Sept 2012 (H). Norway, Oppland, Lunner, Karusputten S, 3 Sept 2011, I. Kytovuori (H). Sweden, Lycksele Lappmark, Stensele parish, Langsjoby, W side of the village, 2 km W of the crossing to south, below the high rock face. S sloping, calcareous grass-herb spruce forest with few hardwood trees, UTM grid WN 78-82 21-22, 9 Sept 2009, P. & I. Kytovuori (H). Sweden, Lycksele Lappmark, Stensele parish, Storoman, Blaiken, N side of the main road E79, opposite to Kyrkberget, at the crossing of a small forest road. *Calcareous* grass-herb spruce forest with few pines and hardwood trees, UTM grid WN 8 4, 10 Sept 2009, P. & I. Kytovuori 09-1034 (H). U.S.A., Alaska, Fairbanks, University Campus NE, trails, fairly old mesic, mossy *Picea* dominated forest with some Alnus and Betula on calcareous soil, 21 Aug 2011, K. Liimatainen & T. Niskanen 11-175 (H), GenBank No. KP165556. U.S.A., Alaska, Fairbanks, Wedgewood, Picea dominated forest with some *Betula on calcareous* soil, 20 Aug 2011, K. Liimatainen & T. Niskanen TN11-161 (H). Etymology: The name refers to the large basidiospores.

Holotype I. Kytovuori 95-1085 (H).

des forêts du Medelpad, avec nombre de plantes vasculaires et de champignons terrestres. Picea y domine, mais il y a également *Betula* et *Pinus*. La belle orchidée *Calypso bulbosa* fleurit au début de juin. Nous avons guidé des botanistes de nombreux pays d'Europe venus ici au début de juin pour avoir la chance de voir au moins une fois dans leur vie *Calypso bulbosa* en fleur.

Francesco Bellù et Gianni Turrini y ont trouvé *Cortinarius alborufescens* en 2010. Ilkka Kytövuori a également trouvé cette même année deux espèces de la section Bovini*: C. bovinus et C. oulankensis,* décrit récemment dans Mycologia, 105 (4), p. 977-993, par Tuula Niskanen, Ilkka Kytövuori, Kare Liimatainen et Håkan Lindström. Autres Cortinarius, parmi les orchidées *Calypso bulbosa et Cypripedium calceolus: C. herpeticus, septentrionalis, sphagnophilus, subbalaustinus, suberi, suboenochaelis, venustus.* À noter encore dans ce paradis botanique: *Lactarius olivinus, Cantharellopis prescotii, Gyromitra longipes* (photoraphie Bengt Larsson), *Inocybe terrigena, Lactarius bertelonii, L. olivinus, Ossicaulis lignatilis, Russula olivobrunnea, R. vinososordida, Tremiscus helvelloides, Tricholoma viridilutescens.*

Species list 31/8 2016

Species list, liste des espèces: Gunnel Avehag, Inga-Lill Franzén, Bengt Petterson
Cortinarius rubellus
Cortinarius sanguineus
Cystoderma amianthinum
Hydnellum peckii
Hygrophorus olivaceoalbus
Paxillus filamentosus

6940953 1497061

46 Ensillrebodarna, V Halmmyran, Borgsjö sn, Medelpad

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Here at Ensillrebodarna Bernt Oertel and Geert Schmidt Stohn in 2010 found *Cortinarius caesiocinctus, C. rusticus* and *Tricholoma olivaceotinctum*. Also found here: *Gerronema brevibasidiatum, Lactarius auriolla.*
Ici Bernt Oertel et Geert Schmidt Stohn ont trouvé en 2010 Cortinarius caesiocinctus, rusticus et Tricholoma olivaceotinctum. Ici également: Gerronema brevibasidiatum, Lactarius auriolla.

Group 2, 2/9 2016

Guides: Bengt Larsson, Håkan Sundin, Magnus Andersson.
Participants: Magnus Andersson, Esperance Bidaud, Margareta Byström, Jean-Marc Hügli, Werner Jürkeit, Gunilla Kärrfelt, Håkan Lindström, Josiane Bocherens Mingard, Ina Paliahenkaya, Lennart Vessberg, Jaap Wisman.

Species list

Cantharellus lutescens
Chroogomphus rutilus
Cortinarius acutus
Cortinarius aureopulverulentus, F, Margareta Byström, Bengt Larsson, det Tor Erik Brandrud
Cortinarius bataillei, Interprétation moderne due à Jacques Melot, reprise dans la Cortinarius, Flora
Cortinarius betulinus
Cortinarius biformis, F, *Picea*, Håkan Lindström
Cortinarius bivelus
Cortinarius camphoratus
Cortinarius casimiri. Interprétation moderne due à Jacques Melot. Connu sous de nombreux noms différents, dont C. subsertipes Romagn. longtemps utilisé sur le continent européen et C. unimodus, interprétation de Moser, également répandue en son temps.
Cortinarius cf cliduchii
Cortinarius collinitus
Cortinarius croceus
Cortinarius delibutus, F, *Picea*, Håkan Lindström
Cortinarius flabellus
Cortinarius flexipes, F, *Picea*, Håkan Lindström
Cortinarius fulvescens
Cortinarius gentilis
Cortinarius glandicolor, F, *Picea*, Håkan Lindström
Cortinarius laniger
Cortinarius lepidopus
Cortinarius malachius
Cortinarius malicorius
Cortinarius ochrophyllus
Cortinarius pholideus
Cortinarius pilatii, F, *Picea*, *Pinus*, Lennart Vessberg, det Håkan Lindström
Cortinarius cf privignatus, F, *Picea*, Håkan, Lindström
Cortinarius raphanoides, F, Håkan Lindström
Cortinarius rubellus
Cortinarius sanguineus, F, *Picea*, Inga-Lill Franzén
Cortinarius scaurus, F, *Picea, Pinus*, Inga-Lill Franzén
Cortinarius solis-occasus
Cortinarius subtortus, F, *Picea*, Håkan Lindström
Cortinarius talus
Cortinarius testaceofolius, F, *Betula, Picea*, Lennart Vessberg, det Håkan Lindström
Cortinarius triumphans, F, *Betula, Picea,* Håkan Lindström
Cortinarius trivialis ss. CFP
Hebeloma edurum, F, *Picea*, Håkan Lindström
Hydnum repandum
Hygrophorus agathosmus

The beautiful Gyromitra longipes, a very rare fungus, grows in old moist Picea forest among the orchid *Calypso bulbosa* at Ensillre kalkbarrskog. Photo: Bengt Larsson

Hygrophorus camarophyllus
Hygrophorus karstenii
Hygrophorus olivaceoalbus
Hygrophorus piceae
Inocybe geophylla
Inocybe nitidiuscula
Lactarius aquizonatus
Lactarius aurantiacus (=mitissimus)
Lactarius deterrimus
Lactarius glyciosmus
Lactarius mitissimus
Lactarius rufus
Lactarius scrobiculatus
Lactarius torminosus
Lactarius trivialis
Lactarius vietus
Leccinum niveum (=holopus)
Leccinum scabrum
Leccinum versipelle
Micromphale perforans
Mycena pura
Mycena rosella
Russula atroglauca
Russula emetic
Russula favrei
Russula olivobrunnea
Russula queletii
Russula vinosa
Russula xerampelina
Stropharia hornemannii
Suillus variegatus
Tricholoma eqestre
Tricholoma terreum
Tricholoma stiparophyllum
Xerocomus ferrugineus

Comment, commentaire

At the rich fen Halmmyran: *Geoglossum glabrum* and *Gerronema brevibasidiatum.*

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

6993071 1493024

49 Lombäcksheden-Harrån, Borgsjö sn, Medelpad

Excursion guide pages 59-62

Habitat protection area, biotopskydd (partly).

Rolf Lidberg (1930-2005), founder of Sundsvall Mycological Society, used to say: " Fungi at the poor, sandy pine heath at Lombäcken is the most exclusive we can show our friends from southern countries in Europe". Karl Soop said: "Lombäcksheden is even better than fungus rich forests in New Zealand". Forest researchers like Mauri Korhonen, Machiel Noodeloos and RoyWatling like the poor, sandy calcareous heath, see photo. The combination of calcareous pine heath and the beautiful river Harrån gives the area high nature value with many rare and redlisted species

The special funga of northern, poor, sandy *Pinus* forests are threatened by future developments towards forests with thicker and thicker litter beds without the classical fire regime and grazing. Lombäcksheden is a real fungus hot spot with many rare fungi that mainly grow in forest soils depleted in nitrogen. A sandy, limerich pine heath with some *Betula* and *Picea* and 76 species of *Cortinarius* found in the period 1982-2016, see list: www.myko.se link JEC and "Svampar vid Harrån". There you find a special more detailed report, supported by the local County Board about fungi on calcareous pine heaths in Medelpad: "Den artrika kalktallheden – Svampar på Lombäcksheden och längs Harrån i Ånge". The report contains also some thoughts about fungi in northern *Pinus* heaths after investigations and excursions during 16 Borgsjö workshops. It is also interesting that species like *Boletopsis grisea* and *Lactarius musteus* occur in 30 years old new *Pinus* forest, see page 65-67 in the report. Leaving old seed trees has been successful here so that rare species more easily can move into the new forest generation. This method where seed trees are left after cutting on fine calcareous pine heaths is a good method in nature conservation. Smaller clear cut areas surrounded by older forest is also good for spreading of seeds and spores into the regenerating forest. Nevertheless, we still do not have complete knowledge on how fungi are establishing. Along the Bothnian coast there are very fascinating calcareous forests around the island Alnö. Also the small brook Lombäcken in the north is a botanical paradise, already pointed out by Lars Guvå, who invented the area in summer 1971 together with Rolf Lidberg.

Lombäcksheden is the type locality for *Cortinarius crassisporus* and *Tricholoma nauseosum*. It is also the only known locality in Sweden for *Entoloma venosum* (leg, det Machiel Noordeloos). *Hygrophorus calophyllus* occurs on naked sand at the road side. There we have also found *Russula crassipes*, a little known but common *Russula* in Sweden. *Gymnopilus odini* is collected in bare sand on the heath. *Picea* is becoming more and more dominant due to the lack of forest fire. Many species in the list below occurred on naked sand along the forest roads in the area. The big forest company SCA owns a part of the heath and their nature expert Tomas Rydkvist have plans to burn away mosses, lichens and needle beds, so that flowers and fungi can establish in the bare sand. Tomas want to create forests that have similarities with those more open forests with none or very thin litter layers that were common in older times when grazing and forest fires was important factors. Many fungi on the heath are excellent for mushroom dyeing: *Boletopsis grisea* and species in *Cortinarius*, section *Dermocybe*. Our dear friend Pirjo Kytövuori told us Finnish names for *Antennaria diocia, Rubus saxatilis* and other plants during the visit at Lombäcken heath now in 2016.

Harråns deep ravine with *Alnus*, *Betula*, *Picea* and *Populus* has an interesting funga: *Amanita friabilis, Cortinarius harcynicus, C. rusticus, C. venustus, Gyrodon lividus, Hohenbuhelia unguicularis, Hygrophorus chrysodon coll., H. purpurascens, H. subviscifer, Lactarius fennoscandicus, L. leonis, L. subcircellatus, L. torminosulus, Mythicomyces corneipes, Russula aurantioflammans, R. intermedia, R. renidens* and *Stropharia magnivelaris. Hygrophorus chrysodon* with *Picea* is probably another species than *H. chrysodon* with *Fagus*.

Lamembert

a famous local cheese from Strömmens gårdsmejeri (farm diary) in Borgsjö

During our mycological meetings in Borgsjö we enjoy local cheeses at the banquet from cow, goat and sheep produced by "Strömmens gårdsmejeri" in Borgsjö and "Åsbergets getgård" in Bräcke, Jämtland. Strömmens dairy produce a very popular cheese, that has won prices, called lamembert. The name of the cheese come from lamb. French cheese specialists have visited dairies in the region to give advice on local cheese production. Jämtland has also a national centre for education in small scale food production called Eldrimner. Our guests from France, the homeland of good cheeses, appreciated the local cheeses at the banquet.

Au cours de nos rencontres mycologiques à Borgsjö, nous utilisons des fromages locaux au banquet de vache, de chèvre et de mouton produits par "Strömmens gårdsmejeri" à Ånge et "Åsbergets getgård" á Bräcke, Jämtland. Strömmens lairy a un fromage très populaire appelé lamembert (pas camembert). Le nom de ce fromage vient de l'agneau. Les spécialistes français de bons fromages ont visité les laiteries dans la région pour enseigner production locale de fromage.

Zone critique avec de nombreux champignons rares nécessitant un sol pauvre en azote.

Pinède arénacée calcaire parsemée d'épicéas et de bouleaux où 76 espèces de Cortinarius ont été récoltées entre 1982 et 2016. Il s'agit de la localité type pour Tricholoma nauseosum décrit par notre ami finlandais Ilkka Kytövuori. Lieu de récolte unique en Suède pour Entoloma venosum (leg. et det. Machiel Noordeloos). *Hygrophorus calophyllus* et *Russula crassipes* dans le gravier en bordure de route. Des nombreux champignons de bruyère s'avèrent avoir d'excellentes propriétés *tinctoriales*, tels *Boletopsis grisea* et des espèces du sous-genre *Dermocybe*.

Profond ravin de Harråns fiskevårdsområde avec *Alnus*, *Betula*, *Picea*, Populus présente une flore mycologique intéressante: *Amanita friabilis, Cortinarius harcynicus, C. rusticus, C. venustus, Gyrodon lividus, Hohenbuhelia unguicularis, Hygrophorus chrysodon, H. purpurascens, H. subviscifer, Lactarius fennoscandicus in ed. L. leonis, L. subcircellatus, Mythicomyces corneipes, Russula renidens, Stropharia magnivelaris.*

Group 2, 30/8 2016

Guides: Hans Andersson, Jan-Olof Tedebrand.

Participants: Rosa Andres, Gunnel Avehag, Josep Ballara, Miroslav Beran, André Bidaud, Esperance Bidaud, Augusto Calzada, Rosa Maria Andrés Carbajal, José Antoniio Cadinados, Xavier Carteret, Augusto Calzada Dominguez, Daniel Dvorak, Eva Hauke, Otto Kowalenko, Ilkka Kytövuori, Pirjo Kytövuori, Rolf Lidberg, Rafael Mahiques, Jean-Paul Maurice, Viktor Papp, Imre Rimoczi, Karl Soop, Maj-Britt Såthe, Birgitta Wasstorp.

Species list

Amanita muscaria var. muscaria
Amanita porphyria
Boletus pinophilus
Cantharellula umbonata
Chroogomphus rutilus
Clitocybe fragrans
Cortinarius sp 21 (Anomali), DB 6140b, Xavier Carteret, Balint Dima seqv.
Cortinarius cf albogaudis, Karl Soop
Cortinarius arenatus
Cortinarius caperatus
Cortinarius calopus
Cortinarius claricolor
Cortinarius croceus
Cortinarius glandicolor, F, *Pinus*, Xavier Carteret, det André Bidaud
Cortinarius leucophanes
Cortinarius millaresenensis, *Pinus*, Xavier Carteret, BD seqv., UPS (inlagd som melitosarx)
Cortinarius melleopallens. Interprétation moderne due à Håkan Lindström. Jacques Melot y voit C. batschii (Humb.) Melot, prioritaire sur le synonyme C. isabellinus (ss. Fries, non aut. européens du XXe siècle).
Cortinarius ochrophyllus
Cortinarius odhinnii, F, *Picea*, *Pinus*, Birgitta Wasstorp
Cortinarius perrugatus Hy, F, Pinus, Xavier Carteret
Cortinarius pholideus
Cortinarius phrygianus, Miroslav Beran, Daniel Dvorak
Cortinarius pinigaudis
Cortinarius pinophilus
Cortinarius quarciticus

Cortinarius renidens, F, *Pinus*, Gunnel Avehag, det Ilkka Kytövuori
Cortinarius sanguineus
Cortinarius semisanguineus
Cortinarius spilomeus s. str., DB 140 a, Xavier Carteret. BD seqv.
Cortinarius suberi var. brunneogriseus, F, *Pinus*, Karl Soop, det Ilkka Kytövuori
Cortinarius traganus, *Picea*, *Pinus*, Daniel Dvorak
Cortinarius trivialis ss. CFP
Cortinarius varius, F, Picea-Pinus, Hauke/Kowalenko
Cystoderma amianthinum
Fomes fomentarius
Fomitopsis pinicola
Gomphidius roseus
Gymnopilus penetrans
Helvella lacunosa
Hydnellum aurantiacum
Hydnellum caeruleum
Hydnellum ferrugineum
Hydnellum geogenium, F, Picea, Daniel Dvorak
Hydnellum peckii, F, *Picea, Pinus*, Birgitta Wasstorp
Hygrocybe conica
Hygrophorus agathosmus
Hygrophorus karstenii
Hypholoma radicosum, F, *Pinus,* Bart van den Berg
Lactarius aquizonatus, F, Ilkka och Pirjo Kytövuori
Lactarius deliciosus
Lactarius deterrimus
Lactarius lilacinus
Lactarius pubescens
Lactarius rufus
Lactarius torminosus
Leccinum versipelle
Leccinum vulpinum
Mycena epipterygia
Mycena flavoalba
Mycena pura
Phellinus igniarius
Pholiota lubrica, F, *Pinus,* Birgitta Wasstorp
Russula acrofolia
Russula decolorans
Russula depallens, Birgitta Wasstorp
Russula elaeodes
Russula paludosa
Russula roseipes
Sarcodon pseudoglaucopus Nitare nom.prov., *Pinus,* Maj-Britt Såthe, Birgitta Wasstorp
Sarcodon scabrosus, 50 m long row with more than 50 fruitbodies
Suillus bovinus, hundreds of fruitbodies at the place where we use to park
Suillus luteus
Suillus variegatus
Thelephora caryophyllea, F, *Picea, Pinus*, Birgitta Wasstorp
Tricholoma aestuans, F, Picea-Pinus, Hauke/Kowalenko
Tricholoma arvernense, D, *Pinus*, Miroslav Beran, Daniel Dvorak
Tricholoma equestre, F, *Pinus*, Birgitta Wasstorp
Tricholoma focale, F, *Pinus*, Gunnel Avehag
Tricholoma terrreum
Tricholomopsis rutilans
Xerocomus ferrugineus

Comment, Commentaires

*Cortinarius phrygianus***.** Roel Douwes found already on monday beautiful fruitbodies of this remarkable species Michael Krikorev took photos of the beauty while many admired the the fungus. Roel got the price of "fungus of the day". At the excursion on tuesday Daniel and Miroslav also collected *C. phygianus*. It like calcareous, sandy, rather old *Pinus* forest and is known from about ten localities in the landscape of Medelpad. One lime locality (shells) at Björköviken in Njurunda parish is protected as "biotopskydd" by Stig Åke Sundström at The National Forest Board. "Biotopskydd" is very suitable for protecting smaller fungus hot spots and is a popular form of forest protection. The forest owners get 125 percent of the forest value. The top up is to compensate for the emotional loss of the ownership of an often beloved forest.

> Roel Douwes a déjà découvert le lundi de beaux carpophores de cette espèce remarquable. Michael Krikorev a pris des photos de cette beauté pendant que beaucoup admiraient ce champignon. Lors de l'excursion du mardi, Daniel et Miroslav cette espèce fut cueillie à nouveau.

Botanister och fjärilsexperter samtalar med biologer från Trafikverket om skötsel av artrika vägkanter vid Långsyna i Borgsjö sommaren 2011.

50 Lombäcken N of Europe way 14, Borgsjö sn, Medelpad

Excursion guide page 62

Habitat protection area. Our best "drive in" locality in Borgsjö for rare phleggs.

The straight highway E14 at Ensillre is famous for thousands of blooming orchids in July, mostly *Gymnadenia conopsea* in the northern ditch and also *Campanula cervicaria*. In 2005 here along the road Hjördis Lundmark found the rare flower *Sisyrinchium montanum*. The Lombäcken stream north of the road has also a rare and beautiful flora: *Actaea spicata, Daphne mezereum*, *Polygonatum verticillatum, Ribes alpinum, Viburnum opulus* and *Viola mirabilis*. Our dutch friends Roel Douwes, Marjo and Nico Dam stopped at the stream and found interesting *Cortinarius* species such as *C. pseudoglaucopus*. A very good "drive through" in *Phlegmacium* land, also with interesting vascular plants. Gunnar Selling at the National Forest Board has protected the area.

L'autoroute E14 à Ensillre est réputée pour les milliers d'orchidées qui y fleurissent en juillet, pour la plupart Gymnadenia conopsea dans le fossé nord, mais aussi la rare Campanula cervicaria. Ici, en bordure de route, Hjördis Lundmark a trouvé en 2005 le rare *Sisyrinchium montanum*. Le ruisseau Lombäcken au nord de la route montre aussi une belle flore: *Actaea spicata, Daphne mezereum, Polygonatum verticillatum, Ribes alpinum, Viburnum opulus, Viola mirabilis*. Nos amis hollandais Roel Douwes, Marjo et Nico Dam se sont arrêtés au cours d'eau et y ont trouvé des cortinaires intéressants.

Species list

Cortinarius corrosus
Cortinarius multiformis
Cortinarius percomis
Cortinarius piceae
Cortinarius pseudoglaucopus
Cortinarius sulfurinus
Cortinarius varius
Cortinarius pseudoglaucopus, NV Alkvattnet, Jämtland.

Comment, commentaire

Cortinarius pseudoglaucopus is rare with about 30 known Swedish localities, most at Gotland, bound to *Pinus* at limerich soil, high ranked as VU at Swedish red list 2015, belong to subgenus *Phlegmacium* (lökspindelskivlingar in Swedish). Swedish Forest Agency and Johan Nitare published in the year 2000 a beautiful book about indicator species (signalarter) for valuable forests and *C. pseudoglaucopus* is listed there among species in limerich coniferous forests. In 2–3 years a new revised and updated version of the indicator species book will be published.

Happy people at social evening. Photo: Egil Bendiksen and Hjördis Lundmark

Cultural events and banquet evening

Before the grand banquet at Träporten on Thursday evening we hade some cultural events: visit at Borgsjö church, the finest rococo church in Sweden.

We also visited the old folk museum (youth hostel), where baking of "tunnbröd" in big stone ovens were demonstrated. We also visited the wood carving museum close to our working hall where Gösta Sundin has created very detailed models of life in the old farming society, always in a humorous way and only with knife and sandpaper.

The models are made of wood from of aspen or lime and offer insights into the daily life in older times. Roger and Ronnie Sundin, sons of Gösta, showed us the museum. We hope that Ånge municipality will talk with Roger and Ronnie about the possibility of moving this fantastic museum to Ånge Naturum so it could be open year round. There are unfortunately delayed plans to build out Ånge Naturum, where Gösta Sundins museum could be a big cultural delight for tourists in the future.

Along the old village road east of the wood carving museum there are many fantastic old wooden houses with ornate, decorative carvings that should be great tourist objects in the future. The great banquet took place at Träporten inn and was well organized with delicious food, see photos.

Hygrophoropsis olida. Photo: Håkan Sundin

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51 Bodåsen O, Borgsjö sn, Medelpad, Woodland Key Habitat (nyckelbiotop) + habitat protection area (biotopskydd).

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Highly calcareous forest soils around the forest road to Kullbodarna. The flower *Vicia sylvatica* adorn roadsides. Calcareous *Betula*, *Picea*, *Pinus* forest and peat bogs with the moss *Rytidiadelphus triquetrus* and the orchids *Cypripedium calceolus, Epipogium aphyllum* and *Neottia ovata. Epipogium* flowers at the end of August during the best mushroom period, when we used to visit this remarkable forest! Here in the rich fens, good mushroom years produce high quantities of *Craterellus lutescens and also Lactarius scoticus and L. sphagnophilus. Cortinarius huronensis* and also species in *Clavaria, Hygrocybe* and *Entoloma.* We still know very little about fungi in rich fens. Jämtland have the highest area of rich fens in the Europan Union! Mauri Korhonen and Ilkka Kytövuori have collected the northern species *Lactarius flavopalustris*, described by Ilkka, in several places under birch in rich fens and swampy areas along the forest road.

Tor Erik Brandrud and Johan Nitare spoke lyrically about this forest in the local newspaper in 2003. Johan said: "black soil like in gardens". Anders Dahlberg showed journalists the red mycelium of *Cortinarius sanguineus*. Johan was fascinated by the many groups of *Cypripedium,* big ant hills and *Salix* trees with *Lobaria pulmonaria*. Johan Nitare visited the area with Gunnar Selling, from the National Forest Board in Ånge, the fine Picea slope south of the Cypripedium swamp areas. Hepatica nobilis dominated this "Phlegmacium slope" or "ängsgranskog" that we use to say in Sweden. Gunnar Selling then protect ed part of the slope as "biotopskydd".

Vicia sylvatica orne les bords de routes. Forêt et tourbières sur sol calcaires avec *Betula, Picea, Pinus et Cypridpedium*

calceolus, Epipogium aphyllum et *Neottia ovata*. Sol noir comme dans un jardin. Tor Erik Brandrud et Johan Nitare ont parlé avec lyrisme de cette forêt dans le journal local en 2003. Mauri Korhonen et Ilkka Kytövuori ont cueilli Lactarius flavopalustris, espéces nordique décrite par Ilkka, en plusieurs endroits sous les bouleaux, dans les marais humides le long de la roue forestière. En 1997, Mats Karström a trouvé Geoglossum montanum dans le fossé de la route (plus tard confirmé par Johan Nitare).

Group 2, 29/8 2016

Guides: Hans Andersson, Jan-Olof Tedebrand.
Participants: Magnus Andersson, José Antonio Cadinados Aguirre, Arturo Baglivo, Mariella Barigelli, Francesco Bellu, Carmelina Boniello, Tor Erik Brandrud, Augusto Calzada, Rosa Maria Andrés Carbajal, Balint Dima, Nicola de Donnantonio, Fabrizio Fabrizi, Mauro Faraoni, Donatella de Giorgi, Sandino Grilli, Ilkka Kytövuori, Pirjo Kytövuori, Bernt Linton, Jean-Paul Maurice, Nicole Maurice, Viktor Papp, Imre Rimoczi, Rafael Mahiques Santandreu, Giampaolo Simonini, Geert Schmidt-Stohn.

