



Gemmels Crossing: understory plants



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Prepared for the Gemmels Crossing Village by Max Crowe - max@fieldlab.nz

Astelia fragrans

Common Name(s):

Bush flax, bush lilly, kakaha

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

References and further reading:

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1528



Caption: Fruit of *Astelia fragrans*

Photographer: John Barkla



Caption: Fruit in Dunedin

Photographer: John Barkla

Blechnum discolor

Common Name(s):

crown fern, petipeti, piupiu

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

References and further reading:

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1544



Caption: Lake Rotoroa, Nelson Lakes National Park

Photographer: John Sawyer



Caption: Boulder Hill, Lower Hutt. Mar 2013.

Photographer: Jeremy Rolfe

Blechnum novae-zelandiae

Common Name(s):

kiokio, horokio, palm leaf fern

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: Kermadec Islands (Raoul Island), North, South, Stewart and Chatham Islands

Habitat:

Coastal to montane. One of the most widespread, abundant and easily recognisable ferns in New Zealand. Widely known by the Maori name "kiokio" *Blechnum novae-zelandiae* is most conspicuous in areas of high rainfall along roadsides, cliff faces, ravines and river banks. It also commonly establishes in pine (*Pinus* spp.,) plantations and is a common urban "weedy" fern in some parts of the country.

Features*:

Rhizome short-creeping, very robust in larger specimens, occasionally suberect or erect; scales to 16 × 3 mm, linear or lanceolate, acuminate, light reddish brown, sometimes dark at base, more or less entire. Fronds dimorphic, erect or pendulous, 0.09-0.3 m (in dry exposed places and in swamps) -3.5 m long (on stream banks) × 35-500 mm wide, widest mid frond; sterile and fertile fronds usually similar length. Stipes 0.08-0.75 m (stipes of fertile fronds often shorter than stipes of sterile fronds), stout, to c.10 mm diameter, pale brown or pinkish brown, darkening at base, scaly, especially at the base; scales 2-20 × 1-3 mm wide, but mostly small and appressed, ovate, reddish brown, concolorous or "black-spot", entire or branched at their bases. Lamina ovate or lanceolate, bright mid green at maturity, 1-pinnate, 5-50 pairs of pinnae. Rachis and costae pale pinkish brown, with sparse to moderately dense scales and irregular fine short tangled hairs; scales 3.0-15.0 × 1.0-1.5 mm, variable in shape from linear to ovate or sometimes stellate, pale brown, reddish brown, "black spot" (especially conspicuous for costal scales), or sometimes entirely concolorous (juveniles and plants growing in swamps, and most plants on the Kermadec islands), entire or toothed. Sterile pinnae 20-350 × 6-30 mm, oblong-lanceolate to lanceolate, apices acute, acuminate, or attenuate, or, in juveniles and smaller plants growing in swamps, obtuse; cuneate, truncate, or rounded-cordate at rachis; sub-petiolate at base of lamina, adnate and decurrent at apex; mostly coriaceous but almost membranous in juveniles and plants growing in swamps; margins minutely toothed, more so near apices; veins simple or once-furcate; small-branched or stellate scales often extending on to lower surface of pinnae; basal pinnae rounder and nearly always significantly shorter than middle pinnae, with 2-11 pairs of sterile auricles (small plants from swamps, very harsh conditions, and from low light conditions may lack auricles); terminal pinna longer than subterminal pinnae. Fertile pinnae 20.0-250 × 1.5-6.0 mm, narrow, linear, sessile at base of lamina, becoming basiscopically adnate at apex; basal pinnae often with sterile auriculate segments at their bases, the lowermost sometimes completely sterile and auriculate; sori covering under surface except for auriculate zone and the short sterile apical region; indusium brown, laciniate; spores 40-60 × 32-43 μm.

Flowering:

Not applicable - spore producing

Fruiting:

Not applicable - spore producing

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (7 March 2012). Description adapted Chambers & Farrant (1998).

References and further reading:

Chambers, T.C.; Farrant, P.A. 1998: The *Blechnum procerum* ("capense") (Blechnaceae) complex in New Zealand. *New Zealand Journal of Botany* 36: 1-19.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1552



Caption: *Blechnum novae-zelandiae*

Photographer: Wayne Bennett



Caption: *Blechnum novae-zelandiae*

Photographer: Wayne Bennett

Coprosma linariifolia

Common Name(s):

mikimiki, yellow wood

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North and South Islands, from the Hawkes Bay and Manawatu south

References and further reading:

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1718



Caption: Kingston

Photographer: John Barkla



Caption: L. Rotoiti, Nelson,
January

Photographer: John Smith-
Dodsworth

Coprosma rotundifolia

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South and Stewart Islands from about Kaitaia south

Habitat:

Lowland to montane. Usually in riparian forest and shrubland, especially on alluvial soils or those derived from calcareous parent materials.

