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Calicium parvum (Caliciaceae) new to Poland

KATARZyna JANDO

During field work in Puszcza Darżłubska forest (N. Poland) I found Calicium parvum. This species has not previously been recorded from Poland (see Faltynowicz 1993).

Calicium parvum Tibell

Thallus thin, grey to greenish grey, verrucose or ± immersed. Apothecia 0.5-0.8 mm, 6-8 times as high as width of stalk, black, shiny, head 0.12-0.4 mm in diameter, lens-shaped: stalk 0.08-0.12 mm in diameter. Asci clavate, 32-42 × 5-8 μm. Ascospores 7-12 × 3-5 μm, not uniseriate, incised at septum and with irregular cracks on the surface.

Calicium parvum grew on bark of trunks of Pinus sylvestris (ten specimens) up to c. 0.4 m from ground in a well-lit pine forest. The trunks of the trees were 25-50 cm in diameter. Associated lichen species included: Bryoria fuscescens, Chaenotheca ferruginea, Cladonia cenotea, C. chlorophaeas s. 1., C. digitata (very frequent), C. glauca, C. macilenta subsp. bacillaris, C. macilenta subsp. macilenta, C. ochrochlora, Hypocenomyce caradocensis, H. scalaris (very frequent), Hypogymnia physodes (very frequent), Imshaugia aleurites, Lecanora conizaeoides with Lichenoconium lecanorae, Lepraria sp., Parmeliopsis ambiguia, Pseudevernia furfuracea and Usnea hirta.

In Europe Calicium parvum has been recorded from Sweden, Norway (rare), Southern and Central Finland (Santesson 1993), British Isles (Purvis 1992), Estonia (Löhmus 1998) and Lithuania (Motiejūnaitė et al. 1998). It is also known from Continental Europe and North America (Tibell 1999). According to Purvis (1992) the species has been also reported from former U.S.S.R (for Ukraine see Kondratyuk et al. 1998).

Specimens examined: N Poland, Puszcza Darżłubska forest. Forest section 71, 54°41’N/18°12’E, ATPOL grid square Ac48, 25.VIII.1998, Jando (UGDA-L); forest section 95, 54°42’N, 18°07’E, ATPOL grid square Ac48, 16.VIII.1998, Jando (UGDA-L); forest section 152, 54°41’N, 18°10’E, ATPOL grid square Ac58, 20.VIII.1998, Jando (UGDA-L); forest section 157, 54°41’N, 18°10’E, ATPOL grid square Ac58, 22.VIII.1998, Jando (UGDA-L).

Acknowledgements

I would like to thank Professor Leif Tibell, Uppsala, for the confirmation of Calicium parvum and Martin Kukwa, Gdańsk, for his help in elaboration of the article. Also, I am indebted to Dr Jurga Motiejūnaitė for her help with the literature.

References

Faltynowicz, W. 1993: A checklist of Polish lichens and lichenicolous fungi including...


**Buellia chloroleuca in the Nordic countries**

ANDERS NORDIN


*Buellia chloroleuca* is reported from Finland, Iceland, Norway and Sweden. A description is given and the known Fennoscandian distribution is mapped. The taxon has previously been discussed by Malme, but because of an incorrect use of the name *B. zahlbruckneri* the identity has remained unclear.

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In April 1998 material of an unknown *Buellia* species containing xanthones was sent to me by T. Tonsberg. It was collected in Nord-Trøndelag in 1981. The spores were 1-septate, and since I had to concentrate on species with pluriseptate spores at that moment, I did not give it much attention until recently. A closer examination made it clear that the material agreed well with original material (in UPS) of *Buellia chloroleuca* Körb., a misunderstood and rarely recorded species described from the Sudetes. Further investigation of herbarium material resulted in several additional localities in Finland, Iceland, Norway, and Sweden.

**Material and methods**

Herbarium material of *Buellia disciformis, B. erubescens, B. insignis, B. zahlbruckneri* and undetermined *Buellia* spp. from AMNH, BG, O, S, TRH, and UPS was investigated in search for specimens of *B. chloroleuca*. Specimens found were more closely investigated morphologically, chemically and ultra-structurally in accordance with standard methods (see for instance Nordin 1996 & 1997). The description below is based on Fennoscandian material. Spore size values, statistically calculated from measurements of 10 spores each from 10 specimens, are given as (minimum value recorded -) the arithmetic mean value minus standard deviation - [the arithmetic mean value] - the arithmetic mean value plus standard deviation (- maximum value recorded). Measurements of other details represent extreme or approximate values.

**Buellia chloroleuca** Körb.


(*Buellia zahlbruckneri* sensu Schauer non Steiner, misapplied name, see below.)

*Thallus* whitish or greenish grey or with a slightly ochraceous tinge, rimose to usually verrucose or granulose, granules discrete or contiguous, c. 0.25 mm thick, in patches up to 10 × 5 cm. Prothallus not seen. Cortex with a c. 5-14 µm thick epinecral layer, not staining in LB, adjacent to the short-celled, thin-walled hyphae surrounding the algae of the algal layer. *Apothecia* soon sessile, 0.2-0.8 mm wide, often tightly crowded and sometimes coalescing; disc black, first flat, later often ±convex, epruinose; margin distinct on young apothecia, later often excluded. Proper exciple 30-70 µm thick, excipular cells with thickened, pigmented walls, lumina elongate in inner part, ±rounded in outer part; hymenium hyaline, 70-85 µm thick; epithecium brown;
Figure 1. Mature spore of *Buellia chloroleuca*. Spore wall layers from outside proceeding inwards: gelatinous sheath (white), perispore (black), intermediary layer (thin white line), proper wall (grey), endospore (white). Drawing based on TEM micrograph. Bar 2 µm.

Subhymenial layers brown, 70-120 µm thick. Paraphyses simple or branched in uppermost part, apical cells widened and with pigmented caps; asci clavate, 55-66 x 11-18 µm. Asci brown, ellipsoid, 1-septate, ends rounded to slightly pointed, (14.5 -) 16.8 - [18.7]- 20.6 (- 23.5) x (5.5 -) 7.1 [-8.1]- 9.1 ( - 11.5) µm. Perispore rugulate, distinctly thinner than the proper wall (Figure 1). Spore wall sometimes slightly thickened subapically in young stages. *Pycnidia* not seen.

Chemistry. Thallus K+ yellow, C+ yellow-orange, P-; 6-O-methylarthothelin (granulin) present above algal layer in thallus, sometimes also in the apothecia. Giralt et al. (2000) also reports ± arthropelin (minor) and ± atranorin (traces).

Ecology. *Buellia chloroleuca* is a corticolous species, in Scandinavia collected on trunks of *Alnus incana*, *Betula* spp., *Juniperus communis*, *Prunus padus*, *Salix phyllicifolia* and *Sorbus aucuparia*, often close to the base. It mainly occurs in subalpine areas but in Nordland, Troms and Ostrobotnia borealis it has been found close to sea level. Associated species found in more than one collection are *Parmeliopsis hyperopta* (in 8 of 20 collections), *P. ambiguа* (6), *Cladonia* spp. (5), *Pertusaria carneaopallida* (5), *Biatora* spp. (4), *Lecanora* spp. (4), *Parmelia saxatilis* (4), *Rinodina* sp. (4), *Pyrhospora cinnabarina* (3), *Stenocybe pullatula* (3), *Buellia disciformis* (2), *Caloplaca cerina* (2), *Candelariella cf. xenhostigma* (2), *Hypocenomyce leuco-cocca* (2), *Lecidella* sp. (2), and *Physcia aipolia* (2). Extrascandinavian material investigated was collected on bark and wood of both coniferous and deciduous trees.