Species list

Amanita muscaria
Armillaria borealis, Francesco Bellu
Bankera violascens, Francesco Bellu
Cantharellus aurora, common
Clavariadelphus truncates
Clitocybe phyllophila, Francesco Bellu
Cortinarius sp. 1, (pseudofallax coll.), Parvuli group, TEB 331-16/DB6125, BD seqv.
Cortinarius armeniacus s. str., SSt 16-138, Balint Dima, seqv.
Cortinarius brunneus var. brunneus, F, *Picea*, Magnus Andersson
Cortinarius caesiocinctus, Tor Erik Brandrud 330-16, Balint Dima seqv.
Cortinarius caperatus
Cortinarius jonimichelliae, DB 6118, Tor Erik Brandrud, BD seqv.
Cortinarius riederi, Tor Erik Brandrud
Cortinarius rosargutus, F, calcareous *Picea* forest in ant hill, Tor Erik Brandrud
Cortinarius rusticus, Jean-Paul et Nicole Maurice
Cortinarius sanguineus
Cortinarius semisanguineus
Cortinarius traganus
Cortinarius venetus
Cortinarius venustus, Jean-Paul et Nicole Maurice
Entoloma aff ermineus, F, calcareous *Picea* forest, Tor Erik Brandrud
Entoloma rhodopolium
Fomes fomentarius
Fomitopsis pinicola
Galerina atkinsoniana, Francesco Bellu
Hebeloma sordidulum, Francesco Bellu
Hygophorus melizeus, Francesco Bellu
Hygrophorus persicolor, Francesco Bellu
Hygrophorus piceae
Infundibulicybe costata, Francesco Bellu
Inocybe geophylla
Lactarius auriolla, Francesco Bellu
Lactarius deliciosus, Francesco Bellu
Lactarius flavopalustris, Francesco Bellu
Lactarius mammosus, Francesco Bellu
Lactarius rufus
Lactarius spinosulus, Francesco Bellu
Lactarius torminosus
Lactarius trivialis
Lactarius utilis, Francesco Bellu
Lactarius vietus
Leccinum niveum
Leccinum variicolor
Leucocortinarius bulbiger, F, *Picea*, Jaap Wisman, det Karl Soop
Micromphale perforans
Mycena epipterygioides, Francesco Bellu
Paxillus involutus
Phellinus igniarius
Phellodon tomentosus, Francesco Bellu
Pholiota squarrosa, Francesco Bellu
Pycnoporus cinnabarinus
Russula aeruginea, Francesco Bellu
Russula decolorans
Russula emetica
Russula gracillima
Russula griseascens
Stereum hirsutum
Stropharia hornemanii, Francesco Bellu
Suillus luteus
Suillus variegatus
Tricholoma fulvum
Tricholoma inamoenum, Francesco Bellu
Tricholoma virgatum, Francesco Bellu
Tricholomopsis rutilans

Comment, commentaire

Amylocystis lapponica, a taiga species found by Francesco in 2010 at Kullbäcken. Photo: Monica Svensson (bilden finns på sida174 I Timråapporten)

Cortinarius jonimitchelliae is named after the Canadian folk singer Joni Mitchell, one of Håkan Lindström favorite artists.

Entoloma poliopus var. parvisporum. Photo: Olga Morozova

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51 B Kullbäcken-Markbäcken, nature reserve, Natura 2000, Borgsjö sn, Medelpad

Excursion guide page 63-65

One of the best *Picea* localities for rare *Cortinarius* species in the Borgsjö region and a very popular excursion goal during mycological Borgsjö workshops. Johan Uebel and Kristin Lindsröm at the county council of Västernorrland have done a good job by protecting Kullbäcken-Markbäcken nature reserve for the future. Exciting nature with old *Picea* forests on chalk rich soil, also calcareous *Pinus* forest with Hygrophoropsis [Aphroditeola] olida, much dead wood along the brooks, swampy forests with *Alnus-Salix caprea* and calcareous fens. The borders of the forest creeks, where water flows out from the ground and also during spring time and rainy periods, are extremely rich in *Aconitum septentrionale*, *Hepatica nobilis*, *Craterellus sinuosus*, *Gomphus clavatus*, *Lactarius leonis*, *L. scrobiculatus* and also many exciting *Cortinarius* species, " a phlegg place said Tor Erik". During Borgsjö workshops we have visited this fungus paradise at the end of August or the beginning of September (later to much risk of frost), but, nevertheless, the best period for many rare fungi like *Phlegmacium* species here along Kullbäcken and Markbäcken is during mild periods late in September and in the beginning of October.

It is very important in forestry to preserve this herb rich borders along forest creeks. The forest owners organisations in Sweden have published a nice book, "Skogens Vatten", about the importance of preserving trees in areas that flood during spring and rainy periods along forest brooks. Balint, Tor Erik and others enjoyed the wet brook sides, they creeped and searched slowly for hours along the fascinating brook sides for *Cortinarius*, *Entoloma* and other species. A detailed description in Swedish of this fascinating nature reserve and some notes about the natural history 1700-2000 is available at www.myko.se link publications and Borgsjörapport 2010, pages 49-50.

Mats Karström found in 1997 *Geoglossum montanum* in road ditch

(confirmed by Johan Nitare)

In 1997 Mats Karström found *Geoglossum montanum* in a road ditch (confirmed by Johan Nitare) at Bodåsen. Mats is a famous swedish fighter for the last virgin forests in Sweden. He has started the group "Steget Före" and done so called "värdepyramider" (value pyramids) for wood inhabiting fungi in old virgin forests with *Skeletocutis odora* at the top and *Fomitopsis rosea* at the bottom. Such a pyramid of ectomycorhizal fungi in old limerich coniferous *Picea* forests should perhaps have *Cortinarius blattoi* at the top and a pyramid in old limerich *Pinus* forests perhaps should have *Hygrophorus calophyllus* or *Cortinarius pini* at the top.

In 2010 Kristin Lindström from the County Board showed us the old detailed maps from several hundred years ago when farmers from the village Boltjärn harvested grass and herbs along the forest creeks in this area and *Carex* species out at the Hallsta Stormyran and other rich fens in the area. Two hundred years ago grass, herbs and sedge were much more valuable than trees. The landscape and the forests here at Boltjärn village was formed by grazing and haymaking.The old way of harvesting herbs and grass and forest grazing by cattle has contributed to the fascinating nature today at Kullbäcken-Markbäcken. Kristin also told us about a national "åtgärdsprogram för bevarande av rikkärr" (action plan for preserving rich fens). Today *Betula*, *Pinus* and *Phragmites* take over more and more, and the open fens disappear. Therefore the Country Council have started to manage a part of the rich fen Halllsta Stormyran with haymaking like in older days.

Karl Soop said 2010 after visiting Kullbäcken-Markbäcken: "this area is one of the best mushroom forests in Borgsjö with 40 different species of *Cortinarius*, several new for Sweden". Our Italian friend Francesco Bellu became happy in 2010 to find a northern "troll species": *Cortinarius rusticus* and *C. venustus*. The visit now in 2016 resulted in some very interesting records like *C. fuscovelatus* (new to Sweden), *C. oulankensis* and perhaps a unknown species close to *C. venetus* gathered by Magnus Andersson.

The forests in the beautiful nature reserve Kullbäcken-Markbäcken were earlier more open with grazing cattle from "fäbodar" (mountain pastures in northern Sweden). Now the trees have become more than one hundred years old. But there is continuity even if many *Picea* trees often burnt in forest fires and, we did, indeed, see many burnt stumps in the forests. An interesting question is if rare ectomycorrhizal species demand tree continuity and only form fruit bodies in really old forests? The Norwegian mycologist Egil Bendikson participated in the JEC meeting. He has done some very interesting research on fungi in different forest successional ages. But there is a great demand for further studies. In the future alternatives to clear cutting probably will be more frequent especially near big cities with "social forests", where tree continuity is preferred, but also in some old calcareous forests. Nature reserves will also be of great importance as gene banks for species and where the fascinating mycorrhizal processes down in the soil can continue through hundreds of years. Forest reserves lika Kullbäcken-Markbäcken will be a paradise for forest researhcers in the future. Certainly, they will have much use of data from excursions with *Cortinarius* lovers in the beginning of the second millennium. Therefore, it is also of importance to preserve collections of fungi in public fungaria.

En 2010, après avoir exploré Kullbäcken-Markbäcken, Karl Soop a dit de cette région qu'il s'agissait d'une des meilleures forêts à champignons à Borgsjö avec 41 espèces de *Cortinarius*, dont plusieurs nouvelles pour la Suède. Cette même année, Francesco Bellù a eu le bonheur de trouver des espèces nordiques, parmi lesquelles *Amylocystis lapponica, Cortinarius rusticus, venustus*. La visite de 2016 s'avéra aussi très intéressante avec des espèces comme *Cortinarius fuscovelatus* (nouveau pour Suède), *C. oulankensis* et peut-être une espèce inconnue proche de *C. venetus récoltée* par Magnus Andersson.

Bernt Oertel and Geert Schmidt Stohn at Kullbäcken 2010. Photo: Tobias Fröslev

Group 2, 29/8

Guides: Hans Andersson, Jan-Olof Tedebrand.

Participants: Magnus Andersson, José Antonio Cadinados Aguirre, Arturo Baglivo, Mariella Barigelli, Francesco Bellu, Carmelina Boniello, Tor Erik Brandrud, Augusto Calzada, Rosa Maria Andrés Carbajal, Balint Dima, Nicola de Donnantonio, Fabrizio Fabrizi, Mauro Faraoni, Donatella de Giorgi, Sandino Grilli, Ilkka Kytövuori, Pirjo Kytövuori, Bernt Linton, Jean-Paul Maurice, Nicole Maurice, Viktor Papp, Imre Rimoczi, Rafael Mahiques Santandreu, Giampaolo Simonini, Geert Schmidt-Stohn.

Species list

Albatrrellus ovinus, Francesco Bellu
Amanita porphyria
Armillaria borealis, F, *Pinus*, Donatella de Giorgi, Francesco Bellu
Bankera violascens
Boletus edulis
Cantharellula umbonata
Chroogomphus rutilus, F, *Pinus*, Magnus Andersson
Climacocystis borealis, storm broken *Picea*
Clitocybe alnetorum, Francesco Bellu
Collybia cookie
Collybia cirrhata, Francesco Bellu
Cortinarius sp, perhaps a new species near venetus (peut-être espèce nouvelle proche de C. venetus), Magnus Andersson, see comment
Cortinarius alboviolaceus, F, *Picea, Pinus,* Farbrizio Fabrizi, Mauro Faraoni
Cortinarius alnetorum, Francesco Bellu, Geert Schmidt-Stohn
Cortinarius anomalus, Francesco Bellu
Cortinarius armeniacus
Cortinarius armillatus
Cortinarius atrocaeruleus, Francesco Bellu, Geert Schmidt-Stohn
Cortinarius aureopulverulentus, F, *Picea*, Magnus Andersson, UPS
Cortinarius balaustinus, Francesco Bellu, Geert Schmidt-Stohn
Cortinarius bataillei, F, *Picea*, Magnus Andersson, det Håkan Lindström
Cortinarius betulinus, Francesco Bellu
Cortinarius biformis, Francesco Bellu
Cortinarius bivelus, Francesco Bellu
Cortinarius bovinus, Tor Erik Brandrud, det Ilkka Kytövuori
Cortinarius camphoratus, Francesco Bellu
Cortinarius caperatus, in vaste groups
Cortinarius casimiri, *Francesco Bellu*
Cortinarius citrinofulvescens
Cortinarius collinitus, F, Magnus Andersson
Cortinarius crassus, oligotrophic Vaccinium *Picea*

Hydnellum mirabile. Drawing by Rolf Lidberg.

forest (pessière oligotrophique à Vaccinium), Jan-Olof Tedebrand, det Tor Erik Brandrud, UPS
Cortinarius croceus, Francesco Bellu
Cortinarius delibutus, *Betula*, *Picea*, Magnus Andersson, det Håkan Lindström
Cortinarius emunctus, F, *Picea*, Magnus Andersson, det Jacques Melot à qui l'interprétation moderne de ce nom est due. Antérieurement déterminé C. epipoleus
Cortinarius flexipes coll., F, Magnus Andersson, det Håkan Lindström
Cortinarius fuscovelatus, *Picea*, Ilkka Kytövuori, new to Sweden (nouveau pour la Suéde), UPS, SSt 16-140, Balint Dima seqv. Nr 1265
Cortinarius gentilis, Francesco Bellu
Cortinarius hemitrichus, Francesco Bellu
Coritnarius illuminus, F, Magnus Andersson, det Håkan Lindström
Cortinarius infractus
Cortinarius laniger, Francesco Bellu
Cortirnarius limonius, F, *Picea, Pinus,* Fabrizio Fabrizi, Mauro Faraoni
Cortinarius luteobrunnescens (=olidoamethysteus ss. auct.)
Cortinarius malicorius, F, *Picea*, Magnus Andersson, det Miroslav Beran
Cortinarius multiformis, F, *Picea*, Balint Dima, Geert Schmidt-Stohn, Tor Erik Brandrud, det TEB
Cortinarius ochrophyllus, F, *Picea, Pinus,* Balint Dima
Cortinarius oulankensis, Håkan Lindström
Cortinarius paragaudis, Francesco Bellu
Cortinarius pholideus, Francesco Bellu
Cortinarius pinophilus, Francesco Bellu
Cortinarius poecilopus, Francesco Bellu, Henry 1955
Cortinarius raphanoides, Francesco Bellu

Originalbeskrivning av *Cortinarius fuscovelatus*, ur Index Fungorum:

Cortinarius fuscovelatus Kytov., Niskanen & Liimat., sp.nov. IF550873

Type: Sweden, Dalarna, Alvdalen, Karmorasen, mossy, old, Picea abies dominated forest with some Populus tremula, Betula and Pinus sylvestris, 5 Sept 2000, coll. T. Niskanen & I. Kytovuori, I. Kytovuori 00-036 (H, holotype;NY, isotype). GenBank no. KP165576. Diagnosis: Pileus 35-65 mm, hemispherical, then broadly convex with a small umbo, dark brown, blackish brown in the centre, hygrophanous. Lamellae moderately spaced, brown. Stipe 50-90 mm long, 6-10 mm thick at apex, clavate, at first greyish white fibrillose, later brown. Universal veil brown, forming complete and incomplete girdles on stipe. Basal mycelium white. Basidiospores 8.2-8.6-9.1 x 5.4-5.7-5.9 um, Q= 1.42-1.51-1.61 (60 spores, 1specimen), ellipsoid (to somewhat obovoid), finely verrucose, moderately at apex, somewhat dextrinoid. Lamellar trama hyphae pale olive yellow in MLZ, finely scabrous and with some larger olive spots. ITS sequence (GenBank KP165576, holotype) distinct from other species of Cortinarius section Boulderenses. With a sister relationship to C. pseudobovinus (GenBank DQ499465) and deviating from it in the ITS regions by 7 substitutions and indel positions. Ecology and distribution: In herb-rich, mesic to damp, forests with Picea on calcareous soil. Producing basidiomata in late summer and autumn. Known from Sweden. Etymology: The name refers to the color of the universal veil.

Holotype I. Kytovuori 00-036 (H).

Cortinarius riederi, F, *Picea*, *Pinus*, Balint Dima
Cortinarius rubellus, very common
Cortinarius rusticus, F, *Picea*, Magnus Andersson, conf Håkan Lindström
Cortinarius sanguineus
Cortinarius scaurus ss. str., Francesco Bellu
Cortinarius semisanguineus
Cortinarius septentrionalis, Francesco Bellu
Cortinarius simulatus
Cortinarius solis-occasus, Francesco Bellu
Cortinarius scaurus (le vrai scaurus ss str.)
Cortinarius scaurus group, F, *Picea*, Magnus Andersson, det Tor Erik Brandrud
Cortinarius subtortus, Francesco Bellu
Cortinarius talus, F, *Betula-Picea*, Francesco Bellu, det Tor Erik Brandrud
Cortinarius traganus, Francesco Bellu
Cortinarius trivialis ss. CFP, Francesco Bellu
Cortinarius turmalis, F, beautiful fruitbodies, oligotrophic *Picea* forest (beaux exemplaires, pessière oligotrophique), Jan-Olof Tedebrand, det Tor Erik Brandrud, UPS
Cortinarius venetus, Francesco Bellu
Cortinarius venustus, F, *Picea*, Magnus Andersson, det Håkan Lindström
Cortinarius vibratilis, F, *Picea*, Magnus Andersson, det Håkan Lindström
Cortinarius violaceus
Craterellus lutescens, Francesco Bellu
Cystodermella terrei, Francesco Bellu
Entoloma cetratum, Francesco Bellu
Entoloma aff ermineus, moist calcareous, *Picea* forest, Tor Erik Brandrud
Entoloma sp, along the creek," *rhodopolium* group", Tor Erik Brandrud
Entoloma nidorosum, F, *Picea*, Magnus Andersson, det Tor Erik Brandrud
Fomtitopsis pinicola
Gomphidius glutinosus
Gomphus clavatus, u. *Picea*, Magnus Andersson, UPS
Gymnopilus penetrans, *Francesco Bellu*
Hebeloma geminatum, Francesco Bellu
Hebleoma helodes, Francesco Bellu
Hydnellum concrescens, u, *Picea*, Magnus Andersson, UPS
Hygrophorus agathosmus
Hygrophorus camparophyllus, very common, in groups along the creek
Hygrophorus karstenii, *Picea*, Magnus Andersson, big groups
Hygrophorus olivaceoalbus
Hygrophorus piceae, very common
Laccaria laccata
Lactarius aquizonatus, F, Arturo Baglivo
Lactarius leonis, several places at the border of the creek
Lactarius lilacinus, Francesco Bellu

Unknown *Cortinarius*. Photo: Håkan Sundin

Lactarius pubescens, Francesco Bellu
Lactarius rufus
Lactarius scrobiculatus
Lactarius torminosus, F, *Betula*, *Pinus*, Silvia Baglivo, det Donatella De Giorgi
Lactarius trivialis, Francesco Bellu
Lactarius vietus, Francesco Bellu
Lactarius tuomikoski
Leccinum scabrum
Lepiota clypeolaria, Francesco Bellu
Mycena rosella
Naucoria geraniolens, Francesco Bellu
Phellinus igniarius, Betula
Phaeolepiota aurea, F, among grass along the forest road, Bernt Linton
Phellinus tremulae
Pholiota squarrosa, along forest way
Polyporus brumalis, Francesco Bellu
Russula claroflava, F, *Betula*, *Pinus*, Arturo Baglivo, det Francesco Bellu
Russula decolorans
Russula fragilis, Francesco Bellu
Russula gracillima
Russula integriformis, F, *Picea*, *Pinus*, Magnus Andersson, Werner Jürkeit
Russula paludosa
Russula puellaris, Francesco Bellu
Russula rhodopoda
Russula vinosa
Sarcodon imbricatus, F, *Picea*, Magnus Andersson
Stropharia hornemannii, F, *Pinus*, Nicola de Donnantonio
Suillus bovinus
Suillus flavidus
Suillus luteus along the forest way
Suillus variegatus
Trichaptum abietinum
Tricholoma aestuans
Tricholoma imbricatum, Francesco Bellu
Tricholoma inamoenum
Tricholoma olivaceotinctum, F, *Picea*, Magnus Andersson, conf Jan-Olof Tedebrand, UPS
Tricholoma virgatum

Comments, commentaires

Clitocybe alnetorum was described in 1960 by Jules Favre in his classic "Catalogue descriptif des Champignons supérieurs de la zone subalpine du Parc National Suisse. Ergebnisse der Wissenschaftlichen Untersuchungen des Schweizerischen Nationalparks. 6:323-610".

Cortinarius sp., Magnus Andersson collected at Kullbäcken-Markbäcken an interesting *Cortinarius*. Ilkka Kytövuori, Håkan Lindström and Tor Erik Brandrud had no idea at all what it could be! They said that it perhaps could be a new species for science in the vicinity of *C. melanotus*. Håkan Sundin took a good photo. Håkan Lindström has sent the collection to Balint Dima in Hungary for DNA-studies.

Magnus Andersson a récolté à Kullbäcken-Markbäcken un cortinaire très intéressant. Ilkka, Håkan et Tor Erik n'avaient aucune idée de son identité! Selon eux, peut-être une nouvelle espèce pour la science, proche de C. venetus. Håkan Sundin a photographié ces champignons. Håkan Lindström a envoyé la récolte de Magnus à Bálint Dima pour séquençage de son ADN.

Cortinarius fuscovelatus Kyöv.,Niskanen & Liimat. Ilkka Kytövuori found this fascinating *Telamonia* species with black velum! Balint Dima in Hungary has checked DNA and confirm. Also found at Tysjöarna, Jämtland.

Ilkka Kytövuori a trouvé ce *Telamonia* fascinant avec un voile noir! Une partie de la récolte est envoyée à Bálint Dima qui confirma la détermination.

Gomphus clavatus occurs in vaste fairy rings along the forest brooks Kullbäcken, Markbäcken and Harrån in Borgsjö at more than 30 localities! Thise forests were grazed earlier by cattle until about 1930, mostly cattle from Kullbodarna in the vicinity. Here at Kullbäcken we saw 10-15 meter fairy rings of *Gomphus* nearly every hundred meter! The lime rich and moist brook sides are a perfect place for this rare redlisted fungus and also for many rare *Cortinarius* species. *Gomphus clavatus* has been the object for a Swedish action program for threatened species 2006-2011 that focused mostly on *Gomphus* forests in northern Uppland. But also here along the forest creeks in western Medelpad there is a perfect paradise for *Gomphus*. Our excursion leader Per Sander worked in 2016 at the local County Board with action programs for threatened species. Håkan Lindström and JOT have also found what they think is *Craterellus sinuosus* in the herb rich zone towards the brook, but they are somewhat uncertain (we have seen *C. sinuosus* in a similar habitat along a forest brook in Jokkmokk, Lappland).

Kristoffer Hylander at Stockholm university have during the last two decades studied the special moss vegetation along forest creeks from Stöde in Medelpad to Bräcke in Jämtland. A similar study of ectomycorrhiza and wood fungi should be of great interest!

Lactarius leonis is rare and typically found in moist, old, rich forests with spruce along forest brooks and a candidate to the next red list 2020.

Naucoria geraniolens has the Swedish name "pelargonskräling", but there a very few records from Sweden according to dyntaxa.se.

Kullbäcken-Markbäcken 2010

We found about 50 *Cortinarius* species here at the JEC-meeting in 2016. During the *Cortinarius* workshop in Borgsjö 2010 with Tor Erik Brandrud as leader the following mycologists visited Kullbäcken-Markbäcken 25/8 2010: Gunnel Avehag, Francesco Bellu, Marjo Dam, Nico Dam, Inga-Lill Franzen, Elias Fries, Doris Laber, Peter Laber, Kristin Lindstrom (County Board), Franco Matli, Bernd Oertel, Carmen Saar, Günter Saar, Per Sander (County board), Geert Schmidt Stohn, Karl Soop, Gianni Turini, Bert Van Der Berg, Mirjan Veerkamp. They found the following species of *Cortinarius* that we did not find in 2016: *C. alob-variegatus, C. badiovinaceus, C. betulinus, C. bivelus, C. caesiobrunneus, C. callisteus, C. casimiri (= rubellopes), C. decipiens, C. flexipes var. flabellus, C. fulvescens, C. gentilis, C. licinipes (Bellu), C. obtusus ,C. pluvius, C. solis-occasus, C. sommerfeltii, C. spilomeus, C. testaceofolius, C. violaceo-cinereus (= simulatus, Bellu).*

Thanks to the nature reserve all *Cortinarius* species can continue to have their fascinating "underground internet" even in the future. And they can produce their spores in coming autumns to hopefully enrich new forests in the surrounding landscape.

So totally we have found about 80 species in *Cortinarius* in the nature reserve. Every *Cortinarius* species has an own own special ecological nish here! Many *Cortinarius* species, especially in subgenus *Phlegmacium* form their fruitbodies later in september and in the beginning of october. So the total number of *Cortinarius* species is perhaps more than 100. Thanks to the nature reserve all *Cortinarius* species can continue to have their fascinating "underground internet" even in the future. And they can produce their spores in coming autumns to suitable habitats in the surrounding landscapes. But important to create "green corridors" in the total landscape where species like Amylocystic lapponica can survive in the long run. About 30 years ago their was an interesting project in the Sundsvall region, lead by the researcher Per Angelstam, to initate ecological landscape planning. Many fungi and other species in nature also survive in the new modern forests but many rare species demand long continuity in protected areas.

Tomas Rydkvist och hans medarbetare bränner tallskog vid invigningen av Njurunda Mångfaldspark.
Foto: Hjördis Lundmark

Även den som är liten och ful har rätt att existera

Bengt Ehneström, kännare av insekter i död ved: En skog är inte bara träd utan summan av alla växter, djur och svampar som håller till i skogen

Många av de arter som vi fann här vid Kullbäcken-Markbäckens naturreservat är inte kända utanför en liten krets av kunniga svampkännare. Det finns bred enighet i Sverige om att vi ska behålla de naturligt förekommande arterna i våra skogar. För att även uppfylla FN-mål om hållbar utveckling till 2030 och andra mål för biologisk mångfald som Sverige skrivit under liksom forskarnas bedömningar behövs mer skyddad skogsareal än idag. Det behövs även bättre hänsyn inom skogsbruket till natur- och kulturvärden.

Positivt är de konkreta målbilder som nu tas fram i bred samverkan om kultur- och naturhänsyn vid avverkning i olika skogsmiljöer: www.skogsstyrelsen.se. Mängden död ved ökar inte i svenska skogar, se artikel av fyra svenska forskare i Forest Ecology and Management 376 (2016) 174-182. Det behövs även ett kvalitetstänk så att exempelvis mer grov död ved i bäckmiljöer lämnas liksom grov tallved i soliga, öppna lägen. Positivt är att vikten av brand och bränd ved lyftes fram såsom i projekt i flera län som stöds av EU Life. Tomas Rydkvist vid SCA är en ”eldsjäl” för bränning och tillskapande av bränd ved liksom för skapande av mer solöppna tallskogar med exponerad tallved. Under invigningen av Njurunda Mångfaldspark 2015 visade Tomas även ”katning” av tallar för att efterlikna brandljuden vid forna skogsbränder och berättade om planer att öppna upp i tallskogar vid havet genom att fälla ner tallar i soliga gläntor för att gynna nattskärra, raggbock, vedsvampar och andra arter som trivs i solexponerade öppna tallskogar. Det skulle behövas liknande nya, kreativa grepp i reservat och Natura 2000-områden där man aktivt tillskapar mycket mer av död ved!

Glädjande är den höjning av anslagen till skydd och skötsel av skogsnaturen som skett senaste åren så att fler skogsägare kan få betalt för att spara värdefull skog och som även möjliggör mer av kreativ naturvård.

Leccinum variicolor. Photo: Giampaolo Simonini

Koordinater

52 Granbodåsen, nature reserve, Natura 2000, Borgsjö sn, Medelpad

Excursion guide page 65-66

Granbodåsen is a former mountain pasture (fäbod).

Granbodåsen is a former "fäbod" (grazed mountain pasture). The farmers in the village Granboda had cows, sheep and goats here during the summer. The women and children were herding the animals and made butter. Villages in northern Sweden had "fäbodar" until early 1900s. Herb rich forest with *Betula*, *Picea*, *Pinus* and *Populus* and also wet areas with *Alnus incana* along a creek. Many interesting *Cortinarius* like *C. alboglobosus*, *C. borgsjoensis*, *C. disjungendus* and *C. pinigaudis*. Also *Amylocystis lapponica*, *Cathatelasma imperiale*, *Chamonixia caespitosa*, *Helvella rivularis*, *Lactarius flavopalustris*, *L. pilatii* (= *moseri*), *L. scoticus* (Juhani Ruotsalainen 1989), *Marasmius cohaerens*, *Microglossum viride*, *Psathyrella fagetophila*, *Pseudobaeospora celluloderma*, *Russula citrinochlora*, R. olivobrunnea, *Sphagnomphalia brevibasidiata* and *Tremiscus helvelloides*.

Old meadows grazed by sheeps with rare grassland fungi like *Entoloma atrocaeruleum*, *E. bloxamii s.l.*, *E. chloropolium*, *E. pallens*, *Pseudotricholoma metapodium* and *Hygrocybe aurantiosplendens*. During the *Entoloma* workshop in 1985 in Borgsjö Machiel Noordeloos found 27 species of *Entoloma* here at Granbodåsen, a very idyllic prairie. There are also at least 22 species of *Hygrocybe* at Granbodåsen.

