

Three scree button daisies (*Leptinella*) of alpine South Island, New Zealand

Alan Jolliffe¹

Leptinella is a genus of mainly alpine plants belonging to the large daisy family Asteraceae (Compositae). For more than 100 years, *Leptinella* was relegated to a section of *Cotula*, before being reinstated by Lloyd and Webb in 1987.

More than 30 species of *Leptinella* occur in South Africa, South America, New Guinea, Australia, and New Zealand. However, the majority of species (24–25 spp.) are endemic (restricted) to the New Zealand mainland, Chatham Island and the Subantarctic Islands.

The three *Leptinella* profiled in this article are alpine species and subspecies restricted to the South Island of New Zealand. All three prefer mountain scree fields higher than 1,000 m above sea level (asl). They are discussed here because of their beauty, both in the wild and in cultivation, and to help with their correct identification which is sometimes confused.

While botanical descriptions are vital for accurate identification, photographic evidence is especially useful for the non-expert. Books with images have for many years provided good references for identifications. Whether line drawings, botanical paintings, or photographic images they are relatively easily accessed.

In today's modern world, the posting of photographic images on websites such as Facebook, Instagram, iNaturalist and the NZ Plant Conservation Network has opened up new and much more easily accessible resources for anyone interested in plants and natural history and can make it much easier to correctly identify plant species.

The three *Leptinella* dealt with here are:

- *L. atrata* subsp. *atrata*
- *L. atrata* subsp. *leuteola*
- *L. dendyi*.

***Leptinella atrata* subsp. *atrata* (black scree button daisy)**

Growing in rocky scree of the drier mountain areas of the South Island from Marlborough to North Otago (Fig. 1), this neat little alpine plant produces its unique and lovely flowers mainly from November to January. Its natural habitat is the many alpine screes on the mountains in a zone above 1,000 m asl.

Shooting up from buried rhizomes, the finely divided, feathery and hairy leaves grow in tufts between the scree stones (Fig. 2A–B). The leaves are almost succulent and their colour may vary from pale green or glaucous/grey green to deep purple depending upon location.

Flower stems, each bearing small leaf-like bracts, rise above the leaf tufts to a height of 3–12 cm and carry tight daisy-like heads (technically called capitula), 0.5–1.5 cm across, with many individual and tiny dark purple to near black flowers crammed together. Of special interest are the yellow male anthers encircling and rising above the dark floral disc in beautiful contrast.

This special plant grows well in pots or rock gardens provided there is good drainage. When cultivated and removed from an alpine environment, the flowering season of plants may be extended.

It was originally named *Cotula atrata* Hook.f. in 1864, and was renamed *Leptinella atrata* (Hook.f.) D.G.Lloyd et C.J.Webb subsp. *atrata* in 1987 as part of the reinstatement of *Leptinella* by Lloyd and Webb.

Twice this alpine *Leptinella* has appeared on New Zealand stamps issued by New Zealand Post (Fig. 3A–B).

***Leptinella atrata* subsp. *leuteola* (yellow scree button daisy)**

Rocky screes are a niche habitat for alpine plants, and finding *Leptinella atrata* subsp. *leuteola* growing in this habitat in full flower is a wonderful sight (Fig. 4A–B).

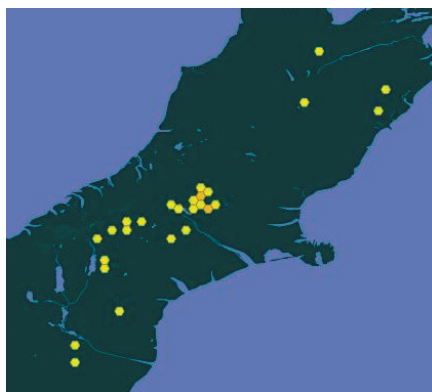


Fig. 1 Distribution map of *Leptinella atrata* subsp. *atrata* generated from GBIF data (<https://www.gbif.org/species/7065885>).



