



A new combination in *Rhodanthe* (Asteraceae: Gnaphalieae) from Western Australia

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Abstract

The Western Australian endemic *Rhodanthe manglesii* Lindl., though treated as one widespread and variable species by P.G. Wilson in 1991, contains a series of undescribed taxa, several of which have or are being allocated phrase names at the Western Australian Herbarium (PERTH). One very distinctive member of the group, previously described as a *Helipterum*, is here combined into *Rhodanthe* as *Rhodanthe cryptantha* (O.H.Sarg.) Keighery *comb. nov.*

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Introduction

The author has been intensively collecting members of the Western Australian endemic *Rhodanthe manglesii* to resolve its taxonomy. Although treated as one widespread species by Wilson (1991), there are a series of undescribed taxa in this complex. One of these, *Rhodanthe* sp. Yuna (G.J. Keighery, B.J. Keighery & B. Moyle 2820), has been allocated a phrase name at the Western Australian Herbarium (PERTH), with several others to follow. Resolution of the correct names applying to other taxa in this complex awaits the location of type specimens of a number of taxa named from cultivated material. During the course of biological surveys of the Western Australian Wheatbelt, I was able to confirm the distinctiveness of one member of the group, previously described as *Helipterum cryptanthum* O.H. Sargent. This is a widespread species, especially common in the Wheatbelt woodlands. It is combined here into *Rhodanthe* as *R. cryptantha* (O.H.Sarg.) Keighery.

Rhodanthe is defined by having inner involucre bracts with broad flat claws, anthers with fine filamentous tails, achenes with normal (not thickened) duplex hairs, and roots that are not ectomycorrhizal. Although there remain many issues with the limits of the genus (Wilson, 1991), *Rhodanthe manglesii sens. lat.* is currently the sole member of its type section. This section is unique in the genus in being completely glabrous with suborbicular, sessile leaves. On this basis, *R. cryptantha* is clearly a member of *Rhodanthe* sect. *Rhodanthe*.

Typical *Rhodanthe manglesii* (i.e., matching the type) overlaps with the range of *R. cryptantha*. However, because it has been widely planted along roadsides and in town gardens and parks outside its pre-European range, its true distribution is difficult to determine. By contrast, the small-flowered *R. cryptantha* is rarely grown, despite being the most common taxon at many sites. Recognition of *R. cryptantha* as distinct from *R. manglesii*, based on their consistent morphological dif-

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Figure 1: Front view of *Rhodanthe* inflorescences: *Rhodanthe manglesii* (LHS, Keighery & Keighery 3217) and *R. cryptantha* (RHS, Keighery & Keighery 3216). Both from a York Gum monitoring quadrat on Syred's Farm, 34.5 km SSW of Trayning (31° 25'57.4" S and 117° 43' 08.8" E).

ferences, will be of benefit to commercial seed collectors, revegetation efforts and horticulturalists.

Taxonomy

Rhodanthe cryptantha* (O.H.Sarg.) Keighery, *comb. nov.

Basionym: *Helipterum cryptanthum* O.H.Sarg., *Journal of Botany, British and Foreign* 61: 285, 1923. Type citation: "Herb. Sargent 1404." Syntypes: Mount Brown, York, W.A., O.H. Sargent 1404 (BM [include sheet number] photo!); Mt. Brown, York, 8 Sep. 1922, O.H. Sargent 1404a (MEL 019635!); Cut Hill, York, 28 Sep. 1922, O.H. Sargent 1404 (PERTH 0570295!). Possible syntype: Cut Hill near York, 2 Sep. 1923, Sargent s.n. (MEL 0109636A!).

