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# A Revision of *Cymbonotus* (Compositae: Arctotideae, Arctotidinae)

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## Abstract

A revision of the Australian endemic genus *Cymbonotus* Cass. is presented, including keys and descriptions for the three recognised species. A new combination, *Cymbonotus maidenii* (Beauverd) A.E.Holland & V.A.Funk is made, based on *Arctotis maidenii* Beauverd.

## Introduction

The Arctotideae is one of 35 tribes in the flowering plant family Compositae. Within the tribe there are two subtribes, and several taxa that are difficult to assign. Previous work (Funk et al. 2004; submitted) has shown that the limits of the subtribe Arctotidinae are well defined and that, except for the Australian genus *Cymbonotus*, the subtribe is restricted to southern Africa. The genus *Cymbonotus* is, however, a strongly supported monophyletic clade embedded within this subtribe (Funk et al. submitted).

For at least 20 years it has been known that a possible undescribed species of *Cymbonotus* was present in New South Wales and Queensland (Stanley & Ross 1986, Murray 1992, Henderson 2002). Our paper provides a new combination based on an earlier name assigned to this species, *Arctotis maidenii* Beauverd. Formal descriptions, and a key to the three species of *Cymbonotus* are presented.

***Cymbonotus*** Cass., in F. Cuvier *Dict. Sci. Nat.* ed. 2, 35: 397 (1825)

*Arctotis* subg. *Cymbonotus* (Cass.) Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 49 (1915)

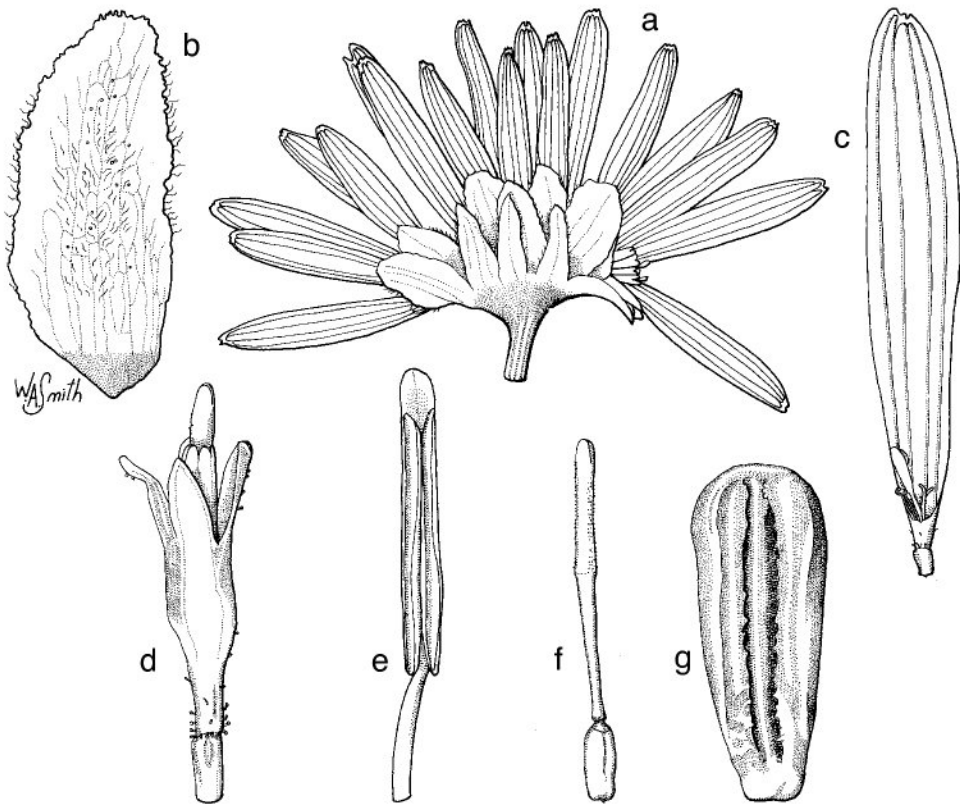
*Arctotis* sect. *Cymbonotus* (Cass.) Baillon, *Hist. Plantes* 8: 198 (1882).

