

Specimens of *Stenostachys gracile* from North I. in AK

"Waikouwhia below crossing", collector's name illegible, possibly "Mr H. J. Andrews, Takahura", herb. H. B. Matthews, s.d., AK 11608

Waikouwhia [sic], Kaitaia, H. B. Matthews, 1910, AK 11608-9

Pahi, Kaipara, T. Kirk, AK 11176

Shelly Beach Road (Creighton property) Q10 306125, 0 m alt., de Lange 6056 & M. Goodwin, AK 286639, 22 May 2004, bank below dense kanuka canopy

Thames River, T. F. Cheeseman, Dec. 1880, AK 2030 etc.

Kaweka Ra., Ngaruroro Rvr below Ngaawapurua confluence, 790 m, M. A. M. Renner, Feb 2001, AK 281975, on damp soil, river bank in shade of mountain beech, sporadic.

Acknowledgements

I am grateful to Peter de Lange and Myles Goodwin for letting me write up their discovery, and to Annette Wilson (current Australian Botanical Liaison Officer at Kew) for searching BM for a Home duplicate, though to no avail.

References

- Buchanan, J. 1880: Manual of the indigenous grasses of New Zealand. Government Printer, Wellington.
Edgar E. & Connor, H. E. 2000: Flora of New Zealand. Vol. V, Gramineae. Manaaki Whenua Press, Lincoln, New Zealand.
Hooker, J. D. 1853. Flora Novae-Zelandiae. Vol. 1.
Hooker, J. D. 1864. Handbook of the New Zealand Flora.

Grammitis ferns in the Auckland region

B S Parris

The fern genus *Grammitis* (Grammitidaceae) has a reputation for being difficult to identify, because the species look rather similar. They all have simple fronds that range from strap-shaped to spatulate in outline, with sori that are occasionally \pm circular, usually elongate, and not protected by an indusium. *Anarthropteris lanceolata* (Polypodiaceae) is also often misidentified as a *Grammitis* because it has similar shaped fronds with \pm circular exindusiate sori. However, it can easily be distinguished by its netted (reticulate) venation and the presence of thick paraphyses (hair-like structures in the sori) made up of several rows of cells that are evident in young fronds. In addition, it produces young plants on stolons and can thus develop large colonies on rock faces and tree trunks. *Grammitis* species, on the other hand, have veins that are once or twice branched, with the branches not joining at their tips, paraphyses in the sori, if present, are of the same type of simple hair that occurs on the lamina surfaces, and no New Zealand species produce young plants on stolons.

There are 11 species in New Zealand. They can be grouped informally by habitat and spore size as follows:

1) Small-spored species of lowland to upland habits, sea level to 1000 m, mostly restricted to lower latitudes; on trees, rocks or soil; mean spore diameter 25-26 μm ; *G. billardierei*, *G. ciliata*, *G. pseudociliata*, *G. rawlingsii*, *G. aff. rawlingsii*.

2. Upland to montane species of intermediate spore size, restricted to higher altitudes, (100-)700-1700 m in mainland New Zealand, lower on Subantarctic Islands, and/or higher latitudes; on trees (*G. magellanica* subsp. *magellanica*) or rocks (*G. givenii*); mean spore diameter 34-35 μm ; *G. givenii*, *G. magellanica* subsp. *magellanica*.

3. Mainly upland to montane species of large spore size, mainly restricted to higher altitudes, (sea level-)800-1700 m and/or higher latitudes, sometimes only occurring above the tree line; usually on rocks but *G. magellanica* subsp. *nothofageti* is epiphytic; mean spore diameter 40-41 μm diam. (*G. gunnii*), 43 μm diam. (*G. magellanica* subsp. *nothofageti*), 45 μm diam. (*G. patagonica*), 47 μm diam. (*G. poeppigiana*), 42 μm diam. (*G. rigida*).

Seven of the 11 New Zealand species have been found in the Auckland region (North Auckland and South Auckland provinces). They are *G. billardierei*, *G. ciliata*, *G. magellanica* subsp. *nothofageti*, *G. patagonica*, *G. pseudociliata*, *G. rawlingsii* and *G. aff. rawlingsii*. The most commonly encountered species are *G. billardierei*, *G. ciliata*, *G. pseudociliata* and *G. rawlingsii*.

