



New Zealand Mistletoe

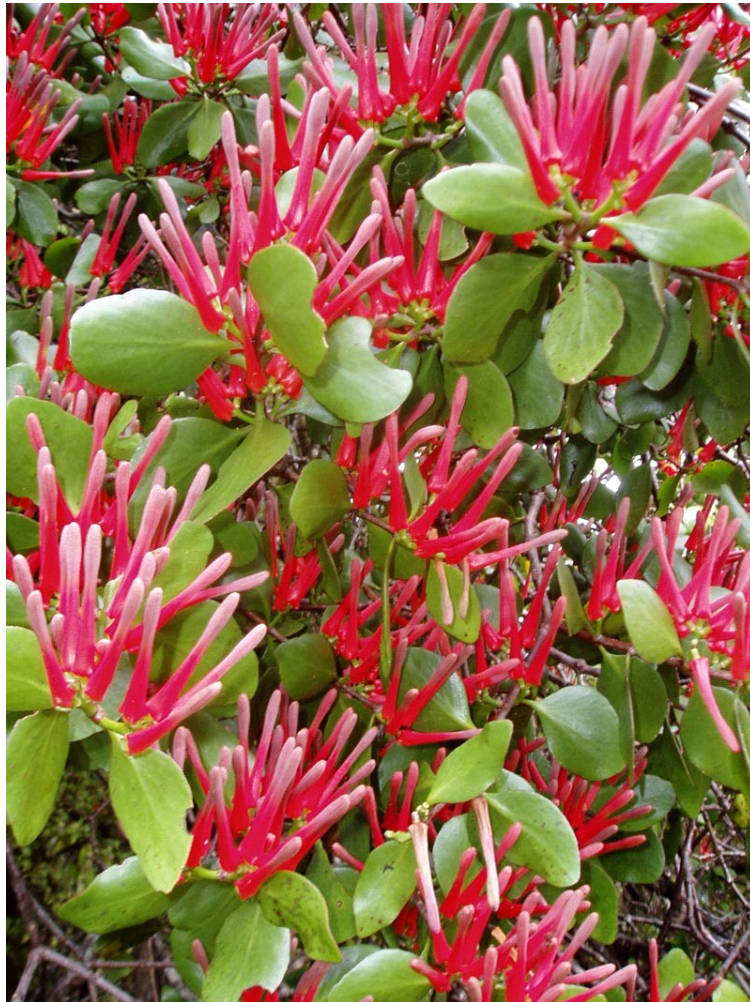


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Made on the New Zealand Plant Conservation Network website – www.nzpcn.org.nz

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Introduction

This book was compiled from information stored on the website of the New Zealand Plant Conservation Network (www.nzpcn.org.nz).

This website was established in 2003 as a repository for information about New Zealand's threatened vascular plants. Since then it has grown into a national database of information about all plants in the New Zealand botanic region including both native and naturalised vascular plants, threatened mosses, liverworts and fungi.

Funding to develop the website was provided by the New Zealand Government's Terrestrial and Freshwater Biodiversity Information System Programme (TFBIS).

The species information used on the website has come from a variety of sources. The indigenous vascular plant text was written largely by Dr Peter de Lange (former Network Vice President). Peter based the descriptions on a wide range of sources including the Flora of NZ Series (Allan 1961, Moore and Edgar 1970 and Webb et al 1987) as well as numerous other taxonomic treatments. For a full bibliography of information sources see the References at the end of this book.

Where no published treatment was available Peter used herbarium specimens and his own knowledge of the flora to prepare species pages. Various other contributors have provided text and additional information to many species pages including botanists such as Mike Thorsen, John Barkla, Cathy Jones, Simon Walls, Nick Singers and many others. The threatened fungi text was written by Eric Mackenzie and Peter Buchanan (Landcare Research).

More than 200 photographers have kindly provided images to illustrate the website and for use in this book especially John Smith-Dodsworth, Jeremy Rolfe, Peter de Lange, Wayne Bennett and Gillian Crowcroft.

The New Zealand Botanic Region

The information on the Network website, from which this book was compiled, is for species that are indigenous to or naturalised within the New Zealand Botanic Region as defined by Allan (1961). The New Zealand botanic region encompasses the Kermadec, Manawatawhi/Three Kings, North, South, Stewart Island/Rakiura, Chatham, Antipodes, Bounties, Snares, Auckland Campbell island/Motu Ihupuku and Macquarie.

About the Network

The Network has more than 800 members worldwide and is New Zealand's largest non-governmental organisation solely devoted to the protection and restoration of New Zealand's indigenous plant life.

