Hypocalymma (Endl.) Endl.

ALA (https://bie.ala.org.au/species/https://id.biodiversity.org.au/taxon/apni/51309992) NSL [legitimate] (https://biodiversity.org.au/nsl/services/apni-format/display/81834)

Options

— Endlicher, S.F.L. (1840), *Genera Plantarum Secundum Ordines Naturales Disposita* 16: 1230

PROFILE () DISTRIBUTION () LITERATURE & LINKS () KEY ()

Top

Nomenclature

Endlicher, S.F.L. (1840), *Genera Plantarum Secundum Ordines Naturales Disposita* 16: 1230 ()

Etymology

From the Greek *hypo* (under) and *kalymma* (hood or veil), a reference to the cap formed by the sepals over the rest of the flower in bud.

Description

Dwarf to medium-sized shrubs 0.1–1.5 (–2.5) m high. Leaves opposite or in whorls of 3. Peduncles absent or solitary in the axils, 1- or 2-flowered, when absent then most species with 2 sessile flowers per axil and 4 per node. Pedicels absent or shorter than the peduncles. Flowers actinomorphic. Hypanthium shallow, 2- or 3-lobed on undersurface (depending on the number of ovary loculi), with a free rim normally spreading after anthesis. Sepals 5, often scarious, not or scarcely keeled, much shorter than the petals, persistent in fruit. Petals 5, widely spreading in flower, 2.5–14 mm long, white to bright yellow or deep pink, sometimes persistent in fruit; antipetalous colleters minute or absent. Staminodes up to 5 per flower, usually absent. Stamens 10–200 in 1–3 series, if more than 20 then connate in a circle at base or for more than half their length, when very few then all antisepalous and sometimes free, about as long as or longer than the petals or (in sect. *Grandiflora*) much shorter than the petals. Filaments narrow. Anthers ± basifixed, with longitudinal dehiscence; thecae introrse, in most species curved around a central connective gland visible from ventral view, in others ± parallel with a dorsal-subterminal connective gland. Ovary 2–4-locular; placentas near-basal, axile, sessile; ovules 1–12 per loculus, collateral if 2, in an arch or radial if more numerous. Style filiform; stigma small. Fruits c. 1/2 to fully superior, broader than long, valvate or winged, thick-walled or moderately so. Seeds not to scarcely facetted, the body irregularly ± ovoid but with the top enlarged by a large protrusion on the inner surface, 0.8–2.65 mm long, the inner protrusion above or largely above the hilum; testa crustaceous, shallowly to deeply pitted in most species, smooth or colliculate in a few species, moderately or very thick, off-white to dark brown.

Diagnostic Features

Anthers ± basifixed, with longitudinal dehiscence; seeds with a large protrusion on the inner surface above the hilum; stamens 20–200 and united at base into a complete circle in most species (rarely as few as 10 and sometimes free), about as long as or longer than the petals (in all but 5 species).

Chromosome Numbers

x = 11, with both diploid and tetraploid numbers known.

Biostatus

Native.

Distribution

A genus of 33 species, extending from Kalbarri National Park south to Augusta and southeast to Cape Arid National Park, Western Australia.

Ecology

Hypocalymma and its two closest relatives, *Astartea* DC. and *Cyathostemon* Turcz., are the only members of tribe Chamelaucieae that are hosts for the genus *Callococcus* (Hemiptera), which produces large, shell-like, white scales on their stems. Some species of *Hypocalymma* are easily killed by fires while others can resprout from lignotubers, although some of the latter may appear single-stemmed or multi-branched during fire-free periods. One species, *H. minus*, is known to produce adventitious roots from prostrate stems. Natural hybridisation occurs within sect. *Hypocalymma* and

artificial cross-pollination has increased the number of species combinations known to be able to produce hybrids. However, no natural hybrids are known in the other, much smaller sections and attempts to produce artificial hybrids between members of different sections have failed. Flowers attract varied insect pollinators to readily accessible nectar and the flowers are sufficiently large and robust in some species to attract honey possums and birds. Outbreeding is strongly favoured in most species. Myrmecochory has been observed in the genus and is likely to be important in all the species with valvate fruits. *Hypocalymma serrulatum* is the only species with winged, indehiscent fruits.