Distribution. In Sweden the present finds of *Buellia chloroleuca* are restricted to the western parts of Härjedalen and Jämtland. In Norway the distribution area is wider, ranging from Aust-Agder to Troms, but with the majority of localities situated in Troms. So far only one locality each is known from Finland and Iceland, see list of specimens examined. Outside the Nordic countries, the species seems to be widely distributed in South and Central Europe.

*Buellia chloroleuca* is closely related to *B. insignis*. The two species agree both in morphology and secondary chemistry. However, *B. insignis* has larger apothecia (often more than 1 mm wide at maturity), thicker hyme-nium (c. 100-130 µm), and larger spores (c. 24-28 x 9-11 µm). The exciple also gives a K+ yellowish solution not seen in the investigated material of *B. chloroleuca*. There is also a difference in ecology: *B. insignis* is mainly a terricolous species. Occurrences on lignum or
bark are rare and restricted to fallen tree trunks or to the lowermost part of the trunks. Another similar species, *B. erubescens*, has somewhat smaller spores (c. 13-16 × 7-8.5 μm) and different secondary chemistry (norstictic acid, atranorin, and some minor substances).

In UPS there are two collections of *Buellia chloroleuca* from the area mentioned in the protologue (the Sudetes), one collected by Körber himself and another collected by B. Stein and determined by Körber. Both agree with the Fennoscandian material. Original material is also found in L and M. The name will be lectotypified by Giralt et al. (2000).

In a discussion of *Buellia zahlbruckneri* Steiner, Malme (1927) created some confusion by disregarding the fact that the description had appeared in a paper by Steiner himself (Steiner 1909) prior to the paper cited by Malme (Zahlbruckner 1909). In the former case the description is based on material from Asia Minor, in the latter there is no indication of material, and the description is very short. Malme discussed taxa and collections possibly corresponding to the short description, concluding that *B. parasema (disciformis) v. sapprophila* was the best candidate, that Hepp. exs. 150 and Arnold exs. 1589 were representative material of this taxon, and that the name *B. zahlbruckneri* could be used. At least some of the Swedish collections discussed by Malme are *B. chloroleuca*.

Schauer (1965) identified the material from Asia Minor cited by Steiner (1909) as *Buellia erubescens*, but realising that the material discussed by Malme (1927) was something else, he jumped to the conclusion that also Steiner had had the same taxon in mind and that he had made a mistake when determining the material from Asia Minor. So in spite of the presence of this material Schauer proposed a neotype for *B. zahlbruckneri*. This, however, is contrary to the principles and rules of The Code (of Botanical Nomenclature) and thus out of the question. *B. zahlbruckneri* is a taxonomic synonym of *B. erubescens* and can not be used in another sense. Schauer could possibly have made a proposal to conserve the name with a new type, or he could simply have introduced a new name. Apparently unaware of the correct use of neotypification he tried this possibility instead. This has resulted in an uncertainty concerning the application of the name. Several authors have used the name in the sense of Schauer (e.g. Poelt 1969). Others have used it correctly as synonymous with *B. erubescens* (e.g. Wirth 1995). Santesson (1993), in his turn, added a question-mark, when synonymizing it with *B. erubescens*, thereby indicating the need of clarification. This need was satisfied by Girald et al. (2000). In connection with a revision of some *Buellia* species from Spain they also revised material of *B. zahlbruckneri* sensu Schauer and found it identical with *B. chloroleuca*.

Fennoscandian specimens examined: 

**Finland.** Ostrobotnia Borealis: Simo, insula Tiurarsenkrunni, 1946, Räsänen (Räsänen et Hakulinin, Lichenoth. Fenn. 124, UPS); **Iceland.** Norður-Island: Suður-Pingeyjarþysla, Aðaldalshraun, 1976, Kristinsson 15976 (AMNH); **Norway.** Aust-Agder: Setesdalen, Bykle, Jarekollen, nedersta branten, 650 m, 9.VI.1955, Degelius (UPS); Setesdalen, Valle, Berg, gransek S om bäcken, 500-550 m, 6.VII.1955, Degelius (UPS); **Nord-Trøndelag:** Leksvik, N of Björktjörnane, along the brook from Tinghaugen, 210-220 m, 1981, Tønsberg 5857 (BG, UPS); **Nordland:** Lødingen, close to sea, VII.1919, Vrang (S); **Oppland.** Fokstuen, 8.IX.1922, Høeg (TRH); **Troms:** Maalsnes, 28.V.1911, Lyngre (O: 3 collections); Indset, 25.V.1910, Lyngre (BG); **Vest-Agder:** Indsetvand, 8.VI.1911, Lyngre (O: 2 collections); Gibostad, 17.V.1910, Lyngre (BG); **Vest-Agder:** Indset i Bardo, 8.VI.1911, Lyngre (O); **Jämtland:** Undersäker, Ristafallet, c. 370 m, 1910, Malme (Malme, Lich. suec. exs. 431, S, UPS); **Sweden.** Jämtland: Undersäker, Ristafallet, c. 370 m, VI.1914, Vrang (S); Åre, Handölf waterfalls, E side
Figure 2. Known Fennoscandian distribution of Buellia chloroleuca.
between the middle and the upper falls, 600 m, 1948, Santesson 48.224b (UPS); Härjedalen: Fjällnäs, VII.1925, Vrang (UPS); Tännäs, the valley of the river Ljusnan c. 2 km SE of Ramundbergets Fjällgård, 700-800 m, 1979, Santesson 29701, 29705 (UPS).

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References


The village Järvselja, 40 km east of the university town Tartu, is embedded in an extensive woodland area which has been reserved for scientific forest cultivation and also include some patches protected from cutting activities the last 150 years. The forest belong to the Forestry Training and Experimental Centre of the Estonian Agricultural University. The territory was previously a swamp locality but as a result of draining towards the end of the last century, the forest area grew 3.5 times! Forest cultures were established and several foreign species were introduced. Deciduous trees are often mixed with pines and spruces in natural forests in this part of Estonia. The area around Järvselja is normally still very wet, an impression that had almost disappeared after the dry summer of 1999. At present time the territory of the Forestry Centre covers an area of 18 by 11 kilometers.

More than 40 participants from the Estonia, Latvia, Lithuania and other countries around the Baltic Sea attended the symposium, which was successfully organized by the Institute of Zoology and Botany at the Estonian Agricultural University and the Institute of Botany and Ecology, University of Tartu. A symposium volume will be printed in the year 2000 - a special issue of *Folia Cryptogamica Estonica*. The papers will be based on the lectures and posters presented during the meeting. Biogeography, bioindication, molecular biology and pathology were some of the fields included among the oral presentations. Deadline for the contributors is December 1st. Next meeting will be organized (continues on page 48)

Figure 1. Estonian lichenologists eagerly collecting around the field station in Järvselja. From the left: Eva Nilsson (Tallinn), Tiina Randlane & Andres Saag (Tartu) and Ljudmilla and Jüri Martin (Tallinn). Photo: Piret Lõhmus.
Notes on the lichen flora of southern Sweden III

STEFAN EKMAN and ULF ARUP


The lichenicolous fungus *Arthrorhaphis aeruginosa* R. Sant. & Tønsb. and the lichens *Fellhanera viridisorediata* Aptroot, Brand & Spier, *Halecania viridescens* Coppins & P. James, and *Trapeliopsis aeneofusca* (Flörke ex Flotow) Coppins & P. James are reported as new to Sweden, all from the southernmost province, Skåne. Brief characterizations and notes on the ecology and distribution of these species are provided. 29 lichens and one calcioid fungus are reported as new to five of the southernmost provinces of Sweden, viz. Skåne, Halland, Blekinge, Småland, and Öland. In addition, recent Swedish finds of *Cyphelium trachylioides* (Branth & Rostr.) Erichsen, *Heppia lutosa* (Ach.) Nyl., *Leptogium corniculatum* (Hoffm.) Minks, *Rinodina pityrea* Ropin & H. Mayrhofer, *Schismatomma graphidioides* (Leight.) Zahlbr., and *Stigmatidium microspilum* (Körb.) D. Hawksw. are reported, all from Skåne, Blekinge, or Öland.

