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Sauteria 9, 1998 IAL 3 - Proceedings 37-42

PHACOPSIS DOERFELTII, SP. NOV., AND TWO OTHER INTERESTING LICHENICOLOUS FUNGI FROM CANADA

Phacopsis doerfeltii, sp. nov., und zwei weitere bemerkenswerte lichenicole Pilze aus Kanada

by

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Key words: Lichenicolous fungi, Canada, *Phacopsis*, *Epicladonia*, *Plectocarpon*, new records.

Schlagwörter: Lichenicole Pilze, Kanada, *Phacopsis*, *Epicladonia*, *Plectocarpon*, Neufunde.

Summary: The gall-forming lichenicolous fungus *Phacopsis doerfeltii* is newly described from Quebec, Canada, growing on *Arctoparmelia centrifuga*. *Epicladonia sandstedei* from Quebec is reported new to North America and a new host *(Nephroma parile)* for the rare *Plectocarpon nephromeum* is reported from British Columbia.

Zusammenfassung: Der auf *Arctoparmelia centrifuga* wachsende, gallenbildende Flechtenparasit *Phacopsis doerfeltii* wird aus Quebec, Kanada, neu beschrieben. *Epicladonia sandstedei* aus Quebec ist neu für Nordamerika und eine neue Wirtsflechte (*Nephroma parile*) wird für das seltene *Plectocarpon nephromeum* aus Britisch Columbia mitgeteilt.

Introduction

A short visit during a students excursion to the area East of James Bay in Northern Quebec during September 1994, following the post congress field trip to Southern British Columbia after IMC-5 in Vancouver, gave an opportunity to collect lichens and lichenicolous fungi in both areas. Among the collections from Quebec determined so far are an undescribed species and another species

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new to North America. The aim of the present paper is to describe the new species and new records. *Plectocarpon nephromeum* from British Columbia is reported here from a second locality in North America (see GOWARD et al. 1996) growing on a new host. Other species new to British Columbia *(Abrothallus cetrariae, Arthonia epimela, Arthonia epiphyscia)* are included in GOWARD et al. (1996).

***Phacopsis doerfeltii* ALSTRUP & P. SCHOLZ sp. nov.**

In thallo Arctoparmeliae centrifugae crescens, cecidogena. Hypothecium brunneum ad nigrobrunneum, basaliter pseudoparenchymaticum. Ascosporae late ellipsoideae, 11-13 (-16) µm longae, 7-8 (-10) µm latae. Hyphae hypothecii in solutione I dicta non reagentes.

Type: Canada, Prov. Quebec, East of James Bay, ca. 70 km W of Nemiscau, granite hill near the road from Matagami to Radison (50° 19' N, 77° 55' W), P. SCHOLZ, CDN-73, 8.9.1994 (M, holotype; isotypes in CANL and the private herbaria of V. ALSTRUP, Copenhagen and P. SCHOLZ, Schkeuditz).

Ascomata aggregated in galls formed by the host, disc brown, shiny, rather flat and small (0.1-0.4 mm diam.). The disc is surrounded by a gall-rim formed by the host appearing lecanorine. Lower hypothecium pseudoparenchymatic, cells 7-9 x 6-7 µm, with pale brownish walls, 0.5 µm thick, and hyaline lumen, I -. Upper hypothecium of similar structure, dark brown to black-brown, I -. Subhymenium similar to lower hypothecium in structure and colour, I -. Excipulum pseudosclerenchymatic, cells 10-13 x 3.5-4.5 µm, with pale brownish walls, I -. Asci clavate, 50-60 x 18-25 µm; outer wall layer < 0.5 µm thick, I + blue; inner wall layer 1-2 µm thick, I -. Tholus I + blue, axial body 3-5 µm thick I - *(Lecanora*-type). Ascospores 8 per ascus, broadly ellipsoid, 11-13 (-16) x 7-8 (-10) µm, wall ca. 1.2 µm thick. Hymenial gel I -. Paraphyses septate, sparsely branched, ca. 3 µm thick between the asci, much longer than these and forming a 20-35 µm thick epihymenium, ca. 5 µm thick and brownish above the asci and with up to 7 µm thick dark brown apical cells.

Host. - *Arctoparmelia centrifuga* (L.) HALE. Fig. - 1.

Etymology. - The species is named in honour of the German mycologist Dr. H. DÖRFELT who has much stimulated the lichenological work of the present author and who has organized and led the students excursion to Quebec during which the new species was collected.

Distribution. - Only known from the type collection.