Fig. 2 *Leptinella atrata* subsp. *atrata*. **A**, habit of whole plant growing on Mt Hutt. Photo: Alan Jolliffe, December 2017. **B**, close-up of flower head (capitula) showing the dark coloured floral disc contrasting with bright yellow anthers. Foggy Peak. Photo: Alan Jolliffe, January 2013.

¹ 7 Greenbank Place, Waitikiri, Parklands, Christchurch 8083, New Zealand; jolliffea@rnzih.org.nz



Fig. 3 Stamps illustrating *Leptinella atrata* subsp. *atrata*. Images courtesy of New Zealand Post Collectables. **A**, issued on the 7th June 1972, this is one of a set of four 'NZ Alpine Plants' stamps designed by E. Mayo of Dunedin. **B**, one of six 'Native Alpine Flora' stamps released 13th February 2019.



Fig. 4 *Leptinella atrata* subsp. *luteola*, growing at Mt Lyford. Photos: Alan Jolliffe, 1st January 2015. **A**, habit of whole plant. **B**, close-up of flower head (capitula) showing the dark coloured central floral disc encircled by pale yellow stamens.

Shooting up from buried rhizomes the finely divided, feathery, hairy leaves which grow in tufts between the scree stones are similar to *L. atrata* subsp. *atrata*.

Flower stems rise above the leaf tufts to a height of 3–12 cm and carry tight daisy-like heads (capitula) 0.5–1.5 cm across. The many and minute individual flowers are a dark, purplish red when crammed together in the buds but upon opening appear pale lemon yellow, caused by a protruding mass of pale yellow stamens. Like the other subspecies, *L. atrata* subsp. *luteola* is a most attractive plant when seen in flower.

This subspecies is much less common of the two, with a localised distribution from eastern Marlborough to North Canterbury (Fig. 5), and has a conservation status of At Risk – Naturally Uncommon.



Fig. 5 Distribution map of *Leptinella atrata* subsp. *luteola* generated from GBIF data (<https://www.gbif.org/species/4250381>).

In cultivation it grows well in pots or a rock garden provided there is good drainage mimicking the alpine scree habitat.

Leptinella atrata subsp. *luteola* (D.G.Lloyd) D.G.Lloyd & C.J.Webb was originally described as a subspecies of *Cotula* by Dr David Lloyd in 1972. Metcalf (1993) suggests that it could be described as a separate species as it is morphologically and culturally different to *L. atrata* subsp. *atrata*. 'Luteola' means yellow referring to the light yellow florets.

Leptinella dendyi (Dendy's scree button daisy)

This is another attractive scree daisy which is similar to *Leptinella atrata* subsp. *atrata* and *L. atrata* subsp. *luteola* in leaf, growth habit, and flowering time.

Leptinella dendyi (Fig. 6) has larger and flatter flower heads (capitula) which are variably coloured yellow, orange and brown. The flower heads are born on much stouter stems than the two subspecies of *L. atrata*.



Fig. 6 *Leptinella dendyi*, growing on Mt Hutt. Photo: Alan Jolliffe, January 2019.

Unopened, the flower heads begin with a dark maroon colour then, as the outer florets open, the colour turns to yellow, orange or brown from the outside in, providing a two-tone effect. Mature flower heads are up to 2 cm across. The stamens do not protrude as much as those of *L. atrata* subsp. *luteola*.

Its rhizomes are buried deeper into the scree than either subspecies of *L. atrata*.

Leptinella dendyi is found on the drier mountains of the eastern South Island from Nelson, Marlborough and Canterbury (Fig. 7). There appears to be a number of differences in flowering across the region, resulting in a range of different photographic images available in the literature and online.

