A NEW SPECIES OF TRICHODELITSCHIA

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with one plate.

Introduction

Crouan (1867) described, from rabbit dung, a dark peritheciate fungus with stiff hairs and dark two-celled ascospores which he called *Hormospora bisporula* Cr. Hansen (1877) made the transfer to *Delitschia* assuming that its affinity was with species in this taxon. Likewise, Winter (in Rabenhorst 1877), Ellis and Everhart (1892) and Saccardo (1882) included the species in *Delitschia*. Cain (1934) though following Hansen and the others in regard to its generic position, maintained that the true relationship of the species was uncertain because of the hyaline apical germ pore present in each cell of the ascospore rather than usual germinal silt typical of the other species included in *Delitschia*. In addition, the short setae-like structures on the ascocarp were unlike any seen among the appendage-bearing species of *Delitschia*. Munk (1953) also noting these differences as pointed out by Cain, established the monotypic genus *Trichodelitschia* Munk in order to accomodate the Crouan specimen, *Hormospora bisporula*, but since his citation of the basionym was incomplete, Lundquist (1964) proposed the combination *Trichodelitschia bisporula* (Cr.) Lundq. At this time, he also included the species *Trichodelitschia Munkii* Lundq. described for the first time from Sweden. *Trichodelitschia adelphica* sp. nov. represents the third species to be included within this concept. It appears as though species of *Trichodelitschia* are more closely affiliated with those of *Phaeotrichum* Cain, the type genus of the family Phaeotrichaceae created by Cain (1956). Cain established *Phaeotrichum* for a non-ostiolate unilocular stromatic fungus with spiny appendages on the ascocarp, clavate asci and two-celled, deeply constricted ascospores with germ pores. The genus, based on *P. hystricinum* Cain & Barr, included, as well, *P. circinatum* Cain. Cain (1956) has already thoroughly discussed the relationship between members in each of the two concerned taxa.

It is sufficient to reiterate here that in *Trichodelitschia*, the two-celled ascospores with circular germ pores, the manner of ascus dehiscence and the stiff thick-walled appendages on the perithecium are significant enough as criteria to warrant the removal of the genus from Sporormiaceae Munk where it was placed by Munk (1957) along with *Sporormia* (sensu lato) and

Perisporium (=*Preussia* Fckl.) through *P. funiculatum*, two genera which appear remote from species of *Trichodelitschia* particularly since the species included possess linear geminal slits.

The writer concurs with Lundquist's decision (1964) to transfer *Trichodelitschia* from the Sporormiaceae to the family Phaeotrichaceae as was originally suggested by Cain (1956).

In 1962, while on an extensive collecting trip throughout western Canada and the western part of the United States, numerous dung collections were made by the author. Among these were elk, cow, sheep and rabbit excrement, each of which provided a favorable substrate for the growth of varied coprophilous fungi. Of the many types of organisms appearing in each of these collections, there was consistently present a fungus belonging to the genus *Trichodelitschia* Munk. It could not be identified with the two existing species already included in the taxon, therefore it has become the subject of this manuscript.

Trichodelitschia Munk

Perithecia globose to pyriform, scattered or gregarious, with thick-walled stiff one-celled ostiolate, spiny appendages. Asci eight-spored, bitunicate. Ascospores two-celled, deeply constricted and separable at the single median transverse septum, dark brown and opaque with two thick-walled hyaline to subhyaline circular germ pores, one at the end of each cell, surrounded by a gelatinous sheath.

Type species: *Hormospora bisporula* Crouan

Key to the Species

1. Ascospores over 30μ in length ..... *T. adelphica* sp. nov.
1. Ascospores less than 30μ in length 2
   2. Ascospores 22-26 × 8-11μ ..... *T. bisporula*
   2. Ascospores 18-21 × 6-7μ ..... *T. Munkii*

Trichodelitschia adelphica sp. nov. Figs. 1-5

Etymology: Gr. *adelphikos*= sisterly, kinship and the feminine ending *a*.

