

***Drummondita borealis* Duretto (Rutaceae), a new species from the Northern Territory, and a revised description for *D. calida* (F.Muell.) Paul G.Wilson from Queensland**

Marco F. Duretto

Summary

Duretto, M. (2018). *Drummondita borealis* Duretto (Rutaceae), a new species from the Northern Territory, and a revised description for *D. calida* (F.Muell.) Paul G.Wilson from Queensland. *Austrobaileya* **10(2)**: 236–241. *Drummondita calida* is revised and two species are recognised. *Drummondita calida* is endemic to north Queensland and plants from the Northern Territory previously assigned to the species are here described as *D. borealis* Duretto. Descriptions, ecological notes and illustrations are provided for both species and amendments to the key to the genus are provided.

Key Words: Myrtaceae, *Drummondita*, *Drummondita borealis*, *Drummondita calida*, Northern Territory Flora, Queensland flora, new species, taxonomy, identification key

M.F. Duretto, National Herbarium of New South Wales, Royal Botanic Gardens and Domain Trust, Mrs Macquaries Road, Sydney, New South Wales 2000, Australia. Email: marco.duretto@rbgsyd.nsw.gov.au

Introduction

Drummondita Harv. (Rutaceae) is a genus of nine species, eight of which are confined to south-west Western Australia, and the ninth, *D. calida* (F.Muell.) Paul G.Wilson, to the Northern Territory and north Queensland (Wilson 2013). *Drummondita* has received little attention since it was described by Harvey (1855). It was placed in synonymy under *Philothea* Rudge by Mueller (1869) and later reinstated by Wilson (1971). Five of the nine species were recognised and described relatively recently (Mollemans 1993; Wilson 1998; Meissner & Markey 2007).

Drummondita calida is found disjunctly in the north-eastern Northern Territory and in north Queensland, areas separated by c. 1000 km. Like the genus, the species has received little attention and only Wilson (2013), in the *Flora of Australia*, provides an account covering its full geographic range. The description in Wilson (2013) appears to be based largely on material from the Northern Territory though the type of the species is from the Gregory River area, Queensland. There

are significantly more herbarium specimens collected from the Northern Territory than Queensland.

During phylogenetic studies of the *Philothea* / *Phebalium* Vent. group of genera it became apparent that *D. calida* contained two distinct forms. The material from the Northern Territory differs from the Queensland material in having pedicellate flowers (versus sessile), branches being minutely puberulous (versus glabrous or nearly so), narrower leaves that are glabrous (versus glabrous to ciliate) and stamens that barely exceed the corolla tube (versus clearly exserted) (**Figs. 1 & 2**). *Drummondita borealis* Duretto is newly described for the populations found in the Northern Territory. A description for *D. calida sensu stricto* is provided.

Material and methods

Species descriptions are based on examination of herbarium collections held at the Australian Tropical Herbarium (CNS), the National Herbarium of New South Wales (NSW), the Northern Territory Herbarium (DNA) and the Queensland Herbarium (BRI), as well as images of herbarium collections available at JSTOR Global Plants (<https://plants.jstor>).

org/).

Taxonomy

1. *Drummondita calida* (F.Muell.) Paul G.Wilson, *Nuytsia* 1: 206 (1971); *Philotheca calida* F.Muell., *Fragm.* 7: 21 (1869). **Type:** Queensland. COOK DISTRICT: Gilbert River, *s.dat.*, *Daintree s.n.* (holo: MEL232711; iso: BRI [AQ0151566], K 717312).

