

## MYCOLOGICAL RECORDS. 5: *LEPTEUTYPA PODOCARPI* (BUTIN) VAN DER AA

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### ABSTRACT

The *Pestalotiopsis* anamorph of *Lepteutypa podocarpi* (Butin) van der Aa, occurring on *Podocarpus totara* G. Bennett ex D. Don, *Podocarpus acutifolius* T. Kirk, and a hybrid of *P. nivalis* W.J. Hooker and *P. hallii* T. Kirk, is reported as a new fungal record for New Zealand.

**Keywords:** *Lepteutypa podocarpi*; *Pestalotiopsis*; *Podocarpus totara*.

### INTRODUCTION

In the early 1980s, a study on the decline of *Podocarpus totara* in the central North Island was carried out by Forest Research Institute staff. A number of fungi, including a distinctive but unnamed species of *Pestalotiopsis*, were associated with the symptoms. The fungus was not observed again until 1995 when two infected collections of *P. totara* were received. Two further specimens of the fungus were received on two new hosts, *Podocarpus acutifolius* and a hybrid of *P. nivalis* and *P. hallii*. The infected leaves always exhibited chlorosis and a prolific development of conidiomata. This fungus has now been identified as the anamorph of *Lepteutypa podocarpi*. It has not previously been recorded in New Zealand.

### DESCRIPTION

**Conidiomata** (Fig. 1C.) at first pycnidial, subcuticular, black, irregular in shape without preformed ostiole, opening by fissure of the upper part and becoming acervular, wall of variable thickness. **Conidiogenous cells** (Fig. 1A.) simple, hyaline, forming from undifferentiated cells lining the basal and lateral parts of the conidioma, shape variable from cylindrical to most commonly thread-like, 6–15 µm long. **Conidiospores** (Fig. 1B.) fusiform, euseptate, 4-septate, 30–45 × 6–9 µm, basal cell hyaline developing a simple 3–9 µm appendage, central three cells pale brown, the central cell often a darker hazel brown. Apical cell hyaline tapering to an 18–30 µm long appendage, bearing at the convex side 4–7 branches which are hyaline and 15–37 µm long.

**Mycelia** on 3% malt extract agar white to yellow/buff or pink grey, floccose, and turning the medium a substantially darker shade, growth rates variable but generally slow, 20–40

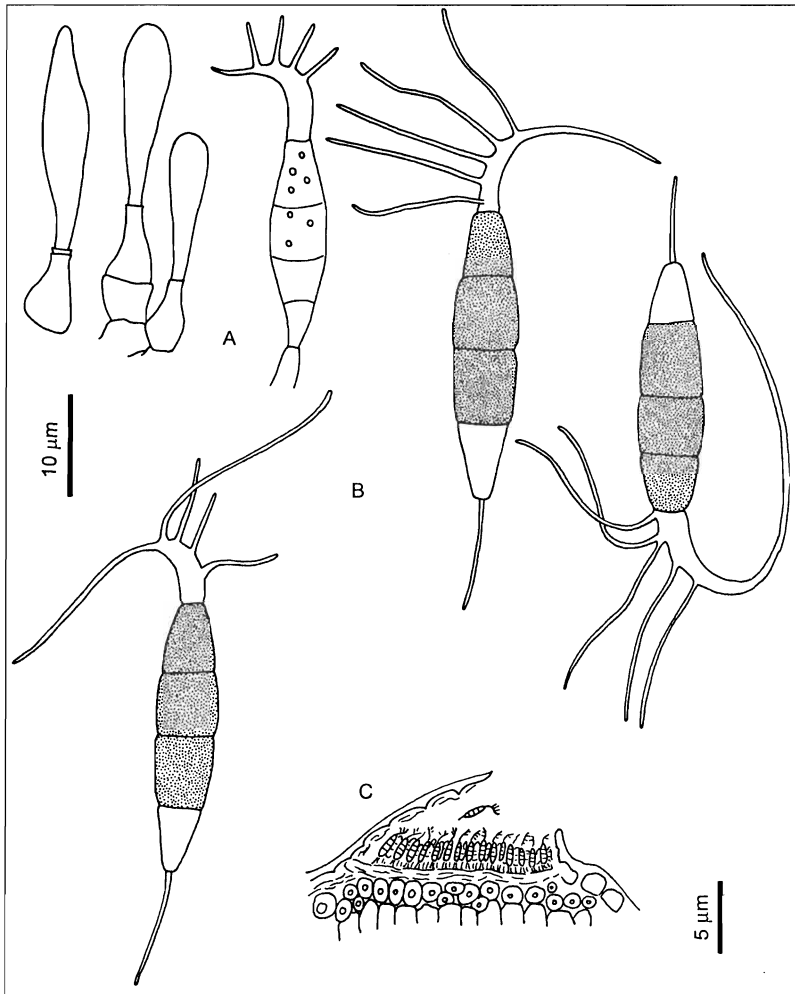


FIG. 1—A: conidiogenous cells and developing conidiospores; B: mature conidiospores; C: section through a conidioma.

mm in 7 days (at 20°C). **Conidiomata** subspherical to irregular flat crusts covered by a 6–9 μm thick upper wall. **Conidiogenous cells** as on natural substrate. **Conidiospores** slightly smaller than those in nature, 28–39 μm long, apical appendage 18–30 μm long.

**Specimens examined:** on *Podocarpus totara* G. Bennett ex D. Don, Pureora Forest, Taupo, 2.iii.1995, *J. Pascoe A0042004, NZFS 281*; on *Podocarpus totara*, Queens Park, Invercargill, 12.vi.1995, *J.A. Bartram A0042787, NZFS 281a, NZFRI (M) 3549*; on *Podocarpus acutifolius* T. Kirk, Otari Plant Museum, Wellington, 14.xi.1996, *B.J. Rogan A0032311, NZFRI(M) 3655*; on hybrid of *P. nivalis* W.J. Hooker and *P. hallii* T. Kirk, Otari Plant Museum, Wellington, 28.iv.1997, *B.J. Rogan A0005173, NZFS 281b, NZFRI(M) 3716*.

## DISCUSSION

The teleomorph of this fungus was originally described as *Keissleriella podocarpi* Butin on *Podocarpus nubigenus* Lindley from Chile (Butin 1975). Its distinctly unitunicate ascus (*Keissleriella* is a bitunicate genus) with an amyloid apical structure led Van der Aa (1986) to reassign it to *Lepteutypa*. A further collection of the teleomorph on *Podocarpus drouyniana* Mueller from Western Australia was examined by van der Aa and linked culturally with a very distinctive *Pestalotiopsis* anamorph occurring on the same leaves. All of the New Zealand collections have abundant *Pestalotiopsis* conidiomata but lack teleomorph structures. Pairing of single conidiospore isolates from the Pureora and Invercargill specimens failed to elicit teleomorph formation and no anastomosis was observed. The New Zealand specimens conform to the description of van der Aa (1986) although conidiospores produced in culture are slightly more variable in size. The fungus is consistently associated with dieback of *Podocarpus totara* (Forest Research Institute unpubl. data). Dieback is possibly caused by *Harknessia globosa* Sutton infection of shoots weakened by sapsucking insects (MacKenzie 1982). These new records of *Lepteutypa podocarpi* extend the known distribution and host range of the species, and show a typical South Pacific distribution (Pirozynski 1983).

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