

## NOTES ON SOME AUSTRALIAN COMPOSITAE.

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(With Plate VII and one Text-figure.)

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## SUMMARY.

Two new species of *Helichrysum* and one of *Chthonocephalus* are described from Queensland, New South Wales, and Western Australia respectively, and a necessary change made in the name of a species of *Erechthites*, now regarded as a *Senecio*. The distributions of four species of *Helichrysum* are mapped.

***Helichrysum eriocephalum* J. H. Willis**; species nova ex affinitate *H. cordati* DC., *H. ramosi* DC. et *H. obovati* DC., a quibus differt foliis supra constanter arachnoideis, inflorescentiis multo minoribus (in specimine unico), involucri squamis longius lanigeris laminis albis latioribus plicatisque.

*Suffrutex* laxis, saltem 50 cm. altus, ramis gracilibus albidotomentosis. *Folia* lanceolata brevissime petiolata, inferiora circiter  $5 \times 1$  cm., summa minora, distantia, omnia utrinque arachnoideolanuginosa, marginibus revolutis, subtus nervo medio lateralibusque paucis prominentibus. *Inflorescentia* densissime lanuginosa terminalis restricta, corymbis confertis in panicula parva laxa dispositis. *Capitula* albida subsessilia subhemisphaerica, circa 5 mm. lata, usque 40-flora. *Involucri squamæ* 30–40, circa 5-seriatae, spathulatae, superiores 2–3 mm. longae, stipite a lana occulto, solum lamina alba brevi (usque ad 1 mm. longa) lata obtusa subplicataque aperta; ob vestem arachnoideolanuginosam intricatam difficillime segregandae. *Flores* circa 3 mm. longi, corollae lobis 5 brevibus papulas sparsas ferentes. *Pappi setae* circa 20, circa 2.5 mm. longae, scabridae, corollam vix excedentes, ad apicem incrassatae, ad basin in corona (latiore quam ovario) connatae. *Achaenia* immatura breviter cylindrica glabra. *Styli ramuli* 0.5–1.0 mm. longi, ad apices brevissime denseque penicillati. *Antherae* circa 1.5 mm. longae, caudis brevibus paulum lobatis; filamentis gracilibus. Pollinis granula circa 18 mic. diam., regulariter echinulata.—Plate VII, figs. 1–7.

QUEENSLAND.—South Kennedy District: Lake Elphinstone, about 100 miles WSW of Mackay, 1870, *Amalie Dietrich* 1722 (HOLOTYPE in MEL; CLASTOTYPE in BRI.).

Notwithstanding the undesirable practice of describing new species from single herbarium specimens, I do not hesitate to publish a diagnosis of this hitherto undescribed plant which differs in so many ways from other species of *Helichrysum*. F. Mueller had long ago labelled the collection "*H. Beckleri* F.v.M. (var.)"; but it has conspicuous white and crinkled spreading tips to the involucre bracts, both surfaces of the rather large lax remote leaves persistently arachnoid-woolly, and bears very little resemblance to this shrub. In January 1947 the late Mr. C. T. White, to whom I submitted this puzzling Queensland plant for examination, reported that he had seen nothing like it and suggested my describing it as new.

With, apparently, a weak and straggling habit, its white-woolly branches, moderately large, broad leaves and exceedingly woolly heads (the bracts difficult to disentangle), *H. eriocephalum* is obviously allied



to *H. cordatum*, *H. ramosum* and *H. obovatum*—all Candollean species in the Section *Ozothamnus*. *H. obovatum* of north-eastern New South Wales differs in having glabrescent leaves on slender petioles and very minute, non-spreading tips to the involucre bracts. The other two species are Western Australian and differ in their large, diffuse, leafless panicles, the bracts much less hairy with narrower white tips (never crinkled as in the new species), and the more sharply scabrid pappus bristles which are not fused at the base to form a broad crown. It would be most interesting to ascertain whether the plant still survives in the neighbourhood of Lake Elphinstone and what is the nature of its habitat.

