

Carmichaelia arborea

COMMON NAME

South Island broom, tree broom, swamp broom

SYNONYMS

Carmichaelia grandiflora var. *alba* Kirk; *Carmichaelia grandiflora* var. *dumosa* Kirk; *Lotus arboreus* G.Forst.; *Carmichaelia australis* var. *grandiflora* Hook.f.; *Carmichaelia grandiflora* (Hook.f.) Hook.f.;

FAMILY

Fabaceae

AUTHORITY

Carmichaelia arborea (G.Forst.) Druce

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

CARARB

CHROMOSOME NUMBER

2n = 32

CURRENT CONSERVATION STATUS

2017 | Not Threatened

PREVIOUS CONSERVATION STATUSES

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

BRIEF DESCRIPTION

Shrub with many erect green branches inhabiting wetter South Island mountains. Branches green, grooved, oval in cross section. Leaves small, distributed along branches, consisting of 1-5 leaflets. Flowers small, pea-like, white sometimes with a purplish centre, in erect clusters. Fruit in a small dry pod, seed flattened.

DISTRIBUTION

Endemic. New Zealand: South Island (west of the Main Divide in Westland, Canterbury, Otago, and Southland; uncommon to the east of the Main Divide in Canterbury)

HABITAT

Lowland to montane. Inhabiting glacial moraine, river terraces, subalpine scrub, rock outcrops and cliffs, forest margins, and recently disturbed ground.

WETLAND PLANT INDICATOR STATUS RATING

FACU: Facultative Upland

Occasionally is a hydrophyte but usually occurs in uplands (non-wetlands).



Homer tunnel, February. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



Carmichaelia arborea. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.

DETAILED DESCRIPTION

Shrub, up to 2 × 2 m; sometimes suckering and forming broad patches up to 1 m tall. Branches up to 80 mm diameter, stout, ascending and spreading. Cladodes 70.0-150.0 × 1.5-3.0 mm, erect to spreading, sometimes drooping, rarely divaricate, linear, striate, compressed, green to dark green, sometimes hairy when young, glabrous when mature, apex obtuse; leaf nodes 4-11. Leaves 1-5-foliolate, present on seedlings and on adult plants, terminal leaflet larger; lamina 2.0-7.0 × 1.5 mm, obovate, broad-obovate to broad-elliptic, fleshy, green, upper surface glabrous, lower surface glabrescent, apex emarginate, base cuneate; petiole 7-11 mm long, glabrous except for a tuft of hairs at petiolule base, green; petiolule < 0.5 mm long, glabrous, light green. Leaves on cladodes reduced to scales, < 0.8 mm long, broad-triangular, glabrous, apex subacute. Stipules 0.9-1.3 × 1.0-1.4 mm, free, triangular, glabrous, apex subacute with a tuft of hairs, margin hairy. Inflorescence a raceme, 1 per node, each with 5-10 flowers clustered on upper third of raceme. Peduncle c.8 mm long, glabrous, green. Bracts < 1 mm long, triangular, pale brown, upper surface hairy, lower surface glabrous, apex acute to subacute, margin hairy. Pedicel 1-1.5 mm long, glabrous, green. Bracteoles < 0.5 mm long, on upper part of pedicel or on receptacle, pale brown, upper surface hairy, lower surface glabrous, apex subacute to obtuse and with tuft of hairs. Calyx 3.0-3.5 × 2.0-2.5 mm, campanulate, green, outer surface glabrous. Calyx lobes 0.5-1.0 mm long, triangular, inner surface hairy, appressed to corolla, apex acute. Standard 6.0-6.5 × 7.0-8.0 mm, broad-obovate, patent, positioned towards front of keel, keeled, apex retuse or obtuse with an apiculate tip; white or with a pale central blotch, veins sometimes weakly flushed red-purple; claw c.1 mm long, pale green. Wings 6.0-7.0 × 1.5-2.0 mm, oblong, longer than keel, white, apex obtuse; auricle 0.2-0.3 mm long, triangular; claw 1.8-2.0 mm long, pale green. Keel 5.0-6.0 × 1.5-1.8 mm, white, apex obtuse; auricle 0.3-0.5 mm long, triangular, white; claw 2-2.5 mm long, pale green. Stamens 4.5-5.0 mm long; dorsal filaments connate for c. $\frac{3}{4}$ of length, outer stamens free for c.0.8 mm. Pistil 5-6 mm long, exerted beyond stamens, glabrous; ovules 8-11; stigma with a ring of hairs at base. Pods 7.0-15.0 × 2.7-4.5 mm, oblong or broad-oblong, laterally compressed, erect, light grey or pale brown, both valves dehiscent at distal end; beak 2.0-2.5 mm long, in a central apical position, stout, pungent tipped. Seeds 1-3 per pod, 2.0-3.7 × 1.6-2.4 mm, broad-oblong to broad-elliptic, light brown or tan.

SIMILAR TAXA

Carmichaelia arborea is allied to *C. odorata* Benth. from which it is distinguished by the shorter peduncle and rachis, fewer, larger, mostly white flowers, with keels 5-6 mm long (cf. 3.5-4.0 mm long), and larger pods.

FLOWERING

December - March

FLOWER COLOURS

Violet/Purple, White

FRUITING

January - December

LIFE CYCLE

Seeds are possibly dispersed by wind and granivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easily grown from seed and hardwood cuttings.

ETYMOLOGY

carmichaelia: After Carmichael, a botanist

arborea: From the Latin arbor 'tree', meaning tree-like

ATTRIBUTION

Description from Heenan (1996)

REFERENCES AND FURTHER READING

Heenan, P.B. 1996: A taxonomic revision of *Carmichaelia* (Fabaceae - Galegeae) in New Zealand (part II). *New Zealand Journal of Botany* 34: 157-177

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 2009 Vol. 11 No. 4 pp. 285-309

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/carmichaelia-arborea/>