

THE INDIGENOUS VEGETATION OF THE MCGREGOR ROAD KAHIKATEA FORESTS, NGAHINAPOURI, HAMILTON BASIN

P.J. de Lange

INTRODUCTION

During April 1988 the author, accompanied by Dr P. Morris and Mr B. Morris of Hamilton, visited a series of scattered kahikatea (Dacrycarpus dacrydioides) forest remnants (S15 081649) located within a small basin on the western edge of the Rukuhia Peat Bog. The basin is drained by the Mangaotama Stream and almost completely enclosed by a series of hills with an average elevation of 70 m a.s.l. The concave surface of the basin enabled the development of a low moor peat bog which formerly covered the central part of the basin.

The kahikatea remnants are situated between this swamp and the bases of the hills where the forests are restricted to moist colluvium or levee soils associated with the Mangaotama Stream. The forest remnants are small and with one exception unfenced. For this reason their condition is poor with wind throw, stock browse, spray drift and milling accelerating their demise.

The following is a brief account of the remnants' indigenous vascular flora. A combined checklist of eighteen remnants visited is given. Some specimens have been lodged in the following herbaria: AK, WAIK, and WELT.

THE MCGREGOR KAHIKATEA FOREST REMNANTS

Of the eighteen remnants visited only two were of sufficient size or good condition to provide some insight into the past flora of the area. The largest of these although under browsed and showing signs of serious damage from Cyclone Bola, if fenced would be a useful addition to the Hamilton Basin reserve network.

This forest had a canopy dominated by kahikatea with lesser amounts of rimu (Dacrydium cupressinum), pokaka (Elaeocarpus hookerianus), pukatea (Laurelia novae-zelandiae) and rewarewa (Knightsia exselsa). Species typical of forest remnants in the basin only recently (i.e. last c. 40 years) subject to drainage.

Tawa (Beilschmiedia tawa) and titoki (Alectryon excelsus var. excelsus) although present were not well represented in all but one forest remnant. As both species are typical of the drier kahikatea forests in the Waikato (Champion 1988) it is probable the McGregor Road forests are still sufficiently moist to have prevented these species dominating the remnants. It is probable both species will increase as the forests continue to dry out.

The understorey of most remnants had long since been destroyed but in places putaputaweta (Carpodetus serratus), taurepo (Streblus heterophyllus), white maire (Nestegis lanceolata) and porokaiwhiri (Hedycarya arborea) were present. The latter two species being more typical of the drier forests of the basin. Both putaputaweta and taurepo are typical of wet kahikatea remnants in the greater Waikato and are well represented elsewhere in the basin in those remnants especially subject to seasonal flooding e.g. Gordonton Kahikatea Remnants (de Lange 1985).

In the most disturbed remnants the indigenous cover of the forest floor was almost absent, supporting only the grass Ehrharta stipoides, Oplismenus imbecillus and the ferns Diplazium australe and Deparia

petersenii ssp. congrua (incl. D. tenuifolia). Both these ferns are frequent weedy species of disturbed habitats in the basin and their abundance is usually a good indication of a seriously damaged forest remnant.

One of the remnants was fenced from stock and supported vegetation typical of other dry kahikatea remnants in the Hamilton Basin e.g. Orini Kahikatea Forest (de Lange 1987), Whewells Nature Reserve (Champion 1988) and Marychurch Road (de Lange in prep.). The canopy consisted of several large staghead kahikatea towering above a younger canopy of kahikatea, rewarewa, white maire, tawa and rare pokaka. The understorey was almost completely dominated by mahoe (Melicytus ramiflorus), mapou (Myrsine australis) and ponga (Cyathea dealbata). In some parts hangehange (Geniostoma rupestre var. ligustrifolium), Coprosma rigida, C. robusta and pate (Schefflera digitata) were also common.

The vines Passiflora tetrandra and Parsonsia heterophylla were common species of this tier, with some of the larger vines ascending into the forest canopy. On the ground tangles of kiekie (Freycinetia baueriana ssp. banksii) were frequent and, especially toward the edges of the forest, this vine and supplejack (Ripogonum scandens) formed dense almost impenetrable thickets.

A healthy fern cover is also present in this remnant. The ferns are typical of those found in dry forest remnants throughout the Waikato and present no surprises. As with other drier forest remnants the moist depressions between the buttressed roots of the canopy trees were dominated by Asplenium bulbiferum s.s. and A. oblongifolium while the drier ground was usually covered in Lastreopsis glabella and Phymatosorus diversifolius.