Peritheciis sparsis, in substrato immersis usque semi-immersis vel fere superficialibus, globosis vel subglobosis atro-brunneis vel nigris opacisque, membranaceis, pilis rigidis praeditis, 200-500 × 180-400 μ; collo perithecii brevi cylindraceo nigro opacoque, ostiolo rotundo praedito. Pilis rectis, rigidis, atro-brunneis, crassis parietibus instructis. (50

100-160 (-180) μ ad basin 5-8 μ. Cellulis peridii atro-brunneis vel nigris opacisque, irregularibus compositis. Ascis octosporis, cylindraceis, 160-180 × 19-24 μ, ad summas late rotundatis basi in stipitem brevem attenuatis. Paraphysibus filiformibus, septatis, hyalinis, circiter 1-2 μ crass. Ascosporis oblique uniseriatis, ellipsoideis vel oblongis, 9-11 (-12) × (28-) 30-34 μ, transverse uniseptatis, medio valde constrictis, initio hyalinis postremo atro-brunneis opacisque utrinque cum foramine orbiculato ornatis.

Perithecia scattered, immersed to semi-immersed, often becoming superficial, semitransparent, becoming dark brown to almost black, membranaceous to coriaceous, globose to subglobose, (when superficial) covered with dark spiny appendages measuring 200-500 × 180-400 μ; neck short cylindrical, black and opaque with circular ostiole, measuring 60-70 (-100) μ in diam., provided with straight, thick-walled, dark brown acuminate spiny appendages measuring in length (50-) 130-160 (-180) μ, diameter at base 5.8 μ. Cells of peridium irregular, dark brown to almost black and opaque, up to 10 μ in diameter. Asci eight-spored, cylindrical, 160-180 × 19-24 μ, broadly rounded at apices, narrowing below into a short stipe. Paraphyses slender, filamentous, septate, hyaline, 1-2 μ wide. Ascospores obliquely uniseriate, ellipsoid to oblong, 9-11 (-12) × (28-) 30-34 μ, transversely uniseptate, deeply constricted and separable at septum, at first hyaline, finally dark brown to almost black and opaque except terminally where each cell is provided with a small hyaline to subhyaline apophysis measuring up to 2 μ wide. Each ascospore provided with a circular germ pore at each end and surrounded by a gelatinous layer which is constricted at both sides of the septum.

Holotype: United States: Nevada: White Pine Co.: 40 mi S W of Ely, on cow dung, 21 Aug 1967 *Cain* (TRTC 39654).

Additional specimens examined:

Canada: Alberta: N of Beaver Mines, on sheep dung, 28 July 1962, *Luck-Allen* (TRTC 39154). United States: Washington: Grays Harbor Co.: near Quinault, on rabbit dung, 22 Aug 1962, *Luck-Allen* (TRTC 45328); Jefferson Co.: Kalaloch, on rabbit dung, 22 Aug 1962, *Luck-Allen* and *Cain* (TRTC 40675); Olympic National Pk., on elk dung, 21 Aug 1962, *Luck-Allen* and *Cain* (TRTC 45249).

This organism resembles, in most respects, the two known species already included in the genus. In common, the three possess thick-walled, one-celled, dark spiny appendages and two-celled ascospores, each cell of which is provided with a terminal germ pore. The essential differences rest in the dimensions of fertile elements. In *T. munkii*, asci and ascospores are more narrow (in comparison with the others in the complex) with spores measuring 6-7 μ in diameter, while in *T. bisporula* they measure 8-11 μ in diameter. *T. adelphica* differs from *T. bisporula* in having longer ascospores.

Summary

An ostiolate Pyrenomycete, *Trichodelitschia adelphica* sp. nov. obtained from dung collections made in Alberta, Canada, in Nevada and Washington, U.S.A., is described and illustrated. A key is provided for the identification of all known species of *Trichodelitschia* Munk.

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Le Sommaire

Un nouveau Pyrenomycète, le *Trichodelitschia adelphica* sp. nov., obtenu de fumier récolté d'Alberta, Canada et du Névada et du Washington, les États Unis est décrit et illustré. Une clé de détermination des espèces du *Trichodelitschia* Munk est donné.