The vision of the New Zealand Plant Conservation Network is that '*no indigenous species of plant will become extinct nor be placed at risk of extinction as a result of human action or indifference, and that the rich, diverse and unique plant life of New Zealand will be recognised, cherished and restored*'.

Since it was founded in 2003 the Network has undertaken a range of conservation initiatives in order to achieve its vision.

That work has included:

- Training people in plant conservation
- Publishing plant books, reports and posters
- Raising money for the David Given Threatened Plant Research Trust to pay for plant conservation research scholarships
- Advocacy to raise awareness of the importance of plant life in general and especially New Zealand's status as a Global Centre of Plant Diversity
- Lobbying central and regional government and business to protect indigenous plant life
- Educating people about plant life through the Network website
- Connecting people through the monthly newsletter, the Network conference and the annual general meeting

What is a threatened plant?

The NZ Threatened Plant Committee was formed in 1991 and ever since then it has met at regular intervals to review the status of indigenous vascular plants. It is made up of a small group of botanists that between them have an extensive knowledge of the native plants of New Zealand. This group is chaired by Dr Peter de Lange of the New Zealand Department of Conservation.

This committee applies a set of criteria to each native plant to determine its conservation status. The resulting list of species classified as threatened is published in the NZ Journal of Botany (see for example de Lange et al. 2009). The main threat categories used are: Extinct, Critical, Endangered, Vulnerable, Declining. Other categories used are: Recovering, Relict, Naturally Uncommon, Coloniser, Vagrant and Data Deficient. For vascular plants the threat status used in this book is taken from the 2009 conservation assessment (see de Lange et al 2009).

More recently other committees have been established to review the status of non-vascular plants but their lists are yet to be published.

Alepis flavida

Common Name(s):

Yellow mistletoe, pirita, piriraki

Current Threat Status (2012):

At Risk - Declining

Distribution:

North Island and South Island, New Zealand

Habitat:

Its host is most commonly mountain or black beech but it has been recorded on 13 species, all indigenous to New Zealand. In North Island the species is dispersed by bellbird (*Anthonis melanura*). It has never been common in the North Island.

Features*:

This species is a shrub that can grow up to 2 m across. It has leathery leaves that are 2-6cm long, narrow and dull green with deciduous tip. The leaves sit in pairs on opposite sides of the stem and are thick and fleshy with a matt surface. The margins of the leaves are red and are rough to touch. Veins are visible on the lower surface of the leaves. Its flowers are small with orange-yellow to yellow tepals that open right back. The fruit are small, shiny, translucent oval berries (approximately 4-5mm long) and ripen to yellow or gold although fruit have been recorded as yellow, green and orange on herbarium sheets at the Landcare herbarium in Lincoln (CHR).

Flowering:

December to February.

Fruiting:

Fruiting from January.

Threats:

Animal pests (including possums), fire, collectors, destruction of habitat and hosts, vegetation succession, fungal diseases.

***Attribution:**

Fact Sheet prepared for NZPCN by P.J. de Lange 1 August 2003.
Description based on Allan (1961).

References and further reading:

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

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=146



Caption: Craigieburn Forest Park, Canterbury
Photographer: Jane Gosden



Caption: Craigieburn Forest Park, Canterbury
Photographer: Jane Gosden

Ileostylus micranthus

Common Name(s):

green mistletoe, pirita

Current Threat Status (2012):

Not Threatened

Distribution:

Indigenous. North, South and Stewart Islands, also on Norfolk Island.

Habitat:

Mainly a coastal and lowland species which rarely extends into upper montane forest. Prefers shrubland and secondary regrowth. This species shows some regional host specificity but nevertheless has been recorded from a wide range (nearly 300) of indigenous and exotic hosts. One of the few indigenous mistletoe's to regularly grow in urban situations.

Features*:

Woody, epiphytic much branched, bushy hemiparasite. producing multiple haustoria (these attaching at intervals long host branch) and epicortical, often spiraled roots. Leaves opposite, coriaceous. Petioles 5-50 mm long, flattened and slightly winged. lamina 30-60(-80) × 15-40(-68) mm, dark green to yellow-green, broadly elliptic, slightly ovate, ovate, obovate to rhomboid, base attenuate, apex obtuse to rounded. Inflorescences axillary, solitary or paired, in cymose panicles, these 10-15(-20) mm long with 8-9-12(-15) flowers arranged in threes. Flowers male, female or hermaphroditic (the dioecious condition most commonly seen when *Ileostylus* is parasitic on species of totara (*Podocarpus* spp.)). Calyx cylindrical, presenting as an truncate rather obscure narrow rim 0.2 mm high. Petals 4, free, c.3-4 mm × 0.8-1.6 mm, greenish to yellow-green. Anthers 4, basifixed. Style contorted, usually initially coiled in middle, up to 3.0-4.5 mm long when uncoiled. Ovary 1-locular. Fruit a 1-seeded, 5-8 mm, yellow or orange, ellipsoid or globular (rarely ellipsoid-globular) berry. Seed 5.0-5.5 mm long, elliptic, rounded at both ends, terete.

