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## STUDIES IN *SENECIO* (COMPOSITAE)

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### Abstract

*Senecio odoratus* Hornem. var. *longifolius* var. nov. and *S. cunninghamii* DC. var. *serratus* var. nov. are described, and a key to all varieties of these related species provided. *S. georgianus* DC. var. *latifolius* J.M. Black and *S. minimus* Poir. var. *picridioides* (Turcz.) R.O. Belcher are recognised at the specific level as *S. gawlerensis* nom. nov. and *S. picridioides* (Turcz.) M.E. Lawrence comb. nov. respectively.

### Key to *Senecio odoratus*, *S. cunninghamii* and their varieties

1. Venation of leaves intricately reticulate, adaxially impressed, abaxially raised and usually darkening on drying; leaves dark green above or glaucous, glabrous or sparsely arachnoid below, usually broadly auriculate..... *S. odoratus*
  2. Cauline leaves at least twice as long as broad.
    3. Cauline leaves 3-7 times longer than broad, rarely approaching 2 or 10 times longer than broad, oblanceolate with stem-clasping auricles, glaucous (Fig. 1A) ..... var. *odoratus*
    3. Cauline leaves at least 10 times longer than broad, linear or narrowly lanceolate, with or without minute auricles, dark green above, lighter below (Fig. 1B) ..... var. *longifolius*
  2. Cauline leaves less than twice as long as broad, obovate with stem-clasping auricles, glaucous (Fig. 1C)..... var. *obtusifolius*
1. Venation of leaves not conspicuous, laterals sometimes evident on drying and then not usually darkened; leaves green or becoming glaucous, glabrous or at least the young shoots and often the involucre with a fine white tomentum, leaves with or without small toothed auricles..... *S. cunninghamii*
  4. Cauline leaves linear to narrowly lanceolate, entire or shortly and distantly toothed, green; glabrous plants (Fig. 1D) ..... var. *cunninghamii*
  4. Cauline leaves oblanceolate, serrate, green or becoming glaucous; at least the young shoots and often the involucre white-tomentose (Fig. 1E) ..... var. *serratus*

### *Senecio odoratus* Hornem., Hort. Hafn. 2:809 (1815)

*Type:* Presumably a specimen grown in botanic garden at Copenhagen from achenes sent from England.

var. *longifolius* M.E. Lawrence, var. nov.

*Suffrutex* ad 150 cm altum. *Folia* anguste lanceolata, saltem 10-plo longiora quam latiora (5-14 x 0.5-1.4 cm), basi agustata vel subpetiolata, cum vel sine auriculis dentatis parvis, margine saepe plana, interdum breviter revoluta, remote denticulata vel subintegra, pagina adaxiali perviridi, pagina abaxiali dilutiore dilute or dilutiore viridi diluta, venis reticulatis conspicuis atrantibus ubi desiccatis. *Inflorescentia* plerumque paniculata aliquantum laxa, interdum corymbosa.

*Type:* Ravine des Casoars, 2.ii.1948, J.B. Cleland (Holotype: AD 97245349, isotype: AD 97410421).

*Etymology:* Latin *longi-*, long; *-folius*, leaved; referring to the leaves much longer than broad.

*Subshrub* to 150 cm high. *Leaves* narrowly lanceolate, at least 10 times longer than broad, 5-14 x 0.5-1.4 cm, basally narrowed or subpetiolate, with or without small toothed

auricles, margins often flat, sometimes shortly revolute, distantly and minutely toothed or subentire, adaxially dark green, abaxially lighter with conspicuous veins that usually darken on drying, glabrous or sparsely arachnoid. *Inflorescence* usually paniculate and rather lax, sometimes corymbose. (Fig. 1B).

*S. odoratus* var. *longifolius* is known to occur in South Australia only on the western end of Kangaroo Island in the Ravine des Casoars and in the vicinity of the Rocky River, and on Pearson Island. Flowering occurs from November to March.

*Selected specimens examined* (collections seen: 25)

SOUTH AUSTRALIA. Kangaroo Island: Ravine des Casoars, 15.i.1983, *G. Jackson 1578* (AD 98309017); banks of the Rocky River at the Koala Bear Sanctuary, 27.xii.1957, *R. Schodde 516* (AD 96024071). Pearson Island: North Bay, Pearson Island, 6.i.1969, *D. Symon 6603* (AD 97544530); North Pearson Island, 14.ii.1960, *R.L. Specht* (AD 966071063).