Forêt gramineuse avec *Betula, Picea, Pinus, Populus*, les zones humides avec *Alnus incana* le long d'un ruisseau. Beaucoup de cortinaires intéressants, comme *C. alboglobosus, borgsjoensis, disjungendus, pinigaudis.* À signaler aussi: *Amylocystis lapponica, Cathatelasma imperiale, Chamonixia caespitosa, Gerronema brevibasidiatus, Helvella rivularis, Marasmius cohaerens, Micorglossum viride, Psatyrella fagetophila, Pseudobaeospora celluloderma, Russula citrinochlora, R. olivobrunnea, Tremiscus helvelloides.*

Prairie ancienne avec des champignons rares comme *Entoloma atrocaeruleum, E. bloxamii, E. chloropolium, E. pallens, Pseudotricholoma metapodium, Hygrocybe auran-*

tiosplendens. Pendant la semaine de 1985 à Borgsjö dédiée au genre Entoloma Machiel Noordeloos a récolté 27 espèces d'entolomes à Granbodåsen, un prairie trés idyllique. Il y avait aussi 22 espèces d'hygrocybe à Granbodåsen.

Group 2, 30/8 2016

Guides: Hans Andersson, Jan-Olof Tedebrand.
Species lists also: Magnus Andersson (forest, forét), Lennart Vessberg (meadow, prairie).
Participants: Rosa Andres, Gunnel Avehag, Josep Ballara, Miroslav Beran, André Bidaud, Esperance Bidaud, Augusto Calzada, Rosa Maria Andrés Carbajal, José Antoniio Cadinados, Xavier Carteret, Augusto Calzada Dominguez, Daniel Dvorak, Eva Hauke, Otto Kowalenko, Ilkka Kytövuori, Pirjo Kytövuori, Rafael Mahiques, Jean-Paul Maurice, Viktor Papp, Imre Rimoczi, Karl Soop, Maj-Britt Såthe, Birgitta Wasstorp.

Species list forest

Albatrellus confluens
Albatrellus ovinus
Amanita muscaria
Boletus edulis
Chalciporus piperatus
Climacocystis borealis
Clitocybe gibba
Clitocybe odora
Clitopilus prunulus
Collybia butyracea
Cortinarius acutus
Cortinarius armeniacus
Cortinarius bivelus, F, *Betula*, Karl Soop
Cortinarius brunneus
Cortinarius caperatus
Cortinarius cinnamomeus
Cortinarius depressus
Cortinarius duracinus
Cortinarius flabellus
Cortinarius fuscovelatus, Magnus Andersson, det Ilkka Kytövuori, UPS, new to Sweden (nouveau pour la Suéde)
Cortinarius glaucopus s.str., F, TEB, sequenced 353-16/DB 6137, Birgitta Wasstorp
Cortinarius infractus, F, *Picea*, Magnus Andersson
Cortinarius ionosmus, F, *Picea*, Esperance Bidaud, det André Bidaud
Cortinarius multiformis
Cortinarius pansa, F, Birgitta Wasstorp, conf. Tor Erik Brandrud, TEB 353-16. Interprétation moderne due à Tor Erik Brandrud
Cortinarius raphanoides
Cortinarius sanguineus
Cortinarius talimultiformis, F, *Betula*, *Picea*, Gunnel Avehag, det Ilkka Kytövuori
Cortinarius talus
Cortinarius testaceofolius, F, *Picea*, Karl Soop
Cortinarius triumphans, F, *Betula*, Gunnel Avehag
Cortinarius venustus
Entoloma nidorosum
Fomes fomentarius
Fomitopsis pinicola
Fomitopsis rosea
Ganomderna applanatum
Gomphidius glutinosus
Helvella lacunosa, u, *Picea*, vid stig, Jan-Olof Tedebrand, UPS
Helvella macropus (=bulbosa), F, Karl Soop, det Jan-Olof Tedebrand
Hydnellum aurantiacum
Hygrophoropsis aurantiaca
Hygrophorus agathosmus
Hygrophorus piceae
Inocybe geophylla var. lilacina, F, Picea, Hauke/Kowalenko
Kuehneromyces mutabilis
Laccaria laccata
Lactarius deterrimus
Lactarius fuliginosus
Lactarius glyciosmus
Lactarius lilacinus, F, *Alnus*, Maj-Britt Såthe
Lactarius mitissimus
Lactarius necator
Lactarius obscuratus
Lactarius pubescens
Lactarius scrobiculatus
Lactarius torminosus
Lactarius vietus
Leccinum scabrum
Leccinum variecolor
Leccinum versipelle
Lycoperdon perlatum
Lycoperdon pyriforme
Mycena sanguinolenta, Karl Soop
Mycena viscosa, F, Picea, Magnus Andersson
Naucoria scolecina, F, *Alnus*, Karl Soop
Peziza badia
Phellinus conchatus
Phellinus ferrugineofuscus
Phellinus igniarius
Phellinus nigrolimitatus
Phellodon tomentosus
Pholiota mixta, F, Joisane Bocherens Mingard
Phyllotopsis nidulans
Russula adusta
Piptoporus betulinus
Russula aeruginea
Russula atrorubens (= *Russula subaffinis* Bidaud & P.A.

Leccinum roseotincium Watling, painting by Siw Muskos

Bengt Larsson and Håkan Sundin

Bengt Larsson and Håkan Sundin were two of our popular guides during the JEC week in Borgsjö.

Bengt and Håkan are not only passionate mushroom lovers. They can also identify birds, lichenized fungi, mosses, butterflies and insects!

Bengt lives with his family in the orchid paradise in Borgsjö. He is the best guide to nature in western part of Medelpad and have good contact with biologists at the County board and also national biologists. He report many of his findings to Swedish Artportalen.

Håkan lives at the coast together with Eva Sundin who is president of The Botanical Society in Medelpad. Håkan is also member of the board and cashier in Swedish Botanical Society. Bengt and Håkan leads every autumn, often late in October or november, a popular excursion every year to some speciesrich, old virgin forest and learn nature friends in Medelpad about lichens and mosses.

The first Cortinarius week in Borgsjö 1982. Birgitta Wasstorp and Åke Strid. Photo: Hjördis Lundmark

Moreau)
Russula betularum
Russula favrei
Russula firmula
Russula fragilis
Russula integra
Russula queletii
Russula sanguinea
Russula taigarum

Russula vinososordida
Sarcodon imbricatus, F, *Picea*, Gunnel Avehag
Stropharia hornemannii
Tapinella atrotomentosa
Tricholoma inamoenum
Tricholoma fulvum
Tricholoma inamoenum
Tricholom saponaceum
Tricholoma virgatum
Xerocomus ferrugineus

Comments, commentaires

Cortinarius ionosmus was an interesting collection by Esperance and André! It has a sweetish smell recalling *Viola odorata*. It is rare and restricted to old rich, *Picea* forests.

Cortinarius ionosmus a été une intéressante découverte d'Esperance et André! *C. ionosmus* a odeur douce de *Viola odorata* est rare et lié à la forêt de *Picea vieux* riche.

Cortinarius ionosmus: une intéressante découverte d'Espérance et André! Cette rare espèce a odeur douce de *Viola odorata* est liée aux vieilles pessières riches.

Entoloma atrocaeruleum, det Machiel Noordeloos
Hygrocybe chlorophana
Hygrocybe conica
Hygrocybe punicea
Hygrocybe reidii
Hygrocybe turunda

6933916 1512039

57 Tubbobäcken, woodland key habitat + swamp forest west of Mörberget, biotopskydd, Torp sn, Medelpad

Excursion guide pages 73-74

Along Tubbobäcken *Alnus* and *Salix* at calcareous soil, a fine Woodland Key Habitat and "*Lepiota* biotop" with for example *Echinoderma dysthales, Echinomderma pseudoasperulum* and *Melanophyllum echinatum*. But mostly forests with norwegian spruce with *Cypripedium calceolus* and *Botrychium virginianum*. In the fascinating lime-rich swampy forest west of Mörberget the rare plant *Circaea alpina* covers soil.

Sundsvalls Mycological Society and Rolf Lidberg was very interested in *Polyporus* fungi 30-40 years ago. We collected and send hundreds of *Trametes zonatella, T. hirsuta* and other polypores to our friend Åke Strid at Naturhistoriska Riksmuseet in Stockholm (S). In 1986 we arranged an exciting Polyporus workshop in Borgsjö with Leif Ryvarden as leader and visited old virgin forests with much dead wood. We found 40 different polypores. Here in the swampy *Picea* forest west of Mörberget we found rare polypores and corticioid fungi and collected for example *Junghuhnia collabens* at large fallen *Picea* log. Per Simonsson found beautiful red *Rhodonia placenta* at standing, thin, barkless dead *Pinus*. Bengt Larsson has guided many moss researchers to this swampy forest. There is exciting research today by Anders Dahlberg, Bengt-Gunnar Jonsson, Jenni Nordén and others concerning special demands for wood living species. Jenni follows fungi at 100 000 *Picea* logs in about 500 sites in different nature types! There have been many excitings findings of wood fungi during 16 work shops in Borgsjö. Michael Krikorev has for example found the rare *Artomyces cristatus* at barkless *Picea* log, see Micaels excellent photo and description in the journal Jordstjärnan 2003/1.

Bengt Larsson has guided to this fungus hot spot during many mycological weeks in Borgsjö. Bengt lives with his family close to the hot spot. Among rare fungi along Tubbobäcken and west of Mörberget: *Clavulina rugosa, Cortinarius aureopulverulentus, balteatus, harcynicus, ionosmus, percomis, rubellus, rusticus, sphagnophilus, trifomis, uraceus, venustus.* Also *Amanita friabilis, Clavaria fumosa, Clitocybe phaeophthalma, Coprinopsis acuminatus, Ecinoderma pseudoasperula, Entoloma dysthales, Geastrum fimbriatum, Hebeloma atrobrunneum, Hygrophorus chrysodon, H.karstenii, H. korhonenii, H.persicolor, H. subviscifer, Limacella guttata, Junghuhnia collabens, Lactarius olivinus, Marasmius siccus, Melanophyllum echinatum, Mycena aurantiomarginata, Onnia leporina, Paxillus filamentosus, Rhodonia placenta, Russula olivobrunnea, Sowerbyella radiculata, Tremiscus helvelloides, Tricholoma atrosquamosum.*

Pessière humide sur sol riche. *Ruisseau* avec *Alnus et Salix. Cypripedium calceolus* et *Botrychium virginianum.* Dans la fascinante forêt calcaire marécageuse à l'ouest de Mörberget le sol était couvert du rare *Circaea alpina.*

Bengt Larsson nous a nous a guidé vers cette zone fongique critique pendant de nombreuses semaines mycologiques à Borgsjö. Bengt vit avec sa famille près de cette localité. Y ont été observées de nombreuses espèces rares telles que*: Cortinarius aureopulverulentus, balteatus, harcynicus* (rectification orthographique correcte, rétablie par Jacques Melot, venant en remplacement de hercynicus, non conforme à celle adoptée dans la publication originale), *ionosmus, percomis, rubellus, sphagnophilus, uraceus, venustus ;également Amanita friabilis, Clavaria fumosa, Clitocybe phaeophthalma, Ecinoderma pseudoasperula, Entoloma dysthales, Geastrum fimbria-*

Ur "Sumpskogen och naturvården"

(Naturvårdsverket 1979)

Länets botaniskt sett mest värdefulla sumpskogar är de som finns i de kalkpåverkade socknarna vid Jämtlandsgränsen, framförallt Borgsjö socken. Här förekommer skogbevuxna så kallade ängskärr (produktiva torvmarker) vilka är enormt frodiga med ett stort antal ädel-, hög- och lågörter. Dessa vegetationssamhällen tillhör de artrikaste av alla skogssamhällen då här förekommer såväl myr-, hed- som ängsseriens arter.

Mycena oregonensis, painting by Siw Muskos

tum, Hebeloma atrobrunneum, Hygrophorus chrysodon, H.karstenii, H. korhonenii, H.persicolor, H. subviscifer, Limacella guttata, Junghuhnia collabens, Lactarius olivinus, Marasmius siccus, Melanophyllum echinatum, Onnia leporina, Rhodonia placenta, Russula olivobrunnea, Sowerbyella radiculata, Tremiscus helvelloides, Tricholoma atrosquamosum.

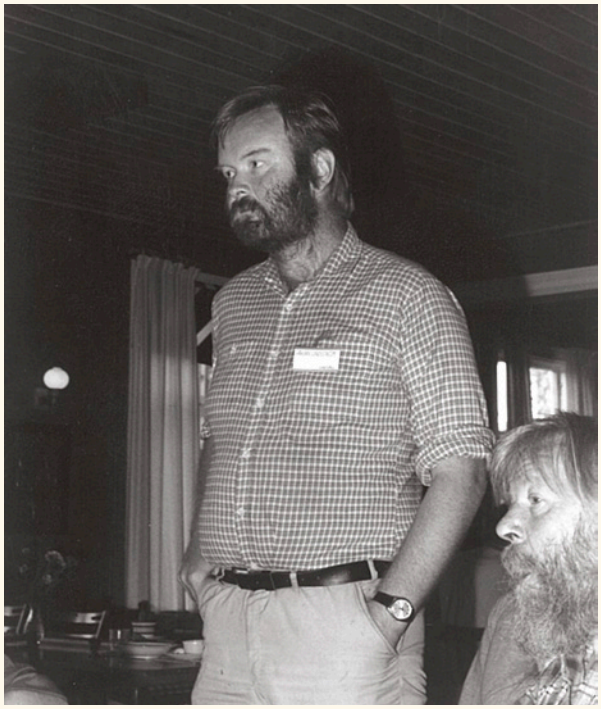
Group 1, 29/8 2016

Guides: Bengt Larsson, Håkan Sundin.
Participants: Miroslav Beran, Andr´Bidaud, Esperance Bidaud, Xavier Carteret, Erika Bühler-Holzer, Barbara Cramer, Yngar Cramer, Lynn Delgat, Daniel Dvorak, Inga-Lill Franzén, Jean-Marc Hügli, Werner Jürkeit, Jacques Melot, Josiane Bocherens Mingard, Rolf Mohan, Georg Müller, Lutz Quecke, Oswald Rohner, Karl Soop, Jeanette Södermark, Monika Weber, Jaap Wismann.

Species list

Albatrellus confluens
Albatrellus ovinus
Amanita muscaria var. regalis
Chalciporus piperatus
Clitocybe odora
Cantharellus aurora
Cortinarius agathosmus
Cortinarius alboviolaceus
Cortinarius anomalus coll.
Cortinarius armillatus
Cortinarius brunneus
Cortinarius camphoratus
Cortinarius caperatus
Cortinarius delibutus
Cortinarius flexipes
Cortinarius gentilis

Cortinarius helvelloides
Cortinarius hemitrichus
Cortinarius laniger, F, *Picea*, Bengt Larsson
Cortinarius leucophanes
Cortinarius metarius (=barbarorum), F, *Picea*, Erika Bühler-Holzer, det Tor Erik Brandrud
Cortinarius mucifluus. Selon Jacques Melot, la limite entre cette espèce et *C. stillatitius* n'est pas claire. L'interprétation de Moser (espèce à stipe blanc, sans trace de bleu) est trop restrictive (n'a pas été faite dans le protologue, mais dans un texte tardif)
Cortinarius pholideus
Cortinarius rubellus, F, *Picea*, Miroslav Beran
Cortinarius rusticus
Cortinarius sanguineus, F, Picea, Erika Bühler-Holst
Cortinarius semisanguineus, F, Betula-Picea, Erika Bühler-Holzer
Cortinarius subtortus
Cortinarius talus
Cortinarius cf tortuosus, plumbosus? F, *Picea*, Håkan Sundin, det Håkan Lindström
Cortinarius triumphans
Cortinarius venustus, F, *Betula-Picea*, Erika Bühler-Holzer, conf Jacques Melot
Crepidotus stenocystis
Flamulaster limulatus
Fomitopsis rosea
Gyromitra infula
Hydnum repandum
Hydnum rufescens coll.
Hygrophorus karstenii
Hygrophorus piceae
Lactarius deterrimus
Lactarius lilacinus
Lactarius rufus
Lactarius tabidus
Lactarius torminosus
Lactarius trivialis
Leccinum versipelle
Limacella glioderma
Limacella guttata
Melastiza chateri, F, Mohan Rolf, Erika Bühler
Mycena laevigata
Mycena oregonensis
Oxyporus populinus, F, Miroslav Beran, Daniel Dvorak
Pholiota lubrica
Pholiota spumosa, F, *Picea*, Miroslav Beran
Psilocybe silvatica (= *P. medullosa* according to www.dyntaxa.se and Funga Nordica 2012)
Russula aeruginea
Russula claroflava
Russula consobrina
Russula decolorans
Russula favrei



The first Cortinarius workshop in Borgsjö 1982. Håkan Lindström och Rolf Lidberg. Photo: Hjördis Lundmark

Russula gracillima
Russula paludosa
Russula roseipes
Russula taigarum
Russula vinosa
Stropharia hornemannii
Suillus variegatus
Tricholoma inamoenum
Xerocomus ferrugineus

Comments, commentaries

Crepidotus kubickae and C. stenocystis. Two interesting *Crepidotus* species were identified in Bengt Larssons home forest. The genus *Crepidotus*, see pages 467-468 in Ryman-Holmåsen and pages 977-980 in Funga Nordica. *Crepidotus stenocystis* is according to Funga Nordica rare in Denmark and Sweden.

> Deux espèces intéressantes de *Crepidotus* etait identifié dans la maison forêt de Bengt Larsson: kubickae et stenocystis. Le genre *Crepidotus*, voir pages 467-468 dans Ryman-Holmåsen et pages 977-980 dans Funga Nordica. Voir aussi une étude publiée récemment sur *C. kubickae* sur la base des résultats obtenus à la Slovaquie centrale.

Mycena oregonensis is a beautiful fungus that gives joy and fascination. Meinhard Moser found it at Lillberg, Borgsjö in 1982. He was very happy, when he showed us and took photos. There are about ten records from Medelpad, always in calcareous, swampy *Picea* forest. At the memorable *Mycena* workshop in 1991 we found *M. oregonensis* north of the high mountain Bergåsen together with the orchid *Epipogium aphyllum*, a magical moment.

Jan-Olof Tedebrand at the biggest *Picea* tree in Medelpad at Seleboåsen, a mountain meadow (fäbod in swedish) that in older times belonged to the village Silje in Selånger parish. Photo: Gösta Åslund

Rolf Lidberg often sang old folksongs at the banquet evenings in Borgsjö. Photo: Hjördis Lundmark

Siw Muskos, wellknown mycologist during many Borgsjö workshops. Photo: Hjördis Lundmark

Kompisarna Lennart Vessberg och Gunilla Kärrfelt bland får på fäbodvallen Granbodåsen.

58 Åsetjärnen, Torp sn, Medelpad

Exkursion guide page 74

***Alnus, Salix, Picea,* wet areas, the rare orchid *Microstylis monophyllus*. *Cortinarius eburneus, parvannulatus, sanguineus*.**

Also *Amanita friabilis, Cantharellus lutescens, Entoloma sarcitulum, Inocybe paludinella, Psatyrella chardroderma. Alnus, Salix, Picea, zones humides,* avec l'orchidée rare *Microstylis monophyllus. Cortinarius eburneus, parvannulatus, sanguineus.* Aussi *Amanita friabilis, Cantharellus lutescens, Entoloma sarcitulum, Inocybe paludinella, Psatyrella chardroderma.*

Group 1, 30/8 2016

Guides: Bengt Larsson, Håkan Sundin.
Participants: Arturo Baglivo, Mariella Barigelli, Carmelina Boniello, Margareta Byström, Nicola de Donnantonio, Fabrizio Fabrizi, Mauro Faraoni, Sandino Grilli, Håkan Lindström, Jacques Melot, Håkan Sundin, Rosella Ucchielli.

Species list

Cortinarius flabellus, F, *Alnus*, *Betula*, *Picea*, Håkan Lindström, HL
Cortinarius camphoratus, F, Håkan Lindström
Cortinarius rubellus, F, Håkan Sundin

59 Hussborg mansion (manoir), Torp sn, Medelpad

Exkursion guide page 76

Park with *Betula, Pinus cembra, Tilia*.

Park with *Betula, Pinus cembra* and *Tilia*.
Cortinarius alibidipes, DB 6144, André Bidaud, Xavier Carteret, Balint Dima seqv.
Lactarius flexuosus var. roseozonatus, F, André Bidaud

Entoloma chloropolium. Photo: Olga Morozova

– Fungi and Nature Conservation in Sweden –

About the importance of saving small forest areas

Sweden has a long history in inventoring small areas with high biological diversity, so called "key biotopes" (Swedish: nyckelbiotoper). About 2 percent of the productive forests are classed as key biotopes. Certified forest owners set aside such areas when clear cutting. There are also money in the national budget to buy some of these key biotopes and they are then classified as "biotopskydd" or "naturvårdsavtal".

The fine swampy forest west of Mörberget with *Circaea alpina*, *Cypripedium calceolus* and the fungi *Junghuhna collabens*, *Rhodonia placenta*, *Russula olivobrunnea* and other demanding species is protected by the skilful employee Gunnar Selling at the National Board of Forestry as "biotopskydd". The National Board of Forestry protects smaller forests as "biotopskydd" or "naturvårdsavtal", often areas between 2 and 20 ha. The forest owners are paid the full market value plus 25 percent. They often maintain hunting rights. This is a very suitable form of protection for some mycological hot spot areas! Gunnar Selling has been a man of action. He has invited Rolf Lidberg, Håkan Lindström and others to make inventories in interesting sites, for example a fine *Cypripedium* forest near Ånge. Gunnar has protected many mycological hot spots such as the type localities for *Tricholoma borgsjoeense* and *T. dulciolens*. Gunnar also protected as biotopskydd a ravine at Långberget in Torp parish where Arne Aronsen, R.A. Maas Geesteranus and Thomas Læssøe in 1991 found *Mycena oregonensis* together with the orchid *Epipogium aphyllum*, a real magical moment! Gunnar lives in Borgsjö with his family and is interested in local nature och culture. He has now retired from his job at the National Board of Forestry and is replaced by Niclas Vallin as responsible for issues concerning nature conservation in the forests of Medelpad. The Swedish government has now in 2017 decided to start a new investigation of forest key biotopes during the coming ten years in order to find the finest jewels ("Skogens parlor"). The latest knowledge about soil inhabiting mushrooms will perhaps be included in this new national investigation.

Mari Jönsson is a forest researcher. She grew up at Bispgården in eastern Jämtland and graduated with a doctorate from Mid Sweden University in Sundsvall (Bengt-Gunnar Jonsson and Nicolas Kruys were her supervisors): "The importance of small forest set-asides for saproxylic biodiversity at stand-landscape and regional scales" (2007). Mari summarize: "In northern Sweden, forests are effectively managed for timber and pulp, and remaining natural stands occur isolated in a matrix of managed forests. A group of species that particularly has suffered from the changes in forest structure are those dependent on dead trees, i.e. sapoxylic species. The habitat for these –dead trees- represent a patchaside system bothin stands and on the landscape scale. In this context, small setaside areas of high conservation value forest (e.g. designated woodland key habitats, (WKHs) may serve as important sites within the managed landscape, constituting a network of potential habitats and increasing the connectivity between larger protected areas. If composed of sufficiently many sites of high quality, this network may maintain viable metapopulations of threatened saproxylic species". Today Mari is now funded by a big state research fond, Formas, to study the effects on mosses, fungi etc on nature conservation of so called "hänsynsytor", forests set aside and not cut down.

6936727 1511699

63 B Sågåstjärn, Torp sn, Mpd

Excursion guide pages 81-82

***Picea, Alnus, Salix*, wet areas.**

Cortinarius findings 2010*: agathosmus, angelesianus,betulinus, Brunneus, clarobrunneus, collinitus, colus, croceus, delbutus, erubescens, gentilis, glandicolor, Glaucopus, laniger, multiformis coll., paragaudis coll., pholideus, raphanoides, rubellus, rusticus, sanguineus, septentrionalis, sommerfeltii, stillatitiius, subtortus, traganus.*

Also *Amanita friabilis, Hebeloma atrobrunneum, Lactarius lacunarum, Mycena filopes, mirata.*

Group 1, 30/8 2016

Guides: Bengt Larsson, Håkan Sundin.
Participants: Arturo Baglivo, Mariella Barigelli, Carmelina Boniello, Margareta Byström, Nicola de Donnantonio, Fabrizio Fabrizi, Mauro Faraoni, Sandino Grilli, Håkan Lindström, Jacques Melot, Håkan Sundin, Rosella Ucchielli.

Species list

Chalciporus piperatus
Clavaria argillacea var sphagnicola, Arturo Baglivo
Collybia cookei
Cortinarius alboviolaceus
Cortinarius betulinus
Cortinarius camphoratus, F, Håkan Lindström
Cortinarius depressus, Håkan Lindström
Cortinarius laniger, Håkan Lindström
Cortinarius lepidopus, F, Håkan Lindström
Cortinarius raphanoides, F, Håkan Lindström
Cortinarius rubellus, F, Håkan Sundin
Cudonia confusa, Arturo Baglivo
Entoloma nidorosum, F, Bengt Larsson
Gyromitra infula, F, Fabrizio Fabrizi-Mauro Faraoni, *Picea*, *Pinus*, (UPS)
Hygrophoropsis aurantiaca, F, Mauro
Hygrophorus korhonenii, F, *Picea, Pinus*, Håkan Lindström, UPS
Inocybe nitidiuscula, F, Bengt
Laccaria laccata
Laccaria tortilis, F, Håkan L
Lactarius deterrimus
Lactarius glyciosmus
Lactarius uvidus, Håkan L
Limacella glioderma
Megacollybia platyphylla
Mycena pura
Otidea brunneoparva, Arturo Baglivo
Otidea leporina, Arturo Baglivo
Paxillus involutus
Stopharia alcis
Tricholoma fulvum
Tricholoma olivaceotinctum, F, *Picea*, Arturo Baglivo, UPS

Comment, commentaire

Otidea brunneoparva is an operculae discomycete that was described in 2015: Olariaga, I.; Vooren, N. Van; Carbone, M. & Hansen, K. Persoonia 35: 166-229. Arturo Baglivo was the collector. He brought wife and their three kids to the workshop. He lives in Lecce, southern Italy. Lecce has 95,000 inhabitants and is more or less of the same size as Sundsvall. Hjördis Lundmark accomodated the family in a spacious cabin with Carin Nilsson at Täljegården.

6958192 1466138

113 Sidsjö, Bodsjö sn, Jämtland

Excursion guide page 125-126

We always find lots of fungi in the Sidsjö woods even in dry periods because it rains more here than down in the Borgsjö valley. Lisbeth Kagardt, former chairman of the Sundsvall Mycological Society, often guide forays to the Sidsjö area. Old moist *Picea* forest (lots of *Craterellus lutescens*), *Pinus* heath, *Betula* (*Lactarius flavopalustris*) and *Salix* along a river. Here we find fungi typical for small holder forests at limerich soil in Jämtland and surrounding areas. Old moist *Picea* forest (lots of *Craterellus lutescens*), *Pinus* heath, *Betula* and *Salix* along a river. At the visit during Lactarius week in 1997 we found 22 species of *Lactarius* among others *aquizonatus, auriolla, flavopalustris, leonis, musteus, torminosulus, tuomikoskii.* We also found *Russula renidens* and *R. robertii Sarnari. Russula olivobrunnea, postiana, renidens, taigarum, vinososordida was identified in 2001 by Jukka Vauras and Juhani Ruotsalainen.*

> Vieille pessière humide, pinède, avec *Betula* et Salix le long d'une rivière.

