

STUDIES IN AUSTRALIAN CENTROLEPIDACEAE I: THE SCAPELESS SPECIES OF CENTROLEPIS LABILL.

by

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SUMMARY

The inflorescence of *Centrolepis* is discussed and terms used in describing the genus are defined. Four species distinguished by their scapeless habit are described and differentiated from reduced states of *C. polygyna* (R.Br.) Hieron. A new species, *C. caespitosa*, is described; *C. basiflora* C.H. Ostenfeld is reduced to a synonym of *C. inconspicua* W.V. Fitzgerald; a lectotype of *C. cephaliformis* F.M. Reader is chosen, and *C. murrayi* J.M. Black is reduced to a subspecies of *C. cephaliformis*.

INTRODUCTION

Centrolepis Labill. (1804) is a genus of about 24 species of small annual or perennial herbs distributed throughout Australia except arid areas, also in south-eastern Asia, New Guinea, and New Zealand. Within the family Centrolepidaceae it is characterized by the structure of its greatly condensed cymose compound inflorescence, here described as the head (Fig. 1).

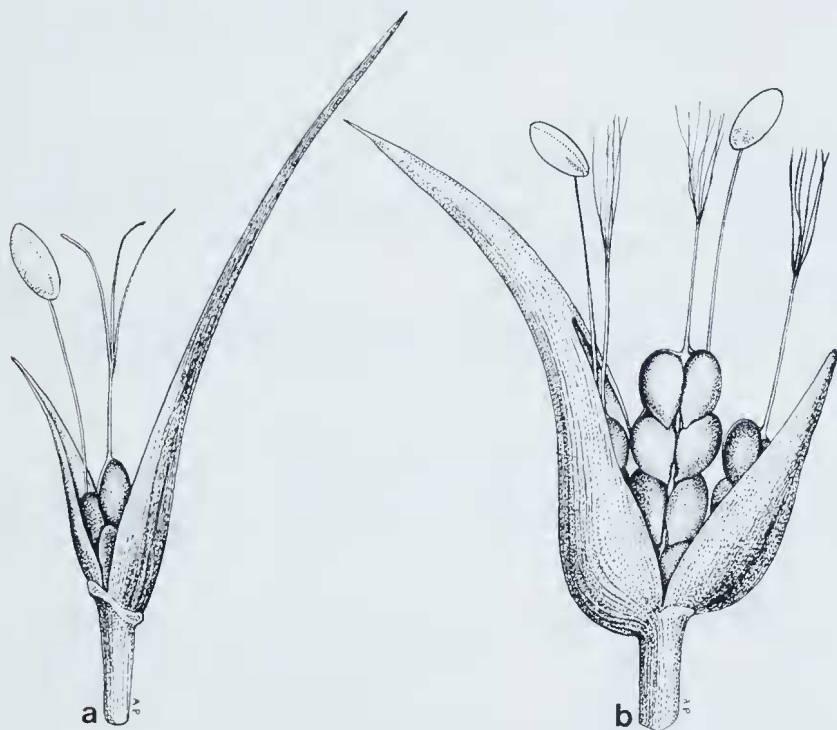


Fig. 1. Flowering heads opened by pulling apart the primary bracts to reveal the pseudanthia; both X15. a — *Centrolepis caespitosa*. From holotype. b — *Centrolepis cephaliformis* ssp. *cephaliformis*. The pseudanthia are shown spread apart from their natural position. From MEL 1502447.

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Muelleria 4 (3): 265-272 (1980).

Each head is enclosed by two (rarely three in atypical specimens) *primary bracts* subopposite on the main axis, the lower (outer) bract partly sheathing the upper (inner).

The flowers of *Centrolepis* are here regarded as unisexual, the male flowers each being reduced to a single stamen with a dorsifixed unilocular anther, and the female flowers to single carpels each containing one ovule. This interpretation was first suggested by Eichler (1875).

