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A new subspecies in *Choretrum spicatum* F.Muell. (Santalaceae) from South Australia

B.J. Lepschi

Australian National Herbarium, Centre for Plant Biodiversity Research,
G.P.O. Box 1600, Canberra, Australian Capital Territory 2601
E-mail: Brendan.Lepschi@csiro.au

Abstract

Choretrum spicatum subsp. *continentale* Lepschi is described as new. Notes on distinguishing this taxon from *C. spicatum* F.Muell. subsp. *spicatum* are provided, and both taxa are illustrated.

Key words: Santalaceae, *Choretum*, nomenclature, taxonomy, South Australia.

The genus *Choretrum* R.Br. comprises approximately eight species distributed throughout southern temperate Australia, and is currently under revision by the author. Preparation of a treatment of the Santalaceae for the forthcoming revised *Flora of South Australia* has necessitated the description of a new subspecies of *C. spicatum* F.Muell. in advance of the full taxonomic revision of the genus.

Choretrum spicatum subsp. *continentale* Lepschi, subsp. nov.

A Choretrum spicatum subsp. spicatum foliis vegetativis appressis ad ascendentes differt.

Holotypus: South Australia: Desert Camp Conservation Park, c. 1 km SW of Keith–Naracoorte Road on road to Kingston SE, 31 Dec. 2002, B.J.Lepschi & A.J.Whalen 4902 (CANB 733709.1). **Isotypi:** AD, BRI, CANB 733709.2, CHR, E, G, HO, K, L, MEL, MO, NSW, P, US.

Erect shrub 0.8–1.5 m high, green, glabrous. Branchlets rigid to more or less flexible, terete, longitudinally ridged, the ridges minutely tuberculate to smooth; fertile branchlets 1.3–2 mm diameter. Leaves persistent (retained on the branchlets and gradually weathering away), scale-like, sessile, appressed to ascending (spreading-ascending to spreading when subtending inflorescences), distal portion rarely slightly incurved or, on older leaves, spreading to recurved, triangular to very-narrowly triangular, 1.3–2 mm long, 0.5–0.6 mm wide; base truncate, apex narrowly acute to acute, margin entire to fimbriate. Inflorescences of single pedunculate flowers inserted laterally on the branchlets; flower subtended by 10–14 bracts, 4 of which are involucre. Peduncle obscured by bracts, 0.3–1 mm long, straight. Bracts persistent to fruiting stage, scale-like, sessile, cupped (lowermost bracts occasionally slightly keeled), scarious; ovate to broadly ovate or rounded-triangular, 0.6–1 mm long, 0.4–1.2 mm wide, lunate in cross section; base truncate, apex

acute to rounded or acuminate (occasionally shortly so), margin fimbriate. Flowers obscurely pedicellate, floral tube and pedicel 1–1.5 mm long; receptacle margin lobed, the lobes depressed triangular to depressed ovate, 0.1 mm long. Tepals more or less ovoid, 1–1.3 mm long; apex incurved, prominently hooded and thickened adaxially, with a small tuft of minute hairs on the adaxial surface above the point of filament insertion, more or less smooth to indistinctly longitudinally striate when dry, white, occasionally flushed reddish-maroon (in life and when dry). Anthers broadly obovate, 0.3–0.4 mm long; filaments 0.15–0.2 mm long. Disc shallowly to moderately lobed, moderately concave, 1–1.5 mm diameter. Style 0.15–0.2 mm long; stigma obscurely stellate. Drupe subglobose to globose or broadly ellipsoid, longitudinally ribbed (due to ornamentation on endocarp) when dry, 3–4 mm long; epicarp thin, green, flushed pinkish-red with age (including the persistent tepals) in life, drying brownish-green, sometimes flushed deep red-maroon. Endocarp globose or broadly ellipsoid, longitudinally ribbed, c. 3–4 mm long. **Fig. 1.**

Distribution. Occurs in south-eastern South Australia in an area bounded approximately by Keith, Coala Coala Swamp and Frances, extending eastwards into Victoria, where it appears to be confined mainly to the western part of the Little Desert National Park. A small number of early collections (the latest from 1952) exist from the eastern portion of the Little Desert and the Dimboola district, but this taxon does not appear to have been collected from these areas in recent times. Records from Wyperfeld National Park in Jeanes (1999) appear to be based on misidentified collections of *C. glomeratum* R.Br.

Habitat. Recorded growing in sand (including sand dunes), sand over clay and sandy loam, in heath or open eucalypt woodland (the latter often with a shrubby understorey), frequently in low-lying sites and swamps.