***Helichrysum tuckeri*** F. Muell. ex J. H. Willis; species nova, de forma foliorum solummodo *H. diotophyllo* F. Muell. comparabilis, cujus autem folia basi amplius auriculata, sursum angustiora et marginibus paulo distantibus subtus tomentosa, capitula ampliora flores usque 40 tenentia, involucre nitenti-flavescentia, pappi setae minus incrassatae et achaenia fere sericata sunt; *H. diosmifolium* (Vent.) Sweet, quod forma et colore capitulorum speciei novae simillimum, foliis multo longioribus anguste linearibus patentioribus, floribus in capitulo pluribus differt.

*Frutex* rigidus, 60–120 cm. altus, ramis numerosis virgatis gracilibus tenuissime tomentellis. *Folia* glabra angusto-oblonga, obtusa sessilia perbrevia (circiter  $3-4 \times 1$  mm.), ad basin latiora et brevissime biloba, erecta appressa conferta, subtus sulco angustissimo percurta, marginibus replicatis paginam inferam plane occultantibus. *Inflorescentia* terminalis, paniculata, fere globularis, 1–3 cm. lata, ex corymbis capitulorum constructa. *Capitula* albida, haud nitentia, breviter pedunculata, primum pilularia demum campanulata, 3–4 mm. lata, 7–12-flora. *Involucri squamae* 30–40, circa 5-seriatae, integrae, glabrae vel ad stipitem parcissime lanuginosae; superiores obovato-oblongae, circa 3 mm. longae, sursum albae, inferne secus stipitem hyalinae; inferiores minores ad formam orbicularem vergentes. *Flores* circa 2.5 mm. longi, sub anthesi involucre parum superantes, corollae lobis 5 minutissime papulatis. *Pappi setae* corollam aequantes haud numerosae, 1.5–2 mm. longae, minute scabridae, apicem versus leniter incrassatae, ad basin fere liberae. *Achaenia* circa 0.5 mm. longa, breviter cylindrica, dense papilloso scabriuscula. *Styli ramuli* circa 0.6 mm. longi, ad apices brevissime denseque penicillati. *Antherae* circa 1 mm. longae, caudis brevibus acuminatis; filamentis gracilibus. Pollinis granula circa 18 mic. diam., sparsim echinulata.—Plate VII, figs. 14–20.

NEW SOUTH WALES.—Western Plains: Lake Cargelligo, Nov., 1915, J. W. Dwyer; "Lachlan River," 1879, Gerard Tucker (HOLOTYPE in MEL, CLASTOTYPE in NSW); Shuttleton Dec. 1903, W. Bäuerlen; Lachlan to Darling River, G. Day; Nyngan, Dec. 1899, W. Bäuerlen; Girilambone, Nov., 1890, E. Bêche; Pilliga-Gwabegar, Dec., 1932 H. M. R. Rupp. Central Western Slopes: Kamarah via Barellan, 17th Oct., 1917, W. R. A. Baker; Ardlethan, Nov., 1917, J. L. Boorman; Weddin, Dec. 1899, J. H. Maiden; Wyalong, Oct., 1903, J. L. Boorman; Wyalong to Barmedman, Mar., 1915, J. W. Dwyer; Temora, Oct., 1915, J. W. Dwyer; Dudauman, 10 miles NW. of Cootamundra, Nov., 1917, J. L. Boorman. Southern Western Slopes: Near Wagga Wagga (? collector).

? VICTORIA.—"Wimmera," 1894, W. H. Matthews.

[All collections available in the National Herbaria at Melbourne, Sydney and Brisbane are cited here.]



