

***HELICHRYSUM PUMILUM* VAR. *SPATHULATUM* (COMPOSITAE: INULEAE), NEW FROM TASMANIA**

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(with two text-figures)

BUCHANAN, A.M., 1987 (30:vi): *Helichrysum pumilum* var. *spathulatum* (Compositae: Inuleae), new from Tasmania. *Pap. Proc. R. Soc. Tasm.*, 121: 53-56. <https://doi.org/10.26749/rstpp.121.53>
ISSN 0080-4703. Tasmanian Herbarium, G.P.O. Box 252C, Hobart, Tasmania.

A name is provided for the spathulate-leaved variant of *Helichrysum pumilum*. Comments are made on the collecting activities of Ronald Gunn and Joseph Milligan.

Key Words: *Helichrysum*, Compositae, Milligan, Gunn, Tasmania.

INTRODUCTION

J.D. Hooker (1856) in his original description of *Helichrysum pumilum* noted the existence of a broader-leaved form which he designated var. β . Subsequent authors (Bentham 1867, Rodway 1903, Curtis 1963) have ignored this variant and included both spathulate- and linear-leaved forms in a single taxon. For some time, workers in the field have recognised the distinctiveness of the spathulate-leaved variant and its preference for exposed situations on mountain slopes and summits in skeletal soils. A close examination of herbarium material and comparative studies in the field have convinced the present author of the necessity of formally recognising these plants as distinct at the varietal level.

DESCRIPTION

Helichrysum pumilum J.D. Hook., Fl.
Tasm. 1(1856) 213-4.

[Typus: 'Gunn, 2045'; *holotypus*: Gunn 2045 Heathy and peaty ground, Macquarie Harbour, 8.10.[18]46, K (Herbarium Hookerianum) n.v. (photograph!). *Isotypus*: *J. Milligan 756*, Heathy and Peaty ground Macquarie Harb. 8.10.[18]46 HO 12436!, N.S.W. *Probable Isotypus*: *J. Milligan 756*, Peaty flats, terrace grounds between mouth of Gordon River and Birchs Inlet, Macquarie Harbour, 8.x.1846, HO 12435!]: Benth., Fl. Aust. 3 (1867) 619-620; Johnston, Field Memoranda Tasm. Bot. (1874) 24; Spicer, Hdbk Pls Tasm. (1878) 118; Rodway, Tasm. Fl. (1903) 86; Curtis, Stud. Fl. Tasm. 2(1963) 330; Curtis in Stones & Curtis, The Endemic Fl. of Tasm. 9(1967) 48; Cameron (ed.), Guide Fls and Pls Tasm. (1981) 32.

Perennial herb, gynodioecious, low tufted, with erect or horizontal rhizome to 2 mm diam., roots coarse. *Leaves* radical, basally sheathing, linear to spathulate (8) 15-50 mm in length and 1-5 mm in breadth, woolly beneath. *Capitulum* solitary on slender, erect, white tomentose, bracteate scape 20-100 mm in length. *Involucre* 15-20 mm diam., outer phyllaries 5-8 mm in length, white, streaked with brown or pink, inner phyllaries to 10 mm in length, white or pink, elliptical, semi-spreading, basal region thickened, brown. *Florets* of two types on separate plants; female *filiform florets*, 20-60 per capitulum, corolla tube 2.5-3.5 mm in length, 0.4 mm in diameter, pink to purple, lobes usually 5, sometimes unequal in size, c.0.5 mm in length, style deeply bifid, arms exserted, achenes 1.0-1.5 mm in length, hirsute; bisexual *disc florets*, 20-40 per capitulum, corolla tube 2.5-3.0 mm in length, 0.6-0.8 mm in diameter, pink to purple, lobes 5, 0.5-0.7 mm in length, with tufts of simple multicellular, uniseriate hairs, stamens with filaments adnate to lower one-third of corolla tube, anthers 5, 1.7 mm in length, style shortly bifid, not or only slightly exserted, achenes 0.5-1.0 mm in length, sparsely hairy, pappus bristles papillose, clavellate, slightly exceeding the floret.

