

NUYTSIA

WESTERN AUSTRALIA'S JOURNAL OF SYSTEMATIC BOTANY

ISSN 0085-4417



Wilson, P.G. and Wilson, M.A.
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Western Australia

Nuytsia 16(1): 255–260 (2006)

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***Rhetinocarpha* (Asteraceae : Gnaphalieae)
– a new genus from Western Australia**

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Abstract

Wilson, Paul G. and Wilson, M.A. *Rhetinocarpha* (Asteraceae : Gnaphalieae) – a new genus from Western Australia. *Nuytsia* 16(1): 255–260 (2006). *Myriocephalus suffruticosus* Benth. is transferred to a new genus *Rhetinocarpha* Paul G. Wilson & M.A. Wilson. One new species combination is made: *R. suffruticosa* (Benth.) Paul G. Wilson & M.A. Wilson.

Introduction

During the preparation of an account of *Myriocephalus* for the Flora of Australia it became apparent that *M. suffruticosus* Benth. differed significantly from other members of the genus. However, the structure of the compound head was difficult to interpret, partly due to the paucity and unsatisfactory state of the available material, and partly due to the dry resinous substance that permeated between and through the various members of the capitulum. In addition, the bracts, pappus and florets readily separated from each other and from the capitulum when examined both in the dried state and when resuscitated in water.

The floral morphology remained unresolved until a population of this plant was discovered by Sue Patrick and Lesley Polomka in 1999 when they were carrying out a survey of rare flora for the Western Australian Department of Conservation and Land Management. Their collections, which included both flowering and fruiting material, enabled the flower head to be carefully examined and permitted a description to be prepared in greater detail than had previously been possible. An understanding of the capitulum was further enhanced by a collection made by us in December 2004 from which the accompanying illustrations were largely prepared.

Rhetinocarpha Paul G. Wilson & M.A. Wilson, *gen. nov.*

Herba perennis ramulis dense sericeis. Folia alterna, integra. Inflorescentia dense composita; bracteae involucris ungue dense lanoso, limbis albis, patulis. Receptaculum concavum vel planum, resinsum. Capitula numerosa, densa, breviter stipitata, 1–3-florifera, bractea subtenti tenui,

glandulosa, ad apicem ovoidea alba. Bracteae aliquot per capitulum, caducae, tenui, resinosae ad apicem ovoideae albae. Flosculi breviter stipitati, bisexuales. Corolla cylindrica, breviter 5-lobata, sparse glandulifera. Anthera inclusa; appendix breviter oblonga, subtilis; caudae delicates breviter ramosae; stigmata truncata. Achenium cylindricum, laeve, glabrum; pericarpium diaphanum; testa aliquantum coriacea, brunnea. Setae pappi *c.* 8, librae, filamentosae, ad apicem ovoideae, albae.

Typus: *R. suffruticosa* (Benth.) Paul G. Wilson & M.A. Wilson.

Perennial *herb*. Branches densely covered with a silvery silky indumentum. *Leaves* alternate, simple, entire. Inflorescence a dense compound head. *Bracts* of general involucre: claw densely woolly with oblong fenestrated stereome; limb white, spreading. General receptacle concave to flat, with globular resinous hairs. *Capitula* numerous, shortly stipitate, 1–3-flowered; subtending bract slender-terete, resinous, with white ovoid tip consisting of a number of ovoid cells fused together. Capitular bracts several, caducous, similar to capitulum subtending bract. Florets shortly stipitate, bisexual. *Corolla* regular, cylindrical, not expanded above; shortly 5-lobed, sparsely glandular at apex. *Anthers* included; appendage ovate, obtuse, delicate; tails short, slightly branched. *Stigma* truncate with obtuse sweeping hairs. *Achene* cylindrical, smooth, glabrous; pericarp diaphanous, vascular strands 2, in lateral position in relation to the cotyledons; testa somewhat coriaceous, brown, consisting of oblong cells. Pappus bristles *c.* 11, free, caducous, filiform, glabrous with milky white ovoid apex formed of fused ovoid cells.

Etymology. The generic name is derived from the Greek *rhetine* – resin, and *karphos* – chaff, with reference to the resinous capitular bracts found in the type species.

A monotypic genus endemic to south-western Western Australia.

Rhetinocarpha suffruticosa (Benth.) Paul G. Wilson & M.A. Wilson, *comb. nov.*

Myriocephalus suffruticosus Benth., *Fl. Austral.* 3:559(1867); *Hirnellia suffruticosa* (Benth.) Kuntze, *Rev. Gen. Pl.* 1:346(1891). *Type:* Between Moore and Murchison rivers, Western Australia, *J. Drummond* 6th coll. 153, 1853 (*holo:* K, photos seen; *iso:* MEL 542215, NSW, PERTH 1087339).

