



Thelymitra

SUBMISSION
ON THE PROPOSED
FOREST PARK
CORNWALLIS

**AUCKLAND
BOTANICAL
SOCIETY**

DECEMBER, 1981

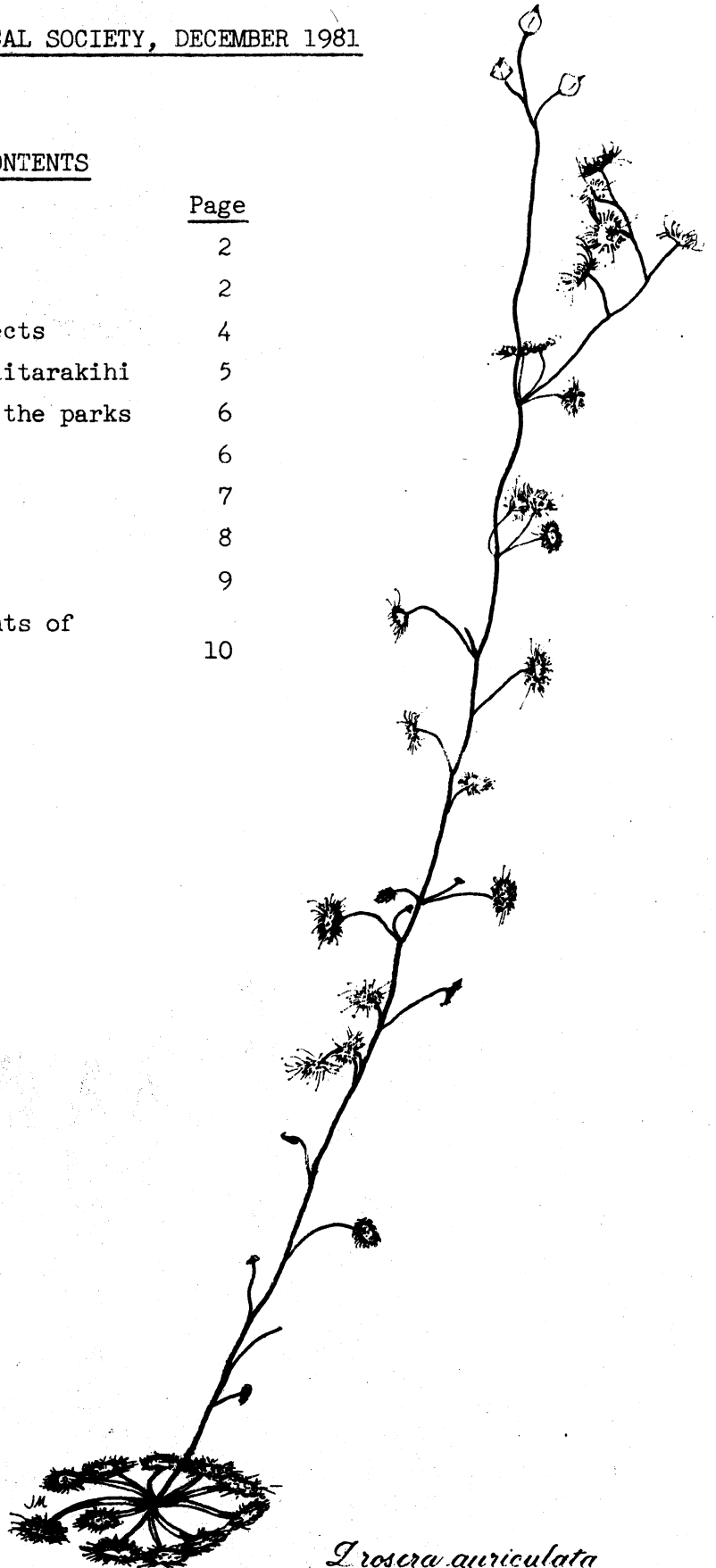
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Rosera auriculata

