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## A new species of *Senecio* from New Zealand

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**Abstract** *Senecio hauwai* ( $2n=60$ ) is described as a new endemic species found only on mudstone cliffs in a few coastal gullies between Lake Grassmere and Cape Campbell, and around White Bluffs, Marlborough. It is most closely related to plants of the *S. banksii/S. colensoi* complex described as *S. colensoi* var. *lobulatus* from the southern end of the range of that complex.

**Keywords** *Senecio hauwai*; new species; coastal Marlborough, Marfells Beach; mudstone; *S. colensoi* var. *lobulatus*; taxonomy; chromosome number.

### INTRODUCTION

Whilst visiting the Marlborough coast between Lake Grassmere and Cape Campbell in 1970, mainly to collect *Senecio glaucophyllus* and *S. lautus*, I discovered an unnamed species of *Senecio*. I first thought it to be a new adventive for New Zealand but subsequently it was found to be a local endemic closely related to the *S. banksii/S. colensoi* complex of eastern North Island.

### Taxonomy:

*Senecio hauwai* W.R. Sykes sp. nov. Fig. 1  
Herba perennis, semiprostrata usque erecta, foliis pinnatis semisucculentibus, in ambitu ± oblongis, foliolis dissitis secus rhachim latam dispositis. A *S. colensoi* diagnoscenda filicina foliorum dissectione, inflorescentia <4 cm alta et simplici vel 2–3-ramosa, capitulis 3–7 bracteis supplementariis basim ornatis, floribus radii nullis (in *S. colensoi* panicula 5–12 cm alta, capitulis 9–16 bracteis supplementariis ornatis, floribus radii conspicue aureis).

Holotypus: New Zealand, Marlborough, near Lake Grassmere, Marfells Beach, mudstone gully 21 March 1970, W.R. Sykes 83/70, CHR 201160.

Semi-prostrate or sprawling, occasionally suberect, much-branched, often dense, perennial herb. Stems woody towards base, up to c. 25 cm long and to c. 1 cm diameter, with scattered simple, ± curled hairs, especially when young. Petiole very short, usually <5 mm long. Leaves pinnate (except basal ones), 10–55 × 4–15 mm, ± oblong in outline, semi-succulent, generally pubescent with straight and curled hairs, these often dense on rachis below, sometimes leaf glabrous or glabrate; leaflets (7)–9–11, well-spaced along the broad rachis, opposite or subopposite in 4–5 pairs, each from <0.5 mm to 7 mm long, narrow-oblong to ± obovate, with 0–5 usually obtuse or rounded, occasionally acute, lobes or teeth.

Inflorescence from <1 to c. 4 cm high, erect, simple or with 1–3–(7) branches, with hairs as on non-flowering stems; capitula terminal, 5–8 mm diameter, broad-oblong. Stem bracts 2–5, 2–5 mm long, linear-lanceolate, glabrate or somewhat puberulent, with hairs as on stems, especially near margins. Supplementary bracts 3–7, 2–3 mm long, linear-lanceolate. Florets hermaphrodite; disc pale yellow; rays 0. Phyllaries (11)–13, 4–6 mm long, oblong-lanceolate, glabrous or nearly so; margin hyaline; apex obtuse; tip dark. Pappus hairs minutely plumose. Corolla infundibuliform. Anthers 1–1.5 mm long. Achenes 2.5–3.4 mm long, cylindrical, scabridulous in grooves; ribs 8–10, brown, broad. Fl. Nov.–Mar.  $2n = 60$  (E. J. Beuzenberg pers. comm.).

Etymology: *Hauwai* is the name of a tiny strip of coast near where the species was first found.

Distribution and habitat: *S. hauwai* is confined to a few mudstone cliffs in a few gullies on the Marlborough coast between Lake Grassmere and Cape Campbell and around White Bluffs north of the mouth of the Awatere River. The mainly bare mudstone surface supports few species and often *S. hauwai* is the only plant present. It may grow with *Plantago spathulata*, the other species most often found on the mudstone.



Fig. 1 Flowering plant of *S. hauwai* in cultivation at Lincoln, December 1985.

