

Gastrodia cunninghamii

COMMON NAMES

black orchid, black potato orchid, pereii

BIOSTATUS

Native

CATEGORY

Vascular

STRUCTURAL CLASS

Orchids

FLOWER COLOURS

Brown, White

DETAILED DESCRIPTION

Terrestrial, saprophytic, deciduous, fleshy, perennial herb lacking chlorophyll. Plant at flowering up to 1.4 m tall. **Rhizome** mycorrhizal, tuberous, rather swollen, short-lived, extensively branched, individual sections up to 250 x 50 mm, dull pale brown to brownish-black, often covered in chartaceous scales and scale-leaves, especially toward the active apex. **Stem** 4–10 mm diameter, dark brown to brown-black with lighter brown coloured, small spots, erect, stout or slender, rather brittle when fresh. Scale leaves widely spaced, chartaceous. **Flowers** up to 100, unscented, erect to pendulous (rarely with the flower touching the stem axis), tuberculate, tubercles paler in colour. **Perianth** 14–20 × 4–6 mm, brownish, brownish-black, or greenish; lobes slightly thickened toward margins. **Lateral sepals** fused slightly above the gibbous base but with their margins lying close together, often more or less overlapping.

Labellum 10 × 4 mm, white or cream, membranous, not irritable, completely enclosed within floral tube (apex just visible), oblong, trilobed, base thickened, twisted and fused for most of length of perianth-tube, lateral-lobes with upturned, irregular, crenate-cristate, margins; mid-lobe yellowish with flat but irregular margins, bearing several long median, cristate, yellowish calli, apex black or brown. **Column** much shorter than labellum, wing minute, present as a more or less curved process; anther terminal, erect and bending forwards, short and broad, operculate, filament transversely pleated at the back, pollen breaking into angular granules; stigma basal, immediately below anther, broadly ellipsoid, hollow; rostellum flap-like, positioned under anther.

SIMILAR TAXA

Gastrodia cunninghamii is most likely to be confused with *G. cooperae* and *G. molloyi*, species from which it is easily distinguished by the short rather than long column (thus the column is not visible at the flower mouth). From *G. sesamoides* it is distinguished by the tuberculate surfaces of the stem and flowers, and short, rather than long column.

DISTRIBUTION

Endemic. North Island (uncommon north of Waikato), South Island, Stewart Island/Rakiura, Chatham Islands.

HABITAT

Usually montane and mostly in forests dominated by beech (*Fuscospora* (R.S.Hill & J.Read) Heenan & Smissen). Often found in montane pine forest plantations. Sometimes found at lower elevations in dark hollows within forest, especially in naturally cold sites.



Butterfly Creek, Eastbourne. Photographer: Jeremy R. Rolfe, Date taken: 23/12/2006, Licence: CC BY.



Longitudinal section showing short column at base of flower. Silverstream, Upper Hutt. Photographer: Jeremy R. Rolfe, Date taken: 10/01/2010, Licence: CC BY.

CURRENT CONSERVATION STATUS

2023 | Not Threatened

DETAILED TAXONOMY

FAMILY

Orchidaceae

AUTHORITY

Gastrodia cunninghamii Hook.f.

SYNONYMS

None

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

ECOLOGY

FLOWERING

October–March

FRUITING

December–May

LIFE CYCLE

Minute seeds are wind dispersed (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

A saprophytic species which should not be removed from the wild. Difficult to grow.

OTHER INFORMATION

CULTURAL USE/IMPORTANCE

The tubers were a much sought after food by Māori.

ETYMOLOGY

gastrodia: Belly tooth (flower centre)

cunninghamii: Named after Allan Cunningham (1791–1839) who was an English botanist and explorer, primarily known for his travels to Australia (New South Wales) and New Zealand to collect plants. Author of *Florae Insularum Novae Zelandiae Precursor*, 1837–40 (Introduction to the flora of New Zealand).

MANAAKI WHENUA ONLINE INTERACTIVE KEY

[Key to native orchids of New Zealand](#)

NVS CODE

GASCUN

CHROMOSOME NUMBER

2n = c.40, 40

PREVIOUS CONSERVATION STATUSES

2017 | Not Threatened

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

REFERENCING AND CITATIONS

REFERENCES AND FURTHER READING

Given DR. 1959. An unusual occurrence of *Gastrodia cunninghamii* Hooker. *Auckland Botanical Society Journal* 16: 3–4.

Moore LB, Edgar E. 1970. Flora of New Zealand, Volume II. Indigenous Tracheophyta: Monocotyledones except Gramineae. Government Printer, Wellington, NZ. 354 p.

Rolfe J. 2017. Guide to New Zealand Gastrodia (Orchidaceae) (pdf, 5Mb)

Thorsen MJ, Dickinson KJM, Seddon PJ. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309. <https://doi.org/10.1016/j.ppees.2009.06.001>.

ATTRIBUTION

Fact Sheet prepared by P.J. de Lange (14 April 2008). Description adapted from Moore and Edgar (1970)

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NZPCN FACT SHEET CITATION

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<https://www.nzpcn.org.nz/flora/species/gastrodia-cunninghamii/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/gastrodia-cunninghamii/>

PDF DATE

12 October 2024