On the edge of one remnant in a moist depression the fern Blechnum penna-marina was found. B. penna-marina is not a common fern in the western Waikato. In the western ranges it is known only from scattered sites on the Pirongia Range (WAIK) but it has been discovered on the mineralised edges of the Kimihia, Whangamarino and Opuatia Wetlands and is locally associated with damp banks and seasonal pools within kahikatea forest.

THE CHECKLIST

An indigenous vascular flora of 106 spp. (Appendix) was prepared from visits of the eighteen forest remnants in the McGregor Road area. The list presents a flora typical of the drier forest remnants of the Hamilton Basin; with a marked absence of cooler climate species (see table 2, de Lange 1989), only one species of the Hymenophyllaceae and only two Coprosma species.

A feature of the forests was the presence of Deparia tenuifolia of Kato (1984). This enigmatic fern differs from the more widespread D. petersenii spp. congrua only in the tripinnate nature of the frond and a tendency to have more stipe and rhacis scales. This fern has been found in several kahikatea remnants always associated with intermediate and normal bipinnate populations of D. petersenii ssp. congrua. At McGregor Road a series of collections were made showing the entire range of frond types, which in some cases had fully tripinnate fronds and bipinnate fronds occurring on single plants. There can be little doubt that this species is nothing more than an unstable form of the typical species. Fronds illustrating these features were lodged in WAIK and WELT for further study.

A small wetland flora survives along the edges of the now drained low moor peat bog that once occupied the central part of the McGregor Road Basin. Examples of this flora include; Isachne globosa, Baumea

rubiginosa, B. tenax, Carex maorica, C. secta s.s., Isolepis prolifer, Schoenoplectus validus, Nertera scapanioides and Ranunculus amphitrichus. These species are restricted to the drain edges near the fenced forest remnant (S15 087639).

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REFERENCES

- Champion, P.D. 1988. The Ecology and Management of kahikatea (Dacrycarpus dacrydioides (A. Rich.) de Laubenfels in the Waikato, North Island, New Zealand. Unpublished M.Sc. Thesis. University of Waikato, Hamilton.
- de Lange, P.J. 1985. The Indigenous Vascular Flora of the Gordonton - Sainsbury Road Kahikatea Forest Remnants of the periphery of the Komakorau Stream. Unpublished Checklist with updated annotations by P.D. Champion, University of Waikato Herbarium Records, Hamilton.
- de Lange, P.J. 1987. The Orini Kahikatea Forest, Tauhei - Whitikahu Road. Auckland Botanical Society Newsletter 42(2): 64-68.
- de Lange, P.J. 1988. New Records from the General Waikato - Part 1. N.Z. Bot. Soc. Newsl. 12: 8-10.
- de Lange, P.J. 1989. Koromatua Bush, Pirongia Highway. Auckland Botanical Society Journal 44(1): 12-22.
- de Lange, P.J. in prep. The Indigenous Flora of the Kahikatea Forests of the "Matangi Basin", south eastern Hamilton Basin.
- Kato, M. 1984. A taxonomic study of the athyroid fern genus Deparia with main reference to the Pacific species. Journal of the Faculty of Science, University of Tokyo, Section III, 13: 375-429.

APPENDIX The indigenous vascular flora of the McGregor Road kahikatea forest remnants, Ngahinapouri.

+ = rare or local within the forest remnants examined (usually less than ten individuals)

Gymnosperms

Dacrycarpus dacrydioides Prumnopitys ferruginea +
Dacrydium cupressinum P. taxifolia +

Ferns

Adiantum cunninghamii + Deparia petersenii ssp. congrua
Anarthropteris lanceolata + (incl. D. tenuifolia)
Asplenium bulbiferum s.s. Dicksonia fibrosa +
A. flaccidum s.s. D. squarrosa
A. oblongifolium Diplazium australe
A. polyodon Histiopteris incisa
A. bulbiferum s.s. x Hypolepis ambigua
A. flaccidum s.s. + Lastreopsis glabella
Blechnum filiforme Paesia scaberula
B. fluviatile + Pellaea rotundifolia
B. membranaceum + Phymatosorus diversifolius

B. minus
B. penna-marina +
B. sp. "Black spot" (common sp.
with basal pinnae reduced
B. capense sensu Allan 1961)
Cyathea dealbata
C. medullaris
C. smithii +

