

## A new *Grovesiella* on grand fir

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A new discomycete (Helotiales) is described from grand fir (*Abies grandis* (Dougl.) Lindl.) in British Columbia, Canada; *Grovesiella grantii* n.sp. occurs on dead branches and as a secondary invader of cankers and dieback produced by other fungus pathogens.

### Introduction

Zeller and Goodding (1930) described the discomycete *Scleroderris abieticola* Z. & G. from cankers on grand fir (*Abies grandis* (Dougl.) Lindl.) and amabilis fir (*Abies amabilis* (Dougl.) Forbes) in the Pacific northwest United States. Morelet (1969) transferred this fungus to the genus *Grovesiella*, of which it became the type species. Recently I have encountered a new species of *Grovesiella*, also on grand fir, that fruits abundantly in shaded-out branches and also invades cankers and dieback produced by other fungi. It is named *Grovesiella grantii* for Jim Grant, naturalist and former biology ranger, Vernon, B.C.

### Taxonomy

*Grovesiella grantii* sp.nov. (Dermateaceae)

Figs. 1–5.

Apothecia in stromata erumpentia, atra, urceolata, solitaria vel caespitosa, breviter stipitata, 0.2–0.5 mm diametro; excipulo exteriori *textura prismatica*, fuscis, in partibus exterioribus squamarum formantibus; excipulo medullari *textura angulari*, fuscis; stromata e *textura epidermoidea*, fuscis.

Asci cylindracea-clavati, breviter stipitati, planam ad apicem, octospori, inoperculati, poro iodo caerulescenti (J+), (57–)60–80(–85) × 6–8 μm. Ascospores filiformibus, hyalinis, triseptatis, 18–24(–34) × 2–3 μm. Paraphyses hyalinae, simpliciter ramosae, epithecium absunt.

TYPUS: DAVFP 21310 in caulibus *Abies grandis*.

Apothecia produced on an erumpent stroma, black, urceolate, single or caespitose, short-stalked, 0.2–0.5 mm diameter; ectal excipulum of dark brown *textura prismatica*, forming scales on the exterior; medullary excipulum of brown *textura angularis*; stromata are of dark brown *textura epidermoidea*.

Asci cylindric-clavate, short-stalked, tips flattened, inoperculate, eight-spored, pore staining blue in iodine (J+), (57–)60–80(–85) × 6–8 μm.

Ascospores filiform, hyaline, three-septate, each cell typically biguttulate, 18–24(–34) × 2–3 μm. Paraphyses hyaline, simple or branched, slightly longer than the asci but not forming an epithecium.

TYPE: DAVFP 21310 in branches of *Abies grandis*, 7.1 mi west of Yahk, B.C., Canada, 19.VIII.1974.

SPECIMENS EXAMINED: (all from British Columbia, Canada) Yahk, 3.X.1973, DAVFP 21312; 4.IX.1969, DAVFP 21317; 25.IX.1970, DAVFP 21314; Salmo, 22.III.1977, DAVFP 21309; 4.IX.1969, DAVFP 21318; 25.IX.1970, DAVFP 21316; Kitchener, 12.VI.1973, DAVFP 21311; 25.IX.1970, DAVFP 21315; Boston Bar, 27.VII.1966, DAVFP 21319; Coombs, 24.VII.1972, DAVFP 21313.

The stromata are strongly erumpent, and somewhat rectangular in shape, frequently with an apothecium at each end, giving a bilobed appearance like a 'cradle' telephone. Young apothecia are completely closed at the top. At maturity they open widely when moistened, to expose the greyish hymenium; on drying, they only partially close leaving a circular opening which may resemble the ostiole in a perithecium. The cells at the margin of the ectal excipulum are much smaller than those near the base, and present a finely serrated edge when expanded.

The asci have a strong bluing reaction at the tip when mounted in lactophenol-iodine. This is an important distinguishing characteristic in separating *Grovesiella* from other genera with filiform ascospores and stromata, such as *Ascocalyx* Naumov (Korf 1973).

The ascospores, when freshly mounted in water, are often seen to have a faint mucilaginous appendage at each end. The appendage may be vermiform to slightly flared and measures from 6–8 × 1–2 μm. They are evanescent and usually not visible in older lactophenol mounts.

### Occurrence

The fungus is found frequently on the dead, lower branches of densely growing trees. As the

