

# Gastrodia cooperae

## COMMON NAME

Cooper's black orchid

## SYNONYMS

None - first described in 2016

## FAMILY

Orchidaceae

## AUTHORITY

*Gastrodia cooperae* Lehnebach et J.R.Rolfe

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Orchids

## CURRENT CONSERVATION STATUS

2018 | Threatened – Nationally Critical

## PREVIOUS CONSERVATION STATUS

2016 | Threatened – Nationally Critical

## BRIEF DESCRIPTION

A terrestrial, parasitic orchid (all parts without chlorophyll). Plants with tubers, producing numerous stems. Flowers fragrant, numerous pendulous, dark brown—green, labellum evident at flower mouth, apex dark brown—black.

## DISTRIBUTION

Endemic. New Zealand, North and South Islands (Wairarapa, North-West Nelson)

## HABITAT

*Gastrodia cooperae* is known in the North Island from a small area of rawirinui (*Kunzea robusta*) forest, and from the South Island from southern beech (*Fuscospora solandri*) forest. *Gastrodia cooperae* seems to have a similar ecology to *G. cunninghamii* with which it is syntopic in the South Island and once was in the North Island sites where *G. cooperae* historically occurred.



Under *Kunzea robusta*, Wairarapa.  
Photographer: Jeremy Rolfe



Tip of column visible below dark tip of labellum.  
Wairarapa. Photographer: Jeremy Rolfe

## FEATURES

Terrestrial, parasitic (on fungi), leafless, achlorophyllous, herb. Rhizome tuberous, pale brown. Plant 220–360–455–960 mm tall at flowering. Stem solitary, glabrous, dark to pale brown with greyish longitudinal streaks; 1.2–1.6–2.6–4.5 mm diameter. Inflorescence erect, terminal, flowers 6–40, scented, erect when developing and pendulous at anthesis. Floral bract papery, glabrous, deltoid to widely deltoid, apex acute, 2.1–6.6 × 1.6–2.2 mm. Pedicel 1.6–5.3 mm long. Perianth tube 4.9–10.4 × 2.5–5.3 mm, brown to dark brown, surface with pale green to gray wartlike elevations. Sepals reflexed, white to pale green abaxially; margin entire to slightly irregular towards the apex; apex acuminate. Petals adnate to the tube formed by the sepals, oblong, 3.0–3.4 × 1.3–1.8 mm, white on both sides; margin irregular, apex obtuse to round. Labellum 6.5–10.8 mm long; adnate to the base of the perianth, fleshy. Hypochile pale brown, covered with pseudo-pollen, margin entire. Mesochile strongly contracted; margins entire. Epychile trilobed, white at the base to pale yellow towards the apex. Lateral margins incurved, entire in the basal portion then irregularly crenate to cristate towards the apex. Labellum apex fleshy, dark brown to black. Two pale yellow ridges covered in pseudo-pollen extend from the mid-section of the epychile to the apex where they join. Column erect, 5.4–7.8 mm tall, narrow at base and wide towards the apex, 1.2–2.0 mm wide. One oblong or two deltoid wings flank the rostellum. Pollinia two; rostellum flap like, positioned under anther. Stigma at base of the column, ovate. Ovary 3.7–4.6 × 6.1–6.7 mm long, brown with a few greyish wart-like elevations. Capsules upright when mature; seeds pale brown

## SIMILAR TAXA

Allied to *Gastrodia cunninghamii*, *G. molloyi* and *G. sesamoides*. From *Gastrodia cunninghamii* it is easily distinguished by the long rather than short column (thus the column is not visible at the flower mouth). From *G. sesamoides* it can be distinguished by the dark brown to black rather than pale brown to cream or pale pink perianth, and by the tuberculate rather than smooth stem and flower surfaces. From *Gastrodia molloyi*, *G. cooperae* differs by the dark brown to black rather than greenish gold to golden brown perianth; and by the labellum apex which is dark brown to black rather than yellow to orange.

## FLOWERING

December - January

## FLOWER COLOURS

Brown, White

## FRUITING

January - February

## PROPAGATION TECHNIQUE

A parasitic species (on fungi) which should not be removed from the wild

## THREATS

Historically recorded from several North Island sites - from two of which it now seems to be extinct (the reasons why are not clear). The extant populations (three, one North Island, two South Island) are believed to comprise fewer than 250 mature individuals so making this species 'Threatened / Nationally Critical, Criterion A1 (Lehnebach et al. 2016; Townsend et al. 2008). While no threats have been documented, the larger *Gastrodia* species are browsed by possums (*Trichosurus vulpecula*), and vulnerable to plant collectors.

## ETYMOLOGY

**gastrodia:** Belly tooth (flower centre)

**cooperae:** In recognition of Dorothy 'Dot' A. Cooper (1941–) who established the New Zealand Native Orchid Group and who authored the Field Guide to New Zealand orchids, which led to the recognition of this species as distinct

## ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange (1 October 2016). Description from Lehnebach et al. (2016)

## REFERENCES AND FURTHER READING

Lehnebach, C.A.; Rolfe, J.R.; Gibbins, J.; Ritchie, P. 2016: Two new species of *Gastrodia* (Gastrodieae, Orchidaceae) endemic to New Zealand. *Phytotaxa* 277: 237–254.

Townsend, A.J.; de Lange P.J.; Duffy, C.A.J.; Miskelly C.M.; Molloy J.; Norton D.A. 2008: New Zealand Threat Classification System manual. Department of Conservation, Wellington. 35 pp.

[NZPCN \*Gastrodia\* Key prepared by Jeremy Rolfe \(pdf, 5Mb\)](#)

### **NZPCN FACT SHEET CITATION**

Please cite as: de Lange, P.J. (Year at time of access): *Gastrodia cooperae* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/gastrodia-cooperae/> (Date website was queried)

### **MORE INFORMATION**

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