

Parapolystichum kermadecense

COMMON NAME

Raoul Island shield fern

SYNONYMS

Lastreopsis kermadecensis Perrie et Brownsey

FAMILY

Dryopteridaceae

AUTHORITY

Parapolystichum kermadecense (Perrie et Brownsey) Perrie et L.D. Sheph.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Ferns

CHROMOSOME NUMBER

2n = 164

CURRENT CONSERVATION STATUS

2017 | At Risk – Naturally Uncommon | Qualifiers: IE, OL

PREVIOUS CONSERVATION STATUSES

2012 | At Risk – Naturally Uncommon | Qualifiers: IE, OL

2009 | At Risk – Naturally Uncommon | Qualifiers: IE, OL

DISTRIBUTION

Endemic. Kermadec Islands: Raoul Island.

HABITAT

Common in the 'wet' forest of Raoul Island where it is a frequent ground cover fern, it also extends into the 'dry' forest of that island, though there it is much less common. Within its habitat range it commonly associates with the ferns *Pteris carsei*, *Doodia australis*, *D. milnei*, *Zealandia pustulata* subsp. *pustulata* and, less commonly, *Arachniodes aristata*, the sedge *Carex kermadecensis* and seedlings of common forest trees, most especially the palm *Rhopalostylis baueri* (Perrie & Brownsey 2012).



Raoul Island. May 2011. Photographer: Peter J. de Lange, Licence: CC BY-NC.



Raoul Island. May 2011. Photographer: Peter J. de Lange, Licence: CC BY-NC.

DETAILED DESCRIPTION

Terrestrial fern. **Rhizomes** erect or short creeping with fronds clustered at apex. **Rhizome scales** similar to, but narrower than, those on stipe, non-clathrate, margins entire to abundantly ciliate, cilia apices sometimes globular. **Stipes** stramineous to castaneous, darker towards the rhizome, 100–500 × 1–4 mm diameter, lacking hairs or with scattered hairs 250–700 mm long, scaly proximally. **Stipe scales** brown to dark-brown, the more distal clathrate, narrowly-triangular or narrowly ovate, 5.0–12.0 × 0.8–2.1 mm, margins entire to repand (or ciliate). **Laminae** green, paler abaxially, 3-pinnate to 3-pinnate-pinnatifid, with 8–13 pairs of primary pinnae of which 0–1–(2) catadromous, angular-ovate to pentagonal, 145–450 × 100–330 mm wide, apex acuminate. **Rachises** 140–420 mm long, adaxial sulcus densely set with erect ctenitoid hairs, the hairs 80–180 mm long, reddish-clear to red or orange; abaxially glabrous or proximally nearly so, or with scattered hairs, often clustered at junctions with primary pinnae and sometimes many distally, the hairs clear with red transverse cell walls, mostly 170–350 mm long, occasionally or commonly interspersed with longer hairs up to 700 mm. **Proximal pair of primary pinnae** 75–250 × 50–210 mm, with proximal basiscopic secondary pinna enlarged, 35–150 × 11–45 mm. **Primary pinnae** in apical third of lamina pinnate-pinnatifid, very occasionally 2-pinnate with ½–1 pair of secondary pinnae. **Ultimate segments** sparsely serrate-crenate, the apex obtuse to acute but with several teeth. **Costa of primary pinnae** adaxially with hairs similar to those of adaxial rachis, but paler and up to 270 mm long, thinning distally so that minor veins and lamina usually glabrous or nearly so; abaxially glabrous or densely hairy, especially proximally, the hairs usually inconspicuous, clear or reddish clear, predominantly ctenitoid, 170–270 mm long, thinning distally so that minor veins and lamina almost glabrous, sinuses between secondary pinnae with no or few hairs. **Glands** inconspicuous, absent or few on abaxial rachis, few to many on abaxial lamina, yellow to orange, often pale, 70–140 mm. **Sori** circular, 0.9–2.1 mm in diameter. **Indusia** persistent, round to ovate, cordate with a narrow to broad sinus, brown to reddish-brown, 0.7–1.3 mm diameter, only partially covering mature sori, glands absent or present on the dorsal surface or margin. **Spores** monolete 29–34 × 22–27 µm.

SIMILAR TAXA

Parapolystichum kermadecense is the only species present on the Kermadec Islands group (where it is found only on Raoul Island). As such, in the field it is unlikely to be confused with any other terrestrial fern on that island, or any other *Parapolystichum*. However, from other *Parapolystichum* species it can be distinguished by the short hairs in the sulcus on the adaxial rachis; by the abaxial rachis being sparsely hairy; by the abaxial lamina having inconspicuous sparse glands and by its tetraploid chromosome number.

PROPAGATION TECHNIQUE

Can be grown from spores and transplanted but difficult to maintain. Needs room to spread and cold sensitive. Does best in a warm, sheltered, shaded site, planted in a free draining, moist, fertile soil.

THREATS

Widespread and common on Raoul Island. This species is listed only because on a global scale, as an island endemic it occupies a small area. Beyond natural threats, such as volcanic activity and earthquakes, there are no known, human-induced threats affecting this species. For this reason it has previously been listed, appropriately as “At Risk/Naturally Uncommon” under the informal name of ‘*Lastreopsis* aff. *glabella* (AK 242151; Raoul Island)’ by de Lange et al. (2009). Despite its formal elevation to species rank there is no need to change this threat status (see comments by Perrie & Brownsey 2012).

TAXONOMIC NOTES

In 2017 *Lastreopsis kermadecensis* was transferred to *Parapolystichum*, as *P. kermadecense* (Gardner et al. 2017). See also Labiak et al. (2015).

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange (8 March 2012). Description adapted from Perrie & Brownsey (2012).

REFERENCES AND FURTHER READING

- de Lange PJ, Norton DA, Courtney SP, Heenan PB, Barkla JW, Cameron EK, Hitchmough RA, Townsend AJ. 2009. Threatened and uncommon plants of New Zealand (2008 revision). *New Zealand Journal of Botany* 47(1): 61–96. <https://doi.org/10.1080/00288250909509794>.
- Gardner JJS, Perrie L, Shepherd L, Nagalingum NS. 2017. Taxonomic Placement of Unassigned Species of Lastreopsid Ferns (Dryopteridaceae) Using Phylogeny. *Systematic Botany* 42(3): 385–391. <https://doi.org/10.1600/036364417X695952>.
- Labiak PH, Sundue M, Rouhan G, Moran RC. 2015. New combinations in *Lastreopsis* and *Parapolystichum* (Dryopteridaceae). *Brittonia* 67: 79–86. <https://link.springer.com/article/10.1007/s12228-014-9351-3>
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NZPCN FACT SHEET CITATION

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<https://www.nzpcn.org.nz/flora/species/parapolystichum-kermadecense/> (Date website was queried)

MORE INFORMATION

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