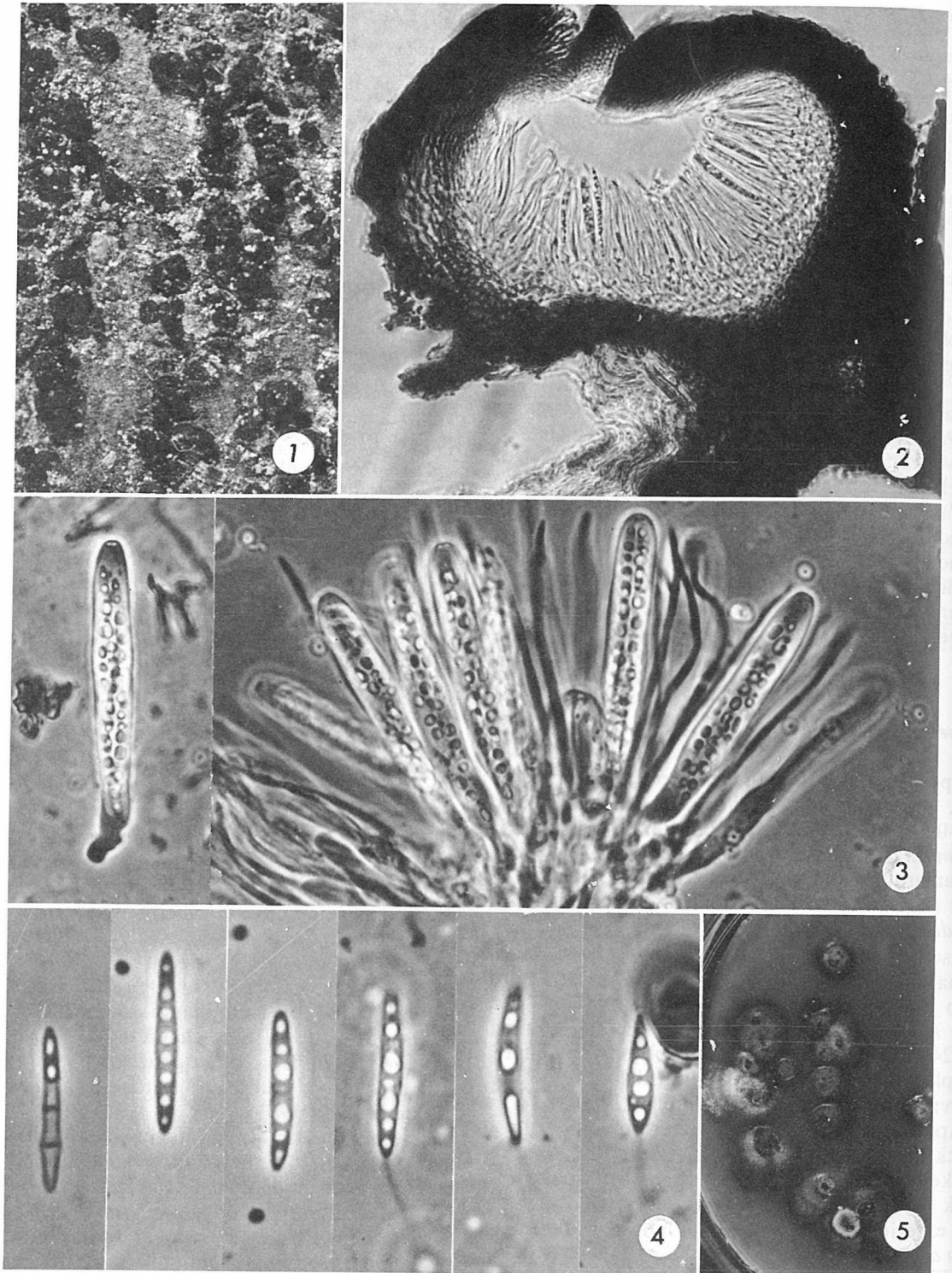


FIG. 1. Apothecia on host.  $\times 10$ . FIG. 2. Apothecium and stroma; vertical section.  $\times 375$ . FIG. 3. Asci and paraphyses.  $\times 1350$ . FIG. 4. Ascospores, showing septation in one spore on the left, and appendages on three spores on the right.  $\times 2000$ . FIG. 5. Culture on malt agar approximately 1 month old.  $\times 1$ .

lower crown is shaded out, the fungus invades the dying or dead bark and fruits abundantly in it. The fungus is also found in cankers and dieback produced by the pathogenic fungus *Potebniamyces balsamicola* var. *boycei* Funk (Funk 1970). In several collections, or parts thereof, the new species fruits side by side with *Grovesiella abieticola*, indicating that it might also be secondary to this fungus. The evidence indicates that it is saprophytic or mildly parasitic on weakened branches.

The fungus is abundant in the Kootenay region of British Columbia, where it is found in all the different situations mentioned above. At the coast, where grand fir is more abundant, it is found only rarely on the dead lower branches.

#### Cultural Studies

Cultures were obtained by plating an ascospore suspension or shooting them from moistened apothecia on 2% malt agar. Growth occurred at 15°C, 20°C, and room temperature (21–23°C), but the optimum was around 20°C. However, at room temperature there was faster and more abundant stroma formation.

Colonies are slow growing, expanding approximately 1 cm in 2 weeks at 20°C, compact, dark, heaped up, covered with a low, light-grey to bluish aerial mycelium, margin whitish and regular; reverse side dark bluish-grey, no diffusion zone. Mycelium is regular, septate, branching, guttulate, 2–4 µm diameter; hyphal tips sometimes with bulbous swellings exuding an amorphous yellow substance. After several weeks, black stromatic areas, which are glabrous and roughly the shape of those produced in the host bark, appear on the colonies. No conidia or apothecia have been found on these stromata.

#### Discussion

The smaller apothecia, asci, and ascospores of

the new species readily distinguish it from *G. abieticola*. However, in *G. grantii*, the stromata are much more prominently erumpent, and apothecia are not partially immersed as in *G. abieticola*. The contrast in the characteristics is obvious in collections DAVFP 21312 & 21317, where the two species fruit side by side.

The generic name *Grovesiella* was proposed almost simultaneously by Morelet (1969), based on *S. abieticola*, and by Eriksson (1970), based on *Cenangium ericae* Fries. However, Korf (1971) had transferred *C. ericae* to *Grovesiella* Morelet, thereby creating a homonym, but also confirming that *Grovesiella* Morelet and *Grovesiella* Eriksson were congeneric, an unusual coincidence! Gremmen and Morelet (1971) later elaborated on the morphology of *G. abieticola* and its biology.

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