Endemic in Tasmania where it is confined to the west and the south of the island.

Flowering December to February.

Note

In his original description J.D. Hooker (1860) cites "Gunn 2045" as the type and the type sheet at Kew bears the following information in Gunn's handwriting, "Heathy and peaty ground Macquarie

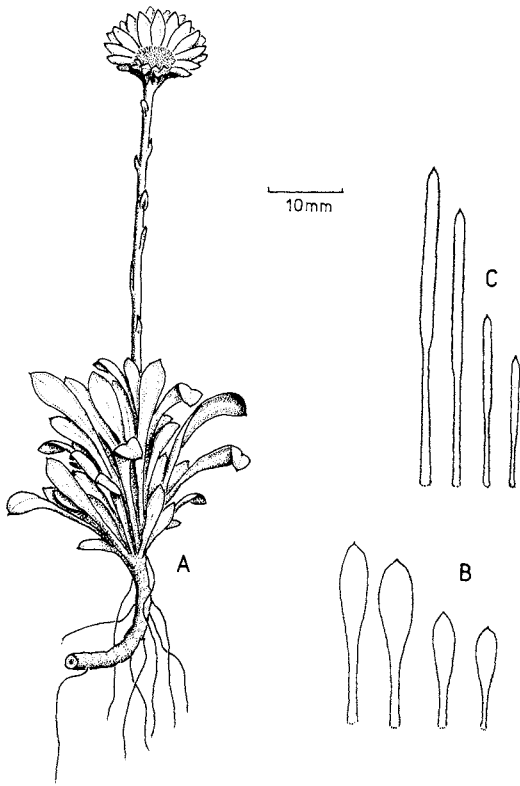


FIG 1 — *Helichrysum pumilum*. A. var. *spathulatum*, habit. B. var. *spathulatum*, range of leaf shape. C. var. *pumilum*, range of leaf shape. (A, B from Moscal 9280, C from Buchanan 1331).

Harbour 8.10.46.” It should be noted that 2045 is Gunn’s species number for *Helichrysum pumilum* and not a collecting number. At HO there is a sheet labelled “Heathy and Peaty ground Macquarie Harb. 8.10.46 JM 756” in Joseph Milligan’s handwriting which matches the type material very well. A second sheet is labelled “756 Peaty flats — Terrace grounds between mouth of Gordon River and Birches Inlet McQuie Hbr. 8.10.46” also in Milligan’s handwriting. Gunn is not known to have been in the Macquarie Harbour area in 1846. A survey of Gunn’s and Milligan’s collections at HO shows that Gunn was in that area on only one occasion, during February 1845, which agrees with the account given by Burns & Skemp (1961) of his activities. Milligan on the other hand collected widely in the Macquarie Harbour area from July 1846 to March 1847.

It is evident that this is a further case of Gunn having forwarded another collector’s material to Kew without acknowledging its source, a problem already observed by Haegi (1982) and Short (1986).

Helichrysum pumilum
J.D. Hook. var. *pumilum*

Leaves linear, 20-50 mm in length and 1-2 mm in breadth; lamina with margins revolute, apex acute to sub-acute, mucronate; upper surface green, glabrous, or with a very fine deciduous felt, under surface white woolly. Scape 20-100 mm in length, bracts linear, leaf-like (fig. 1C).

Western and southern Tasmania from Nelson Bay River in the north to the wet heathlands of the south coast in the south and as far east as Innes Falls, Mt Mawson and Esperance Peak (fig. 2A).

Illustration

J.D. Hook., Flora Tasmaniae (1856) pl.LX.

Helichrysum pumilum J.D. Hook. var.
spathulatum A.M. Buchanan, var. nov.

Helichrysum pumilum var. β J.D. Hook. Fl. Tasm. 1 (1860) 213.

Differt a varietate typica foliis spatulatis (8)15-25(28) mm longis, 2-5 mm latis, cinereococactis, sub-planis; apicibus recurvis, mucronatis; bracteis inferis foliiformis, bracteis superioribus scariosis.

