

TWO NEW SPECIES OF *BORONIA* (RUTACEAE) ENDEMIC IN VICTORIA

D.E. ALBRECHT AND N.G. WALSH*

ABSTRACT

Albrecht, D.E. and Walsh, N.G. Two new species of *Boronia* (Rutaceae) endemic in Victoria. *Muelleria* 8(1): 21–25 (1993). — Two new species of *Boronia* (*B. citrata* and *B. galbraithiae*) endemic in eastern Victoria, are described and illustrated. Their ecology, distribution and conservation status and relationships with other species are discussed.

INTRODUCTION

In this paper we describe two new endemic species of *Boronia* for Victoria. They are not recent field discoveries but have been segregated as a result of more thorough study of specimens previously referred to *B. muelleri* (Benth.) Cheel and *B. citriodora* Cunn. ex Hook. at the National Herbarium of Victoria (MEL). Both new species appear to belong to the *B. pilosa* Labill. group *sensu* Weston *et al.* (1984).

The terminology used to describe inflorescence structures follows Briggs and Johnson (1979).

TAXONOMY

Boronia citrata N.G. Walsh *sp. nov.*

a *Boronia citriodora*e foliolorum hispidulis, obtusis parvioribus, stylo brevioribus, ovario tomentoso; a *B. pilosae* petiolis longiorum, foliolorum obtusis, indumento denso aequaliter, petalis et sepalis non-acuminatis, et aromatis citreis valde differt.

HOLOTYPE: Victoria, Eastern Highlands, 6.4 km E of Licola, Victorian Plant Grid S35, A.C. Beauglehole 43385 with E.A. Chesterfield and J.H. Willis, 21 Oct. 1973 (MEL 542677).

Pungently lemon-scented shrub, to 0.8 (rarely to c. 1.5) m high. *Branchlets* terete or weakly 4-angled, not obviously glandular, moderately to densely hispidulous with hairs 0.1–0.2 mm long. *Leaves* imparipinnate, to 15 mm long and wide, with hairs resembling those of branchlets but slightly sparser; *petioles* 1.5–3.5 mm long, swollen apically; *rachis* segments resembling petiole; *leaflets* 5–11, spreading, narrowly obovate, obtuse, 2–7 mm long, 1–3 mm wide, terminal leaflet shortest, concolorous, veins obscure; margins rounded, entire or slightly and irregularly indented. *Inflorescence* terminal or in upper axils, 1–5 flowered; *peduncle* 0–5 mm long, hispidulous; *prophylls* of primary axis paired, linear, 1–2 mm long; *anthopodia* 3–7 mm long, hispidulous, broadening shortly below the calyx. *Sepals* triangular, 1–1.6 mm long, 1–1.5 mm wide, minutely hispidulous. *Petals* pale to rosy pink, mostly darker apically and abaxially, 4–6.5 mm long, 2–3 mm wide; surfaces minutely and densely papillate, with very short, fine, erect hairs superimposed. *Staminal filaments* 1.5–2 mm long, alternating longer and shorter, glandular-tuberculate, pilose, swollen apically; *anther* connective 0.2–0.3 mm long; *anthers* c. 0.5 mm long, lacking terminal appendage. *Disc* swollen, maroon, 1.5–2.5 mm diam., glabrous. *Ovary* hispidulous; *style* 0.25–0.4 mm long, glabrous or sparsely pilose just below the rounded, slightly broader stigma. *Fruiting cocci*

*National Herbarium of Victoria, Royal Botanic Gardens, Birdwood Ave, South Yarra, Victoria, Australia 3141.

flattened-ovoid or ellipsoid, 3–3.5 mm long, hispidulous; *seeds* dark brown, shining, 2–3 mm long. (Fig. 1 a-c)

ETYMOLOGY

From the Latin *citratus* meaning lemon-like, alluding to the aromatic foliage of the species. Despite the proximity of this name to *B. citriodora*, the lemon scent in both species is such an apparent attribute that the similarity of names is warranted. Confusion of 'field abbreviations' of the species names is unlikely as they are endemic in different states.

OTHER SPECIMENS EXAMINED

Victoria — from type locality: 20 Oct. 1973, *J.H. Willis s.n.* (MEL 503637); 15 Jul. 1973, *E.A. Chesterfield s. n.* (MEL 516720); 21 Feb. 1989, *J. Westaway 617* (MEL 694529); 28 Apr. 1992, *D.E. Albrecht 4967* with *N.G. Walsh* (MEL); Subalpine moors near Mt Macdonald, 21 Mar. 1973, *E.A. Chesterfield s. n.* (MEL 1608227).