The unit inflorescence of *Centrolepis* is interpreted as a *pseudanthium* formed by a greatly condensed and reduced monochasial cyme, with an initial male flower (rarely absent) followed by one to many female flowers forming a compound gynoeceum. As a pseudanthium develops, successive carpels are crowded upwards by the expansion of the preceding ones, the sympodial axis of the cyme forming an erect *gynophore*. This process is illustrated by Stones in Curtis (1973). Each carpel has a terminal style; the styles are initially separate but in most species become fused, those of the lower carpels joining with the gynophore.

Secondary bracts are leaves within the head reduced to nerveless hyaline scales. In species where these are present, there is typically one associated with the stamen and one associated with the base of the gynoeceum; they may be regarded as subtending the first two branches of the sympodial axis of the pseudanthium. Additional secondary bracts may be present between the pseudanthia, subtending cyme branches below the pseudanthia.

Within the head, the pseudanthia are arranged in one or more cymose partial inflorescences (Hieronymus, 1873). In species such as *C. fascicularis* Labill. with numerous pseudanthia and a short internode between the primary bracts it is easy to trace a monochasial cyme of pseudanthia in the axil of each bract. Where the inflorescence is reduced to one or a few pseudanthia between opposite primary bracts, as in *C. polygyna* (R. Br.) Hieron., they cannot be assigned to either bract, and could be interpreted as forming a terminal cyme on the main axis. In all species, the internodes of the cymes are completely suppressed and the pseudanthia sessile.

The leaves of *Centrolepis* consist of a scarious basal sheath passing into a linear or subulate lamina. In the primary bracts the sheaths are modified to enclose and protect the inflorescence; the laminae may remain well-developed as photosynthetic organs, or be partly or completely suppressed. Another type of modified leaf is the *cataphyll* produced at the last node below the head in some species, consisting of the scarious portion of the leaf, the lamina being completely aborted.

The species grouped here as '*scapeless*' are those minute annual species in which the heads are borne among the foliage, terminal on internodes up to 3 mm long. In other species of *Centrolepis*, each head is manifestly raised on an erect leafless scape at least 8 mm long at maturity.

TAXONOMIC TREATMENT

KEY TO SPECIES

1. Leaves distichous, none of them reduced to cataphylls; head containing hyaline secondary bracts1. *C. inconspicua*
 Leaves spirally arranged, the leaf below each head reduced to a scarious cataphyll; head lacking secondary bracts2.
2. Head ovoid-conic, at least half as wide as long; plant lacking dark pigment2. *C. cephaliformis*
 Head \pm cylindrical, less than half as wide as long; leaves and/or primary bracts developing dark pigment3.
3. Primary bract sheaths hyaline; inner primary bract with a recurved tip similar to tips of foliar leaves3. *C. caespitosa*
 Primary bract sheaths thickened, brown-pigmented; inner primary bract lacking a foliar tip4.
4. Leaves broad-linear, conduplicate towards the base; head laterally compressed; carpels 1-74. *C. humillima*
 Leaves terete to subulate; head terete; carpels 6-145. reduced states of *C. polygyna*

1. ***Centrolepis inconspicua*** W. V. Fitzgerald in *Proc. Linn. Soc. N.S.W.* 28: 107 (1903). Type: Pinjarrah, in wet spots, x.1900, Fitzgerald (Holo: NSW 60350!).

TAXONOMIC SYNONYM: *C. basiflora* C.H. Ostenfeld in *Biol. Meddel. Kongel. Danske Vidensk. Selsk.* 3 (2): 13 (1921), *synon. nov.* Type: Armadale prope Perth, 20.ix.1914, Ostenfeld 11 (Syntypes: C n.v.; MEL 535280 !).