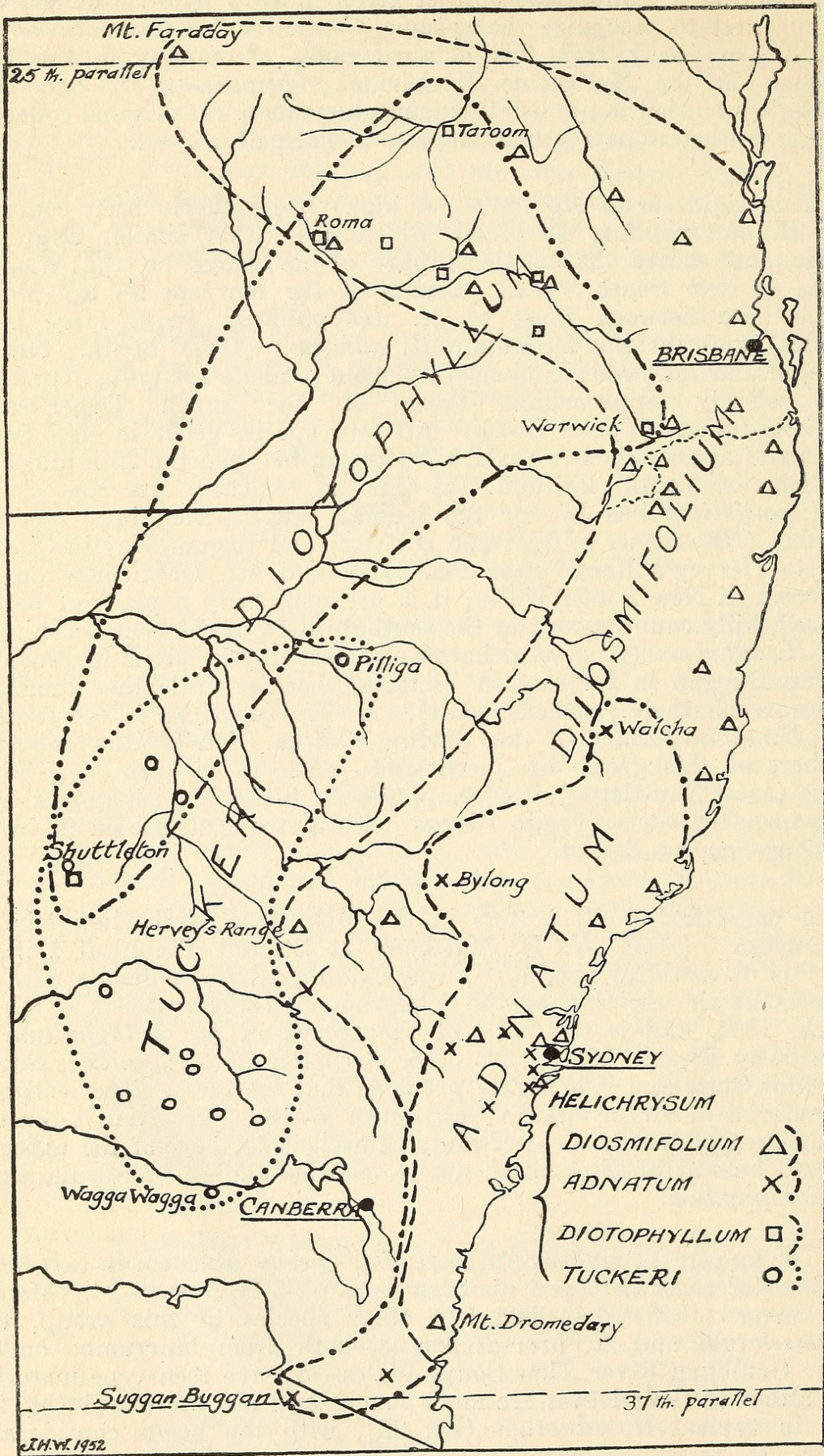
Adopting a manuscript epithet given in 1879 by F. Mueller, who was the first to recognize the specific distinctiveness of *H. tuckeri*, I have drawn freely from his detailed notes accompanying the type specimen in the Melbourne Herbarium. Apparently it had been Mueller's intention to publish this name, honouring the original collector, and his epithet is now perpetuated as a mark of respect.