DISTRIBUTION AND CONSERVATION STATUS

Known from 2 areas in the Macalister River catchment in areas to the north and east of Licola. One site containing about 5 distinct populations (including the Type), ranging over about 1 km is within the Alpine National Park (Wonnangatta-Moroka Unit). The other site, near Mt MacDonal (about 4 populations spanning about 0.5 km), is within uncommitted crown land, but at sites unlikely to experience altered land management and are considered not at risk. Within most of the populations plants of *B. citrata* are plentiful. The area covered by the populations at each of the two sites is about 3–5 ha (E.A. Chesterfield, pers. comm.). Another population was reported to occur by the late W.R. Cane of Maffra, apparently near to the Mt MacDonal site (E.A. Chesterfield pers. comm.), but this population has not been confirmed by any living botanist and details of its location are sketchy.

The Risk Code (*sensu* Briggs & Leigh, 1989) for *B. citrata* is assessed as 2RCa.

HABITAT AND ECOLOGY

Boronia citrata occurs on shallow, shaly soils based on Carboniferous and Ordovician sandstones at altitudes of about 950–1140 m. At the type locality *Eucalyptus sieberi* and a mallee form of *E. dives* form a low open-forest with understory species including *Epacris impressa*, *Daviesia buxifolia*, *Comesperma ericinum*, *Monotoca scoparia*, *Oxylobium ellipticum*, *Tetratheca labillardieri*, *Dillwynia phyllicoides* and *Hibbertia obtusifolia*. Near Mt MacDonal *B. citrata* occurs in similar vegetation, but with *Eucalyptus mannifera* and *E. dives* being the principal canopy species, and *Acacia obliquinervia* and *Pultenaea muelleri* prominent components of the shrub stratum (along with most of the shrub species present at the type locality).

NOTES

Boronia citrata has in the past been confused with Tasmanian *B. citriodora*. This is understandable as both have foliage which is strongly lemon-scented when crushed. However *B. citrata* differs from *B. citriodora* in its leaflets which are obtuse at the apex, hispidulous and smaller (those of *B. citriodora* being acute or apiculate, glabrescent and the largest leaflets >8 mm long); in its shorter style (c. 1 mm long in *B. citriodora*); in the hispidulous ovary and fruit (glabrous in *B. citriodora*); and in the terete or weakly angled and evenly hispidulous branchlets (rather strongly 4-angled with alternating glabrescent and hispidulous faces in *B. citriodora*). The two differ further in their habitats. Although both inhabit subalpine sites, those from which *B. citrata* is known are dry, with skeletal soils derived from sandstones whereas *B. citriodora* typically inhabits wettish peaty sites usually developed on quartzite or dolerite substrates.