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In this paper, we report a number of lichens, one lichenicolous fungus and one calcioid fungus as new to Sweden or as new to the provinces of southernmost Sweden. We have reported such finds in earlier papers (Arup & Ekman 1989, 1991, 1992), and this is a continuation of this series. The finds reported here were made in Skåne, Halland, Blekinge, Småland, and Öland in 1988-1999.

**Arthrorhaphis aeruginosa** R. Sant. & Tønsb.

This species is a parasite on various species of *Cladonia* (mainly the basal squamules), and was originally published from U.S.A. (Oregon and Washington), Norway, and Scotland (Santesson & Tønsberg 1994). It was subsequently reported from France and England (Etayo & Diederich 1998). It is readily identified as a blue discolouration of the basal squamules and sometimes podetia of the *Cladonia* host.

*Arthrorhaphis aeruginosa* is reported here from three Swedish localities, all in Skåne, southernmost Sweden. At all localities, it has pycnidia but no apothecia. At the first locality, *A. aeruginosa* was observed on basal squamules of *Cladonia coniocraea* on the trunk of a *Betula pendula* in a pasture with scattered trees. At the second locality, it occurred on basal squamules and lower parts of the podetia of *C. pyxidata* overgrowing bryophytes and thin, fallen spruce twigs on the ground next to a small road through a mixed coniferous forest. At the third locality, it was found on the basal squamules of *C. coniocraea* overgrowing bryophytes on the trunk of a *Sorbus aucuparia* at the bottom of a deep ravine. *Arthrorhaphis aeruginosa* is almost certainly overlooked in southern Sweden.
**Fellhanera viridisorediata** Aptroot, Brand & Spier

This recently described species was reported to be rather common and rapidly spreading in the Netherlands, Belgium, and Germany (Aptroot et al. 1998). In addition, it is known from a single locality in Austria and another in Wales (Hitch 1999). It was observed on a wide variety of substrata, including bark of several deciduous tree, shrub, and shrublet species, _Juniperus_, wood, _Phragmites_ roofs, granite boulders, and brick. Although thriving on many substrata, it seems to prefer sheltered habitats. **Fellhanera viridisorediata** is an inconspicuous species. It can be identified by its green to grey green soralia with a slight bluish tinge covering much of the concolourous thallus, brown apothecia with a paler margin (0.1–0.7 mm in diameter), 1-septate ascospores that are slightly constricted at the septum (10–17 × 3–5.5 μm), paraplectenchymatous excipular cell lumina, and the presence of roccellic acid in the thallus and apothecia. It is not unlike some morphs of _Cliostomum flavidulum_, which, however, contains fumarprotocetraric acid and reacts PD+ red.

**Fellhanera viridisorediata** is reported here as new to Sweden from a single locality in central Skåne, southernmost Sweden, namely the garden of the second author. It was discovered here already in 1996, but at that time only sterile thalli were observed. Recently, apothecia were found, and the identity could be clarified. In the Arup garden, it appears to be rather abundant on sheltered branches of _Picea abies_ and _Ribes uva-crispa_, although most thalli are sterile.

**Collections: Sweden. Skåne**: N. Mellby par., Vätteryd, c. 900 m W of Snogerup, c. 850 m NW of Skoghus, on _Cladonia coniocraea_ on _Betula pendula_ in rather open situation in a pasture, 30.III.1997, Arup & Ekman (not collected due to sparsity of material, but a photograph is kept by UA); Hjärnsås par., Dönb erga, 150 m ENE of Kyllingahemmanet, along forest road near forest, on _Cladonia pyxidata_ on twigs and mosses on the ground, 31.VIII.1998, Ekman 3418 (BG); Konga par., 400 m NW of Skogvångshus, on S side of creek Kvärkabäcken, in deep ravine with deciduous forest, on _Cladonia coniocraea_ on _Sorbus aucuparia_; 12.XII.1998, Ekman 3468 (BG). – Determinations of the last two collections were confirmed by T. Tönsberg.

**Halecania viridescens** Coppins & P. James

**Halecania viridescens** is widely distributed in Europe (Aptroot et al. 1992, Berger & Türk 1993, Coppins 1992, Tönsberg 1992, Boom et al. 1995), and is known also from North America (Tönsberg 1994). It forms small patches which can be identified by the very fragile areoles, punctiform, pale green or pale bluish green soralia, and the presence of argopsin and norargopsin in the thallus and soralia (Coppins 1989, Tönsberg 1992).

**Halecania viridescens** is reported here as new to Sweden from a single locality in southern Skåne, southernmost Sweden, where it occurs on the branches of an old _Sambucus nigra_ growing in the semi-shade of an east-facing forest edge in a landscape dominated by agricultural fields. The locality is probably a remnant of a former garden, and is surrounded by a deciduous forest dominated by _Ulmus glabra_ and _Fagus sylvatica_.

**Trapeliopsis aeneofusca** (Flörke ex Flotow) Coppins & P. James

*Trapeliopsis aeneofusca* has been reported from the central and western parts of Europe (Coppins & James 1984, Aptroot et al. 1992) and from North America (Aptroot 1996). It is morphologically similar to *T. gelatinosa* (Flörke) Coppins & P. James but differs by having a more or less reddish brown epithecium (instead of green) which causes the brown or red-brown colour of the apothecia.

*Trapeliopsis aeneofusca* is reported here as new to Sweden from a single locality in northeastern Skåne, southernmost Sweden. It was found in abundance directly on the soil of a west-facing road-side cutting (inclination c. 40°) with sandy moraine and with mature coniferous forest on both sides of the small road. The competition from vascular plants was low. Other associated lichens were *Baeomyces rufus* (Huds.) Rebent and *Bryophagus gloeocapsa* Nitschke ex Arnold. At the present locality, *T. aeneofusca* possessed abundant apothecia but no soralia.

**Collections:** Sweden: Skåne: Hjärås parish, Dönanberga, c. 250 m ENE of Kyllingahemmanet, roadside cutting in coniferous forest, on soil, 3.IX.1998, Ekman 3420 (BG).

**New species to the Swedish provinces**

**Skåne, Blekinge, Småland, and Öland**


*Acarospora nitrophila* var. *nitrophila*. Skåne: Benestad parish, Benestads backar nature reserve, c. 500 m NW of the church, in the NW corner of the reserve, on lime-enriched siliceous boulder, 20.V.1995, Arup & Ekman (LD).

*Agonimia albata*. Skåne: Riseberga parish, Skäradal, c. 900 m SW of Kopparhatten, N-facing slope about 30 m above the trail, on *Fagus*, 29.V.1994, Arup, Ekman & Lindblom (LD)

*Arthonia cinereopruinosa*. Skåne: Kviinge parish, Hanaskog, on S side of river Helgeå at Hanaholm, open *Quercus* forest, on old *Quercus*, 22.XII.1997, Ekman 3233, 3235 (BG).