Type: *Cymbonotus lawsonianus* Gaudich. (**here designated**)

Annual herbs, stems short. Latex absent. Leaves all basally rosetted, with a narrow tapering base. Leaf blades entire, toothed to deeply pinnatisect, flat. Indumentum of felted cottony hairs mixed with longer spreading hairs, or nearly glabrous. Most parts of the plant (except achenes) with glandular hairs. Capitula broadly campanulate, radiate, terminal, solitary (rarely branched), pedunculate; involucre bracts free,

2- or 3-seriate, herbaceous throughout or with scarios margins, cottony hairy and glandular; receptacle slightly convex, pitted, with scarios scales. Corollas yellow, sometimes purplish. Ray florets pistillate, 1-seriate, "ligulate" with 4 veins and 3 triangular lobes at apex. Disc florets bisexual, fertile; corollas tubular or campanulate, glandular, deeply 5-lobed; anthers sagittate at base, not tailed, with apical appendage ovate; style minutely pubescent about a slight swelling 1/3 below apex; style branch apices 2, ovate in ray florets, obtuse in disc florets, smooth. Achenes asymmetrically oblong to obovoid, ridged, ribbed or grooved on adaxial side, glabrous or minutely pubescent; pappus absent.

Three species, all endemic to Australia (Figs 1–3).



**Fig. 1.** *Cymbonotus maidenii* (Beauverd) A.E.Holland & V.A.Funk **a**, capitula  $\times 1.5$ ; **b**, involucre bract  $\times 4$ ; **c**, ray floret  $\times 3$ ; **d**, disc floret  $\times 6$ ; **e**, stamen  $\times 12$ ; **f**, style  $\times 6$ ; **g**, mature achene, adaxial view  $\times 8$ . **a–f** from *Menkins 0075* (BRI), **g** from *Bean 14509* (BRI).

### Key to the species of *Cymbonotus*

1. Abaxial surface of leaves green or greenish-grey, sparsely to moderately cottony hairy; achenes 4.5–5.9 mm long; outer involucre bracts not expanded and not spreading at apex ..... *C. maidenii*  
 Abaxial surface of leaves white or grey, densely hairy with matted cottony hairs; achenes 2–4 mm long; outer involucre bracts expanded and spreading at apex ..... 2
2. Achenes strongly curved, smooth or tuberculate, puberulous, adaxial side deeply cavernous ..... *C. lawsonianus*  
 Achenes straight or slightly curved, transversely wrinkled, glabrous or glabrate, or adaxial side with 2 longitudinal ridges either side of a shallow central groove ..... *C. preissianus*

*Cymbonotus maidenii* (Beauverd) A.E.Holland & V.A.Funk, *comb. nov.*

Type: New South Wales. North West Plains: Nully-Toorale, *J.H. Maiden s.n.*, Sept 1913 (lectotype here designated: G).

*Venidium maidenii* Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 7 (1915) nomen nudum.

*Cymbonotus* sp. (Mitchell, RW Johnson 2237) sensu Queensland Nature Conservation Act 1992.

*Cymbonotus* sp. A sensu Murray, in Harden (ed.) *Fl. NSW* 3: 319 (1992)

*Cymbonotus* sp. 1 sensu Stanley & Ross, *Fl. SE Qld* 2: 579 (1986)

*Cymbonotus* sp. (Mitchell R.W.Johnson 2237) in Henderson (2002).

*Arctotis maidenii* Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 47 (1915).

**Illustrations:** Beauverd, *Bull. Soc. Bot. Geneve* 7: 48, fig. 5 (1915); Murray, in Harden (ed.) *Fl. NSW* 3:319 (1992) as *Cymbonotus* sp. A; Stanley & Ross, *Fl. SE Qld* 2:578, fig. 81F<sub>1</sub> & F<sub>2</sub> (1986) as *Cymbonotus* sp. 1.

