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

or few flowered cymes growing from the axil of the leaves.

The second type, apparently taking after its P. betulinus parent, is a compound inflorescence, one that is smaller than those usually seen on P. betulinus, more compact, and is found on the tips of the branchlets. A number of such inflorescences, in bud, were well developed in early June this year. The inflorescences are staminate.

I am informed that the compounding of this inflorescence at the branch tips is the result of an attack by the fungus "Witches Broom". It is an interesting coincidence that this fungus can so change the inflorescence that it acquires similar characteristics to those of its other parent.

Until recently these were the only specimens of "cymosus" I had seen. At the conclusion of the Society's trip to Okuku Pass I accompanied our President to the Homestead to thank the owner for allowing us to wander on his land. I was delighted to see growing near his garage a healthy specimen of what appeared in the dusk to be P. "cymosus". I am looking forward to inspecting this tree during the flowering season though we were informed the owners had not seen flowers on it.

## SOLANUM IN CANTERBURY

by M.J.A. Bulfin

Two New Zealand species of Solanum, S. aviculare and S.laciniatum are being grown extensively in parts of Europe as a crop plant for the production of the alkaloid solasodine used in the manufacture of cortisone. Representatives of drug houses from Switzerland and Hungary have come to New Zealand in recent years to see plants growing in a natural environment and to collect seeds from a range of habitats.

The alkaloid is present in all parts of the plant with the highest concentration in the unripe fruit. Solanum aviculare has a higher percentage of solasodine per unit of dry weight than S. laciniatum but the latter produces a greater quantity of leaves and stems per plant. In the places where these Solanums are grown commercially in Europe the fruit does not develop fully, possibly, because of a shorter day length or because of lower temperatures, and the plant is grown as an annual and cut several times during the season.

Plants growing at the southern limit of the species are therefore of great interest and the Botany Division would be pleased to have any records of S. aviculare from Canterbury and of S. laciniatum from higher altitudes.

Allan gives the distribution of S. aviculare as Kermadecs, Three Kings, North Is., South Is., Chatham Is., "coastal and lowland forest margins and shrubland to Marlborough Sounds and Karamea Coast" and the variety albiflorum as far south as Kaikoura. Now the species is known from the coast just north of Kaikoura, from Goose Bay, Gore Bay and more recently from localities on Banks Peninsula in both Lyttelton and Akaroa Harbours.