Usually 8–15 cm tall, with 1–2 inflorescences per plant. Basal leaves (8–)12–15 mm long, 4–7 mm wide. Flowers 4–7(–15) per inflorescence, which is narrow-tubular and 5–10 mm wide at anthesis (i.e., not opening widely), with dull white basal inflorescence bracts; terminal inflorescence bracts (without claw) (4–)6–8 mm long, pale pink; basal inflorescence bracts (without claw) 2–4 mm long. (Figs 1, 2)

Notes. *Rhodanthe manglesii* and *R. cryptantha* normally occur in pure stands in native vegetation throughout their ranges. However, during floristic surveys of the Wheatbelt Woodlands Threatened Ecological Community for the Wheatbelt Natural Resource Management Group, they were found in sympatry in several relatively undisturbed sites. The distinctiveness of the two species at such sites is illustrated in Figs 1 & 2, showing plants from a co-occurring, co-flowering natural population of both species. The plants considered as *R. manglesii* at this site closely match the illustration in Lindley (1834). Over several years of observations on floristic quadrats established at this site, no sign of intermediates have been detected, indicating that the populations comprise separate species.

By contrast with *R. cryptantha*, *R. manglesii* plants are usually larger (15–40 cm tall), with (1–)3–5(–7) inflorescences per plant borne on several (5–6) stem divisions and has larger basal leaves (20–37 mm long and 10–15 mm wide). There are usually more flowers per inflorescence (30–55), and the inflorescences are campanulate and (15–)20–35 mm wide at anthesis, with silver to brilliant white basal inflorescence bracts. The terminal inflorescence bracts (without claw) are (10–)12–15 mm long



Figure 2: Side view of *Rhodanthe* inflorescences: *Rhodanthe manglesii* (LHS, Keighery & Keighery 3217) and *R. cryptantha* (RHS, Keighery & Keighery 3216). Both from a York Gum monitoring quadrat on Syred's Farm, 34.5 km SSW of Trayning (31° 25'57.4" S and 117° 43' 08.8" E).

and are bright pink and highly visible. Basal inflorescence bracts (without claw) are 8–10 mm long.

Although considerable variation occurs in the size of these annual plants depending on seasonal and site conditions, mature plants of *R. cryptantha* are normally smaller in all dimensions (height, leaf size, bract size) than *R. manglesii*. The inflorescence characters are the most readily observable differences between the species in the field.

Because of the tubular nature of the mature inflorescences of *R. cryptantha*, only 3–5 mm of the terminal pink bracts are visible at flowering beyond the dull white lower bracts, making the plants much less visible from a distance than *R. manglesii*. In that species, the large bright pink terminal inflorescence bracts are well-displayed beyond the lower silver-white bracts in the campanulate inflorescence. All inflorescence bracts in *R. cryptantha* are smaller than those of typical *R. manglesii*. The combination of size, colour and shape of the inflorescences, fewer inflorescences per plant, and smaller stature means that *R. cryptantha* is less showy in the field than *R. manglesii*. It appears from qualitative field observations that *R. cryptantha* receives far fewer visits by native bees than *R. manglesii*, suggesting that it may be at least partially inbreeding.

The inflorescences open at seed maturity to release the fruits, making the shape more like that of *R. manglesii* at this stage, but the other diagnostic differences remain.

Distribution. *Rhodanthe cryptantha* is largely confined to the Western Australian Agricultural Zone, between Geraldton and Ravensthorpe. Flowering occurs between August and October. The species is considered widespread and well-conserved.

Etymology. The specific name derives from the Greek meaning hidden flowers.

Typification: The BM collection states "Mount Brown, York, W.A. OH Sargent 1404" (photo!). A MEL collection (019635!) labelled "Mt. Brown, York, Sargent 1404, a, 8/9/1922" is a syntype. This collection is labelled in Sargent's hand as *Helipterum cryptanthum* and as Sargent 1404, a; probably indicating it was regarded as part of the same gathering as Sargent 1404.

The PERTH collection (0570295!) labelled as a type states "Cut Hill, York, Sargent 1404, 28/9/1922". There is also a collection at MEL (0109636A!) from there labelled as "Sargent s.n., 2/9/1923". The last is probably not a type and the former could be a type but the collection site is a different locality.

Rhodanthe manglesii is illustrated in colour by Sarah Drake from material grown by Robert Mangles in 1833. The illustration, which accompanies the description of

the species by John Lindley (Lindley 1834), is used in this study as indicative of the morphology of plants corresponding to this species.

Disclosures

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