Annual herbs 10–40 cm high. Leaf indumentum of sparse to dense white cottony hairs and scattered longer hairs. Leaves erect, lanceolate, 10–40 cm long, 3–9 cm wide, pinnatisect; lobes triangular to oblong, irregularly toothed or further divided, with apical points sometimes spur-tipped; adaxial surface dark green, sparsely hairy, glabrescent; abaxial surface light green or greenish-grey, with sparse to moderately dense cottony hairs, with glandular hairs present. Capitula 15–30 mm diam.; florets 45–100; mature receptacle to 15 mm diam. Peduncle 2–30 cm long, longitudinally striate with lines of cottony hairs. Involucre bracts cottony hairy and glandular on outer face, with or without a scarious margin to 2 mm wide; outer involucre bracts triangular, 2–8 mm long, 2–3 mm wide, with apex blunt or acute; inner bracts lanceolate, elliptic or obovate, 11–13 mm long, 4–7 mm wide, with apex rounded or bluntly acute. Ray florets 15–20; corolla laminae elliptic, 15–28 mm long, 3–6 mm wide, yellow, glandular; corolla lobes c. 1 mm long. Disc florets 30–85; corollas dilated distally from a narrow base, 4–5 mm long, yellow, glandular; lobes c. 1.4 mm long. Anther appendages broadly ovate, c. 0.2 mm long and wide, rounded or broadly acute at apex. Style branches 0.5–1 mm long. Achenes obovoid, 4.5–5.9 mm long, 2.4–2.8 mm wide, brown to nearly black, straight or slightly curved, with corolla insertion slightly acentric; surface more or less smooth or slightly rugose; abaxial side rounded; adaxial side with 2 inflated ridges on either side, curved inwards to a deep central groove, sometimes with scattered hairs. Figure 1.

**Selected specimens examined: Queensland:** Darling Downs District: c. 12 km SE of Dalby, *Bott s.n.*, 21 Dec 1973 (BRI AQ012804); near Norwin, *Everist s.n.*, 11 Sep 1951 (BRI AQ245137); Millmerran, 9.3 km along Pittsworth-Millmerran road (off Toowoomba-Cecil Plains road) between “Merlewood” entrance and road 31, *Menkins ILM5*, 28 Oct 2000 (BRI); Toowoomba, *Morwood 13*, 21 Nov 1940 (BRI); Just N of Worthington’s road on W side of the Dalby-Cecil Plains road, *Storv JS0001*, Jan 2000 (BRI); cultivated at Oakey, from seed collected by Menkins from the Dalby-Cecil Plains Road, just NW of intersection with Worthington’s Road, *Holland 1339 & Fechner*, 28 Oct 2000 (US, BRI). Maranoa District: 6 km W of Mitchell, *Johnson 2237*, 25 Apr 1961 (BRI); 7 miles [11 km] W of Roma, *Everist 3518*, 13 Oct 1948 (BRI, CANB); Mitchell, *White 11834*, 6 Apr 1941 (BRI). Leichhardt District: Ivy Vale, Gindie, 2 miles [3 km] S of Gindie siding, *Bisset E331*, 20 Aug 1962 (BRI). **New South Wales:** North Western Plains: 15.1 km SW of Goodooga, *Bean 14509*, 29 Dec 1998 (BRI); Jew’s Lagoon, 50 miles [80 km] W of Narrabri, *Blakely s.n.*, Aug 1936 (NSW25514); Near Beemery, Brewarrina, *Milthorpe s.n. & Cunningham 5405*, 13 Sep 1978 (NSW); c. 5 miles [8km] SSE of Wee Waa, *Cutting s.n.*, 31 Oct 1962 (NSW589905); Brenda-Weilmoringle road, *Jones s.n. & McBarron 16516*, 7 May 1969 (NSW); Goodooga, *McBarron 16060*, 17 Oct 1968 (NSW); 12 km from Louth on Wanaaring road, Darling River flood plain, *Moore 9011*, 22 Jan 1990 (CANB); near “Langboyd”, SE of Weilmoringle, *Mulham 1145*, Aug 1977 (CANB); 80 miles [128 km] NW of Walgett, *Roe AR525*, 27 Aug 1948 (CANB); 1 km W of Beemery, *Short 3020*, 31 Oct 86 (MEL).

**Distribution:** *C. maidenii* grows in isolated patches, in New South Wales north of the Darling and Barwon rivers, and in Queensland in southern inland districts as far west as Mitchell (Fig. 2).

**Ecology:** this species occurs on black, brown, or grey heavy cracking clay, usually in open grassland, along roadsides or beside waterholes or watercourses. It flowers throughout the year, probably in response to rain, but most commonly in spring.

**Conservation status:** this species is currently known only from two populations: a few individuals at one roadside locality on the Darling Downs, and another population that is thought to still exist near Roma (Ian Menkins pers. comm. 2006). It is therefore recommended for listing as (E) Endangered under the schedules of the Queensland Nature Conservation Act 1992. The status of populations in New South Wales is not known.