Monocot trees & shrubs

Cordyline australis

Monocot lianes

Freycinetia baueriana ssp. banksii Ripogonum scandens

Dicot trees

Alectryon excelsus var. excelsus Kunzea ericoides var. ericoides +
Aristotelia serrata + Laurelia novae-zelandiae
Beilschmiedia tawa Melicytus ramiflorus ssp. ramiflorus
Carpodetus serratus + Nestegis lanceolata +
Elaeocarpus hookerianus + Pittosporum tenuifolium ssp.
Fuchsia excorticata + tenuifolium
Hedycarya arborea + Schefflera digitata
Knightia excelsa Streblus heterophyllus +

Dicot shrubs

Coprosma rigida Leptospermum scoparium
C. robusta Melicytus micranthus +
Geniostoma rupestre var. Myrsine australis
ligustrifolium

Dicot lianes

Metrosideros diffusa + Parsonsia heterophylla +
M. perforata + Passiflora tetrandra
Muehlenbeckia australis +

Grasses

Deyeuxia avenioides + Isachne globosa
Dichelachne crinita + Oplismenus imbecillus
Ehrharta diplax + Poa anceps var. anceps
E. stipoides Rytidosperma unarede

Orchids

Drymoanthus adversus Earina mucronata

Rushes

Juncus australis J. planifolius
J. gregiflorus

Sedges

Baumea rubiginosa + C. solandri
B. tenax C. virgata
Carex dissita Isolepis prolifer
C. inversa I. reticularis
C. lambertiana + Schoenoplectus validus +
C. lessoniana Schoenus validus +
C. maorica + Uncinia uncinata
C. secta s.s. +

P. scandens
Pneumatopteris pennigera
Pteridium esculentum
Pteris tremula
Pyrrosia eleagnifolia
Trichomanes venosum

Monocots (other than grasses, orchids, rushes & sedges)

Astelia solandri
Collospermum hastatum

Lemna minor (auct. N.Z.)

Docot herbs

Acaena anserinifolia
Callitriche muelleri
Cardimine debilis agg.
Geranium potentillioides
Lobelia anceps

Nertera scapanoides
Oxalis exilis
Pratia angulata
Ranunculus amphitrichus
Solanum americanum

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ORCHID EXTRACTS FROM THE MATTHEWS CORRESPONDENCE

E.D. Hatch

The letters of R.H. and H.B. Matthews, covering material sent to Cheeseman over 20 years, are the basis of these notes. I am indebted to Anthony Wright for permission to peruse them. Comments in brackets in the letters are by EDH.

The Matthews brothers were most remarkable young men. Joseph came early to N.Z., while Richard sailed on the Beagle with Fitzroy and Darwin, in an attempt to found a Mission (single handed!), in Tierra del Fuego; in the harshest climate, and among the wildest savages on earth. The venture failed completely as was to be expected, and Fitzroy had to rescue Richard from the primitive Patagonians, take him back on board the Beagle, and put him ashore eventually in the Bay of Islands, where he joined his brother in 1835.

Meanwhile, on Sunday 11 November 1832, Joseph Matthews had 'discovered' Kaitaia, then inhabited (so the book says) by some 4,000 Maoris, and in 1834 he began a Mission Station there in company with William Gilbert Puckey. Matthews and Puckey were married to 2 sisters, the daughters of the Reverend Richard Davis of Waimate, and in July 1835 the first white children were born in Kaitaia; William George Puckey on the 3rd and Richard Henry Matthews on the 7th.

Thomas Kirk died in 1898, and in 1900 the government asked T.F. Cheeseman to write a Manual of the N.Z. Flora. He promptly commandeered the services, as botanical collectors, of his acquaintances in far away places. One of these was R.H. Matthews, whom Cheeseman had met while passing through Awanui on his several trips to the far north. The northern missionaries had early absorbed the plant lore of their Maori neighbours (Colenso the most notable example), and since they had to travel on foot over their vast parishes, they soon became competent bush-botanists, passing their knowledge on to their children.

R.H. Matthews died in 1912. His last letter to Cheeseman, 27.3.1912 ends - 'am in a parlous state, heart given out, dropsy from toes to breast, helpless'. The collector's mantle fell on his son, Henry Blencoe Matthews 1861-1934.

CHILOGLOTTIS FORMICIFERA R.D. Fitzg. Austr. Orch. 1:3.t 9 (1877)

RHM 9.7.1900 - 'I am glad to say that I have stumbled on another orchid