Features*:

Rather slender shrub or tree up to 2-5 m tall; branches spreading to divaricate; branchlets pubescent to villous. Leaves on villous petioles 3-8 mm. long. Stipules obtuse, oblong, sheathing, pubescent to villous, usually with 1 denticle. Lamina membranous, hairy, especially on margins, dull green, red or red-green, often blotched brown, obtuse, sometimes apiculate, rounded to truncate to subcordate at base (usually on same plant): 15-25 × 10-20 mm. Reticulations of veins evident on both surfaces. Flowers in axillary clusters of 2-4. Male without calyx; corolla funnellform to subcampanulate, lobes ovate, acute, > tube. Female with more or less pubescent minutely toothed calyx; corolla tubular, lobes triangular, 4-5 mm long, subacute, sparsely hairy. Drupe red or white, depressed-globose, sometimes didymous, 4-5 mm diameter.

Flowering:

September - November

Fruiting:

September - August

Threats:

Not Threatened

*Attribution:

Description adapted from Allan (1961)

References and further reading:

Allan, H.H. 1961: Flora of New Zealand. Vol. I, Government Printer, Wellington.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora. Perspectives in Plant Ecology, Evolution and Systematics 2009 Vol. 11 No. 4 pp. 285-309

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1734



Caption: Fruit of *Coprosma rotundifolia*

Photographer: Wayne Bennett



Caption: Fruit of *Coprosma rotundifolia*

Photographer: Wayne Bennett

Coprosma virescens

Current Threat Status (2012):

At Risk - Declining

Distribution:

Endemic. North and South Islands from the ranges east of Gisborne, and especially around Taihape south. Scarce in Nelson and apparently absent from Marlborough and absent from Westland, common in Canterbury south to Southland. Throughout its range it is mainly eastern and often very uncommon or absent from large parts of its range

Habitat:

Lowland to lower montane. On well drained to poorly draining fertile soils (often overlying calcareous or base-rich igneous rocks). In forest and shrubland.

Features*:

Filiramulate, divaricating greyish or reddish-green shrub or small tree up to 5 m tall with green to greyish bark; branches slender, ascending; branchlets very slender, subtetragonous, flexible, interlacing, glabrous or nearly so. Leaves often fascicled, on slender glabrous petioles 2-6 mm long. Stipules subacute to obtuse, broadly triangular, connate near base, more or less pubescent to glabrous; denticles usually 3. Lamina subcoriaceous, glabrous, pale green, brown-green or reddish, 4-9 × 3-6 mm rhomboid, ovate to ovate-oblong, obtuse, abruptly narrowed to petiole; margins sometimes waved or with a few blunt teeth.

Reticulations of veins usually evident on both surfaces, at least when lamina fresh. Male flowers 1-2 on short branchlets; calyx 0; corolla funnellform, lobes ovate, acute, much > tube. Female flowers solitary on short branchlets; calyx-teeth minute, ciliolate; corolla tubular, lobes acute, more or less = tube. Drupe 5-6 mm long, yellowish white, oblong.

Flowering:

September - November

Fruiting:

May - July

Threats:

Not Threatened

*Attribution:

Description adapted from Allan (1961)

References and further reading:

Allan, H.H. 1961: Flora of New Zealand. Vol. I, Government Printer, Wellington.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1741



Caption: Leitz's Gully, Otago
Photographer: Jesse Bythell



Caption: Mangatoetoe Stream, Palliser Bay.
Photographer: Jeremy Rolfe

Microsorium pustulatum subsp. *pustulatum*

Common Name(s):

hounds tongue, kowaowao, paraharaha

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. New Zealand: Kermadec Islands (Raoul, Meyers only), Three Kings, North, South, Stewart, Chatham, Auckland and Antipodes Islands. Also Australia. Abundant throughout main islands of New Zealand except for Central Otago.

Habitat:

A common fern of coastal to montane area, growing either on the ground, over rocks or on tree trunks and branches. Although widespread and often found growing admixed with *Microsorium scandens*, *M. pustulatum* is more drought tolerant and seems to prefer more open, drier habitats.