This rigid shrub (to four feet high) has hitherto been confused with *H. diotophyllum* F. Muell. which has rather similar appressed foliage and shares the northern part of its range on the Western Plains of New South Wales. Leaves of the new species are almost intermediate between those of *H. diotophyllum* (with large basal auricles) and the non-auriculate *H. adnatum* (DC.) Benth.; but its white, pilular flower-heads in small, globose panicles are quite dissimilar, more closely approaching those of the much larger-leaved *H. diosmifolium* (Vent.) Sweet. All four species occur in New South Wales and are confined to eastern Australia, between the 25th and 37th parallels of south latitude (as far as existing records show). *H. diosmifolium* has by far the longest range, extending from Mt. Faraday (NE. corner of Warrego District) and Laguna Bay in Queensland to Hervey's Range near Peak Hill and Mt. Dromedary on the SE. coast of New South Wales; it is predominantly a plant of better-watered, hilly country, and in the southern area of distribution mingles with *H. adnatum* (from Walcha on and east of the Dividing Range to Suggan Buggan in far eastern Victoria where several other tableland species reach their southern limit). *H. diotophyllum* is co-extensive with *H. diosmifolium* in the Darling Downs District—the only two members of this group in Queensland—while in western New South Wales (as at Shuttleton) it accompanies *H. tuckeri* which ranges from Pilliga southward to Wagga Wagga, with a strong development in the Wyalong-Temora district.

A collection of *H. tuckeri* in the Melbourne Herbarium labelled "Wimmera" (from W. H. Matthews at Stawell Technical College, 1894) is of doubtful origin. It was exhibited by Mueller as new for Victoria at the meeting of the Victorian Field Naturalists' Club in March, 1894, and is the basis of the record of *H. diotophyllum* in Victoria by Ewart (1930). No other specimen of the species is known from this State and it is highly probable that Matthews either collected his material during a visit to New South Wales or received it through some correspondent there—certainly Stawell is far beyond the expected dryland habitat of *H. tuckeri*, not to mention the still more northerly *H. diotophyllum*.

The known distribution of these four species is shown in text-fig. 1, and the differences between their leaves in pl. VII, figs. 20–24. Maiden and Baker (1895) described two other species in this group, viz., *H. tessellatum* and *H. brevidecurrens*—both from Murrumbidgee on the upper Goulburn River, New South Wales. I have seen type materials and, although their leaves are much longer and less appressed (fig. 23) than in typical *H. adnatum* (fig. 22), with the heads considerably larger (*H. tessellatum* also has more coarsely papillate achenes), the differences from this species and one another do not seem to be specific. Further investigation in the field may show that these are connected with a variable *H. adnatum* by a series of intermediate forms.





Text Fig 1.—Distribution maps for *Helichrysum diosmifolium* (Vent.) Sweet, *H. adnatum* (DC.) Benth., *H. diotophyllum* F. Muell. and *H. tuckeri* sp. nov. — from material in Melbourne, Sydney and Brisbane Herbaria.



***Chthonocephalus multiceps*** J. H. Willis; species nova ob capita composita numerosa dissita a tribus aliis speciebus *Chthonocephali* valde distincta; *C. tomentellus* (F. Muell.) Benth. habitu staturaque simillimus est, sed capitibus terminalibus solitariis, floribus pluribus et pappo nullo differt.

*Herba* annua rosulata pluricaulis. Caules nigri, subfiliformes, radiantes, subprostrati, usque ad 7 cm. longi, fragmenta tomenti arachnoidei ferentes. *Folia* caulis extremitatem versus decrescentia; inferiora atque vetustiora usque ad 2.5 cm. longa, oblanceolata, subglabrescentia; superiora conferta, 3–5 mm. longa, obovata, valde lanigera pilis adpressis intricatis basi inflatis 30 mic. latis, apice longe flagellatis. *Capita composita* inflorescentiae usque 40 per plantam, axillaria atque terminalia, subdissita, sessilia, pallide flavescentia, modice lanuginosa; summa maxima, congesta, pulviniformia, 5–12 mm. diam. *Capitula* usque 40 in capitibus majoribus, 3–6 flora, receptaculo spiculam brevissimam formanti. *Involucri squamae* usque ad 3 mm. longae, dimorphae; paucae bracteae exteriores stipite angusto, praeter basin laciniatae atque intricate lanuginosae; bracteae interiores 4–7, obovatae glabrae, hyalinae, manifeste areolatae, marginibus subintegrae. *Flores* 2–2.5 mm. longi, quisque ad basin a bractea lanata partim clausus (bracteae subtendentes involucri squamis exterioribus simillimae); corolla anguste infundibuliformis, lobis 5 conspicuis omnino glabris. *Pappi squamae* 5–7, quam corolla circiter triplo breviores, ad basin connatae, laciniatae, supra pilis intricatis ornatae, in floribus summis breviores, paucilobati, glabri. *Achaenia* triquetra, obovoideo-turbinata stylo-basi persistenti, 0.5–0.8 mm. longa, nubila, omnino minute papillosa. *Styli ramuli* 0.5–1 mm. longi, ad apicem penicillati papillis longis radiantibus. *Antherae* 1–1.5 mm. longae apiculis sterilibus conspicuis, caudis longis gracilibus; filamenta perbrevia, prope medium corollae tubum affixa. Pollinis granula 18–20 mic. diam., acriter echinulata.—Plate VII, figs. 25–33.