**Typification:** Beauverd states in his protologue “typus in herb. nat. N.S.W. et in herb. Barbey-Boissier” and the type citation “next to springs near Nulty-Toorale, leg. cl. J.H. Maiden, after whom this significant species has been named.” One sheet with two specimens collected by J.H. Maiden from Nulty-Toorale in September 1913 has been located at G (herb. Barbey-Boissier). This sheet was seen by Beauverd and includes his illustrations as well as correspondence from Maiden (addressed to Beauverd) requesting an identification. One other specimen has been located from Nulty – Toorale, collected by J.L. Boorman 1064 in Sep 1912 (NSW25517). A portion of correspondence kept with this specimen indicates that Boorman was also in correspondence with Beauverd about the identity of this plant a year earlier.

The sheet held at G is here designated as the lectotype. Although there appear to be two specimens on this sheet, Beauverd’s illustration of the material suggests that one specimen has been divided after being drawn.

**Notes:** this species differs from the other two species in the erect pinnatisect leaves, the usually longer peduncles up to 30 cm, the involucre bracts not spreading or expanded

at the apex, and the larger and more or less straight achenes. The leaves are usually greener and less hairy than those of the other species.

*Cymbonotus lawsonianus* Gaudich., *Voy. Uranie* 462, t. 186 (1829).

Type: Port Jackson, Bathurst, *C. Gaudichaud* 166 (G).

*Arctotis lawsoniana* (Gaudichaud) Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 50 (1915).

*Arctotis australiensis* Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 44, fig. 4 (1–9) (1915).

Type: Dubbo, *J.L. Boorman*, August 1903 (lectotype here designated: G – right hand specimen on sheet).

*Venidium australisense* Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 7 (1915) nomen nudum.

**Illustrations:** Gaudichaud, *Voy. Uranie*, plate 86 (1826); Beauverd, *Bull. Soc. Bot. Geneve* ser. 2, 7: 45, fig. 4 (1915); Murray, in Harden (ed.) *Fl. NSW* 3:319 (1992); Jeanes, in Walsh & Entwistle (eds) *Fl. Vic.* 4:718, fig. 138e (1999); Stanley & Ross, *Fl. SE Qld* 2:578, fig. 81E (1986).



**Fig. 2.** Distribution of specimens of *Cymbonotus maidenii* in Australia based on BRI, NSW and CANB specimens.

Annual herbs to 30 cm high. Leaf indumentum of sparse to very dense felted white hairs, especially on the abaxial leaf surface. Leaves erect or spreading, ovate, lanceolate or elliptic, 2–25 cm long, 2–9 cm wide, entire or shallowly or coarsely toothed; lobes triangular, up to 2 cm wide and long, with secondary teeth sometimes present, and apices spur-tipped; adaxial surface dark green, sparsely hairy with short coarse hairs or nearly glabrous; abaxial surface densely covered with white matted hairs, with glands usually obscured. Capitula 10–20 mm diam.; florets 20–50; mature receptacle to 10 mm diam. Peduncle 0–9 cm long, cottony hairy. Involucral bracts with dense cottony hairs on outer face, often obscuring glands; outer involucral bracts spreading, herbaceous, linear or expanded towards the acute or acuminate apex, 5–10 mm long, 1–3 mm wide, often purplish; inner bracts ovate, elliptic or obovate, 5–10 mm long, 2–6 mm wide, rounded or bluntly acute at apex, with a scarious irregular margin to 1.5 mm wide. Ray florets 10–20, corolla laminae linear to oblanceolate, 4–11 mm long, 0.7–1.3 mm wide; corolla lobes 0.2–1 mm long, yellow, with abaxial surface sometimes brownish purple. Disc florets 10–30; corollas dilated distal to narrow base, 2–3.5 mm long, yellow, glandular; lobes triangular 0.5–1.0 mm long. Anther appendages ovate, acute, c. 0.1 mm long and wide. Style branches c. 0.3 mm long. Achenes obovoid, 2.0–2.8 mm long, 1.1–1.5 mm wide, brown to black, strongly curved, with corolla insertion acentric; surface smooth or tuberculate, puberulous; adaxial side deeply cavernous.