An uncommon narrow-leaved variety bearing some resemblance in foliage and inflorescence to *S. cunninghamii* var. *cunninghamii* but distinguished from the latter and allied to *S. odoratus* by its prominent reticulate leaf venation and, when present, sparse arachnoid pubescence on the lower leaf surface. Care should be used in interpreting small sprigs of *S. odoratus* only a few cm long, as leaves of the typical variety are frequently reduced and almost linear on axillary shoots towards the inflorescence but larger and oblanceolate or obovate on the older stems.



Fig. 1. Flowering branches of A, *Senecio odoratus* var. *odoratus* (Eichler 15477); B,—var. *longifolius* (Cleland AD 97245349; holotype); C,—var. *obtusifolius* (Lawrence 610); D, *S. cunninghamii* var. *cunninghamii* (Cleland AD 97245383); E,—var. *serratus* (Cunningham s.n.; holotype). (All  $\times \frac{1}{2}$ ).

***Senecio cunninghamii* DC., Prodr. 6:371 (1838), as *cunninghami*.**

*Type: Cunningham* (Holotype: G); Prodr. Herbarium, vi.371 no. 164; a specimen of unknown provenance, which, according to the note attached, was received by Candolle admixed with *Cunningham 130*, the type of *S. georgianus*; photo seen.

*S. brachylaenus* DC., Prodr. vi:370 no. 163 (1838).

*Type: Banks of the Lachlan River, Cunningham 142*, vi.1817 (Holotype: G-DC; photo seen).

var. ***serratus* M.E. Lawrence, var. nov.**

*S. cunninghamii* sensu Benth., Fl. Austral. 3:671 (1866), *pro parte*; sensu Black, Fl. S. Austral. 613 (1929), *pro parte: non* DC., Prodr. 6:371 (1838).

*S. cunninghamii* form 2 (arid zone) M.E. Lawrence, Aust. J. Bot. 28:154 (1980).

*S. sp.* (aff. *S. cunninghamii*) G.M. Cunn. *et. al.*, Pl. West. N.S.W. 675, text and fig. (1981); M.E. Lawrence, Fl. Cent. Austral. 385 (1981).

*S. sp. F* (aff. *S. cunninghamii*) Jacobs and Pickard, Pl. N.S.W., Census 86 (1981), cited as in Northern Far Western Plains.

*Suffrutex* ad 100 cm altum, saltem partibus juvenilibus et saepe involucris cum tomento tenui albo cristato. *Folia* oblanceolata, serrata, serraturae saepe serrulatae, attenuata vel subpetiolata cum vel sine auriculis parvis denticulatis, tomentosa, demum glabrata. *Phyllaria* 3-4 mm long.

*Type: S. Aust. Chintapanna Dam, Witchelina Station, 13.iii.1979, F. Badman 182* (Holotype: AD 97927194, isotypes: COLO, G, HO).

*Etymology:* Latin *serratus*, serrate; referring to the saw-like teeth of the leaf margins.

*Subshrub* to 100 cm high, at least the youngest shoots and often the involucre with a fine white tomentum of crisped hairs. *Leaves* oblanceolate, serrate, the teeth sometimes again shortly toothed, basally narrowed or subpetiolate, with or without small toothed auricles, tomentose, becoming glabrate. *Phyllaries* 3-4 mm long. (Fig. 1E).

*S. cunninghamii* var. *serratus* is confined to central Australia, occurring in southern regions of the Northern Territory, the south-western corner of Queensland, north-western New South Wales, and north-central and north-eastern regions of South Australia. It is most frequent near areas of temporary impeded drainage on sand or clay, and less frequent on hillsides or open stony plains. Flowering occurs opportunistically throughout the year, with peaks recorded in September and May.

*Selected specimens examined* (collections seen: 122)

NORTHERN TERRITORY: Finke River, S. Glen Helen H.S., 4.ii.1955, *G. Chippendale* (AD 95910081); 1 mile N of Alice Springs, 12.xi.1963, *R. Swinbourne 774* (AD 96535160).

SOUTH AUSTRALIA: Maree-Dulkaninna track 5 miles from Maree, 23.ix.1956, *T.R.N. Lothian L2001* (AD 96224209); Mulgaria H.S. 30°14'S 137°38'E, 13.xii.1964, *P. Aitken* (AD 96506008); Roadside near Avondale on Talc Road from Lyndhurst, 4.iii.1966, *D.E. Symon 4044* (AD 97544259).

