

FUNGI SILVICOLAE NOVAZELANDIAE: 7

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ABSTRACT

The coelomycetous fungi described in this paper have been recorded from New Zealand but not fully described. The fungi are:

Corticulous coelomycetes: *Coryneum umbonatum* Nees on *Castanea sativa* Miller and *Quercus robur* Linnaeus; *Stegosporium pyriforme* (Hoffmann) Corda on *Acer pseudoplatanus* Linnaeus.

Follicolous coelomycetes: *Phyllosticta abietis* Bissett & M.E.Palm on *Cedrus atlantica* (Endlicher) Manetti ex Carrière; *Phyllosticta* sp. on *Pittosporum ralphii* Kirk.

Keywords: fungi; New Zealand; new descriptions.

INTRODUCTION

The purpose of this series of papers is to provide descriptions of fungi newly recorded in New Zealand. Most of these records come from specimens sent to the Forest Health Reference Laboratory at this Institute for identification. In this seventh paper in the series, descriptions are provided for four coelomycetous fungi. For examination, sections were cut using a freezing microtome. Sections and squash preparations were mounted in water.

The location record of local specimens examined is followed by the name of the arbitrarily defined geographical region (Crosby *et al.* 1998) to which the specimen belongs. The account of the New Zealand distribution of an organism is based principally on data recorded on the Forest Health database maintained by Ensis Forest Health and Biosecurity at the New Zealand Forest Research Institute Limited and it is presented for each geographical region, with the number of records for that region given in parentheses. Not all records on the database are supported by voucher specimens.

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DESCRIPTIONS OF FUNGI

Corticolous Coelomycetes

Coryneum umbonatum Nees, 1817 (Fig. 1)

Das System der Pilze und Schwämme: 34.

Teleomorph (not found in New Zealand): *Pseudovalsa longipes* (Tulasne) Saccardo, *Atti della Società Veneto-Trentino di Scienze Naturali in Padova* 4: 20, 1875.

Conidiomata acervular, scattered, subepidermal, becoming erumpent through the bark, elongate-oval to effuse, dark brown, composed of cushion-shaped, vertically arranged pseudoparenchyma, (1.5)–1.9–(2.2) mm long. Conidiophores arising from the upper cells of the pseudoparenchyma, erect, branched near the base, hyaline to pale brown, (10)–27.5–(47.0) μm long. Conidia narrowly fusiform, straight or slightly curved, 5–7-distoseptate, (47.5)–58.0–(70) \times (10.5)–13.5–(16.0) μm , smooth, light brown, tapering gradually towards the apex which has a hyaline tip, base truncate, often with a part of the conidiogenous cell attached, many septa dark brown, cell lumen considerably reduced.

Habitat: Bark of small branches of *Castanea sativa* and *Quercus robur*.

Specimens examined: on bark of small branches of *Castanea sativa*, Marylands Reserve, Christchurch (Mid Canterbury), 14.xii.2005, B.H.Doherty, NZFRI-M 5366; on bark of small branches of *Quercus robur*, Marylands Reserve, Christchurch (Mid Canterbury), 14.xii.2005, B.H.Doherty, NZFRI-M 5365.

New Zealand distribution: Mid Canterbury (2).

First recorded in New Zealand as *C. umbonatum* (Bain 2006) and later as *Pseudovalsa longipes* (Morrison 2006) although the teleomorph has not been found here. See Ellis & Ellis (1997) for a description and an illustration of *P. longipes*.

According to Sutton (1975), *C. umbonatum* is restricted to species of *Quercus*. Our finding of its presence on *Castanea sativa* is the first record of the fungus on another host genus. *Coryneum umbonatum* was infrequently isolated by Collado *et al.* (1999) as an endophyte in leaves of *Quercus ilex* Linnaeus in Spain. The fungus is regarded as a saprophyte.

