

Gastrodia molloyi

COMMON NAME

Molloy's potato orchid

SYNONYMS

None—first described in 2016.

FAMILY

Orchidaceae

AUTHORITY

Gastrodia molloyi Lehnebach et J.R.Rolfe

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Orchids

CURRENT CONSERVATION STATUS

2017 | Not Threatened

BRIEF DESCRIPTION

A terrestrial, saprophytic orchid (all parts without chlorophyll). Plants with tubers, producing numerous stems. Flowers numerous pendulous, golden-brown to dark green, fragrant.

DISTRIBUTION

Endemic. New Zealand: North Island (widespread from South Auckland southwards), South Island, Stewart Island/Rakiura.

HABITAT

Gastrodia molloyi is often found in disturbed sites including, willow car, flood-prone waterways, tracksides where it may be found growing amongst exotic weeds and grasses, and in forests (especially silver beech (*Lophozonia menziesii*) forest. It is also known from indigenous forests dominated by tawa (*Beilschmiedia tawa*), rawirinui (*Kunzea robusta*), Nothofagaceae and scrublands dominated by *Kunzea* species or kahikato (*Leptospermum scoparium* agg.).



Under *Kunzea robusta*, Wairarapa.
Photographer: Jeremy R. Rolfe, Date taken: 14/01/2010, Licence: CC BY.



Perianth cut away to show column and labellum. Wairarapa. Photographer: Jeremy R. Rolfe, Date taken: 14/01/2010, Licence: CC BY.

DETAILED DESCRIPTION

Terrestrial, saprophytic, leafless, achlorophyllous herb. Plant 296–800 mm tall at flowering. **Rhizome** tuberous, pale brown to blackish, often covered in papery scales. **Stem** solitary, glabrous, golden brown to pale pink-greyish, with gray-whitish longitudinal streaks; 1.8–8.5 mm diameter. **Stem bracts** 3–5, papery, glabrous, sheathing.

Inflorescence erect, terminal, flowers 12–55, densely arranged, non-resupinated, nectarless, scented, erect when developing and pendulous at anthesis. **Floral bract** papery, glabrous, deltoid, apex acute, 3.3–9.3 × 1.8–2.7 mm.

Pedicel 1.1–6.6 mm long. **Perianth tube** 7.7–14.1 × 2.3–7.6 mm, greenish gold to golden brown, surface with pale green to gray wart-like elevations. **Sepals** slightly 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, 2.7–4.4 × 1.3–2.0 mm, white on both sides; margin irregular, apex obtuse. **Labellum** 7.8–10.5 mm long; adnate to the base of the perianth, fleshy. **Hypochile** yellow to orange, covered in pseudo-pollen, margin entire. **Mesochile** strongly contracted; margins entire. **Epychile** trilobed, white. Lateral margins incurved, entire in the basal portion then irregularly crenate to cristate towards the apex. Two bright yellow to orange, warty ridges extend from the basal section of the epychile to the middle section, where they join and extend as one towards the apex. Pseudo-pollen accumulates on both sides of the ridge. **Labellum apex** fleshy, yellow to orange. **Column** erect, 6.8–7.9 mm tall, narrow at base and wide towards the apex, 2.5–3.7 mm wide. **Pollinia** two. **Rostellum** flap like, positioned under anther, flanked by one oblong or two deltoid column wings. **Stigma** at base of the column, ovate. **Ovary** 3.4–4.3 × 6.2–8.7 mm long, brown with a few grayish wart-like elevations. **Capsules** upright when mature; seeds pale brown.

MANAAKI WHENUA ONLINE INTERACTIVE KEY

Key to native orchids of New Zealand

SIMILAR TAXA

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

FLOWERING

December–March

FLOWER COLOURS

Green, Yellow

FRUITING

January–April

PROPAGATION TECHNIQUE

A saprophytic species that should not be removed from the wild.

THREATS

Gastrodia molloyi is widespread throughout most of NZ south of Auckland. It is, therefore, regarded as 'Not Threatened' using the criteria of Townsend et al. (2008)

ETYMOLOGY

gastrodia: Belly tooth (flower centre)

molloyi: The epithet "molloyi" honours Brian P. J. Molloy (1930–) an eminent New Zealand botanist, biosystematist, ecologist, and conservationist. Molloy's taxonomic interest covered New Zealand conifers, Melicytus, Pachystegia, Hebe, Leucogenes and especially New Zealand orchids.

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange (2 October 2016). Description from Lehnebach et al. (2016)

REFERENCES AND FURTHER READING

Lehnebach CA, Rolfe JR, Gibbins J, Ritchie P. 2016. Two new species of *Gastrodia* (Gastrodieae, Orchidaceae) endemic to New Zealand. *Phytotaxa* 277: 237–254. <https://doi.org/10.11646/PHYTOTAXA.277.3.2>.

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

Townsend AJ, de Lange PJ, Norton DA, Molloy J, Miskelly C, Duffy C. 2008. New Zealand Threat Classification manual. Department of Conservation, Wellington, NZ. 35 p.

<https://www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf>.

NZPCN FACT SHEET CITATION

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MORE INFORMATION

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