

# Pteris vittata

## COMMON NAME

ladder brake, Chinese brake

## SYNONYMS

*Pteris longifolia* var. *brevipinnia* Domin

## FAMILY

Pteridaceae

## AUTHORITY

*Pteris vittata* L.

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

No

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Ferns

## CURRENT CONSERVATION STATUS

2017 | Introduced and Naturalised

## PREVIOUS CONSERVATION STATUSES

2009 | Non-resident Native – Coloniser

2004 | Not Threatened

## DISTRIBUTION

Indigenous? New Zealand: North Island (Bay of Plenty—in geothermal areas, especially along the shores of Lake Rotomahana—however, also reported as naturalised from Auckland City and Napier). Also present in Australia, Norfolk Island (where it may be indigenous but is currently regarded as naturalised—see de Lange et al. 2005), and throughout the tropical to warm temperate parts of the Old World.

## HABITAT

On base rich rocks such as limestone, basalt, and also concrete. All recent records are urban but previously was reported from the margins of a geothermal spring (Tarawera Springs)

## DETAILED DESCRIPTION

Terrestrial or lithophytic ferns. **Rhizome** short-creeping; scale numerous, conspicuous, c. 5 mm long, narrowly triangular, pale brown. **Fronde**s monomorphic, arching, appearing to radiate from a crown. **Stipe** 20–250 mm long, pale brown, grooved, scaly towards base. **Lamina** 0.15–0.8 × 0.05–0.3 m, 1-pinnate, oblong-obovate. **Pinnae** to 250 mm long, closely spaced, decreasing in length from apex to base, narrowly oblong, ± falcate, and tapering above to an acute apex, base subcordate, ± overlying rachis; margins finely serrate in sterile zones; most pinnae attached by midrib only. **Lowermost pinnae** distinctly shorter, deltoid to cordate; terminal pinna longest, veins free set at ± 90° to costa, simple or forked once, paraphyses abundant.



Geothermal area around Lake Rotomahana.  
Photographer: Paul Cashmore, Licence: CC BY-SA.



Geothermal area around Lake Rotomahana.  
Photographer: Paul Cashmore, Licence: CC BY-SA.

## SIMILAR TAXA

Distinguished from all other *Pteris* indigenous and naturalised in New Zealand except *P. cretica* by the free veins of the laminae and the basally 1–2-pinnate fronds. From the naturalised *P. cretica* it is distinguished by the undivided basal pinnae, much narrower fronds whose pinnae decrease in length from the apex to the base, and by the distinctly longer terminal pinna. Most likely to be confused with species of *Blechnum* from which it is easily separated by the absence of separate sterile and fertile frond types, i.e. the fertile fronds like the same as the sterile ones.

## PROPAGATION TECHNIQUE

Easily grown from spore and readily self-establishes. Prefers a free draining, sunny situation. Does best on limestone or basalt rock walls.

## THREATS

Unknown. If this species was truly present at the Tarawera Springs it has now gone extinct there but it is abundant around the hot springs of Lake Rotomahana, and it is still locally present in Auckland and Napier—where it may have established from garden plants.

## ETYMOLOGY

**pteris:** A fern known to the ancient Greeks; from the Greek pteris

**vittata:** From the Latin vitta 'stripe, band', meaning longitudinal stripes of one colour across another

## WHERE TO BUY

Occasionally available from commercial nurseries. However commercial stock is of unknown origin (it is unlikely to be from New Zealand sources).

## NOTES

*Pteris vittata* was first recorded from New Zealand in the mid 1800s by Government Botanist John Buchanan from the Tarawera Hot Springs (C.E. Ecroyd pers. comm.). However, that record is not substantiated by a herbarium specimen and it has not been seen there on recent surveys. In the case of Buchanan this is not unusual as many of his herbarium specimens were lost as a result of his often erratic collecting and curatorial habits, and the way the herbarium he maintained for James Hector (now known as WELT—the herbarium of Te Papa Tongarewa Museum of New Zealand) was then maintained (Adams 2002). Subsequently *Pteris vittata* was discovered as a probable weed in Auckland City (Cameron & Parris 1998) and later again in similar circumstances in Napier (Cameron 1999).

Because *Pteris vittata* has been brought into New Zealand through the nursery trade and is occasionally cultivated, the conclusions reached by Cameron & Parris (1998) and Heenan et al. (1999) are logical. Nevertheless at that time, the *Pteris* was not known to be so common around geothermal sites in the Rotorua district. Some pteridologists (J.E. Braggins pers. comm.) believe that *Pteris vittata* could have easily self-established from Australia (where it is common) and they see no reason why this fern could not be both indigenous (i.e. those populations in the Rotorua geothermal field) from an earlier dispersal event (if, of course Buchanan's observations were correct this may be the case) and more recently naturalised from the horticultural trade. This problem could be resolved by using DNA fingerprinting techniques to determine if the wild populations in the Rotorua geothermal field are distinct from those lines known to have been brought into New Zealand. Such a study would however be rather expensive requiring a critical sampling of overseas populations as well. Irrespective of these issues the species was listed as a Coloniser by de Lange et al. (2009) on the basis of a submission made by C.E. Ecroyd. However, it was assessed to be Introduced and Naturalised by de Lange et al. (2013) and it retained that status in 2017 (de Lange et al. 2018).

## ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange (18 January 2012). Description adapted from Kramer & McCarthy (1998).

## REFERENCES AND FURTHER READING

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## NZPCN FACT SHEET CITATION

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## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/pterus-vittata/>