A combination of morphological and ecological characters is useful in identifying the species of the Auckland region.

Key to *Grammitis* of the Auckland Region

- 1 Hairs absent, or less than 0.5 mm long, not obvious with x 10 hand lens.....2
Simple and/or branched hairs more than 0.5 mm long present, obvious with x 10 hand lens.....3
- 2 In lowland to coastal forest of Hauraki Gulf, usually on rocks or earth banks; mean spore size less than 30 μm diam. rare aberrant \pm glabrous form of..... *G. ciliata*
In upland forest, known from Warawara and Mt Moehau, epiphyte; mean spore size more than 40 μm diam.
..... *G. magellanica* subsp. *nothofageti*
- 3 Hairs absent from sorus area.....4
Hairs present in sorus area.....5
- 4 Unbranched hairs always present, branched hairs always present; widespread above 500 m alt. in the Auckland region; usually epiphytic, very rarely on earth banks..... *G. billardierei*
Branched hairs always present, unbranched hairs absent; kauri forest associate of Great Barrier Island and Hunua Ranges, to be expected on Coromandel Peninsula; epiphytic, or terrestrial in open ridge forest..... *G. aff. rawlingsii*
- 5 Rhizomes with stipes 0.8-5.0 mm apart in each row; all frond hairs medium to dark red-brown; above 500 m alt. in the Auckland region, known from Great Barrier Island and Mt Pirongia; mean spore diam. more than 40 μm *G. patagonica*
Rhizomes with stipes 0.1-2.3 mm apart in each row; some or all frond hairs whitish, translucent, pale yellow-brown to pale red-brown; below 500 m alt. in the Auckland region; widespread; mean spore diam. less than 30 μm diam.....6
- 6 Sorus hairs stout, dark brown; kauri associate in North Auckland, Great and Little Barrier Islands and Coromandel Peninsula..... *G. rawlingsii*
Sorus hairs slender, whitish to pale red-brown; in various forest types.....7
- 7 No hydathodes (small dark dot at vein ending) on upper surface of lamina (use hand lens); usually on rocks and soil banks, rarely epiphytic, sometimes in coastal and secondary forest..... *G. ciliata*
Hydathodes present on upper surface of lamina; epiphyte in wet forest..... *G. pseudociliata*

A new record for the Auckland Region: *Schizeilema trifoliolatum* (Apiaceae)

Ewen K Cameron

During an Auckland Botanical Society monthly field trip to a private area of forest (Craig property) south of Barthow Road, west of Pollok on the Awhitu Peninsula, 18 September 2004 (see Aspin 2004), an interesting mat of a low herb was spotted by Maureen Young. The plant was superficially similar to *Ranunculus reflexus*, which was also present. It covered an area ca.2 x 1m (only a single patch was seen). Small flowering umbels were spotted below the leaves that placed it in the Apiaceae and it had a slight taste of celery. Genera like *Apium*, *Hydrocotyle* and *Schizeilema* were likely candidates, but the last-named seemed most unlikely because that genus wasn't known to be present anywhere near the Auckland region. The habitat was primarily native, but an exotic species couldn't be ruled out. The mature fruit are an important character when keying in the Apiaceae, and when Tricia Aspin sent me some ripe fruit the following month it keyed straight out to the native *Schizeilema trifoliolatum* (Fig. 1). A

remarkable record for the Auckland region because the genus is hitherto unknown this far north.

I asked other New Zealand herbarium curators for their northern records of *S. trifoliolatum* to see how far this new location extended the known northern geographical limit of this species (see Table 1). The result was 1° 21' northern range extension of the Maungatapere record (at 38° 30' S) collected by Bruce Clarkson (NZFRI 17352). But in a straight line the nearest known population to Pollok is in North Taranaki (White Cliffs) collected by Cheeseman (AK 6296-98) ca.195km away from Pollok, and also at west Taupo (Hauhungaroa Range) collected by Peter Bellingham & Shannel Courtney (AK 278271) ca.200km distant.

The habitat