

distinctively raised leaf decurrencies which give the branches a distinctive sharply angular shape, flat leaflets, and broadly deltate sepals.

Populations at Gibraltar Range (e.g. *Conveny* 2213, *Duretto* 676, 680-684) have relatively wide elliptic leaflets (usually 1.5–2 mm wide) while in the remaining populations the leaflets are linear and usually 1–1.5 mm wide. There are intermediate specimens from Anvil Rock (*Southwell* H85-012) and The Lookout (*Constable s.n.*, NSW 56125) as well as scattered collections from throughout the range of the species. This variation warrants further detailed investigation.

Distribution and ecology: *Boronia anethifolia* is found from the Border Ranges of Queensland and New South Wales south along the ranges to Wadbilliga Mountain (Southern Tablelands) and the South Coast of New South Wales (Fig. 1). Isolated populations are found on some rocky areas on the Western Slopes of New South Wales, e.g. Willala Hills south of Narrabri and Goonoo Goonoo. The species is found in heath or dry sclerophyll forest on mountain tops, ridges, rocky slopes and other exposed rocky areas. Usually the species is found on granites and sandstones but is also found on other rocks such as trachytes (e.g. Mt Maroon, Qld). The known distribution, ecology and conservation status of this species in the Central Tablelands and Central Coast areas (New South Wales) are discussed by Benson and McDougall (2001). *Boronia anethifolia* was found to be self compatible by Weston *et al.* (1984). Flowering June–October; fruiting September–December.

Conservation status: *Boronia anethifolia* appears to be common, widespread and well protected in reserves. Benson and MacDougall (2001) noted that the species is uncommon in the Central Tablelands and Central Highlands of New South Wales. The broad-leafed form from Gibraltar Range (see *Notes* above) is restricted in distribution and research to determine its taxonomic and conservation status is required.

Etymology: The specific epithet refers to the deeply divided leaves with narrow leaflets which resemble that of *Anethum* Tourn. ex Linn. (Dill, Apiaceae).

2. *Boronia montimulliganensis* Duretto *sp. nov.*

A *Boronia bipinnata* Lindl. caulibus eglandulosis, foliis ad bases clare decurrentibus et foliolis longioribus differt; a *B. warangensis* Duretto inflorescentiis paucifloris et appendicibus antherarum glabris differt.

Type: QUEENSLAND: COOK: Mt Mulligan, a mesozoic sandstone mountain c. 40 km NW of Dimbulah, 16°54'S 144°51'E, *J.R. Clarkson* 5917, 18.iv.1985 (holotype BRI AQ399193; isotypes BRI [MBA], CANB 365418, MEL 250912, MEL 2068522, PERTH *n.v.*, QRS *n.v.*). (Figs 2 A–C).

Erect, woody *shrub* to at least 35 cm tall. *Branchlets* smooth with visible glands, sparsely and minutely pilose between distinctive leaf decurrencies, becoming glabrous with age, hairs to 0.25 mm long. *Leaves* imparipinnate or bipinnate, (3–)5–7-foliolate, lowermost pinnae sometimes ternate, entire leaf in outline (15–)20–40 mm long, (15–)30–34 mm wide, glabrous or glabrescent, not obviously glandular, glands black on drying; petiole 7–12 mm long; rachis segments 5–11 mm long; terminal leaflets 5–15 mm long, 1–1.25 mm wide, linear, concolorous, dorsiventral, region of undifferentiated cells between the spongy and palisade mesophyll layers, flat, margins smooth, tip acute, sometimes slightly recurved; lateral leaflets similar to terminal leaflets but longer, 6–17 mm long, 1–1.25 mm wide. *Inflorescence* 1(–3)-flowered, usually only one flower open at a time, not obviously glandular, glabrous, much shorter than leaves; peduncles c. 1 mm long; prophylls 0.5–2.5 mm long; metaxyphylls c. 0.5 mm long; anthopodia 0.5–1 mm long. *Sepals* circular, 1–1.25 mm long and wide, flat, not obviously glandular, glabrous, tip obtuse. *Petals* white, 2–2.5 mm long, not obviously glandular, glabrous, persistent. *Staminal filaments* pilose, glandular tuberculate towards apex; anthers glabrous, apiculum minute. *Ovary* glabrous; style pilose; stigma entire, minute, scarcely wider than