Small glabrous annual herb. *Roots* few, sparsely branched, to 3 cm long. *Stem* very short, unbranched, with internodes of negligible length. *Leaves* 2-5, basal, distichous, erect; basal sheath scarious, 3-4 mm long, passing into a linear lamina 4-28 mm long, tip obtuse. Cataphylls absent. *Head* terminal, sessile, 1-2 mm wide, 1.5-3 mm long; occasionally one or more additional heads sessile in the axils of the upper leaves. *Primary bracts* 2, opposite, \pm gaping at anthesis, similar to the leaves but shorter, 4-16 mm long, the outer one slightly longer than the inner. Bract sheaths 1.5-3 mm long, with membranous margins terminating in minute lobes. *Secondary bracts* 2 per pseudanthium, hyaline, 2-3 mm long, acute and entire or \pm erose; additional shorter secondary bracts often present between the pseudanthia. *Pseudanthia* 2-5 per head, all bisexual. *Stamen* 1, not adnate to gynophore; filament 2-4 mm, anther elliptic c. 0.8 mm long. *Gynoecium* of 1-4, usually 2, carpels superposed alternately biseriate on a gynophore. Styles c. 2 mm long, becoming connate at the base only. *Seed* brown, ovoid, c. 0.5 mm long, smooth.

DISTRIBUTION:

Western Australia — known from three localities in the Darling and Avon districts, but may be expected to be more widespread in south-western W.A. and probably overlooked due to its small size.

ECOLOGY:

Growing in moist sites, including moss bcds. Flowering September to October.

SPECIMENS EXAMINED (total 4):

Western Australia — 17 miles E. of Pingelly, Tutanning Reserve, 18.ix.1962, *Royce 7541* (PERTH); W.A. n.d., n.coll. (MEL 1502031).

NOTES:

C. basiflora C.H. Ostenfeld is, from the protologue description and from a comparison of type material, not distinguishable from *C. inconspicua* W. V. Fitzgerald.

C. inconspicua is closely allied to *C. aristata* (R.Br.) Roem. & Schult., from which it is distinguished by the absence of a scape, the narrower head with fewer pseudanthia, and the single stem never proliferating to form a dense tuft. The presence of axillary heads in some plants is a character apparently unique to this species of *Centrolepis*. Although it has been found growing in association with *C. aristata* by Ostenfeld (1921), the two species do not intergrade. A series of 55 collections of *C. aristata* from south-western Western Australia was examined by the author and showed discontinuities in variation with *C. inconspicua* in the above characters.

2. ***Centrolepis cephaliformis*** F.M. Reader in *Vict. Nat.* 19: 97 (1902); Ewart, 'Fl. Vict.' 260 (1931); Willis, 'Handb. Pl. Vict.' 1: 278 (1962). Type: Sandy Desert, Lowan, 1892, F.M. Reader (Lectotype (here chosen): MEL 536054 pro parte !. Syntypes: MEL 536054 pro parte !; MELU 11831 !).

The type sheet in MELU does not bear a label in Reader's writing, and consists of one plant which was probably removed from the MEL collection. One of the plants on the sheet MEL 536054 is a depauperate specimen of *Centrolepis polygyna* (R.Br.) Hieron.; the individual plant at top right of this sheet is here designated as the lectotype of *C. cephaliformis* F.M. Reader.

Small glabrous annual herb forming dense, rounded tufts 4-25 mm in diameter. *Stem* repeatedly branching from the axils of the lower leaves forming internodes less than 1 mm

long. *Leaves* 3-9 mm long, with a scarios sheathing base passing into a \pm recurved, linear to subulate lamina terminating in a hyaline mucro. Uppermost leaf reduced to an obtuse, scarios sheathing cataphyll 0.8-2 mm long. *Head* terminal on an internode 0-3 mm long; ovoid-conic, 1-1.6 mm wide, 2-3 mm long. *Primary bracts* 2, opposite, tightly enclosing the head. Outer bract with a pale, scarios, keeled basal sheath 2-3 mm long passing abruptly into a terete, awn-like lamina 2-4 mm long; inner bract pale, scarios, keeled, 2-3 mm long, acute to apiculate, lacking a lamina. *Secondary bracts* absent. *Pseudanthia* 1-3 per head. *Stamen* 1 per pseudanthium or absent, not adnate to gynophore; filament 2-4 mm long, anther ovate-elliptic, c. 0.5 mm long. *Gynoeceium* of 4-10 carpels superposed in subopposite pairs on a gynophore. *Styles* 1-2 mm long, becoming connate for up to half their total length. *Seed* ovoid, brown or pale, c. 0.5 mm long, smooth.