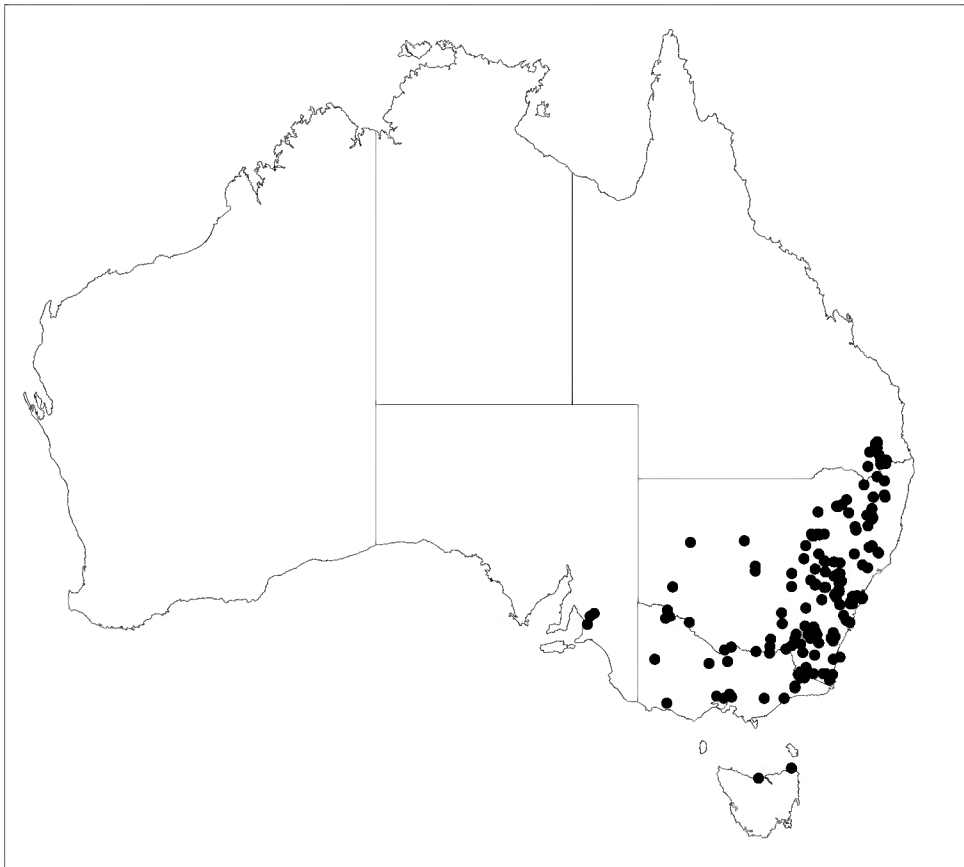
**Selected specimens examined:** **Queensland:** Darling Downs District: 6 km from Mt Colliery towards Gambubal SF, E of Warwick, *Bean 14803*, 11 Apr 1999 (BRI); 2.2 km E of Allora along Forest Plain road, *Bean 10850*, 4 Oct 1996 (BRI); c. 4 km along The Head Road from Spring Creek road, Condamine Gorge, NE of Killarney, *Phillips 1040*, 12 Apr.2003 (BRI). Moreton District : Gladvale grazing property on Emu Creek, on New England highway, *McIntyre SM98241*, 8 Sept 1998 (BRI). **New South Wales:** North Coast: 12 miles [9.2 km] SSW of Curricabark on Scone road, *Blaxell & Coveny 580*, 22 Sep 1968 (NSW); Barrington River, near Gloucester, *Heron s.n.*, Aug 1909 (NSW25540). Northern Tablelands: Long Ridge road, Dalmorton SF, E of Glen Innes, *Bean 20136*, 23 Mar 2003 (BRI, NSW); 2 miles [3.2 km] N of Dumaresq, *Jessup & Gray s.n.*, 19 Oct 1952 (NSW61690). North West Slopes: Warrumbungle Ranges, 22 km WSW of Coonabarabran, 0.8 km NW of Burumbuckle Rock, *Crisp 4382*, 11 Oct 1978 (CANB); Killarney Gap, Mount Kaputar NP, 35 km from Narrabri towards Bingara, *Dalby 86/128*, 2 Oct 1986 (BRI, NSW); Coonabarabran, *Boorman s.n.*, ix 1916 (US). North West Plains: Cobar, *Abrahams s.n.*, 7 Sep 1911 (NSW25526); Cuttabri, *Jensen s.n.*, Aug 1911 (NSW25541). Central Coast: R.C.Cemetery, Cawdor road, Camden, *McBarron s.n.*, 16 Sep 1967 (NSW616039); Glen Davis, *Salasoo s.n.*, without date (NSW514412). Central Tablelands: Above Coxes River, 4 km S of Hartley, *Benson 1801 & Keith*, 23 May 1984 (NSW); "Cherter", Clandulla, *Bray & McBarron s.n.*, 6 May 1967 (NSW590407). Central West Slopes: Dubbo, *Betche s.n.*, Sep 1885 (NSW25547); Gilgandra, *Simon s.n.*, Sep 1915 (NSW25523). Southern Tablelands: Monga, *Bauerlen s.n.*, Sep 1898 (NSW25533). South West Plains: Near Eremaran turnoff, on Gigunnia road, *Cunningham 1465 & Milthorpe*, 17 Nov 1973 (NSW). Hunter River, US Exploring Expedition, *Wilkes, s.n.*, without date (US). Australian Capital Territory: Stromlo Forest, *D'Arnay 746*, 25 Nov 1975 (CANB, NSW); Lyneham, Canberra, *Gray 6402*, 16 Mar 1969 (CANB); open country to NE of Black Mountain, Canberra, *Pullen 2197*, 10 Sep 1960 (CANB). **Victoria:** Kamarooka State Park, *Beaughtehole 69612*, 31 Oct 1981 (MEL); East Gippsland, Junction of Snowy and Deddick Rivers near McKillop bridge, *Beaughtehole 33842 & Rogers*, 28 Aug 1970 (MEL).

