

PUKEMOKEMOKE, A FOREST REMNANT IN THE WAIKATOR.E. Beever

Although the forecast was not promising, and Auckland members drove through heavy rain, the skies had cleared by the time we reached the meeting point and 18 spirits were raised. Pukemokemoke, a hill reaching 166 m (543 ft) is largely owned by the local council who are quarrying the western end for road metal. Pioneer Waikato botanist M.C. Gudex wrote a brief account of the area and listed the native vascular plants in a paper 'Native Flora of Tauhei-Pukemokemoke (Middle Waikato Basin)' in TRSNZ Botany 1: 317-321 (1962). The south eastern end, which we visited, comprises about 40 hectares and is owned by Mr David Johnstone who spoke to us telling of his plans to set up a trust to administer it as a private reserve for outdoor recreation. The future reserve consists of a long ridge flanked to the south by spurs running down to the Mangatea Stream. Habitats include dry ridges, steep south facing slopes, frost-prone valley floor and small swamps, this diversity accounting at least in part for the diversity of plant life. Most of the area is forest covered but there are small grassland areas where a sawmill once stood and along the 4-wheel access near the stream.

Some large totara remain close to the stream. Matai, tawa, titoki and tarata are common on the lower slopes and near the valley floor with putaputaweta and pukatea prominent in wetter regions. Tanekaha becomes important on the dry ridges where old kanuka are beginning to fall. An occasional fallen kauri head betrayed the sawmillers past activities. While a few small kauri remain there is little indication of kauri regeneration. The few large hard beech and fine clump of kawaka that we were shown looked healthy but like kauri we saw no sign of regeneration. The forest margin near the stream was of particular interest with many divaricating shrubs: the juvenile phase of Pennantia corymbosa, Paratrophis microphylla, Melicytus micranthus, Melicope simplex, Coprosma areolata, C. rotundifolia (these two not strictly divaricating), C. rhamnoides, and of special interest Pseudopanax anomalum. In the lower forest reaches Metrosideros colensoi caught our eye drooping elegantly from leaning trunks - presumably this is the var pendens recognised by Colenso who commented 'It is a beautiful plant in its native wilds, and will, no doubt, at some future day, become a favourite garden one, on account of its elegant pendulous habit'. Is it yet in cultivation? The single Weinmannia seen had trifoliate glabrous leaves and glabrous twigs placing it in W. silvicola var. betulinus. Amongst the ferns of special interest was the seldom found Doodia caudata which was apparently used by the Maori as a perfume plant. On referring to Colenso I found that this plant gave its name to Pukemokimoki, a hill, now levelled, in Napier. Perhaps it likewise gave its name to our hill although a derivation from mokemoke meaning isolated or solitary is also plausible.

Amongst the dicots seen by us but not listed by Gudex were black nightshade Solanum nodiflorum, easily confused with the introduced S. nigrum but distinguished by its smaller umbellate flowers, and karaka. In a later paper 'The Native Flora of Maungatautari and the Kaimai Range, and the distribution of native plants in the Waikato' in TRSNZ Botany 2: 173-184 (1963) Gudex comments that karaka occurs sparsely in inland Waikato where it is usually only represented by scattered individuals and small groups, a distribution that he suggests supports the theory that karaka was planted at such sites by the Maori. We saw only one large tree and scattered seedlings in a gully near the old sawmill site. Turning to the monocots hedgehog grass, Echinopogon ovatus was noted by Jack Mackinder. This grass is rare in the Waikato being known by

Gudex only from one plant on Taupiri Mountain. The find of the day was undoubtedly Jessica Beever's of the orchid Bulbophyllum tuberculatum on a small fallen branch. It is a strange coincidence that this relatively rare plant should have been found also on the September ABS trip to Logues Bush near Wellsford.

While the future reserve has been modified by man's activities it is still a very important natural feature containing as it does a remnant of the now much reduced Waikato Basin flora. We were disappointed to see that the exotic fern ally Selaginella kraussiana was well established in the lower areas, and barberry (Berberis glaucocarpa) and privet (Ligustrum sinense) are present at the forest margin, but the influence of adventive plants is minor. While the future reserve probably includes most of the species listed by Gudex it is likely that it does not include all. We did not see the heath association Gudex reported as present on the higher parts of the ridge where Epacris pauciflora and Pomaderris ericifolia var. phylicifolia occur. Nevertheless the area will form a most significant reserve. We wish Mr Johnstone success in establishing it and trust the botanical features of the area will be preserved intact.

