



Fronds among bryophytes



Sori at apex of frond segments



Frond segment margins with dark border and spines

Hymenophyllum armstrongii

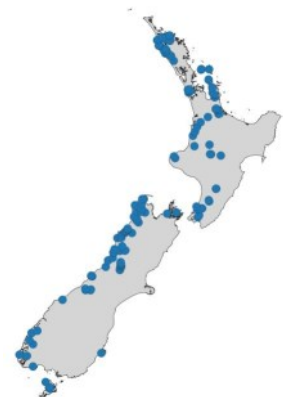
Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its small fronds (usually < 3 cm long), frond segment margins with dark spines and often dark border, and solitary, unstalked sori with untoothed indusia at the apex of a frond segment.

Grows with mosses and liverworts, as an epiphyte on tree branches or matting damp rocks, even extending into the alpine zone.

Distinctive, but easily overlooked. Compare with *H. minimum*.





Growing with bryophytes at water's edge.



Fertile frond



Fronds hairless and with untoothed segment margins

Hymenophyllum australe

Hymenophyllum atrovirens

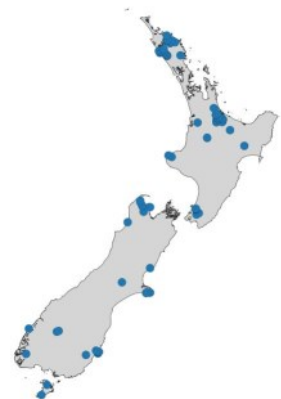
Hymenophyllaceae

Indigenous to New Zealand and Australia.

Distinguished by its hairless frond segments with untoothed margins, the flat wing that extends for most of the stipe's length, fronds divided two to four times, and its riparian habitat.

Grows in and around flowing water, usually on rock. Can be partially submerged.

Compare with *H. flexuosum* and *H. pluviatile*.





Fertile frond, with sori not upturned



Frond segments toothed

Hymenophyllum bivalve

Hymenophyllaceae

Indigenous to New Zealand and Australia.

Distinguished by its hairless frond segments with toothed margins, fronds that are usually divided at least four times and often > 12 cm long, and the sori lying in the same plane as the frond (rather than upturned).

Grows in forest, on the ground or as an epiphyte on tree trunks.

Compare with *H. multifidum*.





Fronds growing en masse, from creeping rhizomes



Fronde segments toothed and some backward pointing, rachis winged, indusia shallowly toothed

Hymenophyllum cupressiforme

Hymenophyllaceae

Indigenous to New Zealand and Australia.

Distinguished by its hairless frond segments with toothed margins, fronds divided two or three times only and < 8 cm long, shallowly toothed indusial flaps, the rachis being winged for its entire length, and having both **forward- and backward-pointing** secondary frond segments.

Grows on the ground, most often in lighter and drier forest and scrub, below 760 m elevation.

Compare with *H. peltatum* and *H. revolutum*.





Fertile frond



Carpeting forest floor, via creeping rhizome



Untoothed frond segments, sori often paired

Hymenophyllum demissum

irirangi

Endemic to New Zealand.

Distinguished by its mostly hairless frond segments with untoothed margins, frond divided three to five times, unwinged stipe, and sori often in pairs at frond segment apices, with often pointed indusia.

Grows on the ground and as an epiphyte in forest and tall scrub. Common, and the most likely *Hymenophyllum* species to be encountered in lowland forest, especially on the ground.

Hymenophyllaceae





Fertile frond



Segments broad and untoothed, sori round

Hymenophyllum dilatatum

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its mostly hairless frond segments with untoothed margins, frond divided three to four times, partially winged stipe, and round sori that are partially immersed in the frond segment apices. The broad frond segments, 1.3–2.5 mm wide, are distinctive.

Grows in forest and tall scrub, usually as an epiphyte but also on the ground.