**Distribution:** *C. lawsonianus* occurs in south-eastern Queensland in the Darling Downs district from Toowoomba to the NSW border, throughout NSW, in northern Victoria, South Australia and Tasmania. Fig. 3.

**Ecology:** the species grows in a range of situations on roadsides, in open forest and woodlands, and in disturbed areas often near water. Soils are variable, including skeletal soil over sandstone, grey sand on old dunes, clay loam, sandy loam and red earth. Sometimes it also occurs in lawns and gardens. It flowers throughout the year, probably in response to rain, but most commonly in spring.

**Conservation status:** this species is not considered to be threatened.

**Typification:** in his protologue, Beauverd describes the achenes of *Arctotis australiensis* as glabrescent or glabrous, winged, the wings lateral, inflexed, with whole margins, very similar to *C. lawsonianus*. His illustration of an achene of *A. australiensis* on page 45, Fig. IV (3) looks like *C. lawsonianus*. What is curious is that an illustration on the same plate Fig. IV (10) is supposed to be an achene of *C. lawsonianus* but looks more like *C. preissianus* Steetz, although this name is not mentioned anywhere in his study. Further, he goes on to distinguish *A. australiensis* (from *C. lawsonianus*) by the achene that has



**Fig. 3.** Distribution of specimens of *Cymbonotus lawsonianus* in Australia. (data courtesy Australias Virtual Herbarium)

two wings inflexed against the median ribs creating two strong longitudinal cavities, while the achene of *C. lawsonianus* is lacking in apparent cavities and has a horizontal apex (rather than oblique as in *A. australiensis*). On this basis, I suggest that Beauverd was probably unaware of the existence of *C. preissianus* and mistakenly assumed that his material was *C. lawsonianus*. Correspondence (kept with the type material) from J.H. Maiden (to Beauverd), indicates that he too was mystified as to why a new name was being formulated for this species “for it is identical with the whole series of *C. lawsonianus* in this Herbarium... and closely resembles Gaudichaud’s figure”. *Arctotis australiensis* Beauverd is therefore considered to be a synonym of *C. lawsonianus*.

The lectotype of *Arctotis australiensis* is here chosen as the right hand specimen on the sheet held at G. The illustration by Beauverd appears to have been drawn from this specimen. No achenes are present on either specimen or in the attached packet, so it is possible that the left hand specimen may represent *C. preissianus*.