Group 3, 2/9 2016

Guides: Hans Andersson, Jan-Olof Tedebrand.
Participants: Jose Antonio Cadinanos Aquirre, Gunnel Avehag, Josep Ballara, Bart van den Berg, Gerhard Bozler, Augusto Calzada, Rosa Maria Andrés Carbajal, Marjo Dam, Nico Dam, Roel Douwes, Gunnar Hensel, Doris Laber, Peter Laber, Gisela Lockwald, Masja van der Meer, Viktor Papp, Pätzold, Imre Rimoczi, Rafael Mahiques Santandreu, Inge Somhorst, Willem Stouthamer, Maj-Britt Såthe, Ulla Täglich, Birgitta Wasstorp, Mirjam Veerkamp.

Species list

Albatrellus syringae, F, vägkant, Doris Laber, det Jan-Olof Tedebrand
Amanita muscaria var. muscaria, trés belles, F, Hans Andersson
Boletopsis leucomelanea, F, *Picea*, Maj-Britt Såthe
Cantharellus aurora, plenty, beaucoup
Coprinus atramentarius
Cortinarius armillatus, plenty, beaucoup
Cortinarius bivelus, F, *Betula*, *Picea*, Gunnel Avehag
Cortinarius brunneus
Cortinarius caperatus
Cortinarius collinitus
Cortinarius flavipallens, TEB 348-16/DB 6152, Doris Laber, Balint Dima seqv.
Cortinarius glaucopus s.str., TEB 347-16/DB 6151, Doris Laber, BD seqv.
Cortinarius metarius, Doris Laber, TEB 345-16, GenBankNummer 139762. BD seqv.
Cortinarius phrygianus, Roel Douwes
Cortinarius privignipallens, Doris Laber, TEB 348-16, DB 6152, GenBankNummer MF139760
Cortinarius purpurascens, Doris Laber
Cortinarius rubellus
Cortinarius sanguineus
Cortinarius scaurus, F, Maj-Britt Såthe
Cortinarius subtortus
Fomes fomentarius
Fomitopsis pinicola
Gomphidius glutinosus, F, Hans Andersson
Hydnum rufescens coll., F, Hans Andersson
Inonotus obliquus
Lactarius aquizonatus, F, Ulla Täglich
Lactarius deterrimus, F, Hans Andersson
Lactarius glyciosmus
Lactarius obscuratus, Tatyana Svetasheva
Lactarius olivinus, F, *Betula*, *Picea*, wet, Ulla Täglich, det Ilkka Kytövuori
Lactarius pubescens
Lactarius resimus, F, *Betula*, *Pinus*, Doris Laber, det Ilkka Kytövuori
Lactariuis rufus
Lactarius scrobiculatus
Lactarius torminosus, F, Hans Andersson
Lactarius trivialis
Leccinum holopus, *Alnus*, wet, Tatyana Svetasheva, *Giampaolo Simonini*
Leccinum scaber
Leccinum variicolor, F, Karin Pätzold
Leccinum versipelle,very beautiful, trés beau!
Lycoperdon perlatum
Lyophyllum connatum, among grass in roadside
Micromphale perforans
Paxillus involutus

Michael Krikorev och Tor Erik Brandrud ser på Mickes fina bilder inför kvällens genomgång. Foto: Hjördis Lundmark

Russula decolorans
Russula claroflava
Russula decolorans, F, Hans Andersson
Russula depallens, *Betula*, sandy soil
Russula emetica
Russula gracillima
Russula griseascens
Russula paludosa
Russula rhodopoda
Suillus variegatus, F, Hans Andersson
Tricholoma fulvum
Tricholoma stiparophyllum

Comment, commentaire

The sun was shining from a blue sky, gentle wind, *Parnassia palustris* and *Leucanthemum vulgare* by the roadside, a beautiful autumn day. Wet soil after rain, a lot of fresh and beautiful mushrooms. Gunnel Avehag and Birgitta Wasstorp found lots of *Craterellus lutescens*. Tanya Svetasheva and Giampaolo Simonini discussed some *Leccinum* collections. Roel Douwes showed us, proud and happy, *Cortinarius phrygianus*. Maj-Britt Såthe found *Boletopsis leucomelanea*, a redlisted fungus in Sweden. Doris Laber collected *Cortinarius purpurascens*.

> Le soleil brillait du ciel bleu, douce brise, *Parnassia palustris* et *Leucanthemum vulgare* au bord de la route, une belle journée d'automne. Sol humide après la pluie, beaucoup de champignons frais et beau. Gunnel Avehag et Birgitta Wasstorp a trouve *Cantharellus aurora*. Tanya Svetasheva et Giampaolo Simonini a discuté des conclusions de Leccinum. Roel Douwes a montré fier et heureux jusqu'à Cortinarius phrygianus. Maj-Britt Såthe trouvé *Boletopsis leucomelanea*. *Doris Laber* trouvé *Cortinarius purpurascens*. Haute qualité de vie!

Cortinarius cupreorufus. Akvarell Siw Muskos

6956317 1480368

112 Bodtjärnsbäcken, Sjöändan, Bräcke sn, Jämtland

Excursion guide page 125

Jan Olof Tedebrand made a short stop at a calcareous moist brook valley on the home road from Sidsjö along with Jose Antonio Cadinano's Aquirre, Josep Ballara, Augusto Calzada, Rosa Maria Andrés Carbajal Doris Laber, Peter Laber. At this place we found many interesting species during *Lactarius* week in Borgsjö 1997 with Annemieke Verbeken, among others 19 species of Lactarius. The total number of *Lactarius* species found in 1997 was 42, a high number in lack of beech, hazel and oak.

Jan Olof Tedebrand a fait un court arrêt dans une vallée calcaire avec un ruisseau sur la route de Sidsjö avec Aquirre Jose Antonio Cadinano, Josep Ballara, Augusto Calzada, Rosa Maria Andrés Carbajal Doris Laber et Peter Laber.

Species list

Cortinarius cupreorufus
Cortinarius duracinus
Cortinarius glaucopus
Cortinarius illuminus
Cortinarius infractus
Cortinarius infractus
Cortinarius malicorius
Cortinarius spilomeus, F, *Picea*, Doris Laber
Cortinarius traganus
Hygrophorus agathosmus
Hygrophorus karstenii
Hygrophorus piceae
Tricholoma virgatum

7005351 1430418

118 Andersön 1, nature reserve, Skansholmen, Sunne sn, Jämtland

Excursion guide page 135–139

Fungus hot spot. Limestone (exposed at the sea side). Old *Picea* and *Pinus*. Among earlier findings: *Cortinarius aureopulverulentus*, *C. caesiocinctus*, *C. cupreorufus*, *C. fuscoperonatus*, *C. microspermus*, *C. napus*, *C. pini*, *C. pseudodiabolicus* and *C. violaceomaculatus*. Also *Hygrophorus atratomentosus*, *Russula aurea*, *R. olivinus*, *Sarcodon fuligineo-violaceus*, *Tricholoma aurantium* and *Volvariella reidii*.

> Fungus point chaud. *Vieux, Picea, Pinus sur sol calcaires pierres.* Parmi les constatations antérieures*: Cortinarius aureopulverulentus, caesiocinctus, cupreorufus, fuscoperonatus, microspermus, napus, pini, pseudodiabolicus, violaceomaculatus. Aussi Hygrophorus atratomentosus, Russula aurea, olivinus, Sarcodon fuligineo-violaceus, Tricholoma aurantium, Volvariella reidii.*

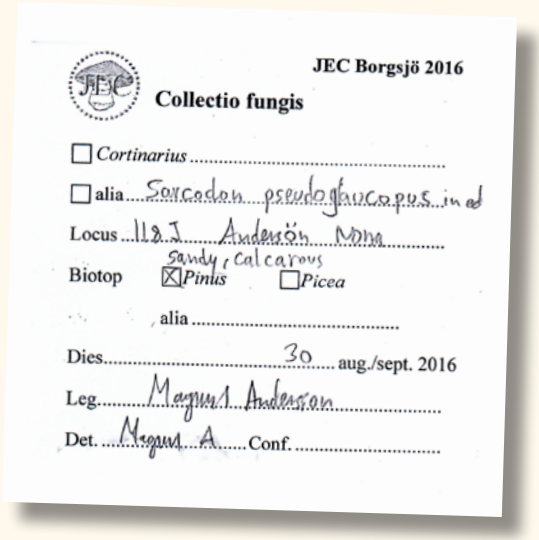
Group 4, 30/8 2016

Guide: Bengt Petterson.

Lokal 1 Andersön, nature reserve, Skansholmen, Sunne sn, Jämtland

Species list

Amanita vaginata
Auriscalpium vulgare
Bankera violascens
Boletus pinophilus
Chroogomphus rutilus
Clavariadelphus truncatus
Climacocystis borealis
Clitocybe fragrans
Cortinarius aureofulvus
Cortinarius causticus
Cortinarius cupreorufus
Cortinarius metarius, F, *Picea*, *Pinus*, low herb forest, Katriina Bendiksen, det Tor Erik Brandrud, UPS
Cortinarius mussivus, F, Tor Erik Brandrud, 335/16, Balint Dima seqv. Interprétation moderne due à Jacques Melot
Cortinarius percomis
Cortinarius pini, F, *Pinus*, Erika Bühler-Holzer, conf Tor Erik Brandrud
Cortinarius sanguineus
Cortinarius sulfurinus, F, *Picea*, *Pinus*, G. Schmidt-Stohn, T. Svetasheva, T.E. Brandrud, B. Dima, SSt 16-029, DB 6136, TEB 332-16, GenDataBank MF 139765
Cortinarius varius
Cortinarius violaceorubens, u, *Picea*, *Pinus*, Egil Bendiksen, sequenced by Balint Dima, UPS
Cudonia confusa
Cystoderma amianthinum
Fomitopsis rosea
Galerina pumila
Geastrum pectinatum


JEC Borgsjö 2016
Collectio fungis
☐ Cortinarius .....
☐ alia Sarcodon pseudoglaucopus in ed
Locus IIa 1 Andersön Mona
Biotop sandy, calcarous ☒ Pinus ☐ Picea
alia .....
Dies 30 aug./sept. 2016
Leg. Magnus Andersson
Det. Magnus A. Conf. .....

Hebeloma mesophaeum
Hydnellum aurantiacum
Hydnellum caeruleum, F, *Picea*, *Pinus*, Egil Bendiksen
Hydnellum peckii
Hydnum repandum
Hygrophorus erubescens
Hygrophorus karstenii
Hypocrea leucopus, Tatyana Svetasheva
Inocybe geophylla
Lactarius deliciosus
Lactarius deterrimus
Lactarius scrobiculatus
Lycoperdon pyriforme
Mycena pura
Mycena vulgaris, F, on *Picea* needle bed, Katriina Bendiksen
Phaeolus schweinitzii, F, on large *Pinus* log, Egil Bendiksen and others, conf Viktor Papp
Phellinus ferrugineofuscus
Phellodon tomentosus
Pholiota flammans
Russula aurea
Russula firmula, F, Egil Bendiksen, det Birgitta Wasstorp
Russula queletii
Sarcodon glaucopus, F, calcareous, dry, pine forest, Tor Erik Brandrud
Sardodon squamosus
Suillus luteus
Suillus variegatus
Tricholoma terreum
Tricholoma virgatum

Comment, commentaire

Cortinarius sulfurinus found by Tanya became best find for today!

> *Cortinarius sulfurinus* trouvé par Tanya fut la meilleure trouvaille de la journée!

Cortinarius violaceorubens is northern, newly described by Ilkka and Tuula Niskanen. Three species In the group.

1430460 7003975

118 Andersön 2, southern part

Excursion guide page 157

Guides: Tor Erik Brandrud, Karin Kellström.
Notes: Bengt Petterson.
Cortinarius violaceorubens is northern, newly described by Ilkka and Tuula Niskanen. Three species in the group.

Species list

Cortinarius armeniacus, F, *Pinus*, Bengt Petterson, det Karl Soop
Bankera violascens
Hydnellum aurantiacum
Paxillus filamentosus
Sarcodon fuligineoviolaceus
Sarcodon pseudoglaucopus, F, *Pinus*, Magnus Andersson, det Magnus Andersson, UPS
Tricholoma arvernense, F, Bengt Petterson, det Tor Erik Brandrud m fl
Tricholoma aurantium, F, Bengt Petterson, det Tor Erik Brandrud
Tricholoma terreum

118 Andersön 3, nature reserve, Kronstugan, Sunne sn, Jämtland

Excursion guide page 157

Guide: Tor Erik Brandrud.
Notes: Bengt Petterson.

Species list

Bankera violascens
Clavariadelphus truncatus
Cortinarius cf anisochrous (*C. bovinus* coll.)
Cortinarius aureofulvus, F, *Picea*, *Pinus*, Balint Dima, Tor Erik Brandrud 334-16
Cortinarius betulinus, F, Magnus Andersson
Cortinarius bivelus coll.
Cortinarius brunneus
Cortinarius casimiri coll.
Cortinarius croceus
Cortinarius cupreorufus, F, *Picea*, Tor Erik Brandrud
Cortinarius duracinus
Cortinarius fervidus
Cortinarius fuscoperonatus, F, Mohan Rolf, det Tor Erik Brandrud
Cortinarius illuminus
Cortinarius infractus, F, *Picea*, *Pinus*, low herb forest (forêt à herbe basse), Egil Bendiksen
Cortinarius laniger, F, *Picea*, *Pinus*, Egil & Katriina Bendiksen, conf Ilkka Kytövuori
Cortinarius lepidopus, F, Balint Dima, conf Håkan Lindström
Cortinarius metarius (=barbarorum), F, Tatyana Svetasheva, det Tor Erik Brandrud 338/16
Cortinarius mucosus, F, *Pinus* dominated forest near the shore (à *Pinus* dominants près du ravage), Egil og Katriina Bendiksen, *Cortinarius mussivus*, F, Mohan Rolf
Cortinarius percomis, F, *Picea*, *Pinus*, Tor Erik Brandrud 337/16
Cortinarius quarciticus, F, *Picea*, *Pinus*, Magnus Andersson, det Håkan Lindström
Cortinarius renidens, F, *Picea*, *Pinus*, Katriina Bendiksen
Cortinarius rusticus, F, *Picea*, *Pinus*, Egil & Katriina Bendiksen
Cortinarius sanguineus
Cortinarius semisanguineus
Cortinarius solis-occasus
Cortinarius squamulopercomis ined, Tor Erik Brandrud
Cortinarius sulfurinus, F, Egil Bendiksen, conf Tor Erik Brandrud
Cortinarius varius
Cortinarius venustus, F, *Picea*, *Pinus*, Egil & Katriina Bendiksen, conf Ilkka Kytövuori
Hebeloma sinapizans
Hydnellum aurantiacum
Hydnellum auratile
Hydnellum ferrugineum, F, Magnus Andersson
Hygrophorus agathosmus
Hygrophorus erubescens
Hygrophorus karstenii
Inocybe geophylla coll.
Lactarius deliciosus
Lactarius scrobiculatus
Melanoleuca stridula
Ramaria safraniolens
Ramaria testaceoflava
Russula sanguineus, F, *Pinus*, near the shore, Egil & Katriina Bendiksen
Sarcodon fuligineoviolaceus
Sarcodon imbricatum
Sarcodon scabrosum
Tricholoma apium, F, Giampaolo Simonini, det Balint Dima
Tricholoma batschii
Tricholoma flavovirens
Tricholoma focale, F, near coast path, *Pinus*, Egil og Katriina Bendiksen
Tricholoma olivaceotinctum, u, Tor Erik Brandrud, UPS
Tricholoma sudum
Tricholoma terreum

Picnic at the shore of Storsjön in Jämtland. Photo: Karin Källström

Balint Dima, Tor Erik Brandrud and Tatyana Svetasheva have lunch in old Pinus forest at Andersön.
Photo: Karin Källström

Old calcareous coniferous forests

Maria Forslund at the county board in Uppsala has for a long time studied old calcareous forests in northeastern part of the landscape Uppland. Maria showed slides and talked about this forests at a seminar autumn 2017 arranged by Elisabet Ottosson and Swedish Mycological Society. You can see her presentation at www.myko.se, see link "JEC 2016" and then kalkbarr_20170916_liten.

118 Andersön mid , nature reserve, Sunne sn, Jämtland

Excursion guide page 157

Guide: Bengt Petterson.

Species list

Albatrellus subrubescens, *Pinus*, Magnus Andersson
Cortinarius caesioarmeniacus, Andersön mitt
Hydnellum aurantiacum, F, *Picea*, *Pinus*, Magnus Andersson
Phellodon niger, F, *Picea*, *Pinus*, Magnus Andersson
Sarcodon fuligineoviolaceus, F, Magnus Andersson
Tricholoma focale
Tricholoma sudum

Tor Eriks and Michaels popular talk show friday 2/9 2016

Tor Erik spoke German and said: "schöne *Phlegmacium* funde in Jämtland". *Cortinarius olido-amythysteus* in *cliduchi* group, a beautiful species, bluish as young. Several species found in *calochrous* group: *C. metarius* with pinkish stipe base, *C. barbaricus* with big spores, *C. caesiocinctus*, bluish as young. In *fulvi* nice material of *C. sulfurinus*. Egil Bendiksen spoke about *C. diosmus*, a calcicolous species close to *C. urbicus*.

Fungi of today:

Cortinarius fuscoperonatus, collected by Daniel Dvorak and Balint Dima. Price: the book Medelpads Flora by Rolf Lidberg and Håkan Lindström.

Oswald Rohner thanked Tor Erik and Michael for excellent talks and photos during their evening shows. Applauses and whistles!

Entoloma atrocaeruleum. Photo: Olga Morozova

130 Tysjöarna nature reserve, Jämtland

Excursion guide page 150, 162

The group visited following areas:
130 C, southwest part, west of Semsån, 1441184;7013148 (100 m)
130 E, Kännåsenvägen V, 1442725;7014475
130 F, Kännåsenvägen O, 1442430;7014265
Betula, *Picea*, *Pinus*
Jämtland has the largest area with limestone bedrock in Sweden and the largest amount in Europe of the orchid Cypripedium calceolus. Tysjöarna is one of many hot spots for rare ectomycorrhizal fungi and vascular plants at the lime plate! Tysjöarna have the largest area with lake marl (bog lime) in the world with an area of 90 hectares and about 25 meter thick deposit with loose chalk sludge from springs in the ground. The nature reserve at Tysjöarna is ”the promised land of *Cypripedium calceolus*”! Thousands of this magnificent orchid grow in groups all over the visited forest slopes and flowers in the middle of june! *Cypripedium* grows also like weeds along the Kännåsen road where *Primula farinosa* grows down in the ditches! The most beautiful roadside in Sweden! *Ophrys insectifera* and a total number of 16 orchid species are found in the nature reserve. The popular *Cantharellus lutescens* is very common. *Hapoloporus odorus* if found at old *Salix caprea*. Bengt Petterson showed Egil and Katriina Bendiksen the rare northern grass *Calamagrostis chalybaea*. Tysjöarna is a paradise for rare limedemanding *Cortinarius* species! We found 51 Cortinarius species at this single visit. But the inventory of exciting fungi at the limestone plate in Jämtland has just started!

> Peut-être la plus grande zone de « kalkbleke » (une terre sédimentaire blanc-jaunâtre) avec une superficie de 90 ha et environ 25 mètres d’épaisseur de dépots calcaires provenant de sources dans le sol.

Group 1, 2/9 2016

Guide: Bengt Petterson.
List: Tor Erik Brandrud.
Participants: Egil Bendiksen, Katriina Bendiksen, Miroslav Beran, Tor Erik Brandrud, Anders Dahlberg, Lynn Delgat, Balint Dima, Daniel Dvorak, Elias Fries, Inga Lill Häggberg, Ilkka Kytövuori, Pirjo Kytövuori, Olga Morozova, Geert Schmidt-Stohn, Giampaolo Simonini, Karl Soop, Tatyana Svetasheva.

Entoloma group

130, Tysjöarna nature reserve, Jämtland 02.09.2016
152. *Entoloma incanum* (Ph, LE)
153. 158. *Entoloma cf. sarcitulum* (Ph, LE, seq)
154. 159. *Entoloma korhonenii* (Ph, LE, seq)
155. *Entoloma poliopus var. poliopus* (Ph, LE)
157. *Pluteus podospileus?* (Ph, LE)
160. *Entoloma formosum* (Ph, LE)
Volvariella murinella (Ph)

Species list

Albatrellus confluens
Bovista limosa
Clitocybe diatreta
Clitocybe nebularis
Clavariadelphus truncates
Cortinarius sp. 9, (Anomali), DB 6139, Balint Dima, seqv.
Cortinarius armillatus
Cortinarius aureofulvus
Cortinarius balaustinus
Cortinarius biformis
Cortinarius bovinus coll
Cortinarius brunneus
Cortinarius caesiocinctus, TEB 346-16, Balint Dima, seqv.
Cortinarius caperatus
Cortinarius cf casimiri
Cortinarius citrinofulvescens. Vraisemblablement C. infucatus (cf. Cortinarius, Flora photographica, vol. 5)
Cortinarius collinitus, Karl Soop
Cortinarius croceus
Cortinarius decipiens
Cortinarius delibutus
Cortinarius cf diosmus, F, *Picea*, Populus, Salix, Karl Soop, det Tor Erik Brandrud
Cortinarius duracinus
Cortinarius emunctus, F, *Betula*, *Picea*, *Pinus*, Karl Soop, det Tor Erik Brandrud
Cortinarius flavipallens, Balint Dima, TEB 349-16, DB 6153, BD seqv.
Cortinarius fuscoperonatus. Robert Kühner, l'auteur du nom, ne reconnaissait pas son espèce dans la photographie de la Cortinarius, Flora photographica. Il se peut donc qu'il s'agisse là d'un nom mal appliqué (J. M.).

Henri Romagnesi and Rolf Lidberg, Borgsjö 1983.
Photo: Hjördis Lundmark

Cortinarius fuscovelatus, TEB 351-16, DB 6149/SSt 16-061, Daniel Dvorak, Miroslav Beran, BD seqv, det Ilkka Kytövuori
Cortinarius gentilis
Cortinaius glandicolor
Cortinarius hemitrichus, Karl Soop
Cortinarius huronensis
Cortinarius illuminus
Cortinarius infractiflavus, TEB 355-16/DB 6147, Balint Dima, BD seqv.
Cortinarius aff lepidopus
Cortinarius limonius, Karl Soop
Cortinarius luteobrunnescens (=olidoamethysteus)
Cortinarius metarius, Dima-Brandrud, TEB 344-16, DB6148/SSt 16-060, GenBankNummer MF139763
Cortinarius metarius, G. Schnidt-Stohn,SSt 16056, GenBankNummer MF 139764, BD seqv.
Cortinarius multiformis
Cortinarius obtusus, Karl Soop
Cortinarius olidoamethyseus
Cortinarius oulankensis, F, *Picea*, Ilkka Kytövuori
Cortinarius cf paragaudis
Cortinarius percomis coll.
Cortinarius pholideus
Cortinarius piceae, TEB 343-16/DB6145, Balint Dima, BD seqv.
Cortinarius cf praestigiosus
Cortinarius privignatus, F, *Picea*, Karl Soop
Cortinarius saturninus, F, *Picea*, Salix, Karl Soop, conf Tor Erik Brandrud
Cortinarius sanguineus
Cortinarius stillatitius
Cortinaius subbalaustinus
Cortinarius suberi
Cortinarius sulfurinus, SSt 16-029/DB 6136, Egil *Bendiksen, BD seqv.*
Cortinarius aff tabularis
Cortinarius talus
Cortinarius trivialis ss CFP, F, *Betula*, Tor Erik Brandrud,

Sista dagen vid JEC-veckan blev även "Svampens Dag".

Balint Dima
Cortinarius varius
Cortinarius venustus, F, Karl Soop
Cortinarius vibratilis coll.
Cortinarius violaceorubens, Egil Bendiksen, BD seqv.
= 51 species of Cortinarius!
Cystoderma amianthinum, Karl Soop
Cystoderma carcharias, Karl Soop
Entoloma cf elodes
Entoloma formosum
Entoloma incanum
Entoloma korhonenii
Entoloma cf lividocyanulum
Entoloma poliopus var. poliopus
Entoloma aff rhombisporum
Entoloma sarcitulum
Entoloma sericeum
Gymnopus dryophilus coll.
Hebeloma mesophaeum
Hebeloma syrjense
Helvella crispa, F, *Betula*, *Picea*, Inga Lill Häggberg, det Birgitta Wasstorp
Hydnum repandum
Hydnum rufescens coll.
Hygrocybe conica
Hygrocybe insipida
Hygrophorus agathosmus
Hygrophorus camarophyllus
Hygrophorus erubescens
Hygrophorus karstenii, Karl Soop
Hygrophorus subviscifer
Hypocrea nybergiana
Inocybe dulcarmara
Inoybe cf napipes
Lactarius badiosanguineus, F, *Picea*, Doris Laber
Lactarius citriolens, F, *Picea*, Ilkka Kytövuori
Lactarius deterrimus
Lactarius glyciosmus
Lactarius scoticus
Lactarius scrobiculatus
Lactarius trivialis
Lactarius vietus
Lactarius zonarioides, F, *Picea*, Ilkka Kytövuori
Leccinum versipelle
Limacella glioderma
Lycoperdon limosa
Marasmius androsaceus
Marasmius wettsteinii
Mycena epipterygia, F, *Betula*, *Picea*, Inga Lill Häggberg, conf José Antonio Cadinanos Aguirre
Mycena rosella, F, Picea, Karl Soop
Omphalina pyxidata
Phaeocollybia aurea, Karl Soop
Rhodocollybia butyracea, Karl Soop
Rhodocybe hirneola
Russula adusta
Russula consobrina, Karl Soop
Russula decolorans
Russula queletii
Sarcodon fennicus
Sarcodon imbricatus
Suillus luteus
Suillus variegatus
Tricholoma saponaceum coll.
*Tricholoma scalpturat*um, F, *Betula*, *Picea*, Karl Soop
Tricholoma stiparophyllum Karst. F, *Betula*, *Picea*, Inga Lill Häggberg, det Anders Dahlberg, Conf Machiel Noordeloos: "*Tricholoma stiparophyllum* is the commun, white *Tricholoma* with aromatic smell, grows with *Betula. T. album* has wider, thicker gills, is southern and grows with Quercus" (Machiel) *Tricholoma virgatum*

Comment, commentaires

Cortinarius diosmus. Karl Soop put the collection at the exhibition table as *C. niveoglobosus*. Håkan Lindström changed to *C. alboglobosus*. Tor Erik Brandrud changed to *C. cf diosmus*. At last they all agreed: *C. diosmus*, but the name should perhaps be *C. argillaceo-sericeus*. About 10 records from Sweden.

The first Norwegian record was from the Nordic Mycological Congress in Steinkjer 2009, where it was found in a forest on limestone with deep sink holes.

Photographer Hans Marklund, Borgsjö 1982. Photo: Hjördis Lundmark

Karl Soop a mis la collection à la table d'exposition comme *Cortinarius niveoglobosus.* Håkan Lindström a changé en *C. alboglobosus.* Tor Erik Brandrud a changé en *C. cf diosmus.* Au moins, ils étaient tous d'accord: *C. diosmus.*

Cortinarius fuscovelatus was found by Balint Dima and by Daniel Dvorak here at Tysjöarna. It was described by Kyöv.,Niskanen & Liimat in Index Fungorum Nomenclatural novelties 201: 2, 2014. It, hitherto, was only known from type collection in Dalarna, Sweden. It was also found at Kullbäcken-Markbäcken nature reserve during the JEC week. It has some similarities with *C. fuscoperonatus*. Michael Krikorev took photos and also Balint Dima. Tor Erik Brandrud: "it seems to come close to species with red veil in the section *Bouldernense* with f.ex *C. rubrovioleipes* that also was found by Egil Bendiksen and Katriina Bendiksen during the JEC week in Borgsjö."

