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

PREVIOUS CONSERVATION STATUSES
2009 | Threatened – Nationally Critical | Qualifiers: CD, SO
2004 | Threatened – Nationally Critical

DISTRIBUTION
Indigenous. Kermadec Islands (Raoul Island), New Zealand (North Island). A pan tropical species ranging from Crete throughout the warmer parts of the world to New Zealand. In New Zealand known only from Kaitaia north, although somewhat similar plants have been found twice near Kawhia and Piopio (now extinct at either location), and there are forms of unknown origin present in horticulture which have naturalised in Auckland, Hamilton and Wanganui. 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).
FEATURES
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 rhacis, oblong to lanceolate, 300-1000 x 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. Pneumatopteris 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 Paki 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 Paki (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

NZPCN FACT SHEET CITATION
Please cite as: de Lange, P.J. (Year at time of access): Christella dentata Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. https://www.nzpcn.org.nz/flora/species/christella-dentata/ (Date website was queried)

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