

Thyronectria antarctica (Speg.) Seeler
var. *hyperantarctica* D. Hawksw. var. nov.

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ABSTRACT. *Thyronectria antarctica* (Speg.) Seeler var. *hyperantarctica* D. Hawksw. var. nov. is described from moribund rings in bryophyte colonies of species of *Brachythecium* and *Bryum* in the South Orkney Islands, the Argentine Islands and Petermann Island.

AMONGST the fungi found in association with moribund rings in Antarctic bryophyte colonies described by Longton (1973), and sent to the Commonwealth Mycological Institute for determination, was the following previously undescribed taxon.

Thyronectria antarctica (Speg.) Seeler, 1940. *J. Arnold Arbor.*, **21**, No. 4, p. 437.
var. *hyperantarctica* D. Hawksw. var. nov. (Fig. 1).

Perithecia rosa, atriora fiantia, ut in *Thyronectris antarcticis* (Speg.) Seeler var. *antarcticis*. Asci unitunicati, ad 140 μ m. alti et 12 μ m. lati; numerosi. Sporae 6-8 in quoque asco; pallide fuscae ad brunneas; irregulariter ovaes vel ellipsoideae; muriformes, cum (2-) 3-4 (-5) septis transversalibus, et 3-11 cellulae; muri valde constricti in septis; (21-) 32.3 (-41) \times (9-) 14.6 (-19) μ m.

Conidia ignota.

Habitio holotype est in foliis muscorum generis *Bryi* et *Brachythecii*, in regionibus Antarcticis. Locus holotypi: Antarctica—Insulae Argentinis, Insula Galindez, humidus septentrio-occidens-spectans clivus ad apicem praeruptum proxima Meek Channel, alt. c. 50 ft. [15 m.], 7.iii.1965, R. E. Longton 2309 (holotypus in herb. IMI No. 137177(a); isotypus herb. AAS).

Perithecia pale red becoming darker with age, identical to those of *T. antarctica* (Speg.) Seeler var. *antarctica*. Asci unitunicate, to 140 μ m. tall and 12 μ m. wide; numerous. Spores 6-8 in each ascus; pale fuscous to brown; irregularly ovoid or ellipsoid; muriform, with (2-) 3-4 (-5) transverse septae, 3-11 celled; the walls markedly constricted at the septae; (21-) 32.3 (-41) \times (9-) 14.6 (-19) μ m.

Conidial state unknown.

The habitat of the holotype is on leaves of mosses of the genera *Bryum* and *Brachythecium*. Holotype: Antarctica—Argentine Islands, Galindez Island, wet north-west-facing slope at top of cliff by Meek Channel, alt. c. 50 ft. [15 m.], 7.iii.1965, R. E. Longton 2309 (holotype herb. IMI No. 137177(a); isotype herb. AAS).

Other specimens examined: Antarctica—South Orkney Islands, Signy Island, wet west-facing slope opposite Spindrift Rocks, on *Bryum*, alt. c. 100 ft. [30 m.], 7.ii.1965, R. E. Longton 2308 (herb. IMI No. 137175; AAS); Graham Coast, Petermann Island, stony ground near summit, on *Brachythecium*, alt. 450 ft. [135 m.], 10.iii.1965, R. E. Longton 2337 (herb. IMI No. 137176(b); AAS).

This variety differs from var. *antarctica* in the shape, constriction and septation of the ascospores as well as in its habitat. In var. *antarctica* the ascospores are narrower (9-12.5 μ m.) and have 6-12 transverse, and 1-2 longitudinal septae. These differences are summarized more fully in Table I. *T. antarctica* differs from most other species of the genus in the particularly distinct septae of the spores. The type of septation in *T. antarctica* var. *hyperantarctica* is most similar to that seen in *T. austroamericana* (Speg.) Seeler but the latter species has yellow-brown to grey perithecia and much smaller ascospores, (8-) 12 (-16) \times (4.5-) 6.5 (-9) μ m. It is distinguished microscopically from *T. missouriensis* (Ellis and Everhart) Seeler of the eastern United States of America by the size of its spores, and from the pantropical *T. pseudotrichia* (Schweinitz) Seeler by the shape and septation of its spores.