QUEENSLAND: Wilson River, ix.1922, *Dr McGillivray 903* (AD 97630543, no. 1 of 3 specimens, Herb. J.M. Black).

NEW SOUTH WALES: Mt Mulyah c. 50 miles NW Louth, vi.1968, *E.D. Arnay* (CANB 188080); Mt King Station near Tibooburra, 11.ix.1971, *Perry 5814* (CANB 254469).

Var. *serratus* differs from var. *cunninghamii* in both morphology and distribution; var. *serratus* has serrate leaves, a white tomentum on at least the young shoots, and occurs in central Australia; var. *cunninghamii* is a glabrous plant with entire leaves that occurs predominantly in the Murray-Darling drainage system. Occasional plants of somewhat intermediate morphology occur in the southern Flinders Ranges and northern Lofty regions of South Australia. They have short revolute entire leaves characteristic of rare collections of var. *cunninghamii* from Yorke Peninsula, and a white tomentum on the youngest shoots indicative of var. *serratus*.

**Senecio picridioides** (Turcz.) M.E. Lawrence, comb. nov.

*Type:* W. Aust., Swan River, *J. Drummond, 3rd collection: 132* (Isotypes: K, FI), *n.v.*

*Erechtites picridioides* Turcz. Bull. Soc. Imp. Nat. Mosc. 24:200 (1851); Black, Fl. S. Austral. 4:610 (1929). —*non* Sond. and F. Muell, ex Sonder, Linnaea 25:523 (1852) = *S. runcinifolius*.

*E. prenanthoides* DC. var. *picridioides* (Turcz.) Benth., Fl. Austral. 3:658 (1866).

*S. minimus* Poir. var. *picridioides* (Turcz.) R.O. Belcher, Ann. Mo. Bot. Gdn. 43:48 (1956).

*S. minimus* Robertson in Fl. S. Austral. 4:887 (1965) *pro parte, non* Poir. Lam. Ency. Meth. Bot. Suppl. 5:130 (1817).

*Erechtites picridioides* Turcz. was treated as a variety of *E. prenanthoides* by Bentham (1866) and as a variety of *Senecio minimus* by Belcher (1956). The treatment is inconsistent when compared with other varieties and species of *Senecio*. The lobed leaves and hispid vestiture of var. *picridioides* are quite different from those of var. *minimus* and the characteristic purple pigmentation of the leaves and stems of var. *picridioides* is approached only by *Arrhenechtites mixta* (A. Rich.) Belcher in the Senecioneae of Australia. The floral morphology of var. *picridioides* and var. *minimus* is similar, but on this ground alone, *S. bipinnatisectus* Belcher and perhaps also *S. biserratus* Belcher should have been treated as varieties of *S. minimus*. *S. minimus* var. *picridioides* is accordingly recognised at the specific level, as it was by Black (1929) in *Erechtites*. He likened it to his *E. prenanthoides*, which, as shown by Belcher (1956), is actually *Senecio biserratus* Belcher. Robertson compounded Black's error by reducing *E. picridioides* to a synonym of her *S. minimus*, which is partly *S. biserratus*, partly *S. picridioides*.

**Senecio gawlerensis** M.E. Lawrence, nom. et stat. nov.

*Type:* 10 miles W. Yardea, E.P., 24.viii.1928, *J.B. Cleland* (Lectotype selected here: AD 96822076!). Caroon, E.P., s. date, Dr W.L. Cleland (Syntype: AD 96822072!).

*S. georgianus* DC. var. *latifolius* J.M. Black, Fl. S. Austral. 613 (1929).

Black (1929) probably treated material from the Gawler Ranges as a variety of *S. georgianus* because the latter is the only discoid species with a high floret number (35-40) reported to occur in South Australia. The floret number of *S. gawlerensis* (15-20) is higher than in other South Australian discoid species (9-14) but is numerically closer to these than to *S. georgianus*. Furthermore, the leaves of *S. georgianus* are linear or lanceolate, entire or shortly toothed and arachnoid beneath at maturity, while those of *S. gawlerensis* are broad-lanceolate or ovate, deeply toothed or pinnatifid and glabrate at maturity. As the epithet *latifolius* has been used several times at the specific level in *Senecio*, the epithet *gawlerensis* was selected to reflect the restricted distribution of this species in the Gawler Ranges of South Australia. The J.B. Cleland specimen was chosen as lectotype as it has Black's notes and drawings.

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