1. INTRODUCTION AND SUMMARY

Since its foundation in 1937 our Society has had a particular interest in the diverse botany of the Waitakere Ranges, their forests and scrubland, sand dunes and swamps. Thus we are particularly interested when new plans for the management of the Ranges' parks are proposed. In August 1981 the Planning Division of the Auckland Regional Authority produced a Discussion Document "Proposed Cornwallis Forest Park" in which a possible plan for the future of the public parks of Cornwallis and Kaitarakihi is described. The essence of this plan is to convert most of those lowland areas of the park where regeneration of indigenous tree species is limited into exotic production forests; other lowland areas where indigenous tree species are regenerating will be managed for timber production. A variety of facilities for visitors are envisaged including an information centre, specimen tree plantings, interpretative trails and improved access to the beaches. The history of the kauri forestry of the area will be emphasised in a museum, a small sawmill may be built and perhaps a kauri dam reconstructed. Thus it is hoped the park will help develop community awareness of the historical and biological features of the area with particular emphasis on the role of forestry.

While our Society supports many of the ancillary aspects of the plan, and accepts the need for increased facilities for visitors, it is opposed to the central feature of the plan, which is the establishment of an exotic forest. In addition we have reservations about the appropriateness of indigenous forestry management here. Our prime reason for opposing exotic forestry is that its establishment will lead to the destruction of one of the last remnants of gumland in the vicinity of Auckland city. Few remnants of this peculiarly northern New Zealand plant association are presently reserved in any way and there are no significant areas in the Centennial Memorial Park. We suggest that the appropriate future for Cornwallis and Kaitarakihi Parks is for them to be incorporated into the Centennial Park. Those areas where indigenous forest is present, or actively regenerating, should be left essentially untouched; the gumland remnants should be managed in a manner which will ensure their continued existence.

2. GUMLAND, WHAT IS IT ?

The first Europeans to visit northern New Zealand found vast forests many of which were soon to be exploited for their prized kauri timber. But not all the land was covered by forest. Much was covered by low shrubby vegetation variously referred to as "tea tree", "fern", "moorland", "barren heath" and or "scrubland". The predominant plant over most of this area was

anuka (Leptospermum scoparium). Ecologically it is important to distinguish two types of Leptospermum scrubland. The first is that on relatively fertile soils, which is transitional to forest over a period of about 100 years. Undoubtedly some such areas were present in Maori times having established on areas that had been burnt, either accidentally or on purpose. Following European settlement, however, extensive areas were created as the forests were felled and the land burnt. The second type of Leptospermum scrubland is on very nutrient-poor soils often of impeded drainage because of the presence of impervious soil pans. It occupied perhaps as much as one quarter of the land north of Auckland city at the time of European settlement (Taylor & Sutherland, 1953).

These nutrient-poor scrublands were once covered in kauri forest, its acid leaf litter promoting the downward movement of nutrients from the topsoil. The former presence of kauri is shown by the kauri gum buried in the soil, hence the term "gumland".

Little is known of the development of gumland from kauri forest nor of the factors needed for its maintenance. The existence of the special gumland flora implies that it was a distinct community in primitive times before the arrival of the Maori. Probably fires started by natural causes helped to establish and maintain it. Although fire leads to a release of mineral nutrients from standing vegetation, and thus results in a transitory increase in the nutrients available for plant growth, some of the nutrients will be carried away in runoff and leached deep into the soil profile so that repeated burning contributes to the progressive depletion of soil fertility. With the arrival of the Maori, fires undoubtedly increased in frequency and probably led to an increase in the areas of gumland. When the gumdigger arrived he frequently burned the gumland vegetation to improve access and thus the picture of gumland around the turn of the century was of countryside covered with a very short (and young) vegetation. In the absence of burning it is doubtful whether the most nutrient depleted sites will show major changes but where the soil has been disturbed such as by gum digging and roading, drainage will improve and extra nutrients will become available, and over a period of possibly centuries forest may become re-established. To maintain gumland remnants as a distinct community it will probably be necessary to burn and/or cut it periodically.