Features*:

Epiphytic or rupestral scrambling or climbing fern. Rhizomes long-creeping, 4-10(-12) mm diameter, fleshy-succulent, yellow-green to golden brown, sometimes glaucescent maturing greyish-brown to grey-black, growing tips densely invested in brown-black appressed ± ovate scales, these entire or minutely toothed near apex, scales shedding over time as rhizome matures leaving small scars. Fronds joined to rhizomes, very coriaceous; stipes 20-250(-340) mm long, pale brown to almost black, ± pliant when young becoming brittle with age; laminae adaxially glabrous (except for a few scales on midrib and costae), bright glossy green (yellow green in exposed sites), abaxially paler, in outline variable ranging from undivided (especially in young plants) narrowly elliptic, 70-250 × 10-30 mm to mostly pinnate, ovate, 60-450 × 40-300 mm; midrib and veins prominent, main lateral veins mostly prominent, usually with 2 or 3 series of major areoles between costa (midrib in simply fronds); hydathodes present on blind vein endings, visible mainly on upper surface; pinnae in 1-12 pairs, 30-170 × 5-40 mm, bluntly acute, margins smooth, weakly undulose to extremely so, bases adnate. Sori prominent, round (rarely elliptic), sunk into abaxial lamina causing a prominent bulge on the adaxial laminal surface, aligned in one row either side of costa, set back from pinna margins. Spores pale, bearing wart-like protuberances.

Flowering:

Not applicable - spore producing

Fruiting:

Not applicable - spore producing

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (13 January 2012). Description adapted from Brownsey & Smith-Dodsworth (2000) and Bostock & Spokes (1998).

References and further reading:

Bostock, P.D.; Spokes, T.M. 1998: Polypodiaceae. Pp. 468-495. Flora of Australia 48. Australian Biological Resources Study, CSIRO Canberra

Brownsey, P.J.; Smith-Dodsworth, J.C. 2000: New Zealand Ferns and Allied Plants. Auckland, David Bateman

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2201



Caption: *Microsorium pustulatum* subsp. *pustulatum* (Kowaowao)

Photographer: Wayne Bennett



Caption: *Microsorium pustulatum* subsp. *pustulatum* (Kowaowao)

Photographer: Wayne Bennett

Myrsine divaricata

Common Name(s):

Weeping matipo, weeping mapou

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South, Stewart and Auckland Islands. Uncommon north of the Waikato.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1009



Caption: Myrsine divaricata, Milford Sound

Photographer: John Barkla



Caption: Pisa Range

Photographer: John Barkla

Neomyrtus pedunculata

Common Name(s):

Rohutu, myrtle

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North, South and Stewart Islands from near Kaitaia (Mangamuka) south but generally scarce in Northland and Auckland.

Habitat:

Coastal to montane forest and shrubland. Often a conspicuous component of the understorey of lowland Podocarp riparian forest but also an frequent component of grey scrub in some parts of the South Island. Unless flowering or fruiting *Neomyrtus* is often overlooked or mistaken for the superficially similar *Lophomyrtus obcordata* with which it often grows.

Features*:

Shrub or small tree up to 8 m tall. Trunk slender, c.0.1 m dbh. Bark pale-grey to almost silvery, chartaceous, flaking in small irregular shards. Branches few to many, upright to spreading, often openly branched. Branchlets glabrous, 4-angled, rather brittle, either sparse and so openly branched or densely and then compactly interwoven. Brachyblasts usually sparingly leafy except toward actively growing apices. Leaves opposite, coriaceous, glandular punctate, oil glands colourless, leaf lamina and petiole decurrent with branchlet; petioles 3-6 mm long, somewhat brittle; lamina 6-15(-20) × 4-10(-15) mm, obovate-oblong to obovate, adaxially glabrous, silvery green, pale green to yellow-green, red to purple-black spotted, abaxially pale silvery green to white, glabrescent (initially finely hairy, hairs sericeous, ± finely appressed, caducous). Flowers 5-merous, in axillary, usually solitary (rarely paired) monads, borne on slender, 10-15(-20) mm long pedicels. Hypanthium subturbinate, not extending beyond ovary summit, calyx lobes 5, persistent, deltoid, spreading. Petals 5-8(-10) × 6-9 mm, orbicular, white, margins entire to slightly irregular, oil glands colourless. Stamens 40-60(-80), free, in 3-4 (or more) weakly defined whorls, filaments 5-9 mm long, anthers cream, basifixed, latrorse. Ovary unilocular, weakly septate, ovules borne on 2 parietal placentas. Style 8-10 mm long, slender, white, stigma capitate, scarcely dilated. Fruit a broadly ovoid, yellow, orange or red 6-8 mm long berry. Seeds 1-7(-11) varying in shape depending on number of seeds present per berry, mostly reniform, 1.5-2.5 mm diameter, testa brown, glossy smooth and very hard.

Flowering:

November - April

Fruiting:

February - June

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange 9 February 2011. Seed description which is modified from Webb & Simpson (2001).