T. antarctica var. *antarctica*, which is known from Punta Arenas, Chile, and Tierra del Fuego (Seeler, 1940), does not appear to have been reported south of Tierra del Fuego. Var.

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TABLE I. SUMMARY OF THE ASCOSPORE CHARACTERS DISTINGUISHING *Thyronectria antarctica* var. *antarctica* AND var. *hyperantarctica*

Characters	var. <i>antarctica</i>	var. <i>hyperantarctica</i>
Size ($\mu\text{m.}$)	$(26-31.5 (-41.5) \times (9-) 10.5 (-12.5))$	$(21-) 32.3 (-41) \times (9-) 14.6 (-19)$
Shape	Elongate ellipsoid to ellipsoid	Ovoid to ellipsoid
Constrictions	Slight	Marked
Transverse septae	6-12	$(2-) 3-4 (-5)$
Longitudinal septae	1-2	0-1
Cells	15-19	3-11

hyperantarctica has been so named since it occurs farther south than var. *antarctica*, and is only known from the Longton specimens cited above. Var. *hyperantarctica* may eventually prove to be a distinct species but because of the considerable variation which occurs within other species of this genus in the ascospore characters (particularly *T. pseudotrichia*) it seems more appropriate to treat it in the rank of variety, at least for the time being.

No species of this genus appear to have been reported previously as occurring on bryophytes. *T. antarctica* var. *antarctica* occurs on the bark of various shrubs and trees and is known from *Berberis ilicifolia* Forst., *Drymis winteri* Forst., *Fagus betuloides* Mirb., *F. antarctica* Forst. and *Maytenus magellanica* Hook. (Seeler, 1940), species absent from the Antarctic islands. *T. antarctica* var. *hyperantarctica*, in contrast, is associated with moribund rings in bryophyte colonies of the genera *Bryum* and *Brachythecium* and, although it is not yet proved if this is definitely the pathogen, a study of Longton's collections indicates that it may well be. Details of these rings have been given by Longton (1973).

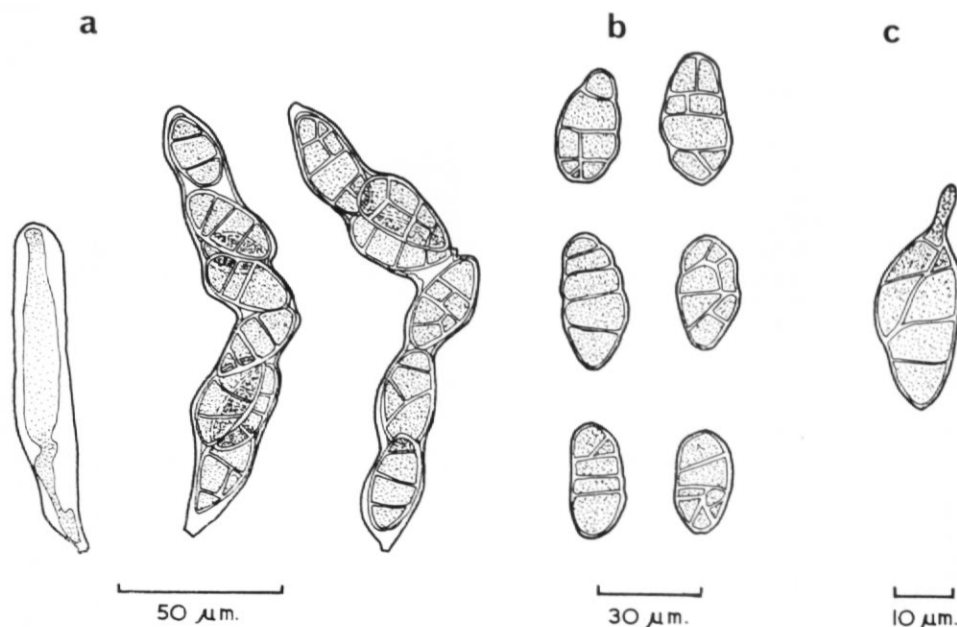


Fig. 1. *Thyronectria antarctica* var. *hyperantarctica* D. Hawksw. Camera lucida drawings from the holotype specimen (IMI 137177(a)). a. One immature and two mature asci; b. Ascospores; c. Papillate (germinating) ascospore.

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