*Bacidia laurocerasi*. Blekinge: Sölvesborg parish, Ryssberget, c. 1 km S of Koppannan, old *Fagus* forest, on lower part of trunk of old *Fagus*, 28.VIII.1996, Ekman (LD). – This is the only recent Swedish find of this species. It was previously collected from a number of localities in east-central Sweden, but has not been observed for three decades. It was hence classified as extinct from Sweden in the most recent national Red List (Aronsson et al. 1995).


*Bacidia trachona*. Blekinge: Sölvesborg parish, c. 1 km S of Koppannan, old *Fagus* forest, on small siliceous boulder, 21.VII.1997, Ekman (BG).

*Bacidina egenula*. Skåne: Benestad parish, Benestads backar nature reserve, c. 500 m NW of the church, in the NW corner of the reserve, on a brick on the ground, 20.V.1995, Arup & Ekman (LD).

*Bryophagus gloeocapsa*. Skåne: Kiaby parish, Ivö, c. 300 m ENE of Ivö klack triangulation point, on soil of recent wheel tracks in *Fagus* forest, 21.VII.1993, Ekman (LD). Hjärås parish, Dönanberga, c. 250 m ENE of Kyllingahemmanet, roadside cutting in coniferous forest, on soil, 3.IX.1998, Ekman 3422 (BG).

Leptogium. Öland: Resmo par, c. 2 km N of the church, near pt. 52.5, in the Litorina embankment, on W-facing, overhanging limestone rock shaded by trees, 15.VIII.1989, Ekman (LD).


Cladonia caespitica. Skåne: Äsphult par., on the W side of Vramsån about 800 m E of Råböckarp, on a mossy boulder near the creek, 16.X.1990, Arup & Ekman L581 (LD).


Leptogium intermedium. Skåne: Åhus par., Östra Sandar, at the parking area in the military area c. 400 m NW of Övre Båkören, on calciferous gravel, 14.VII.1996, Arup (LD).

Lobothallia radiosa. Skåne: Benestad par., Benestads backar nature reserve, c. 500 m NW of the church, in the NW corner of the reserve, on lime-enriched siliceous boulder, 20.V.1995, Arup & Ekman (LD).


Ranonia interjecta Coppins. Skåne: Bjosköldstorp par., Klinta, c. 150 m N of Ringsjögården, close to the shore of Ö Ringsjön, on old Sambucus nigra in shady deciduous forest, 15.VI.1999 Arup (herb. Arup). N. Mellby par., Vätteryd, at the radio pylon 900 m NW of Skoghus, 1050 m W of Snogerup, on old, somewhat shaded Sambucus at forest edge, 4.IX.1999, Arup (LD).


Thelocarpon impressellum. Skåne: Åhus par., Östra Sandar, at the parking area in the military area c. 400 m NW of Övre Båkören, on soil on calciferous gravel, 14.VII.1996, Arup (LD).

Thelomma ocellatum. Skåne: Many finds, the following being a selection. Fulltofta par.,


**Other interesting finds**

*Cyphelium trachylioides*. Skåne: Köpinge par., 900 m NNW of Härnestadgård, W of Helge å, on wooden pole near old bridge, 18.VII.1993, Arup (LD). – Arup (1999) provided the first modern record of this species, made in 1998, from a closely locality at Ähus par., Ripa. The find reported here was, however, made already in 1993. It is based on a collection of *The lomma ocellatum*, in which *C. trachylioides* occurs as an immixture. The few apothecia of *C. trachylioides* present in this collection were, until recently, overlooked.

*Heppia lutosa*. Öland: Vickleyby par., on naked soil on the alvar 1.5 km ESE of Altarstenen, 25.VII.1988, Ekman L880 (LD). – The species occurs as an immixture in a collection that was originally intended for a *Catapyrenium* sp. It was overlooked until 1996, when it was discovered by the senior author during a revision of *Catapyrenium* specimens in LD.


*Schismatoma graphidioides*. Blekinge: Elleholm par., Elleholm, on *Fagus* in open *Fagus* forest on E side of Brunnsviken, 7.IV.1996, Ekman (LD). – This species is exceptionally rare in Sweden. It is known from one additional recent locality in Blekinge (Arup & Ekman 1997: 244–245), which is situated less than two kilometers west of the new locality presented here.

*Stigmatium microsporum*. Skåne: Dalby par., Dalby Söderskog national park, deciduous forest, on *Graphis scripta* on *Corylus*, 31.XII.1997, Ekman 3237 (BG). – There are two previous Swedish finds of this species, one from Skåne: Riseberga par. (1947, distributed as Santesson, *Fungi Lichenic. exs. 97*) and one from Väster götland: Vänernsäs par. (1961, distributed as Santesson, *Fungi lichenic. exs. 43*).
Corrections

Catapyrenium michelii (A. Massal.) R. Sant. Reports of this species by Arup & Ekman (1989) refer to C. squamulosum (Ach.) Breuss.

Sclerophora coniophaea (Norman) J. Mattsson & Middelb. Reports of this species by Arup & Ekman (1989; as Chae-notheca coniophaea) refer to Sclerophora amabilis (Tibell) Tibell. This species was reported as new to Europe by Gustavsson (1995). See also Arup (1997: 103) and Aronsson et al. (1995).

Acknowledgements

Tor Tønsberg and Håkon Holien are gratefully acknowledged for confirming the determinations of Arthrorhaphis aeruginosa and Bryoria subcana.

References


Some of the participants in front of the sand stone cliffs at Taevaskoja Nature Reserve: Sitting from the left: Olga Treikale, Ilze Irbe and Lelde Galovecka (Latvia), Arne Thell (Sweden), Jurga Motejtinaite (Lithuania), Laila Sica (Latvia), Gražina Adamonytė (Lithuania), Andres Saag (Estonia), Inguna Krastina and Ligita Liepina (Latvia), Lauri Saag and Tiina Randlane (Estonia), Nomeda Jucevičienė and Ernestas Kutorga (Lithuania), Pekka Halonen (Finland) and Martin Kukwa (Poland). Standing: Kuulo Kalames (Estonia) who was the only remaining participant from the very first meeting in 1959. Photo: Piret Lõhmus.

by the Lithuanians in the year of 2002. Biodiversity of fungi and lichens around the Baltic Sea and the forest ecosystems were the main topics of the present meeting. Oral presentations and poster sessions were mixed with field trips and laboratory activities.

Some of the excursions took place in the vicinity where several rare fungi and lichens, some of them new for Estonia or new for Tartumaa County were identified. There will be a separate paper in the symposium volume on this subject, according to Tiina Randlane. However, some of us were happy to recognize some typical old-growth forest lichens, such as Cetrelia olivetorum and Evernia divaricata. Lobaria pulmonaria was frequent on the old aspen trunks.

The trip to Taevaskoja Nature Reserve was of special interest for the foreigners. The area is split by a big river with steep, soft, light red sand stone walls close to it. These cliffs are well known among Estonians and has been used in film projects because of their beauty. Two bigger and seven smaller springs flow out from caves at the base of the cliffs. The whole area is a popular place for festivals, tourist trips or walks. The lichen flora has been documented in a diploma work supervised by prof. Hans Trass after a risky field work.