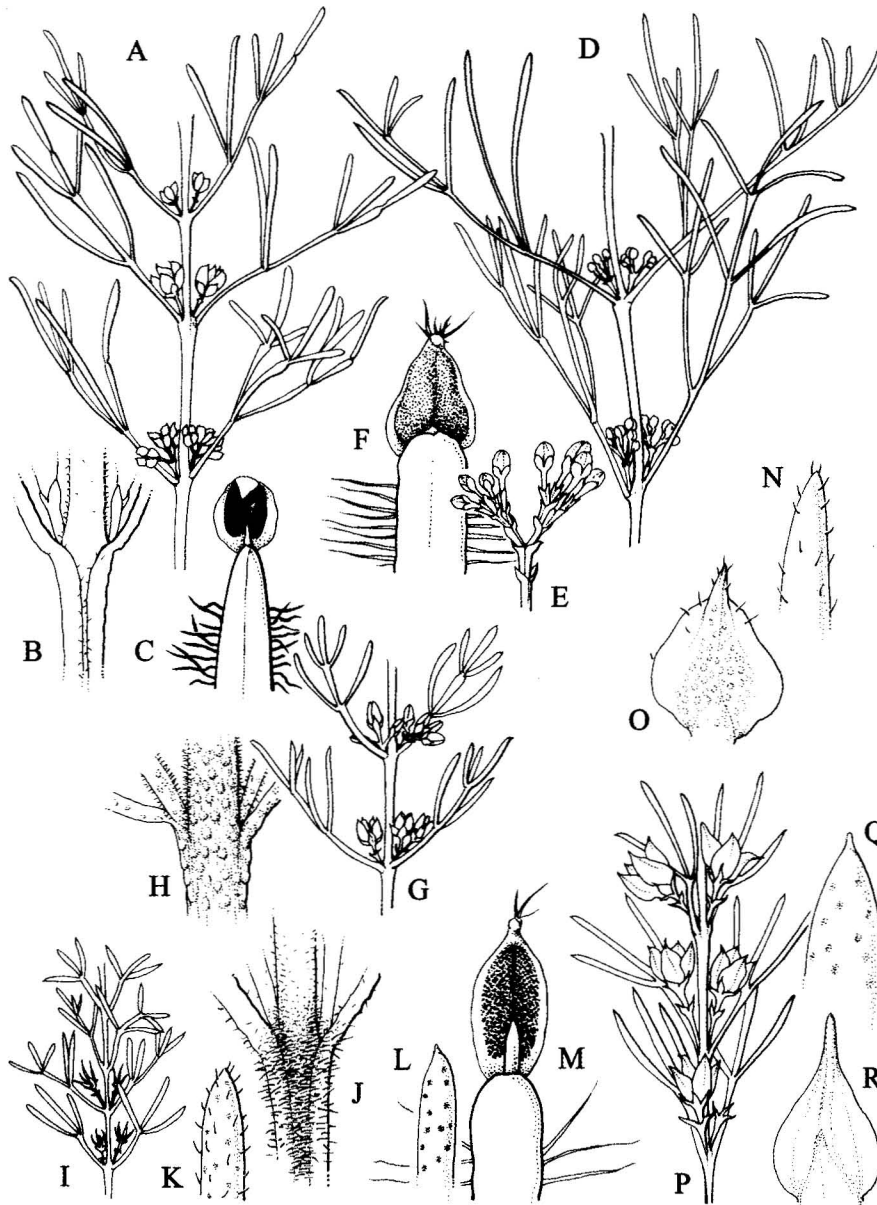


Figure 2. A-C, *B. montimulliganensis*: A, flowering branchlet, $\times 1$; B, stem, $\times 5$; C, distal portion of antisepalous stamen, $\times 40$ (A-C, Clarkson 5917, BRI). D-F, *B. warangensis*: D, flowering branchlet, $\times 1$; E, inflorescence, $\times 2$; F, distal portion of antisepalous stamen, $\times 40$ (D-E, Duretto 371, MEL 2049260; F, Cumming 9671, BRI AQ474307). G-H, *B. yarromerensis*: G, flowering branchlet, $\times 1$; H, stem, $\times 5$ (G-H, Henderson H2853, BRI AQ414467). I-K, *B. inflexa* subsp. *inflexa*: I, flowering branchlet, $\times 1$; J, stem, $\times 5$; K, leaflet tip, $\times 10$ (I-K, Armstrong 1149, NSW 385918). L-M, *B. inflexa* subsp. *montiazura*: L, leaflet tip, $\times 10$; M, distal portion of antisepalous stamen, $\times 40$ (L-M, Dodd A3-12-1, BRI AQ12434). N-O, *B. inflexa* subsp. *grandiflora*: N, leaflet tip, $\times 10$; O, abaxial surface of sepal, $\times 10$ (N-O, Harslett s.n., NE 2638). P-R, *B. inflexa* subsp. *torringtonensis*: P, flowering branchlet, $\times 1$; Q, leaflet tip, $\times 10$; R, abaxial surface of sepal, $\times 10$ (P-R, Williams s.n., MEL 2040351).

the style. *Cocci* c. 3.5 mm long, c. 1.75 mm wide, glabrous. *Seed* dull, grey, 2.5–3 mm long, c. 1.5 mm wide, irregularly rugulose, wax platelets between tubercula.

Additional specimens examined: Known from the type material only.

Notes: *Boronia montimulliganensis* appears to be most closely related to *B. warangensis*, both sharing the glabrous, glabrescent or sparsely and minutely pilose (between leaf decurrencies) stems with distinct leaf decurrencies. *Boronia montimulliganensis* can be distinguished from *B. warangensis* by having 1–3 flowers per inflorescence (cf. 7–20+) and glabrous anther appendages (cf. pilose); and from *B. bipinnata* by the eglandular branchlets with distinctive leaf decurrencies and longer leaflets (5–15 mm long; cf. 1.5–9 mm long).