KEY TO SUBSPECIES:

Pseudanthia 3 per head (rarely, in depauperate plants, some heads with only 2 pseudanthia) a. ssp. *cephaloformis*
Pseudanthium solitary (very rarely, some heads with 2 pseudanthia) . . . b. ssp. *murrayi*

a. subspecies **cephaloformis**

Each head with 3 pseudanthia, 2 bisexual and the third lacking the stamen. Rarely, a minority of heads with 2 pseudanthia, one of them lacking the stamen. Leaves with scarios sheaths subequal to the manifestly recurved lamina. Outer bract with a recurved lamina subequal in length to the expanded basal sheath. (Fig. 1b).

DISTRIBUTION:

Western Australia — Scattered in the south-west in the Darling, Avon, Irwin and Eyre districts.

Victoria — Scattered in the State west of Bendigo, extending south as far as the northern Grampians and north to Hattah Lakes; frequent in Wyperfeld National Park and the Little Desert.

ECOLOGY:

Growing in seral communities where vegetation cover is sparse, typically on substrates of low fertility and subject to water stress, such as salt pans, sand hills, lithoserai moss beds, and former gold workings.

Annual, flowering in September to October. Seed collected in the Little Desert in November 1978 was found to have a dormant period of about 3 months, germinating in March.

SPECIMENS EXAMINED (total 29):

Western Australia — c. 27 km N. of Young R. crossing on Ravensthorpe-Esperance main rd., 10.x.1968, *Donner* 2957 (PERTH); Bolgart, viii.1953, *Erickson s.n.* (MEL 545750); 3½ mi S. of Morawa, 29.viii.1945, *Gardner s.n.* (PERTH); Tutanning Reserve, 17 mi S.E. of Pingelly, 17.ix.1962, *Royce* 7566 (PERTH); Watheroo N.P., 7.x.1971, *Royce* 9708 (PERTH); 29 km N. of Cleary, 2.ix.1967, *Wilson* 6088 (PERTH).

Victoria — Eastern Lookout Area, Wyperfeld N.P., 5.xi.1960, *Beaglehole* 5190 (MEL 532507; MEL 1502448); Dimboola Flora Reserve, 9.x.1960, *Beaglehole* 7454 (MEL 532513); Moora Moora Reservoir, 30.ix.1967, *Beaglehole* 17311 (MEL 532505); Lendrook Salt Lake, Hattah Lakes N.P., 3.x.1960, *Beaglehole* 19291 (MEL 532511); Mt. Zero, Grampians, 21.viii.1968, *Beaglehole* 28193 (MEL 532512); N. of Black Flat, Wyperfeld N.P., 14.ix.1968, *Beaglehole* 28267 (MEL 532510); Lunar Clearing, Wyperfeld N.P., 6.x.1968, *Beaglehole* 28952 (MEL 532509); Rudd's Rocks, Wyperfeld N.P., 7.x.1968, *Beaglehole* 28989 (MEL 532508); Pine Flats, Wyperfeld N.P., 9.x.1968, *Beaglehole* 29142 (MEL 532506); Little Desert N.P., 3.xi.1978, *Cooke* 228 (MEL 537434); Ironstone Hill, 3 mi N. of Bendigo, 3.x.1952, *Melville* 1393A (MEL 537440); near Dimboola, 30.ix.1893, *Reader s.n.* (MEL 1502447); Little Desert, Lowan, 9.x.1898, *Reader s.n.* (MEL); Little Desert, Lowan, 20.xi.1898, *Reader s.n.* (MEL); Sandy Desert, Lowan, x.1898, *Reader s.n.* (MELU 11832); Victoria, n.d. *St. John s.n.* (MEL 537318); Puzzle Flat, Bealiba, 5.x.1936, *Willis s.n.* (MEL); Faulkner Ck. Timber Reserve, 14.ix.1960, *Willis s.n.* (MEL 1502449); Webster's Lookout, Hattah Lakes N.P., 15.x.1960, *Willis s.n.* (MEL 1502450); near Lake Hindmarsh, n.d., *n. coll.* (MEL).