Additional specimens seen: Marfells Beach, mudstone gully, 21 March 1970, *W. R. Sykes* 79/70, CHR201162; Marfells Beach, mudstone slip, November 1971, *A. P. Druce*, CHR208914; Marfells Beach, mudstone gully, May 1974, *A. P. Druce*, CHR273158; Marfells Beach, mudstone gully, December 1975, *A. P. Druce*, CHR285757; Cape Campbell, vicinity of residence, July 1964, *G. I. Collett*, CHR153804; near Cape Campbell, on mudstone, 29 October 1970, *W. R. Sykes* 495/70, CHR211769; cultivated, Hutt Valley, Pinehaven, January 1977, *A. P. Druce*, CHR312930 (ex

Marfells Beach); White Bluffs, 300ft, soft mudstone cliff, 1 July 1985, *A. P. Druce and W. D. Burke*, CHR394301.

## DISCUSSION

Surprisingly, *S. hauwai* was apparently not collected until 1964 although it is very distinctive and grows in a readily accessible area. In addition to being close to a beach frequented for recreation, the habitat is just below cliff-top pastures of introduced

grasses on which stock graze. Because *S. hawaii*, with its generally almost prostrate habit, distinctive, finely dissected, almost fern-like foliage and relatively inconspicuous, 1–3-branched, short-stemmed inflorescences and small capitula lacking ray florets (Fig. 1) is so unlike any other indigenous New Zealand species of *Senecio*, I first thought that it was introduced. However, a literature search, especially in floras of Australia, southern Africa, and extra-tropical South America, failed to reveal any species with characters approaching *S. hawaii*.

*S. hawaii* has  $2n = 60$ , as do many other New Zealand species including some now referred to *Brachyglottis* (Nordenstam 1978). However, the basal cells of the anther filament collar in *S. hawaii* are dilated and thickenings of the endothelial cells are distributed over all cell walls as in senecioid rather than cacalioid Senecioneae.

*S. hawaii* is therefore referable to *Senecio* (*sensu stricto*) rather than to *Brachyglottis* and its closest relatives are likely to be among the species indigenous to New Zealand. Those besides *S. hawaii* which have  $2n = 60$  are the *S. banksii*/*S. colensoi* complex and the erectitoid species (Beuzenberg 1975). However, the N.Z. erectitoid species all have narrow cylindrical capitula with filiform outer florets, as opposed to broadly oblong capitula and tubular outer florets in *S. hawaii*.

Plants in the *S. banksii*/*S. colensoi* complex vary considerably among populations and it is here that relationships with *S. hawaii* are evident. Allan (1961) treated glabrous plants with crenately-toothed, amplexicaul leaves, corymbose panicles, and rayed capitula on long peduncles as *S. banksii* Hook. f. He treated lanate plants as *S. colensoi* Hook. f., and included the more northern and much less hairy plants most similar to *S. banksii* in var. *colensoi*. He described two other varieties, of which *S. colensoi* var. *lobulatus* Allan, from the Wairarapa and southern Hawke's Bay coasts, is closest to *S. hawaii* mainly because the leaf dissection is greater and the hairiness less than in other varieties. Thus, var. *lobulatus* has pinnatifid to pinnatisect leaves as compared to the more shallowly-lobed or merely toothed leaves of var. *colensoi* or var. *obtusifolius* Allan.

Whilst there is little doubt that *S. hawaii* is related to *S. colensoi*, it is distinct in several characters and in general appearance is markedly dissimilar. Even in var. *lobulatus* the lobes are ovate or broadly oblong and thus larger and much wider

than in *S. hawaii*. Also, the leaves of *S. colensoi* are generally lanate beneath and, although some specimens of var. *lobulatus* are merely densely hairy, they never have as few hairs as in *S. hawaii*. In plants of the three varieties of *S. colensoi* the rayed capitula are aggregated in conspicuous,  $\pm$  corymbose panicles with the main rachises usually between 5 and 12 cm long, and there are usually 9–16 supplementary bracts at the capitulum base, more than the 3–7 below the rayless and often single capitulum of *S. hawaii*. Plants referred by Allan (1961) to *S. colensoi* and its varieties usually grow on limestone, as well as mudstone, cliffs either inland or on the coast, and have been collected up to 600 m.

In the area of Marlborough where *S. hawaii* grows, *S. glaucophyllus* Cheeseman is also present, and in one gully close to Marfell's Beach, *S. glaucophyllus* and *S. hawaii* are in close proximity. *S. glaucophyllus* often has a similar herbaceous habit to *S. hawaii*, but it differs in its much less dissected leaves, its rayed capitula, and a chromosome complement of  $2n = 100$  (Ornduff 1960).

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