WESTERN AUSTRALIA.—South-East Division (Euclonia): Balladonia Homestead, 128 miles east of Norseman, on sandy soil against large granite slabs, with ephemeral *Helipterum* spp., etc., 31st August, 1947, J. H. Willis, Grimwade Expedition (HOLOTYPE in MEL, PARATYPE in PERTH, CLASTOTYPE in BRI.).

Both the author and Mr. C. A. Gardner, who examined the material 24/3/1948, at first considered this remarkable plant to be a species of *Gnephosis* which it resembles outwardly; but the presence of subtending scales between the florets shows its affinity with *Craspedia* and *Chthonocephalus* in the sub-tribe *Angiantheae*. Members of the former genus have long, erect peduncles, a general involucre, long, plumose pappus scales, and a silky-hairy achene. The newly described plant lacks these features, and conforms well to the present circumscription of *Chthonocephalus*, making a fourth species in that genus. In its growth form *C. multiceps* approximates to the west-coast (Western Australia) species *C. tomentellus*, but in this the inflorescences are wholly terminal on the woolly branches and the numerous florets are completely devoid of any pappus. The only other species with a pappus is *C. pygmaeus*—a rare, minute, stemless plant with narrowly linear leaves—which could never be mistaken for the new one. *C. multiceps* is at once recognizable by its very numerous compound heads (to 40) of varying sizes, and it is only to be expected that it will prove to have a wide distribution in the botanically little-known south-eastern part of Western Australia.



***Senecio runcinifolius* J. H. Willis, nomen novum.**

*Erechthites picridioides* Sonder & F. Muell. in *Linnaea* 25: 523 (1852), non *E. picridioides* Turczaninow, 1851.

*E. mixta* sensu Benthami in *Fl. Aust.* 3: 659 (1866), non (A. Rich.) DC., 1837.

SOUTH AUSTRALIA.—Murray River at Moorundee near Blanchetown, Feb. 1851, F. Mueller (HOLOTYPE & PARATYPES in MEL); "Towards Spencer Gulf", Warburton.

VICTORIA.—North-West: Between Cohuna and Kerang, May, 1944, R. V. Smith; Berribee Tank, far NW. corner of State (in a large claypan 2 miles east), 31st Aug., 1948, J. H. Willis.

NEW SOUTH WALES.—Far Western Plains: Junction of Murray and Darling Rivers, 1889, Mrs. Holding. Western Plains: Warrego River, E. Bêche.

The epithet of the new name (rendered necessary by preoccupation of the name *Erechthites picridioides*) is in allusion to the remarkable, retrorsely-lobed leaves of this plant that resemble those of a dandelion (*Taraxacum* species). It would seem to be riparian and, in view of the scanty material available in Australian herbaria, is apparently rare. The original diagnosis, drawn up from poor "starved" specimens, gives a completely inadequate picture of the species and an amended and amplified description follows:

*Herb*, pale green, glabrescent, 20–40 cm. high (6 ins. in original description), the young parts and leaf axils slightly cottony-woolly. *Leaves* sessile, lanceolate acuminate, with up to 8 more or less reversed sinuate-lobed segments on each side, to 12 cm. long and 3 cm. wide at base of stems (1 in. and 3–4 lin. in original description); upper floral leaves less toothed, with long, almost filiform tips. *Panicle* corymbose, loose, up to 60-headed (6–8 in original description). Peduncles of each head slender, up to twice the length of involucre which is minutely cottony, bracteolate at the base. *Phyllaries* of involucre 12–14, about 1 cm. long, linear, acute, glabrous in fruit. *Corolla* tube of central hermaphrodite florets about 0.5 mm. diameter at base of the 5 lobes, about 4 times wider than the tubular filiform female florets; lobes in both with shortly papillose margins. *Achene* 2.5–3 mm. long, pallid, slightly flattened (about 0.3 mm. wide), with about 9 costae that bear short, erect, papillate hairs—without the attenuated beak ascribed to it in the original diagnosis. *Anthers* about 1 mm. long, without basal appendages. *Style arms* ligulate, about 0.33 mm. long, with swollen, recurved apices, coarsely papillose on inner face. Pollen grains sharply echinulate, 20–25 mic. diameter.—Plate VII, figs. 34–37.

All the collections cited are in Melbourne Herbarium, but Bentham saw only the South Australian ones. It is astonishing he should have confused *E. picridioides* Sonder & F. Muell. with *E. mixta* (A. Rich.) DC.—a purplish mountain plant of entirely different aspect and floral structure. J. M. Black (1929) perpetuated the confusion.

[Mr. A. O. Belcher (Michigan) is revising *Erechthites* Rafin., and many changes are anticipated in the nomenclature of Australian species hitherto referred to this genus.]



## REFERENCES.

- BLACK, J. M., 1929. Flora of South Australia 4: 610.  
EWART, A. J., 1930. Flora of Victoria, 1137.  
MAIDEN, J. H., AND BAKER, R. T., 1895. Proc. Linn. Soc. N.S. Wales 10: 589, 590.

## EXPLANATION OF PLATE VII.

Figs. 1-7, *Helichrysum eriocephalum* sp. nov. — 1, branch with inflorescence ( $\frac{1}{2}$  nat. size); 2, capitulum; 3, upper involueral bract; 4, central floret; 5, tip of pappus bristle; 6, style arms; 7, anther.

Figs. 8-10, *H. cordatum* DC. (upper bract, central floret and pappus bristle—cf. figs. 3-5).

Figs 11-13, *H. ramosum* DC. (upper bract, central floret and pappus bristle—cf. figs. 3-5).

Figs. 14-20, *Helichrysum tuckeri* sp. nov. — 14, branch with inflorescences ( $\frac{1}{2}$  nat. size); 15, capitulum; 16, upper involueral bract; 17, central floret; 18, tip of pappus bristle; 19, anther; 20, leaves (enlarged).

Figs. 21-22, enlarged leaves of *H. diotophyllum* F. Muell. and *H. adnatum* (DC.) Benth. respectively.—cf. with fig. 20.

Figs. 23-24, leaves of *H. tessellatum* Maiden & Baker and *H. diosmifolium* (Vent.) Sweet, respectively ( $\frac{3}{4}$  nat. size).—cf. figs. 20-22.

Figs. 25-33 *Chthonocephalus multiceps* sp. nov. — 25, plant ( $\frac{1}{2}$  nat. size); 26, flagellate hairs on leaf surfaces; 27, hairless inner involueral bract of partial head; 28, outer bract of partial head; 29, uppermost floret, with hairy subtending scale and reduced pappus; 30, lower floret, with normal pappus; 31, triquetrous achene; 32, style; 33, anther (inserted on corolla tube).

Figs. 34-37, *Senecio runcinifolius* nom. nov. — 34, branch with an inflorescence ( $\frac{1}{2}$  nat. size); 35, outer female and central hermaphrodite florets; 36, style arms; 37, anther.