NOTES:

The three pseudanthia are borne between the two primary bracts and are not closely associated with either, apparently representing a single cymose group terminal on the axis.

b. subspecies **murrayi** (J.M. Black) D.A. Cooke, comb. & stat. nov.

Basionym: *C. murrayi* J.M. Black in *Trans. Roy Soc. S. Aust.* 47: 367-368 (1923); Black, *Fl. S. Aust.* 1: 179 (1943).

Type: North Pearson Island, South Australia, i.1923, *T.G. Osborn.* (Holo: AD 96012011 !; Iso: AD 97918146 !).

Each head with 1 bisexual pseudanthium; rarely, a minority of heads with a second pseudanthium lacking the stamen. Leaves with scarious sheaths manifestly shorter than the slightly recurved lamina. Outer bract with a \pm recurved lamina subequal to, or up to twice as long as, the expanded basal sheath.

DISTRIBUTION:

Western Australia — Boxer Island.

South Australia — North Pearson Island.

ECOLOGY:

Occurs in similar habitats to ssp. *cephaloformis*.

SPECIMENS EXAMINED (total 4):

Western Australia — Boxer Island, Recherche Archipelago, 8.xi.1950, *Willis s.n.* (MEL 545751; PERTH).

NOTES:

The bisexual pseudanthium of subspecies *murrayi* is borne between the two primary bracts, apparently terminating the main axis. In one head examined a second, female pseudanthium was present; in others, a minute multi-lobed structure was observed beside the gynoeceum and possibly represents a vestigial second pseudanthium. The differences between this taxon and typical *C. cephaloformis* seem insufficiently clear-cut to retain it as a separate species; however the specimens previously determined as *C. murrayi* lie outside the range of variation of all other *C. cephaloformis* material, and it is here treated as a subspecies.

C. cephaloformis is related to *C. polygyna*; it is distinguished by the broader head, with primary bracts never becoming brown and indurated; the compact, burr-like habit; and the stamen being free from the gynophore.

3. **Centrolepis caespitosa** D.A. Cooke, sp. nov.

Herba nana glabra, dense caespitosa, pulvinos rotundatos ad 25 mm diametro formans. *Caulis* ex axillis foliarum inferiorum repetite ramificans, internodia 0.5-2 mm formans. *Folia* vaginis basalibus angustis scariosis usque ad 2 mm longis, in laminis filiformibus atrantibus usque ad 9 mm longis et 0.2 mm latis transientibus. Apex folii acutus, emucronatus. Folium summum ad cataphyllum acutum scariosum 1-2 mm reductum. *Capitulum* cylindricum, super internodio 1-2 mm longo terminans. *Bracteae primariae* 2, suboppositae, capitulum includentes. *Bractea externa* vagina hyalina 1.5-3 mm longa, ecarinata sed manifeste plurinervata, in lamina foliaceo 2.5-4 mm longa sensim transiens. *Bractea interna* angusta, hyalina, cartnata 1.5-2 mm longa in apicem foliaceum recurvum usque ad 0.6 mm longum terminans. *Bracteae secundariae* nullae. *Pseudanthium* solitarium bisexuale. *Stamen* unicum gynophoro discretum, filamentum 3-4 mm, anthera ovato-elliptica c. 0.5 mm longa. *Gynoeceum* 3-6 carpido in gynophoro biseriato alterne superposito. *Styli* 1-2 mm usque ad dimidium coalescentes. *Semen* brunneum ovoideum c. 0.4 mm longum, laeve.

TYPUS: Beenup, W.A., 26.xi.1904, *A. Morrison s.n.* (Holo: PERTH !).