Distribution and ecology: The species is known from Mt Mulligan, north Queensland (Fig. 1), where it is found in *Eucalyptus* woodland on sandstone (collector's notes). Flowering and fruiting material has been collected in April.

Conservation status: *Boronia montimulliganensis* is known from the type collection only. Mount Mulligan is on private property and fairly inaccessible and so *B. montimulliganensis* is probably secure: a conservation code of 1K is appropriate. Coal was once mined under the mountain and any future mining, as well as increased tourist activities, could pose a threat to the species. Surveys are required to ascertain accurate distributional, population size and conservation data for this species.

Etymology: The specific epithet refers to Mt Mulligan, an isolated mountain to which this species is apparently restricted.

3. *Boronia warangensis* Duretto, *sp. nov.*

A *Boronia bipinnata* Lindl. caulibus leviter glandulo-tuberculatis, foliis ad bases clare decurrentibus et foliolis longioribus differt; a *B. montimulliganensis* Duretto inflorescentiis multifloris et appendicibus antherarum pilosis differt.

Type: QUEENSLAND: BURKE: edge of the White Mountains at "Warang" Station, c. 20°27'S 144°50'E, *M.F. Duretto 371 and A. Vadala*, 15.v.1993 (holotype MEL 2049260; isotypes BRI, CANB, MEL 204261). (Figs 2 D-F).

Boronia sp. (Warang R.J.Cumming 9671): P.I. Forster, '*Rutaceae*' in R.J.F. Henderson, *Queensland Plants: names and distribution*, 185 (1997).