***Cymbonotus preissianus*** Steetz in Lehmann., *Pl. Preiss.* 1: 486 (1845).

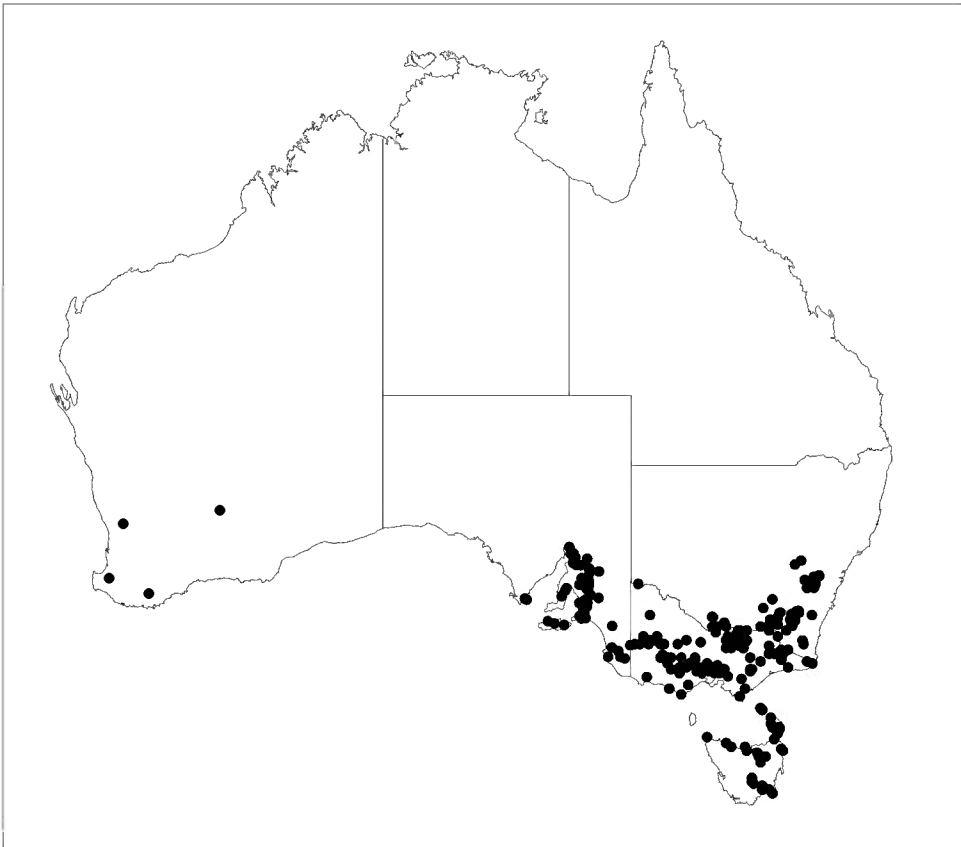
Type: Western Australia. In Nova Hollandia (Swan River Colonia), *J.A.L. Priess* 13 (lectotype here designated: MEL 727579).

**Illustrations:** Murray, in Harden (ed.) *Fl. NSW* 3:318 (1992); Jeanes, in Walsh & Entwistle (eds) *Fl. Vic.* 4: 718, fig. 138f (1999).

Annual herbs to 30 cm high. Leaf indumentum of sparse to very dense felted white hairs, especially on the abaxial leaf surface. Leaves erect or spreading, petiole-like at base, ovate, lanceolate or elliptic, 2–30 cm long, 2–10 cm wide, coarsely toothed or pinnatisect; lobes triangular, up to 2.5 cm wide and long, with secondary teeth sometimes present, and apices spur-tipped; adaxial surface dark green, sparsely hairy with short coarse hairs or nearly glabrous; abaxial surface densely covered with white matted hairs, with glands usually obscured. Capitula 12–30 mm diam.; florets 20–60; mature receptacle to 15 mm diam. Peduncle 0–15 cm long, cottony hairy. Involucral bracts with dense cottony hairs on outer face, often obscuring glands; outer involucral bracts spreading, herbaceous, linear or expanded towards the acute or acuminate apex, 5–10 mm long, 1–3 mm wide, often purplish; inner bracts ovate, elliptic or obovate, 5–10 mm long, 2–4.5 mm wide, rounded or bluntly acute at apex, with a scarious irregular margin to 1 mm wide. Ray florets 10–20; corolla laminae linear to oblanceolate, 6–20 mm long, 1–4 mm wide; corolla lobes 0.2–1 mm long, with adaxial surface yellow, and abaxial surface brownish purple. Disc florets 10–40, dilated above a narrow base, 2–4 mm long, yellow, glandular; lobes triangular, 0.5–1.0 mm long. Anther appendages ovate, acute, c. 0.1 mm long and wide. Style branches c. 3 mm long. Achenes obovoid, 2.5–4.0 mm long, 1.0–1.4 mm wide, brown to black, straight or slightly curved, with corolla insertion slightly acentric; surface transversely wrinkled throughout; adaxial side with 2 narrow ridges either side of a shallow central groove.



