

I thank other members of the party for assistance in the field, especially Ross Beever, Shannel Courtney and Fred Brook for their contributions to the moss collection. I am also grateful to Allan Fife (Botany Division DSIR) for confirming or determining a number of specimens.

Received 22 June 1987.

PUKITU - WOODHILL

E.K. Cameron

On 16 February and 6 August 1987 I looked at the vegetation on Pukitu; a stabilised sand dune (NZMS 260 Q09 187225; 40-140 m ASL). This small hill with indigenous vegetation covering less than 3 hectares in Woodhill State Forest was mentioned by Cameron & Bellingham (1986) as the apparent southern limit for Hebe diosmifolia under the heading "Area 4". Pukitu knoll is surrounded by a pine plantation and the nearest native vegetation is the Coal Seam Hill Ecological Area just over 1 km to the south (see map of Cameron & Bellingham 1986). Along with the four Ecological Areas in Woodhill, Pukitu is now owned by the new Forestry Corporation and is covenanted to the new Department of Conservation.

The tallest vegetation is pure kanuka 6-8 m tall on the summit of the knoll and this extends eastwards for a short distance. There are plenty of canopy gaps which have encouraged a dense undergrowth of Hebe diosmifolia, mingimingi (Leucopogon fasciculatus), Coprosma crassifolia and weeping mapou (Myrsine divaricata) to a height of about 2 m. The sloping eastern margin also contains stocky plants of N.Z. broom (Carmichaelia aligera) up to 4 m tall. A small area has been cleared in the kanuka for the placement of a trig. This opening has allowed pampas (Cortaderia seloana) to establish here.

From the top of the knoll to the west the kanuka is lower (4-6 m tall), denser, and with scattered narrow bushes of weeping mapou and Coprosma crassifolia. On the west facing slope under the kanuka, Poa pusilla and Lagenifera stipitata are common. On the open margins H. diosmifolia is locally abundant, 1-4 m tall, standing out because of its bright green foliage. Also present on the margin are low shrubs of mingimingi and kanuka.

The native cover on the knoll's southern side extends further than on the other flanks and is locally dominated by houpara (Pseudopanax lessonii) up to 5 m tall. Occasional hybrid Pseudopanax are also present and equally as tall. Associated with the houpara are weeping mapou, Coprosma crassifolia, the occasional Coprosma macrocarpa and larger kanuka.

Very few individuals were seen of the filmy fern, hangehange, mahoe, kawakawa, Myrsine australis, Parsonsia and Pellaea. Apart from bryophyte mats the ground is frequently bare. The fern, Doodia media is only on the lower southern slope. The most frequent ferns are bracken,

hound's tongue (Phymatosorus diversifolius) and Pyrrosia. Houpara seedlings are common and usually chewed. H. diosmifolia seedlings are the next most frequent.

H. diosmifolia is represented throughout the vegetation in the more open areas by seedlings up to tall shrubs. In February many were in flower, a few were flowering profusely and others lacked flowers. On 31 December 1986 Hebe flowers and flower buds were absent (W. Patterson pers. comm.), and in August only empty seed capsules were present. Pukitu is the only known locality in Woodhill for Hebe diosmifolia and the nearest population appears to be in Tapu Bush, Pouto Peninsula, where it also grows on sand (R.M. Bellingham pers. comm.) 23 km north-west of Pukitu.

Lagenifera : R.O. Gardner pointed out (pers. comm.) that the Ball specimen from Woodhill of Lagenifera pinnatifida (see Cameron & Bellingham 1986) was in fact a mixed sheet containing both L. pinnatifida s.s. (AKU 5365) and L. stipitata (L. pinnatifida var. tenuifolia) (now AKU 19364) and that Woodhill was an unlikely locality for L. pinnatifida s.s. Judging from Drury's (1974) account and the specimens at AK and AKU this Woodhill specimen of Ball's collected in 1885 appears to be the first collection of L. stipitata in N.Z. and so far it has only been recorded from Kaimaumau to Reef Point (Tauroa) in Mangonui County, south along the west coast on stabilised dunes to Te Henga.

There is also an undated (1870-1923) Cheeseman specimen (AK 9353) from Woodhill. Drury (1974) was only aware of plant specimens from Mangonui County and felt that L. stipitata could be adventive in N.Z. These earlier Woodhill records some 180 km further south strengthen the case for L. stipitata to be a N.Z. native.