The new species is mainly characterized by the broadly ellipsoid, thick-walled ascospores, the pale brown excipulum and the pseudoparenchymatic

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("cupulate") pigmented hypothecium. It causes the formation of characteristic galls appearing superficially like agglomerations of lecanorine apothecia (fig. 1). According to TRIEBEL et al. (1995) it differs from other *Phacopsis* species with cupulate and pigmented hypothecia by the shape and size of ascospores [longer and narrower in *P. falcispora* TRIEBEL & RAMBOLD and *P. oxyspora* (TUL.) TRIEBEL & RAMBOLD; smaller in *P. thallicola* (A. MASSAL) TRIEBEL & RAMBOLD, (tab. 1)]. *P. lethariellae* HAFELLNER & RAMBOLD with somewhat similar sized spores and similar pigmentation of excipulum and hypothecium is distinguished by larger (0.3 - 0.5 [-0.8] mm), strongly convex apothecia without a gall-rim formed by the host, the non-pseudoparenchymatic hypothecium and the different host *[Lethariella intricata* (MORIS) KROG].

The new species seems, together with other *Phacopsis* species with cupulate hypothecia, to be related to *Protoparmelia* CHOISY as also noted by TRIEBEL et al. (1995), but a description within this genus might be premature.

Epicladonia sandstedei (ZOPF) D. HAWKSW.

During the same field trip to Quebec where *Phacopsis doerfeltii* was discovered the gall-forming lichenicolous fungus *Epicladonia sandstedei* was found on *Cladonia cornuta* (L.) HOFFM.

Northwest of Lake Sakami, East of Radison, P. SCHOLZ, CDN-16, 6.9.1994. According to ESSLINGER & EGAN (1995) and SANTESSON (in litt. 1995) this species is reported herewith for the first time from North America.

Plectocarpon nephromeum (NORMAN) R. SANT.

Plectocarpon nephromeum (fig. 2), recently reported new to North America (GOWARD et al. 1996), was collected during the post congress field trip to Southern British Columbia after IMC-5 in Vancouver.

This second record is of special interest because the species was so far known from only four localities in Norway and Sweden (SANTESSON in litt. 1995) and from the first discovery in British Columbia growing always on *Nephroma bellum* (SPRENG.) TUCK. In the collection reported here (British Columbia, Wells Gray Provincial Park, Dawson Falls 51° 58´ N, 120° 07´ W; P. SCHOLZ, CDN-62, 25.08.1994; duplicates in the herbaria of V. ALSTRUP, Copenhagen, and R. SANTESSON, Uppsala) the parasite is growing on *Nephroma parile* (ACH.) ACH., a new host. It represents typical and well developed material of this little known and probably rare lichen parasite.

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Acknowledgements

I wish to thank Dr. Vagn ALSTRUP, Copenhagen, for help with the description of *Phacopsis doerfeltii* and stimulating discussions, Dr. Paul DIEDERICH, Luxembourg, and an unknown referee for helpful comments on the manuscript, Prof. Rolf SANTESSON, Uppsala, for the confirmation of *Plectocarpon nephromeum* and additional information on the distribution of this species and *Epicladonia sandstedei*, Mrs. A. GUTJAHR, Jena, for drawing the figures, Dr. William PURVIS, London, for improving the English, and Dr. Heinrich DÖRFELT, Jena, for inviting me to the field trip to Northern Quebec.

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Fig. 1: *Phacopsis doerfeltii*, gall-like agglomeration of apothecia. (Herb. SCHOLZ, CDN-73, isotype; scale 0.5 mm, drawing by A. GUTJAHR, Jena)