Flowering:

September - December

Fruiting:

December - July

Threats:

Not Threatened

*Attribution:

Factsheet and description prepared for the NZPCN by P.J. de Lange (7 May 2011).

References and further reading:

Cameron, E.K. 2000. An update of the distribution and discovery of *Ileostylus micranthus* in the Auckland region. *Auckland Botanical Society Journal*, 55: 39-44

Duguid, F. 1967. Hosts of *Loranthus micranthus*. *Wellington Botanical Society Bulletin*, 34: 23-24

Menzies, B. 1945. *Loranthus micranthus*. *Auckland Botanical Society Journal*, 2: 8-9

Moore, S. 1987. Mistletoes are urban parks ideal habitats? *Wellington Botanical Society Bulletin*, 43: 26-27

Silbery, T. 2002. A sticky solution to a tricky problem: restoration of *Ileostylus micranthus*. *Wellington Botanical Society Bulletin*, 48: 27-32

Stanley, R. 1998. Mistletoe hunt in Hunua. *Auckland Botanical Society Journal*, 53: 74-75

Young, M. 1996. Information on the *ileostylus* intersection. *Auckland Botanical Society Journal*, 51: 68-69.

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=858



Caption: Planted on Matiu/Somes Island

Photographer: John Sawyer



Caption: Banks Peninsula

Photographer: Melissa Hutchison

Korthalsella clavata

Common Name(s):

Leafless mistletoe, dwarf mistletoe

Current Threat Status (2012):

At Risk - Naturally Uncommon

Distribution:

Endemic. North and South Islands from near Whakamaru south to Cape Turakirae and the Wairarapa. In the South Island throughout, though notably more common in the east.

Habitat:

Coastal to subalpine. Usually found parasitising shrubs within grey scrub communities, also found on shrubs and trees within montane alluvial forest. No clear host preference is as yet evident, though regional patterns may exist (this needs study).

Flowering:

October - March

Fruiting:

October - June

Threats:

Not Threatened

References and further reading:

Rebergen, A., Sawyer, J.W.D. 2005. *Korthalsella clavata* in the lower North Island. *Wellington Botanical Society Bulletin*, 49: 11-15

Nickrent, D.L.; Malécot, V.; Vidal-Russell, R.; Der, J.P. 2010: A revised classification of Santalales. *Taxon* 59: 538-558.

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=883



Caption: Paengaroa S.R. Mataroa, Taihape

Photographer: Peter de Lange



Caption: Catlins

Photographer: John Barkla

Korthalsella lindsayi

Common Name(s):

Leafless mistletoe, dwarf mistletoe

Current Threat Status (2012):

Not Threatened

Distribution:

Endemic. North and South Islands. In the North Island generally uncommon from Pureora south to about the Hawkes Bay and Wairarapa, there after abundant. In the South Island throughout, though apparently more common in the east.

Habitat:

Coastal to subalpine but more usually found in lowland and coastal situations. Usually associated with lowland alluvial and coastal forest. Parasitising a diverse range of shrubs, trees and vines with not clear host preference evident, though regional patterns may exist (this needs further study).

Flowering:

October - March

Fruiting:

October - June

Threats:

Not Threatened

References and further reading:

Nickrent, D.L.; Malécot, V.; Vidal-Russell, R.; Der, J.P. 2010: A revised classification of Santalales. *Taxon* 59: 538-558.

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=884



Caption: Stevensons Island, Lake Wanaka

Photographer: John Barkla



Caption: Stevensons Island, Lake Wanaka

Photographer: John Barkla

Korthalsella salicornioides

Common Name(s):

Mistletoe, dwarf mistletoe, leafless mistletoe

Current Threat Status (2012):

At Risk - Naturally Uncommon

Distribution:

Endemic. North, South and Stewart Islands. From Te Pahi south - easily overlooked.