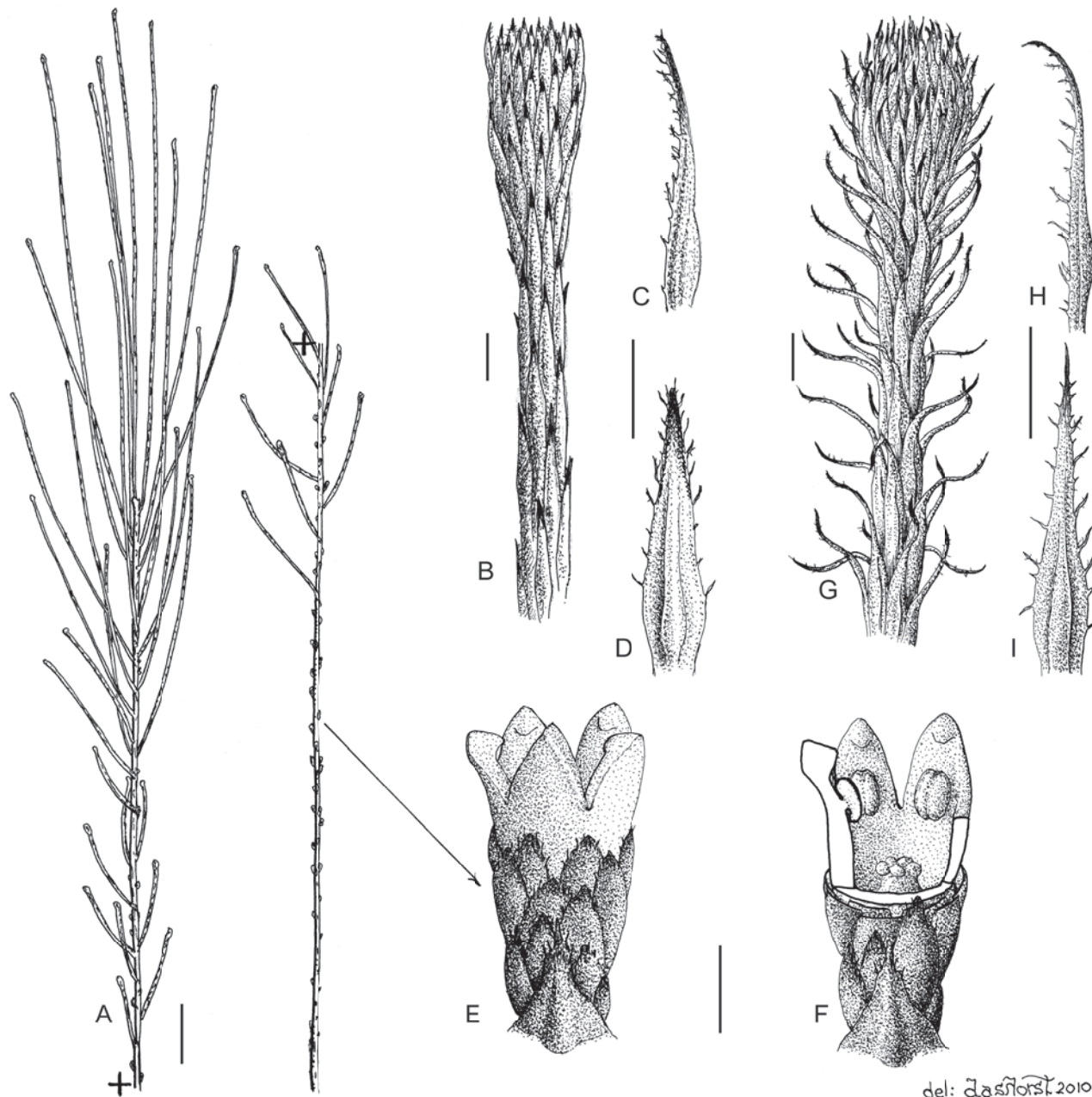


Fig. 1. *Choretum spicatum*. — A–F subsp. *continentale*: A flowering branch; B young growth; C leaf, side view; D leaf, abaxial view; E–F flower. G–I subsp. *spicatum*: G young growth; H leaf, side view; I leaf, abaxial view. Scale bars: A, B, G 1 mm; C–F, H–I 0.5 mm. — A–F Lepschi & Whalen 4902; G–I A.G. Spooner 3802 (AD).

Phenology. Flowers recorded in November and January, with plants collected between September and December generally in bud or very young flower. Fruits recorded in January, March and November.