Typus: A. Moscal 9202, Jubilee Range, 8.i.1985. Holotypus: HO 97029

Leaves crowded in a rosette, spatulate (8)15-25(28) mm in length and 2-5 mm in breadth at the widest point; lamina flat to slightly channeled along midrib, apex recurved, rounded mucronate; both surfaces covered with a felted mat of hairs, grey above and light grey densely woolly beneath. Scape 20-60 mm in length, lower bracts leaf-like, upper bracts scarious, resembling the outer phyllaries (fig. 1A,B).

Confined to mountains of the central west of Tasmania (fig. 2B).

Illustration

Stones in Stones & Curtis, The Endemic Flora of Tasmania 1(1967) pl.21 as *Helichrysum pumilum*.

Note

J.D. Hooker described var. β from a Milligan collection which is now in the Herbarium Hookerianum at Kew, bearing the labels “Tasmania Dr. Milligan” “*Helichrysum pumilum* Hf β ”. In his

protologue Hooker cites the locality for this collection as "Macquarrie Harbour". Milligan probably collected this specimen during his ascent of Mt Sorell near the eastern shore of Macquarie Harbour. The holotype of var. *spathulatum* closely resembles Milligan's collection, of which there is a photograph at HO.

**SPECIMENS EXAMINED
(ALL TASMANIAN)**

Helichrysum pumilum var. *pumilum*

Adams 39, Moores Garden, 14.i.1984 (HO 76662). — *Berrigan s.n.*, Frenchmans Cap, near summit, -.iv.1978 (HO 28644). — *Boyer s.n.*, Mt Mawson Plateau, 21.xii.1980 (HO 37369). — *Buchanan 1331*, Birchs Inlet, 15.xi.1983 (HO 72953). — *Buchanan 3429*, Heath between west end of Turua Beach and the shelter, 26.iv.1984 (HO 76586). — *Buchanan 7745*, South side of Giblin River, c. 2 km from mouth, 10.i.1986 (HO 97701). — *Buchanan 8125*, Summit of the Lawson Range, 25.i.1986 (HO 98431). — *Buchanan 8808*, Burke Creek flats, Cox Bight, 9.viii.1986 (HO 98908). — *Collier 1996*, Western Arthur Range, 5.xii.1986 (HO 101379). — *Comber 2159*, Mt Sedgwick 2000 ft, 28.ii.1930 (HO 98001). — *Curtis s.n.*, Tarn Shelf, National Park, 3.i.1948 (HO 52537). — *Davis 1362*, Melaleuca Settlement, Moth Creek, s.d. (HO 12433). — *Giblin s.n.*, Jubilee Range, -.i.1929 (HO 12430). — *Jarman 31*, Scotts Peak Road near Clear Creek, 31.x.1979 (HO 31389). — *Milligan 756*, Macquarie Harbour, 8.x.1846 (HO 12436). — *Milligan 756*, Between mouth of Gordon River and Birchs Inlet, Macquarie Harbour, 8.x.1846 (HO 12475). — *Moscal 1826*, Rocky Hill, 15.ii.1983 (HO 92261). — *Moscal 2010*, Innes Falls, 27.ii.1983 (HO 92564). — *Moscal 2118*, 2 km SE of Federation Peak, 9.iii.1983 (HO 71623). — *Moscal 5716*, Point Hibbs, 17.i.1984 (HO 74419). — *Rodway s.n.*, Mt Dundas, -.xii.1893 (HO 12427). *Rodway s.n.*, Esperance Peak, -.xii.1894 (HO 12434).