Habitat:

Coastal to upper montane and subalpine (0-1300 m a.s.l.). A parasite found in forest and shrublands. Most commonly found parasitic on *Leptospermum scoparium* J.R.Forst. et G.Forst. (kahikatoa/manuka) and members of the *Kunzea ericoides* (A.Rich.) Joy Thomps. (Rawiri/Titiri/Kanuka) complex.

Features:

Hemiparasitic, succulent, much branched, green, yellow-green, red-green to orange-green plant parasitising exposed branches and branchlets of host. Haustoria internal, dark green, encircling stele of host. Plants 30-100 x 10-450 mm, erupting from host bark, individual aerial structures lasting from 1-4 years before dehiscing and resprouting. Branches arising at narrow angles; Internodes terete, succulent to subsucculent, 3-10 x 1-3 mm, narrowed to a finely constricted node. Collar truncate, up to 0.5 mm long, sheathing at nodes. Flowers scarcely differentiated from barren stems, 3-10 x 1 mm. Fruit 1.5 mm long, ovoid to globular, dispersed by birds or ejected under hydraulic pressure

Flowering:

October - March

Fruiting:

October - May

Threats:

An apparently naturally uncommon and biologically sparse species which can on occasion be locally abundant, but is more usually known from large parts of its likely range by only spot or scattered occurrences. In some parts of its range it is seriously at risk due to the felling of its main host species (*Leptospermum* and *Kunzea*) for fire wood and also to clear land for farming or pine plantations.

References and further reading:

Cameron, E.K. 2001. *Korthalsella salicornioides* discovered close to Auckland city. *Auckland Botanical Society Journal*, 56: 53-54

Nickrent, D.L.; Malécot, V.; Vidal-Russell, R.; Der, J.P. 2010: A revised classification of Santalales. *Taxon* 59: 538-558.

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=275



Caption: Stevensons Island, Lake Wanaka

Photographer: John Barkla



Caption: Stevensons island, Lake Wanaka

Photographer: John Barkla

Peraxilla colensoi

Common Name(s):

Scarlet mistletoe, korukoru, pirita, roeroe

Current Threat Status (2012):

At Risk - Declining

Distribution:

North and South Island, but common only in southern parts of the South Island.

Habitat:

A parasite mainly found in silver beech forest but has been recorded on 16 host species (9 exotic) in New Zealand including red beech and black beech. Tui (*Prothemadera novaeseelandiae*) and bellbird (*Anthornis melanura*) disperse this species in the North Island.

Features:

A shrub up to 3 m across. It parasitises further out on branches of its host than *Peraxilla tetrapetala*. The veins on leaves are hardly evident and only the midrib is conspicuous. Leaf tips are never notched and the leaves themselves are large and never blistered. The leaves sit in pairs on opposite sides of the stem and are thick and have a leathery texture. Leaf margins are usually smooth with red slightly rough margins. Masses of scarlet flowers make this plant very obvious from October - January. Flower heads have groups of 3-10 flowers and are up to 60 mm long. The ripe fruit are yellow/golden and are small, fleshy and oval.

Flowering:

October to January

Threats:

A wide variety of threats are now acknowledged as working in unison to cause the national decline of this and allied leafy mistletoes species. The most obvious threat seems to be brush tailed possums (*Trichosurus vulpecula*), which heavily browse mistletoes, to such an extent that they are held as the primary cause for the loss of the beech mistletoes from large parts of the countries beech forest.

References and further reading:

Simpson, M.J.A. 1976. *Elytranthe* in the vicinity of Nelson Lakes National Park. Wellington Botanical Society Bulletin, 39: 39-40

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=191



Caption: *Peraxilla colensoi*, Tawanui

Photographer: John Barkla



Caption: *Peraxilla colensoi*, Catlins

Photographer: John Barkla

Peraxilla tetrapetala

Common Name(s):

Red mistletoe, pikirangi, pirita, roeroe, pirinoa

Current Threat Status (2012):

At Risk - Declining

Distribution:

North and South Island, but less common in the North Island.

Habitat:

Coastal to montane. A hemiparasite whose main hosts are mountain beech (*N. solandri* var. *cliffortioides*), black beech (*Nothofagus solandri* var. *solandri*), red beech (*N. fusca*), and silver beech (*N. menziesii*). However, it has been recorded as a parasite on a further 17 species (2 exotic) including puriri (*Vitex lucens*) and pohutukawa (*Metrosideros excelsa*).

