

The native flora of Auckland's bowling greens

Rhys Gardner

In his wide-ranging Lucy Cranwell Lecture for 2022 urban ecologist Dr Colin Meurk mentioned even our bowling greens as habitat for native herbs. My interest in these places dates back to a time when Alan Esler showed me an unfamiliar crassula from a local green. That plant, and my own finds (all from central Auckland) are listed below.

Firstly, some background. I began my searches in the mid-1980s. At that time, bowling clubs employed professional greenkeepers, who were fastidious about the composition of their greens (and did not encourage botanical collecting). As I recall, fine-leaved grasses were still in use, but some of the best greens were 'maniototo' swards, composed of the little creeping daisy *Leptinella maniototo* (McMenamin 1976; Anon. 2019; Figs. 1, 2; Notes 1, 2). This South Islander, a perennial daisy-herb of tarn edges and other cyclically wet-and-dry, silty habitats, was brought up to Auckland in winter as 'groovings' (machine-cut narrow strips of turf). These were obtained from South Island clubs and perhaps specialist nurseries too. Greens that had worn out during summer and autumn would be denuded of their remaining turf, resurfaced with groovings, and watered and rolled. This repair would have to be done every several years because other native herbs (*Plantago*, *Hydrocotyle*, etc.), which had been present inconspicuously in the groovings, would gradually increase and change the playing characteristics of the green (e.g. *Colobanthus apetalus*, Fig. 3). (The usual practice would be to get rid of them with herbicide, but this produced gaps; these could be filled with replacement 'plugs', but eventually both the gaps and the unwanted herbs would come to dominate).

Lloyd (1973: 322) has noted that, especially in the South Island in the 1960s and '70s, *Leptinella dioica* had been widely used, usually under the name *Cotula pulchella*, in what were widely termed (pace Dr Meurk) 'weed' bowling greens: "Plants have been introduced onto greens on a number of occasions since 1913 from natural populations, usually from Otago and Southland estuaries but occasionally from elsewhere...Now, after much transfer of plants between greens and intercrossing of the various populations, the cultivated material is very heterogeneous." Writing in 1949, E. Bruce Levy mentioned weed greens in the far south as being entirely of what he called *Cotula dioica*. He noted that *Dichondra repens* had been widely planted in the North Island, especially in drier areas (I have seen no examples); he also mentions in these greens four species of *Hydrocotyle* (Note 3).



Fig. 1. *Leptinella maniototo*. Compact growth with more or less linear, entire leaves. Flowering heads c. 3 mm diam. Balmoral Bowling Club. Photo: ROG 28 Dec 2021. Scale bar = 1 cm.



Fig. 2. *Leptinella maniototo*. Vigorously growing shoots from edge of green. Leaves to 1 cm long. Balmoral Bowling Club. Photo: ROG 30 Dec 2021. Scale bar = 1 cm.

More recently, a 'Grasslands Pahia' cultivar of *Leptinella dioica* has been reported as being particularly suitable for greens (Hickey et al. 1997). I have not found voucher specimens for it.

Of the plants of the South Island's bowling greens recorded below, only one species 'naturalises' in Auckland—no Great Regreening with southern herbs is imminent (cf. the behaviour of these plants in the suburban lawns of Bluff; Ford 2022). The exception,

though only to a slight degree, is starwort (*Plantago triandra*), which can spread by seed into the lower-level 'ditches' that surround the greens, but never further (Fig. 4). (Twice I have recorded "*Cotula dioica*" as growing in the ditches but this seems likely to have been just by dispersal of mown-off vegetative pieces). Of course, this restraint does not apply to the behaviour of two widespread and weedy natives, *Carex inversa* and *Oxalis exilis*. And possibly the *Lobelia angulata* belongs to a local race rather than a South Island one.

For a hundred years the sport of bowls has been one of the taken-for-granted aspects of our communities, where people from all walks of life could get to know one another, compete without violence or tribalism, and take refreshment in moderation. Recent years have not been kind to these groups: attendance has declined, health and safety problems have proliferated, and the task of keeping the greens playable has had to be taken over by club members. As a result, a substantial proportion of our greens have been lost to urban development, morphed into drinking clubs, or (just as bad from a botanical point of view) have gone over to artificial turf. At the time of writing,



Fig. 3. *Colobanthus apetalus*. Rocky Nook Bowling Club. Photo: ROG Jul 2021. Scale bar = 1 cm.



Fig. 4. *Plantago triandra*. Large plant (10 cm diam.) in pebble-filled ditch of green. Auckland B.C., Grafton Rd. Photo: ROG 21 Nov 2021. Scale bar = 1 cm.

I recommend anyone wanting to see 'maniototo' and fellow denizens to visit the greens at Grafton Road (Auckland B.C.), Nicholson Park (Mt Eden B.C.), Fowlds Park (Rocky Nook B.C.), Allendale Rd (Mt Albert B.C.), Mont Le Grand Rd (Balmoral B.C.), or Cornwall Park (Carlton B.C.). I have investigated only a few others around the city so possibly some new records are still to be made.

The records

The nine taxa here are arranged in alphabetical order. Auckland War Memorial Museum herbarium (AK) numbers are given for some; for others, the records are based on my own observations and recorded in my collecting books. Several records are from greens no longer in existence: Edendale Bowling Club, at Gribblehirst Park, Sandringham; Auckland Women's Bowling Club, 11A Royal Terrace, Sandringham; Mt Roskill Bowling Club, 17 Akarana Ave, Mt Roskill.

