



## THE SPECIES

1. *Chiodecton colensoi* (Massal.) Müll. Arg.,  
*Bull. Herb. Boissier* 2: App. 1: 86 (1894)

A full description and discussion of the morphology, anatomy and distribution of this species are given by Galloway (1985) and Thor (1990). For photograph see plate 1. It is characterised chiefly by the absence of abundant oil droplets in the hymenium. *Chiodecton colensoi* is the most common Tasmanian species of the genus (fig. 1), being widespread in a wide range of cool temperate rainforest vegetation as well as occurring in some wet sclerophyll forests. It occurs exclusively on smooth bark, usually in shaded, moist microhabitats, and typical host trees include *Atherosperma*, *Anodopetalum*, young *Nothofagus cunninghamii* and *Tasmannia*. In rainforest, common lichens associated with *Chiodecton colensoi* include *Phaeographis exaltata*, *Megalospora lopadioides*, *Parmeliella nigrocincta*, *Phlyctis subuncinata*, *Thelotrema lepadinum*, *Opegrapha stellata* and *Coccotrema cucurbitula*. The record from Tasmania of *Chiodecton perplexum* Nyl. by Shirley (1894) refers to *C. colensoi* (Kantvilas 1988).

*Selected specimens examined: Australia, Tasmania:* Mount Arthur, 1885–95, *F.R.M. Wilson* 1115 (G, COLO). Weldborough, 41°12'S, 147°54'E, on *Atherosperma moschatum* in rainforest, 770 m a.s.l., 1981, *Kantvilas* 1135/81 (HO, BM). Arthur River, on *Nothofagus cunninghamii* in rainforest, 270 m a.s.l., 1982, *Kantvilas* 65/82 (HO, BM). Mt Dundas track, 41°55'S, 145°28'E, on *Anodopetalum biglandulosum* in rainforest, 670 m a.s.l., 1988, *Kantvilas* 541/88 (HO). Balts Spur, Tasman

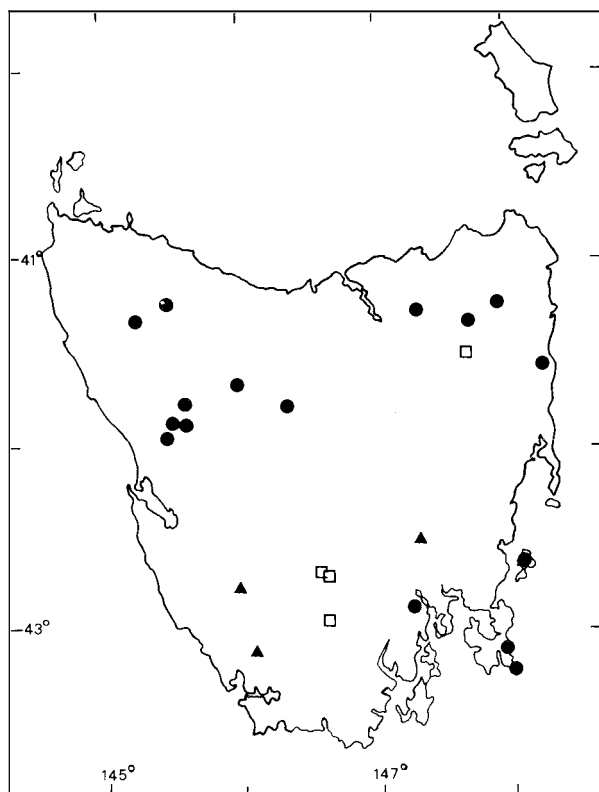


FIG. 1 — Distribution of *Chiodecton* in Tasmania: *C. colensoi* (●); *C. flavovirens* (□); *C. montanum* (▲)

Peninsula, 43°05'S, 147°56'E, on canopy twigs of *Nothofagus cunninghamii*, 420 m a.s.l., 1983, *Kantvilas* 157/83 (HO). Murchison Highway at saddle over Mt Black, 41°47'S, 145°35'E, on *Anodopetalum biglandulosum* in rainforest, 530 m a.s.l., 1989, *Kantvilas* 269/89 (HO). Track to The Blade, Cape Pillar, 43°14'S, 148°00'E, 1973, *M. Kershaw* s.n. (HO). Anthony Road near Lake Sandra Track, 41°50'S, 145°36'E, on *Anodopetalum biglandulosum* in rainforest, 580 m a.s.l., 1989, *Kantvilas* 31/89 (HO). Little Fisher River, 41°45'S, 146°20'E, on *Atherosperma moschatum* in rainforest, 820 m a.s.l., 1984, *Kantvilas* 705/84 (HO, BM). Mount Wellington, alt. 600 m [2000 feet], 1891, *W.A. Weymouth* 118 (VT). St Marys Pass, 1891, *F.R.M. Wilson* s.n. (G).