Correction : Lagenifera pumila and Poa pumila records for Coal Seam Hill Ecological Area (Cameron & Bellingham 1986) should be L. stipitata and P. pusilla respectively.

VASCULAR PLANT LIST FOR PUKITU

m = mainly restricted to the open margins

Ferns

<u>Asplenium flaccidum</u> ssp. <u>flaccidum</u>	<u>Pellaea rotundifolia</u>
<u>A. oblongifolium</u>	<u>Phymatosorus diversifolius</u>
<u>Doodia media</u> ssp. <u>australis</u>	<u>Pteridium esculentum</u>
<u>Hymenophyllum dilatatum</u>	<u>Pyrrosia serpens</u>

Dicotyledons

<u>Carmichaelia aligera</u>	<u>Lotus saueolens</u> m
<u>Cassinia retorta</u> m	<u>Lupinus arboreus</u> m
<u>Centaurium erythraea</u> m	<u>Macropiper excelsum</u>
<u>Conyza albida</u> (<u>C. floribunda</u>)	<u>Melicytus ramiflorus</u>
<u>Coprosma crassifolia</u>	<u>Muehlenbeckia complexa</u>
<u>C. macrocarpa</u>	<u>Myrsine australis</u>
<u>C. macrocarpa</u> x <u>C. robusta</u>	<u>M. divaricata</u>
<u>C. rhamnoides</u>	<u>Oxalis rubens</u> (<u>O. stricta</u> auct. N.Z.) m
<u>Corokia cotoneaster</u>	<u>Parsonsia ?heterophylla</u>
<u>Crepis capillaris</u> m	<u>Pseudognaphalium luteoalbum</u> m
<u>Cyathodes fraseri</u> m	

<i>C. juniperina</i>	<i>Pseudopanax crassifolius</i> x <i>P.</i>
<i>Geniostoma rupestre</i>	<i>lessonii</i>
<i>Hebe diosmifolia</i>	<i>P. lessonii</i>
<i>Hypochaeris radicata</i>	<i>Senecio bipinnatisectus</i>
<i>Kunzea ericoides</i>	<i>S. biserratus</i>
<i>Lagenifera stipitata</i> (AKU 19797)	<i>Solanum americanum</i> m
<i>Leucopogon fasciculatus</i>	<i>Sonchus oleraceus</i>

Monocotyledons

<i>Carex testacea</i>	<i>Holcus lanatus</i>
<i>Cortaderia jubata</i> m	<i>Oplismenus imbecillis</i>
<i>C. selloana</i>	<i>Poa pusilla</i>
<i>C. splendens</i> m	<i>Rytidosperma unarede</i>
<i>Corybas trilobus</i>	<i>Scirpus nodosus</i> m
<i>Deyeuxia billardieri</i> m	<i>Sporobolus africanus</i> m
<i>Dichelachne crinita</i>	<i>Zoysia pauciflora</i> m

REFERENCES

- Cameron, E.K. & P.J. Bellingham. 1986. Woodhill State Forest - notes on several natural areas. Auck. Bot. Soc. Newsletter 41(2): 46-52.
- Drury, D.G. 1974. A broadly based taxonomy of Lagenifera Section Lagenifera and Solenogyne (Compositae - Astereae), with an account of their species in N.Z. N.Z. Jl. Botany 12(3): 365-396.

Received 22 April 1987, revised 19 August 1987.

THE INDIGENOUS VASCULAR FLORA OF A LARGE GULLY SYSTEM BORDERING THE SOUTH EASTERN SUBURBS OF HAMILTON CITY

P.J. de Lange

INTRODUCTION

The gully systems of the Hamilton basin have in the past been ignored by botanists and naturalists alike, primarily because of the problems of access and the unsanitary conditions of some of the systems e.g. effluent discharging and rubbish tips. However during surveys of several gully systems in the Hamilton basin it has become increasingly apparent that the indigenous flora of some of these systems is much better preserved than the remnants on the drier table land from which the gully's drain. This point was well illustrated by de Lange (1986) who examined the flora of the Koromatua gully systems and found an indigenous vascular flora of 205 species and hybrids including the vulnerable king fern (Marattia salicina) (Given 1981), kauri (Agathis australis) - a species thought extinct within the basin and a number of