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(**Pomaderreae**) from Arnhem Land, Northern Territory

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# ***Cryptandra triplex* K.R.Thiele ex Kellermann, a new species of Rhamnaceae (*Pomaderreae*) from Arnhem Land, Northern Territory**

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## **Summary**

Kellermann, J. (2006). *Cryptandra triplex* K.R.Thiele ex Kellermann, a new species of Rhamnaceae (*Pomaderreae*) from Arnhem Land, Northern Territory. *Austrobaileya* 7(2): 299–303. A new species of *Cryptandra* Sm. is described from the Kakadu and Nitmiluk National Parks in Arnhem Land, Northern Territory, *C. triplex* K.R.Thiele ex Kellermann. It is closely related to *C. intratropica* W.Fitzg. and *C. filiformis* A.R.Bean. A distribution map, a photograph of the holotype and a key to *Cryptandra* species from northern Australia are provided.

**Key Words:** Rhamnaceae, *Pomaderreae*, *Cryptandra triplex*, new species, Australia, Australian flora, Northern Territory flora, Arnhem Land, identification key

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## **Introduction**

*Cryptandra* Sm. is a genus of about 55 species and occurs predominantly in the semi-arid, temperate and subtropical regions of Australia with centres of diversity in south-western Western Australia and south-eastern Australia. There are also a few species distributed in northern tropical Australia. Two species occur in northern Western Australia, *Cryptandra intratropica* W.Fitzg. and *C. monticola* Rye & Trudgen from the Kimberley and the Pilbara, respectively, one species has been described from Arnhem Land in the Northern Territory, *C. gemmata* A.R.Bean, and three species are known from the Cook District of Queensland, *C. debilis* A.R.Bean, *C. filiformis* A.R.Bean and *C. pogonoloba* A.R.Bean (with two subspecies: *C. pogonoloba* subsp. *pogonoloba* and *C. pogonoloba* subsp. *septentrionalis* Kellermann).

This paper recognises a further new species of *Cryptandra* for northern Australia, *C. triplex* K.R.Thiele ex Kellermann. It was first collected in fruit by Lyn Craven in 1980 from an area near Jabiru in Kakadu National Park (N.P.) in the Northern Territory (N.T.), and in flower the following year. Subsequently, more collections were made from Kakadu

N.P. and the adjoining Nitmiluk N.P. During the preparation of the 'Flora of Australia' treatment of Rhamnaceae, Kevin Thiele recognised it as a distinct taxon, closely allied to *C. intratropica*. However, uncertainties regarding the circumscription of the genera of Australian Rhamnaceae prevented formal naming of the species. I have here adopted Kevin Thiele's manuscript name, but am solely responsible for the validating description of this species.

Recent molecular systematic analyses (Kellermann *et al.* 2005) showed that *Cryptandra triplex* and *C. intratropica* were nested deep within a clade of typical *Cryptandra* species. *Cryptandra intratropica*, *C. triplex* and *C. filiformis* are unique within the genus in having a consistently dense indumentum of stellate hairs on both surfaces of the leaves, flowers and stems, in addition to having flowers in few-flowered contracted cymes, which are sometimes arranged in short panicles. More typical species of *Cryptandra* have single flowers which are subtended by one to several rows of bracts, and are usually glabrous on the upper surface of the leaves (Thiele & West 2004).

## Taxonomy

**Cryptandra triplex** K.R.Thiele ex Kellermann, **species nova** a *Cryptandra intratropica* W.Fitzg. ovario tri-loculari et fructu parviore toro fere basali differt. **Typus:** Northern Territory, ARNHEM LAND: 15 km NNE of Jabiru East, 12°32'S, 132°57'E, 22 March 1981, L.A.Craven 6546 (holo: MEL; iso: CANB, DNA *n.v.*, MEL; A, AD, B, BISH, BRI, CHR, E, G, HO, K, L, NE, NSW, NY, P, PRE, RSA, UC, US, *distribuendi*).

*Cryptandra* D019989 Jabiru, Dunlop (1995: 21).