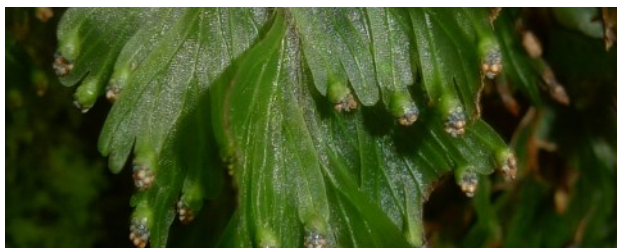




Large frond



Small frond, with hairless, fan-shaped segments



Untoothed frond segments, with sori



Pale curly hairs on the stipes and rhizome

Hymenophyllum flabellatum

Hymenophyllaceae

Indigenous to New Zealand, Australia, Vanuatu, Fiji, Samoa, and French Polynesia.

Distinguished by its mostly hairless frond segments with untoothed margins, somewhat fan-shaped **primary pinnae**, pale, curly hairs on the rhizome and stipes, and unwinged stipes.

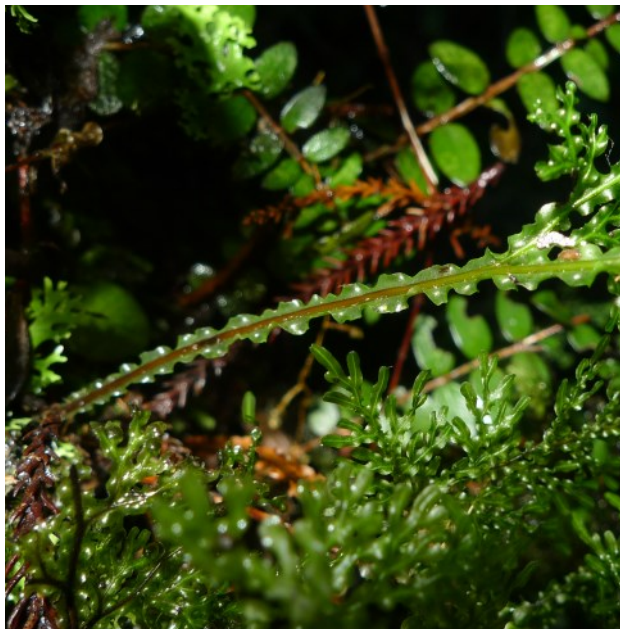
Grows in forests, usually as an epiphyte, but also on banks and rock faces. Generally in warmer sites than *H. rufescens*.

Compare with *H. rufescens*.





Frond



Stipe with broad, flexuous wing



Flexuous frond segments with untoothed margins

Hymenophyllum flexuosum

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its hairless frond segments with untoothed margins, the broad wing along its stipe and rachis that is usually prominently flexuous (wavy), long-creeping rhizome, and its frond divided four to five times.

Grows in forest, on the ground or rocks, or as a low epiphyte.

Compare with *H. australe*, *H. pluviatile*, and *H. pulcherrimum*.