2. *Chiodecton flavovirens* Thor,  
*Opera Botanica* 103: 41 (1990)

See Thor (1990) for a full description and photograph. *Chiodecton flavovirens* is an uncommon Tasmanian endemic lichen from wet forests. Superficially similar to *C. colensoi*, it is characterised by the presence of oil droplets and granules in the hymenium, and by its unique ecology. It is known from highland areas where it grows in locally dry microhabitats such as on the papery, fibrous bark of *Leptospermum lanigerum* and on the dead leaves of *Richea pandanifolia* (Thor 1990). The latter habitat tends to be particularly rich in lichens with typical species including *Lecanactis abietina*, and species of *Chaenotheca*, *Cliostomum* and *Opegrapha*.

*Additional specimen examined* (see also Thor 1990): *Australia, Tasmania:* Track to Nevada Peak, 42° 54' S, 146° 41' E, on dead dry leaves of *Richea pandanifolia* in rainforest, 800 m a.s.l., 1993, *Kantvilas* 19/93 (HO, S).

3. *Chiodecton montanum* Thor.,  
*Opera Botanica* 103: 52 (1990)

A full morphological description and photograph are provided by Thor (1990). *Chiodecton montanum* is characterised by the presence of yellow pigments (secalononic acid derivatives and skyrin) in the medulla, a thallus closely attached to the substrate, and an hymenium interspersed with oil droplets and granules. The species is most closely related to *C. flavovirens* (see key above) from which it is distinguished by the additional characters of a darker thallus colour and the presence of a prothallus (sometimes almost lacking).

In collections of *C. montanum* from Tasmania, only small amounts of the yellow pigments are present in the medulla surrounding the ascocarp. Hence these are detected best in microscope preparations where the pigments turn red and dissolve in KOH. Tasmanian material also differs from New Zealand material by the slightly shorter ascospores: material from Tasmania — (41–) 43–50 (–56) × (3–) 3–4 (–4) μm (length: X = 46.5 μm, SD = 3.1 μm, n = 120; width: X = 3.2 μm, SD = 0.4 μm, n = 120); material from New Zealand — (44–) 47–53 (–57) × (3–) 3 (–4) μm (length: X = 50.0 μm, SD = 3.0 μm, n = 60; width: X = 3.1 μm, SD = 0.2 μm, n = 60). Material of *C. colensoi* from Australia has similarly slightly shorter spores than the material from New Zealand (Thor 1990).

## Distribution and habitat

*Chiodecton montanum* was known previously from only two localities in New Zealand, one in the North Island (1000 m a.s.l.) and one in the South Island (1080 m a.s.l.) (Thor 1990). In Tasmania, *C. montanum* is known from three localities (fig.1). Two are from Precambrian metamorphic peaks in the remote southwestern area, where the species was associated with normally corticolous species such as *Megalospora lopadioides* and species of *Sphaerophorus*. This region is characterised by a high rainfall (up to c. 3000 mm per annum) and supports a highly interesting lichen flora, rich in endemic species or taxa with a restricted distribution, especially from genera of Gondwanan origin, e.g. *Siphula* (Kantvilas *et al.* 1992, Kantvilas & Jarman 1991). The third locality is from dolerite rocks in southeastern Tasmania, where *C. montanum* was associated with *Rinodina murrayi* and species of the Parmeliaceae. This is a most remarkable ecological disjunction, in that this locality is in a markedly drier (annual rainfall c. 700 mm), milder macroclimate and, with the apparent notable exception of *Chiodecton montanum*, shares very few cryptogam or phanerogam species with the southwestern mountains. At all three localities, *Chiodecton montanum* occurs in moist, very sheltered rock crevices.

*Chiodecton montanum* is a further example of a southern Australian/Tasmanian–New Zealand disjunction. Biogeographic connections between these regions are well known and have been discussed by many authors (e.g. Galloway 1990). Similar distributions have been found in, for example, species of *Megalospora* (Sipman 1983), *Sphaerophorus* (Tibell 1987) and, most recently, *Roccellina* (Tehler *et al.* 1991).

*Specimens examined: Australia, Tasmania:* Mt Sprent, on sheltered overhangs amongst alpine quartzite boulders, 42°48'S, 145°58'E, 1050 m a.s.l., 1984, *Kantvilas* 550/84 (BM, HO); Little Quoin, on vertical dolerite cliff face in eucalypt forest, 1988, *Kantvilas* 602/88 (HO); Green Head, c. 3 km SSE of Greystone Bluff, on vertical and overhanging Precambrian metamorphic rocks in alpine moorland, 43°06'S, 146°04'E, 800 m a.s.l., 1991, *Kantvilas* 75/91 (HO, S).

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