

# Lejeunea hawaikiana

## COMMON NAME

Liverwort

## SYNONYMS

*Stenolejeunea acuminata* R.M.Schust.

## FAMILY

Lejeuneaceae

## AUTHORITY

*Lejeunea hawaikiana* M.A.M.Renner et de Lange

## FLORA CATEGORY

Non-vascular – Native

## ENDEMIC TAXON

No

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Liverworts

## CURRENT CONSERVATION STATUS

2009 | At Risk – Naturally Uncommon | Qualifiers: DP, Sp, ?SO

## PREVIOUS CONSERVATION STATUS

2004 | Threatened – Nationally Endangered

## DISTRIBUTION

Indigenous. Australia, New Zealand, Cook Islands (Rarotonga). In New Zealand recorded from the Kermadec islands (Raoul Island), North Island (Te Pahi (Radar Bush, North Cape), Karikari Peninsula, Hihi (near Mangonui), at Maunganui Bluff) and on Chatham Island (see Renner & de Lange 2011)

## HABITAT

On bark or rock (usually basalt). Favouring smaller trees such as *Coprosma grandifolia*, *Geniostoma ligustrifolium* var. *ligustrifolium* and *Melicactus chathamicus*.



Surville Cliffs, on *Metrosideros excelsa*. Feb 2011. Photographer: Jeremy R. Rolfe, Licence: CC BY.



Te Pahi, on *Coprosma grandifolia*. Sep 2011. Photographer: Jeremy R. Rolfe, Licence: CC BY.

## DETAILED DESCRIPTION

Plants light, opaque green, tightly adnate to substrate, leafy shoots up to 675-725 µm broad, freely, irregularly ramified, the leading axes usually gynoecial, the branches commonly soon androecial otherwise usually gynoecial; innovations beneath unfertilised or fertilised gynoecia always developed, at least normally *Lejeunea*-type. Stem slender c.50 µm diameter; cortical cells in 7 rows, somewhat but not greatly firm-walled, surrounding c.4 medullary cell rows of somewhat inferior size. Leaves contiguous to weakly imbricate, ovate-lanceolate, c.250-275 x 500-550 µm, at most feebly convex, the short-acuminate apices often a little deflexed, entire-margined, smooth (marginal cells not or hardly projecting as crenulations), the acuminate apices ending in mostly 3-4 superposed single cells which are subsisodiametric or weakly elongated (1: 1-8). Lobules ovoid, strongly inflated except in and near apical tooth, about 0.3 length of lobe, with a blunt 1-celled apical tooth, the fine hyaline papilla at antical base. Underleaves small, c.115-135 x 135-175 µm long. c.0.6-0.7 bifid via a U-shaped sinus, divided to within 2-3 cells of rhizoid-initial region; lobes narrow, often their acuminate apices arched toward each other, 3-4 cells broad at base and long-tapered into a uniseriate apex formed of mostly 2 superposed cells. Rhizoid-initial region prominent, mostly formed of c.12-16 cells giving rise to conspicuous rhizoid-initial discs, the plants closely adherent. Cells in 2-3 marginal rows rather firm-walled and with obscure trigones and weak, isolated intermediate thickenings; laminar cells becoming clearly larger, 23-26 x 24-28 µm, 5-6-angled, weakly or hardly firm-walled but with rather large, ± convex-sided but not nodular trigones, + isolated, scattered intermediate thickenings. Oil bodies in 1-2 marginal rows lacking, in third row vestigial or small; laminar cells with mostly 4-8 variable usually fusiform oil-bodies varying from transversely few-septate to botryoidal to granular-botryoidal, the larger 4.5-5.5 x 15.0-17.5 µm. Autoecious. Androecia forming short lateral branches lacking sterile leaves, mostly spicate, compactly so, with c.4-8 or more closely imbricate, inflated pairs of bracts, their arched keels ± inflated cells; bracts diandrous; bracteoles 1-2 at androecium base. Gynoecia on short to lateral branches (gynoecia at apices of leading shoots rare; apical dominant normal); always innovating, innovations single, usually remaining sterile but ± elongating; at times innovations producing 1-2 male and/or female branches. Female bracts in 1 pair, sheathing basal 0.45-0.55 or perianth; bracts with lobes ovate to obovate-lanceolate, acute to longly acute at apex, edentate or with 1-4 variable, obtuse to obscure teeth; lobule lanceolate to narrowly obovate, acute to apiculate, often with a tooth of inner margin, the distal third or more free, the keel short to long, unwinged. Bracteole free, variably obovate to ovate, 0.4-0.6 bifid, sinus V- to narrowly U-shaped, lobes erect and acute, often with 1(-2) teeth of one or both margins. Perianth obovate, a little complanate, the lateral keels more pronounced, the ventral shorter, often weak and abbreviated; perianth keels smooth; perianth apex truncate, the long beak sometimes a little recessed.

## SIMILAR TAXA

*Lejeunea hawaikiana* is easily distinguished from other *Lejeunea* in New Zealand by the light, opaque green colour (sometimes almost white), and compact growth habit with the plants tightly attached to the substrate, and especially by the contiguous to weakly imbricate, ovate-lanceolate leaves with slightly deflexed short-acuminate apices. Plants are nearly always found bearing perianths.

## FRUITING

Fruiting material is frequently seen throughout the year

## THREATS

Once regarded as highly threatened *Lejeunea hawaikiana* has proved to be more overlooked than it is threatened. In suitable habitats it is often abundant. However, to date it is still only known from a handful of sites suggesting that it is probably Naturally Uncommon.

## WHERE TO BUY

Not commercially available.

## ATTRIBUTION

Fact Sheet Prepared for NZPCN by: P.J. de Lange (12 February 2008). Description based on Schuster (2000).

## REFERENCES AND FURTHER READING

- Renner, M.A.M.; de Lange, P.J. 2011. Additions to the Lejeuneaceae Flora of New Zealand: New Species from the Kermadec Islands and Range Extensions of New Zealand species into the South Pacific. *New Zealand Journal of Botany* 49: 421-433.
- Schuster, R.M. 2000: Studies on Lejeuneaceae, III. Revisionary studies on *Stenolejeunea* Schust. *Journal of the Hattori Botanical Laboratory* 89: 151-171.

### **NZPCN FACT SHEET CITATION**

Please cite as: de Lange, P.J. (Year at time of access): *Lejeunea hawaikiana* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/lejeunea-hawaikiana/> (Date website was queried)

### **MORE INFORMATION**

<https://www.nzpcn.org.nz/flora/species/lejeunea-hawaikiana/>