References and further reading:

Webb, C.J.; Simpson, M.J.A. 2001: Seeds of New Zealand Gymnosperms and Dicotyledons. Christchurch, Manuka Press.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1392



Caption: Leaf detail, Tutoko Valley, Fiordland

Photographer: Jesse Bythell



Caption: *Neomyrtus pedunculata*

Photographer: Keir Morse

Polystichum vestitum

Common Name(s):

punui, prickly shield fern

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. New Zealand: North, South, Stewart, Chatham, Snares, Antipodes, Campbell, Auckland, Macquarie Islands. In the North Island scarce north of Auckland and the Coromandel Peninsula.

Habitat:

Coastal to alpine. In the northern part of its range *P. vestitum* is confined to montane regions or cold ('temperature inversion') situations, further south it progressively extends to lower altitudes; in the South Island it ranges from coastal to alpine regions. *Polystichum vestitum* is a species of exposed habitats, such as forest margins, gully floors and tussock grasslands, but it also commonly extends into forest in colder, wetter parts of New Zealand.

Features*:

Rhizome erect, sometimes forming a trunk up to 0.9 m tall. Stipe 90–410 mm long. Stipe and rachis densely clothed with scales of diverse form. Larger rachis scales usually ovate-lanceolate (those from the mid rachis 340–1620 mm at their mid length) to lanceolate-acicular (Chatham Islands and these from the mid rachis 180–780 mm at their mid length); usually bicolorous, with an obvious dark brown centre surrounded on all sides by pale brown margins, but dark centre sometimes much reduced (Chatham Islands, Subantarctic Islands and islands around Stewart Island especially) such that the rachis scales are uniformly pale brown; apex usually long and tapering; usually without marginal projections except for plants from the Chatham Islands, in which they may be very well developed; usually underlain by pale bristle-like scales. Lamina 0.23–2.0 m, long, 90–350(–480) mm; narrowly elliptic to narrowly oblong; bipinnate; adaxially usually dark green (sometimes purple-green), abaxially paler. Primary pinnae in 20–62 pairs, oblong. Secondary pinnae all stalked except those towards the apex of primary pinnae; with sharply pointed apex and prominent marginal teeth and/or crenulations. Sori round. Indusia peltate, ± flat, ± round; with entire although sometimes undulate and/or scalloped margins; central dark area usually insignificant (< 10% surface area, and usually < 5%).

Flowering:

Not Applicable - Spore Producing

Fruiting:

Not Applicable - Spore Producing

Threats:

Not Threatened

*Attribution:

Fact sheet prepared for NZPCN by P.J. de Lange (13 November 2012). Description adapted from Perrie et al. (2003).

References and further reading:

de Lange, P.J.; Heenan, P.B.; Rolfe, J.R. 2011: Checklist of vascular plants recorded from the Chatham Island Islands. Department of Conservation, Wellington. 57pp.

Perrie, L.R.; Brownsey, P.J.; Lockhart, P.J.; Large, M.F. 2003B: Morphological and genetic diversity in the New Zealand fern *Polystichum vestitum* (Dryopteridaceae), with special reference to the Chatham Islands. *New Zealand Journal of Botany* 41: 581-602.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=2223



Caption: *Polystichum vestitum*

Photographer: John Barkla



Caption: *Polystichum vestitum*

Photographer: DoC

Streblus heterophyllus

Common Name(s):

small-leaved milk tree, turepo

Current Threat Status (2012):

Not Threatened

Threats:

Not Threatened

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=1311



Caption: Eastern Hutt hills,
Naenae. Jul 2013.

Photographer: Jeremy Rolfe



Caption: Eastern Hutt hills,
Naenae. Jul 2013.

Photographer: Jeremy Rolfe

Teucrium parvifolium

Common Name(s):

Teucrium

Current Threat Status (2012):

At Risk - Declining

Distribution:

Endemic to New Zealand, occurring sporadically from Northland to Southland, but commoner in the east of both islands.

Habitat:

Along fertile stream sides and river terraces in lowland dry forest and podocarp-hardwood forest; occasionally on forest margins, clearings and amongst scrub.

Features:

A small-leaved shrub to 2 m. Young stems are orange or brown, square in cross-section and finely hairy. Leaves are in opposite pairs, round, dull green or brown-green; up to 12 mm long on stalks of equal length. Flowers are small (8 mm diameter), white (rarely bluish) with 5 irregular petal lobes. Fruit is a group of 4 seeds held within a persistent calyx.

Flowering:

Flowering occurs from October to January.

Fruiting:

Fruiting from December to March.

Threats:

Forest clearance, rural development, stock and feral animal browse, invasive weeds.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=207



Caption: Old Man Range, January

Photographer: John Barkla



Caption: Taken in November

Photographer: John Smith-Dodsworth