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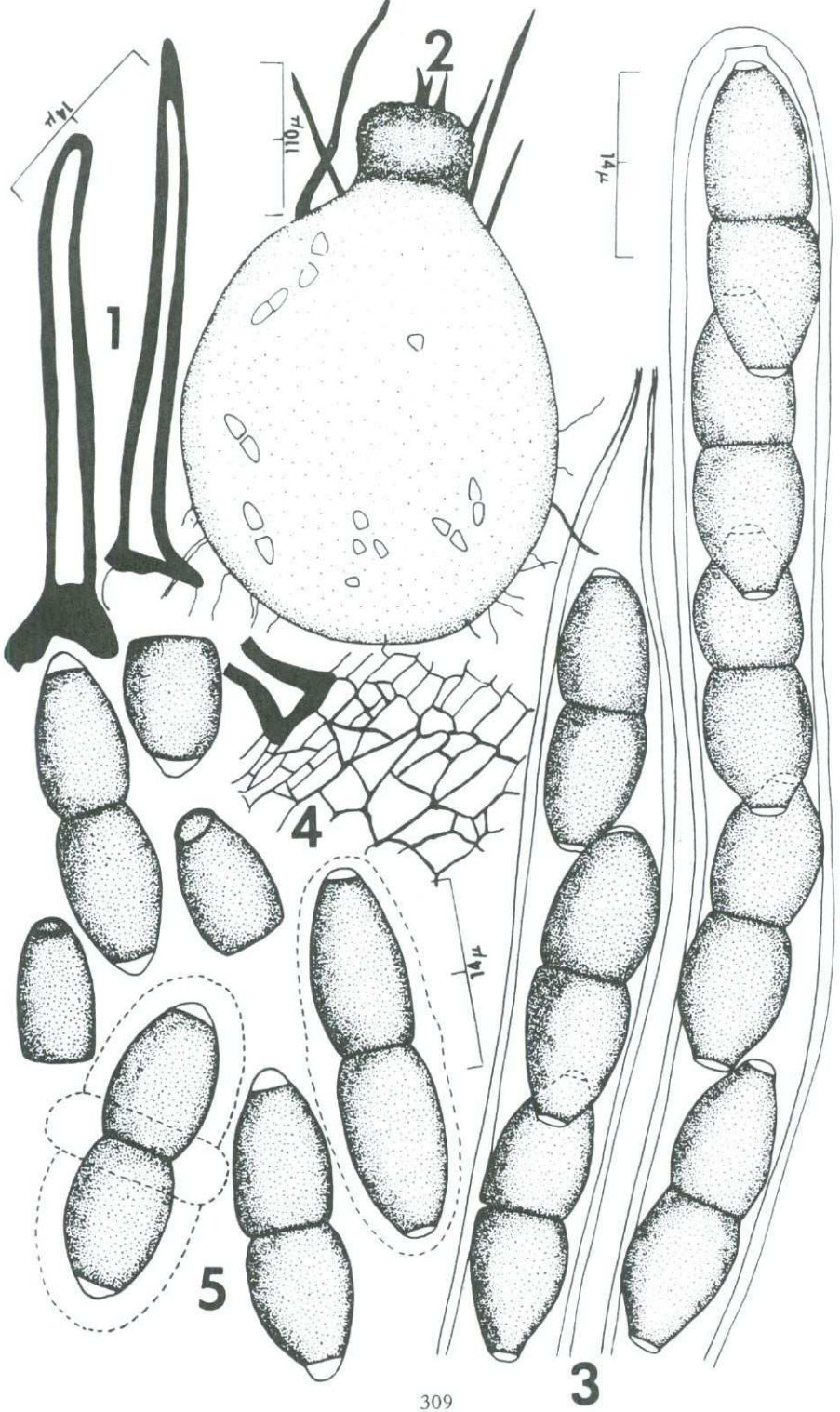
Explanation of Plate: Figures 1-5: *Trichodelitschia adelphica*. Fig. 1 thick-walled spiny appendages. 45249. Fig. 2 semitransparent perithecium showing spore and spore segments through peridium, 45249. Fig. 3 ascus with uniseriately arranged ascospores, 39654. Fig. 4 cells of the peridium with base of one appendage prominent, 45249. Fig. 5 ascospores: two showing gelatinous layer, one at left indicating the constriction at both sides of the septum, 45249, the remaining two spores without gelatinous layers, 39654.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2
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110μ
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14μ