

Christella dentata

COMMON NAME

christella

SYNONYMS

Polypodium dentatum Forsskal, *Dryopteris dentata* (Forsskal) C.Chr., *Thelypteris dentata* (Forsskal) St John, *Cyclosorus dentatus* (Forsskal) Ching, *Polypodium nymphale* G.Forst.

FAMILY

Thelypteridaceae

AUTHORITY

Christella dentata (Forssk.) Brownsey et Jermy

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

No

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Ferns

NVS CODE

CHRDEN

CHROMOSOME NUMBER

2n = 144

CURRENT CONSERVATION STATUS

2017 | At Risk – Naturally Uncommon | Qualifiers: PD, SO

PREVIOUS CONSERVATION STATUSES

2012 | At Risk – Naturally Uncommon | Qualifiers: PD, SO

2009 | Threatened – Nationally Critical | Qualifiers: CD, SO

2004 | Threatened – Nationally Critical

DISTRIBUTION

Indigenous. New Zealand: Kermadec Islands (Raoul Island), North Island (known only from Kaitaia north, although somewhat similar plants have been found twice near Kawhia and Piopio (now extinct at both locations), and there are forms of unknown origin present in horticulture which have naturalised in Auckland, Hamilton and Wanganui). A pan tropical species ranging from Crete throughout the warmer parts of the world to New Zealand. *Christella dentata* is a widespread and variable old world species, showing a wide range of local variation. Many of these variants have been given formal names but acceptance of these is not universal. New Zealand plants appear to be the same form as that commonly found in eastern Australia and Norfolk Island.

HABITAT

A short-lived fern of recently disturbed ground. In New Zealand proper the typical form of *C. dentata* is found naturally only in the far north in the warm, frost-free situations such as coastal wetlands, along river banks and in alluvial forest remnants. The same form is abundant on the Kermadec Islands (on Raoul Island only)



In Cultivation from Kaitaia Beach.

Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



Auckland. Mar 2007. Photographer: Peter J. de Lange, Licence: CC BY-NC.

WETLAND PLANT INDICATOR STATUS RATING

FAC: Facultative

Commonly occurs as either a hydrophyte or non-hydrophyte (non-wetlands).

DETAILED DESCRIPTION

Somewhat soft and delicate fern, producing numerous tufts of pinnate fronds from a stout, somewhat woody, creeping rhizome. **Rhizome**, usually semi-exposed, covered in the frond base remnants. **Fronds** not long-persistent, broadly ovate to oblong in outline, up to 2 m long (usually much less), pale green to yellow-green, soft, wilting easily when broken, all parts clad in soft velvety hairs. **Primary pinnae** with the exception of the basal prominently hastate pair, alternating along rachis, oblong to lanceolate, 300–1000 × 130–400 mm, with longest pinnae located within the central portion of the frond, subsequent pairs decreasing in size toward either end of frond. **Secondary pinnae** prominently lobed, lobes, oblong, apex bluntly truncate. **Sori** are arranged in up to 7 pairs on the pinnae lobes. **Sorus** covered by a heart- to kidney-shaped indusia.

SIMILAR TAXA

Cyclosorus interruptus though similar is smaller, scarcely creeping, and has long persistent, hairless, leathery, deltoid fronds, which are less deeply divided. *Pakau pennigera* is also similar and has been found growing with *Christella*. *Christella* differs from that species by its widely creeping habit, and softer, very hairy fronds with oblong rather than ovate secondary pinnae. In New Zealand *Christella dentata* comprises two races, the one described here, and a second race which is mostly confined to geothermally active areas (though it also occurs in Te Pahi) in the North Island. This race, known as the “Geothermal Race”, also extends to the Kermadec Islands (Raoul Island), and possibly occurs elsewhere in the Pacific. The “Geothermal Race” differs from the form of *C. dentata* described above by having a shortly creeping rhizome, the plants producing overtime an erect, caudex (trunk) the base of which is typically covered in vegetative buds. The fronds often appear narrower than the typical form of *C. dentata* described above, and may be more densely covered in milky white hairs. The “Geothermal Race” is considered by many botanists to be a distinct, possibly unnamed species (see Taxonomic Notes below).

FLOWERING

Spores may be found throughout the year

FLOWER COLOURS

No flowers

FRUITING

Spores may be found throughout the year

LIFE CYCLE

Seeds are dispersed by ballistic projection, wind and water (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Very easily grown by the divisions of whole plants and from spores. In warm sheltered gardens this species frequently naturalises. It is frost sensitive. Although in New Zealand it is primarily a species of wetlands, in cultivation it can, and will grow in almost any soil and moisture regime.

THREATS

In New Zealand proper currently known from just one natural site, this is protected as a QE II covenant. At this site it is threatened by natural succession and the rank growth of weeds following fencing of the forest remnant in which it grows (de Lange et al. 2010). Current management at the QEII site involves handweeding plants, and population enhancement. *Christella dentata* is however abundant on Raoul Island (see also Distribution and Taxonomic Notes).

ETYMOLOGY

dentata: Toothed

WHERE TO BUY

Specimens of Northland origin are held by several botanic gardens, universities and private fern growers. Occasionally this species is offered for sale by commercial nurseries, though in these cases it is not always certain whether the plants on sale are of New Zealand origin.

TAXONOMIC NOTES

Two races of *Christella* exist in New Zealand. The first of these has a widely creeping, brittle, usually buried rhizome (and is the race discussed mostly by this fact sheet), the second has shortly creeping rhizomes, with well established plants developing a stout caudex over time, the bases of which are often covered in vegetative buds. The first race is naturally confined to a few sites near Kaitaia (Awanui) and on Raoul Island (where it is abundant). However, the same form is also naturalised in Auckland and Hamilton cities, and possibly also Whanganui. The second race, because in the North Island it is mostly associated with geothermally active sites is widely known as the "geothermal race". However, the same race also occurs on Raoul Island (where it grows with the first race), and possibly also at Te Pahi (and at one time near Kawhia and Piopio). Taxonomic resolution of these forms, in isolation, in New Zealand would be unwise, especially as *C. dentata* is widely distributed across much of the world and extremely variable within that range. Therefore pending a thorough revision of the species, as an interim measure it seems best to acknowledge that in New Zealand *C. dentata* is variable, and that two races exist but that further action on their status without a global context is possibly beyond our scope.

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange (12 October 2003). Description modified from de Lange et al. (2010).

REFERENCES AND FURTHER READING

de Lange PJ, Heenan PB, Norton DA, Rolfe JR, Sawyer JWD. 2010. Threatened Plants of New Zealand. Canterbury University Press, Christchurch. 471 p.

Thorsen MJ, Dickinson KJM, Seddon PJ. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309. <https://doi.org/10.1016/j.ppees.2009.06.001>.

NZPCN FACT SHEET CITATION

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MORE INFORMATION

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