Stegonsporium pyriforme (Hoffmann) Corda 1839 (Fig. 2)

Icones Fungorum 3: 23

Conidiomata acervular, scattered to gregarious, globose to elongate-oval, subepidermal, black, (0.5)–1.1–(1.5) mm long, composed of 2–3 layers of isodiametric, thin-walled brown cells, 14–17 μm thick, (0.5)–1.1–(1.4)

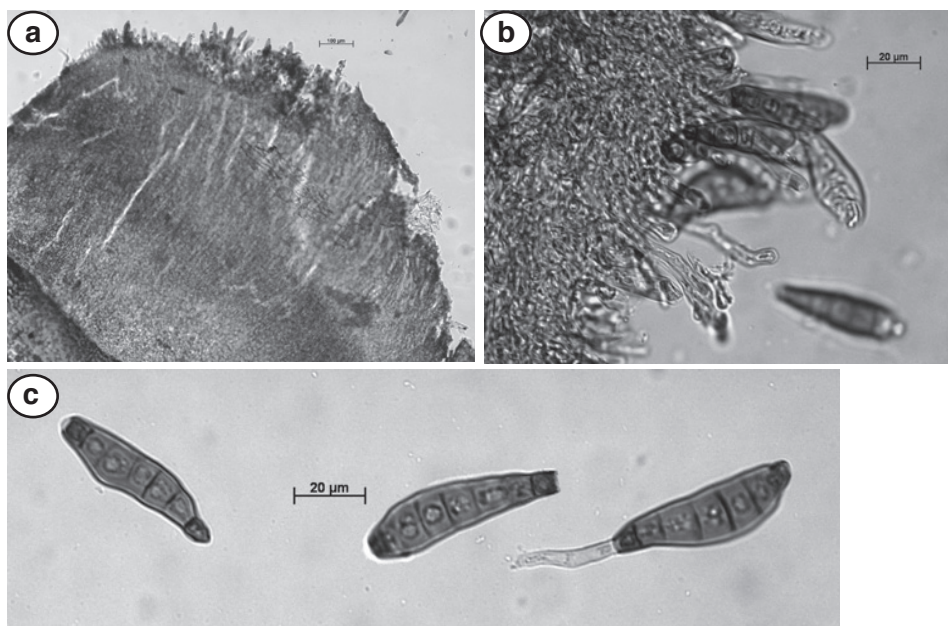


FIG. 1—*Coryneum umbonatum*

- (a) Cushion-shaped stroma composed of vertically arranged pseudoparenchyma. Bar = 100 μm
 (b) Conidiophores. Bar = 20 μm
 (c) Conidia. Bar = 20 μm

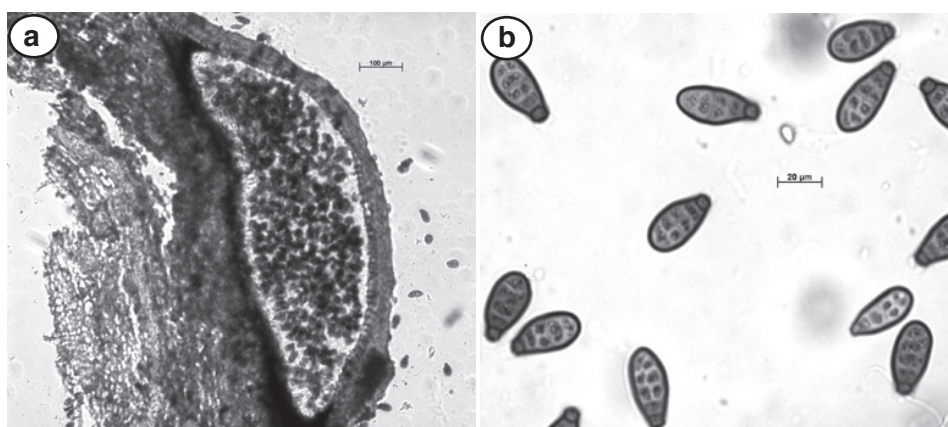


FIG. 2—*Stegonsporium pyriforme*

- (a) Conidioma. Bar = 100 μm
 (b) Conidia. Bar = 20 μm

\times (0.3)–0.4–(0.5) mm. Conidiophores arising from the upper cells of the conidioma, erect, hyaline, 14–20 μm long. Conidia obovoid to clavate, with

3–5 transverse and 1–3 longitudinal or oblique distosepta, (35.0)–38.5–(49.0) \times (15.0)–17.0–(19.0) μm , cell lumen considerably reduced, smooth, olivaceous to brown, apex obtuse, base truncate, forming pulvinate to effuse black masses on the bark surface.

