The first record of Descolea antarctia Sing. (Basidiomycetes, Agaricales) from the northern hemisphere

Jan Vesterholt & Jens H. Petersen

The genus *Descolea*

In 1951 Singer discribed the genus *Descolea* based on *Descolea antarctica,* a species from the *Nothofagus* stands of Tierra del Fuego, Argentina. Since then several other taxa have been added to the genus, and Horak (1971) includes a total of 8 species.

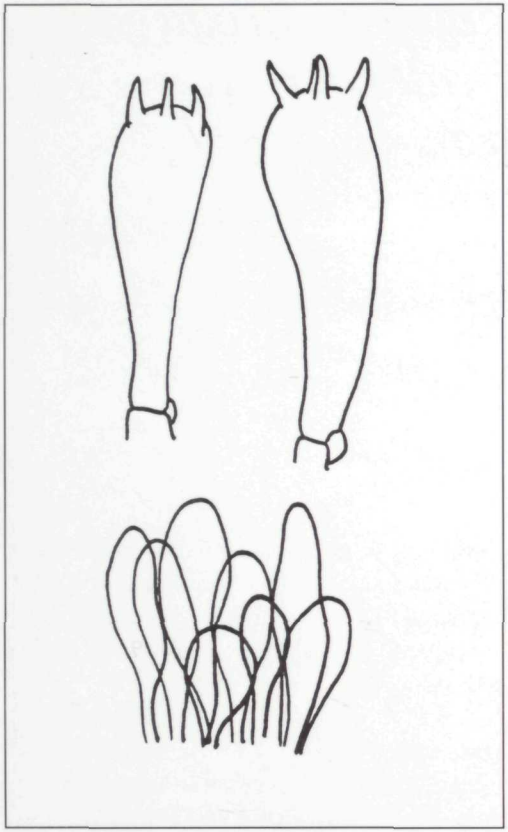
The slender fruitbodies of some of the species may superficially resemble *Pholiotina* species, but microscopically the verrucose spores without a germ pore are very different. Other species of *Descolea* produce more fleshy fruitbodies, which may appear similar to species of *Rozites* – a genus with which *Descolea* is closely related. All *Descolea* species are believed to form mycorrhiza, and at least 5 of these are known to grow with various species of *Nothofagus* in the southern hemisphere.

According to Horak (op. cit.) each of these 5 species have a very narrow area of distribution. Three of them have only been found on New Zealand and the other two are known from two separate areas of Chile and Argentina. *Descolea anarctica* is the only species of its genus known from Tierra del Fuego, which is the origin of the introduced *Nothofagus* trees of the Faroe Islands.

Description based on Faroe material

Pileus 20-45 mm, convex to campanulate, then expanding with a low, broad umbo, shiny when wet, dull and slightly micaceous when dry, centre chestnut brown (8EF8), towards margin paler and more yellowish brown (5B4), (colours referring to Kornerup & Wanscher 1974), striate at margin, weakly hygrophaneous, often with whitish remnants of universal veil. Lamellae free or very narrowly adnate, fairly crowded, pale ochraceous brown, edge serrulate. Stipe 40-70 x 3-6 mm, cylindrical or basally widened up to 9 mm, apex pale ochraceous brown, downwards more yellow-brown, under the ring with white adpressed fibrils. Ring pendant, membranaceous and persistent, pale, upper side striate. Smell and taste indistinct.

Fróðskaparrit 38.-39. bók (1989-90): 77-80



Descolea antarctica (JHP-62F) - photo Jens H. Peteren

Sporeprint sordid olivaceous yellow, slightly more olive than 5B5 but more vivid than 4B5.

Spores limoniform, frequently with long apical papilla, 11-13.5 x 6-7.5 μm, yellowish brown, apical area almost smooth and pale, elsewhere verrucose, dextrinoid reaction strong. Basidia clavate, 32-40 x 10-13 μm, 4-spored. Edge sterile, cheilocystidia of variable shape, mostly sphaeropedunculate to clavate or utriform, 15-35 x 6-11 μm, hyaline, densely packed. Lamellar trama pale brownish. Clamp connections present.

Ecology: Apparently associated with *Nothofagus betuloides* and other *Nothofagus* species.

A colour photo of the species in situ will be published in a coming popular flora on the fungi of the Faroe Islands.

Material

Faroe Islands: Streymoy: Tórshavn, Viðalundin, 6.10.1989, leg. J. H. Petersen (JHP-62F) - ibid., 10.10.1989 (JHP-138F) - ibid., 12.10.1989 (JHP-175F).

Discussion

Both macroscopically and microscopically, the characters of the collections from the Faroe Islands correspond well to the original diagnosis of *D. anarctica* (Singer 1951). He describes the pileus as 17-52 mm broad, the stipe as 29-52 x 5-15 mm, the spores as 11.5-12.5 x 7.5 μm and the cheilocystidia as 20-42 x 5-7 μm. However, our spore measurements do not fully agree with those given by Horak (1971). He separates the largespored *D. anarctica* sp. 12-15 x 6.5-8.5 μm) from the smallspored *D. pallida* Horak (sp. 10-13 x 5-6.5 μm), which he describes as a new species in the same paper.