*Cryptandra* sp. 5 (Jabiru; L.A.Craven 6484), Briggs & Leigh (1996: 161).

*Cryptandra* sp. Jabiru (L.A.Craven 6484), Cowie & Albrecht (2005).

*Cryptandra* sp. 'Jabiru East', Kellermann *et al.* (2005), Ladiges *et al.* (2005).

Evergreen *shrub* to 1.2 m high; young stems, leaves and flowers densely and closely greyish stellate-pubescent. *Leaves* alternate: *stipules* linear-filiform or narrowly triangular, (1.5–) 2–3.5 mm long, persistent, free, moderately to densely stellate-pubescent; *petiole* 0.5–2 mm long; *lamina* narrowly elliptical to oblanceolate or obovate, 10–22 mm long, (2.5–) 3–6 mm wide, flat with the margins narrowly recurved, base cuneate, apex obtuse to subacute or slightly emarginate, venation penninerved, the veins clearly visible below or obscure, ± concolorous. *Inflorescences* contracted cymes with 1–5 flowers, axillary towards the branch tips, the cymes sometimes forming short, leafy panicles. *Pedicels* up to 0.5 mm long, subtended by 3–5 bracts; *bracts* ovate, 0.6–1 mm long. *Flowers* bisexual, 5-merous, white or cream to yellowish. *Hypanthium tube* 0.4–0.6 mm long, 1.8–2 mm diameter. *Sepals* 1–1.2 mm long, incurved or erect at anthesis, persistent in fruit. *Petals* cucullate, 0.8–1 mm long, erect, distinctly clawed. *Stamens* subequal to petals, 0.8–0.9 mm long, erect; *anthers* 0.3–0.4 mm long. *Disk* conspicuous, pubescent, forming a narrow rim around the ovary at the base of the hypanthium tube. *Ovary* inferior to half-inferior at anthesis; roof densely stellate-hairy; carpels 3; *style* (0.6–) 0.8–1.3 mm long, glabrous, unbranched. *Fruit* an obovoid schizocarpic capsule, 1.6–2.2 mm long, grey or brown, apex obtuse; torus in the

lower third; *fruitlets* splitting along their inner surface to release the seeds. *Seed* 1.1–1.4 mm long, reddish brown, arillate; aril *c.* 0.4 mm long. **Fig. 1.**

**Additional specimens examined: Northern Territory.** ARNHEM LAND: 15 km NNE of Jabiru East, Jun 1980, Craven 6484 (MEL, CANB, DNA *n.v.*; A, AD, *distribuendi*); Kakadu N.P., N outliers, 14 km NE Jabiru Airstrip, Mar 2004, Brennan 6133 (DNA, MEL; duplicates not seen: AD, B, BRI, CANB, MO, NSW, NT, PERTH); Kakadu N.P., S end of N Outliers, 13 km NE of Jabiru Airfield, Mar 2004, Kerrigan 801 (DNA); N UDP Range, Map 5371 Mundogie, Apr 1990, Brennan 64 & Orr (DNA); Kakadu N.P., Gravesite Gorge, Mar 2004, Brennan 6202 (DNA); Kakadu N.P., Gravesite Gorge, Feb 2005, Egan 5506 (DNA); Nitmiluk N.P., Art Site, Edith Region, May 2001, Short 5116 & Kerrigan (DNA); Nitmiluk N.P., Feb 2001, Michell 3147 & Boyce (DNA); Nitmiluk N.P., Feb. 2001, Michell 3148 (DNA); Nitmiluk N.P., W side of site 496, Apr 2001, Reisler 1631 & Waetke (DNA).