Woody perennial to 80 cm high with slender erect branches. *Leaves* scattered on slender branches and clustered on short axillary shoots; medial stem leaves linear–terete, shortly apiculate, 10–30 mm long becoming shorter towards the apex of the stem, revolute, glabrous and glossy above, densely silky villous beneath; leaves towards base of stem ± flat, linear to narrowly oblong. Compound heads terminal to long, slender branches, depressed hemispherical, to 2 cm diam. *Bracts* of general involucre multi-rowed; claw oblong, woolly with broad stereome and narrow scarious margin; limb milky white, obovate, to 3 mm long decreasing adaxially. Capitular stipe 0.3–0.5 mm long, *c.* 0.3 mm diameter, densely covered with globular resinous hairs and surmounted by 1–3 bracts shortly exceeding florets; capitular bracts with curved cartilaginous base, slender terete glandular claw, and white ovoid apex. Florets 2 or 3, stipitate; stipe 0.1–0.3 mm long, glabrous or with a few globular resinous hairs at apex, reddish brown, subtended by a bract similar to capitular bracts. *Corolla* tubular, *c.* 3 mm long, sparsely glandular. *Achene* broadly cylindrical, *c.* 1.2 mm long, 0.6 mm

diam., truncate at apex and base, smooth, reddish brown; carpophore minute. Pappus bristles 8–11, filiform, glabrous, with milky white ovoid apex, shortly exceeding corolla, caducous. (Figures 1, 2)

Selected specimens examined. WESTERN AUSTRALIA: N of Dandaragan, 28 Sept. 1988, *E.A. Griffin* 5290 (PERTH); near Badgingarra, 1 Dec. 1999, *L. Polomka & S. Patrick* 3347 (PERTH); Badgingarra, 26 Nov. 1974, *R. Smith s.n.* (PERTH); Badgingarra district, 8 Dec. 2004, *P.G. Wilson* 13078 & *M.A. Wilson* (PERTH).

Distribution. Known only from the Badgingarra – Dandaragan area of western Western Australia, c. 180 km north of Perth.

Habitat. This species has been found growing on the side of lateritic ridges in open Wandoo (*Eucalyptus wandoo*) woodland.

Flowering period. November and December.

Conservation status. Conservation Codes for Western Australian Flora: Priority One. No populations have been recorded on a conservation estate.

Notes. The stipes that supports the capitula are persistent and continuous with the receptacle; evidently they are developmentally part of the receptacle and bear the same type of resinous hairs. These resinous hairs are globular and are borne on a very short 2–3-celled stipe. They eventually make the capitulum extremely resinous, however, the resin is soluble in water and presumably the first rains of the season allow the achenes to disperse.

This species was included in *Myriocephalus*, a genus that had become extremely polymorphic with the inclusion of several elements that bore no close relationship to each other (Short *et al.* 1989; Short 1993, 2000). *Rhetinocarpha* differs from the species now recognised in *Myriocephalus* (Short 1993; Wilson 2002) in having a strongly resinous capitulum, slender-terete (not obovate and hyaline) capitular bracts, stipitate florets, and glabrous achenes with a hyaline pericarp.

It has been observed by Anne Cochrane (PERTH, pers. comm.) that when heated the flower heads emit a strong camphor smell.

The genus is possibly most closely related to *Argentipallium* for this genus has florets with similar types of corolla, stigmas, achene, and pappus bristles. The leaves agree with those of *Argentipallium obtusifolium* both in shape and in the possession of an appressed silvery indumentum. If the suggested affinity is correct then *Rhetinocarpha* (which has a compound head) would appear to have a comparable relationship to *Argentipallium* (the species of which have simple heads) as *Cephalipterum drummondii* (with compound heads) has to species in *Rhodanthe* section *Leiochrysum* (see Wilson 1992).

The terminology used to describe the floral bracts follows that of Short (1983).