Our visit was most ably arranged and led by Waikato members Mary Skinner and Peggie Jenner. The Society was indeed fortunate to have the opportunity to visit the site.

#### THE FLORA

The following list contains vascular plants and mosses seen by us. A ? indicates uncertainty as to the exact taxon seen; fl indicates flowering; fr indicates fruiting. We found 142 vascular plants comprised of 45 ferns and allies, 9 gymnosperms, 64 dicots, and 24 monocots compared with Gudex's total of 215 (58,9,97,51). Gudex did not list mosses; we list 46 species.

VASCULAR PLANTS (compiled R.E. Beever, J.E. Beever, E. Brown, J. Mackinder, B.E. Oldham, M. Skinner)

#### Ferns & allies

<i>Adiantum cunninghamii</i>	
<i>A. diaphanum</i>	
<i>A. fulvum sensu Parris</i>	} M.C.G. as <i>A. fulvum</i>
<i>A. viridescens</i>	
<i>Anarthropteris lanceolata</i>	
<i>Arthropteris tenella</i>	
<i>Asplenium bulbiferum</i> ssp. <i>bulbiferum</i>	
<i>A. bulbiferum</i> ssp. <i>gracillimum</i>	M.C.G. as var. <i>laxum</i> & var. <i>tripinnatum</i>
<i>A. flaccidum</i>	
<i>A. oblongifolium</i>	M.C.G. as <i>A. lucidum</i>
<i>A. polyodon</i>	M.C.G. as <i>A. falcatum</i>
<i>Athyrium japonicum</i>	new record
<i>Blechnum 'capense'</i>	
<i>B. filiforme</i>	
<i>B. fluviatile</i>	
<i>B. chambersii</i>	M.C.G. as <i>B. lanceolatum</i>
<i>B. membranaceum</i>	
<i>Cyathea dealbata</i>	
<i>C. medullaris</i>	
<i>Dicksonia squarrosa</i>	

Doodia caudata	
D. media	
Histiopteris incisa	
Hymenophyllum demissum	
H. flabellatum	
H. flexuosum	
H. sanguinolentum	
Hypolepis rufobarbata	new record
Lastreopsis glabella	M.C.G. as Ctenitis glabella
L. hispida	M.C.G. as Rumohra hispida
L. microsora	M.C.G. as Ctenitis decomposita
Leptopteris hymenophylloides	M.C.G. as Todea hymenophylloides
Lygodium articulatum	
Pellaea falcata	
P. rotundifolia	
Phymatosorus diversifolius	M.C.G. as Phymatodes diversifolium
P. scandens	M.C.G. as Phymatodes scandens
Pneumatopteris penniger	M.C.G. as Thelypteris pennigera
Polystichum richardii	
Pteridium esculentum	M.C.G. as P. aquilinum var. esculentum
Pteris macilenta	
P. tremula	
Pyrrosia serpens	
Tmesipteris lanceolata	?M.C.G. as T. tannensis
 Gymnosperms	
Agathis australis	
Dacrycarpus dacrydioides	M.C.G. as Podocarpus dacrydioides
Dacrydium cupressinum	
Libocedrus plumosa	
Phyllocladus trichomanoides	
Podocarpus ferrugineus	
P. hallii	
P. spicatus	
P. totara	
 Dicotyledons	
Acaena anserinifolia fl	
Alectryon excelsus fl,fr	
Aristotelia serrata (in quarry)	
Alseuosmia banksii x macrophylla	M.C.G. as A. quercifolia
Beilschmiedia tawa fr	
Brachyglottis repanda	
Calystegia sepium fl	new record
Cardamine debilis	new record
Carmichaelia sp. fl	?M.C.G. as C. cunninghamii
Carpodetus serratus fl	
Clematis ?forsteri	
C. paniculata	
Corynocarpus laevigatus	new record
Coprosma arborea	
C. areolata	
C. lucida	
C. propinqua	
C. propinqua x C. robusta	M.C.G. as C. cunninghamii
C. rhamnoides fr	
C. rotundifolia fr	
C. spathulata	

