

Three species of Sordariomycetes (Ascomycota: Pezizomycotina) new to Norway

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known occurrence in Fennoscandia.

Norsk tittel: Tre sekksporesopper av klassen Sordariomycetes nye for Norge

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KEYWORDS

Ascomycetes, pyrenomycetes, bark-living, wood-living

NØKKELOORD

Sekksporsopp, kjernesopp, barklevende, vedlevende

SAMMENDRAG

Tre sekksporesopper av klassen Sordariomycetes rapporteres som nye for Norge: *Hypoxyton subticinense* på dødt trevirke fra ask (*Fraxinus excelsior*), *Ophiocordyceps stylophora* på en smellerlarve (Elateridae) og *Paranectria oropensis* på epifytiske laver. Funnene presenteres sammen med den kjente forekomsten i resten av Fennoscandia.

ABSTRACT

Three species from Sordariomycetes (Ascomycota) are reported as new to Norway: *Hypoxyton subticinense* on dead wood of ash (*Fraxinus excelsior*), *Ophiocordyceps stylophora* on a click beetle larva (Elateridae) and *Paranectria oropensis* on epiphytic lichens. The finds are presented together with the

INTRODUCTION

Despite that many species of sordariomycetes ('pyrenomycetes s. str.') are conspicuous in the field they often don't get the attention they deserve by mycologists. They are therefore more poorly known compared to for instance most basidiomycete taxa and lichenized fungi, enabling interesting finds on various substrates. We here report three new species for Norway, one from dead wood of ash (*Fraxinus excelsior*), one restricted to click beetle larvae and one lichen parasite. The finds are presented together with the known occurrence in the other Fennoscandian countries.

MATERIALS AND METHODS

Species distributions in Fennoscandia were checked using the following sources; for Norway: Species Map Service (2017), The Norwegian Mycological Database (2017), and Aarnæs (2002); Sweden: Eriksson (2014) and Artportalen (2017); Denmark: Atlas of Danish Fungi (2017); Finland: Finnish Biodiversity Info Facility (2017); Fennoscandia: Nordin et al. (2017).

Collectors and identifiers: BN = Björn Nordén, JBJ = John Bjarne Jordal, MJ = Mari Jäntti, NO = Norway. The nomenclature follows Eriksson (2014) for species occurring in Sweden, and otherwise Index fungorum (2017).

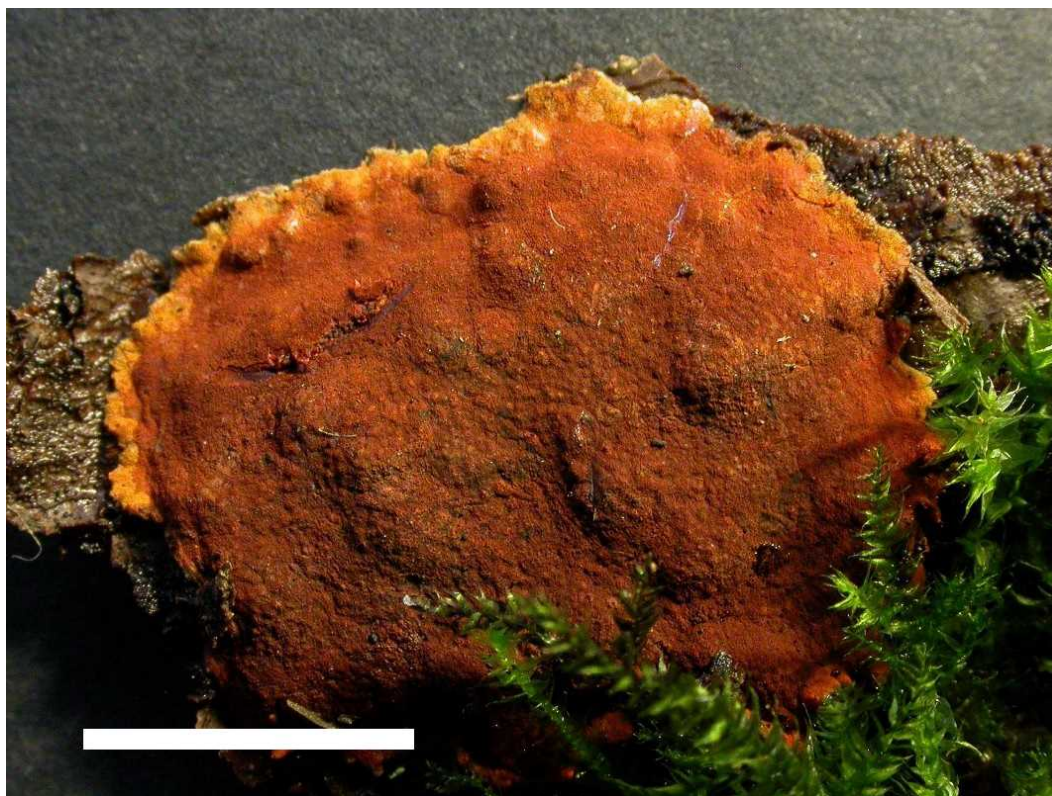


Figure 1. *Hypoxylon subticinense*, from Denmark, showing orange stroma (scale bar = 2 mm). Photo: Jens Maarbjerg, 2016.