Notes. Taxonomic differences between populations of *C. spicatum* on Kangaroo Island (the type locality) and those on the Australian mainland were noted by the late H.U. Stauffer (in Eichler 1965), who suggested that mainland plants might deserve specific status, an observation repeated by Hewson (1984) and Jessop (1986). Jeanes (1999) also commented on differences in leaf morphology between mainland and Kangaroo Island populations. Studies by the present author have

confirmed that mainland populations are taxonomically distinct. As the differences between mainland and Kangaroo Island populations are relatively minor, subspecific rank is considered appropriate.

Subspecies in *Choretum spicatum* may be distinguished by characters of the vegetative leaves (i.e. those not subtending inflorescences). These are best observed on young growth, as leaves gradually abrade and weather on older growth. In *C. spicatum* subsp. *spicatum* the vegetative leaves are spreading-ascending to spreading or recurved (Fig. 2), whereas in *C. spicatum* subsp. *continentale* vegetative leaves are appressed to ascending (Fig. 1). The orientation of the vegetative leaves is distinctive for each taxon, and can easily be

observed on young shoots without magnification. The distal portion of the leaf in *C. spicatum* subsp. *continentale* may rarely be slightly incurved or spreading to recurved on older leaves, and in very young growth of *C. spicatum* subsp. *spicatum* some appressed to ascending leaves may rarely occur (e.g. *Osborn s.n.*, AD 98008472), but both these states are infrequent, and overall leaf orientation remains diagnostic. Supplementary characters for separating subspecies in *C. spicatum* include narrowly acute to acute leaf apices in *C. spicatum* subsp. *continentale* (vs. very narrowly acute in subsp. *spicatum*) and entire to fimbriate leaf margins (vs. suberose to (usually) fimbriate in subsp. *spicatum*). Leaves in *C. spicatum* subsp. *spicatum* may also be contorted (in lateral view), a state not observed in subsp. *continentale*. Jeanes (1999) suggested leaf length and persistence as possible diagnostic characters for separating mainland and Kangaroo Island populations of *C. spicatum*, but these characters unfortunately have no discriminatory value in separating infraspecific taxa in this species.

From limited field observations in South Australia and Victoria by the author during December 2002, *C. spicatum* subsp. *continentale* apparently occurs in relatively low densities throughout much of its range, with individual plants often growing hundreds of metres from one another. This is supported by anecdotal observations in field notes on specimen labels, especially from Victoria, e.g. “One plant seen” (*Clarke 2235*), “One plant” (*Cornwall LD 13/89*), “Only saw two plants in more than 150 miles” (*Irvine s.n.*), “Extremely rare shrub, only two plants seen” (*Willis s.n.*, MEL 2063113). Jessop (1986) records *Choretrum spicatum* p.p. (= *C. spicatum* subsp. *continentale*) as “rare in the SE [of South Australia]”, and the species is listed as Rare in Barker et al. (2005). Collectors field notes on herbarium specimens suggest that *C. spicatum* subsp. *spicatum* is also not an abundant taxon within its range.

Etymology. Named from the Latin *continentalis* (mainland, continent), in reference to this subspecies being restricted to mainland Australia.

Selected specimens examined

SOUTH AUSTRALIA. Sandy Ranges near Tilly’s Swamp, *s.dat.*, *leg. ign. s.n.* (MEL 2267); 14.5 km S of Western Flat, 3 Mar. 1994, *T.Croft 406* (AD); c. 20 km N of Frances, 14 Jan. 1982, *R.Davies s.n.* (AD); Bordertown road, c. 6 miles [c. 10 km] S of Bordertown, 28 Oct. 1961, *D.Hunt 315* (AD); Desert Camp Conservation Park, 1 Dec. 1996, *D.Murfet 2588 & R.L.Taplin* (AD); 42 km S of Keith, at junction of Keith–Naracoorte and Kingscote–Bordertown roads, 10 Nov. 1974, *J.G.West 426* (CANB).

VICTORIA. Wimmera, *s.dat.*, *leg. ign. s.n.* (MEL 2270); Little Desert National Park, West Block, East–West track, adjacent to South Australian border, 8 Jan 1989, *G.Cornwall LD 13/89* (MEL); Sand hills near Reedy Creek, *s.dat.*, *C.H. Irvine s.n.* (MEL 2268); 1.3 km N of East–West Track on Mt Moffat Track, Little Desert National Park, 31 Dec. 2002, *B.J.Lepschi & A.J.Whalen 4913* (AD, BRI, MEL, NSW, W); Banks of the Wimmera River, Dimboola, 26 Nov. 1896, *F.M. Reader s.n.* (MEL).

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