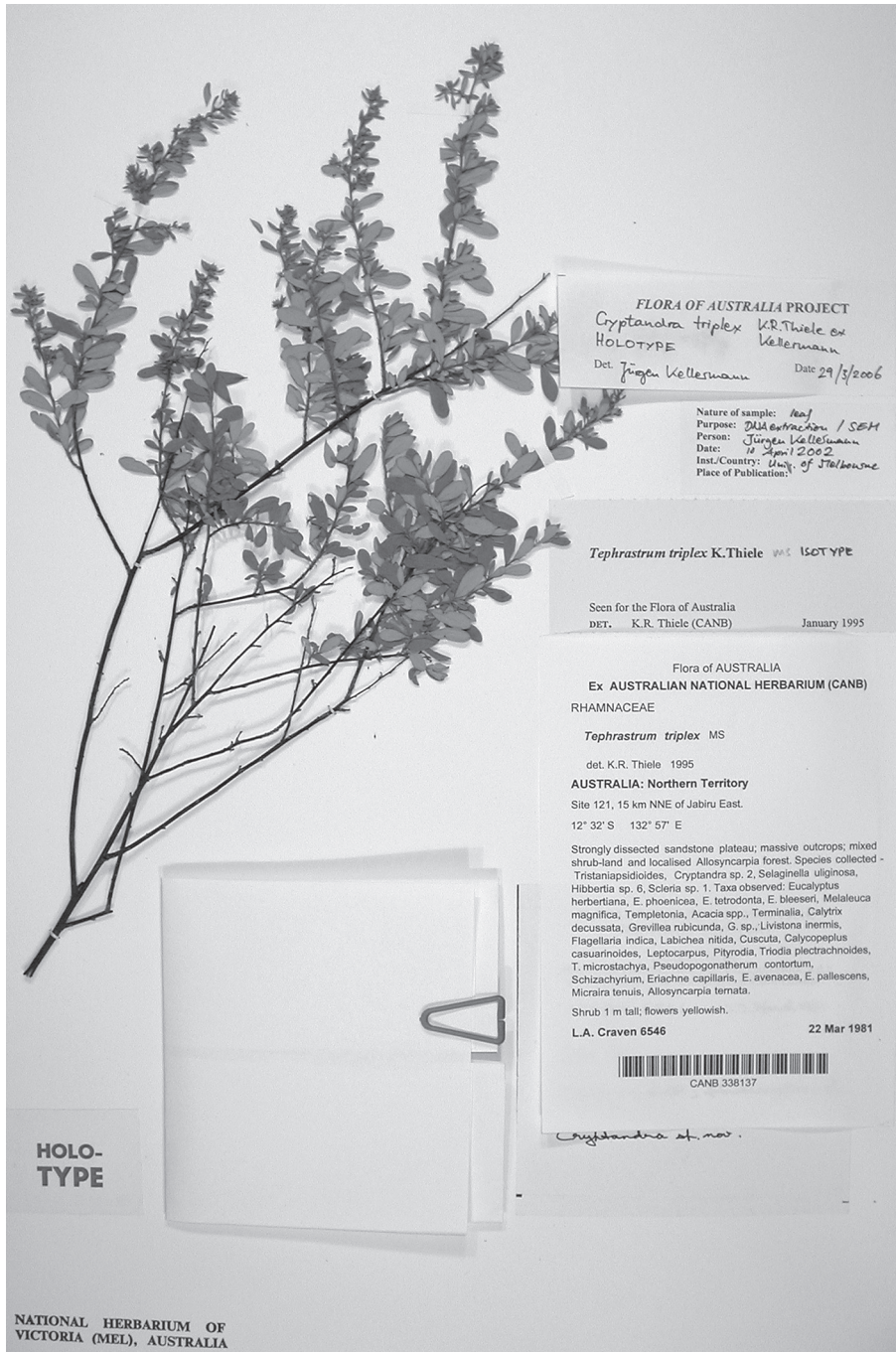
**Distribution & habitat:** Known only from Kakadu and Nitmiluk National Parks in the N.T. Occurs on sandstone plateaux, cliffs and outcrops with mixed shrubland, woodland of *Eucalyptus phoenicea* F.Muell. and *Acacia latescens* Benth., or localised *Allosyncarpia* S.T.Blake forests. **Map 1.**

**Affinities:** *Cryptandra triplex* is closely related to *C. intratropica*, which differs in its 2-carpellate flowers, and longer capsule (2.5–3 mm long) with the ovary roof less domed so that the torus lies in the middle or upper third. Both species can be distinguished from *C. filiformis* by their obovate flat or recurved leaves, compared to the narrowly elliptic to linear, revolute leaves of *C. filiformis*; the torus of that species is also in the middle third.

