

***Pterostylis puberula* – a new record for Great Barrier Island and first record for the Auckland Region in 74 years**

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Introduction

Aotea, Great Barrier Island, has a rich indigenous flora with nearly 600 vascular plant species, which is about a quarter of New Zealand's total (Cameron et al. 2002; Cameron 2004; Wellington Botanical Society 2008). Among the special features of Great Barrier Island's vascular plants are two endemic species, 20 species at their northernmost geographic limits, and two species at their southernmost (Cameron 2005; E. Cameron pers. comm.). Native orchid diversity for the island is significant, with approximately 48 species having been recorded (Cameron 2004). Although the vascular flora of Great Barrier Island is comparatively well-studied, there are still species to be found, as noted in the recent recording of *Gleichenia inclusisora* and *Hymenophyllum villosum* near Hirakimata, Mount Hobson (Perrie et al. 2019).

On the 18 September 2020, Anna Baird, Danielle McBride, Madara Vilde and I set off from Windy Canyon to spend the night in the Mt Heale Hut and were pleasantly surprised to find the dwarf green hood (*Pterostylis puberula* Hook. f.).

The dwarf green hood was first described in 1853 by Joseph Hooker (Hooker 1853). The orchid is endemic to New Zealand, with a national conservation status of Threatened-Nationally Vulnerable (with the qualifiers of Extreme Fluctuations and Sparse; de Lange et al. 2018). The species has been recorded from the Three Kings Islands, the North Island Te Pahi to Waikato, southern Coromandel Peninsula, Wellington and Northwest Nelson (de Lange 2021).

The orchid is small and silvery-green in appearance (up to ~12 cm tall) with a basal rosette of stalked trowel-shaped leaves, and more narrow sessile leaves extending up the stem (Fig. 1). The stems are covered in short stiff white hairs, hence the name 'puberula' (downy) (Fig. 2). The single flower is green with white streaks and appears 'chinless' (J. Collings pers. comm.), the lateral sepal being pulled in and covered by the blunt-ended dorsal sepal, and the lateral sepal tips extending well above the flower (Figs. 1 & 3).



Figs. 1–3: 1. Whole plant showing flower in lateral view, and narrow stem leaves. Photo: Jack Warden. All photos taken 18 Sep 2020. 2. Showing basal rosette and downy stem. Photo: Jack Warden. 3. Showing flower with blunt ended dorsal sepal which was sometimes notched. Photo: Jack Warden.



Fig. 4. Jack, orchid photographer, and an enthusiastic helper, Madara Vilde. Photo: Anna Baird.



Fig. 5. General habitat and locality of dwarf greenhood orchid. Photo: Danielle McBride.



Fig. 6. Anna Baird and Danielle McBride spot another orchid for Jack to photograph. Photo: Madara Vilde.

Flowering of the dwarf green hood on Great Barrier Island seems to be common around September, with other orchids noted in flower at the time including *Caladenia alata*, *Corybas acuminatus*, *Corybas oblongus* and *Pterostylis trullifolia*.

The dwarf green hood was occasional along sections of track generally around 300–400 m elevation, generally associated with the rhyolite lava and associated deposits (GNS Science 2021). The orchid was generally observed growing on exposed track edges thrusting through a thick mat of bryophytes atop of exposed rhyolite among stunted or regenerating native vegetation (~1–6 m tall) (Figs. 4–6).

Conclusions

This new record for Great Barrier Island is available to view from the iNaturalist website and herbarium specimens will hopefully follow. The discovery adds another orchid species to the Great Barrier Island flora.

Based on specimens in the Auckland Museum herbarium (AK) it has been frequently collected on the clay soils of west Auckland and Silverdale in the past. However, it was last collected there in 1947, making the observation on Great Barrier Island the first recorded one in the Auckland region for 74 years.

Applying the criteria of Townsend et al. (2008), this orchid species would likely qualify as 'Regionally Critical' if our brief survey overestimated its extent and it occupies less than 1 ha, especially with the decline of wetland / gumland habitat in the region. Further surveys for the dwarf green hood in September would be warranted to confirm the extent of this new addition to the Great Barrier Island flora.

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***Leptinella rotundata* revisited: An unfolding story**

John Rugis, Cameron Kilgour

Introduction

In 2020, one of the authors (John) relocated to Waimauku, west of Auckland near the Muriwai coast. Shortly after the move, John came into contact with the Muriwai Environmental Action Community Trust (MeACT) and local resident Michael (Mike) Fitchett. Mike does pest control as part of the MeACT's Muriwai Penguin Project (Fig. 1) and, for

that work, has access across private land to coastal cliffs and shoreline. Mike mentioned to John that, along one of his trap lines, he spotted what he thought could be the rare plant *Leptinella rotundata*. In February 2021, John accompanied Mike to that site and confirmed that the plant was in fact *L. rotundata* (Fig. 2). A question arose: Was this a new discovery?



Fig. 1. Michael Fitchett attending to a Muriwai Penguin Project breeding box. All photos by J. Rugis on 21 Feb 2021 (unless otherwise stated).



Fig. 2. The threatened – nationally endangered plant, *Leptinella rotundata*, Muriwai coast. Scale bar = 1 cm.