Fellhaneropsis myrtillicola, a new genus and species for Finland

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The genus *Fellhaneropsis* and the species *Fellhaneropsis myrtillicola* (Erichsen) Sérus. & Coppins are new to Finland from three localities in the south. The species was found corticolous and foliicolous on *Picea abies*, and on *Vaccinium myrtillus* in forests with rather humid microclimate and insignificant human influence. Notes on the habitats and the microscopic characters of the species are given. The microconidia turned out to be wider than what is reported in the literature.

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Arup & Ekman (1994) treated three species of *Fellhanera* in Sweden, *F. subtilis* (Vězda) Diederich & Sérus., *F. myrtillicola* (Erichsen) Hafellner, and *F. boutellei* (Desm.) Vězda, with fairly similar, somewhat peculiar, habitat ecology – all growing on *Vaccinium myrtillus*. *Fellhanera myrtillicola* was later transferred to the new genus *Fellhaneropsis* Sérus. & Coppins as *Fellhaneropsis myrtillicola* (Erichsen) Sérus. & Coppins (Sérusiaux 1996). The paper of Arup & Ekman inspired me to search for these tiny crustose lichens. As a result, *Fellhanera subtilis* was soon found and reported from several localities as new to Finland (Harmaja 1995). Later, I also found *Fellhaneropsis myrtillicola* new to Finland in three localities. These finds are reported on and discussed below. *Fellhanera boutellei* is known from Finland by two specimens collected close to each other in the 1890s, in Lammi in southern Finland but that species is now considered extinct in the country (Rassi et al. 2001).

Habitat and substrate descriptions of Finnish finds of *F. myrtillicola*

The Lohja locality

The Lohja locality comprises fairly rich woods (mainly *Picea abies, Betula pendula, Populus tremula* and *Sorbus aucuparia*) with big boulders, at the SW face of a steep wall of a massive meso-oligotrophic rock outcrop, with, e.g., *Dryopteris expansa, Elymus caninus, Impatiens noli-tangere* and *Huperzia "selago s. str."* (the common taxon in South Finland that prefers shaded, humid, not too oligotrophic habitats). Additional species in the near-by brook valley include *Anemone ranunculoides, Dryopteris dilatata s.str., Poa remota, Pulmonaria obscura, Tilia cordata* and *Viola mirabilis.* *Nephroma bellum* and *N. parile* (both published by Pykälä 1992, and also collected by me [H]) also occur near-by.

*Fellhaneropsis myrtillicola* grew here on the lower portions of *Picea abies* where it occurred both as a corticole on the upper surfaces of living twigs and as a foliicole on green needles (again mostly on the upper surface). Accompanying lichens on the same
spruce tree included *Fellhanera subtilis*, *Biatora helvola* (conf. Ch. Printzen), and *Biatora sphaeroidiza* (det. Ch. Prinzen; all leg. Harmaja, H).

**The Järvenpää locality**
The habitat is a fairly old mesic heath wood (representing the MT, or *Myrtillus* site type according to the Finnish classification) in the eastern gentle slope of the valley of a small river. The area is at the border of a nature reserve that mainly consists of luxurious brook-side grove with mainly *Picea abies*, *Alnus incana*, *Populus tremula* and *Betula pendula* in the tree layer, and also with e.g. *Pulmonaria obscura*, *Mercurialis perennis* (at the northern edge of its distribution area), *Polygonatum multiflorum* as well as the fairly recently introduced *Symphytum officinale* var. *bohemicum*.

*F. myrtillicola* was found on the lower portions of *Picea abies* where it occurred both as a corticole on the upper surface of living twigs and as a foliicole on green needles. It was also found, albeit scanty, on the living, green twigs of *Vaccinium myrtillus* in the understory below the branches of the spruce tree. Accompanying species included *Scoliciosporum* cf. *chlorococcum* (living spruce twigs), *Fellhanera subtilis* (living twigs and needles of spruce; living, green [scanty] and brown twigs of *Vaccinium myrtillus*), and *Micarea peliocarpa* (dead spruce twigs).

**The Lammi locality**
This habitat is an oligotrophic, mesic heath wood (between the *Myrtillus* and *Vaccinium* site types in the Finnish classification) with *Pinus sylvestris*, *Picea abies* and *Betula pendula* at the southern edge of a small, fairly low elongated glacialfluviial kettle hole “Kylmäsuppa”. Kettle holes exemplify the phenomenon of temperature inversion: air temperatures often drop considerably closer to the ground and in lower-lying spots in the terrain under certain climatic conditions. Consequently, also moisture condenses in such spots more than in the surroundings. This interesting phenomenon is described, e.g., by Tikkanen & Heikkilä (1991) who studied the microclimate of this very kettle hole (where the temperature inversion was increased through recent clear felling).