1. *Carex inversa* (Cyperaceae)

—28 April 1989, Edendale B.C., occasional in 'ditches'.

2. *Colobanthus apetalus* (Caryophyllaceae)

—AK 202983 (*ROG 6059*, 2 Jan 1990), Mt Eden B.C., Nicholson Park, uncommon weed of *Cotula* spp. bowling green.

—AK 340068 (*ROG 11004*, 5 July 2009), Rocky Nook B.C., Fowlds Park, a local component of last season's [newly recreated] bowling green turf. Some plants with a substantial rootstock, others apparently recently coming from seed. Flowers and unripe fruit. [Also recorded here at this time: *Lobelia angulata*, *Hydrocotyle microphylla* and a *Leptinella* with "heavily pitted leaves"].

3. *Crassula ruamahanga* (Crassulaceae)

—AK 220948 (*Esler*, c. 1980), Mt Albert B.C., Allendale Rd; in "bowling green lawn". 10 April 1989, Mt Albert B.C.; quite frequent on margins of especially the upper ("no.1") cotula green.

—18 April 1989, Rocky Nook B.C., Fowlds Park; abundant in all three greens and especially in the ditches, there with "*Cotula dioica*" [synonym of *Leptinella dioica* – Ed.].

—AK 198122 (*ROG 5666*, 27 April 1989), Auckland Women's B.C., infrequent in the ditches around the cotula green.

—2 Jan 1990, Mt Eden B.C., Nicholson Park.

—AK 291811 (*de Lange*, 2 Aug 2005), Rocky Nook B.C., weed in bowling green "gutters".

4. *Hydrocotyle microphylla* (Araliaceae)

—AK 215923, (*Stockdale*, 18 Jun 1979; herb. *Esler*), Mt Roskill B.C.

—AK 185608 (*ROG 5670*, 28 April 1989), Edendale B.C., luxuriant and common in the ditches.

5. *Leptinella dioica* subsp. *dioica* (Asteraceae)
—2 Jan 1990, Mt Eden B.C., Nicholson Park; quite common.
—11 Oct 2021, Rocky Nook B.C., Fowlds Park; locally abundant at edge of one of the greens, not seen in the ditches.

6. *Leptinella maniototo* (Asteraceae)
—28 Apr 1989, Edendale B.C., Gribblehirst Park; not nearly as abundant as "*Cotula* [*Leptinella*] *dioica*".
—AK 199869 (*ROG 6058*, 2 Jan 1990), Mt Eden B.C., Nicholson Park, quite common.
—30 Dec 2021, Balmoral B.C., Mont Le Grand Rd, green composed largely of this sp., which is flowering abundantly.

7. *Lobelia angulata* (Lobeliaceae)
—28 April 1989, Edendale B.C., occasional [on the greens]
—AK 206203 (*ROG 6060*, 2 Jan 1990), Mt Eden B.C., Nicholson Park, occasional weed of cotula green.
—29 Dec. 2022, Central B.C., Kiwitea Street, Mt Roskill; extensive flowering patches.

8. *Oxalis exilis* (Oxalidaceae)
—2 Jan 1990, Mt Eden B.C., Nicholson Park.

9. *Plantago triandra* subsp. *triandra* (Plantaginaceae)
—28 April 1989, Edendale B.C., occasional on the greens and a few larger plants in the ditches.
—2 Jan 1990, Mt Eden B.C., Nicholson Park.
—21 Nov 2021, Auckland B.C., Grafton Road, plentiful near outer edges of green and notably large specimens in the ditches.

References

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Notes

1. I am not sure when *L. maniototo* began to replace fine-leaved grasses on Auckland's greens. It has a practical advantage over other leptinellas—in winter it makes 'bulbils', very short, swollen, drought-resistant, abscission-prone, axillary shoots. These are said to be short-lived but are otherwise ideal for being transferred in the winter's consignment of groovings.

2. In Auckland the flowering heads of *Leptinella maniototo* appear in late December. They are conspicuous in a modest way by the red-flecked tips of the corolla tubes of the heads' inner (larger, anther-bearing) flowers. These flowers are nectar-bearing too (Lloyd 1972, p. 288), and I have seen tiny flies visiting the plant (Balmoral B.C., Dec 2021). I have not found any seed-bearing heads, although the search has been hampered (the greenkeepers are mowing, again!) by summer-grooming.

3. E.B. Levy (writing as Director of Grasslands Division DSIR) admitted that because fine-leaved grass greens were difficult to maintain it was reasonable for bowling clubs to want to work with weed greens; he could not resist saying though, that "To the connoisseur the weed green is vegetation run riot, untamed, untutored, unrefined; an ecological accident, the outcome of technical inefficiency." (Levy 1949: 24).

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Verbena bonariensis L. and *V. incompta* P.W.Michael (Verbenaceae) in Auckland

Rhys Gardner

Introduction

The two species of the title, and the closely related *V. brasiliensis* Vell., are native to South America. They are now found in many other countries,

including our own, as weedy naturalisations. In New Zealand *V. brasiliensis* is currently known only as a rare plant of the Hokianga region, so the focus of this article is just on distinguishing between the