Cyathodes fasciculata	
C. juniperina	
Dodonaea viscosa	
Dysoxylum spectabile	
Elaeocarpus dentatus	
Fuchsia excorticata	
Geniostoma rupestre	M.C.G. as G. ligustrifolium
Haloragis erecta	
Hebe ?stricta	
Hedycarya arborea	
Knightia excelsa fl	
Laurelia novae-zelandiae	
Leptospermum ericoides	
Litsea calicaris	
Lophomyrtus bullata	
Macropiper excelsum var. excelsum	
Melicope simplex	
Melicytus micranthus	
M. ramiflorus	
Metrosideros colensoi var. pendens	M.C.G. as M. colensoi
M. diffusa	
M. perforata	
Muehlenbeckia australis	
Myrsine australis	
Nestegis lanceolata	
N. montana	
Nothofagus truncata	
Olearia rani fl	
Oxalis corniculata	
Paratrophis microphylla	
Parsonsia sp.	M.C.G. records P. heterophylla and P. capsularis
Passiflora tetrandra	M.C.G. as Tetrapathaea tetrandra
Pennantia corymbosa fl	
Pittosporum eugenioides	
P. tenuifolium	
Pseudopanax anomalus fl	M.C.G. as Neopanax anomalum
P. crassifolius	
Rubus australis	
R. schmidelioides	
Schefflera digitata	
Solanum ?aviculare	
S. nodiflorum	new record
Weinmannia silvicola var. betulina	M.C.G. as W. silvicola

## Monocotyledons

Astelia ?solandri	
Bulbophyllum tuberculatum	new record
Carex geminata fr	
C. virgata fr	
C. solandri fr	
Collospermum hastatum	
Cordyline australis	
C. banksii	
Cyperus ustulatus	M.C.G. as Mariscus ustulatus
Dianella nigra	M.C.G. as D. intermedia var. norfolkensis
Drymoanthus adversus	M.C.G. as Sarcochilus adversus
Earina mucronata	
Echinopogon ovatus	new record

Freycinetia baueriana ssp. banksii	M.C.G. as F. banksii
Gahnia lacera	
G. sp. (large)	M.C.G. lists G. setifolia and G. xanthocarpa
Microlaena avenacea	
Oplismenus imbecillus	M.C.G. as O. undulatifolius
Poa anceps	
Rhopalostylis sapida	
Ripogonum scandens	
Typha orientalis (in quarry)	M.C.G. as T. muelleri
Uncinia banksii	M.C.G. as U. riparia var. banksii
U. uncinata	M.C.G. as U. australis

## MOSESSES (compiled by J.E. Beever)

Achrophyllum dentatum	Lopidium concinnum
Breutelia pendula	Macromitrium gracile
Bryum sp.	M. ligulare
Calomnion laetum	Neckera pennata
Camptochaete arbuscula	Orthorrhynchium elegans
Catagonium politum	Papallaria crocea
Catharomnion ciliatum	P. flexicaulis
Cryphaea ?exannulata	Porotrichum oblongifolium
Cyathophorum bulbosum	Ptychomnion aciculare
Dicranoloma fasciatum	Racopilum convolutaceum
Echinodium hispidum	Rhizogonium novae-hollandiae
Eriopus cristatus	Rhynchostegiella muriculata
Fissidens humilis var. angustifolius	Rhynchostegium tenuifolium
F. leptocladus	Sematophyllum amoenum
F. pallidus	Tetrarhizopsis pusilla
F. pungens	Thamniobryum pandum
F. rigidulus	Thuidium furfurosum var. furfurosum
F. tenellus	T. furfurosum var. sparsum
Homalia falcifolia	Trachyloma diversinerve
H. pulchella	Trichostomum brachydontium
Hypnum chrysogaster	Weymouthia mollis
Leptostomum macrocarpum	Wijkia extenuata
Leucobryum candidum	Zygodon intermedius

OPHIOGLOSSUM CORIACEUM

Katie Mays

It is good to know that the quaint adder's tongue fern, Ophioglossum coriaceum is still in the Waitakeres. Found growing on a rocky outcrop on September 23rd, this colony had many fertile spikes and yellow clouds of spores could be seen when they were touched. The tallest no more than an inch high, these tiny plants can be easily overlooked. "Flora of New Zealand" states that it is "Not uncommon in grassy places throughout" and I have seen it in the Lower Hollyford Valley growing on a grassy river flat. Here in Auckland it seems to favour exposed hilltops where soil is sparse and perhaps because of this its season is short, it becomes fertile in the spring and dries up and dies away in the hot sunny days of summer. Those found on the 23rd September were growing in association with tiny plants of the fern Cheilanthes sieberi, the sundew, Drosera auriculata and the heath, Cyathodes fraseri.

30 September 1984