Cortinarius flavipallens. (*C. percomis coll.*) It is a typical species of high indicator value (a "signalart") in Sweden and indicates fine calcareous forests and was collected at Tysjöarna. According to Tor Erik Brandrud C. percomis should be split in three different species.

Lactarius citriolens was an interesting record made by Ilkka. The species is rather rare and demands limestone. It grows with *Betula* here at Tysjöarna, Jämtland.

Tricholoma scalpturatum is described on the pages 148-149 in Mortens Christensen and Jacob Heilmann-Clausen's book in the FNE series: "The genus Tricholoma". It was neotypified by Christensen & Noordeloos from a collection from Jämtland, MC97-165 (L). It grows with deciduous trees on limestone, smells of flour, has southern distribution with its northern boundary in Jämtland and Trönderlagen.

Volvariella murinella. There are no records in Dyntaxa.

Lactarius citriolens était intéressant à trouver d'Ilkka. L'espèce est rare, au sud, exige du calcaire, se développe avec du bouleau ici à Tysjöarna.

Tricholoma scalpturatum est décrit aux pages 148-149 de Mortens Christensen et Jacob Heilmann, le livre de Clausen "Ridderhatte". Neotypé par Christensson & Noordeloos de find in Jämtland 1997, MC97-165, (L). Croque avec des arbres à feuilles caduques sur le calcaire, sent de la farine, a traversé le sud avec la limite nord de Jämtland et Trönderlagen, image dans le livre danois "Ridderhatte".

JEC-veckan i Borgsjö 2016, några reflektioner

Borgsjöveckan. Hur många gånger har jag inte hört talas om denna vecka när svampkännare från när och fjärran kommer samman för en veckas svampinventering och studier. Även om jag sedan barnsben varit svampintresserad och sedan många år kan kalla mig svampkonsulent, efter utbildning i Umeå, så har jag känt att jag inte har hört hemma bland alla dessa experter. Men mina goda vänner och svampkonsulentkollegor Maj-Britt Såhte och Gunnel Avehag har ofta varit med och tycks välja denna vecka framför andra svampbegivenheter om möjlighet ges. Och lokalerna ligger ju bra till för mig som är bosatt i Jämtland, så kanske skulle jag i alla fall...

Detta år, 2016, gjorde jag alltså slag i saken såtillvida att jag hade lust att vara med på Borgsjöveckan men hade inte tillfälle att vara med annat än ett par dagar och en kväll. Kontaktade Jan-Olof för att få veta om det var möjligt och för att i så fall få ett pris på en del av veckan. Fick svar att jag var välkommen ändå och fick frågan om jag kunde ta på mig att skriva under exkursionerna som jag var med på och fotografera lite. Ett sådant fantastiskt erbjudande! Inte nog med att jag kunde delta på mina villkor, jag fick förmånen att anteckna lite grand om dagens fynd då jag var med. Det lär man sig massor på.

Min ”Borgsjövecka” började den 29 augusti ovanför Marieby vid den så kallade Fugelsta brunkullaäng eller Nästmyren som den egentligen heter (lokal 121). Brunkullan är Jämtlands landskapsblomma vars pyttesmå vindspridda frön behöver kontakt med svampmycel för att gro och sedan bilda mykorriza med.

När alla bilar var på plats började vandringen på ca 100 m bort till brunkullaängen. Det var inte lätt att få det svampintresserade gänget att blunda för alla svampar som fanns på vägen dit. Bengt Petterson som var lokal guide, fick mana på en hel del när deltagarna satte iväg in i skogen i stället. Framme vid ängen kunde man se alla dessa myrstackar, som befolkar ängen/myren. Bilden av små kullar i gräset kompletterades strax av ett flertal rumpor. Kameror arbetade för högtryck och fynden rapporterades. Lennart Vessberg med all sin kunskap om svampar på gamla ängar var med, ofta knäböjande med kameran nere i gräset bland myror och småsvampar.

Efter någon timme fortsatte vi till Storvålen (lokal 126) med en annan typ av ängsmark, inte så många myrstackar här men även denna är en brunkullaäng. Här intogs lunchen men alla hade inte tid att börja med den utan några var ivriga och spred sig snabbt över ängen, inte lätt att få uppgifter att notera, somliga intresserade sig förstås även för det som fanns utanför ängen. Utöver många svamparter fanns ganska många gentianor, både blå och vita. Ängsvaxskivlingar kunde man plockat till åtminstone en macka, om man hade varit ute efter det.

Nästa dag, 30 aug, gick färden till Andersöns Naturreservat område Skansholmen västra (lokal 118). Det är alltid intressant att leta svamp på Andersön med sin speciella jordmån, många fynd rapporterades.

Tiden på plats var intensiv men kort, totalt inklusive snabbt intag av lunch varade Jämtlandsvistelsen kanske i max tre timmar per dag, åktiden för deltagarna var lång, efter att de kommit tillbaka till Borgsjö ska de ju även hinna rapportera och analysera sina fynd, men tiden var mycket effektivt utnyttjad av de ivriga deltagarna.

Det var mycket roligt att vara med, fantastiska människor med oerhörda kunskaper som de gärna delade med sig av. Visserligen var det ju en som skojtestade mig genom att på Andersön anmäla fynd av Amanita caesarea, han räknade kanske inte med att jag faktiskt kände till denna läckra svamp som ju ännu inte hittats i Sverige, så det skämtet/testet klarade jag, det var bara roligt.

Synd att jag bara kunde delta under en kväll på plats i Borgsjö, med det var ju alltid något, och mina krusbär som jag tagit med mig från våra dignande buskar gick år som smör i solsken. Så roligt att vara med och träffa många av mina svampvänner, inte bara Maj-Britt och Gunnel! Nästa Borgsjövecka ska jag försöka vara med hela veckan!

Östersunds Mykologiska Förening fyller förresten 40 år nu 2017. På vår hemsida, www.omf.se kan du läsa en kort historik. Lars Lundberg grundade föreningen och har varit en förgrundsfigur under alla år. Lars mottog 2017 vid 95 års ålder den finaste utmärkelsen en svensk mykolog kan få: Sveriges Mykologiska Förenings pris Guldkniven för sina stora insatser.

Karin Kellström, ordförande
i Östersunds Mykologiska Förening, ÖMF

Cortinarius diosmus. Åssjön, Alnö parish, Medelpad. Photo: Håkan Sundin

1463180 6982945

133 Tunsved nature reserve, Jämtland

Excursion guide page 164

***Calcareous Picea*-dominated forest.**

Earlier findings of *Cortinarius: blattoi, caesiocinctus, caperatus, citrinofulvescens, clarobrunneus, depressus, duracinus, ectypus, laniger, parvannulatus, percomis, piceae, pilatii, sanguineus, solis-occasus.* Other fungi: *Haploporus odorus, Helvella crispa, Hygrophorus purpurascens, Hypocrea nybergiana, Infundibulicybe geotropa, Inocybe striata, Russula aurea, R. olivobrunnea, Sarcodon martioflavus.*

Forêts calcaires dominées par l'épicéa. Récoltes antérieures de cortinaires: *C. blattoi, caesiocinctus, caperatus, citrinofulvescens, clarobrunneus, depressus, duracinus, ectypus, laniger, parvannulatus, percomis, piceae, pilatii, sanguineus, solis-occasus.* Autres champignons*: Haploporus odorus, Helvella crispa, Hygrophorus purpurascens, Hypocrea nybergiana, Infundibulicybe geotropa, Inocybe striata, Russula aurea, R. olivobrunnea, Sarcodon martioflavus.*

Group 1, 1/9 2016

Guide: Bengt Petterson.

List: Magnus Andersson, Bengt Petterson, Doris Laber-Gunnar Hensel-Ulla Täglich.

Participants: Gerhard Bozler, Gunnar Hensel, Ilkka Kytövuori, Pirjo Kytövuori, Doris Laber, Peter Laber, Gisela Lockwald, Viktor Papp, Karin Pätzold, Geert Schmidt-Stohn, Ulla Täglich.

Species list

Agaricus langei
Agaricus abruptibulbus
Albatrellus ovinus
Bankera violascens
Boletopsis leucomelanea
Boletus edulis
Chroogomphus rutilus
Clavariadelphus ligula, Doris-Gunnar-Ulla
Clavariadelphus truncatus, F, *Picea*, Magnus Andersson
Clavulina cristata
Cortinarius aureopulverulentus, F, ant hill, fourmilière, *Picea*, Magnus Andersson
Cortinarius betulinus, Doris, Gunnar, Ulla
Cortinarius caesiocinctus, F, *Picea*, Magnus Andersson
Cortinarius caperatus
Cortinarius cinnamomeus, Doris-Gunnar-Ulla

Cortinarius vitiosus. Photo: Tatyana Svetasheva

Cortinarius citrinofulvescens, Doris-Gunnar-Ulla
Cortinarius collinitus
Cortinarius crassisporus, F, ant hill, fourmilière, *Picea*, Ilkka Kytövuori
Cortinarius delibutus
Cortinarius duracinus
Cortinarius fuscoperonatus, Doris-Gunnar-Ulla, foto+kollekt SSt 16-046, Balint Dima seqv. Nr 1279 Cortinarius fuscoperonatus, Doris Laber, SSt 16-046, GenBankNummer MF139754, BD seqv.
Cortinarius gentilis, Doris-Gunnar-Ulla
Cortinarius glaucopus, Doris-Gunnar-Ulla
Cortinarius infractus
Cortinarius laniger
Cortinarius malachius
Cortinarius metarius
Cortinarius multiformis, Doris-Gunnar-Ulla
Cortinarius percomis, F, *Picea*, Magnus Andersson
Cortinarius rusticus
Cortinarius sanguineus, Doris-Gunnar-Ulla
Cortinarius solis-occasus, F, *Picea*, Magnus Andersson
Cortinarius sommerfeltii
Cortinarius spilomeus
Cortinarius sulfurinus, F, *Picea*, Magnus Andersson
Cortinarius talus
Cortinarius vibratilis var. bresadolae
Cortinarius violaceus
Cudonia circinans, Doris-Gunnar-Ulla
Gomphidius glutinosus
Hebeloma edurum
Hydnellum aurantiacum
Hydnellum auratile, Doris-Gunnar-Ulla
Hydnellum caeruleum, F, *Picea*, Jaap Wisman, det Daniel Dvorak
Hydnellum suaveolens, F, *Picea*, Magnus Andersson
Hydnum repandum
Hydnum rufescens coll.
Hygrophorus agathosmus
Hygrophorus discoideus, Doris-Gunnar-Ulla
Hygrophorus erubescens, F, Jaap Wisman, det Nico Dam
Hygrophorus piceae
Hypocrea nybergiana, Doris-Gunnar-Ulla
Infundibulicybe gibba
Lactarius aurantiacus
Lactarius deterrimus
Lactarius fuliginosus, Doris-Gunnar-Ulla
Lactarius flexuosus
Lactarius glyciosmus
Lactarius pubescens
Lactarius scrobiculatus

Dysjöberget, fertile herbrich forest at diabase soil near the parking place. Photo: Bengt Larsson

Lactarius trivialis
Lactarius uvidus
Lactarius vietus
Leccinum melaneum, F, *Betula*, *Picea*, Gerhard Bozler, conf Doris Laber
Lepiota cristata
Lepista densifolia
Lyophyllum rancidum
Melanoleuca melaleuca
Phaeolepiota aurea, F, vägkant, Bengt Petterson
Pholiota spumosa
Physarum nutans
Pseudohydnum gelatinosum, F, *Picea*, Viktor Papp
Ramaria eosanguinea, F, *Picea*, Magnus Andersson, det Ilkka Kytövuori, UPS
Ramaria karstenii
Ramaria suecica, F, *Picea*, Magnus Andersson, det Ilkka Kytövuori
Ramaria testaceoflava
Russula cessans, kalkbarrskog, leg Bengt Petterson, det Herbert Kaufmann, HK 16014
Rusula cyanoxantha
Russula olivina
Russula olivobrunnea, leg Bengt Petterson, det Herbert Kaufmann, HK 16016
Russula puellaris, leg Bengt Petterson, det Herbert Kaufmann
Russula queletii
Sarcodon imbricatus
Stropharia pseudocyanea
Suillus granulatus
Tremiscus helvelloides, F, *Picea*, Magnus Andersson
Trichia varia
Tricholoma frondosae, F, *Picea*, Gerhard Bozler, conf Doris Laber
Tricholoma inamoenum
Tricholoma fulvum
Tricholoma saponaceum
Tricholoma terreum
Tricholoma stiparophyllum
Tricholoma vaccinum, Doris-Gunnar-Ulla
Tricholoma virgatum

Comment, commentaires

Cortinarius crassisporus är en spindelskivling i undersläktet Telamonia som beskrevs 2014 av Kytövuori, Niskanen och Liimatainen. Den uppges vara sällsynt, växa på kalkmark och gärna i myrstackar. Kanske ny för Sverige?

> *Cortinarius crassisporus*, une espèce du sous-genre Telamonia, fut décrit en 2014 par Kytövuori, Niskanen et Liimatainen. Cette espèce vient en terrain calcaire et souvent sur les fourmilières. Elle est considérée comme rare. Peut-être nouveau pour la Suède.

Tremiscus helvelloides. Painting by Rolf Lidberg who tested to do marmalade of this fungi but said "no taste at all"

Leccinum melaneum is bound to *Betula* but little known according to Funga Nordica (2012).

At www.dyntaxa.se you can see a photo by Jan Olsson from Jokkmokk in northern Sweden.

L. melaneum has no bluish green coloration at stem base, the flesh sometimes discolour pink when damaged.

> *Leccinum melaneum* est lié aux bouleaux, mais, selon la Funga nordica (2012), reste peu connu. À l'adresse www.dyntaxa.se on peut en voir une photographie due à Jan Olsson et prise à Jokkmokk, au nord de la Suède. Cette espèce ne se colore pas en bleu-vert à la base du pied, mais la chair devient parfois rosée dans les parties lésées.

RT 90: 6943734;1486455

Dysjöberget nature reserve, Borgsjö sn, Medelpad

84 hectare, map at page 212 in the excursion guide.

Group 3, 30/8 2016

Guides and list: Per Sander, Michael Krikorev.
Participants: Bart van den Berg, Gerhard Bozler, Marjo Dam, Nico Dam, Lynn Delgat, Roel Douwes, Helmut Grünert, Renate Grünert, Gunnar Hensel, Inga Lill Häggberg, Werner Jürkeit, Doris Laber, Masja van den Meer, Peter Laber, Gisela Lockwald, Inge Somhorst, Ulla Täglich, Mirjan Veerkamp, Jaap Wisman.

The County Board in Västernorrland created this nature reserve in 2014. Per Sander was one of the guides. Per works at the local county with nature protection and threatened species. The other guide was Michael Krikorev, a well known mycologist with Artdatabanken in Uppsala. Dysjöberget is situated some kilometers from the old forest meadows Granbodåsen and Kullbodarna. In older days farmers from the village Boltjärn grazed their cows, goats and sheeps at Dysjöberget in the summer. The stony area is dominated by old pines burnt in 1888. Today old *Betula*, *Populus* and *Salix* are common. We call this wonderful nature type in Swedish for "lövbränna", which means burnt broadleaved forest. The forest is partly herb rich because of water flow and diabase. Bengt Larsson has guided us to the forest in the summer and showed us flowers like *Dactylorhiza fuchsia*, *Daphne mezereum*, *Goodyera repens*, *Hepatica nobilis*, *Listera ovata*, *Moneses uniflora*, *Platanthera bifolia* subsp. *latiflora*, *Polygonatum verticillatum*, *Saussurea alpina*, *Viola selkirkii* and *V. mirabilis*. Fascinating is *Carex nigra* subsp. *juncella* with big tufts of old stems and leaves, like the grey hair of an old man!

Le conseil de comté local dans la région Västernorrland a formé cette réserve naturelle en 2014. Par Sander était l'un des guides. Per travailles dans le comté local avec protection de la nature et menaces espèce. L'autre guide était Michael Krikorev, mycologiste bien connu de la Swedish Species Data Base à Uppsala. Dysjöberget est situé quelques kilomètres de l'ancienne prairies Granbodåsen et Kullbodarna. Dans les vieux jours, les agriculteurs du village Boltjärn avait leurs vaches et moutons à Dysjöberget en été. Le pierreux domaine dominé par le pin brûlé en 1888. Aujourd'hui, la vieille *Betula*, *Populus et Salix* forêt est commune. Nous appelez ce type de nature merveilleux en suédois pour "lövbränna" ce qui signifie forêt feuillue brûlée. La forêt est en partie riche en herbes à cause du débit d'eau et de la diabase. Bengt Larsson nous a guidés vers la forêt en été et nous a montré des fleurs comme *Dactylorhiza fuchsia, Daphne mezereum, Goodyera repens, Hepatica nobilis, Listera ovata, Moneses uniflora, Platanthera bifolia subsp. Latiflora, Polygonatum verticillatum, Saussurea alpina, Viola selkirkii, Viola mirabilis.* Fascinant est dans les *marais humides Carex nigra subsp. juncella* avec de grandes touffes de vieille herbe comme les cheveux gris.

Bengt Petterson, our excellent guide to fungus hot spots in Jämtland. Photo: Hjördis Lundmark

Species list

Amanita porphyria
Baeospora myosura
Cantharellula umbonata
Chroogomphus rutilus
Clitocybe odora
Cortinarius sp. 1, (pseudofallax coll.), Parvuli group, TEB 341-16, DB 6143, Nico Dam
Cortinarius alboviolaceus, F, *Betula*, *Picea*, Doris Laber, det Tor Erik Brandrud
Cortinarius armeniacus, F, Roel Douwes, conf Tor Erik Brandrud
Cortinarius armillatus, F, Lynn Delgat
Cortinarius badiovinaceus, F, *Picea*, *Pinus*, Michael Krikorev, det Ilkka Kytövuori, UPS
Cortinarius balaustinus, F, *Betula*, *Picea*, Populus, Nico Dam
Cortinarius bivelus
Cortinarius caesiostramineus, F, *Picea*, *Pinus*, Täglich & Hensel, det Brandrud
Cortinarius caperatus
Cortinarius cinnamomeus, F, *Picea*, Doris Laber
Cortinarius collinitus, F, Lynn Delgat
Cortinarius croceus
Cortinarius cyanites, F, Roel Douwes
Cortinarius decipiens
Cortinarius erubescens, F, roadside, en borde de chemin, *Betula*, *Picea*, *Pinus*, Nico Dam
Cortinarius flexipes
Cortinarius gentilis
Cortinarius glaucopus, F, *Betula*, *Picea*, *Pinus*, Nico Dam

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

Cortinarius laniger
Cortinarius lepidopus, F, *Betula*, *Picea*, *Pinus*, Michael Krikorev, det Håkan Lindström, UPS
Cortinarius malachioides (=C. jotunae ined.), F, *Picea*, *Pinus*, Doris Laber-Karin Pätzold, det Brandrud, TEB 340-16,DB 6138, BD seqv.
Cortinarius melitosarx, F, *Betula*, *Picea*, *Pinus*, Michael Krikorev, det Karl Soop
Cortinarius ochrophyllus, F, *Picea*, Doris Laber
Cortinarius pholideus, F, Lynn Delgat
Cortinarius porphyropus, F, *Betula*, *Picea*, Gisela Lockwald- Karin Pätzold, det Inga-Lill Franzén
Cortinarius raphanoides
Cortinarius sanguineus
Cortinarius semisanguineus, F, *Pinus*, Bozler + Laber, conf Doris Laber
Cortinarius stillatitius
Cortinarius subtortus
Cortinarius talus, F, *Betula*, *Populus*, *Picea*, Salix, Gisela Lockwald, det Doris Laber
Cortinarius traganus, F, *Betula*, *Picea*, *Populus*, Salix, Gisela Lockwald
Cortinarius trivialis s CFP
Cortinarius turmalis, F, Doris Laber-Gunnar Hensel, det Tor Erik Brandrud
Cudonia confusa, F, *Betula*, *Picea*, *Pinus*, Ulla Täglich
Cystoderma amianthinum
Cystoderma granulosum
Exobasidium vaccinii
Fuligo rufa
Gomphidius glutinosus
Gomphidius roseus
Gymnopilus picreus
Gymnopus confluens
Hygrophorus camarophyllus, F, *Picea*, Doris Laber
Hygrophorus karstenii, F, *Picea*, Gerhard Bozler, conf Doris Laber
Infundibulicybe clavipes
Inocybe geophylla
Lactarius deterrimus
Lactarius glyciosmus
Lactarius lilacinus, F, *Alnus*, Gisela Lockwald, det Karin Pätzold
Lactarius mammosus, F, *Picea*, *Pinus*, Doris Laber
Lactarius pubescens
Lactarius rufus

Cypripedium calceolus, painting by Rolf Lidberg

Lactarius uvidus
Lactarius vietus
Leccinum cyanobasileucum, F, normal and white form (forme normal, blanche), Gisela Lockwald, conf Doris Laber
Leccinum scabrum
Leccinum versipelle
Leccinum vulpinum
Mycena epipterygia
Mycena pura
Mycena rosella, F, *Picea*, *Pinus*, Ulla Täglich
Nyctalis lycoperdoides
Phellinus populicola
Pholiota tuberculosa
Physarum nutans, F, *Pinus*, Ulla Täglich
Piptoporus betulinus
Rhodocollybia butyracea
Rickenella fibula
Russula atrorubens
Russula decolorans
Russula griseascens
Russula paludosa
Sarcodon scabrosus
Stropharia alcis, F, at elk excrements (sur excréments d´elans), Gerhard Bozler, det Ilkka Kytövuori (conf Doris Laber)
Stropharia hornemanii
Suillus variegatus
Thelephora terrestris, F, on charcoal more than one hundred years old (sur charbon de bois âgé de plus de cent ans), Gerhard Bozler
Tricholoma fulvum
Tricholoma inamoenum
Tricholoma vaccinum, F, *Picea*, *Pinus*, Ulla Täglich
Tricholomopsis decora
Tubaria confragosa, F, *Pinus*, on a birch log (sur une bûche de bouleau), Per Sander

Floberget nature reserve, Borgsjö sn, Medelpad

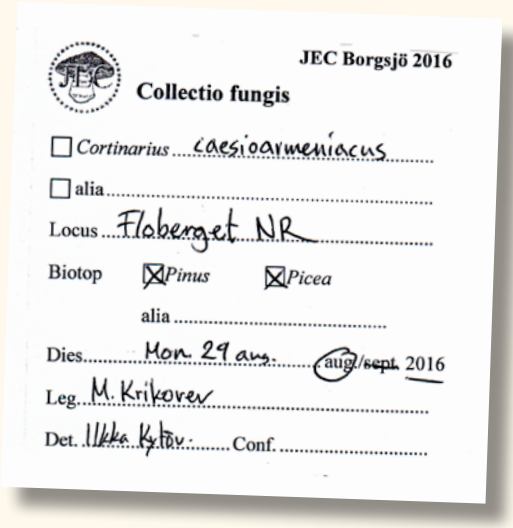
Excursion guide page 213

Group 3, 29/8 2016

Guides: Michael Krikrorev, Per Sander.
List: Katriina Bendiksen, Gunilla Kärrfelt and Katriina Bendiksen said when they came back from the excursion: ”*rather much mushrooms but difficult to walk in the forest because of many storm fallen trees*”. Many big, old aspen trees in the nature reserve. Aspen is important for biological diversity in norterh forest both as living and dead. Big fallen aspens has often many rare fungi like *Ossicaulis lignatilis*.

Selon Gunilla et Katriina à leur retour d'excursion:

> Pas mal de champignons mais difficile de se déplacer dans la forêt à cause des troncs abattus par la tempête.


JEC Borgsjö 2016
Collectio fungis
☐ Cortinarius ... caesioarmeniacus
☐ alia ...
Locus ... Floberget NR
Biotop ☒ Pinus ☒ Picea
alia ...
Dies ... Mon. 29 aug. aug/sept. 2016
Leg. M. Krikorev
Det. Ilkka Kytöv. ... Conf. ...

Participants: Egil Bendiksen, Kaatriina Bendiksen, Bart van den Berg, Gerhard Bozler, Marjo Dam, Nico Dam, Roel Douwes, Helmut Grünert, Renate Grünert, Eva Hauke, Otto Kowalenko, Gunilla Kärrfelt, Doris Laber, Peter Laber, Gisela Lockwald, Masja van der Meer, Karin Pätzold, Inge Somhorst, Willem Stouthamer, Birgitta Wasstorp, Mirjam Veerkamp.