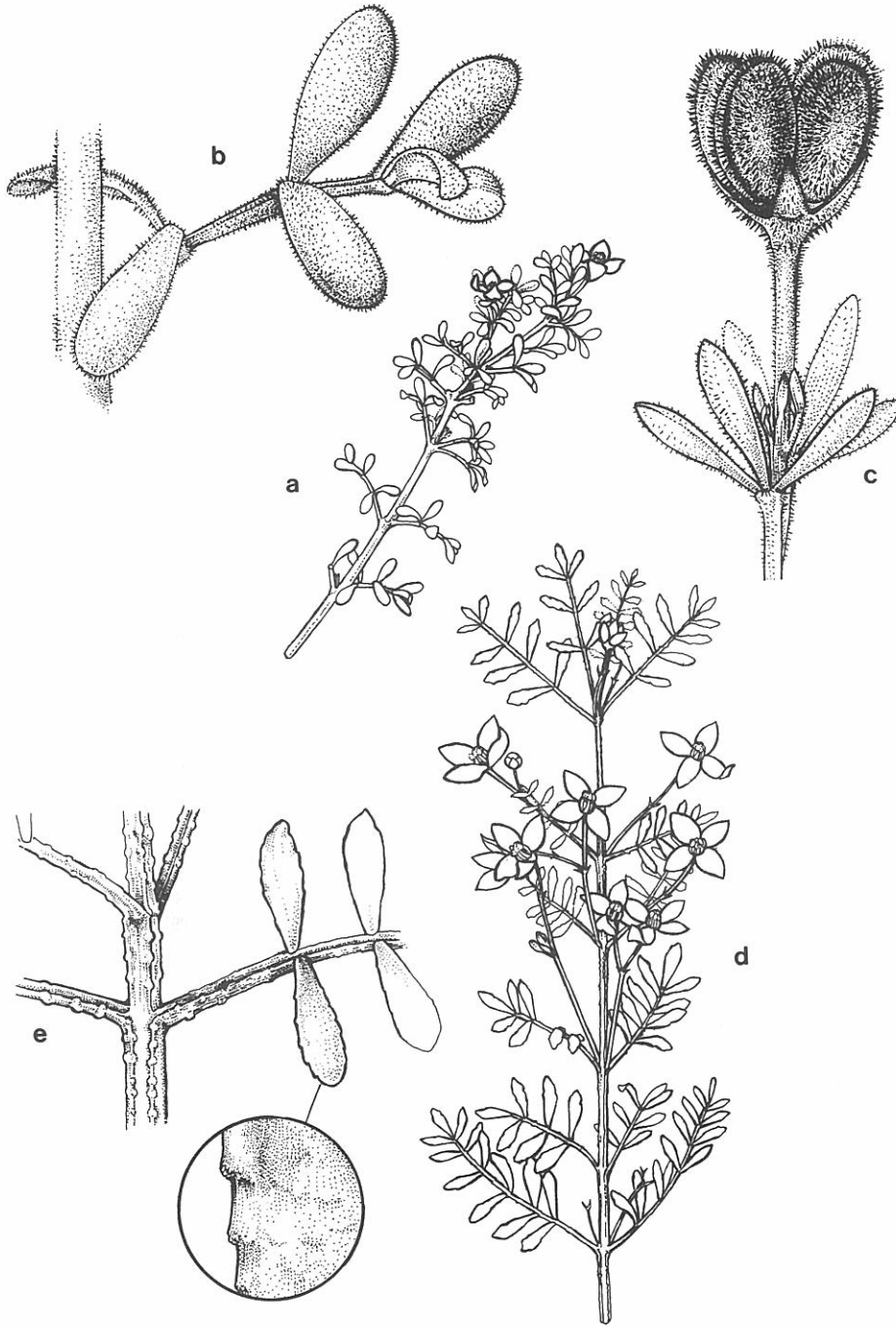


Fig. 1. *Boronia citrata*. a — flowering twig, $\times 1$. b — leaf and stem, $\times 6$. c — fruiting cocci, $\times 6$. All drawn from Albrecht 4967 (MEL). *Boronia galbraithiae*. d — flowering twig, $\times 1$. e — part of leaf and stem, $\times 3$ and (inset) leaflet margin. All drawn from Albrecht 1965 (MEL).

Boronia citrata resembles some forms of the widespread *B. pilosa* which occurs in South Australia, Victoria and Tasmania, but is readily separable from that variable species in the longer petioles (<1.5 mm long in *B. pilosa*); in the obtuse leaflets (acute in *B. pilosa*, except in a glabrous form from far western Victoria and probably south-eastern South Australia); in the shape of the sepals and petals (acuminate and apiculate respectively in *B. pilosa*); in the dense even tomentum (hairs typically scattered and of unequal lengths in *B. pilosa*); and in the distinctive lemon foliar fragrance.

Boronia galbraithiae* D.E. Albrecht *sp. nov.

Boronia muelleri affinis foliolorum brevioribus, oblanceolatis vel obovatis, serrulatis valde, et odore feniculi differt; *B. microphylla* similis sed ramulis glabris anguste alatis, foliolorum serrulatis et antheris non-apiculatis differt.

TYPUS: Victoria, Eastern Highlands, S of Cobbannah, 26 Sept. 1984, A.C. Beauglehole 77328; HOLOTYPE: MEL 669258; ISOTYPI: MEL 669259, CBG, NSW, HO, CHR).

Pleasantly fennel-scented shrub to 2 m high. *Branchlets* glabrous, 4-angled, with glandular-tuberculate decurrent leaf bases forming flanges along the internodes, becoming sub-terete with age. *Leaves* imparipinnate, to 25 mm long, glabrous; petioles 3.5–8 mm long, glandular-tuberculate, channelled above; rachis to 25 mm long, segments similar to but slightly shorter than the petioles; leaflets (3-)5–15(-17), oblanceolate to narrowly obovate, obtuse to subacute, apiculate, 2–9.5 mm long, 1–3 mm wide, terminal leaflet shortest, lower surface paler, gland dots ± obscure; margins plane, glandular-serrulate, the teeth verrucose. *Inflor-escence* axillary, (1-)3–5(c.15)-flowered; peduncle 5–12 mm long, 4-angled, glandular-tuberculate, glabrous; prophylls of primary axis entire to pinnate (and resembling the leaves), to 7 mm long, glabrous; anthopodia 2.5–7 mm long, broadening towards the calyx, glabrous. *Sepals* ovate-triangular, glabrous, 1–2 mm long, 1–1.4 mm wide. *Petals* white to deep pink, 4.5–7.7 mm long, 2.5–5.8 mm wide, minutely pubescent to glabrous adaxially, glabrous abaxially, not persistent in fruit. *Staminal filaments* 1.5–3 mm long, alternating longer and shorter, glandular-tuberculate, pilose, swollen apically; anther connective 0.2–0.3 mm long; anthers 0.5–0.7 mm long, terminal appendage absent. *Disc* 1.6–2.1 mm diameter, glabrous. *Gynoecium* glabrous; style 0.3–0.4 mm long; stigma rounded, about as wide as the style. *Fruiting cocci* flattened ovoid, c.4 mm long, glabrous; seeds almost black, shiny, 2–2.3 mm long. (Fig. 1 d-e)