Small densely tufted glabrous herb, forming rounded cushions up to 25 mm diameter. *Stem* repeatedly branching from the axils of the lower leaves, forming internodes 0.5-2 mm long. *Leaves* with narrow scarious basal sheaths to 2 mm long passing into filiform laminae, dark-pigmented in dried material, up to 9 mm long and 0.2 mm wide. Leaf tip acute, lacking a micro. Uppermost foliar leaf on each branch reduced to an acute scarious cataphyll 1-2 mm long. *Head* cylindric, c. 0.5 mm wide, terminal on an internode 1-2 mm long. *Primary bracts* 2, subopposite, enclosing the head. Outer bract with a hyaline sheath 1.5-3 mm long, lacking a keel but with several prominent nerves, grading into a leaf lamina

2.5-4 mm long. Inner bract keeled, hyaline, narrow, 1.5-2 mm long terminating in a recurved foliar tip up to 0.6 mm long. *Secondary bracts* absent. *Pseudanthium* 1 per head, bisexual. *Stamen* 1, not adnate to the gynophore, filament 3-4 mm, anther ovate-elliptic c. 0.5 mm long. *Gynoecium* of 3-6 carpels superposed alternately biseriate on a gynophore. Styles 1-2 mm long, becoming connate for up to half their total length. *Seed* brown, smooth, ovoid, c. 0.4 mm long. (Fig. 1a).

DISTRIBUTION:

Known only from the type locality in Western Australia, but may be more widespread and overlooked due to its small size.

ECOLOGY:

Annual, flowering in spring.

NOTES:

C. caespitosa is apparently related to *C. polygyna*, having a narrow, terete head containing a single pseudanthium, and a cataphyll below each head. The hyaline texture of the primary bracts is associated with the habit of the plant, the heads being immersed in the dense cushion of foliage with only the bract tips, stigmas and anthers exposed. This is the most distinctive feature of the species. *C. caespitosa* is also distinguished from *C. polygyna* by the free stamen, the fewer carpels, and the narrow, acute cataphylls.

4. **Centrolepis humillima** F. Muell. ex Benth., 'Fl. Austr.' 7: 203 (1878). Type: Salt lagoons north of Stirling Range, x.1867, *F. Mueller s.n.* (Holo: K n.v.; Iso: MEL 536059 ! MEL 536060 !).

Small tufted glabrous herb. *Stem* repeatedly branching from the lower leaf axils forming internodes less than 0.5 mm long. *Leaves* with a scarios, sheathing base 0.8-2 mm long passing into a recurved, broad-linear lamina 2-8 mm long and up to 1 mm wide, keeled, conduplicate towards the base, ending in an obtuse or acute tip without a mucro. Uppermost leaf reduced to an acute scarios cataphyll. *Head* terminal on an internode less than 0.4 mm long, or quite sessile; \pm cylindric, laterally compressed, 0.5-1 mm broad. *Primary bracts* 2, subopposite, tightly enclosing the head. Outer bract with a dark, keeled, indurated basal sheath 1.5-3.5 mm long passing abruptly into a leaf lamina 2-5 mm long. Inner bract 1-2.2 mm long, scarios to indurated, \pm conduplicate, the base exposed and often swollen, the apex acute and enclosed by the outer bract, margins hyaline. *Secondary bracts* absent. *Pseudanthium* 1 per head, bisexual, in the axil of the outer bract. *Stamen* 1, not adnate to the gynophore; filament 1.5-3.5 mm, anther elliptic 0.5-1 mm long. *Gynoecium* of 1-7 carpels superposed alternately biseriate on a gynophore. Styles up to 2.5 mm long, becoming connate for less than half their total length. *Seed* ovoid, brown or pale, c. 0.5 mm long, regularly pusticulate.

DISTRIBUTION:

Western Australia — Scattered in the Avon, Stirling, and Eyre districts of the south-west.

ECOLOGY:

Growing in similar habitats to *C. cephaliformis*. Apparently annual, flowering in September to December.

