

Carmichaelia kirkii

COMMON NAME

Climbing broom, Kirk's broom

SYNONYMS

Carmichaelia gracilis J.B.Armstr., *C. kirkii* var. *strigosa* G.Simpson

FAMILY

Fabaceae

AUTHORITY

Carmichaelia kirkii Hook.f.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

CRMKIR

CHROMOSOME NUMBER

2n = 32

CURRENT CONSERVATION STATUS

2012 | Threatened – Nationally Vulnerable | Qualifiers: RF

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Declining | Qualifiers: RF

2004 | Threatened – Nationally Endangered

BRIEF DESCRIPTION

Sprawling or climbing nearly leafless greyish brown shrub. Twigs many, rounded, slightly grooved. Leaves few except in shaded sites or on young plants. Flowers whiteish with darker purple centre, pea-like, in small clusters. Fruit a small sharp-tipped dry pod partly splitting to release the small white mottled hard seeds.

DISTRIBUTION

Endemic. Eastern South Island, from the Awatere River south to Otago

HABITAT

A plant of moderate to high fertility sites. Usually associated with grey scrub communities particularly those along riverbanks and gorges, or on poorly drained river terraces. It is often associated with totara (*Podocarpus totara* var. *totara*) forest, and has also been found in carex dominated wetlands, or within kahikatea (*Dacrycarpus dacrydioides*) dominated forest.



Carmichaelia kirkii. Photographer: John Barkla



Carmichaelia kirkii. Photographer: Colin Ogle

FEATURES

Vine 1-3 m tall, usually climbing, scrambling or sprawling, very rarely a bushy shrub. Branches up to 40 mm diameter, ascending and spreading. Cladodes 70-420 x 1.7-3 mm, spreading, sometimes divaricate, linear, striate, terete, green to bronze-green, hairy or glabrous; leaf nodes 4-12. Leaves 1-5-foliolate, present on seedlings and adults, particularly in shaded situations, terminal leaflet larger; lamina 4.5-8 x 2.5-6 mm, obovate to broad-elliptic, fleshy, green to bronze-green, usually glabrous but sometimes sparsely hairy, apex emarginated, base cuneate; petiole 6-25 mm, green or brown-green; petiolule 0.5-0.9 mm, glabrous, light green. Leaves on cladodes reduced to scales. Stipules 0.7-1 x 0.6-0.8 mm, free, triangular. Inflorescence a 1-5-flowered raceme, cladodes bearing 1-3 racemes per node. Peduncle 2-6 mm long, glabrous or hairy, green or red. Bracts 0.5-1.2 mm long, triangular, sparsely hairy. Pedicel 2.5-4 mm long, glabrous or hairy, green or red. Bracteoles 0.5 x 0.3 mm, narrow-triangular, on or near receptacle or lower part of pedicel, green or red. Calyx 4-5 x 2 mm, campanulate, green sometimes flushed red, glabrous or hairy. Calyx lobes 1.5-2 mm, narrow-triangular, green, usually flushed red. Standard 8-9 x 8.5-12 mm, orbicular or board-obovate, patent, positioned in central part of keel, weakly keeled, margins recurved, apex emarginated, rarely mucronulate; central portion of inner surface red-purple, margins white, sometimes purple-veined; outer surface white with a darkened central part. Wings 6-8 x 2.5-3.5 mm, oblong, shorter than keel, apex obtuse; outer surface white, proximal part pale green; inner surface sometimes purple-veined. Keel 8-9 x 3-3.5 mm, apex obtuse; distal part of inner surface red-purple, proximal part white or pale green. Stamens 6-5-8.5 mm long, dorsal filaments fused for $\frac{3}{4}$ of length, outer stamens free for 2 mm. Pistil 8.5-10 mm long, exerted well beyond stamens; style bearded on upper surface. Pods 12-18 x 4-5.8 mm, broad-elliptic, spreading, dark brown, grey-brown or yellow-brown, both valves partially dehiscent. Beak 3-6 mm long, stout, pungent-tipped. Seeds 2-3.5 x 1.7-2.5 mm, 2-5 per pod, off-white with black or dark purple mottling, broad-elliptic, reniform, oblong-reniform or rounded.

SIMILAR TAXA

Carmichaelia australis R.Br., leafless clematis (*Clematis afoliata*). Climbing broom has mottled seeds and prominently beaked pods, which persist throughout the year. *Carmichaelia australis* is a shrub rather than a climber. *Clematis afoliata* is always leafless.

FLOWERING

November-January

FLOWER COLOURS

Violet/Purple, White

FRUITING

January - June

LIFE CYCLE

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

PROPAGATION TECHNIQUE

Easy from seed or semi-hardwood cuttings. A beautiful lianoid shrub which is best treated as a climber, or allowed to grow up through another shrub. It does best in full sun, and though tolerant of dry conditions, grows better in moist ground. As with most *Carmichaelia* this species does not like humidity.

THREATS

Most *C. kirkii* populations occur on private land. The species is highly palatable and so vulnerable throughout its range of all browsing animals. Though recent surveys have discovered more populations leading to this species being one of few with a lower threat ranking in 2008 vs that in 2009, at many sites there is no recruitment. Several former populations appear to have gone extinct through excessive collection of specimens by botanists.

ETYMOLOGY

carmichaelia: After Carmichael, a botanist

kirkii: After Thomas Kirk (18 January 1828 - 8 March 1898), a NZ botanist and lecturer in natural sciences and regarded as a leader of botanical enquiry in NZ for over three decades. One of his most significant publications was Forest flora of NZ (1889) but he also contributed over 130 papers to the Transactions and Proceedings of the NZ Institute and other journals.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 13 June 2006. Description modified from Heenan (1996).

REFERENCES AND FURTHER READING

Heenan, P. B. 1996: A taxonomic revision of *Carmichaelia* (Fabaceae-Galegeae) in New Zealand. Part 2. *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

CITATION

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MORE INFORMATION

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