Because of the low nutrient status of the soils, and their often poor structure, relatively few groups of plants are able to grow there. The total gumland flora comprises some 70 - 80 species (see Appendix), which are of particular botanical interest because of the variety of strategies that they have adopted to colonize this habitat. The dominant shrub is the adaptable manuka but there is a characteristic assemblage of other shrub species,

including Cyathodes (mingimingis), Dracophyllum, Olearia furfuracea and gum-digger's soap (Pomaderris kumeraho) and its allies. There are typically few dicot herbs apart from the bizarre sundews Drosera auriculata and D. binata which augment their meagre nutrient rations from the soil by catching and digesting insects. Monocots are relatively well represented. The dwarf cabbage tree Cordyline pumilio is usually found along with the superficially similar blueberry (Dianella nigra). Only a few grasses, including some danthonias (Rytidosperma species), are present but sedges are common. To the inexperienced eye the sedges resemble one another quite closely but there are in fact many distinguishing features. Gumland sedges include species of Baumea, Carex, Gahnia, Lepidosperma, Morelotia, Schoenus and Tetraria. To the general public orchids conjure up images of tropical forests so that it may come as a surprise that over 20 species are characteristic of gumland. Genera represented include Caladenia, Chiloglottis, Corybas, Microtis, Orthoceras, Prasophyllum, Pterostylis and Thelymitra. Ferns are a distinctive feature of gumland. Those present include the umbrella fern Gleichenia circinata, the diminutive Lindsaea linearis, the inconspicuous comb ferns Schizaea bifida and S. fistulosa and of course bracken (Pteridium aquilinum var esculentum). The club mosses Lycopodium cernuum, L. deuterodensum and L. laterale are frequently found but that "living fossil" Phylloglossum drummondii is unfortunately rare. Lower plants are an important element also. Terrestrial mosses such as Dicranoloma billardieri and Tayloria calophylla and lichens of the genus Cladonia are conspicuous in drier regions.

The intent of this brief account is to point out that gumland is a distinct ecosystem characterised by a peculiar assemblage of plants. Unfortunately, as pointed out by D.R. Given in his book on rare and endangered plants (Given, 1981), this habitat is now at risk. Scientifically, gumland has not been well documented. Very few scientific accounts of gumland have been published, and the only reasonably detailed botanical account is for a small remnant near Kaikohe (Esler and Rumball, 1975). Furthermore few gumland remnants remain - most are now rolling farmland, forests of exotic pines or city suburbs. Thus it is imperative that some remaining remnants be preserved.

3. HISTORICAL AND LANDSCAPE ASPECTS

The history and landscape features of the Cornwallis area are briefly described in the Discussion Document but one major element, that of gumdiggers and gumland, is barely mentioned. In the vicinity of Auckland gumland occupied an area stretching from the Waitakere Ranges north towards Helensville and across to the East Coast Bays and Whangaparaoa Peninsula (Beever, 1981). Most of this has now disappeared forever. Gumdiggers and gumland were however very much part of the history and heritage of that part of Auckland "west of the [redacted] (Diamond, 1977). Gumdiggers were active over much of the Cornwallis

insula and indeed burnt almost all the region covered by the Cornwallis and Kaitarakihi Parks at one time or another (Esler and Astridge, 1975).

We are disappointed at the lack of appreciation in the Discussion Document of scrubland and in particular gumland. To quote a few examples:

On page 10 "There are many different landscape characters represented in the Cornwallis Park including the wild bush covered ranges to the north, intimate sheltered sandy beaches pine covered headlands bush-filled stream gulleys." But 'where is the scrubland?' we would suggest the distinctive Cornwallis landscape.

On page 17 "The higher area from 500 metres north of Huia Road has relatively healthy indigenous and exotic vegetation, while in the area south of this line the vegetation is much less thrifty due to the soil phosphate deficiency. However within this general area, and particularly near the coastal areas there are pockets of healthy vegetation." Agreed that the pines don't look too healthy so we can assure the writer that the scrubland is perfectly healthy. There are very natural communities of low nutrient status in the world such as the heathlands of Europe, and the tropical rainforests; gumland is one particular type found in New Zealand.

On page 20 "the results of 'doing nothing' for the past few decades are there for all to see." While stunted pines are unattractive they'll go given time, but the scrubland is surely the essence of the area - the flowering of manuka scrubland is one of the New Zealand sights.