Dense shrub to 4 m high. Branchlets smooth, glabrous apart from the presence of 2 to several minute and usually dark hairs (similar to stipular excrescences seen in *Philotheca*) at the base of the adaxial surface of the leaves, cream-coloured, leaf scars dark and often giving the branchlets a distinctive geometric pattern, becoming corky and fissured with age. Leaves alternate, often crowded at ends of branches, though sometimes evenly spread, simple, glabrous or ciliate (glabrous only at Bulleringa Range); hairs simple, 0.2–0.7 mm long, sometimes deciduous; sessile or with petiole to 0.5 mm long; lamina slender, trigonous or semi-terete, 8–20 mm long, 0.75–1.2 mm wide, acuminate, glossy, sulcate adaxially. Flowers solitary, 5-merous, sessile, bracteoles absent. Sepals free, \pm subequal, orbicular, 6–8 mm long, 4–6 mm wide, leathery, sparsely ciliate to ciliate but otherwise glabrous (colour not recorded). Petals free, erect and forming a tube, narrowly orbicular, 12–17 mm long, sparsely ciliate or ciliate but otherwise glabrous (colour not recorded). Stamens 5, antipetalous, exceeding petals, alternating with 5 slightly longer, antisepalous staminodes; filaments united into a cylinder for *c.* $\frac{3}{4}$ length, white-sericeous abaxially; anthers 2.5–3 mm long, lacking appendages and obvious glands. Style slender; stigma exerted. Fruit and seed not observed. **Fig. 1.**

Additional specimens examined: Queensland. COOK DISTRICT: Bulleringa NP, 80 km NW of Mt Surprise, Red River area, Apr 1998, *Forster PIF22556 & Booth* (BRI, CNS, DNA); Bulleringa NP, Sep 2008, *McDonald KRM7945 & Smith* (BRI); Bulleringa NP, May 2000, *O'Keefe s.n.* (BRI [AQ731864]); Wall Creek, W of Gilbert River near 'North Head' Nov 1985, *Jackes s.n.* (BRI [AQ431603]); Gilbert River, plateau between Dingo Creek and Fish Hole Creek, Apr 2010, *Ford 5742 et al.* (BRI, CNS); Gilbert River, upper reaches of Dead Horse Creek, Apr 2010, *Ford 5704 et al.* (BRI, CNS); Gregory Range Station, 120 km NE of Richmond, 27 km

ENE of Middle Park Station Airstrip, Apr 2004, *Kahler TH7907 & Appelman* (BRI); Rungulla – Fog Creek boundary, Gregory Range, upper reaches of Clara River, Apr 2010, *Ford 5726 et al.* (BRI, CNS).

Distribution and habitat: *Drummondita calida* is endemic to Queensland and is found on the Gregory Range, at the headwaters of the Gilbert River, and *c.* 150 km to the north in the Bulleringa Range. The species has been found on the tops and bases of sandstone plateaux and ridgelines in heath, shrubland, *Eucalyptus whitei* Maiden & Blakely, *Corymbia* species woodland, and *Acacia shirleyi* Maiden thicket, often with *Triodia*. It can dominate the shrub layer.

Phenology: Flowers have been recorded in April, September and November.

Notes: The leaves of the plants from the Bulleringa Range are glabrous and smaller (**Fig. 1A, C**) than those from the Gregory Range which may be glabrous or ciliate (**Fig. 1E, G**). Further collections and research are needed to determine if this variation warrants taxonomic recognition.

Conservation status: The Bulleringa Range populations are all found within the Bulleringa National Park. The Gregory Range populations are found in Rungalla National Park and North Head Nature Refuge. The species is known from few collections and population data is lacking with most herbarium collections. It is currently listed as **Vulnerable** under the Queensland *Nature Conservation Act 1992*.

2. *Drummondita borealis* Duretto **sp. nov.** with affinity to *D. calida* but differing in having pedicellate flowers (versus sessile), smaller petals (8–11 mm long versus 12–17 mm long), branches being minutely puberulous (versus with few hairs near base of leaves or nearly glabrous), usually narrower leaves that are glabrous (versus glabrous to ciliate). **Typus:** Northern Territory. DARWIN AND GULF: Near Dinner Creek, Kakadu Stage 3, 21 April 1995, *G. Leach 4571 & L. Greschke* (holo: DNA 12551; iso: BRI [AQ531897], CANB [*n.v.*], PERTH [*n.v.*]).