The bus went back to Tartu - my fourth visit since 1994. It was pleasant to see how fast the old town recovers after the Soviet time. The department buildings of the university are one after the other being repaired to western standard. The beautiful Janus church in the town centre, which had been left as ruins since the second world war, has a new tower and roof. There will be a ceremony this Christmas.

*Arne Thell*
A blue-green Psoroma hypnorum found in Trøndelag, Central Norway

HÅKON HOLIEN and PER M. JØRGENSEN


This paper reports on a curious specimen in the Pannariaceae which proved to be Psoroma hypnorum with a blue-green thallus quite different from its normal cephalodia.

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It has been known for some time (see James & Henssen 1976) that the same mycobiont may take different photosynthetic partners, and that this may result in totally different looking specimens.

The implications of this has recently been discussed by Jørgensen (1999). Below we report on a curious specimen of the Pannariaceae which morphologically does not agree with any described taxon, but which we interpret as a blue-green expression of a normally green species.

The specimen

This specimen, collected in Nord-Trøndelag, Norway (see below), exhibits the following characters (Figure 1a):

Thallus granular-crustose, bluish, spreading to several centimetres over the substrate. Granules to 0.5 mm long, corticate, containing Nostoc in clusters.

Apothecia numerous, red-brown, flat, disciform, to 5 mm with distinct, undulating, white proper exciple, occasionally with blue-green thalline granules, often surrounded by a weft of hyaline hyphae. Hymenium about 100 μm high, I+ dark blue, with simple paraphyses. Asci clavate with I+ blue amyloid ring-structure, 8-spored. Spores colourless, ellipsoid, 18-20 × 7-8 μm with a prominent warded perispore.

Pycnidia numerous, globular, about 0.1 mm in diameter, pinkish brown with dark brown ostiolar region. Pycnoconidia formed terminally and laterally on articulate, short-celled conidiophores, bacillariform, 5-6 × 1-2 μm.


Discussion

This puzzling specimen differs from any other collection of the Pannariaceae which we have seen in Scandinavia. We have wondered if it could be an unusual form of Pannaria pezizoides, a species with blue-green thallus and large warted spores, growing nearby. However, the thallus is quite different from the
Figure 1. *Psoroma hypnorum* from humid forests in Central Norway

a. The totally blue-green one from Snåsa, H. Holien 7730 (TRH).

b. A corticolous specimen dominated by "cephalodia", best seen in the upper left part, from Grane, Majavatn, T. Tønsberg 23873 (BG).
normal form of that species, and it has asci with internal amyloid structures, not observed in *P. pezizoides*. Actually the internal characters of the apothecia are those of *Psoroma hypnorum*, which by James & Henssen (1976) was believed possibly to be the green counterpart of *P. pezizoides*. This theory was rejected by Jørgensen (1978) on the basis of differences in the apical structures of the asci. In fact this newly discovered specimen, which is morphologically quite different from *P. pezizoides*, appears to be the counterpart anticipated by James & Henssen. The mycological characters all fall within the variation of *Ps. hypnorum*, though the spores are on the small side, but otherwise typical. The most surprising fact is that the blue-green thallus is so granular, rather like that of certain forms of the green photobiont, and not at all similar to the cephalodia of *Ps. hypnorum* (see figure 1b). We clearly do not have a situation of "free-living cephalodia" as has been reported in some *Psoroma* species from the Southern Hemisphere (Jørgensen & Wedin 1999), where the species primarily disperse by vegetative cephalodial propagules. It is rather a case of spores having found a bluegreen partner and resynthesized. This assumption finds support in that this blue-green thallus is fruiting, unlike those of the vegetatively produced ones, and that no green squamules are present.

In the damp forests of Trøndelag (Holien & Tønsberg 1996) *Ps. hypnorum* is frequently found on trees rather than on the ground, often with dominant cephalodia (Figure 1b). In this environment several photobiont pairs have been discovered previously, i.e. *Lobaria amplissima*, *Nephroma arcticum*, *Peltigera aphthosa* and *P. britannica* (Tønsberg & Holtan-Hartwig 1983). The blue-green expression of *N. arcticum* is as yet not known from outside this region.

The particular locality in Snåsa where this peculiar specimen was collected differs from localities of such pairs as it is situated in an open montane birch forest with scattered *Picea abies*, *Salix caprea* and *Sorbus aucuparia*. The forest is situated close to a mountain farm and is heavily grazed. Also the choice of substrate is unusual. In most cases of occurrence of cyanolichens on *Betula* and other species with acidic bark (pH less than 4.0), there is an association with specific soil conditions or nutrient enrichment, for example from soil or spray of waterfalls (Gauslaa & Holien 1998). In this locality the bedrock is dominated by calcium-rich schist which is expressed in a rich herb vegetation at the locality where also a number of other cyanolichens are found, mostly on trunks of *Salix* and *Sorbus: Lobaria scrobiculata*, *Nephroma bellum*, *N. parile*, *Pannaria pezizoides* and *Parmeliella triptophylla*.

**Conclusion**

We accordingly conclude that we have at hand the first known and rare case of a totally bluegreen *Psoroma hypnorum*, which is clearly different from *Pannaria pezizoides*. This is not a "free-living cephalodium", and is also unusual for its choice of habitat, which indicates that this may be a rare phenomenon.

**References**


Jørgensen, P. M. & Wedin, M. 1999: On *Psoroma* species from the Southern Hemi-

Lepraria elobata found in Hungary, Poland and Slovakia

MARTIN KUKWA and BJÖRN OWE-LARSSON


*Lepraria elobata* is reported for the first time from Hungary, Poland and Slovakia. Notes on the ecology are given, and the known distribution based on literature is presented.

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During field work and revision of Polish lichens deposited in the herbarium at University of Gdańsk, *Lepraria elobata* was identified. According to Faltynowicz (1993) the species has not been previously found in Poland. In 1999 it was also collected in Hungary and Slovakia, and the species has not been reported from either Hungary (Edit Farkas, in letter) or Slovakia before. The new localities of *Lepraria elobata* are presented in this paper.

**The species**

*Lepraria elobata* was described by Tønsberg (1992), and is characterised by its bluish grey or greenish grey, leprose thallus without lobes, forming usually a thin, sometimes thicker, cover. The soredia, which are discrete to more or less contiguous, are fine, up to 30-45 μm, and without projecting hyphae (Tønsberg 1992). The chemistry is characterised by atranorin, stictic acid and zeorin (major substances), cryptostictic acid, norstictic acid and constictic acid (minor substances), i.e. almost identical to *Lepraria lobificans*. However, *L. lobificans* differs in having a lobate and distinctly stratified thallus and filamentous soredia, and seems to prefer richer bark of broad-leaved trees (Tønsberg 1992). *Lepraria elobata* shows resemblance to *Lepraria incana*, which also seems to prefer acidic bark, but the latter species contains zeorin and divaricatic acid, giving the thallus an UV+ bluish reaction.

**Distribution and ecology**

In Norway, from where the species is described, *Lepraria elobata* occurs in inland, coastal, low-land and alpine regions (Tønsberg 1992). Subsequently, *Lepraria elobata* has also been found in Sweden (Moberg & Thor 1993, Muhr 1993, Santesson 1993, Lindblom 1995), and is, for example, quite common in mixed, deciduous forests along the River Klarälven in the province Värmland (Jansson et al. 1998). Lohtander (1994) reported *Lepraria elobata* from Finland (more than 20 localities mapped) and Russia (one specimen from the Leningrad Region). The same year the species was also listed from Germany (Wirth 1994). Orange (1995) reported *Lepraria elobata* as new to the British Isles, and it was stated that the species is apparently widespread in Wales in a variety of
habitats. In 1996, Dietrich & Scheidegger reported the species from Switzerland, where it is probably widely distributed and relatively common.