Species list

Albatrellus syringae
Aleuria aurantiaca
Amanita fulva
Amanita muscaria
Amanita porphyria
Auriscalpium vulgare
Chalciporus piperatus
Climacocystis borealis
Clitocybe clavipes
Clitocybe hydrogramma
Cortinarius acutus
Cortinarius albovariegatus coll.
Cortinarius alboviolaceus
Cortinarius armeniacus
Cortinarius armillatus, *Picea, Pinus*, Gerhard Bozler, Gisela Lockwald
Cortinarius betulinus
Cortinarius bivelus
Cortinarius brunneus
Cortinarius caesioarmeniacus, u, *Picea, Pinus,* Michael Krikorev, det Ilkka Kytövuori, SSt 16-138, GenBankNummer MF139753
Cortinarius camphoratus, F, *Picea,* Hauke/Kowalenko
Cortinarius caperatus, F, *Picea*, *Pinus*, Gisela Lockwald
Cortinarius collinitus, F, old *Picea d*ominated forest with *Betula* and *Populus* (vieille forêt dominée par l´e*picea*, avec *Betula* et *Populus*), Egil & Katriina Bendiksen
Cortinarius evernius
Cortinarius flexipes
Cortinarius gentilis, F, *Picea,* Gisela Lockwald
Cortinarius infractus
Cortinarius laniger, F, *Picea,* Kowalenko/Hauke
Cortinarius lepidopus, F, *Picea,* Hauke/Kowalenko, conf

Tor Erik Brandrud
Cortinarius multiformis, F, *Picea,* Birgitta Wasstorp
Cortinarius ochrophyllus, F, *Picea,* Birgitta Wasstorp
Cortinarius cf paragaudis
Cortinarius pholideus
Cortinarius raphanoides
Cortinarius rubellus, F, *Picea,* Birgitta Wasstorp
Cortinarius sanguineus
Cortinarius spilomeus
Cortinarius stillatitius, F, old *Picea* dominated forest with *Betula* and *Populus* (vieille forêt dominée par l´epicea, avec *Betula et Populus),* Egil & Katriina Bendiksen
Cortinarius subtortus, F, *Picea, Pinus,* Gisela Lockwald, det Karin Pätzold
Cortinarius traganus, F, Picea, Pinus, Gisela Lockwald
Cortinarius trivialis ss CFP, F, Egil & Katriina Bendiksen, with Populus, also *Betula-Picea,* "lamellae lack *lilac-bluish colour, NB!*"
Cortinarius uliginosus, F, Gisela Lockwald, det Karin Pätzold
Cortinarius umbrinolens, Interpretation modern due à Jacques Melot. Anterieurement determine
C. rigidus ss Fries par Moser
Cystoderma jasonis
Entoloma cetratum
Exobasidium vaccinii
Flammula alnicola
Fomes fomentarius
Fomitopsis pinicola
Fomitopsis rosea
Gloeophyllum sepiarium
Gomphidius glutinosus
Gymnopus perforans
Hebeloma circinans
Hydnum repandum
Hygrophorus agathosmus
Hygrophorus camarophyllus
Hygrophorus korhonenii, u, *Picea,* Birgitta Wasstorp
Hygrophorus olivaceoalbus
Hypholoma capnoides
Hypocrea nybergiana, F, *Picea*, Birgitta Wasstorp, det Michael Krikrorev
Inoybe geophylla
Laccaria laccata
Laccaria proxima
Lactarius deterrimus
Lactarius leonis
Lactarius lilacinus
Lactarius pubescens
Lactarius repraesentaneus, F, *Betula, Picea*, Karin Pätzold
Lactarius tabidus
Lactarius torminosus
Lactarius trivialis, u, *Picea,* Doris Laber
Lactarius tuomikoskii, *Betula, Picea*, Gerhard Bozler, det Ilkka Kytövuori
Lactarius uvidus
Lactarius vietus
Leccinum albostipitatum, F, *Aspen-Picea-Pinus*, Bozler, conf Doris Laber
Leccinum variicolor
Leccinum versipelle
Leccinum vulpinum
Lycoperdon perlatum
Marasmius androsaceus
Mycena flavoalba
Mycena galericulata
Mycena haematopus
Mycena pura
Mycena rosella
Mycena vulgaris
Paxillus involutus
Phellinus chrysoloma
Phellinus ferrugineofuscus, F, on *Picea* trunk, Egil Bendiksen
Phellinus populicola
Pholiota lundbergii
Piptoporus betulinus
Postia caesia
Pseudohydnum gelatinosum
Rhytisma salicina
Russula atrorubens
Russula clavipes
Russula claroflava
Russula decolorans
Scutellinia scutellata
Stereum rugosum
Stropharia hornemanii, F, *Picea*, Gunilla Kärrfelt
Tricholoma inamoenum
Tubaria confragosa, F, on *Betula*, Gunilla Kärrfelt

Along forest road/Le long route forestière

Albatrellus syringae
Armillaria borealis
Clitocybe connata
Hypholoma capnoides
Hypholoma elongatum coll.
Kuehneromyces mutabilis
Lactarius glyciosmus
Lactarius torminosus
Lacrymaria glareosa (dominant), F, on forest road in old *Picea* dominated forest, Katriina & Egil Bendiksen, conf Ilkka Kytövuori
Leccinum versipelle
Peziza badia
Phaeolepiota aurea
Pluteus cervinus

Hässjor på gammelvall. Foto: Håkan Sundin

Comment, commentaire

Albatrellus syringae [now often treasted as *Xanthoporus syringae*] is now rather common at grassy sides of forest roads but also in old lawns, often at cemeteries like in Borgsjö. It has never been seen in Medelpad out in the wild nature. It is, perhaps, an expanding species according to Ove Eriksson, professor emeritus in Umeå: Albatrellus syringae-markticka på frammarsch. Svensk Bot. Tidskr. 72 (1978). "Ängstickan" was described in 1962 and was 1978 known only from five localities: two in Estland (Parmasto 1962), two in Finland (Niemelä 1970) and one in Sweden (Niemelä 1970). Another species in the *Albatrellus* complex is *A. subrubescens*, that was notes in Sweden for the first time about 50 years ago. Now we find "lammticka" here in Sweden on sandy soils in some old *Pinus* forests. Perhaps we have more mycologists looking for fungi than 50 years ago? Distribution maps of fungi in the Nordic countries often show the living places of skillful mycologists!

Hypocrea nybergiana [now *Trichoderma nybergiana*] is a typical species from old, rich calcareous coniferous forests in Jämtland and western Medelpad and seems to parasitize other fungi like other members in the genus.

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

Entoloma

There is nowadays a big discussion about agricultural policy in the European Union (EU) and also in Sweden. Almost half of the EU budget supports agriculture. More funds should be allocated away from production to environment, biological diversity and rural development, see paper "Fungi at meadows" at www.myko.se and J.E.C. 2016. *Entoloma* is a dominant genus in old meadows and in grazed areas.

The Norwegian mycologists led by Tor Erik Brandrud, performed with modern phylogenetic methods an exciting three-year study - 2015-2017 - of *Entoloma* species together with Bálint Dima, Machiel Noordeloos and Olga Morozova. We invited Balint, Olga and Machiel to the JEC meeting. "The *Entoloma* dream team" was guided around old meadows of Jämtland and Medelpad during the Borgsjö workshop by the local meadow experts Bengt Petersson and Lennart Vessberg. Hard cold storms from the high mountains had reduced the fruiting in the meadows, but the results from the Norwegian *Entoloma* study will be excellent facts for the next red lists in Nordic countries and also for the next edition of Funga Nordica – if such an edition materialize. Several *Entoloma* species have no records in the Swedish Dyntaxa, www.dyntaxa.se and are perhaps new to Sweden: *Entoloma cf brunneoserrulatum*, *E. mutabilipes*, *E. weholtii* and *E. violaceoserrulatum*.
In Sweden there has been inventories of old hay meadows and grazed grasslands in 1987-1992 and in 2002-2004. At the site www.jordbruksverket.se you can find a database, TUVA, for Swedish meadows. There is today a growing interest in grassland fungi in Sweden. Frida Turander in Värmland leads a Facebook-group on grassland fungi ("Ängssvampar") with photos and information on records of waxcaps, *Entoloma* species and other fungi from old meadows. Unfortunately, the national and EU-support for meadows today is too limited and too troublesome to obtain. Many farmers with fine meadows avoid the schemes. See paper in Swedish about Swedish meadows at www.myko.se and JEC 2016 and "Fungi on meadows".

Entoloma group in Jämtland 26–28/8 2016

Guide: Bengt Petterson

Before the JEC-meeting a group studying mostly *Entoloma* on old chalk rich meadows met in western Jämtland 26–28 of August and was guided by Bengt Petterson. EU mention in habitat directive seminatural dry grasslands on calcareous substrates (6210 kalkgräsmarker). You find a Swedish paper about actual agricultural and meadows policy in Sweden at www.mykose and link "JEC 2016".

At Friday 26/8 their was, unfortunately, a heavy storm over the excursion area, not good for mushrooms at open grass areas. Bengt had sent maps and descriptions of all localities to Tor Erik before their arrival to the cottages at Solbacken camping in Krokom. On Saturday 27 August the *Entoloma* group visited three localities. Bengt Petersson in mail 1 februar 2017:

"De tre förlokaler med entolomisterna jag minns från 27/8 är Jale i Trång, Alsens-Ede 3: 1 och Glösa. Då träffade vi markägarna och brukarna, vilka även kunde bidra med hävdstoryn.

Vid Jale i Trång drog markägaren och brukaren Nils-Bertil Nilsson storyn om släktgården och brukandet. F.d. apotekaren NB är mycket växt- och naturkunnig och vet hur Jale bör skötas. Han släpper inte på nötbetet före mitten av juli, vilket är helt rätt på den marken. För ett antal år sedan kontaktade NB mej. Han kände till att jag jobbade på Lst och undrade vad som låg bakom hans miljöstödsåterkrav. Efter en tids intern efterforskning kom det fram att lantbruksenheten skickat ut en grässtubbmätare veckan efter midsommar, dvs. några veckor före NB´s betespåsläpp. NB brukar inte svära men då gjorde han det. Tror inte att NB sökt något mer miljöstöd eller miljöersättning sedan dess. NB har väl iofs. råd med avståendet och sköter Jale på ett föredömligt sätt.

Alsens-Ede 3: 1, artrik tomtmark. Markägare och brukare är lavkännarna Fredrik Jonsson och Ulrika Nordin. Dom redogjorde för tomtskötseln. Fredrik och Ulrika använder gräsklippare med gräsuppsamlare på sina ängsartade gräsmarker. De har 180 kärlväxter på tomten bland annat *Alchemilla oxyodontha*. Fredde antecknade som en galen iller mykopaternas fynd. Jag kände redan innan deras tillträde, på Leo Ombergs tid, till fältgentianorna och kände att det osade katt för mer på den tomten. Att Kati Bendiksen hade finnursprung visste jag, men under fikat kom det fram att både jag och Ulrika härstammar från Savolaks-finnarna. Skogsfinnarna var bl.a. mycket naturkunniga och svedjebännare.

Glösa. Mycket intressant att vi fick med både markägare och brukare, Göran Dahl och brukaren ekobonden Jan Runsten. Bekant med båda sedan lång tid tilbaka. Runstenen tog nog till sig av mina synpunkter om betestrycket vilket jag ansåg vara lite för högt."

Bengt Petterson, Republiken Jämtland

Hygrocybe turunda. Photo: Olga Morozova

Shortenings

Number = Olga Morozova, field number
Ph, Photo, Olga Morozova
LE=Herbarium Leiden
Seq=Balint Dima have sequensed and checked DNA

Jämtland, Jale i Trång, Krokom 27.08.2016

69. *Entoloma chloropolium* (Ph, LE, seq)
70. *Hygrocybe cantharellus* (Ph, LE)
71. *Hygrocybe irrigata* (Ph, LE)
72. *Clitopilus* prunulus (Ph, LE)
75. *Entoloma chalybeum* (LE)
76. *Entoloma prunuloides* (Ph, LE)

Jämtland, Alsens Ede 3: 1, Rönningsberg 27.08.2016

78. *Entoloma serrulatum* (Ph, LE, seq)
79. *Entoloma cf. brunneoserrulatum* (Ph, LE, seq)
80. *Entoloma violaceoserrulatum* (Ph, LE)
81. *Entoloma poliopus var. parvisporigerum* (Ph, LE, seq)
82. 83. *Entoloma turci* (Ph, LE, seq)
85. *Pholiotina rugosa* (Ph, LE) det. E. Malysheva

Comment

Entoloma brunneoserrulatum described by Guillaume Eyssartier and Machiel Noordeloos i Österr. Z. Pilzk. 11 (2002). Ej i Dyntaxa.
Entoloma violaceoserrulatum new to Sweden.

The orchid *Nigritella nigra*. Painting by Rolf Lidberg

Jämtland, Glösa 27.08.2016

86. *Camarophyllopsis foetens* (Ph, LE)
88. *Microglossum atropurpureum* (Ph, LE) det. A. Fedosova
89. *Entoloma sericatum* (Ph, LE)
94. *Entoloma formosum* (Ph, LE, seq)
Entoloma bloxamii (Ph, LE) col. M. Noordeloos
104. *Entoloma prunuloides* (Ph, LE)
99. *Entoloma griseocyaneum* (Ph, LE, seq)
100. *Entoloma turci* (Ph, LE)
TEB 317 *Entoloma asprellum* (LE, seq) 27.08.2016
TEB 322 *Entoloma pseudocoelestinum* (LE, seq)

Glösa both forest and grazed meadow

Cortinarius metarius, *Picea* forest, Egil Bendiksen, conf Tor Erik Brandrud, Balint Dima
Entoloma violaceoserrulatum, Egil och Katriina Bendiksen, new to Sweden

Jämtland, Krokom (grassland at the camping) 28.08.2016

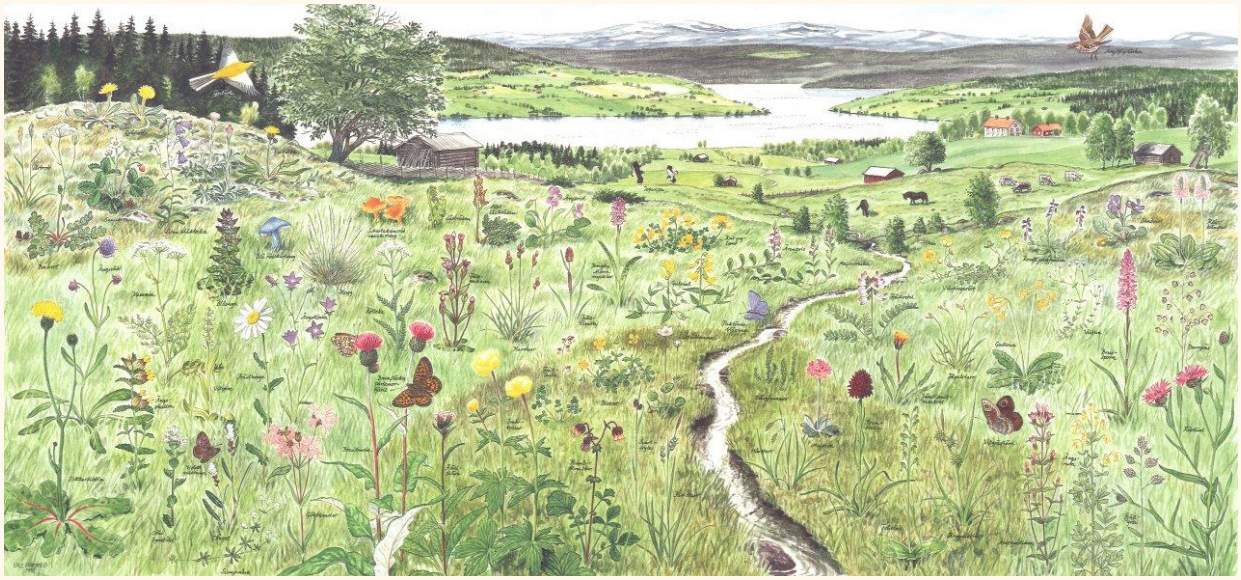
102. *Entoloma cf. inutile* (Ph, LE, seq)
103. *Entoloma rhombisporum var. floccipes* (Ph, LE, seq)
104. *Pseudoomphalina cf. pachyphylla* (with cystidia!) (Ph, LE)

Jämtland, Östersund Torvalla Ängsmon västa 28.08.2016

106. *Entoloma turci* (Ph, LE, seq)
107. 108. *Entoloma pseudocoelestinum* (Ph, LE, seq)
109. *Entoloma turci* (Ph, LE, seq)
110. *Entoloma violaceoserrulatum* (Ph, LE, seq)

Comment

Entoloma pseudocoelestinum is described by Eef Arnolds, rare according to Funga Nordica redlisted in Norway as VU (vulnerable).



”Fagert är landet som blev vår lott och arvedel”. Akvarell av Nils Forshed som visar brunkullans uråldriga och vackra landskap i Jämtland.

Entoloma group monday 29/8 at the meadows Nästmyren-Fugelsta and Storvålen, Jämtland

6999816 1444536

121 Nästmyren nature reserve, Fugelsta, Marieby sn, Jämtland

Excursion guide page 139

Meadow with hundreds of the rare orchid *Gymnadenia nigra* and the beautiful flower *Taraxacum crocodes*.

Well managed by Marieby Hembygdsförening. Coniferous forest around the meadow. Håkan Lindström and Bengt Petterson talked about *Gymadenia nigra* at a workshop in april 2016 in Bräcke, Jämtland with participation from the landowners organization LRF and from farmers with meadows and grazed areas in Jämtland and Västernorrland county. Bengt and Håkan said that *Gymnadenia* is unique, endemic for Jämtland county and some parts of Oppland and Trönderlag in Norway. Urban Gunnarsson and Anders Janols from Dalarna told us about fungi at meadows and about new methods to preserve old grasslands. Maria Danvid at the local office of Swedish organization for Nature Conservation will soon publish a report from the workshop at www.naturskyddsforeningen.se/vasternorrland

Prairie calcaire avec l’orchidée *Nigritella nigra* et la fleur *Taraxacum crocodes.* Bien géré par Marieby Hembygdsförening. Forêt de conifères autour de la prairie

Group 4 Monday 29/8

Guides: Bengt Petterson, Lennart Vessberg.
Species lists: Karin Kellström.
Participants: Gunnel Avehag, Margareta Byström, Gunnar Hensel, Inga-Lill Häggberg, Olga Morazova, Machiel Noordeloos, Giampaolo Siminini, Tanya Svetasheva, Maj-Britt Såthe, Ulla Täglich.

Species list

112. *Entoloma caesiocinctum* (Ph, LE)
113. *Entoloma clandestinum* (Ph, LE)
114. *Stropharia inuncta* (Ph, LE)
Cortinarius diosmus, F, calcareous Picea forest, Tatyana Svetasheva, det Tor Erik Brandrud
Cystoderma amianthinum
Entoloma sericeum, F, Maj-Britt Såthe
Hygrocybe acutoconica
Hygrocybe ceracea, Tatyana Svetasheva
Hygrocybe conica
Hygrocybe insipida, F, wet meadow, Lennart Vessberg
Hygrocybe quieta
Hygrophorus erubescens, F, *Picea,* Ulla Täglich, conf Tor Erik Brandrud
Hypholoma capnoides
Inocybe cervicolor, u, *Picea*, Maj-Britt Såthe, UPS
Lactarius vietus

Nästmyran. Photo: Karin Källström

Olga Morozova and Lennart Vessberg in action at Storvålen. Photo: Karin Kellström

1446600 6991200

126 A Storvålen, Lockne sn, Jämtland, Natura 2000

Excursion guide page 145 & 160

Bengt Petterson use to guide fungi lovers to this popular locality during Borgsjö workshops! Fine meadow with *Nigritella nigra, Gentiana campestris var.campestris* (thousands), *Gentianella campestris var. islandica, Taraxacum crocodes* and also interesting fungi like *Arpinia fusispora, Entoloma ianthinum*. Earlier grazed, mossy coniferous forests at lime around the meadow or in the fascinating mossy calcareous forests at both side of highway E 45 with *Boletopsis leucomelanea, Catathelasma imperiale, Clavaria purpurea, Hygrophorus secretanii, Lactarius hysginoides, Russula aurantioflammans, R. postiana, R. vinososordida, Sarcodon martioflavus, Stagnicola perplexa* and *Tricholoma squarrulosum*. See list of some Cortinarius species found earlier in the excursion guide. Jan Vesterholt found 1997 *Hebeloma monticola* in forest near the meadow. *Holotypus for H. monticola* in UPS (also JV86-548, C) was collected by Siw Muskos 1986 in her homeforest at Ängomsåsen, Matfors in Medelpad. Morten Christensen found *Lactarius quieticolor* in limerich forest near the meadow at Storvålen. The literature wrongly claims that *L. quieticolor* occurs in acid forests. All findings of L. quieticolor in Medelpad, Ångermanland and Jämtland are from lime rich areas. According to Annemieke Verbeken there are no microscopical differences between *L. deliciosus* and *L. quieticolor* and *L. deliciosus* always grow on lime rich soil in northern Sweden.

Plateau humide avec *Nigritella nigra, Gentiana campestris var. campestris (milliers), Gentianella campestris var. islandica, Taraxacum crocodes.* Forêt de conifères autour de la prairie. Voir certaines des espèces in *Cortinarius* trouvées ici dans le guide d'excursion.

Belle prairie d'environ 10 ha pâturée par des chevaux et des moutons avec *Entoloma, Geoglossum, Hygrocybe.* Olga Morozova a bien apprécié Kullbodarna. En 1997 Mats Karström a trouvé *Trichoglossum* walteri dans le pré, détermination confirmée ensuite par Johan Nitare.

Inga Lill Häggberg and Giampaolo Simonini have corresponded about this white form of *Gentianella campestris var. campestris* at Storvålen. Photo: Karin Kellström

Group 4 Monday 29/8

Guides: Bengt Petterson, Lennart Vessberg.
Species list: Karin Kellström, Machiel Noordeloos, Olga Morozova, Tatyana Svetasheva.
Participants: Gunnel Avehag, Margareta Byström, Gunnar Hensel, Inga-Lill Häggberg, Olga Morazova, Machiel Noordeloos, Giampaolo Siminini, Tanya Svetasheva, Maj-Britt Såthe, Ulla Täglich.

Species list

Boletus edulis
Camarophyllopsis micacea, Olga Morozova
Cortinarius caninus, F, *Betula*, *Picea*, *Pinus*, Tatyana Svetasheva, det Tor Erik Brandrud
Cortinarius croceus coll., *C. silvae-norvegicae*? F, *Picea*, *Pinus*, Maj-Britt Såthe, det Tor Erik Brandrud
Cortinarius hinnuleus, F, *Betula*, *Picea*, Tatyana Svetasheva, det Tor Erik Brandrud
115. *Dermoloma pseudocuneifolium* (Ph, LE)
116. 121. *Entoloma turci* (Ph, LE, seq)
117. *Entoloma caesiocinctum* (Ph, LE, seq)
118. 119. *Entoloma poliopus var. parvisporum* (Ph, LE, seq)
120. *Camarophyllopsis micacea* (Ph, LE)
123. *Entoloma infula* (Ph, LE)
124. *Entoloma chloropolium* (Ph, LE, seq) col. Balint Dima
Clitocybe costata, Tatyana Svetasheva
Entoloma griseocyaneum, F, Olga Morozova
Entoloma infula, F, Olga Morozova
Entoloma lividocyanulum
Entoloma prunuloides, Lennart Vessberg
Entoloma sericellum
Entoloma sericeum, F, Tatyana Svetasheva, conf Olga Morozova
Entoloma turci, u, Lennart Vessberg, det Machiel Noordeloos, UPS
Hebeloma circinans, Giampaolo Simonini & Tatyana Svetasheva, conf Tor Erik Brandrud
Hebeloma theobrominum, F, *Picea*, *Pinus*, Tatyana Svetasheva, conf Tor Erik Brandrud
Hygrocybe ceracea

Entoloma griseocyaneum. Painting by Tanja Böhning

Hygrocybe coccinea, F, Tatyana Svetasheva
Hygrocybe conica
Hygrocybe fornicata, F, Lennart Vessberg
Hygrocybe insipida
Hygrocybe irrigata (= unguinosa), F, Gunnel Avehag
Hygrocybe nitrata
Hygrocybe psittacina, F, Tatyana Svetasheva
Hygrocybe pratensis, F, Gunnel Avehag, *Hygrocybe quieta*, F, Lennart Vessberg
Hygrocybe reidii
Hygrocybe virginea, F, Lennart Vessberg
Hypomyces luteovirens, F, on Russula sp, Ulla Täglich
Kuehneromyces mutabilis
Lactarius deterrimus
Lactarius glyciosmus
Lactarius rufus
Lactarius scrobiculatus
Stropharia coronilla
Tricholoma olivaceotinctum, F, *Picea*, Ulla Täglich
Xerocomus ferrugineus,Karin Kellström

Livliga diskussioner om Cortinariusfynd.
Foto: Hjördis Lundmark

"Entoloma judithae", maintenant *E.araenosum f. robustum.* Photographie: Siw Muskos

Entoloma group in western Medelpad 30/8 – 1/9 2016

Guide: Lennart Vessberg

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44 Granboda, Judith Jonssons courtyard (gårdstun), Borgsjö sn, Mpd

Excursion guide page 44-45

Old grassland (meadow) around the houses at an old farm.

Machiel Noordeloos found here 31/8 1993 a form of *Entoloma araneosum* with green stipe who received the provisional name "*Entoloma judithae*" (today *E. araenosum f. robustum*) after the name of the happy peasant woman who owned the farm. Birgitta Wasstorp has found *Cortinarius alboglobosus* with *Betula* at the old grassland, confirmed by Håkan Lindström. Olle Persson collected in 1985 *Lactarius glyciosmus, L. necator, L. spinosulus and L. torminosus* in the same habitat. Among *Russula* findings at Judiths old lawns: *R. aeruginea, R. depallens, R. globispora group (Ruotsalainen), R. gracillima, R lutea and R. nana.* Judith died many years ago but the present owners are also interested in preserving the beautiful farm.

Vieille prairie dans une ferme. Machiel Noordeloos trouvé ici 31/8 1993 une forme de *Entoloma araneosum* avec pieds vert qui reçu le nom provisoire "*Entoloma judithae*" (maintnant *E.araenosum f. robustum*) après le nom de la femme heureuse paysan qui possédait la ferme. Aussi *Cortinarius alboglobosus* avec *Betula* sur la prairie.

Species list

136. *Gliophorus laetus* (Ph, LE)
Hygrocybe conica
Hygrocybe psittacina
Hygrocybe virginea
Suillus granulatus

Trolls as haymakers along the river Indalsälven, Medelpad. Painting by Rolf Lidberg

42 Råabäcken, Borgsjö sn, Medelpad

Excursion guide page 55

Entoloma prunuloides sensu lato

Comment

This wet calcareous "drivein meadow" along highway E 14 is a botanical hot spot in Medelpad with *Primula farinosa, Sesleria uliginosa* and also alpine species like *Saussurea alpina*. In road ditches also the orchids *Dactylorrhiza incarnata var. cruenta* and *Malaxis monophyllos*. Also interesting meadow fungi like *Hygrocybe acutoconica var. konradii* (Eef Arnolds and Erik Rald 1987)

Tälje, Borgsjö sn, Medelpad 30/8 2016

Notes by Lennart Vessberg at old countyyard (gårdstun in Swedish) with long grass (summer place for the owners) *Hygrocybe aurantiosplendens*

Comment

Eef Arnolds, Johan Nitare and others collected in 1987 *Hygrocybe acutoconica, H. aurationsplendens* and *Dermoloma josserandii* at this courtyyard. Last autumn 2017 Bengt Larsson, Håkan Sundin, Jan-Olof Tedebrand and Lennart Vessberg revisited this place, now just summer cottage and found Hygrocybe *acutoconica, H. aurantionsplendens* and seven other *Hygrocybe species*. Lennart also found a brown earth tongue, *Entoloma prunuloides* and a *Camarophyllopsis species* without strong smell. The moss researcher Henrik Weibull found 2017 *Hygrocybe aurantiosplendens*

Microglossum atropurpureum at old meadow in Jämtland. Photo: Olga Morozova

and other meadow fungi at another courtyard in Ånge, near Roggån, Torp parish. Owners of old courtyards should be informed about high diversity of meadow plants and fungi and also about not spreading nitrogen!

52 Granbodåsen, nature reserve, Natura 2000, Borgsjö sn, Medelpad

Excursion guide page 65-66

30/8 2016

Notes by the guide Lennart Vessberg:
Cortinariuis triumphans
161. *Entoloma atrocaeruleum* (Ph, LE, seq) col. M. Noordeloos

Species list

Entoloma griseocyaneum
Entoloma infula
Entoloma sarcitulum
Entoloma sericellum
Entoloma sericeum
Hygrocybe aurantiosplendens
Hygrocybe chlorophana
Hygrocybe coccinea
Hygobyce conica
Hygrocybe pratensis
Hygrocybe punicea
Hygrocybe reidii
Hygrocybe turunda

Entoloma incanum at Tysjöarna nature reserve. Photo: Olga Morozova

Kullens fäbod

Kullens fäbod ägs av Mats Olsson och Margita Sjöberg I byn Boltjärn. De har gjort en kulturhistorisk insats genom att restaurera den gamla fäbodmarken som idag är pampigaste ännu levande fäboden i Medelpad. Under botaniska Borgsjöveckor brukar vi alltid ta våra besökare från sydligare nejder i Europa hit. De blir imponerade av den vackra ängen och av den storslagna utsikten.

Hösten 2017 var bästa svampåret i Jämtland och Medelpad sedan 1995. Ängarna lyste i regnbågens alla färger. Hjördis Lundmark och andra rapporterade om gårdstun vid torp och gamla gårdar fulla med tjusiga ängssvampar. Facebook-gruppen ”Ängssvampar” blev populär. Många botanister lärde sig de knepigare ängssvamparna. Håkan Sundin och Lennart Vessberg började tillsammans mikroskopera och sätta namn på jordtungor från havsstränder (Geoglossum arenarium), mossiga körvägar på nedlagt skjutfält (Geoglossum fallax), myrstråk (Geoglossum glabrum), bergiga alnögångar med ren kalksten (Geoglossum hirusutum) och andra naturtyper nära havet i Timrå.