Dense shrub to 1.5 m high. Branchlets smooth, sparsely and minutely puberulous, often with

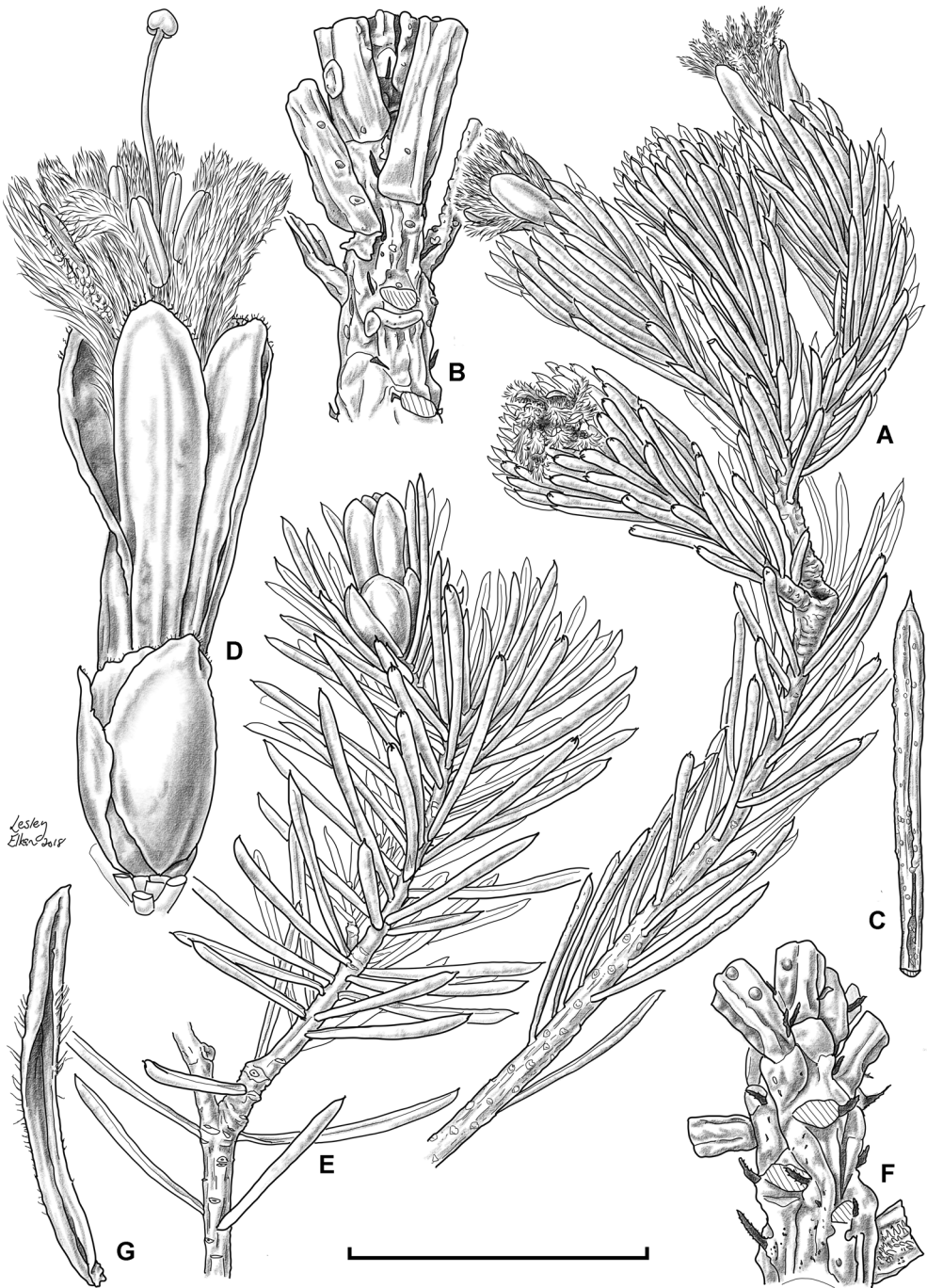


Fig. 1. *Drummondita calida* (Bulleringa Range). A. branchlet with flowers. B. stem detail. C. leaf, adaxial surface. D. flower. *D. calida* (Gilbert River). E. branchlet with flower. F. stem detail. G. leaf, adaxial surface. A–D from McDonald 7945 (BRI); E–G from Ford 5704 (BRI). Scale Bar = 24 mm for A & E, 3.3 mm for B & F, 10 mm for C, D & G. Del. L. Elkan.

small dark hairs (stipular excrescences) at base of adaxial surface of leaves, becoming glabrous with age, cream-coloured, with very little or no cork development. Leaves alternate, usually spread along branches though sometimes crowded at ends, simple, glabrous, sessile or with petiole to 0.5 mm long; lamina slender, trigonous or semi-terete, 12–30 mm long, 0.5–0.75 mm wide, acuminate, glossy, sulcate adaxially. Flowers solitary, 5-merous; pedicel 1.5–2 mm long, fleshy, bracteoles absent. Sepals free, \pm subequal, orbicular, 4–6 mm long, 3.5–4 mm wide (enlarging with fruit), leathery, ciliate but otherwise glabrous, green and pink. Petals free, erect and forming a tube, narrowly orbicular, 8–11 mm long, ciliate but otherwise glabrous, white to pink with orange tips. Stamens 5, antipetalous, exceeding petals, alternating with 5 slightly longer, antisepalous staminodes; filaments united into a cylinder for *c.* $\frac{3}{4}$ length, white-sericeous abaxially; anthers *c.* 2 mm long, lacking appendages and obvious glands. Style slender; stigma exserted. Fruit 5–5.5 mm long, 4 mm wide, glabrous. Seed oblong, minutely patterned, 3.5–4 mm long, black, shiny, *c.* 2 mm wide. **Fig. 2.**