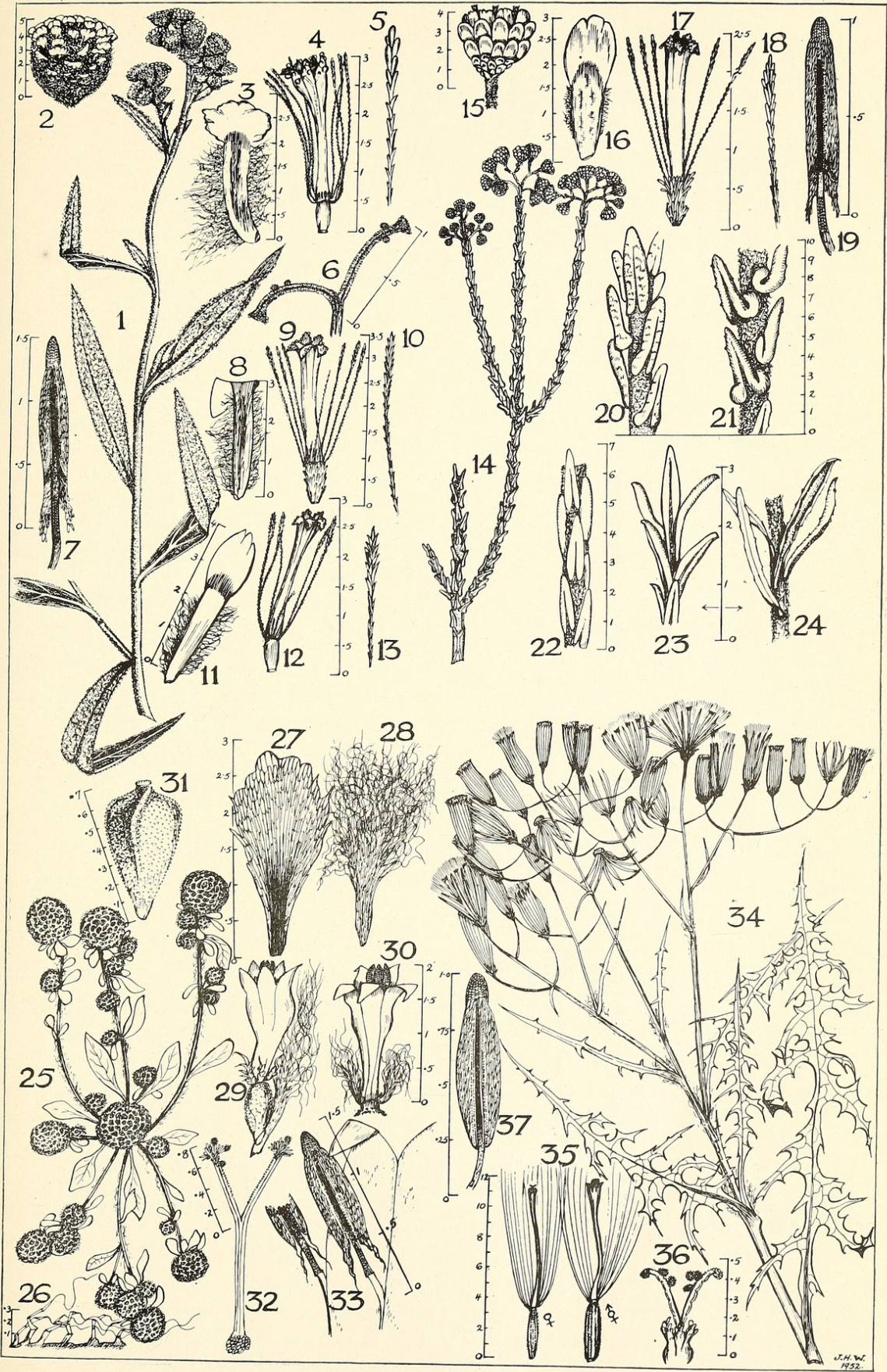
[Except in figs. 1, 14, 25 and 34, a scale in millimetres accompanies each drawing; the scale for figs. 23-24 is in centimetres.]

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SOME AUSTRALIAN COMPOSITAE.





Willis, J. H. 1952. "Notes on Some Australian Compositae." *The Proceedings of the Royal Society of Queensland* 62, 101–107. <https://doi.org/10.5962/p.351759>.

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