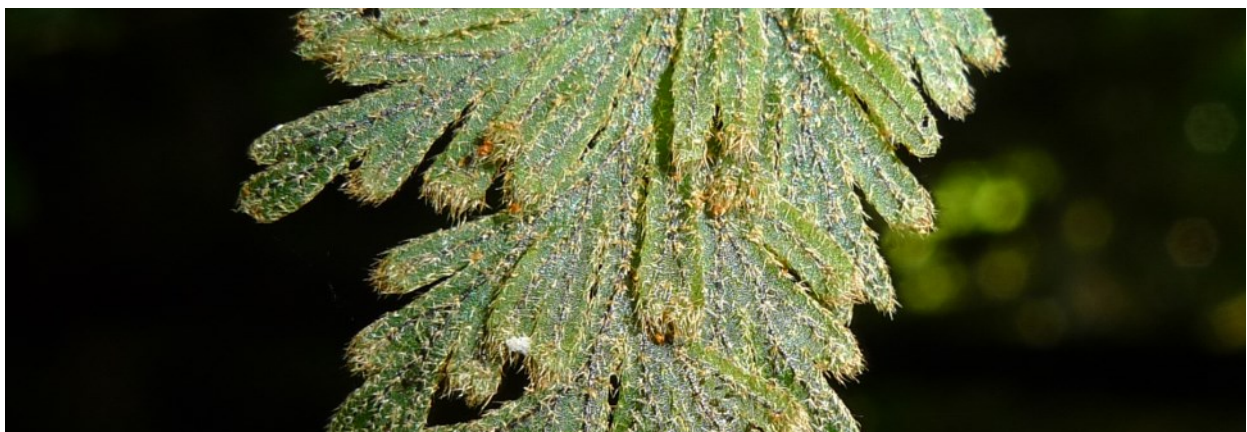




Fronds



Many epiphytic fronds, connected by creeping rhizomes



Fron segments with untoothed margins and star-shaped hairs

Hymenophyllum frankliniae

Hymenophyllaceae

rusty filmy fern

Endemic to New Zealand.

Distinguished by its frond segments having untoothed margins and being flattened, and by the many star-shaped, red- or orange-brown hairs on both surfaces of the frond.

Grows in forest, usually as an epiphyte on tree fern trunks.

Compare with *H. malingii*. Previously known as *H. ferrugineum*, but that species is confined to South America.





Fan-shaped frond, with marginal hairs



Fronds



Epiphytic on tree fern trunk

Hymenophyllum lyallii

Hymenophyllaceae

Indigenous to New Zealand and Australia.

Distinguished by its fan-shaped fronds, with the frond segment margins having small teeth that bear forked hairs.

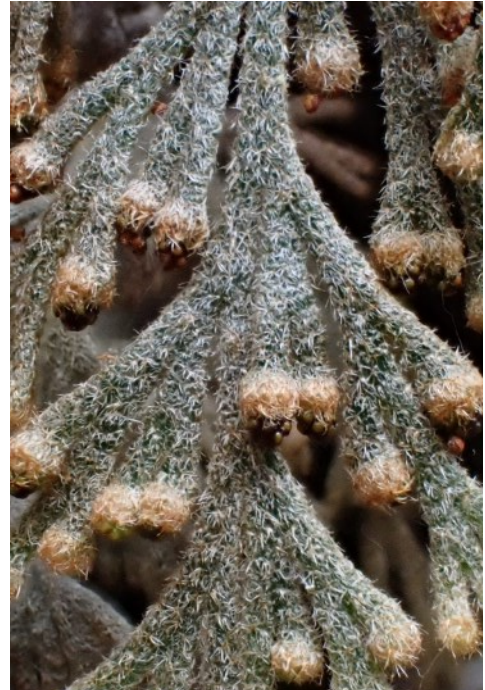
Grows in forest, usually as an epiphyte.

The sori distinguish this species from some fan-shaped liverworts with which it is often confused.





Fronds, with grey upper surfaces



Star-shaped hairs, grey on upper surface



Epiphytic on *Libocedrus bidwillii* trunk



Reddish-brown on under surface

Hymenophyllum malingii

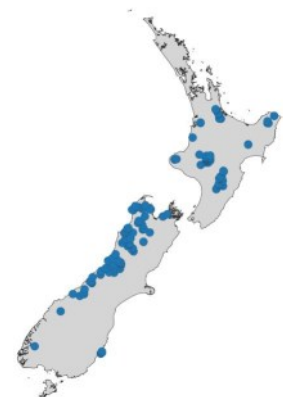
Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its frond segments having untoothed margins and being almost circular in cross-section, and by the dense, star-shaped hairs that are grey on the upper surface of the frond and reddish-brown on the underside.

Grows usually in colder forest as an epiphyte on the trunks of *Libocedrus bidwillii* or *Metrosideros umbellata*.

Compare with *H. frankliniae*.





