

Carmichaelia corrugata occur here and, on open sandy areas, the Acaena species A. novae-zelandiae and the introduced A. ovina. Poa laevis seems to be dominant on the deeper, sandier soils but, behind the dunes, a rather species-poor, heavily grazed grassland dominated by needle grass and Notodanthonia unarede is present on the older, but shallower stony soil. Mosses and herbaceous plants are present here also and it is in this area that the little Hypoxis occurs.

The continuing study of the botany of the area, with its blend of native and introduced plants, strongly influenced by special soil and climatic conditions is a challenge to local botanists. Permission must be obtained for visits to the area from Mr Bayley, Kaitorete R.D. 2, Christchurch (Western half of the Spit), or Mr A. Birdling, Birdlings Flat R.D.3 (Eastern half of the Spit). Other landowners must be contacted for access to the lake shore.

FRONTISPIECE

We are indebted to Mr Cecil W.H. Dunn for the frontispiece of our Journal. The drawing of Myosotis australis var. Lytteltonensis is one of a series which Mr Dunn will supply showing some of the plants that may be found growing in the Lyttelton Reserve No 101.

The drawing shows well the decumbent habit of this white flowered Myosotis. Only four plants now grow in the Reserve.

R.M. Laing found specimens growing on the cliffs above Lyttelton, Governors Bay, and Lyttelton Road in 1917. Oliver found similar plants on cliffs above Governors Bay in November, 1947.

Your Editor has not been able to find any other specimens than those seen in the Reserve. He would welcome reports of other findings. The plants in the Reserve flower from the middle of October to early in December.

SOME NATIVE PLANTS AT GRAVEL PITS

by R. Mason

At first glance, there may not seem much of interest in a gravel pit but sometimes - usually after taking for gravel has stopped and before the stage of rubbish dump is reached - it may provide a home for a considerable collection of native plants.

One such gravel pit is a moderately small one at Springston on the Ellesmere Junction Road, Grid ref. S83/808430. The vegetation is not dominated by native plants. There are adventive shrubs, some broom, some sweet brier, hawthorne, a silver wattle, an apple tree on the dry gravel and small willows by the water and there are also a great many adventives herbs of the type that grow on well drained, shingle soils and also others of damper ground.

No doubt in the past, the area was burnt over and grazed but

today it is left more or less alone. About 6 or 7 years ago the pit contained a considerable pond of quite deep water but over the years it has been draining out until now there is only a fairly small pool with a good deal of damp ground around. Some of the natives are confined to the remains of the original stony land surface or slopes or ledges within a short distance of it. The several shrubs of the native brom, Carmichaelia violacea, are not very vigorous, some patches of pohuehue (Muehlenbeckia complexa) spread over the ground and the native sea holly (Eryngium vesiculosum) forms clumps of flat rosettes. Wahlenbergia gracilis is most readily seen when it shows its blue flowers. The only native grass is Agropyron scabrum. All these plants could be relics of the original vegetation.

In the water is found the common native pond weed, Potamogeton cheesemanii, with oval brown-green floating leaves. Completely submerged is Riccia fluitans, a liverwort with a narrow forked thallus. The sedge, Eleocharis acuta, is in the shallow water and the rush, Juncus gregiflorus, on the muddy edge. Three herbaceous members of the family Scrophulariaceae are found on the margins of the pond. Glossostigma elatinoides and Limosella lineata are both small, low, creeping plants that grow submerged or on wet mud subject to inundation. G. elatinoides produces a multitude of small, white flowers when exposed to the air. These flowers provide a simple but always fascinating entertainment. The stigma is spoon-shaped and curves completely over the stamens, displaying a papillose surface. When it is touched, it rather abruptly straightens up disclosing its plain surface and the stamens. Some time later it returns to its original position. The mechanism should, as Cheeseman explained (Trans. N.Z. Inst. 10: 353) favour cross-pollination against self-pollination. Limosella lineata sets abundant seed when submerged.

The third Scrophulaceous plant was the more exciting find. Gratiola sexdentata is a more or less erect, more or less branched plant up to 9" tall. The cream to pale pink flowers are tubular about ¼" long and grow singly in the leaf axils. The stems at Springston were red. It is usually said to be common throughout in wet places in the North Island but, as it is readily eaten by stock, it is often difficult to find today. It has always been regarded as local in the South Island and has only twice previously been found in Canterbury: near Ashburton by Dr Allan in 1920 and near Lake Sumner by Dr N.T. Moar in 1956. It was first found at Springston in shallow water and on wet mud in 1966 when it was abundant but after two years it could not be found again.

Another unexpected find on the pond margins was Carex cirrhosa. This sedge has, in Canterbury, only been known from the mountains upwards of 1900' and the Springston site is the only known one for South Island lowlands. The leaves are short, narrow, red, and curling.

There are 3 native Composite herbs. Centipeda orbicularis has greenish, sessile, button heads, green toothed or cut leaves and grows on damp soil. It belongs to the tribe Anthemidae and like many fellow members of the tribe such as tansy, has a slightly distinctive

smell. The two Gnaphaliums belong to the Inuleae. Gn. collinum spreads by fine rhizomes in the wet soil, and has leaves with white tomentum below. Gn. luteo-album is entirely greyish white and grows on dry ground.

The native plants of the water and wet ground must have come from some little distance to this rather isolated artificial habitat. They all have small seeds that can easily be carried in mud on a duck's foot and when the pond was larger wild ducks were seen on it.

Between Southbridge and Leeston (S93/673705) there is a much larger gravel pit still in use. A considerable part of the bottom was left untouched long enough for a considerable vegetative cover to develop. There was no real pool but in places the water lay a few inches deep for a long time and much of the ground was very wet. The native plants present in damp or wet places were Juncus planifolius, J. gregiflorus, J. amabilis, Eleocharis acuta, Gnaphalium collinum, Centipeda orbicularis and Epilobium linnaeoides.

Most unexpected were scattered plants of Scirpus basilaris in some numbers. This is a dwarf green, closely branched, tufted sedge that hides its spikes towards the base of the leaves, hence the name. It has been found in several places in lowland Canterbury, but is seldom met with.

The natives seen on drier ground were a tussock of Carex comans, Notodanthonia sp., Agropyron scabrum, Oxalis corniculatis, Erechtites quadridentata, and Epilobium microphyllum.

Excavation is now being carried out again so that the vegetation on the pit bottom is being destroyed and perhaps Scirpus basilaris will have gone by the time this is published.

PLAGIANTHUS "CYMOSUS"

by John Thompson

Plagianthus "cymosus" is now considered to be a hybrid between P. betulinus and P. divaricatus.

Professor Arnold Wall in his Botany of Christchurch records having seen P. "cymosus" in the bush above Lyttelton. I have been unable to find it growing in that locality in more recent years.

Two specimens, however, grow in Webbs Reserve, a small reserve of planted native trees and shrubs situated two hundred yards West from the Lyttelton Road Tunnel Portal.

One tree, which attained a trunk diameter of 12 inches, was blown over in the storm of April, 1968. New growth is shooting from the stump. This tree has not been known to flower. The other is an older tree. It too was blown over, but quite a number of years ago. Since then it has sent out a few substantial upright branches. The April, 1968 storm damaged some of these but enough remains for the tree to continue to grow.

This specimen is noteworthy in that it appears to produce two types of inflorescence. The first type of inflorescence is similar to that produced by P. divaricatus and consists of solitary flowers