Trochocarpa montana (Ericaceae), an endemic new species from the Northern Tablelands area of north-eastern New South Wales

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Abstract

Trochocarpa montana J.B.Williams & J.T.Hunter, a restricted montane species from the Northern Tablelands area of New South Wales is described. Notes are provided on its distribution, ecology and conservation status.

Introduction

A mountain form of Trochocarpa laurina has been recognised, described informally and treated as a separate taxon in works such as Williams et al. (1984), Floyd (1989), Wiecek (1989) and more recently Harden et al. (2006). This putative taxon has also been included in molecular phylogenetic analyses of the tribe Styphelieae (Quinn et al. 2003). The senior author was preparing descriptions of a number of new taxa over recent years, but his untimely death prevented their completion. Publications of some of these have recently appeared (Hunter et al. 2006; Williams & Hunter 2006) but others still await formal description. This paper presents the formal description of the distinct mountain form of Trochocarpa laurina from the Northern Tablelands region of New South Wales as a separate species.

Trochocarpa montana J.B.Williams & J.T.Hunter, sp. nov.

T. laurinae similis sed foliis minoribus fimbriatis alternatis (haud pseudoverticillatis), fructu minore, caulibus, bracteis bracteolisque hirsutis differt.

Trochocarpa species, sensu Floyd (1989, p. 123); Harden et al. (2006, p. 142).


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Much-branched shrub to 2–10 m tall; branchlets fawn to grey, shortly pubescent to scabrous or very rarely glabrescent with age. Leaves alternate, spread along stems; narrowly ovate, narrow-elliptic to broadly ovate, slightly asymmetric; 1.05–5 cm long, 0.4–2.6 cm wide; veins 7, at least 5 usually easily visible though sometimes obscure especially adaxially; margins distinctly thickened, slightly recurved; base broadly tapers; acute; tip usually obtuse (due to apex dying), sometimes abruptly so, or rarely acute, always dry, brown and brittle; usually glabrous except for scabrous hairs restricted to the edges or more rarely minutely scabrous to sparsely pustulate adaxially; margins minutely fimbriate to minutely ciliate, usually restricted or more prominent in the distal third but sometimes along the whole margin; glossy deep green above, paler abaxially, new growth red. Petiole 1.5–4.5 mm long; shortly pubescent, rarely hairs restricted to adaxial groove. Caducous early season growth bracts to 4.2 mm long, marginally ciliate, pubescent abaxially on distal half. Inflorescences terminal and axillary racemes of c. 20 flowers. Pedicels 0.2–0.5 mm long. Bracts 1.1–1.6 mm long, 1–1.1 mm wide, sometimes keeled, margins ciliate, pubescent abaxially on distal half. Bracteoles 1–1.1 mm long, ovate to elliptic, margins ciliate, sometimes keeled and pubescent abaxially on the distal half. Calyx 1.2–2 mm long, 0.6–1.1 mm wide; ovate to elliptic; margins ciliate, pubescent abaxially on the distal half. Petals 2.8–3.5 mm long; tube broader above, 1.6–2.1 mm long, 1.4–2.1 mm wide at the mouth; lobes erect to spreading, 1.2–1.6 mm long, 1–1.3 mm wide; lobes and top half of the tube adaxially densely hairy, hairs spreading on lobes and reflected in tube, hairs 0.3–1 mm long, margins papillate. Anthers dorsally apically connected to the filaments, 0.7–0.9 mm long; filaments 0.6–0.8 mm long. Ovary 0.7–0.9 mm long; 0.7–0.9 mm wide; disc prominently toothed to undulate, 0.4–0.6 mm high. Style 0.4–0.7 mm long, with a broad base. Fruit 4.5–6 mm wide, 7–11 locular, purple to black, depressed globose; seed 2.5–3.5 mm long, 1.5–2.5 mm wide. Flowering mainly late September to October.


**Distribution:** the known populations are all restricted to altitudes above 1000 m in seven general locations; the Styx River area, New England and Cathedral Rock National Parks and Mt Hyland Nature Reserve around Ebor and Werrikimbe National Park (Walcha), Nbulan Nature Reserve (Nowendoc) and the Barrington Tops area (Fig. 1).