Habitat: Bark of small branches of *Acer pseudoplatanus* Linnaeus.

Specimens examined: on bark on small branches of *Acer pseudoplatanus*, Bureta Park, Tauranga (Bay of Plenty), 19.xii.2005, B.J.Rogan, NZFRI-M 5364; on bark on small branches of *A. pseudoplatanus*, Cornelius O'Connor Reserve, Addington, Christchurch (Mid Canterbury), 15.iii.2006, B.H.Doherty, NZFRI-M 5367.

New Zealand distribution: Bay of Plenty (1), Mid Canterbury (1).

This fungus has previously been recorded from Europe and Canada on bark and twigs of *Acer platanoides* Linnaeus, *A. pseudoplatanus*, *Aesculus hippocastanum* Linnaeus, *Fagus sylvatica* Linnaeus, and *Tilia* sp. (van Warmelo & Sutton 1981). It is regarded as a saprophyte.

Foliicolous Coelomycetes

Phyllosticta abietis Bissett & M.E.Palm 1989 (Fig. 3)

Canadian Journal of Botany 67: 3379.

Conidiomata pycnidial, discrete, subglobose, subepidermal, immersed, dark brown, 115–140 \times 80–85 μm ; wall composed of 3–6 layers of cells, outer layers of brown, isodiametric cells, cells of the inner layers hyaline, thin-walled and flattened, 17–30 μm thick. Conidiophores not seen. Conidiogenous cells arising from the inner cells of the conidioma, cylindrical, hyaline, 14–16 μm long. Conidia subglobose to broadly ellipsoidal, 0-septate, (8.0)–9.3–(11.0)

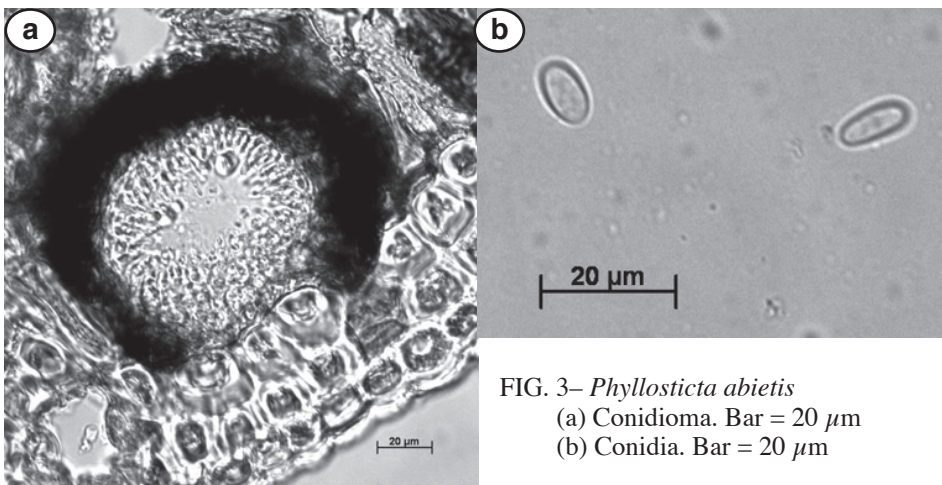


FIG. 3—*Phyllosticta abietis*
(a) Conidioma. Bar = 20 μm
(b) Conidia. Bar = 20 μm

× (5.0)–7.3–(8.5) μm , smooth with granular contents, hyaline, surrounded by a thin (0.5–1.5 μm) mucilaginous coat, appendages lacking.

Habitat: Discoloured or dead portions of living needles of *Cedrus atlantica* (Endlicher) Manetti ex Carrière.

Specimen examined: on discoloured and dying needles of *Cedrus atlantica*, Eastwoodhill Arboretum, Ngatapa (Gisborne), 9.iii.2006, B.J.Rogan, NZFRI-M 5340.

New Zealand distribution: Gisborne (1).