Erect, woody *shrub* to 2 m tall. *Branchlets* not (Just Range) or slightly ('Warang') glandular tuberculate, glabrous, glabrescent or sparsely and minutely pilose, becoming glabrous with age, hairs concentrated between slight leaf decurrencies, to 0.25 mm long. *Leaves* bipinnate, (3–)5–7-foliolate, lower pinnae usually ternate, entire leaf in outline (Just Range, 15–)30–56 mm long, (Just Range, 18–)28–90 mm wide, glabrous, not obviously glandular, glands drying black; petiole 7–17 mm long; rachis segments 7–18 mm long; terminal leaflets (4.5–)7–30 mm long, (Just Range, 0.5–)1–1.25 mm wide, linear, concolorous, dorsiventral, region of undifferentiated cells between the spongy and palisade mesophyll layers, flat, margin smooth, tip acute; lateral leaflets similar to terminal leaflets but longer except in ternate leaves, 7–25 mm long. *Inflorescence* (mature not seen for Just Range, description based on Warang material) 5–25⁺-flowered, not obviously to slightly glandular, glabrous, shorter than leaves; peduncles 2–2.5 mm long, secondary inflorescence units 1–1.5 mm long; prophylls and metaxyphylls c. 0.5 mm long; anthopodia 1–1.5 mm long. *Sepals* ovate, 1–1.25 mm long, c. 1 mm wide, flat, not obviously glandular, ciliate or glabrous, tip obtuse. *Petals* white, c. 2 mm long, not obviously glandular, glabrous to minutely ciliate, persistent. *Staminal filaments* pilose, slightly glandular tuberculate towards apex; anther loculi glabrous, apiculum minutely pilose towards apex. *Gynoecium* glabrous; stigma entire, minute, scarcely wider than style. *Cocci* c. 3 mm long, c. 1.5 mm wide, glabrous. *Seed* dull, grey, c. 2.5 mm long, c. 1.5 mm wide, irregularly rugulose, wax platelets between tubercula.

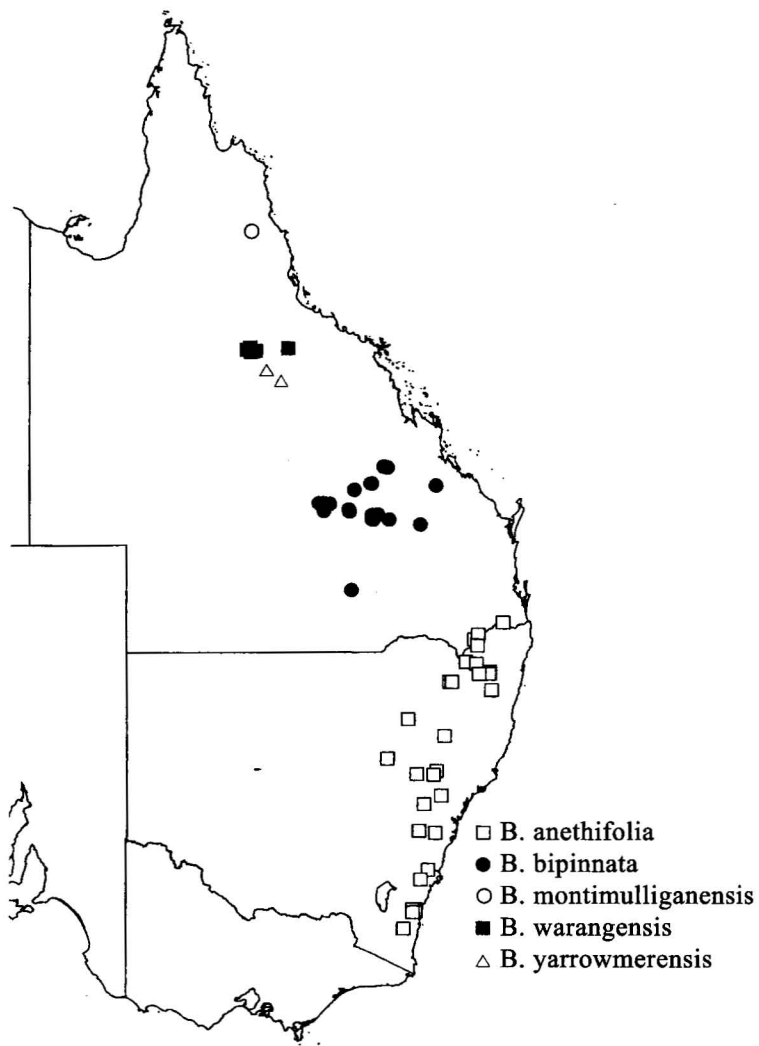


Figure 1. Distribution of *B. anethifolia*, *B. bipinnata*, *B. montimulliganensis*, *B. warangensis*, *B. yarrowmerensis*.