Nomenclature and Typification

Hypocalymma (Endl.) Endl., *Genera Plantarum Secundum Ordines Naturales Disposita* 16: 1230 (1840); *Leptospermum* sect. *Hypocalymma* Endl. in S.F.L. Endlicher, E. Fenzl, G. Bentham & H.W. Schott, *Enumerato Plantarum* quas in Novae Hollandiae ora austro-occidentali ad fluvium Cygnorum et in Sinu Regis Georgii collegit Carolus liber baro de Hügel: 50, adnot. (1837); *Baeckea* sect. *Hypocalymma* (Endl.) Baill., *Histoire des Plantes* 6: 358 (1876). Lectotype: *Leptospermum robustum* Endl. [= *Hypocalymma robustum* (Endl.) Lindl.], designated by B.L. Rye, *Nuytsia* 20: 323 (2010).

Hypocalymna Meisn., *Plantarum Vascularium Genera: secundum ordines naturales digesta eorumque differentiae et affinitates tabulis diagnosticis expositae* 2: 354 (1843), *orth. var.*

Hypocalimna Turcz., *Bulletin de la Societe Imperiale des Naturalistes de Moscou* 35(2): 325 (1862), *orth. var.*

Taxonomic Notes

Four sections are recognised in *Hypocalymma*, with sect. *Hypocalymma* much larger than the other three: sect. *Cardiomyrtus* Schauer (with broad, thin, gland-dotted leaves), sect. *Grandiflora* Rye, Keighery & M.D.Barrett (with petals much longer than filaments) and sect. *Verticilla* Rye (with ternate leaves). Sections *Grandiflora* and *Hypocalymma* differ from the other two sections in having reticulate-pitted seeds. About a quarter of the species have a 2-locular ovary in the majority of their flowers, in which case the fruits are not as thick as wide and often appear to be markedly dorsiventrally compressed in the distal half.

Notes

The following taxa do not currently match the Flora classification:

- *Hypocalymma angustifolium* (Endl.) Schauer (https://profiles.ala.org.au/opus/foa/profile/Hypocalymma%20angustifolium)
- *Hypocalymma ×linifolium* Turcz. (https://profiles.ala.org.au/opus/foa/profile/Hypocalymma%20%C3%97%20linifolium)
- *Hypocalymma ×proliferum* Keighery & Rye (https://profiles.ala.org.au/opus/foa/profile/Hypocalymma%20%C3%97%20proliferum)
- *Hypocalymma tenuatum* Strid & Keighery × *Hypocalymma xanthopetalum* F.Muell. (https://profiles.ala.org.au/opus/foa/profile/Hypocalymma%20tenuatum%20Strid%20%26%20Keighery%20x%20Hypocalymma%20xanthopetalum%20F.Muell.)

Source: Editor, 13 October 2023

Illustrations

B.L. Rye in N.G. Marchant *et al.* (eds), *Flora of the Perth Region* 1: 403, fig. 155 (1987); B.L. Rye, P.G. Wilson & G.J. Keighery, *Nuytsia* 23: 290, fig. 3, https://www.biodiversitylibrary.org/page/60008900 (https://www.biodiversitylibrary.org/page/60008900) & 293, fig. 4, https://www.biodiversitylibrary.org/page/60008903 (https://www.biodiversitylibrary.org/page/60008903) (2013); G.J. Keighery, B.L. Rye & C. Tauss, *Nuytsia* 34: 25, fig. 1; 46, fig. 5; 52, fig. 6 (2023).

Excluded or Uncertain Names

Hypocalymma angustifolium var. *acerosum* Schauer in J.G.C. Lehmann, *Plantae Preissianae* 1(1): 112 (1844). Type: Hester's Point [Canning River, near Perth], W.A., Oct. 1840, *L. Preiss 338*; syn: LD 1355117; 'in calculosis limosis sylvae terrae superioris Australiae occidentalis', W.A., Sept. 1839, *L. Preiss 340*; syn: KW *n.v.*, LD 1354937, MEL 655027, W *n.v.*; Vasse River, W.A., Dec. 1840, *L. Preiss 341*; syn: LD 1354997.

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Taxonomy

- Kingdom: Plantae ()
- Phylum: Charophyta
- Class: Equisetopsida
- Subclass: Magnoliidae
- Superorder: Rosanae ()
- Order: Myrtales ()
- Family: Myrtaceae (/opus/foa/profile/Myrtaceae) ()
- Genus: Hypocalymma (/opus/foa/profile/Hypocalymma) ()

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