SPECIMENS EXAMINED (total 5):

Western Australia — Neridup, c. 3 km NE of Howick Hill, 21.ix.1968, *Eichler 19912* (PERTH); Cape Arid N.P. along Balladonia Road, 5.xii.1971, *Royce 10153* (PERTH); Wongan Hills, 17.ix.1963, *Willis s.n.* (MEL 1501982).

NOTES:

C. humillima appears to be related to *C. polygyna*, from which it is distinguished by the

form of the leaf, the carpel number, and the laterally compressed head (see Key).

The inner primary bract is reduced and almost concealed in this species. Bentham (1878) did not regard it as a bract, but described it as "a scariosus complicate scale opposed to the bract". Its position directly on the main axis of the head, subopposite to, and slightly above, the outer primary bract indicates that it is homologous to the inner primary bract of other species of *Centrolepis*. In texture it is similar to the basal sheath of the outer primary bract, and unlike the nerveless hyaline secondary bracts of other species.

5. Reduced states of *Centrolepis polygyna* (R.Br.) Hieron. in *Abh. Naturf. Ges. Halle* 12: 210 (1873).

Small glabrous annual herb. *Stem* repeatedly branching from the lower leaf axils forming internodes up to 1 mm long. *Leaves* 4-8 mm long with a scariosus sheathing base 1-3 mm long passing into an erect or recurved terete linear lamina terminating in a hyaline mucro. Uppermost foliar leaf reduced to an obtuse scariosus sheathing cataphyll up to 3 mm long. *Head* terminal on an internode at least 0.5 mm long; erect, cylindrical, 0.8-1.2 mm wide. *Primary bracts* 2, opposite, keelless, closely enclosing the head. Outer bract with a brown, scariosus \pm indurated basal sheath 3-4 mm long bearing a terete, \pm recurved awn-like lamina 3-7 mm long. Inner bract brown, scariosus, \pm indurated, acute, lacking a lamina, 3-4 mm long. *Secondary bracts* absent. *Pseudanthium* solitary, bisexual. *Stamen* 1, the filament 3-4 mm long, adnate to the gynophore for c. 0.5 mm at the base; anther ovate-elliptic, 0.6-1 mm long. *Gynoecium* of 6-14 carpels superposed in subopposite pairs on a gynophore. *Styles* c. 1.5 mm long, becoming connate at the base only. *Seed* brown, ovoid, c. 0.5 mm long, smooth. Whole plant often becoming dark-pigmented in the fruiting stage.

DISTRIBUTION AND ECOLOGY:

Recorded from localities in Victoria and Tasmania, and possibly occurring elsewhere, usually in close proximity to taller states of *C. polygyna* and intergrading with them, in sites such as sand hills and moss beds on rock. Flowering September to November.

SELECTED SPECIMENS EXAMINED:

Victoria — Mt. Arapiles, south side, 23.xi.1964, *Beaglehole* 6570 (MEL); Dimboola Flora Reserve, 9.x.1960, *Beaglehole* 7455 (MEL 532539); Mt. Arapiles, S.E. slope, 22.ix.1968, *Beaglehole* 28686 (MEL 532504); Dimboola Reservoir, x.1948, *Beaglehole* 39697 (MEL 534085); Sandy desert, Lowan, 1892, *Reader s.n.* (MEL); wet pastures, Lowan, 16.x.1898, *Reader s.n.* (MEL).

Tasmania — Killiecrankie Bay, Flinders Island, 24.ix.1966, *Whinray* 69A (MEL 536063); Prime Seal Island, Furneaux Group, 17.x.1972, *Whinray* 1503 (MEL 533586).

NOTES:

The state of *C. polygyna* described above represents one extreme of variation within a highly polymorphic species, or perhaps species aggregate. There appears to be no discontinuity in variation between such plants and typical *C. polygyna*, and it is not known whether the reduced state has any genetic basis or is due solely to phenotypic plasticity. It is not proposed to describe it as a separate taxon.

Reduced *C. polygyna* is sometimes confused with the related scapeless species of *Centrolepis*. Distinguishing characters are given under the respective species.

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