

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. *Bractee 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 transientis. Bractea interna angusta, hyalina, carinata 1.5-2 mm longa in apicem foliaceum recurvum usque ad 0.6 mm longum terminans. *Bractee secundariae* nullae. *Pseudanthium* solitarium bisexuale. *Stamen* unicum gynophoro discretum, filamento 3-4 mm, anthera ovato-elliptica c. 0.5 mm longa. *Gynoeceum* 3-6 carpidio 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 mucro. 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, *Eichtler 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