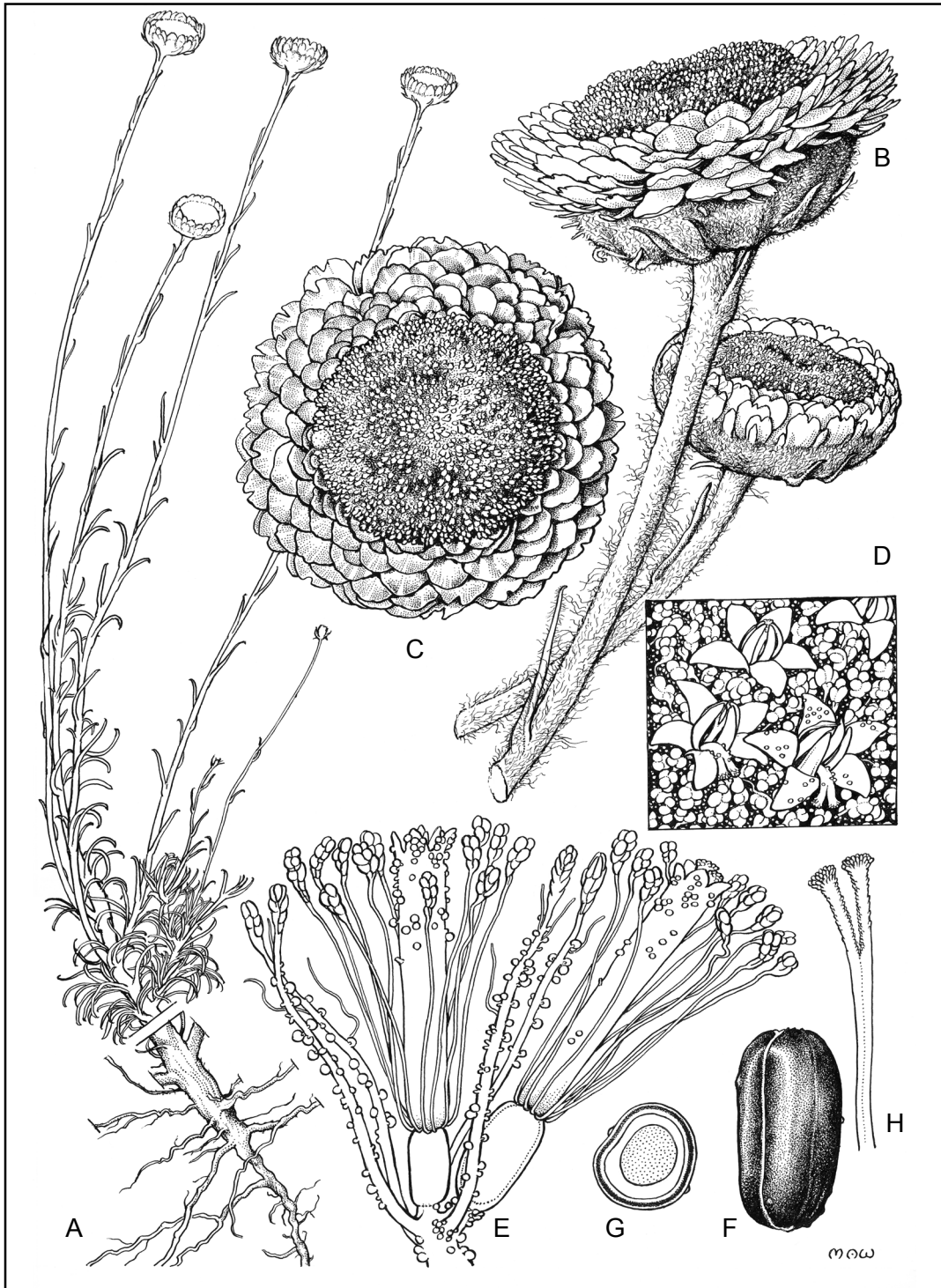


Figure 1. *Rhetinocarpa suffruticosa*. A – flowering plant ($\times \frac{1}{2}$), B – flower heads from side ($\times 3$), C – flower head from above ($\times 3$), D – florets with associated pappus bristles and floral bracts from above ($\times 20$), E – a 2-flowered capitulum ($\times 30$), F – achene ($\times 25$), G – T.S. achene ($\times 25$), H – style ($\times 30$). Drawn from P.G. Wilson & M.A. Wilson 13078.