Features:

A shrub that can grow up to 2 m across. It usually parasitises close to the trunk of its host. It has characteristic small raised blisters or lesions on small, usually rhombic leaves. The flowers are solitary or 2-4 together and are bright red (up to 40 mm long). The ripe fruit is fleshy and green. Veins on the leaves are hardly evident and only the midrib is conspicuous. Leaf tips are never notched. Host trees are typically beech or *Quintinia*.

Flowering:

October to January

Fruiting:

April to June

Threats:

A wide variety of threats are now acknowledged as working in unison to cause the national decline of this and allied leafy mistletoes species. The most obvious threat seems to be brush tailed possums (*Trichosurus vulpecula*), which heavily browse mistletoes, to such an extent that they are held as the primary cause for the loss of the beech mistletoes from large parts of the countries beech forest.

References and further reading:

Simpson, M.J.A. 1976. *Elytranthe* in the vicinity of Nelson Lakes National Park. Wellington Botanical Society Bulletin, 39: 39-40

Urlich, S., Hopkins, C.J., Thompson, T. 2007. The survival of *Peraxilla* mistletoes in the Tararua Range. Wellington Botanical Society Bulletin, 50: 37-47

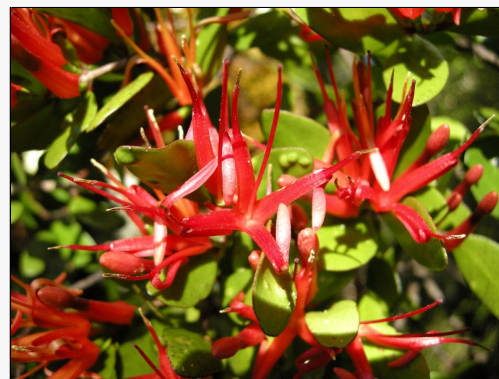
For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=192



Caption: Fruit. Ahuriri Valley, Otago

Photographer: John Barkla



Caption: Whakapapa, Tongariro National Park

Photographer: John Sawyer

Tupeia antarctica

Common Name(s):

taapia, pirita, white mistletoe, tupia

Current Threat Status (2012):

At Risk - Declining

Distribution:

Endemic to the North and South Islands.

Habitat:

Forest or scrub (often in regenerating vegetation), where it is parasitic on a wide range of hosts including tarata, karo, *Coprosma* species, putaputaweta, fivefinger, white maire and broom.

Features:

A shrubby semi-parasite to 1 m diameter. Leaves are oppositely arranged, variable in shape, 10 to 70 by 10 to 40 mm, slightly fleshy and bright green. Stems are always rounded in cross section near the tips, have pale white to grey bark, and downy or hairy branchlets. Flowers are tiny, greenish-yellow. Fruit are fleshy, white to pink, 5 to 7 mm diameter.

Flowering:

Flowers from October to December.

Fruiting:

Fruit appear from December to March.

Threats:

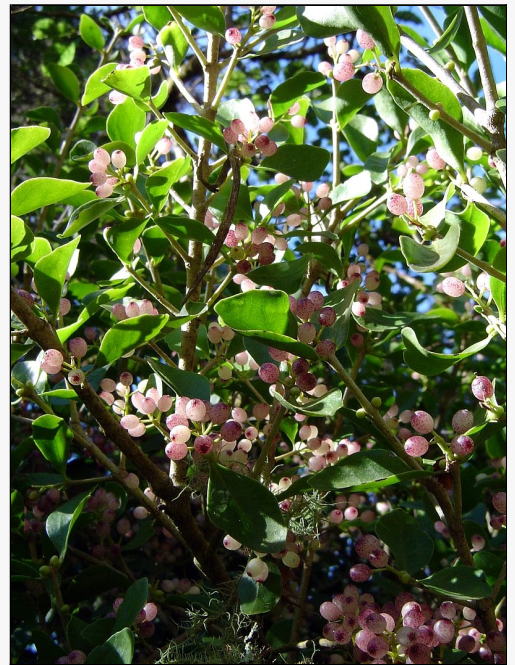
Possum browse is the primary threat to this species. Insect browse, habitat destruction, loss of pollinating and seed-dispersing native birds, collectors, vandalism and fungal disease also threaten this species.

References and further reading:

Moorfield, J. C. (2005). *Te aka : Maori-English, English-Maori dictionary and index*. Pearson Longman: Auckland, N.Z.

For more information, visit:

http://nzpcn.org.nz/flora_details.asp?ID=210



Caption: fruit on marbleleaf

Photographer: Philip Lissaman



Caption: young plant on *Plagianthus regius*

Photographer: Jesse Bythell