ETYMOLOGY

The species is named in honour of Miss Jean Galbraith, doyenne of Victorian botanists, who first brought our attention to the distinctness of this taxon, and whose collections and writings have contributed much to our knowledge of flora of the Gippsland region.

OTHER SPECIMENS EXAMINED

Victoria — from type locality — Oct. 1956, *J. Galbraith s.n.* (renumbered as A.C. Beauglehole 7099); 14 Oct. 1956, *J. Mathew s.n.*; 29 Sept. 1985, *D.E. Albrecht 1965* (MEL 1585677, 1585703); 27 Apr. 1992, *D.E. Albrecht 4968* with *N.G. Walsh* (MEL).

DISTRIBUTION AND CONSERVATION STATUS

Boronia galbraithiae is only known from uncommitted crown land in the vicinity of Mt Difficulty, where it is patchily distributed for about two kilometres along the Insolvent Track. Although the population occupies a small area plants of *B. galbraithiae* are locally plentiful. Applying the coding system of Briggs & Leigh (1989) *B. galbraithiae* is assigned a risk code of 2Ri.

HABITAT AND ECOLOGY

Boronia galbraithiae occurs in dry sclerophyll forest on skeletal spurs and upper slopes between about 420 and 540 m altitude. The soil is shallow and derived from Ordovician sediments. Associated species include *Eucalyptus sieberi*, *Persoonia confertiflora*, *Platysace lanceolata*, *Dillwynia phyllicoides*, *Chionochloa pallida* and *Poa* sp. aff. *gunnii*.

Part of the population of *B. galbraithiae* was recently burnt by a low intensity fire. Within this area plants were observed to be resprouting from rootstocks and some seedling recruitment was also evident.

NOTES

Specimens of *Boronia galbraithiae* have previously been referred to *B. muelleri*, a species of scattered distribution between the Victorian Otways and far south-eastern New South Wales. However, *B. galbraithiae* differs from *B. muelleri* in its consistently shorter leaflets (the longest leaflets <10 mm long, cf. >10 mm long in *B. muelleri*), that are oblanceolate to narrowly obovate (narrowly elliptic in *B. muelleri* except for one specimen from the Genoa Gorge in far eastern Victoria with oblanceolate leaflets), distinctly serrulate (entire or slightly serrulate in *B. muelleri*) and have a aroma resembling fennel when bruised. Furthermore, the young stems of *B. galbraithiae* are invariably glabrous compared to glabrous to sparsely hairy in *B. muelleri*, and plants of *B. galbraithiae* rarely reach 2 m high (and are typically below 60 cm) whereas plants of *B. muelleri* range in height from about 1–7 m. The two species also differ in their habitat preferences. *B. galbraithiae* occurs in dry sclerophyll forest on skeletal spurs and upper slopes, whilst *B. muelleri* occurs in moister and often more sheltered sites in riparian and damp sclerophyll forests, *Banksia* woodland and wet heathland.

Boronia galbraithiae also superficially resembles the eastern New South Wales and Queensland *B. microphylla* Sieb. ex Spreng., but differs from that species in its glabrous stems that have conspicuous flanges along the internodes (those of *B. microphylla* being bristly when young and lacking flanges); in its glandular-serrulate leaflets (entire in *B. microphylla*); and in its non-apiculate anthers (minutely apiculate in *B. microphylla*).

ACKNOWLEDGEMENTS

We are grateful to Jean Galbraith (Tyers, Victoria) whose enquiry led to the realization that the two species were undescribed, to Evan Chesterfield (Department of Conservation & Natural Resources, Victoria) who discovered *B. citrata* and supplied detailed ecological information about the species, John Eichler (Black Rock, Victoria) and James Turner (Kalimna West, Victoria) for information regarding the populations of the new species, to Allen Trumbull-Ward, Geoff Beilby and John Davies (Department of Conservation & Environment, Victoria) for collections of and information regarding *B. muelleri*, and to our colleague Anita Barley for illustrating the new species.

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