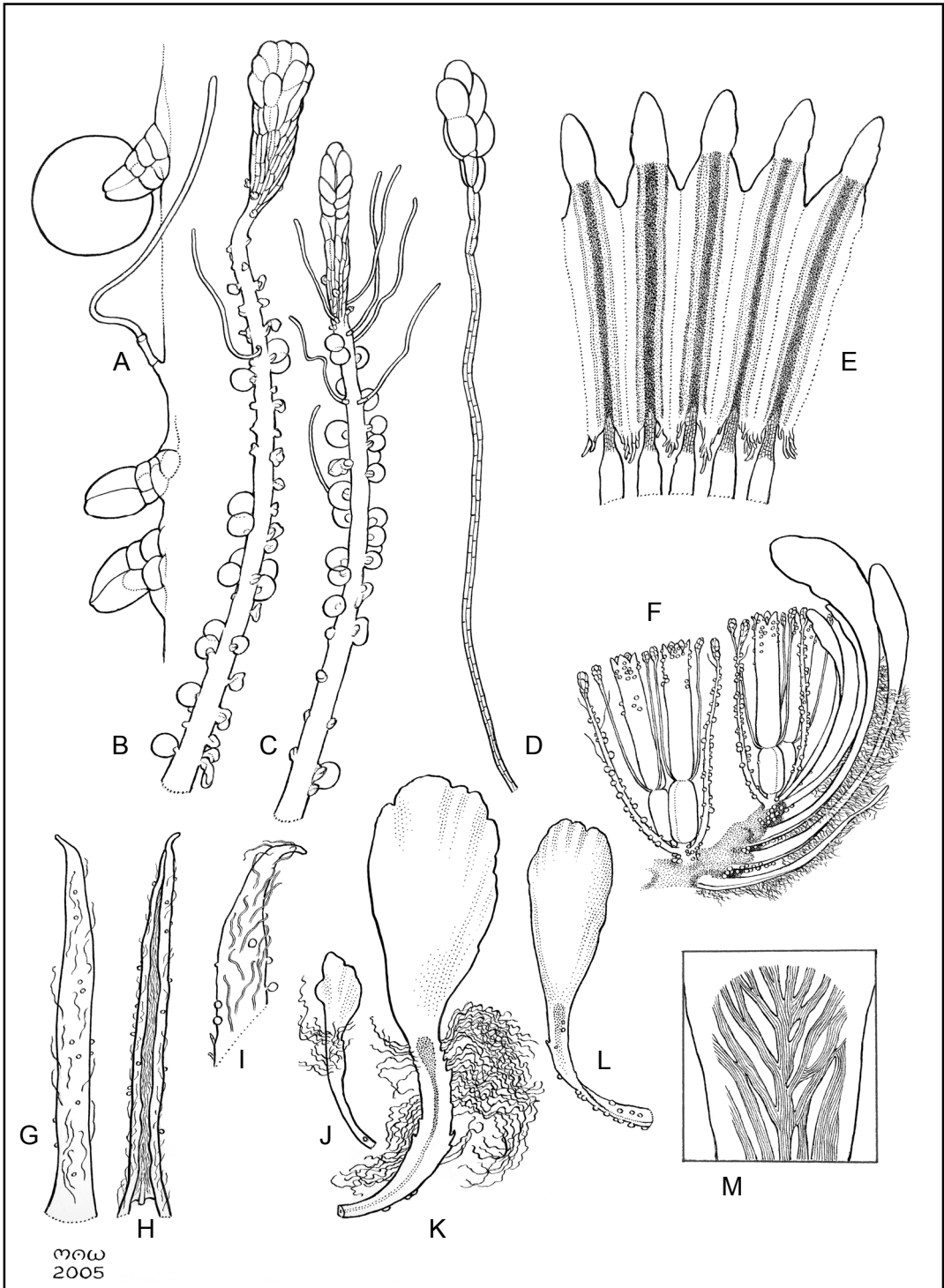


Figure 2. *Rhetinocarpha suffruticosa*. A – hairs on capitular bract ($\times 300$), B – capitular bract ($\times 20$), D – pappus bristle ($\times 20$), E – anthers ($\times 60$), F – longitudinal radial section through side of compound head ($\times 6$), G – leaf, adaxial surface ($\times 5$), H – leaf abaxial surface ($\times 5$), I – tip of leaf, adaxial surface ($\times 8$), J – outer involucre bract ($\times 14$), K – medial involucre bract ($\times 14$), L – inner involucre bract ($\times 14$), M – stereome of medial bract, cleared ($\times 30$). Drawn from P.G. Wilson & M.A. Wilson 13078.

Acknowledgements

We have been assisted by the careful collections made by Leslie Polomka and Sue Patrick (PERTH) and for their notes on its habitat. Pauline and Bruce Cook made us welcome on a visit to their farm near Badginarra where we were able to inspect the plant *in situ*. Comments by the referee have been incorporated into this paper. The Melbourne herbarium (MEL) sent on loan an isotype of *Myriocephalus suffruticosus*. The work on this genus was carried out while one of us (PGW) was in receipt of a contract from the Australian Biological Resources Study to prepare an account of the genus *Myriocephalus* for the Flora of Australia.

The illustration tab. 1, prepared by MAW, is copyright Australian Biological Resources Study who kindly permitted the use of it in this paper.

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