**Habitat:** commonly found in and on the margins of *Nothofagus moorei* cool temperate rainforest and warm temperate rainforest but also in tall wet eucalypt forests dominated by *Eucalyptus obliqua* (Floyd 1989; Clarke et al. 2000; Hunter 2005; Harden et al. 2006); at altitudes between 1000 and 1600 m. The species has been found on a variety of rock types from basalt, acid volcanics, phyllites and granite with soils that are usually clay loams.
Notes: this species is closest to *Trochocarpa laurina* (Rudge) R.Br. in overall features but differs in the combination of a number of characters (Table 1). Most notable is the smaller size of many features, particularly the leaves and fruits. In addition *T. montana* is hairy on the branchlets, petioles, leaf margins (sometimes adaxial leaf surface) and on the abaxial surface of bracts, bracteoles and sepals, whereas *T. laurina* is glabrous on these parts. The phyllotaxy is also different, being distinctly alternate in *T. montana* and pseudo-whorled in *T. laurina*; overall leaf shape is different, with *T. montana* being usually broadest below the middle, (similar to *T. bellendenkerrensis* Domin), whereas *T. laurina* is broadest at the middle. Small-leaved forms of *T. laurina* have been found near Dorrigo and Tenterfield in New South Wales and the Lamington area of south-east Queensland which superficially resemble *T. montana* solely due to foliage size. These small-leaved *T. laurina* do not possess any of the other diagnostic features of *T. montana* (Table 1). Specimens of *T. montana* from the Walcha, Nowendoc and Barrington Tops areas differ from the type form in having larger and broader leaves and a generally more dense and longer indumentum on most parts.

<table>
<thead>
<tr>
<th>Feature</th>
<th><em>T. montana</em></th>
<th><em>T. laurina</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stems</td>
<td>densely to sparsely shortly pubescent, rounded to angular, grey to fawn</td>
<td>glabrous angular, grey to black</td>
</tr>
<tr>
<td>Petiole length (mm)</td>
<td>1.5–3.5</td>
<td>3–7</td>
</tr>
<tr>
<td>New leaves</td>
<td>bright red</td>
<td>pale green to pink</td>
</tr>
<tr>
<td>Leaf length (cm)</td>
<td>1–5</td>
<td>5–9</td>
</tr>
<tr>
<td>Leaf width (cm)</td>
<td>0.4–2.6</td>
<td>1.5–4.5</td>
</tr>
<tr>
<td>Leaf margins</td>
<td>minutely fimbriate</td>
<td>smooth</td>
</tr>
<tr>
<td>Leaf arrangement</td>
<td>alternate</td>
<td>pseudo-whorls sometimes alternate, often clustered below buds</td>
</tr>
<tr>
<td>Leaf apex</td>
<td>obtuse rarely acute, never acuminate</td>
<td>acute to acuminate</td>
</tr>
<tr>
<td>Leaves</td>
<td>usually widest below the middle, narrowly ovate or rarely elliptic</td>
<td>widest at the middle, elliptic to broadly elliptic.</td>
</tr>
<tr>
<td>Corolla lobes</td>
<td>erect to spreading, white</td>
<td>recurved, cream</td>
</tr>
<tr>
<td>Nectary</td>
<td>prominently toothed (usually 2-toothed)</td>
<td>truncate to rounded or shallowly 3–4 toothed</td>
</tr>
<tr>
<td>Bracts and sepals</td>
<td>margins ciliate, dorsal keel indumented</td>
<td>margins ciliate otherwise glabrous</td>
</tr>
<tr>
<td>Fruit colour</td>
<td>purple to black</td>
<td>black to bright purple or yellowish</td>
</tr>
<tr>
<td>Fruit width (mm)</td>
<td>4–6</td>
<td>6–8</td>
</tr>
</tbody>
</table>
Conservation status: *Trochocarpa montana* has a highly disjunct distribution, being restricted to the higher altitudes in very specific cool and moist environments. The species is known from only seven general locations, and though common at these sites, this taxon is highly susceptible to climate change and changes in fire regimes, both of which are listed as key threatening processes in the *New South Wales Threatened Species Conservation Act 1995* (TSC 1995, 2002, 2004). Thus it is suggested that *T. montana* should be considered vulnerable and listed as such (TSC 1995, 2002, 2004; EPBC 1999).

Etymology: the epithet *montana* refers to the occurrence of all populations at high elevations; it was a manuscript name written on preliminary diagnostic notes on this taxon made by the senior author since 1967. Known colloquially as Mountain Tree-heath.

**Acknowledgments**

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![General distribution map of *Trochocarpa montana* (triangles) in northern New South Wales.](image)
References


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