*F. myrtillicola* grew on the lower portions of *Picea abies* where it occurred on the upper surface of an apparently dead twig. No indicator species of humid microclimate or old-growth forest were among the accompanying lichens. The locality is not far from the site where *F. boutellei* was collected (see above).

**Microscopic characters of Finnish F. myrtillicola**
The three specimens were studied in Melzer mounts and proved to be similar in microscopical characters: photobiont, possibly belonging to Chlorococcaceae, green, unicellular, subglobose or globose (sometimes broadly ellipsoid), up to 10 μm in diam.; pycnidia (conidiomata) abundant, more or less cupulate, grey to blackish; macroconidia long, filiform, sigmoid, unicellular, hyaline; microconidia – borne in very inconspicuous microconidiomata – slightly allantoid, unicellular, hyaline, 4–7.5 × 2–3 μm. Apothecia not observed with certainty. Moreover, in all specimens an indigo blue pigment was observed on or between the hyphae of the upper part of the pycnidia.

Discussion

The morphology and anatomy of the Finnish specimens are in good concordance with the descriptions in the literature. However, the microconidia, 4–7.5 × 2–3 μm, are wider than those reported in the literature. Measurements given in the literature are 4–5 × 0.5 μm (Jacobsen & Coppins 1989) and 4–8(–13) × 0.5–1 μm (Sérusiaux 1996). Distinct apothecia with asci were not observed. According to, e.g., Sérusiaux (1996) the pycnidia that produce the macroconidia are borne in connection to old apothecia. The blue pigment observed on or between the hyphae of the pycnidia has possibly not been reported before in the species; however, Arup & Ekman (1994) mentioned that the pycnidia usually have blue colour. For full descriptions of *F. myrtillicola*, consult Arup & Ekman (1994), Sérusiaux (1996; also with full synonymy of the species) and Sparrius & Aptroot (2000; also containing a key to the species of *Fellhanera* and *Fellhaneropsis* of western Europe). The article of Arup & Ekman (1994) contains a good colour photograph of the species (see Fig. 4. C – which depicts *F. myrtillicola* and not *Fellhanera subtilis* as indicated in the figure legend!). The Finnish habitats are woods with insignificant human influence and apparently rather humid microclimate. Concerning the Lohja locality, the occurrence of *Sphaerophorus* cf. *globosus* near the base of the trunk of an adjacent *Sorbus aucuparia* is most interesting. A corticolous habitat is very exceptional for *S. globosus* in Finland, and is another indication of the unusually humid microclimate of this site. In addition, this *Sorbus* trunk also supports a tuft of the fern *Polypodium vulgare*, likewise an unusual occurrence and apparently another indication of high humidity at the site. The ecology and distribution of *F. myrtillicola* in Finland corresponds well to what is reported from elsewhere. In Finland, *F. myrtillicola* is both corticolous and foliicolous and occurs on *Picea abies* (twigs and needles) and *Vaccinium myrtillus*. All three localities are situated in the southern boreal bioclimatic zone (Ahti et al. 1968). No species of *Fellhaneropsis* were known in Finland previously. In Fennoscandia, *F. myrtillicola* was known from Sweden and Norway (Santesson et al. 2004). For the total distribution of the species, see Sérusiaux (1996), Clerc (1998), and Sparrius & Aptroot (2000). The species is infrequent throughout its range, and commonly red-listed. Because of its obvious rarity and somewhat restricted habitat ecology, *F. myrtillicola* may be considered a candidate for the Red List of Finland.

References


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**NLF-excursion 2009: Snæfellsnes peninsula, Iceland**

The biannual excursion of the Nordic Lichen Society will take place in the western part of Iceland 19–24 July 2009. We will stay in a school, which serves as a hotel during summers, with some possibilities to work with the material during evenings. The localities visited are on and close to the Snæfellsnes peninsula and include lavafield, coastal cliffs, heaths and basaltic cliffs.

Full accommodation in double rooms will cost around ISK 50,000 (≈ DKK 1350, NKK 1600, SEK 1850) pr. person. Excursion fee will depend on our success in acquiring funds for other costs, such as bus-trips. Please send a note to Starri Heiðmarsson (starri@ni.is, for full address, see inside of Graphis) if you intend to participate, preferably before 1 April 2009. Additional information will soon be available on NLF:s homepage at [http://www.nordiclichensociety.org/](http://www.nordiclichensociety.org/).