Helichrysum pumilum var. *spathulatum*

Buchanan 5289, Jubilee Range, 13.i.1985 (HO 98903). — *Collier 1995*, Western Arthur Range, 5.xii.1986 (HO 101380). — *Elliott s.n.*, Denison River, 6.i.1947 (HO 52621). — *Gordon s.n.*, N. Col, Frenchmans Cap, 13.xii.1944 (HO 52538). — *Harwood s.n.*, Denison Range, Reeds Peak area, xii.1978 (HO 29563). — *Jarman s.n.*, Double Peak, 10.xii.1978 (HO 30354). — *Macphail s.n.*, Tyndall Range between Mts Tyndall and

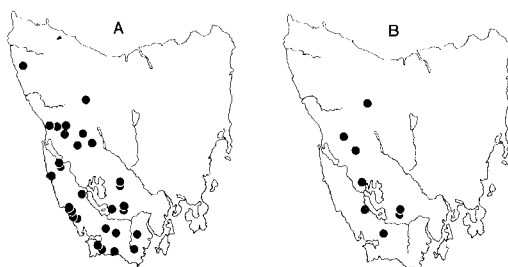


FIG. 2 — Geographic range of *Helichrysum pumilum* in Tasmania. A. var. *pumilum*. B. var. *spathulatum*.

Geikie, 8.xii.1980 (HO 37071). — *Moscal 1930*, Mt Inglis — Fury Gorge, 25.ii.1983 (HO 92416). — *Moscal 2011*, Little Plateau, Cradle Mtn, 28.ii.1983 (HO 92565). — *Moscal 9202*, Jubilee Range, 8.i.1985 (HO 97029), Holotype.

SEX EXPRESSION

Capitula of both varieties of *Helichrysum pumilum* are of two types:

- a. Hermaphrodite, bearing bisexual disc florets, and
- b. Female, bearing filiform (pistillate) florets.

A very low degree of inconstancy (about 3%) was noted in the specimens examined, with an occasional hermaphrodite capitula containing one or two female florets, e.g. *Moscal 9280*. In the populations of *H. pumilum* var. *pumilum* examined, female plants and bisexual plants occurred in more or less equal numbers and their capitula contained 20-30 florets. Within the limited number of var. *spathulatum* specimens available, a tendency towards a slightly higher frequency of bisexual plants and a greater number of florets per capitulum compared with the type variety was observed. Further insight could undoubtedly be obtained from detailed population studies in which correlations may become evident between sex distribution and ecological gradients. In other genera of Compositae sex ratios and hence plant breeding systems have proved to be valuable aids in taxonomic studies of the groups concerned (e.g. Lloyd 1972a,b, Short 1981).

DISCUSSION

Helichrysum pumilum as a species does not closely resemble any other taxon in the genus, although the habit of var. *spathulatum* approaches

that of *H. milliganii*, another Tasmanian endemic. Typical plants of var. *spathulatum* can be readily distinguished from var. *pumilum* by their relatively shorter, recurved, matt grey spatulate leaves. The matt grey colouration is imparted by a well-felted layer of grey hairs which occasionally in leaves long exposed to the elements, weathers off in a thin sheet. The apices of the leaves are flattened and recurved so as to be in extreme cases almost appressed to the ground in contrast with the erect or semi-spreading leaves of var. *pumilum*. The mid to upper bracts of the scape of the type variety are always linear and leaf-like whereas the upper bracts, at least, of var. *spathulatum* are expanded into a broad scarious margin. A few plants are encountered which are more or less intermediate in one or other character but these can usually be determined by reference to the leaf length/breadth ratio. The type variety is almost invariably confined to wet soils of deep acidic peat, usually developed on quartzite, where the large cyperaceous tussock *Gymnoschoenus sphaerocephalus* is dominant, a habitat commonly referred to as "buttongrass plains". Occasionally it extends into the sub-alpine zone in peaty soils developed on quartzite, dolerite or mudstone, especially at the southeastern limits of its range. The variety *spathulatum* on the other hand is confined to the upper slopes or summits of mountains, often in very shallow skeletal soils or even in crevices of quartzite rock outcrops.

ACKNOWLEDGEMENTS

For assistance in the field I am grateful to Mr Tony Moscal, and for critically reading the manuscript I wish to thank Dr A.E. Orchard.

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(accepted 3 March 1987)