*Lepraria elobata* has further been found in Lithuania (Motiejūnaitė et al. 1998). Recently it has also been reported from Estonia (Saag & Saag 1999, Randlane & Saag 1999), from Faeroe Islands (Alstrup & Christensen 1999) and from Iceland (Kristinsson 1999). Thus, *Lepraria elobata* seems to be a widespread and rather common lichen in central and northern parts of Europe.

The first report of *Lepraria elobata* from North America was given by Tønsberg (1997; Vancouver, British Columbia, Canada).

*Lepraria elobata* is found in deciduous, coniferous and mixed forests, occasionally as well on more or less solitary trees. The species usually grows on acid-bark trees or intermediates (see Tønsberg 1992), especially *Alnus glutinosa* and *A. incana*, *Betula pubescens/pendula* and *Picea abies*, but also, to summarise the literature cited, on *Crataegus sp.*, *Fagus sylvatica*, *Juniperus communis*, *Malus domestica*, *Pinus contorta*, *Pinus sylvestris*, *Prunus padus*, *Pyrus*, *Quercus*, *Rhododendron* cf. *oreodoxa*, *Salix caprea*, *Salix* sp. and *Sorbus aucuparia*. It is seldom found on eutrophic bark, but is known from *Acer, Fraxinus* and *Populus tremula*. Mostly, *Lepraria elobata* grows on the base of the trees. The species is more rarely saxicolous, and has also been found on mosses and on soil.

In Poland, *Lepraria elobata* was first determined from Tatra Mountains in the southern part of the country 1996, where it was growing on the base of *Picea abies* in wet spruce forest. Studies of collected material (herbarium UGDA-L in Gdańsk) from northern Poland has hitherto revealed the species from three localities, growing on well-lit bark of *Betula pendula* and on bark on the base of *Carpinus betulus* and *Fagus sylvatica* in humid places. *Lepraria elobata* is probably not uncommon in Poland.

The specimen from Hungary was growing on *Alnus glutinosa* in shaded and humid situation by a small lake, while the finding in Slovakia was made on the bark of a dead trunk, probably *Picea*, in open terrain by a lake.

*Specimens examined:* **Hungary.** NE Hungary, Miskolc city, on bark of *Alnus glutinosa* in park by small lake in Miskolc Tapolca, 48°05'N, 22°75'E, 12.VIII.1999, leg. & det. M. Kukwa (UGDA-L), TLC: atranorin, stictic acid complex and zeorin.

**Poland.** Tatry Polskie, Dolina Roztoki, c. 8 km SE Zakopane, along Potok (=River) Roztoka, c. 800 m ENE Dziadula, alt. c. 1300 m, 49°13'N, 20°04'E, ATPOL grid square Ge60, at the base of *Picea abies* in spruce forest 2 m from the river, 4.VII.1996, leg. & det. Björn Owe-Larsson (no 7757; UPS), TLC: atranorin, stictic acid complex and zeorin; Żulawy Wiśl. Frombork city, 54°21'N, 19°40'E, ATPOL grid square Ad57, on bark at the base of *Fagus sylvatica*, 31.VIII.1997, leg. A. Kotarska (UGDA-L), det. M. Kukwa, TLC: atranorin, stictic acid complex and zeorin; Mierzeja Wiśla sandbar, village Piaski, 54°25'N, 19°25'E, ATPOL grid square Ad76, on bark of *Betula pendula*, 23.VII.1981, leg. E. Budzbon (no 2179; UGDA-L), det. M. Kukwa, TLC: atranorin, stictic acid complex and zeorin; Pojezierze Ławskie lakeland, Lisewo forestry, forest section No 201, 53°52'N, 18°58'E, ATPOL grid square Bd42, on bark of *Carpinus betulus*, 8.VIII.1996, leg. & det. M. Kukwa (UGDA-L), TLC: atranorin, stictic acid complex and zeorin.

**Slovakia.** High Tatras Mts., Tatra National Park, Lake Štrbské Pleso, alt. c. 1355 m, 49°07'N, 20°02'E, on bark of dead trunk (probably *Picea*) by the lake, 16.VIII.1999, leg. & det. M. Kukwa (UGDA-L), TLC: atranorin, stictic acid complex and zeorin.

**Acknowledgements**

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Farkas for information about *Lepraria* species reported from Hungary, and the anonymous reviewer for valuable comments.

**References**


A new species of Agonimia and some interesting lichens from Gorce Mts (Western Beskidy Mts) new to Poland

PAWEL CZARNOTA and BRIAN J. COPPINS


Agonimia repleta discovered in the Gorce Mts (Western Beskidy Mts, Southern Poland) is described as a new, 8-spored taxon. *Micarea myriocarpa, M. nigella*, also from the Gorce Mts, are recorded for the first time in Poland. *Biatora ocelliformis, Fuscidea pusilla* and *Ropalospora viridis* are reported from the same area.

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During a study of the lichen flora of the Gorce National Park (Western Carpathians, Southern Poland) some 8-spored specimens of *Agonimia tristicula* were discovered, along with several other interesting species previously not or little known from Poland.

The localities are marked on the map of the Gorce National Park and Poland, based on the ATPOL 10 km grid square (Figure 2). The specimens are deposited in the lichen herbarium of the Gorce National Park (GPN), Poręba Wielka. The nomenclature follows Purvis et al. (1994) and Printzen (1995).

**Agonimia repleta** Czarnota & Coppins *sp. nova*

*Agonimia tristicula* (Nyl.) Zahlbr. affinis sed peritheciis parvioribus (0.18–0.2 vs. 0.4–0.5 mm diam.), ascis 8-sporis, ascosporis parvioribus, granulis et squamulis thalli parvioribus plus adpressis differt.

Typus: Poland, Western Beskidy, Gorce National Park, "Turbacz" nature reserve, Olszowy Potok valley, on bark of base of *Fagus sylvatica*, in humidity, shady Carpathian beech forest (*Dentario glandulosae-Fagetum*), alt. 780 m, 49°33'N, 20’05’E, ATPOL EG 20, 21 July 1996, leg. P. Czarnota 1340/94 (GPN).

**Thallus** dull green, or rarely brown tinged, granular to granular verrucose or minutely squamulose; granules (30–)40–120 μm in diameter, often coalescing to form a granular-verrucose crust; squamules sometimes present, elongate, to 240 × 100 μm; cortex of rounded to angular cells, 4–7 μm in diameter, a few often bearing a small papilla to 1.7 μm tall. Photobiont cells 5–10 μm in diameter, dividing by binary fission to produce 2–4 daughter cells. **Perithecia** black, mostly half- to three-quarters immersed amongst the thalline granules, 0.18–0.2 mm in diameter, globose when young but soon becoming pyriform, with a neck that is roughened by vertical channels. **Asci** 8-spored. **Ascospores** 20–40 × 12–20 μm, mainly ellipsoid, sometimes globose, colourless (Figure 1).
Of the three hitherto described European species of *Agonimia*, *A. tristicula* is the most similar to *A. repleta*, especially by having pyriform perithecia with a longitudinally furrowed (plicate) neck. It differs, however, in having larger squamules (c. 0.1–1.0 × 0.1–0.3 mm) and in having 2-spored asci and very large ascospores, (60–)80–120(–150) × 26–50 μm (Purvis et al. 1992). Eight-spored asci are characteristic of *A. allobata* (Stizenb.) P. James in Coppins, P. James & D. Hawksw. and *A. octospora* Coppins & P. James, but the perithecia of both these species are smooth and without a well-defined neck. Also, the ostiolar region in these species is pale or pinkish – a feature not noted in either *A. repleta* or *A. tristicula*. *Agonimia octospora* further differs from *A. repleta* in having much larger ascospores, 60–75(–85) × 20–26 (–30) μm (Purvis et al. 1992).