**Selected specimens examined: New South Wales.** Central Tablelands: 10 km SW of Orange, Boree Creek, Federal Falls, *Barnsley 1123*, 5 Nov 1979 (CANB); Jenolan State Forest, *Benson 1689 & Keith*, 30 Mar 1984 (NSW). Southern Tablelands: c. 4 km SE of Tumut, Tumut State Forest, *Jones 7625 & Broers*, 23 Aug 1991 (CANB); Cave Creek, 18 miles (28.8 km) NNE of Kiandra, *Rodd & Coveny 2634*, 11 Dec 1969 (NSW); Gurrangorambla Creek, Currango Plain, N of Tantaugoara Dam, *Thompson 771*, 19 Jan 1971 (NSW). South West Slopes: Wagga, *Breakwell s.n.*, Oct 1912 (NSW25551); 1 km NNE of Mt Ulandra, *Crawford 6575*, 26 Oct 2001 (CANB); Ulandra Nature Reserve, c. 29 km directly ENE of Junee, at summit of Mt Ulandra, *Parris 9916*, 6 Oct 1991 (CANB). South Western Plains: Deniliquin, *Mulham S387*, 17 Sep 1965 (CANB, NSW). Australian Capital Territory: Tidbinbilla Flora and Fauna Reserve, *Canning 3067*, 16 Dec 1969 (CANB); Black Mountain, *McKee 8955*, 15 Feb 1962 (CANB, NSW); beside Paddys River road, c. 1 km from Cotter Reserve, *Ward 19 & Hughes*, 1 Sep 1983 (CANB). **Victoria:** Boweya Flora and Fauna Reserve, *Beaulehole 80373*, 13 Sep 1985 (MEL); Morphet Swamp Wildlife Reserve, *Beaulehole 80497*, 15 Sep 1985 (MEL); Splitters Range Forest Block, 12.7 km NNW of Swifts Creek township, Splitters Range road, 1.2 km E of Omeo Gap road, *Carr 10205*, 7 Dec 1984 (CANB); SW of Hepburn, Tipperary Track, S of Bruces Flat, E of Sailors Creek, *Ross 3984*, 26 Sep 1997 (MEL); Mouth of Aire River, 4.5 miles [7.2 km] NW of Cape Otway, *Willis s.n.*, 13 Sep 1969 (MEL2159321). **Tasmania:** Penquite, *Gunn 509*, 13 Sep 1841 (NSW61712); Summit of Mt Nelson, *Lord H509*, 18 Jan 1930 (CANB); Deal Island, *Whinray 1264*, 18 Dec 1970 (CANB).



**Fig. 4.** Distribution of specimens of *Cymbonotus preissianus* in Australia. (data courtesy Australias Virtual Herbarium)

**South Australia:** Morialta near Adelaide, *Cheel s.n.*, Aug 1924 (NSW61695); Mt. Lofty Range, Tarma, ca. 90 km NNE of Adelaide, *Kraehenbuehl 2250*, 17 Aug 1968 (US).

**Distribution:** *C. preissianus* occurs in the southern half of New South Wales, throughout Victoria, in southern South Australia east from Eyre Peninsula, in Tasmania and in south-western Western Australia. Fig. 4.

**Ecology:** the species grows in a range of open forest and woodland habitats, in disturbed areas, often in drainage lines. Soils include shallow loams, coastal sandhills, loams, sandy loams and red earths. Flowers have been collected between August and February.

**Conservation status:** this species is not considered to be threatened.

**Typification:** the specimen held at MEL: In Nova Hollandia (Swan River Colonia), *J.A.L. Preiss 130* (MEL 727579) is here designated as the lectotype. According to the annotation on the specimen, it was part of the Steetz herbarium, and was seen by Bentham. No other authentic material was found at MEL or LD.

### Acknowledgments

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