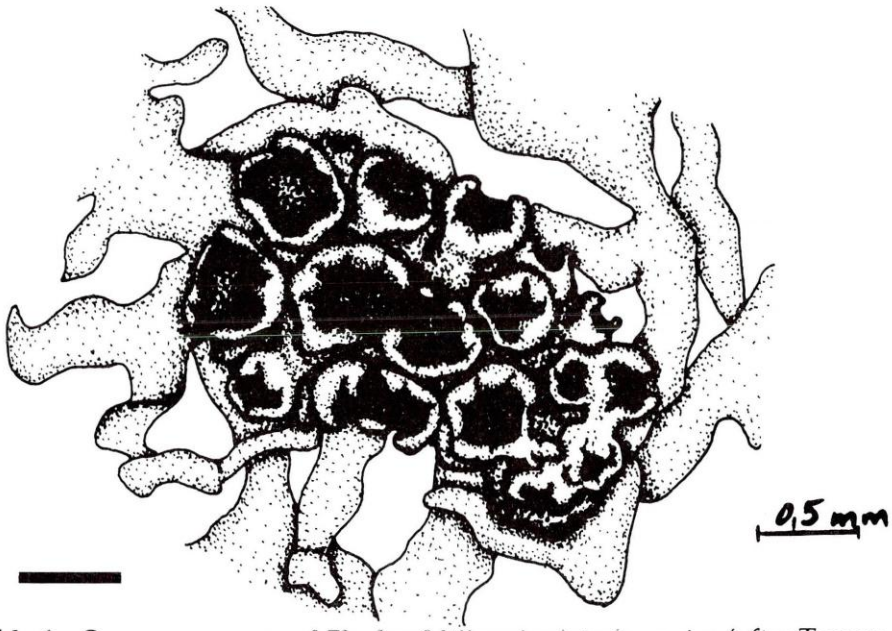
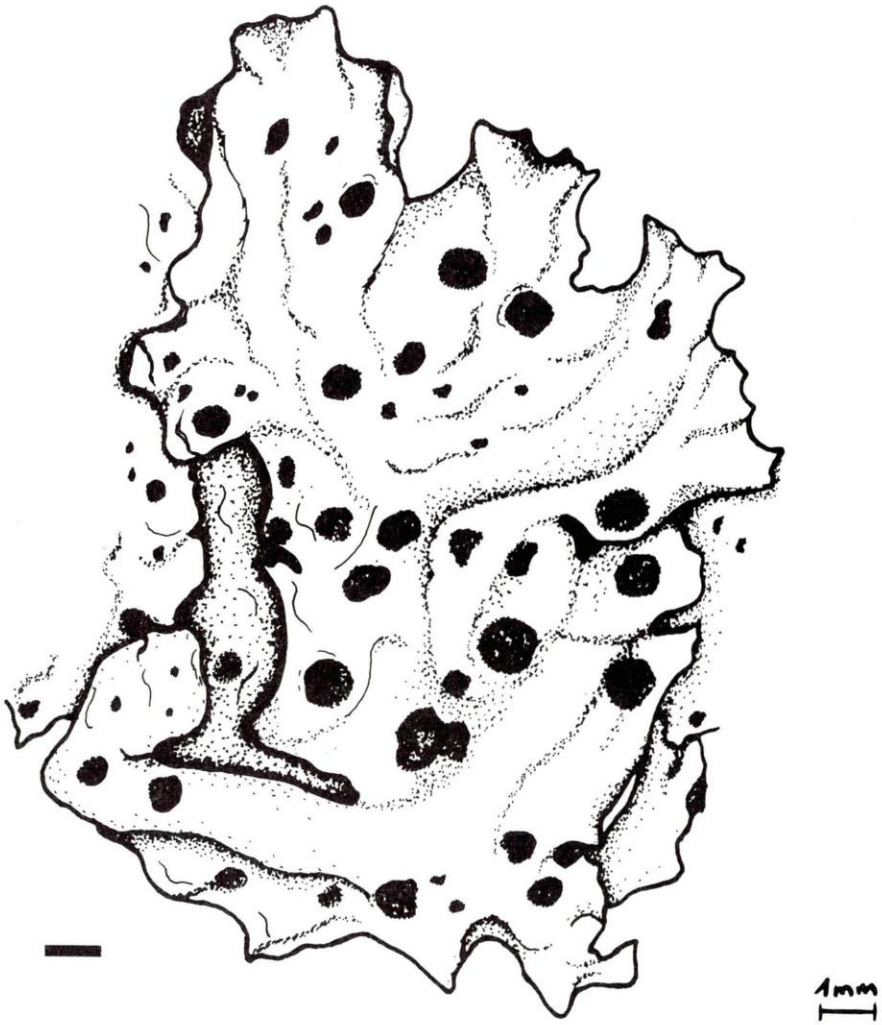


Table 1: Spore measures of *Ph. doerfeltii* and related species (after TRIEBEL et al. 1995)

	Length [µm]	Width [µm]
Ph. doerfeltii	11-13 (-16)	7-8 (-10)
Ph. oxyspora	16-18 (-21)	(5-) 5.5-6.5 (-7)
var. *fusca*	(14-) 15.5-21 (-24.5)	(5-) 5.5-6.5 (-7)
Ph. falcispora	(11.5-) 13.5-15 (-16)	5-5.5 (-6)
var. *sipmanii*	(12-) 14-16 (-19)	5-5.5 (-6)
Ph. thallicola	8-11	(4.5-) 5-6
Ph. lethariellae	(10.5-) 11-13 (-14)	(5.5-) 6-7 (-8)

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Fig. 2: Apothecia of *Plectocarpon nephromeum* on *Nephroma parile*.
(Herb. SCHOLZ, CDN-62; scale 1 mm, drawing by A. GUTJAHR, Jena)



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Zeitschrift/Journal: Sauteria-Schriftenreihe f. systematische Botanik, Floristik u. Geobotanik

Jahr/Year: 1998

Band/Volume: 9

Autor(en)/Author(s): Scholz Peter

Artikel/Article: Phacopsis doerfeltii, sp. Nov., und zwei weitere bemerkenswerte lichenicole Pilze aus Kanada 37-42