Forming a mat in a rock crevice, under rhizome of hound tongue's fern



Fronds with solitary sorus at rachis apex



Indusia with spines on outer surface

Hymenophyllum minimum

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its small fronds (usually < 3 cm long), frond segments with toothed margins, solitary, stalked sorus at the rachis apex, and indusia that have spines on their outer surfaces.

Grows often on rocks, but can also be on banks and an epiphyte, ranging from the coast through forest and scrub to the alpine zone.

Compare with *H. armstrongii*.





Fronds epiphytic from creeping rhizome on branch



Frond segments with toothed margins, upturned sori



Blanketing upland forest

Hymenophyllum multifidum

Hymenophyllaceae

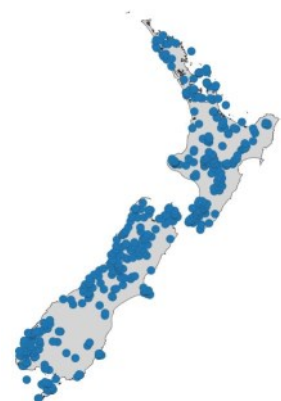
much-divided filmy fern

Indigenous to New Zealand, Australia's Lord Howe Island, and some Pacific islands.

Distinguished by its mostly hairless frond segments with toothed margins, fronds that are usually divided at least four times and often > 12 cm long, and the sori upturned at nearly 90° from the rest of the frond.

Ranges widely, from shaded forest, as an epiphyte or on the ground, to exposed rocks, including in alpine areas, where it may be stunted.

Compare with *H. bivalve*.





Fertile frond



Fronks spread along creeping rhizome



Carpeting ground

Hymenophyllum nephrophyllum

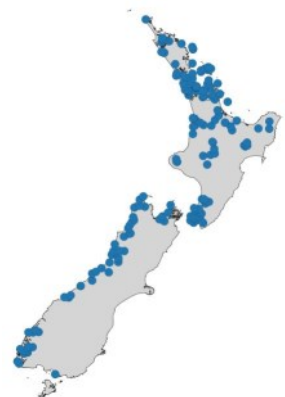
Trichomanes reniforme, *Cardiomanes reniforme*
raurenga, kidney fern

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its kidney-shaped, almost round fronds.

Grows in forest and scrub, as an epiphyte or on the ground.





Winged rachis, segments toothed



Fronds



Secondary frond segments only pointing forward, indusium untoothed

Hymenophyllum peltatum

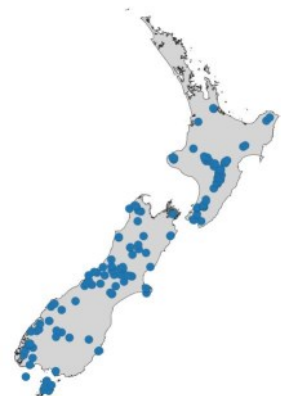
Hymenophyllaceae

Indigenous to New Zealand, Australia, New Guinea, Borneo, South Africa, and Chile.

Distinguished by its hairless frond segments with toothed margins, fronds divided two or three times only and < 14 cm long, untoothed indusial flaps, the rachis being winged for its entire length, and having only **forward-pointing** secondary frond segments.

Grows on the ground or as an epiphyte in forest or alpine scrub. Tends to be in colder habitats, and often above 750 m elevation.

Compare with *H. cupressiforme* and *H. revolutum*.





Frond



Frond segments with untoothed margins



Stipe with narrow wing

Hymenophyllum pluviatile

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its hairless frond segments with untoothed margins, the narrow stipe wing that extends almost to the base, long-creeping rhizome, and frond divided four to five times.

Grows on the ground or as a low epiphyte in forests with high rainfall.

Compare with *H. australe* and *H. flexuosum*.