RESULTS

Hypoxylon subticinense

Hypoxylon subticinense Y.M. Ju & J.D. Rogers (Fig. 1) is previously found in Denmark in Fennoscandia. It occurs on dead wood from deciduous trees. It has distinctive fluffy orange immature stromata and a KOH-reaction similar to that of *H. rubiginosum*. To separate it from *Hypoxylon ticinense* L. Petrini (not found in Fennoscandia) the ascospores need to be examined. Although only immature ascospores were found, they did appear equilateral and we refer the material to *H. subticinense*.

Material: NO Østfold, Moss, Grønliparken, UTM32 590906/ 6589076, on the upper side of log of *Fraxinus excelsior*, diameter 10 cm,

in deciduous forest. Growing together with *Protocrea farinosa* and *Skeletocutis nivea*, September 22, 2016, leg. BN, det. BN.

Ophiocordyceps stylophora

Ophiocordyceps stylophora (Berk. & Broome) G.H. Sung, J.M. Sung, Hywel-Jones & Spatafora (Fig. 2) is previously known from Sweden in Fennoscandia and is otherwise rare in Europe (Chachula et al. 2011). It has a greyish stroma with a sterile tip and occurs on larva of click beetles (Elateridae) in dead wood.

Material: NO Vestfold, Sandefjord, Sand, UTM 32 575732/ 6559328, on Elateridae larva in old stump of *Alnus glutinosa* in deciduous forest, October 5, 2016, leg. BN, MJ, det. BN.



Figure 2. *Ophiocordyceps stylophora* stroma showing sterile upper part and papillate ostioles. The stroma was rooted in a click beetle larva concealed in a very much decomposed stump of *Alnus glutinosa* (scale bar = 5 mm). Photo: Mari Jäntti, 2016.

Paranectria oropensis

Paranectria oropensis (Ces. ex Rabenh.) D. Hawksw. & Piroz. (Fig. 3) is previously found in Denmark and Sweden in Fennoscandia. It forms a white mycelium and copious orange perithecia and is a parasite on various lichen species.

Material: 6 samples. NO, Rogaland, Strand, Fiskåneset Ø, UTM32 328071/ 6556960, on lichens on bark of pollarded *Fraxinus excelsior* in pasture, October 8, 2012, leg. BN & JBJ, det. BN. NO, Rogaland, Strand, Rag, UTM 32 326098/ 6555365 and 326087/ 6555348, on lichens on bark of old *Fraxinus excelsior* in deciduous forest, October 3 & 4, 2012, leg. BN & JBJ, det. BN. NO, Hordaland,

Osterøy, Kløvneset, UTM32 310658/ 6705250 and 310618/ 6705336, on dead *Physcia* sp. on bark of an old *Fraxinus excelsior* in a deciduous forest, September 30, 2013, leg. & det. BN & JBJ.

DISCUSSION

Most of the species of sordariomycetes reported for the first time in Norway in this paper, and by Nordén et al. (2015), were probably present in Norway for a long time, but has been neglected by mycologists. However, it is also possible that some may be new arrivals resulting from a warming climate. *H. subticinense* may be the most likely candidate since *Hypoxylon* is among the best known genera of sordariomycetes in Norway and since it occurred at a climatically favoured site. Similar establishments would be interesting to follow in the future and more surveys should be performed in the southern parts of Norway.



Figure 3. *Paranectria oropensis* ascomata and mycelium overgrowing epiphytic lichens (scale bar = 300 µm). Photo: Cristopher Reisborg, 2012.

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REFERENCES

- Aarnæs J-O, 2002. Catalogue over macro- and micromycetes recorded for Norway and Svalbard. Fungiflora, Oslo, 412 pp.
- Artsdatabanken & GBIF (Global Biodiversity Information Facility) Norway 2017. Artskart. –<http://artskart.artsdatabanken.no>. Accessed November 10, 2017.
- Artportalen, 2017. The Swedish Species Observation System. <https://www.artportalen.se/>. Assessed October 20, 2017.
- Atlas of Danish Fungi, 2017. Svampeatlas 2.0. <https://svampe.databasen.org/>. Assessed October 20, 2017.
- Chachula P, Vončina G, Kozik J, 2011. *Ophiocordyceps stylophora* (ascomycota, hypocreales), new species for Poland. Polish botanical journal 56: 321–326.
- Elven H, Søli G (Eds.), 2015. Kunnskapsstatus for arts mangfoldet i Norge 2015. Utredning for Artsdatabanken 1/2016. Artsdatabanken, Norge.
- Eriksson OE, 2014. Checklist of the non-lichenized ascomycetes of Sweden. Symbolae Botanicae Upsalienses 36, 1-501.
- Index Fungorum, 2017. The Index Fungorum database and web site. <http://www.indexfungorum.org/Names/Names.asp> Assessed October 20, 2017.
- Nordén B, Læssøe T, Jordal JB, Petersen JH, Voglmayr H, Jaklitsch W, 2015. Forty pyrenomycetous fungi belonging to Class Sordariomycetes new to Norway. Agarica 36: 45-56.
- Nordin A, 2017. Santesson's Checklist of Fennoscandian Lichen-forming and Lichenicolous Fungi <http://130.238.83.220/santesson/home.php>. Accessed October 10, 2017.
- Norwegian Mycological Database, NMD, 2017. Natural History Museum, University of Oslo, Norway, <http://www.nhm.uio.no/botanisk/sopp/>. Accessed October 10, 2017.
- Species Map Service (2017), <https://artskart.artsdatabanken.no>.