GUMLANDS OF THE CORNWALLIS AND KAITARAKIHI PARKS

The extent of gumland in the parks can be at least approximately estimated from Fig. 4 of the Discussion Document. Those areas designated as "Mixed Scrub - dense and bracken common, little regeneration" undoubtedly represent the main regions. These regions all lie in the southern lowland part of the park and are mostly scheduled for exotic afforestation in the proposed plan (see Fig. 1 of the Discussion Document). We understand that a detailed forestry assessment of the region is underway (page 41, Discussion Document) but are disturbed that little emphasis is being given to non-tree species.

When our Society visited Kaitarakihi in November 1981 one of the major aims was to see the Thelymitra sun orchids which are found around Spragg's Memorial. The blue-flowered Thelymitra aemula, the pale blue T. pauciflora, the rose-pink intermedia and the white-flowered T. longifolia were all in bloom. The creamy-pink T. carnea flowers somewhat earlier and was by this time seeding. These orchids need open areas, such as those provided by clay banks and road verges, to grow and we were disturbed to notice that in overzealous "tidying" of the verges they had been trimmed off.

In order to satisfy ourselves that the area under discussion was worthy of preservation a small group of members visited the piece of gumland extending north of the Huia Road between the Pine Avenue junction and the Panto Track entrance. We traversed this area over about 3 hours and listed over 40 gumland species; further searching would doubtless reveal more. Although the exotic weeds Hakea sericea and gorse (Ulex europaeus) are present along the road margin they are rare over most of the interior. The pines are still stunted after more than 50 years, providing salutary confirmation that this is still indeed a gumland pocket. Some growth trials with indigenous conifers have recently been established in the western part of this area. To establish these areas the ground cover of Schoenus tendo has been flattened and small areas cleared. We found the gumland orchids Thelymitra intermedia, T. pauciflora, Pterostylis graminea, Acianthus fornicatus var sinclairii and notably a large group of about 10 plants of the relatively infrequent Chiloglottis cornuta in this trial block.

There is no detailed listing of the plants of the Cornwallis and Kaitarakihi Parks but it is probable that most of the typical gumland plants are present in at least one of the gumland pockets. Absentees probably include Phylloglossum drummondii which was once present at Waikumete, but the rare Pterostylis barbata & P. nana have both been found here. Although some of the gumland species are found in other communities, many of them are most at home here, and their continued existence is dependent on the preservation of the whole community.

5. SUGGESTIONS ON THE FUTURE OF THE PARKS

5.1 The gumland remnants. We strongly urge that these remnants are not destroyed. In the Discussion Document the proposed 'management' for most of them is to crush the shrubs and rip the soil with heavy machinery to a depth of about 1 metre, to ridge the soil, and to plant exotic trees on the ridges. Fertiliser would be added to stimulate tree growth. Needless to say the gumland would be annihilated. All the present remnants should be reserved and appropriately managed.

As mentioned earlier to maintain the gumland cutting of the tall shrubs and burning on some sort of rotational basis is probably necessary. Some exposed clay banks are part of the gumland habitat and are needed for some of the orchids to grow on. Weeds, and in particular Hakea sericea will need to be controlled by cutting and removal. Such active management of nature reserves has seldom been attempted in New Zealand but is very much the common practice with selected communities in other parts of the world. For example, the role of fire in maintaining allied heathlands in Australia is now being appreciated.

Verges abutting the gumland should not be fertilized nor seeded with exotic clovers and grasses but merely trimmed occasionally. In particular they should not be touched from about September to January to allow the orchids to flower and disperse their seeds.

In the Discussion Document the gumland of Kaitarakihi around Spragg's Monument is not to be afforested but suggestions for its management are made. On page 25 it is proposed to

"(i) Clear scrub back to restore full view."

This is desirable from the point of view of retaining the gumland and also in accordance with the commitment in 1919 by the "Mayor Councillors & Citizens of Auckland" to "at all times maintain the surrounding lands (around Spragg's Monument) so that all views herefrom over all aspects both distant and near shall be free open and unobstructed."

"(ii) Cultivate and grass the cleared area."

No ! Perhaps make some paths but otherwise allow the gumland flora to re-establish. Do not actively disturb the soil as this will encourage the growth of gorse and other weeds.