Epiphytic on tree trunk



Fertile frond



Fron segments with untoothed margins



Fronds tufted, stipes winged

Hymenophyllum pulcherrimum

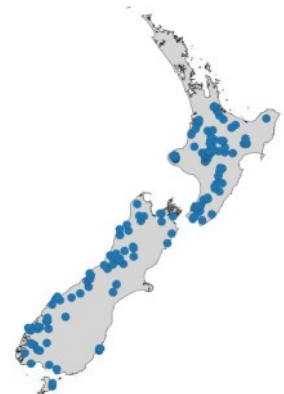
Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its hairless frond segments with untoothed margins, frond divided four to five times, prominently winged stipe, and flexuous fronds. The only *Hymenophyllum* in New Zealand with tufted fronds, the rhizome being erect or short-creeping rather than long-creeping.

Grows in forest, usually as an epiphyte, and more common in colder habitats.

Compare with *H. flexuosum*.





Frond



Sori immersed in segment apices



Fronds whitish when dry

Hymenophyllum rarum

Hymenophyllaceae

Indigenous to New Zealand and Australia.

Distinguished by its hairless frond segments with untoothed margins, frond divided two to three times, unwinged stipe, and sori immersed within the apices of the frond segments. The whitish-green colour of dry fronds is distinctive.

Grows in lowland forest to alpine scrub, usually as an epiphyte but can be on the ground.





Secondary frond segments backward- and forward-pointing



Indusia deeply toothed



Rachis mostly unwinged

Hymenophyllum revolutum

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its mostly hairless frond segments with toothed margins, fronds divided two or three times only and < 10 cm long, deeply toothed indusial flaps, the rachis being winged only near its apex, and having both **forward- and backward-pointing** secondary frond segments.

Grows in damp forest, on the ground or as an epiphyte. Mostly below 750 m elevation.

Compare with *H. cupressiforme* and *H. peltatum*.





Frond



Pale hairs on stipe



Hairs on upper surface of frond



Sori

Hymenophyllum rufescens

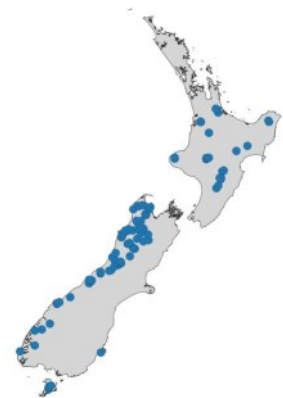
Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its densely hairy and somewhat triangular fronds, with the frond segments having untoothed margins.

Grows in forests, as an epiphyte, or on banks and rocks. Generally in colder sites than *H. flabellatum*.

Compare with *H. flabellatum*.





Frond



Indusia with crests



Stipe with narrow wing

Hymenophyllum sanguinolentum

Hymenophyllaceae

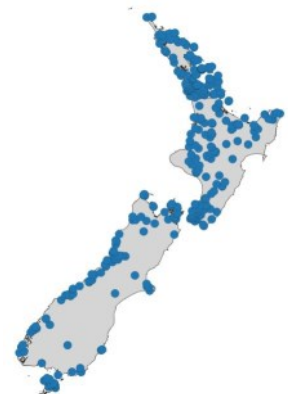
piripiri

Indigenous to New Zealand and the Cook Islands.

Distinguished by its frond segments with untoothed margins, narrowly winged stipe, the rachis and costae undersides with usually only scattered hairs, and round sori with raised crests on the outer surfaces of the indusia. The blackish, often zig-zagging rachis towards the frond apex is shared with *H. villosum*, as is the smell of blood when dry.

Grows in forest and scrub, usually as an epiphyte, but also on the ground. Generally in warmer sites than *H. villosum*.

Compare with *H. villosum*.





Frond



Sori, olive-green frond



Stipe with bristly hairs

Hymenophyllum scabrum

Hymenophyllaceae

rough filmy fern

Endemic to New Zealand.

Distinguished by its frond segments with untoothed margins, unwinged stipe with dense, bristly hairs (which can fall off in old fronds), and olive-green fronds.

Grows in forest as an epiphyte or on the ground.