Additional specimens examined: Northern Territory. DARWIN AND GULF: Kakadu NP, 4 km SW of Bloomfield Springs, Jan 1995, *Russell-Smith 9115* (DNA); Kakadu NP, source of south Alligator River, Apr 1995, *Russell-Smith 10442* (DNA); Kakadu NP, Bloomfield Springs, Jan 1992, *Russell-Smith 8552* (BRI, DNA); Turnoff Creek – Upper South Alligator catchment, Apr 2001, *Brock 241* (DNA); Kakadu NP, 18.5 km S of Gimbat homestead (below E edge of Marawal Plateau), Apr 1990, *Slee & Craven 2691* (BRI, CANB [n.v.], DNA); Kakadu NP, Apr 1990, *Dunlop 8537 & Munns* (BRI, DNA, MEL [n.v.], NSW, PERTH [n.v.]); Kakadu NP, 4 km SW of Bloomfield Springs, Apr 1989, *Menkhorst*

364 (DNA, PERTH n.v.); Gimbat Station, source of South Alligator River, July 1983, *Russell-Smith 763* (CANB [n.v.], DNA); Edge of Marawal Plateau, W of Bloomfield Springs, Mar 2008, *Brennan 7494* (DNA); Marawal Plateau, Apr 1990, *Brennan Bre39 & Orr* (DNA); Marawal Plateau, near Bloomfield Springs, Apr 1990, *Brennan Bre17* (DNA); Marawal Plateau, S of Bloomfield Springs, Feb 1996, *Brennan 3198* (DNA); Nitmiluk NP, Douglas Springs area, edge of Murrawal Plateau, May 2001, *Mitchell 2882* (BRI [n.v.], DNA); Nitmiluk NP, May 2001, *Mitchell 2785* (DNA); *ibid.*, Apr 2002, *Leach & Pritchard 4695* (DNA); *ibid.*, NW corner of Murrawal Plateau, May 2002, *Mitchell 3596* (DNA); *ibid.*, May 2001, *Risler 1539 & Diechmann* (DNA).