Under svamptoppen i september 2017 besöktes Kullbodarna i Borgsjö av Bengt Larsson, Håkan Sundin, Jan-Olof Tedebrand, Lennart Vessberg och Margita Sjöberg. Vilken show! De steniga ängsbackarna var som en färgglad tavla med massor av röda och gula och vita och svarta ängssvampar! Margita tände skön, värmande brasa i en av fäbodstugorna där vi lugnade ner oss efter de starka upplevelserna ute på ängsbackarna. Vi fikade och Margita berättade för oss om livet här på Kullbodarna i gamla tider. Margita och Mats borde få pris för sin gärning att restaurera de gamla ängsbackarna vid Kullbodarna!

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53 Kullen, mountain pasture (äng), Borgsjö sn, Medelpad

Excursion guide page 66

Beautiful great meadow grazed by horses and sheeps with species in *Entoloma*, Geoglossum, Hygrocybe in colours of red and yellow and blue during the autumn.

Beautiful big meadow grazed by horses and sheep with many species of *Entoloma*, *Geoglossum*, and *Hygrocybe* s.l. in colours of red and yellow and blue during the autumn. Mats Olsson and Margita Sjöberg from Boltjärn own the meadow and has done a fantastic job with taking away trees and letting their sheep graze the slopes. Olga Morozova liked Kullbodarna very much. Machiel Noordeloos and others also visited Kullbodarna during the Borgsjö workshop in 1997 and found: *Entoloma ameides*, *E. corvinum*, *E. griseocyaneum*, *E. serrulatum*, *E. undatum*, *E. xanthochroum* and also *Geoglossum montanum*, *Trichoglossum hirsutum* and *T. walteri*. The grassland fungi seem to live in a certain kind of mycorrhiza together with vascular plants, a gigantic internet down in the soil at the mountain pasture! Grassland fungi in *Entoloma*, *Hygrocybe* s.l., *Geoglossum* and *Trichoglossum* are also found along mossy calcareous parts of the forest road among *Vicia sylvatica* and other herbs. Groups of *Clavaria rosea* occur also some years at roadsides near the meadow. South of the meadow and south of the road, Mats Karström found *Gomphus clavatus* in swampy area. Mats also collected *Multiclavula mucida* at a big aspen fallen over the forest creek.

Belle prairie d'environ 10 ha pâturée par des chevaux et des moutons avec *Entoloma, Geoglossum, Hygrocybe.* Olga Morozova a bien apprécié Kullbodarna. En 1997 Mats Karström a trouvé *Trichoglossum walteri* dans le pré, détermination confirmée ensuite par Johan Nitare.

Au sud de la prairie et de la route, Mats a trouvé cette même année *Gomphus clavatus* ainsi que *Multiclavula mucida* sur un grand *Populus tremula* tombé sur le ruisseau forestier. Le groupe de

Group 5, 30/8 2016

Guide: Lennart Vessberg.

Species lists: Olga Morozova, Lennart Vessberg.Participants: Jean-Marc Hügli, Josiane Bocherens Mingard, Gunilla Kärrfelt, Olga Morozova, Machiel Noordeloos Lennart Vessberg.

Olga Morozova, Photo: Karin Kellström

Species list meadow

Olga Morozova field number, photo, herbarium Leiden, sequenced by Balint Dima

125. Entoloma weholtii (Ph, LE, seq)
126. Entoloma asprellum (Ph, LE, seq)
127. 128. 130. 131. Entoloma anatinum (Ph, LE, seq)
129. Hygrocybe turunda (Ph, LE)
132. Entoloma clandestinum (Ph, LE, seq)
135. Entoloma mutabilipes (Ph, LE)
137. Entoloma undatum (Ph, LE)

Lennart Vessberg har funnit en intressant jordtunga.
Foto: Håkan Sundin

Entoloma sericatum. Photo: Olga Morozova

138. Entoloma serrulatum (Ph, LE)
139. Entoloma griseocyaneum (Ph, LE)
Bolbitius vitellinus
Clavulinopis luteoalba, F, Lennart Vessberg
Coprinus niveus, F, horse dung, Gunilla Kärrfelt
Entoloma anatinum
Entoloma caesiocinctum
Entoloma griseocyanylum
Entoloma infula var. chlorinosum
Entoloma infula var. infula
Entoloma prunuloides, F, Lennart Vessberg
Entoloma scabrosum
Entoloma sericeum
Entoloma serrulatum
Entoloma undatum
Hygrocybe irrigata (=unguinosa)
Hygrocybe ceracea
Hygrocybe coccinea
Hygrocybe conica
Hygrocybe irrigata (Ph)
Hygrocybe persistens
Hygrocybe pratensis
Hygrocybe psittacina, F, Josiane Bocherens Mingard
Hygrocybe quieta
Hygrocybe turunda, F, Lennart Vessberg
Hygrocybe virginea
Omphalina umbellifera, F, Gunilla Kärrfelt
Pholiota lundbergii, u, vägren, Gunilla Kärrfelt, det Machiel Noordeloos, (UPS)
Polyporus melanopus, F, Lennart Vessberg
Stropharia inuncta
Trichoglossum hirsutum, F, Lennart Vessberg
Species list forest
Chalciporus piperatus, F, Gunilla Kärrfelt
Chroogomphus rutilus
Collybia butyracea
Cortinarius crassus
Cortinarius sanguineus
Gomphidius glutinosus
Hydnum repandum
Hygrophorus piceae
Hypholoma capnoides
Kuhneromyces mutabilis
Laccaria laccata
Lactarius deterrimus
Lactarius glyciosmus
Lactarius torminosus
Lactarius trivialis
Leccinum variicolor, F, *Betula*, *Picea*, Gunilla Kärrfelt
Lycoperdon perlatum
Russula queletii
Stropharia hornemannii
Suillus luteus
Suillus variegatus
Tricholoma stiparophyllym, F, *Betula*, *Picea*, Josiane Bocherens Mingard

Jean-Marc Hügli and Josiane Bocherens Mingard at Kullbodarna. Photo: Lennart Vessberg

Bengt Larsson och Margita Sjöberg. Foto: Håkan Sundin

Clavariadelphus truncatus, typical in fine calcareous Picea forests. Photo: Tatyana Svetasheva

Herbarium Collections UPS JEC Borgsjö 2016

Stefan Ekman is senior curator of the botanical collections at the museum of Evolution in Uppsala (UPS) while Åsa Kruys is managing the fungal collection. Åsa also makes fungal research, mostly on Ascomycota. The museum of Evolution in Uppsala (UPS) has more than 360 000 collections of fungi, many of them will be digitalized in the coming years. Siw Muskos has contributed with most fungal collections from the landscape of Medelpad. Stefan Ekman describes methods for preserving collections at UPS in mail to Håkan Lindström 14 december 2015: "Vi sätter en ära i att ta hand om nyinkomna accessioner snabbt. Inget material blir liggande i högar, lådor eller skåp. Material som kommer in fryses först i en vecka för att ta knäcken på eventuella skadedjur. Därefter packas det upp och registeras som en accession *(alltså vad det är för material i grova drag och vem som donerat det och när).* Därefter registeras kollekterna individuellt i vår databas, och blir momentant tillgängliga på nätet (med lite fördröjning även GBIF och Virtuella herbariet). Materialet kureras så och sorteras in i herbariet. Hur lång tid processen tar beror lite på hur mycket det är, hur bra etikettunderlaget är och, när det gäller svampar, huruvida de behöver mjukas och pressas. I runda slängar brukar det ta ungefär en månad eller en och en halv från materialet anländer tills det är kurerat och färdigt. Snabbast går det nog med lavar och mossor, lite längre tid för svampar och alger;längst tid tar det med kärlväxter som måste fästas upp på ark.Vi tar alltså gärna emot nytt material och du kan vara helt säker på att materialet blir omhändertaget, registrerat och inordnat." Medelpads Botaniska Förening och Sundsvalls Mykologiska Sällskap gör i februari 2018 studiebesök hos Stefan och Åsa vid UPS-herbariet.

Clitocybe diatreta

Rankleven, naturreservat, Mpd
Oligotrophic *Picea* dominated forest in deep moss (Hyl. spl)
31/8 2016
Egil & Katriina Bendiksen

Cortinarius aureopulverulentus

Kullbäcken-Markbäcken naturreservat, Borgsjö sn, Mpd
Picea, ant hill
29/8 2016
Magnus Andersson

Cortinarius badiovinaceus

Dysjöberget, naturreservat, Borgsjö sn, Mpd
30/8 2016
Michael Krikorev
Det Ilkka Kytövuori

Cortinarius caesioarmeniacus

Floberget, naturreservat, Borgsjö sn, Mpd
Picea, *Pinus*
29/8 2016
Michael Krikorev
Det Ilkka Kytövuori

Cortinarius crassus

Kullbäcken-Markbäcken naturreservat, Borgsjö sn, Mpd
Oligotrphic *Picea* forest
29/8 2016
Jan-Olof Tedebrand
Det Tor Erik Brandrud

Cortinarius fuscovelatus

Kullbäcken-Markbäcken naturreservat, Borgsjö sn, Mpd
29/8 2016
Daniel Dvorak, det Ilkka Kytövuori, sequenced Balint Dima
Blackish brown velum, new to Sweden

Cortinarius glandicolor

Julåsen, Borgsjö sn, Mpd
Picea
31/8 2016
Doris Laber
Det Ilkka Kytövuori

Cortinarius lepidopus

Rankleven, naturreservat (28), Mpd
31/8 2016
Magnus Andersson
Det Egil Bendiksen

Cortinarius lepidopus

Dysjöberget, naturreservat, Borgsjö sn, Mpd
Betula, *Picea*, *Pinus*
30/8 2016
Michael Krikorev
Det Håkan Lindstöm
Cortinarius melitosarx
Dysjöberget, naturreservat, Borgsjö sn, Mpd
Betula, *Picea*, *Pinus*
30/8 2016
Michael Krikorev
Det Karl Soop

Cortinarius melitosarx

Lombäcksheden (49), Borgsjö sn, Mpd
Pinus
30/8 2016
Xavier Carteret
Det Karl Soop

Cortinarius metarius (= barbarorum)

Andersön (118), naturreservat, Jmt
Picea, *Pinus*, low herb forest
30/8 2016
Katriina Bendiksen
Det Tor Erik Brandrud

Cortinarius odhinnii

Svarttjärn, Jämtgaveln
Pinus
31/8 2016
Håkan Lindström

Cortinarius roseoarmillatus

Rankleven naturreservat (28)
Betula, *Picea*, near the path
31/8 2016
Ilkka Kytövuori, Katriina Bendiksen
Det Ilkka Kytövuori

Cortinarius saturninus

Rankleven (28), naturreservat, Borgsjö sn, Mpd
31/8 2016
J.A. Cadinanos & J. Ballara
Det André Bidaud, Xavier Carteret

Cortinarius tubarius

Jämtgaveln, Värsjön, naturreservat, Mpd
Pinus
31/8
Håkan Lindström

Cortinarius turmalis

Kullbäcken-Markbäcken naturreservat, Borgsjö sn, Mpd
Oligotrophic *Picea* forest
29/8 2016
Jan-Olof Tedebrand
Det Tor Erik Brandrud

Cortinarius uliginosus

Borgsjöbyn, Borgsjö sn, Mpd
Kalkrik lövskog, Salix, vid Borgsjön (3)
29/8 2016
Eva Hauke, Otto Kowalenko

Cortinarius violaceorubens

Andersön (118), naturreservat, Jmt
Picea, *Pinus*.
30/8 2016
Egil Bendiksen det Ilkka Kytövuori

Entoloma majaloides

Svarttjärn, Jämtgaveln, Borgsjö sn, Mpd
Pinus
31/8 2016
Margareta Byström
Det Olga Morozova

Entoloma politum

Södra Sillre (28 B), Borgsjö sn, Mpd
Alnus, Salix
1/9 2016
Olga Morozova, Tatyana Svetasheva
Det Machiel Noordeloos

Entoloma turci
Storvålen (126 A), Lockne sn, Jmt
Äng
29/8 2016
Lennart Vessberg
Det Machiel Noordeloos

Gomphus clavatus
Kullbäcken-Markbäcken (51 B), naturreserat, Borgsjö sn, Mpd
Picea
29/8 2016
Magnus Andersson

Gyromitra infula
Mpd, Torp sn, Sågåstjärn (63 B), Mpd
30/8 2016
Fabrizio Fabrizi-Mauro Faraoni
Picea, *Pinus*

Hebeloma syrjense
Julåsen, skogen vid ängarna (22), Borgsjö sn, Mpd
Picea
31/8 2016
Karl Soop

Helvella lacunosa
Granbodåsen, naturreservat (52), Borgsjö sn, Mpd
Picea, vid stig
30/8 2016
Jan-Olof Tedebrand

Hydnellum concrescens
Kullbäcken-Markbäcken, naturreservat, Mpd
29/8 2016
Picea
Magnus Andersson

Hygrocybe aurantiosplendens
Tälje, Borgsjö sn, Mpd
Äng vid gårdstun
Sep 2016
Lennart Vessberg

Hygrophorus korhonenii
Sågåstjärn (63 B), Torp sn, Mpd
Picea, *Pinus*
30/8 2016
Håkan Lindström
Inocybe cervicolor
Fugelsta (121), skogen vid brunkullaängen, Jmt
Picea
29/8 2016
Maj-Britt Såthe

Lactarius badiosanguineus
Orråsberget N (41B), Borgsjö sn, Mpd
Betula, *Picea*, Salix
1/9 2016
Birgitta Wasstorp

Lactarius lilacinus
Orråsberget N, Husmyrbäcken, Borgsjö sn, Mpd
Alnus, *Betula*, *Picea*
1/9 2016
Birgitta Wasstorp

Lactarius olivinus
Orråsberget N (41 B), Borgsjö sn, Mpd
Betula, *Picea*, *Pinus*, Salix
1/9 2016
Birgitta Wasstorp

Lactarius resimus
Jämtgaveln naturreservat, Borgsjö socken, Mpd
Betula, *Pinus*, moist depression near the road
1/9 2016
Egil Bendiksen

Leotia lubrica
Södra Sillre, Borgsjö sn, Medelpad
Alnus, *Betula*, Salix
1/9 2016
Tatyana Svetasheva

Pholiota lundbergii
Kullbodarna, Borgsjö socken, Mpd
Vägren
30/8 2016
Gunilla Kärrfelt
Det Machiel Noordeloos

Lactarius picinus
Picea
31/8 2016
Ulla Täglich

Ramaria eosanguinea
Jmt, Tunsved (133)
1/9 2016
Picea
Magnus Andersson, det Ilkka Kytövuori

Ramaria primulina
Svarttjärn, Jämtgaveln, Borgsjö sn, Mpd
Pinus
31/8 2016
Bengt Larsson, det + mikroskoperad, Katriina Bendiksen, Ilkka Kytöuvori

Sarcodon pseudoglaucopus in ed
Andersön (118 J), naturreservat, Jmt
Pinus, sandy, calcareous
30/8 2016
Magnus Andersson

Sowerbyella cf rhenana
Jämtgaveln, naturreservat (18 c)
Bränd skogsmark 2005, vägkant
2/9 2016
Mohan Rolf

Tricholoma dulciolens
Svarttjärn, Jämtgavelns naturreservat, Borgsjö, Mpd
Picea, *Pinus*
31/8 2016
Miroslav Beran, Daniel Dvorak
Conf Ilkka Kytövuori

Tricholoma olivaceotinctum
Mpd, Torp sn, Sågåstjärn (63 B)
Arturo Baglivo
30/8 2016
Picea

Tricholoma olivaceotinctum
Kullbäcken-Markbäcken, naturreservat, Borgsjö sn, Mpd
Picea
29/8 2016
Magnus Andersson

Tricholoma olivaceotinctum
Jmt, Andersön, naturreservat, Kronstugan
Picea, *Pinus*
30/8 2016
Tor Erik Brandrud

Photo: Olga Morozova

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 Alumn /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.

Hjördis Lundmark

Elin's summer project with her grandmother Hjördis

The art of dyeing yarn with mushrooms

Bilder: Torkel Edenborg

In rainbow colors are showing yarns that are colored with fungus

by Elin Lundmark Edenborg

During a summer holiday, Elin dyed wool with five different fungi.
She has mordanted yarn, weighed, measured, checked the PH and minuted all results.
Getting to transfer knowledge and experience to a granddaughter who has an open mind, creative and endurance, is an indescribable happiness. Elin asks questions that no adult has asked.
Her interest in mushrooms began early and I want to share my experience with her.
We had sunny days with occasional showers and beautiful rainbows over the lake Pannsjön.
For me this summer along with Elin started new thoughts and ideas.

Grandma Hjördis

Cortinarius sanguineus

BLODSPINDLING

Phaeolus schweinitzii

GROVTICKA

Boletopsis grisea

TALLGRÅTICKA

Thelephora palmata

BUSKSVAMP

Hapalopilus rutilans

LYSTICKA

CREATIVE JOY

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

Jeanette Södermark, President of Sundsvall Mycological Society got mushroom coloured scarf at her 40th birthday. Photo: Hans Andersson

Inga-Lill shows her mushroom-dyed silk scarf. Photo: Tatyana Svetasheva

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

Svampfärgade konstverk av Hjördis Lundmark, Hans Andersson, Siv Norberg, Anita Sjöberg.
Foto: Hans Andersson

Bengt Petterson, our guide to fungus hot spots in Jämtland. Photo: Tatyana Svetasheva

Hypocrea leucopus, typical in calcareous Picea forests in Borgsjö and Jämtland. Photo: Tatyana Svetasheva

Bilagor/Attachments

– Fungi and Nature Conservation in Sweden –

Our findings of Red Listed fungi

Red listing is a global system developed by the International Environmental Protection Union (IUCN).

Findings of many highly redlisted species have no legal input but point out valuable nature types. Today many countries all over the world, like China, make Red Lists of threathened species. There is also work with global redlists. Many species in tropical areas disapperar before they are found and described. In Sweden there are both positive and negative trends. Sulphur in the air has diminished. Lichens and mosses are coming back in city areas and has also become more fertile. But still valuable old forests are cut away and old meadows and pastures are disappearing. At the positive side is also strongly growing interest and knowledge about species in swedish nature, many persons report today species findings to www.artportalen.se. At Facebook fungi lovers today have contact with each other for exemple at Swedish "Svampklapp" with already about 33 000 visitors. Special groups have just started at Facebook about for example "Ängssvampar" (fungi at meadows) and "Naturvårds- arter" (species and nature conservation) and "Åtgärdsprogram för hotade arter" (action plans for threathened species).

At the Swedish red list for fungi about a third of the species are ectomycorrhizal fungi. Every fifth year a new Swedish red list is published at a popular conference about Swedish nature conservation "Flora and Fauna" in Uppsala at Ultuna, Swedish Agriculture University (SLU). Next Swedish red list will be published in springtime 2020. Finland and Norway also publish new red lists in 2020. There will be contacts between the three countries and also with the Baltic countries before the redlists in 2020. Coordinator in Norway is Tor Erik Brandrud and in Finland is Tea von Bonsdorff key person in the redlisting process. Finland have also a new database for species: www.lajvi.fi

Our knowledge of species in Swedish nature types varies. The 16 fungi weeks in Borgsjö from 1982-2016 have improved our knowledge about many fungus groups in the Swedish part of western taiga belt. But still we know less about species in northern Sweden and in alpine areas than about nature and species in southern Sweden. Changes in vegetation is also higher in alpine areas because of warmer climate than southwards. Snowbeds and glaciers are slowly smelting away and the area of alpine heath will perhaps diminish in the future. At the Swedish mycological meeting in western Härjedalen 2006 we studied fungi at fascinating lime heaths with *Dryas octopetala* and also in alpine birch forests, see report at www.myko.se link "Publikationer" and "Mykologiveckan 2006".

Redlisting in Sweden is based on many sources like personal knowledge among comittee members, facts about distribution and ecology at Artportalen, www.artportalen.se and also sources like NILS, a Swedish program for landscape analysis: www.slu.se/centrumbildningar-och-projekt/nils and Riksskogstaxeringen: www.slu.se/centrumbildningar-och-projekt/riksskogstaxeringen

Here follows list of our findings of redlisted fungi at the swedish redlist 2015. Number refers to locality number in excursion guide.

Starkt hotad/ Endaged	**EN**	
Sarcodon fuligineoviolaceus	EN	Andersön 118
Sårbar/ Vulnerable	**VU**	
Albatrellus subrubescens	VU	Andersön 188
Boletopsis grisea	VU	Jämtgaveln 18 D
Boletopsis leucomelanea	VU	Sidsjö 113, Svarttjärn 18, Tunsved 133
Cortinarius aureofulvus	VU	Tysjöarna 130
Cortinarius caesiocinctum	VU	Bodåsen 51, Tunsved 133, Tysjöarna 130
Cortinarius corrosus	VU	Lombäcken, N Europavägen 50
Cortinarius cupreorufus	VU	Andersön 118, Bodtjärnsbäcken 113 B
Cortinarius fuscoperonatus	VU	Andersön 118, Tunsved 133, Tysjöarna 130
Cortinarius mussivus	VU	Andersön 118
Cortinarius pini	VU	Andersön 118
Cortinarius psedoglaucopus	VU	Lombäcken N Europavägen 50, Tysjöarna 130
Dermoloma pseudocuneifolium	VU	Storvålen 126
Gomphus clavatus	VU	Kullbodarna-Markbäcken 51 B
Hydnellum auratile	VU	Andersön 118, Tunsved 133
Hygrophorus subviscifer	VU	Tysjöarna 130
Mycena oregonensis	VU	Tubbobäcken
Russula olivina	VU	Tunsved 133
Russula olivobrunnea	VU	Tunsved 133
Sarcodon fennicus	VU	Svarttjärn 18, Tysjöarna 130
Tricholoma dulciolens	VU	Svarttjärn 18
Tricholoma apium	VU	Andersön 118
Tricholoma olivaceotinctum	VU	Andersön 118, Kullbodarna-Markbäcken 51 B, Storvålen 126, Sågåstjärn 63 B
Nära hotad/ Near Threatened	**NT**	
Artomyces pyxidatus	NT	Rankleven 28
Bankera fuligineoalba	NT	Värsjön 17
Bankera violascens	NT	Andersön 118, Kullbodarna-Markbäcken 51 B
Clavariadelphus truncatus	NT	Andersön 118, Rankleven 28, Tunsved 133, Tysjöarna 130
Cortinarius aureofulvus	NT	Andersön 118
Cortinarius aureopulverulentus	NT	Ensillrebodarna 46, Kullbodarna-Markbäcken 51 B, Tunsved 133
Cortinarius caesiostramineus	NT	Dysjöberget, page 212 in excursion guide
Cortinarius metarius (=barbarorum)	NT	Andersön 118, Rankleven 28, Tubbobäcken 57, Tysjöarna 130
Cortinarius pinophilus	NT	Lombäcksheden 49, Svarttjärn 18
Cortinarius phrygianus	NT	Lombäcksheden 49, Sidsjö 113
Cortinarius sulfurinus	NT	Lombäcken N Europavägen 50
Entoloma griseocyaneum	NT	Granbodåsen 52, Kullens fäbod 53

Entoloma griseocyaneum. Photo: Olga Morozova

Nära hotad/ Near Threatened	**NT**	
Entoloma prunuloides	NT	Råabäcken 42, Storvålen 126
Fomitopsis rosea	NT	Andersön 118, Floberget page 213 in excursion guide, Rankleven 28, Tubbobäcken 57
Hericium coralloides	NT	Rankleven 28
Hydnellum aurantiacum	NT	Andersön 118, Lombäcksheden 49, Svarttjärn 18, Tunsved 133
Hydnellum caeruleum	NT	Andersön 118, Jämtgaveln 18 C, Lombäcksheden 49, Tunsved 133
Hydnelum geogenium	NT	Lombäcksheden 49
Hydnellum suaveolens	NT	Svarttjärn 18
Hygrocybe aurantiosplendens	NT	Granbodåsen 52, Kullens fäbod 53
Hygrophorus karstenii	NT	Andersön 118, Bodtjärnsbäcken, 113 B, Dysjöberget page 212 in excursion guide, Kullbäcken-Markbäcken 51 B, Lombäcksheden 49, Rankleven 28, Tubbobäcken 57, Tysjöarna 130
Hypocrea nybergiana	NT	Floberget page 212 in excursion guide, Tunsved 133, Tysjöarna 130
Lactarius olivinus	NT	Orråsberget N, Husmyrbäcken 41, Sidsjö 113
Lepista densifolia	NT	Tunsved 133
Phellinus chrysoloma	NT	Julåsen 22
Phellinus ferrugineofuscus	NT	Andersön 118, Granbodåsen 52
Phellinus nigrolimitatus	NT	Granbodåsen 52
Phellinus populicola	NT	Dysjöberget, page 212 in excursion guide, Floberget page 213 in excursion guide
Phellodon niger	NT	Andersön 118
Sarcodon scabrosus	NT	Dysöberget page 212 excursion guide, Jämtgaveln 18 B, Lombäcksheden 49
Sarcodon squamosus	NT	Andersön 118

Hebeloma theobrominum. Photo: Tatyana Svetasheva

– Fungi and Nature Conservation in Sweden –

Per Simonsson:

Red Lists have influenced Nature Conservation in Sweden

Per Simonsson was biologist at the big forest company SCA 1992-2017. After criticism from Malin Sahlin at The Swedish Society for Nature Conservation and others SCA have today in 2017 employed 7 biologists.

Per Simonsson defended in november 2016 at Umeå university his academic paper about the Swedish debate the last 50 years concerning nature conservation in forests. Anders Dahlberg was one of the opponents. One of Pers conclusions was that red lists have been important for saving valuable nature in Sweden. Fifty years ago vaste clear cut areas, killing broadleaved trees with hormoslyr and ditching was common in northern Sweden. Today the situation is better for nature conservaton but many more old, speciesrich forests must be saved so national and international environmental goals will be acchivied. In the last years the Swedish government have raised the amounts for nature protection and also for culture- and nature tourism and for rural development. An action plan for swedish forests (nationellt skogsprogram) have been discussed in broad networks and shall soon be decided by the swedish government.

Tricholoma ilkkae. Vibyberget, Gästrikland. First finding in northern Sweden (Norrland) of this *Tricholoma* species, named in honour of Ikka Kytövuori. Photo: Magnus Andersson

– Fungi and Nature Conservation in Sweden –

Magnus Andersson tells us about

Soil Mushrooms in Old Calcareous Coniferous Forest

My name is Magnus Andersson and I usually attend the mycological meetings in Borgsjö to learn more about rare and saveworth mushrooms. The JEC meeting in 2016 gave me new knowledge and also contact with many pleasant European mycologists.

Here in Sweden we have biologists who invent valuable nature of different form for future protection and care. In my work as a biologist, I often assess the natural value of beautiful old forests. Among the many exciting assignments, some seem more fun than others. I get warm in my heart when I think of the amazing lime coniferous forests that I have visited in the counties of Jämtland and Gävleborg. The assignments have been to find and document the very special soil fungus flora that is left in the old and lime-affected coniferous forests that survived from calamification. Even though they are very special forest environments, they may differ in appearance. These include long-drawn, herbrich stretches of submerged water, slopes with light-woven green-stone blocks, ravines with calcium-rich sandy soils or herbaceous streams. As a rule, these forests have been grazed by cattles earlier, which contributed to the rich funga. Most often there are elements of vascular plants that demands lime, but not always. The inventories resulted in two reports, see the links below! There you can read about the different areas, what was found and look at pictures of some interesting mushrooms. Some of the most interesting finds in Gävleborg were *Tricholoma ilkkae, Tricholoma roseoacerbum, Ramaria lutea* and *Phellodon secretus*. In Jämtland I found for example *Tricholoma dulciolens* and *Hydnellum mirabile* that gave me moments of happiness. In both counties, the rare *Ramaria fennica, Cortinarius pseudoglaucopus C. dalecarlicus* were found. Some of the finest chalk coniferous forests in Jämtland were Rödde, Loke, Lokmarken and NV Alkvattnet while Hillesjön, Vibyberget, west of Gröntjärn belong to the finest forests in the county of Gävleborg.