Frond



Desiccated fronds; will unfurl with water



Stunted fronds in alpine habitat



Indusia uncrested



Hairs on stipe



Hairs on underside of frond

Hymenophyllum villosum

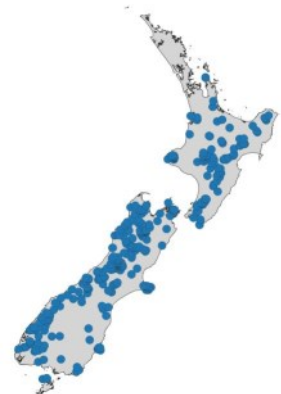
Hymenophyllaceae

hairy filmy fern

Endemic to New Zealand.

Distinguished by its frond segments with untoothed margins, narrowly winged stipe, moderately to densely hairy undersides of the rachis and costae, and ovate sori with uncrested indusia. The blackish, often zig-zagging rachis towards the frond apex is shared with *H. sanguinolentum*, as is the smell of blood when dry.

Grows in forest and scrub, as an epiphyte or on the ground. Extends into alpine areas, particularly on rock outcrops. Generally in colder sites than *H. sanguinolentum*.



Compare with *H. sanguinolentum*.



Thrice-divided large frond



Fronds growing from creeping rhizome on bank



Stalked, tubular indusia, and unwinged rachis

Trichomanes colensoi

Polyphlebium colensoi

Hymenophyllaceae

Endemic to New Zealand.

Distinguished by its thrice-divided fronds spread along a creeping rhizome, unwinged stipe and rachis, stalked frond segments with untoothed margins and veins forking one to two times, and tubular indusia that are often stalked.

Grows in dark forest on damp rock and banks, usually beside waterways.

Compare with *T. endlicherianum*.





Frond



Frond underside, with long bristles from sori



Fronde tufted from rhizome



Veins forking several times within frond segments

Trichomanes elongatum

Abrodictyum elongatum

bristle fern

Endemic to New Zealand.

Distinguished by its erect rhizomes having tufted fronds that are broadly triangular, dark green, and with a mostly unwinged rachis, broad frond segments with untoothed margins and with the veins forking several times, and tubular indusia, often with a long projecting bristle.

Grows in forest on the ground, often in deep shade.

Compare with *T. strictum*.

Hymenophyllaceae





Twice-divided frond, winged rachis, unstalked frond segments and tubular indusia

Trichomanes endlicherianum

Polyplebium endlicherianum

Hymenophyllaceae

Indigenous to New Zealand, Australia, New Guinea, Borneo, and many Pacific islands.

Distinguished by its twice-divided fronds spread along a creeping rhizome, winged stipe and rachis, unstalked frond segments with untoothed margins and a single, unbranched vein, and unstalked tubular indusia.

Grows in forest, usually on damp rock, but occasionally a low epiphyte.

Compare with *T. colensoi*.





Fronds



Fronid segments with single, unbranched veins



Rachis winged



Fronds tufted from rhizome

Trichomanes strictum

Abrodictyum strictum

erect bristle fern

Endemic to New Zealand.

Distinguished by its erect rhizomes having tufted fronds that are narrowly elliptic, medium green, and with a winged rachis, narrow frond segments with untoothed margins and a single, unbranched vein, and tubular indusia, often with a long projecting bristle.

Grows in forest on the ground, often in wetter, colder sites.

Compare with *T. elongatum*.

Hymenophyllaceae





Frond



Segments with many-branched veins



Epiphytic on tree fern trunk

Trichomanes venosum

Polyphlebium venosum

veiny filmy fern

Hymenophyllaceae

Indigenous to New Zealand and Australia.

Distinguished by its once- to twice-divided fronds spread along a creeping rhizome, unwinged stipe and mostly unwinged rachis, frond segments with untoothed margins and many-branched veins, and tubular indusia.

Grows in forest, usually as an epiphyte, especially on tree fern trunks, but rarely on banks and rocks.