Distribution and habitat: *Drummondita borealis* is endemic to the Northern Territory where it is found from southern Kakadu NP to Nitmiluk NP, mainly in the catchment areas of the South Alligator and Katherine Rivers. The species is found mainly in heath and shrubland, but also in *Melaleuca nervosa* (Lindl.) Cheel or eucalypt woodland, on sandstone, mudstone and ironstone.

Phenology: Flowering material has been collected from January to May, and fruiting material from March to May.

Conservation status: All known populations of *Drummondita borealis* are in Kakadu and Nitmiluk National Parks, and this and the rugged terrain the species is found in, offers excellent protection. Population data are usually lacking with herbarium specimens though the collectors sometimes note that the species was common where found.

Etymology: The specific epithet is derived from the Latin, *borealis* (north or northern), and refers to this species being the most northerly species in *Drummondita*.

Amended key to the species of *Drummondita*

Adapted from Wilson (2013, *Flora of Australia*: p. 427); to replace couplets 1 and 2

- 1 Leaves mostly >14 mm long, acuminate or apex rounded with a short mucro
 - 2a. Flowers shortly pedicellate; petals 8–11 mm long; sepals 4–6 mm long (NT) **D. borealis**
 - 2a. Flowers sessile; petals 12–17 mm long; sepals 6–8 mm long (Qld, SW WA)
 - 2b Petals and sepals ciliate (Qld) **D. calida**
 - 2b. Petals and sepals glabrous (SW WA) **D. longifolia**
- 1. Leaves <12 mm long or if longer then with a rounded apex