*Agonimia repleta* is living on the often mossy bark of trees, and also on mossy rock near the streams, in very shaded conditions. At its localities in the Gorce National Park it is accompanied by *Dimerella diluta*, *Leptogium lichenoides*, *Peltigera praetextata*, *Polyblastia gelatinosa*, *Vezdea aestivalis* and *V. stipitata*.

The species has also been recently discovered in the Ukrainian part of the "East Carpathians" Trilateral Biosphere reserve, and one of the specimens is cited below.

**Additional specimens examined: Ukraine.**

**Biatora ocelliformis** (Nyl.) Arnold

This species is quite rare in Europe, connected to old, natural forests. It occurs especially in Scandinavia. In the central part of the continent it grows mainly in mountains (Alps, Carpathian, Pyrenees), indicating its boreal-mountain character (Printzen 1995, Printzen & Palice 1999). The majority of known localities date from the last century and have historical importance to-day. *Biatora ocelliformis* has been hitherto reported on the bark of *Abies alba*, *Acer* sp., *Alnus* sp., *Coryllus avellana*, *Fagus sylvatica*, *Juniperus communis*, *Picea abies*, *Quercus* sp., *Salix* sp., Sor-
bus aucuparia and Tilia cordata (Printzen 1995).

By the general appearance of its apothecia B. ocelliformis can be confused with young forms of Lecania globulosa or a few Micarea species, e.g. M. synotheoides - recently recorded in Gorce Mts too (Czarnota 1997). It is distinguished from these taxa by blue-olive (turquoise) hymenium, by different shape, septation and dimensions of ascospores and by the Pd+ red colour reaction of its thallus.

Additional locality in Poland (in addition to that from Białowieża; Printzen & Palice 1999: 323): Western Beskydy: Gorce Mts, Gorce National Park, Roztoka valley, on bark of Acer pseudoplatanus in shady Carpathian beech forest (Dentario glandulosae-Fagetum), alt. 840 m, 49°33'N, 20°08'E, ATPOL EG 21, 9 August 1994, leg. Czarnota 584/94 (GPN).

**Micarea myriocarpa** Wirth & Vézda ex Coppins

This species has most frequently been reported on a rocks or on exposed roots of trees in forest environments, often together with Micarea sylvicola and M. botryoides. It is quite widespread, especially in Western Europe – in Britain, Scandinavia, Germany, though the number of known localities is not impressive (Coppins 1983, Wirth 1995, Santesson 1993).

**Micarea myriocarpa** is very similar to Psilolechia clavulifera and some other Micarea species with a thin mealy-granular, thin and light-green thallus. Diagnostic characters are its pale to dark-brown apothecia, brownish colours in section, but never brown-black or olive, and small, 0–1-septate ascospores.

**Specimens examined:** Poland. Western Beskydy: Gorce Mts, Gorce National Park, ATPOL EG 21: southern slope of Jaworzyna Kamienicka Mt in Jaszcze Duże valley, on clayey soil in upper spruce forest (Plagiothe-

cio-Piceetum), alt. 1140 m, 49°33'N, 20°10'E, 5 November 1997, leg. Czarnota 1766/94 (GPN); Kamienica valley below Bieniowe glad, on shaded sandstones, alt. 820 m, 49°34'N, 20°13'E, 1 July, 1999, leg. Czarnota 1966/94 (GPN); Pod Jaworzną range in Kamienica valley, on shaded sandstones, alt. 1060 m, 49°34'N, 20°10'E, 19 July 1999, leg. P. Czarnota 2022/94 (GPN).

**Micarea nigella** Coppins.

Specimens have been reported in Europe mainly on soft wood of stumps in shaded woodlands. The previously known distribution of *Micarea nigella* is very limited, it being reported only in Great Britain, Denmark and Sweden suggesting a eu-atlantic character (Coppins 1983, Santesson 1993). However, its recent discovery in the Gorce Mts (and in the Ukrainian East Carpathians) alters this picture. It seems to us that *Micarea nigella* is more common than records suggest, and has probably been overlooked or confused with other Micarea species.

**Micarea nigella** is morphologically similar to *M. misella* (a much more frequent species in Poland) or to specimens of *M. botryoides* rarely growing on wood. These species all have black, globose apothecia and black stalked pycnidia, and an endoxylic or thin, grey-green thallus. The colour reaction of apothecial sections and the pycnidial wall provide the most important diagnostic characters of *Micarea nigella*. The purple-brown pigmentation of the apothecia and pycnidia reacts K+ dull-green, while *M. misella* has a dark-olive pigment reacting K+ violet. *Micarea botryoides* has green or brown pigments (without a purple tinge) that are little changed by K; furthermore, it usually grows in different habitats than the other two species, preferring shaded sandstones and other acidic rocks.

**Specimens examined:** Poland. Western Beskydy: Gorce Mts, Gorce National Park, Ustępny Potok valley, on wood of conifer
stump in clear Carpathian beech forest (Dentario glandulosae-Fagetum), alt. 800 m, 49°35'N, 20°14'E, ATPOL EG 21, 20 February 1996, leg. Czarnota 297/94 (GPN).

**Ropalospora viridis and Fuscidea pusilla**

The identity of two macroscopically very similar, sterile species: *Ropalospora viridis* (Tønsberg) Tønsberg and *Fuscidea pusilla* Tønsberg has been confirmed by thin-layer chromatography (TLC). The first species was hitherto published in Poland as *Fuscidea viridis* Tønsberg (Alstrup & Olech 1992). *Fuscidea pusilla* has recently been recorded in the nearby Beskid Sądecki Mts (Śliwa & Tønsberg 1995). Both species grew quite frequently in Gorce Mts on ± smooth bark of deciduous trees, and they are probably more common in Poland than it appears from their not numerous reports.

**Specimens examined:** **Poland. Western Beskidy:** Gorce Mts, Gorce National Park: *Ropalospora viridis:* "Turbacz" nature reserve in Potok Turbacz valley, on bark of *Fagus sylvatica* in the Carpathian beech forest (Dentario glandulosae-Fagetum), alt. 830 m, ATPOL EG 21, 23 May 1996, leg. Czarnota 1326/94 (GPN); Czerwony Gróń range near Mały Borek in Kamienica valley, on bark of *Fagus sylvatica*, alt. 1020 m, ATPOL EG 21, 19 July 1999, leg. Czarnota 2013/94 (GPN). *Fuscidea pusilla:* Obidowiec Mt, in mixed forest *Picea abies* and *Fagus sylvatica*, on bark of *Fagus sylvatica*, alt. 1010 m, ATPOL EG 20, 10 August 1995, leg. Czarnota 451/94 (GPN); Znaki range near Beniowe glad in Kamienica valley, on bark of *Fagus sylvatica* in the Carpathian beech forest (Dentario glandulosae-Fagetum), alt. 1020 m, ATPOL EG 21, 26 May 1997, leg. Czarnota 1581/94 (GPN).
References


Byssoloma marginatum new to Norway and the status of the species in Scandinavia

HÅKON HOLIEN


Byssoloma marginatum is reported from Norway for the first time. Notes on its morphology, ecology and distribution status in Scandinavia are provided. The known European distribution is mapped.