According to Horak, *D. pallida* lacks cheilocystidia, and as they are present in *D. antarctica,* it appears somewhat surprising that Horak refrains from using this character when separating these two South American taxa.

Introduction of Descolea antarctica to the Faroe Islands

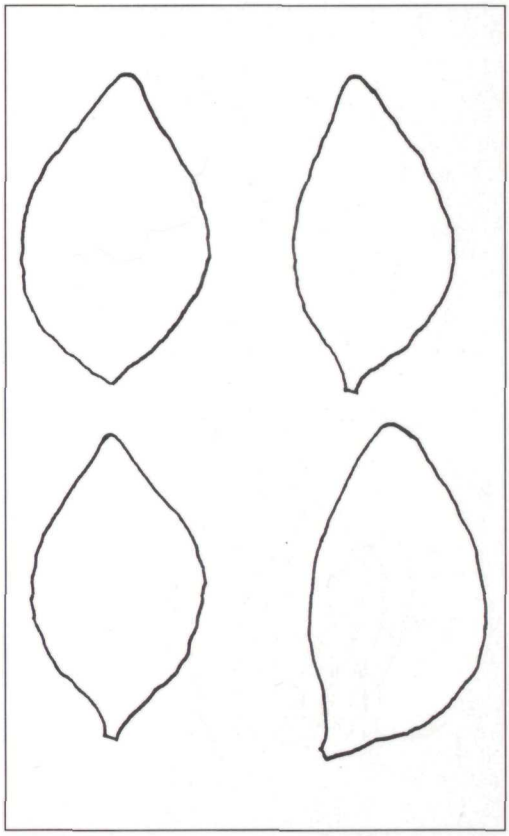
The large majority of the *Nothofagus*

plants in the plantation at Gundadalur were introduced from Tierra del Fuego, Argentina in 1979. The plants, which at that time were 20-25 cm high, were initially planted in a nursery in Tórshavn and were later transferred to their present localities. Considering the very long distance from Tierra del Fuego to the Faroes, it seems very unlikely that spores of the *Descolea* species should have crossed the Equatorial winds and reached Tórshavn by air. It is more likely that the roots of the young plants were carrying their mycorrhiza already at the time of transportation.

It is generally believed that mycorrhizal fungi play an important role for their hosts, and it is possible that the success of the introduced *Nothofagus* trees of the Faroe Islands has been influenced by the unaware, but succeded transfer of their mycorrhizal symbionts.

Acknowledgements

We would like to thank Søren Ødum, The Arboretum of Hørsholm, Denmark for inforations concerning the introduction of *Nothofagus* to the Faroe Islands, Jóhannes Jóhansen, Føroya Náttúrugripasavn, Tórshavn for arranging our visits to the Faroe Islands in 1988 and 1989 and for translating the summary, Henning Knudsen, The Botanical Museum of Copenhagen for finding relevant literature to identify this interesting species, and Mikako Sasa, Institute of Thallophytes, Copenhagen for improving the English text.



Descolea anarctica, spores & basidia (JHP-62F), cheilocystidia (JHP-175F) - scale: 10 μm

Summary

Hatsvampearten *Descolea antarctica* blev i 1989 fundet tre steder i plantagen i Tórshavn - i alle tilfælde i tilknytning til Sydbøg *(Nothofagus)*. Hidtil var arten kun kendt fra Ildlandet, og ingen af denne slægts arter har tidligere været fundet i Europa. Det formodes, at svampen, der danner mykorrhiza med *Nothofagus*-arter, er kommet med de unge planter, der blev indført direkte fra Ildlandet i 1979.

Literature

Horak, E. 1971: Studies on the genus Descola Sing. - Persoonia 6(2): 231-248.

Højgaard, A., J. Johansen & S. Ødum (eds.) 1989: A century of tree-planting in the Faroe Islands. - Tórshavn.

Kornerup & Wanscher 1974: Farver i Farver. - København.

Singer, R. 1951: Descolea antarctica, genero y especie nuevos de Tierra del Fuego. - Lilloa 23: 255-258 (1950).

Jan Vesterholt & Jens H. Petersen
Botanical Museum
University of Copenhagen
Gothersgade 130
DK-1123 Copenhagen K

Úrtak:

Hattsoppurin *Descolea antarctica* varð í 1989 funnin í 3 støðum í viðarlundini í Gundadali, Tórshavn. Í øllum trimum førum hevði hann tætt tilknýti til eldlandsbók, *Nothofagus*. Frammanundan er soppurin einans funnin í Eldlandinum og einki slag av hesi slekt er áður funnið í Europa. Roknast kann við, at soppurin, sum livir í sopparótarsamlívi *(mykorrhiza)* við *Nothofagus,* er komin til Føroya við teimum mongu plantunum, sum í 1979 vórðu innfluttar beinleiðis úr Eldlandinum.