Champignons et conservation de la nature

Magnus Andersson fait línventaire d´anciennes forêt de coniféres calcaires

Je m'appelle Magnus Andersson et je participe habituellement aux semaines d'études mycologiques de Borgsjö pour en apprendre davantage sur les espèces rares et menacées. La tenue des Journées européennes du Cortinaire à Borgsjö en 2016 permit d'acquérir de nouvelles connaissances et fut l'occasion de rencontrer de nombreux mycologues européens de fréquentation agréable.

Ici, en Suède, nous avons inventaire des biologistes du visage naturel précieux diverses formes de protection et gestion. Dans mon travail en tant que biologiste, j'évalue souvent la valeur naturelle des belles forêts anciennes. Parmi les nombreuses missions passionnantes se démarquer comme plaisir spécial. Je réchauffer le cœur quand je pense aux magnifiques forêts de pins de la chaux que j'ai appris à visiter en Jämtland et Hälsingland et Gästrikland (the co1unty of Gävleborg).

Les missions ont été de trouver et documenter la flore très particulières de champignons du sol qui restent seulement dans les anciens forêts de conifères chaux touchés qui se sont échappées de la coupe à blanc. Bien qu'il soit sur les habitats forestiers très spéciaux, ils diffèrent beaucoup en apparence. Il peut impliquer long, chaîne riche en herbe avec la fuite soudaine de l'eau, les pentes, facilement patinés blocs de pierre verte, des ravins avec des sols sableux calcaires ou des bords de cours d'eau riche en herbes. En règle générale, ces forêts ont été exploités dans le passé, ce qui a contribué à la funga riche. En général, il y a des éléments de plantes vasculaires ont besoin de chaux, mais pas toujours.

Les inventaires ont donné lieu à deux rapports, voir les liens ci-dessous! Là, vous pouvez lire sur les différents domaines, ce qui a été trouvé et regarder beaucoup de photos de délicieux champignons. Certains des résultats intéressants dans Gavleborg était Tricholoma ilkkae, T. roseoacerbum, Ramaria lutea et Phellodon secretus. En Jämtland Tricholoma dulciolens et Hydnellum mirabile qui a enchanté. Dans les deux comtés, j ái trouvé Ramaria fennica, Cortinarius pseudoglaucopus et C. dalecarlicus. Certaines des plus belles zones ont été Rödde, Loke, Lokmarken et

Cortinarius pseudoglaucopus, NV Alkvattnet, Jämtland. Photo: Magnus Andersson

NV Alkvattnet Jämtland. Hillesjön, Vibyberget, à l'ouest de Gröntjärn sont parmi les meilleurs Gavleborg http: //www.lansstyrelsen.se/Gavleborg/Sv/publikationer/2017/Sidor/inventering_av_marksvamp_i_gavleborgs_kalkbarrskogar_och_sandtallskogar_2016.aspx

http: //www.lansstyrelsen.se/Jamtland/Sv/publikationer/2015/Pages/marksvampar-i-kalkbarrskog.aspx

Karl Soop and Jacques Melot smoking cigar after successful Cortinarius hunting. Photo: Hjördis Lundmark

KARL SOOP

Les cousins au bout du monde

1. En étudiant les cortinaires de l'hémisphère sud on se rend vite compte que beaucoup rappellent certains cortinaires de chez nous, sans être exactement pareils. Des analyses moléculaires confirment souvent notre soupçon qu'ils appartiennent à un groupe commun, tandis que dans d'autres cas, leur ressemblance s'avère illusoire: les cas de convergence. Par exemple, dans la section *Purpurascentes* en Europe, il n'est pas difficile d'apprécier que *C. porphyropus et C. subporphyropus* sont très affines: ils sont en effet deux espèces soeurs dans cette section. De même on peut spéculer que *C. australis*, récolté en Australie et en Nouvelle-Zélande, y appartient aussi, ce qui est également confirmé par les études moléculaires. Un peu éloigné des espèces susdites, on pourrait qualifier *C. australis* d'espèce cousine. Nous allons maintenant voir quelques cousins intéressants à l'autre bout du monde.

2. Les régions dans le monde où l'on a étudié récemment les cortinaires, sont surtout, l'Europe, le nord-ouest de l'Amérique et le Pacifique Sud (y compris la Patagonie en Amérique du Sud). Surtout les régions où le climat est tempéré et favorable à nos champignons. Évidemment on a aussi entrepris des études plus modestes dans d'autres zones, telles la Chine, l'Amérique Centrale, et les Indes, mais très peu a été accompli en Afrique.

3. Dans le Journal des JEC en 2011, j'ai abordé avec Gasparini le recouvrement taxinomique entre les deux l'hémisphères. On y a considéré les différents rangs de Cortinarius depuis l'espèce jusqu'au genre, et on a conclu que même si aucune espèce ne pousse naturellement dans les deux, le rang de section et le premier où il existe un certain recouvrement, comme dans l'exemple de *Purpurascentes.*

On parle alors de sections bihémisphériques, tandis que dans d'autres cas les sections sont endémiques pour l'un ou l'autre hémisphère. Nous allons maintenant examiner quelques petites sections bihémisphériques, et on y décèlera quelques surprises. Le sujet fait partie d'un projet plus étendu où nous traitons la phylogénie de toutes les sections de Cortinarius sur un niveau global. Plusieurs membres du projet sont ici présents.

4. Il fut une surprise quand, en 2006 (projet Garnica, finalement publié en 2016), on découvrit que C. turmalis, un Phlegmacium bien connu en Europe, possède un cousin, *C. picoides,* en Nouvelle-Zélande. Jusqu'ici aucune autre espèce ne s'est révélée membre de la section *Turmales.*

5. La situation est analogue pour les cousins *C. crassus — C. eutactus*. Le premier a toujours été une entité énigmatique, ni figue ni raisin, sans position établie dans la taxinomie traditionnelle. Tout comme lui, son cousin néo-zélandais possède des cheilocystides spectaculaires et une chair molle,.

6. Encore une section analogue: le couple *C. rubicundulus — C. subgemmeus*. Ces cousins ont une chair jaunissante et des cheilos en commun, tout en étant liés avec les Crassi. Ce lien a d'ailleurs été soupçonné depuis longtemps, et s'avère constant malgré un faible support.

7-8. La section Elastici remonte à Fries, ainsi que son type, *C. papulosus*. Cette petite section renferme pourtant deux cousins austraux: *C. artosus* de Nouvelle-Zélande et *C. coelopus* de Tasmanie.

9. Cette curieuse section fut aussi une surprise. Je ne connais pas *C. lustrabilis*, supposé parenté avec *C. vibratilis*, mais en réalité cousin d'une espèce inédite de Nouvelle-Zélande, de façon informelle appelée *C. badiohepaticus*, mais dont je n'ai pu trouver ni photo ni description. Par contre, la section *Vibratiles*, aussi bihémisphérique, est loin de *Lustrabiles*, qui est rangée dans une position basale.

10. Les Rozites sont caractérisés par leur anneau membraneux, homologue avec une cortine. Dans le Sud on en trouve une vingtaine, formant un ensemble polyphylétique, dont seulement quatre font partie de la section (anciennement genre) Rozites. Sur l'hémisphère nord la section renferme, outre le type, *C. caperatus* bien connu, deux espèces soeurs poussant en Asie centrale (le Sikkim) et en Nouvelle-Guinée.

11. Dans les analyses, *Telamonia* forme un énorme clade, d'où il faut exclure un certain nombre d'espèces. Alors que ce clade, Telamonia ss str., s'est avéré endémique pour l'hémisphère nord, les espèces exclues forment au moins cinq sections bihémisphériques. Deux des sections, *Obtusi et Læti*, sont assez grandes, mais trois sont petites, dont *Camphorati* que voici. *C. putorius* est nordaméricain*, C. dysodes* néo-zélandais, et *C. tasmacamphoratus* australien. Tous ces champignons puent comme le type, *C. camphoratus*, et présentent à peu près les mêmes teintes.

12. Il est important de se rappeler que ces cinq sections sont télamonioïdes, certes, mais sontclairement séparées des *Telamonia* ss str., autrement dit, un cas de convergence. Les Illumini renferment à part *C. illuminus* et *C. badiovinaceus (ss auct.)*, deux nouvelles espèces *C. microglobisporus* méditerranéen, et *C. cypripedii* néo-zélandais. Elles sont toutes caractérisées par des teintes vives, rougeâtres, et par leurs spores subglobuleuses.

13. *C. renidens* est bien connu en Europe et au nord de l'Amérique pour son manque de voile et de cortine. Il forme une petite section, *Renidentes*, avec *C. parahumilis*, son cousin sud-américain, qui, entre parenthèses, est bien fourni de voile.

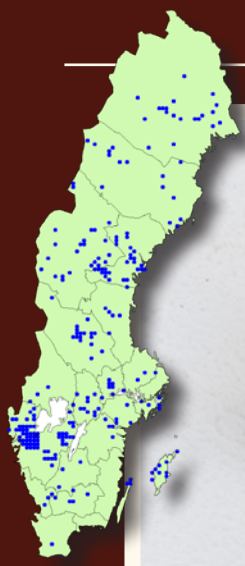
14. Le dernier cliché donne des exemples de sections plus grandes que celles présentées avant. En particulier, le cas de Limonii est intéressant. Son centre de gravité se trouve dans l'hémisphère sud, où cette section est presque endémique pour la Nouvelle-Zélande. On peut aussi noter que le type boréal, *C. limonius*, n'a rien à voir avec *C. callisteus*, rangé dans une autre section, bien éloignée de la première.

Some Cortinarius species

Michael Krikorev at the Swedish Species Information Center (Artdatabanken) took wonderful photos during the JEC workshop in Borgsjö. Michael have also done maps from the database "Artportalen" of distribution in Sweden for some Cortinarius species.

Cortinarius badiovinaceus

Cortinarius barbaricus



Cortinarius biformis

Cortinarius bolaris

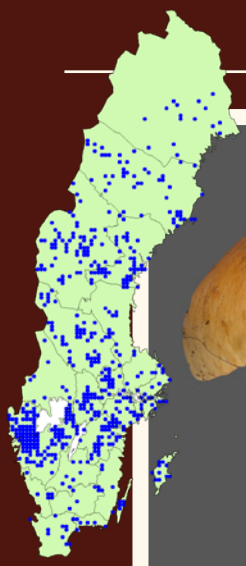
Cortinarius flabellus

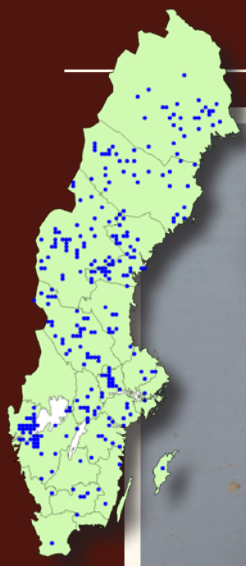
Cortinarius lepidopus

Cortinarius melitosarx

Cortinarius metarius

Cortinarius multiformis



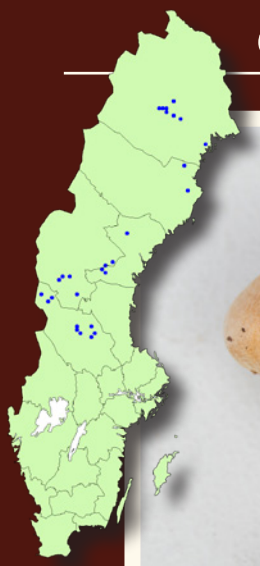


Cortinarius ochrophyllus

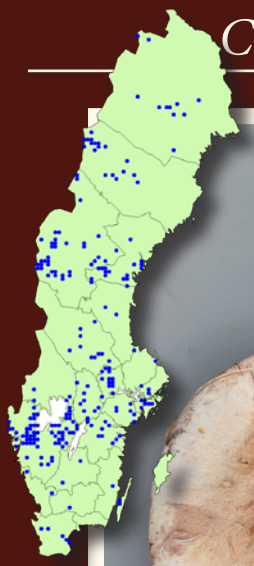
Cortinarius phrygianus

Cortinarius pini

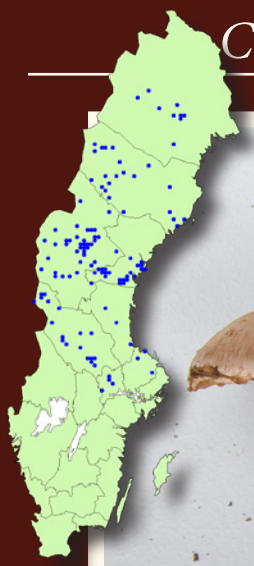
Cortinarius pinophilus



Cortinarius porphyropus

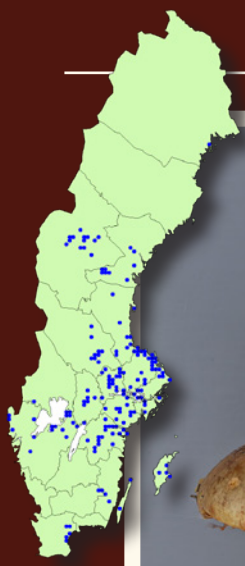


Cortinarius rusticus

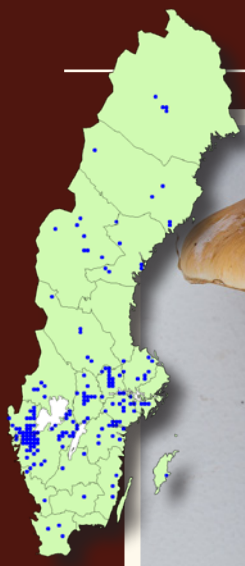


Cortinarius semisanguineus

Cortinarius sulfurinus



Cortinarius turmalis



Cortinarius venustus

Russula painting by the young mycologist Hjördis Böhning

Herbert Kaufmann

Russula Species

Collected by Herbert Kaufmann during the Cortinarius symposium 2016 in Borgsjö County in the province Medelpad, Sweden.

1. Introduction

During the Cortinarius symposium I also collected russulas, and in the following I report what I found.

Borgsjö, situated in the province of Medelpad, is in the geographical center of Sweden, and here southerly hemiboreal and northerly boreal species coexist. In the area species which require a warm climate are missing, including those which are in symbiosis with trees that require such a climate. The closeness to the province of Jämtland with subboreal areas of mountain tundra is cause for a particularly high diversity of russulas.

During my visit I tried to revisit some locations that I visited with H. Romagnesi during 1983. Unfortunately nature changes quite a lot due to forest clear cutting and other occurances. Thus it was found difficult or impossible to relocate some earlier visited rich locations.

Most collections now presented were made in the near vicinity of Borgsjö, in the cemetary and the local history yard (Hembygdsgården). The most interesting collection was *Russula scotica,* which I earlier have found in Swedish mountain tundra areas.

Unfortunately the descriptions of boreal species are incomplete in the works of Sarnari, and I recommend reference to the the original publications of the respective species.

2. Methodology of Determination

All determinations were made on dried material, and all collections were studied in microscope, and observations were drawn on paper.
Maesurements: all measuremens are taken from the collected specimens.

Used abbreviations:		
DCY	=	dermatocystidia
PHY	=	primoridal hyphae
HCl	=	Hydrochloric acid
CF	=	Carbol Fuchsin
sn.	=	county (for swedish "socken")

3. Results

Russula pascua (*F.H.Möller & Jul. Schäff.*) Kühner
Province Medelpad, Borgsjö sn., Borgsjö local history yard, among grass below pine and birch (*1505011, 6936683*), 2016-08-30, HK16008, leg. and det. H. Kaufmann.
NB: Spores nearly spherical to slightly oval with very low ornamentation, <0.5 Qm, finely dotted with sparse low ornamentations. 6.7 – 7.4 x 6.2 x 7.2 Qm, average size 7.1 x 6.7Qm. Q =1 – 1.1.
DCY narrow and smooth, 3 - 5 Qm, 2- to 3-septate.

Discussion:

Russula pascua is one of many critical species in the xerampelina group. It is usually found in connection with salix in boreal areas. According to Flora Nordica it is also found in connection with *betula*, in agreement with this find. The fruitbodies were quite small, probably not fully outgrown. Spores were spherical to slightly oval. My interpretation is russula pascua, although microscopical characters differ somewhat from what is normal for the species. Thus spore size is considerably smaller than according to Flora Nordica (7-9 x 6-7 Qm). A possible explanation is that the fruitbodies were not mature.

Russula cremeoavellanea

Province Medelpad, Borgsjö sn., Borgsjö cemetary, west of the bell tower (1505133, 6936533), among grass below birch and pine, 2016-08-30, HK16008a leg. and det. H. Kaufmann.

Russula subrubens under Salix caprea, Nacksta, Medelpad. Leg Jan-Olof Tedebrand, det Herbert Kaufmann, conf Slavomir Abramcik.

NB: Spores 7.8 – 8.3 x 7.0 -7.4 Qm, alomost round to slightly oval with small dots and broken ornamentation. PCY narrow, diameter 5 - 6 Qm. PHY 4 Qm septate and incrusted.

Russula atroglauca

Province Medelpad, Borgsjö sn., Borgsjö cemetary, among grass below birch and pine (*1505312, 6936455*), 2016-08-30, HK16009, leg. and det. H. Kaufmann.
NB: Spores 7.4 – 7.8 x 6.5 – 6.7 Qm, slightly verrucose and with some ornamentation. Spore color IId. DCY typical of species in the *Griseninae* group, biwinged, maximum 8 Qm diameter.

Russula cessans A. Pearson

Province Medelpad, Borgsjö sn., Borgsjö local history yard, below pine among grass, fairly dry location, (*1504919, 6936678*), HK16010, 2016-08-30, leg. and det H. Kaufmann.
Spores slightly oval, 8.3 – 8.7 x 6.5 – 7.0 Qm, rich ornamentation <1 Qm in height. Spore color IVb. DCY broad, clavate, 7 - 10 Qm wide, with few short septa.

Russula cessans

Province Medelpad, Borgsjö sn., Borgsjö cemetary, among grass below pine, (1505312, 6936455), 2016-08-30, HK16010a, leg. and det. H. Kaufmann.

NB: Spores 8.7 – 9.1 x 7.4 – 7.8 Qm, spiny and with ornamentation, DCY 6 - 7 Qm in diameter, clavate with few septa.

Russula scotica

Province Medelpad, Borgsjö sn., Borgsjö cemetary, among grass below birch and pine, (*1505312, 6936455*), 2016-08-30, HK16010b, leg. and det. H. Kaufmann.
NB: Spores oval, 7.4 – 7.8 x 6.1 – 6.5 Qm, with low verruca and broken ornamentation. DCY 8 - 10 Qm in diameter, barrel shaped in very short segments, primary segment just 12 - 20 Qm.

Russula cessans

Province Medelpad, Borgsjö sn., Borgsjö local history yard, below pine and birch, (*1504938, 6936698*), 2016-08-30, HK16012, leg. and det. H. Kaufmann.
NB.: Spores slightly oval, 9.1 x 7.8 Qm, spiny with broken ornamentation.
DCY clavate, few and short septa.

Russula vinososordida

Province Medelpad, Borgsjö sn., Borgsjö local history yard, below pine and birch, (*1504938, 6936698*), 2016-08-30, HK16012a, leg. and det. H. Kaufmann.
NB: Spores 7.4 – 7.8 x 6.3 – 6.5 Qm, with small verrucae and a somewhat broken ornamentation. DCY unseptate, up to 110 Qm long, clavate, 5 - 6 Qm in diameter.

Russula firmula

Province Medelpad, Borgsjö sn., Borgsjö local history yard, in grass below pine and birch, (*1505020, 6936678*), 2016-08-30, HK16012b, leg. and det. H. Kaufmann.
NB: Spores 8.3 – 8.7 x 6.1 – 6.5 Qm, oval, locally verrucose with few septa, DCY 7 - 8 Qm in diameter, long, uniformly wide and septate. Cilia 2 Qm with inflated tops.

Russula firmula

Province Medelpad, HK16013, leg. M. Krikorew, det. H.Kaufmann
NB.: Hot taste. Spores 7.4 – 7.8 x 6.5 – 6.7 Qm, low verrucose, single ornamentations. DCY 5 - 6 Qm with septa. Sometimes with inflated DCY as shown by Romagnesi (p. 841 fig. 1004).

Magnus Andersson visar intressant Ramariakollekt.
Foto: Hjördis Lundmark

Russula cessans

Province Jämtland, Bräcke sn. Tunsved Nature Reserve, in needle tree forest, (*1463081, 6983020*), 2016-09-01, HK16014, leg. Bengt Pettersson, det. H. Kaufmann.
NB: Cap pales by age. Grew below pine trees in a dry location. Spores 8.7 – 9.1 x 7.2 – 7.4 Qm, spiny with much ornamentation, spore color IIIb.

Russula puellaris

Province Jämtland, Bräcke sn. Tunsved Nature Reserve, in spruce forest on lime rich ground, (*1463081, 6983020*), 2016-09-01, HK16015, leg. Bengt Pettersson, det. H. Kaufmann.
NB: Spores 8.3 – 8.5 x 6.7 – 7.0 Qm, spiny, with single ornamentations, DCY mostly 5 Qm in diameter, multiseptate.

Russula vinososordida

Province Medelpad, Borgsjö sn., Borgsjö local history yard, below pine and birch, (1504938, 6936698), HK16012a, 2016-08-30, leg. and det. H. Kaufmann.

NB: Spores 7.4 – 7.8 x 6.3 – 6.5 Qm, weakly spiny with ornamentation, spore color IIIa, DCY 5 - 7 Qm in diameter, nonseptate, maximum 110 Qm in length.

Russula olivobrunnea

Province Jämtland, Bräcke sn. Tunsved Nature Reserve, in needle tree forest, (*1463081, 6983020*), 2016-09-01,HK16016, leg. Bengt Pettersson, det. H. Kaufmann.
Province Jämtland, Bräcke sn. Tunsved Nature Reserve, in needle tree forest, (*1463081, 6983020*), 2016-09-01,HK16017, leg. Magnus Andersson, det. H. Kaufmann.
NB: Spores large, 9.6 – 10.0 x 8.3 – 8.7Qm, coarsely spiny in places, spore color IVd, DCY 6 - 12 Qm in diameter, multiseptate.

R. olivobrunnea occurs with spruce trees in boreal parts of Sweden. Base color of the cap is brown with gray and green nuances. In dry condition the green component of the cap color is exaggerated, and it becomes similar to R. olivina.
The description of Sarnari (*part 2, p. 1012 - 1015*) is incorrect. DCY is 12 Qm in diameter and the basidia have four spores. A correct and detailed description of this species is found in Karstenia 34: 21-34, 1994.

Russula cremeoavellanea

Province Medelpad, Borgsjö sn., Borgsjö cemetary, in grass below birch and pine, (*1505316, 6936455*), 2016-09-02, HK16018, leg. Hjördis Lundmark, det. H. Kaufmann.
NB: Spores have low verruca, single ornamentations, 7.8 – 8.3 x 7.4 – 7.7 Qm, diameter 3.1 – 3.5 Qm, incrusted, septate. PHY narrow, diameter 4 Qm. PHY and DCY incrusted.

Russula atroglauca

Province Medelpad, Borsjö sn., Borgsjö local history yard, below fur, pine and birch, (*1504939, 6936669*), HK16021, 2016-08-30, leg. and det. H.Kaufmann.
NB: Spores small, dotted appearance with single ornamentations, 7.0 – 7.4 x 6.3 – 6.5 Qm. Spore color IIb. DCY 6 - 8 Qm in diameter, cilia multiseptate, with short flat segments.

Russula atrorubens
Province Medelpad, Borgsjö sn., western side of Ormberget, below birch in needle tree forest, (*1504834, 6933870*), HK16022, 2016-08-31, leg. and det. H. Kaufmann.
NB: Spores 7.0 – 7.8 x 5.7 – 6.1 Qm, finely dotted appearance with rich ornamentation, DCY 7 - 8 Qm in diameter, multiseptate.

Russula clavipes
Province Medelpad, Borgsjö sn., western side of Ormberget, in needle tree forest with pine and spruce, (*1504777, 6933831*), HK16023, 2016-08-31, leg. and det. H. Kaufmann.
NB: Cap brown, brown olive, yellow. Severe smell of raw fish. Spores 7.4 – 9.1 x 6.7 – 7.8 Qm, shortly spiny with few ornametations, spore color III b. DCY 7 - 12 Qm in diameter, with few septa.

Russula versicolor
Province Medelpad, Borgsjö sn., Södra Sillre, forest of needle trees and broadleaved trees, (*1508290, 6934027*), HK16024, 2016-08-31, leg. and det. H. Kaufmann.
NB: Spores oval, dotted appearance and ornamentations, 7.8 – 8.7 x 6.3 – 6.5 Qm. DCY clavate, 5 - 10 Qm, multiseptate, segments fairly elongate.

Russula vinososordida
Province Medelpad, Borgsjö sn., Södra Sillre, in forest of spruce and aspen, (*1508251, 9634055*), 2016-08-31, HK16025, leg. and det. H. Kaufmann.
NB: Spores 7.4 – 8.3 x 5.4 – 6.5 Qm, spore color IIIa. DCY clavate, diameter 6 - 9 Qm, elongate, nonseptate.

Russula versicolor
Province Medelpad, Borgsjö sn., Gammelbodarna Nature Reserve, below birch and spruce, (*1501539, 6939840*), HK 16026, 2016-09-01, leg. and det. H. Kaufmann.
NB: Spores oval, finely dotted appearance with ornamentations, 6.5 – 7.0 x 5.4 – 6.1 Qm. DCY 3- 5 Qm in diameter, multiseptate, with fairly long segments.

Russula velenovskyi
Province Medelpad, Borgsjö sn., Gammelbodarna Nature Reserve, edge of forest with spruce and birch, (*1501543, 6939833*), 2016-09-01, HK16027, leg. and det. H. Kaufmann.
NB: Small spores, with dotted appearance in places, 6.7 – 7.8 x 6.1 – 6.7 Qm. DCY blue when died in PhF + HCl, few and small incrustations, diameter 5 - 8 Qm, long and mostly nonseptate.

Russula cessans
Province Medelpad, Borgsjö sn., Gammelbodarna Nature Reserve, among grass below pine, (*1501510, 6939926*), 2016-09-01, HK16028, leg. and det. H. Kaufmann.
NB: Spores 8.7 x 7.7 Qm. DCY multiseptate, diameter 6 - 7 Qm.

Russula queletii
Province Medelpad, Borgsjö sn., in spruce forest, in heavy moss cover on top of decaying cut wood, (*1501461, 6940018*), 2016-09-01, HK16029, leg. and det. H. Kaufmann.
NB: Cap starkly umbonate(*!*), strong fruitlike smell, large spores, sparsly spiny, 9.6 – 10.9 x 7.8 – 8.7 Qm. DCY long, nonseptate, diameter 6- 8 Qm.

Två kämpar pustar ut efter lyckat jobb.
Two fighters rest after good work.
Photo: Gunilla Kärrfelt

Wood nymph Tanya. Photo: Olga Morozova

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