**Phenology:** Flowers recorded February to April; fruits April to May.

**Conservation status:** The species is known only from Kakadu and Nitmiluk National Parks, in isolated and rugged country. It is probably highly localised but not under any known threat. A conservation code of **2RC**—was suggested by Briggs & Leigh (1996).

**Etymology:** The epithet is derived from the Latin *triplex* (three-fold), as the species has a 3-carpellate ovary, in comparison to the 2-carpellate gynoecium of the closely related *C. intratropica*.

Fig. 1. Holotype of *Cryptandra triplex* (MEL).

### Key to species of *Cryptandra* from northern Australia

- 1 Ovary 2-locular; Kimberley, W.A. . . . . **C. intratropica**  
 Ovary 3-locular; north Qld, N.T. and Pilbara, W.A. . . . . 2
- 2 Flowers pedicellate in open cymose inflorescences; densely stellate-pubescent on young stems, leaves, inflorescences and flowers . . . . . 3  
 Flowers sessile, single or clustered into confluences at the branch tips; indumentum of stellate and simple hairs . . . . . 4
- 3 Leaves narrowly elliptic to linear, revolute; eastern Qld . . . . . **C. filiformis**  
 Leaves obovate, flat or recurved; northern N.T. . . . . **C. triplex**
- 4 Leaves minute, 0.8–1.6 (–2) mm long, strongly revolute, glabrous above, northern N.T. . . . . **C. gemmata**  
 Leaves 2.3–12 (–18) mm long, recurved or revolute, glabrous or with papillae, simple and/or stellate hairs above. . . . . 5
- 5 Young stems soon becoming glabrous or near glabrous, often with reddish bark; leaves with an incurved dark mucro; shrubs to 0.3 m high; south-eastern Cape York Peninsula, Qld . . . . . **C. debilis**  
 Young stems with stellate and/or simple hairs persisting to older stems of current season's growth, bark brown to dark brown; mucro erect or recurved, if present; shrubs 0.2–2 m high . . . . . 6
- 6 Leaves 1–2.5 (–3) mm wide, margins recurved, upper surface covered in stellate hairs and longer antrorse simple hairs; confluence of 4–12 flowers; hypanthium tube 1.1–1.4 mm long; Pilbara, W.A. . . . . **C. monticola**  
 Leaves 0.4–1.2 mm wide, margins recurved or revolute, indumentum not as above; confluences of 1–5 flowers; hypanthium tube 0.6–0.8 mm long; Qld . . . . . 7
- 7 Leaves (1.4–) 3–9 mm long, 0.5–1.2 mm wide, margins recurved or revolute; lower surface or at least midrib partly visible; upper leaf surface with papillae or tubercles, simple or stellate hairs; flowers solitary or in clusters; southern Cape York Peninsula, Qld . . . . . **C. pogonoloba** subsp. **pogonoloba**  
 Leaves 2.3–4.5 mm long; 0.4–0.6 mm wide, margins strongly revolute; lower surface and midrib usually concealed; upper leaf surface glabrous, smooth; flowers always solitary; northern Cape York Peninsula, Qld . . . . . **C. pogonoloba** subsp. **septentrionalis**

### Acknowledgments

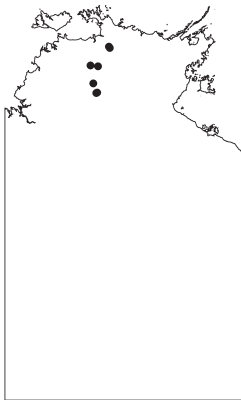
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**Map. 1.** Distribution of *Cryptandra triplex* in the Northern Territory.