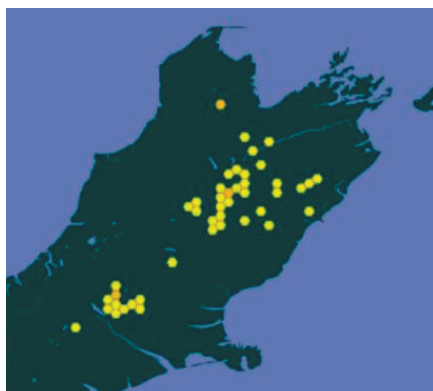


Fig. 7 Distribution map of *Leptinella dendyi* generated from GBIF data (<https://www.gbif.org/species/3097528>).

Along with the other *Leptinella* in this article, *L. dendyi* (Cockayne) D.G.Lloyd et C.J.Webb was a new combination following Lloyd and Webb's 1987 review of New Zealand *Cotula*.

Of the three *Leptinella* discussed here, there seems to be most confusion distinguishing between *L. atrata* subsp. *luteola* and *L. dendyi* due to the similarity in flowering. Both produce dark flower heads and the outer florets open to produce a yellow ring around the flower head which gets larger as more florets open. However, closer examination shows that the flower heads on *L. dendyi* are larger and flatter and open to produce a series of darker yellows and orange colours.

All three *Leptinella* are attractive alpine plants and can be grown in cultivation with very well drained and stony media. The roots are quite fleshy and will drive down vertically in the media to find moisture, as they would in their natural habitats.

References

- Cockayne, L. (1910). New Zealand plants and their story. Government Printer, Wellington, New Zealand.
- Lloyd, D.G. (1972). A revision of the New Zealand, Subantarctic, and South American species of *Cotula*, section *Leptinella*. *New Zealand Journal of Botany* 10: 277–372.
- Lloyd, D.G. and Webb, C.J. (1987). The reinstatement of *Leptinella* at generic rank, and the status of the 'Cotuleae' (Asteraceae, Anthemideae). *New Zealand Journal of Botany* 25: 99–105.
- Mark, A.F. and Adams, N.M. (1995). New Zealand alpine plants. Godwit Publishing, Auckland, New Zealand.
- Metcalfe, L.J. (1993). The cultivation of New Zealand plants. Godwit Publishing, Auckland, New Zealand.
- Metcalfe, L.J. (1996). Alpine plants of New Zealand. Reed Publishing, New Zealand.
- Philpson, W. R. and Hearn, D. (1965). Rock garden plants of the Southern Alps. 2nd Ed. Caxton Press, Christchurch, New Zealand.

Websites

(accessed December 2020)

- Alan Jolliffe: The Art and Science of Horticulture: <http://alanjolliffe.blogspot.com/2013/01/black-daisy.html>.
- Alan Jolliffe: The Art and Science of Horticulture: <http://alanjolliffe.blogspot.com/2015/01/leptinella-atrata-ssp-leuteola-button.html>.
- Alan Jolliffe: The Art and Science of Horticulture: <https://artandscienceofhorticulture.weebly.com/leptinella-dendyi.html>.
- iNaturalist NZ – Mātaki Taiao: Miniature Brass-Buttons (Genus *Leptinella*): <https://inaturalist.nz/taxa/379070-Leptinella>.
- New Zealand Plant Conservation Network: Flora search results: *Leptinella atrata* subsp. *atrata*: <https://www.nzpcn.org.nz/flora/species/leptinella-atrata-subsp-atrata/>.
- New Zealand Plant Conservation Network: Flora search results: *Leptinella atrata* subsp. *luteola*: <https://www.nzpcn.org.nz/flora/species/leptinella-atrata-subsp-luteola/>.
- New Zealand Plant Conservation Network: Flora search results: *Leptinella dendyi*: <https://www.nzpcn.org.nz/flora/species/leptinella-dendyi/>.
- Ngā Tipu o Aotearoa – New Zealand Plant Names Database: <https://nzflora.landcareresearch.co.nz/default.aspx?NavControl=search&selected=NameSearch>.
- Wikipedia: *Leptinella*: <https://en.wikipedia.org/wiki/Leptinella>.