"(iii) Plant clumps of low growing shrubs and a few clumps of larger trees for shade."

No ! The gumland shrubs are low growing and large trees would be an alien element to the area. We noticed on our recent visit that puriri (*Vitex lucens*) had been planted in a few places around the monument. These should be removed.

"(iv) Develop a picnic area."

We would suggest that the area is not really an appropriate one for picnics. Facilities for this activity should be confined to the bays and grassy areas around them.

On page 26 of the Discussion Document it is suggested that more defined tracks should be cut around Spragg's Monument. Such tracks, as well as giving access to viewing points and to fishing spots, will allow the unadventurous visitor to see the gumland and coastal scrub more readily. Caution should be taken however not to bring in weeds along with path metal. Digging drainage ditches along track margins will tend to increase spread of gorse.

5.2 The other areas. While our submission has primarily concentrated on the gumland we wish to provide comment and opinion on the other areas. While there are still some areas of pine forest in reasonable condition in the parks we see no reason for these to be extended. As is commented on page 7 of the Discussion Document "When planting was planned in 1959 the council was reminded that it was administering a public park, not a commercial plantation, and the scheme was abandoned." While the stand of Pinus muricata and P. pinaster on the head-

land of Cornwallis Peninsula are attractive (Discussion Document, page 8), they are alien to the area. Certainly there is no need to "strengthen" nearby Lawry Point, an area apparently "weak in character", by planting exotic trees. We would prefer to see the pines of the park left untouched. They will eventually die out and their removal would require disturbance of the soil which would lead to further establishment of gorse.

A significant part of Cornwallis and Kaitarakihi Parks are in actively regenerating indigenous forest which would make a very welcome addition to the Centennial Park. While management of such areas for timber production is feasible we would suggest that such is not appropriate in public parks such as these.

5.3 Concluding remarks. In conclusion we believe that this area is not an appropriate one to create a forestry park of the type suggested. If it is considered desirable to create one near Auckland we would suggest that the possibility of establishing one in the Hunuas should be examined. The visual scars created by soil ripping and ridging, the noise of sawmills, the heavy logging trucks are surely not part of this quiet backwater. In contrast to the opinion expressed in the Discussion Document that the area is "not an integral part of the Centennial Memorial Park" we suggest that it is inextricably linked with it both physically and historically. Its incorporation into that park would be a most significant addition, particularly if in its future management due consideration is given to its gumland history.

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APPENDIX

A list of the gumland plants of the Auckland district.

DICOTYLEDONSShrubs

Cyathodes fasciculata	Leptospermum ericoides
C. juniperina	L. scoparium
Dracophyllum sinclairii	Olearia furfuracea
Epacris pauciflora	Pimelea prostrata
	Pomaderris kumeraho
	P. phylicifolia

Herbs

Drosera auriculata	Gonocarpus incanus
D. binata	G. montanus

MONOCOTYLEDONSOrchids

Acianthus fornicatus var sinclairii	Pterostylis alobula
Bulbophyllum pygmaeum	P. banksii
Caladenia carnea	P. barbata
Chiloglottis cornuta	P. graminea
Corybas aconitiflorus	P. nana
C. macranthus	P. trullifolia
C. oblongus	Thelymitra aemula
Microtis unifolia	T. carnea
M. parviflora	T. longifolia
Orthoceras strictum	T. pauciflora
Prasophyllum colensoi	T. pulchella
P. pumilum	T. intermedia
	T. ixioides

Sedges

Baumea tenax	Morelotia affinis
B. teretifolia	Schoenus brevifolius
Carex breviculmis	S. tendo
Gahnia setifolia	Tetraria capillaris
Lepidosperma australe	
L. filiforme	
L. laterale	

Grasses

Deyeuxia quadriseta	Rytidosperma biannulare
Paspalum orbiculare	R. tenuis

Other monocots

Cordyline pumilio	Dianella nigra
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Ferns and fern allies

Blechnum capense	Lycopodium cernuum
Gleichenia circinata	L. deuterodensum
G. flabellata	L. laterale
Lindsaea linearis	Phylloglossum drummondii
	Pteridium aquilinum var esculentum
	Schizaea bifida
	S. fistulosa