Funk (1985) reported that a *Phyllosticta* species (later named *P. abietis* by Bissett & Palm 1989) caused needle-blight of *Abies grandis* (D. Don ex Lambert) Lindley in Christmas tree plantations in Idaho, U.S.A. It is also frequently isolated as an endophyte from needles of *Pseudotsuga menziesii* (Mirbel) Franco (Petrini *et al.* 1991). Manter *et al.* (2001) found that the colonisation of *P. menziesii* needles by *P. abietis* was limited, each infection site comprising only a few fungal cells in healthy needles. Although associated with dying needles of *Cedrus atlantica* in New Zealand, its pathogenicity has not been tested.

Phyllosticta sp. (Fig. 4)

Conidiomata pycnidial, discrete or aggregated in groups of 1–4 or 5, globose to subglobose, subepidermal, immersed, dark brown, 150–170 μm in diameter; wall composed of 2–4 layers of brown, isodiametric cells, 10–15 μm thick. Conidiophores not seen. Conidigenous cells cylindrical to lageniform, hyaline, 10–12 μm long.

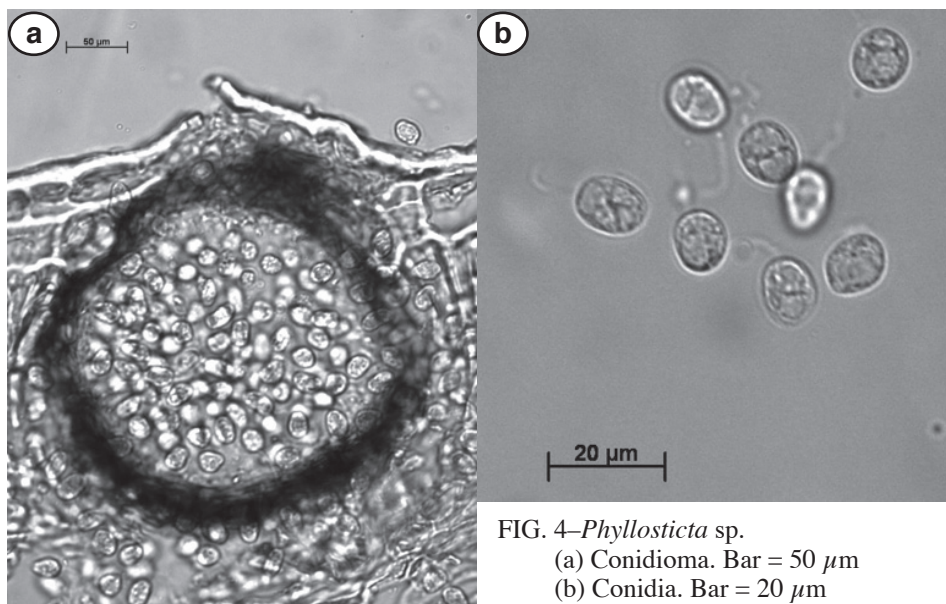


FIG. 4—*Phyllosticta* sp.

(a) Conidioma. Bar = 50 μm

(b) Conidia. Bar = 20 μm

Conidia subglobose to ellipsoidal to obpyriform, 0-septate, (10.0)–11.3–(13.0) × (6.5)–8.6–(10.0) μm , smooth, hyaline, surrounded by a 1.0–1.5 μm thick mucilaginous coat and a mucilaginous, slender, apical appendage 4–10 μm long.

Habitat: Necrotic areas on leaves of *Pittosporum ralphii* Kirk. Leafspots roughly circular, 1–3 mm in diameter, occasionally confluent and covering larger areas, light brown at first, turning dark brown with a dark brown to black edge, often with a light yellow-green halo, with 1–5 scattered fruit bodies; on upper surfaces of leaves.

Specimen examined: on leaves of *Pittosporum ralphii*, Napier Botanic Gardens, Napier (Hawke's Bay), 20.iii. 2006, J.A.Bartram, NZFRI-M 5363.

New Zealand distribution: Hawke's Bay (1).

The morphological characters — for example, the unilocular subepidermal conidiomata and non-septate conidia with a mucilaginous coat and a mucilaginous apical appendage — indicate that this is a species of *Phyllosticta*. As the fungus is associated with necrotic areas on living leaves, it probably has some pathogenic ability. It does not fit the description of any of the *Phyllosticta* species described by van der Aa (1973) or by van der Aa & Vanev (2002).

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