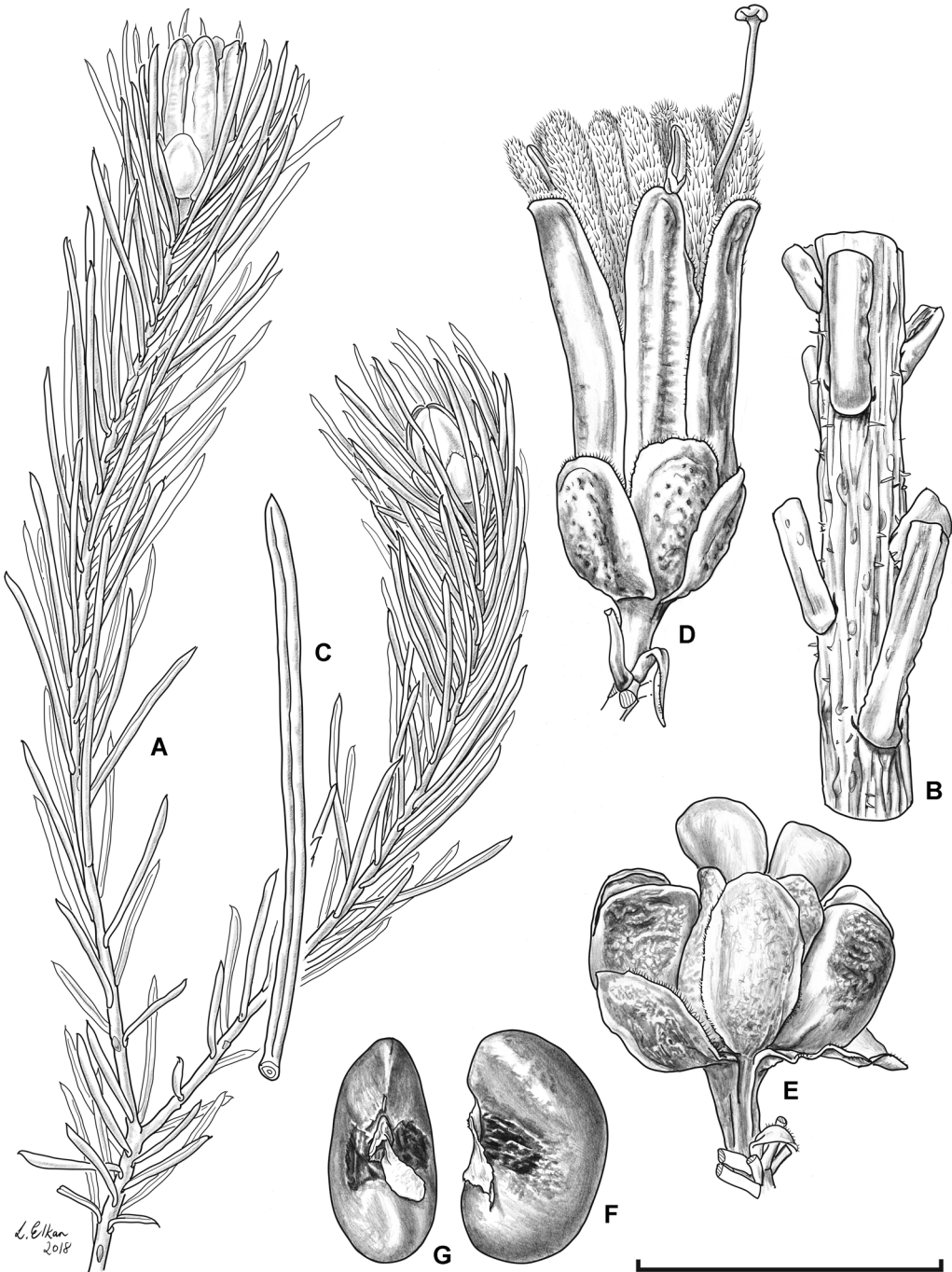


Fig. 2. *Drummondita borealis*. A. branchlet with flowers. B. stem detail. C. leaf, adaxial surface. D. flower. E. fruit. F. seed, lateral view. G. seed, ventral view. A–D from *Leach 4571 & Greschke* (DNA, holotype); E–G from *Russell-Smith 10442* (DNA). Scale Bar = 24 mm for A, 3.3 mm for B, 10 mm for C, D & E, 6 mm for F & G. Del. L. Elkan.

Acknowledgements

I would like to thank the Directors of BRI, CNS and DNA for the loan of material; and Lesley Elkan (NSW) for her excellent line drawings in Figures 1 and 2.

References

- HARVEY, W.H. (1855). Characters of some new genera of plants recently discovered by Mr. James Drummond in Western Australia. *Hooker's Journal of Botany and Kew Garden Miscellany* 7: 51–58.
- MEISSNER, R.A. & MARKEY, A.S. (2007). Two new Western Australian species of *Drummondita* (Rutaceae: Boronieae) from banded ironstone ranges of the Yilgarn Craton. *Nuytsia* 17: 273–280.
- MOLLEMANS, F.H. (1993). *Drummondita wilsonii*, *Philotheca langei* and *P. basistyla* (Rutaceae), new species from south-west Western Australia. *Nuytsia* 9: 95–109.
- MUELLER, F.J.H. (1869). *Fragmenta Phytographiae Australiae* 7(51): 21. Government Printer: Melbourne.
- WILSON, P.G. (1971). Taxonomic notes on the family Rutaceae, principally from Western Australia. *Nuytsia* 1: 197–207.
- (1998). Nomenclatural notes and new taxa in the genera *Asterolasia*, *Drummondita* and *Microcybe* (Rutaceae: Boronieae). *Nuytsia* 12: 83–88.
- (2013). *Drummondita* (Rutaceae). *Flora of Australia* 26: 427–431. CSIRO Publishing: Melbourne.