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During field work in the humid spruce forests (boreal rain forests) of Nord-Trøndelag, central Norway I recently collected a small crustose lichen with bluish black apothecia and conspicuous sessile pycnidia on thin twigs of Picea abies. Closer examination showed that it is Byssoloma marginatum (Arnold) Sérusiaux, a species not previously known from Norway (Santesson 1993, Jorgensen 1996).

The genus Byssoloma is characterized by the byssoid excipulum, Byssoloma-type of ascus structure and pyriform conidia (Séru-siaux 1992) with most species being foliicolous in tropical rainforests (Farkas & Sipman 1993). Within the genus B. marginatum is characterized by the blackish apothecia with a bluish tinge containing hyaline, 3-septate spores. The apothecia are often confluent, forming lobate aggregates. Pycnidia are conspicuous, subglobose to ovoid, often also with a bluish pigment, with pyriform conidia which are slightly constricted at the middle.

According to Séru-siaux (1998) Byssoloma marginatum is an oceanic species which in Europe is known from the British Isles, southwestern parts of Sweden, the Alps, the western parts of France and the Iberian peninsula and from the Mediterranean area (Malorca and Calabria). It is listed by Jorgensen (1996) among oceanic species which could be expected to be found in Norway. The present distribution in Europe (Figure 1) is similar to that of Lobaria amplusima and Nephroma laevigatum (Degelius 1935). Outside Europe B. marginatum is known from Tenerife and Madeira, where it is both corticolous and foliicolous (Sérusiaux 1996), as well as from the Pacific coast of North America (Brodo 1995). According to Lücking (in litt.) B. marginatum is also known from cloud forests at high altitude in Costa Rica where it grows on leaves.

All Norwegian localities are humid spruce forests situated within the southern boreal, strongly oceanic (O2) region according to Moen (1998). Byssoloma marginatum is a further addition to the rain forest element occurring in these forests (Holien & Tønsberg 1996). Among accompanying lichen species were e.g. Biatora rufidula, Fellhanera subtilis, Fuscopannaria ahlneri, Gyrolideopsis piceicola, Lichinodium ahlneri, Micarea cinea, Parmeliella parvula and Pseudocyphellaria crocata. At one of the localities (Over-halla, Foss) B. marginatum was found on 8 of 36 sampled branches of Picea abies which was collected for a pilot study on vertical distribution of lichens in boreal rain forests.
The results from this study will be presented elsewhere. Most occurrences were from the lowest level (less than 3 m above the ground), but it was also found at a level of 12 m above the ground.

In the Swedish localities *Byssoloma marginatum* has been found on mature trunks of *Quercus* sp. and *Sorbus aucuparia* as well as on trunks of *Picea abies*. The appearance in Öland seems surprising, but according to Tommy Knutsson (in litt.) the locality in the northern part of this island is rather humid, strongly influenced by the maritime climate of the Baltic Sea. Several other oceanic lichens are also known from this region, i.e. *Lobaria amplissima*, *L. virens* and *Nephroma laevigatum* (Arup et al. 1999, Thor & Arvidsson 1999). For the other localities no detailed information on habitat was found on the labels.

*Byssoloma marginatum* is obviously a rare species in Scandinavia, but like several other inconspicuous species it is probably overlooked to some extent. Surprisingly it has not been included in the Swedish list of threatened lichens (Thor & Arvidsson 1999) and it is a strong candidate for the Norwegian Red List of crustose lichens. According to Sérusiaux (1992) the species is probably extinct from Central Europe.

*Byssoloma marginatum* should be searched for on suitable substrates at old Swedish localities as well as along the west coast of Norway, preferably in old forests with long canopy continuity where it seems to be a pioneer in species rich lichen communities.

*Specimens examined:* **Norway. Nord-Trøndelag:** Grong, along river Gartlandselva,
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A new long-desired lichen flora: Nordic Lichen Flora, Volume 1


At the first sight of Nordic Lichen Flora, Volume 1, with the front cover illustrated by Eric Acharius' drawing of Cetraria islandica in Westring, Svenska lafarnas färghistoria, I was very pleased. Acharius is our original source of inspiration for lichenogy in the Nordic countries, and I started my studies with this particular lichen and its variation.

The first part of the Nordic Lichen Flora, in all 15 pp. include introductory chapters on the (1) Lichen habitats by Teuvo Ahti, (2) Biogeography by Teuvo Ahti, (3) Lichens as bioindicators of air pollution by Ulrik Söchting, (4) Red-listed lichens by Göran Thor, (5) Chemistry by Gunnar Carlin, (6) Names by Per Magnus Jørgensen and Teuvo Ahti and (7) Provinces and Maps by Roland Moberg. These short articles all include valuable information, including references and the scope of the project on the complete Nordic Lichen Flora.

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Don't hesitate to buy this first volume of the Nordic Lichen Flora, which can be ordered from Svenska Botaniska Föreningen, postal account number 48 79 11 – 0, SEK 280 including postage. We all look forward to see the forth coming volumes in the same series.

E. I. Kärnefelt
Instructions for authors

Unpublished papers on all aspects of lichenology will be considered for publication in Graphis Scripta, but priority is given to those dealing with Nordic systematics and floristics. Manuscripts should be submitted as one original and one copy to the editor (Ingvar Kærnefelt). Papers are published in English or in a Scandinavian language with a short English summary. All papers will be evaluated by referees.

The manuscript should be type-written double-spaced with wide margins. As a guide to the layout recent issues should be consulted. When accepted for publication, the final version of the manuscript should, if possible, be accompanied with the text on diskette, preferably written in MS Word or WordPerfect (PC or Macintosh), or as an ASCII-file. Use a minimum of formatting codes; underline or italics, bold-face, and tabulator stops are usually sufficient. Avoid right-hand and center justifications, do not use multiple columns, use only one font and one type-size.

The abstract should be in about 3-10 printed lines. It summarizes the results and conclusions of the paper, and is not merely a description of the work.

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The nomenclature follows Santesson (1993) for papers on Nordic species, unless otherwise stated. Author names are normally given at the first mention of a species; abbreviations of author names follow Kirk & Ansell (1992). Titles of periodicals are abbreviated according to Botanico Periodicum Huntianum, and titles of books (in taxonomic treatments in the text) according to Stafleu & Cowan, Taxonomic literature, 2nd edition. Spellings of geographical names follow The Times Atlas of the World.

For the layout of references, follow these examples:


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Innehåll

33 Calicium parvum (Caliciaceae) new to Poland
   K. Jando

35 Buellia chloroleuca in the Nordic countries
   A. Nordin

40 Report from the 15th symposium of Baltic mycolgists and lichenologists
   in Järveljä, eastern Estonia, 3-8 September 1999

41 Notes on the lichen flora of southern Sweden III
   S. Ekman, S. & U. Arup

49 A blue-green Psoroma hypnorum found in Trøndelag, Central Norway
   H. Holien & P. M. Jørgensen

53 Lepraria elobata found in Hungary, Poland and Slovakia
   M. Kukwa & B. Owe-Larsson

56 A new species of Agonimia and some interesting lichens from Gorce Mts
   (Western Beskidy Mts) new to Poland
   P. Czarnota & B. J. Coppins

61 Byssoloma marginatum new to Norway and the status of the species in
   Scandinavia
   H. Holien

64 New book [Nordic Lichen Flora, Volume 1]