

Note on *Chiloglottis* in Pine Plantations. *Chiloglottis cornuta* has established a large flourishing colony under a shelter belt of pines at Pukerua Bay. This orchid is also frequent in pine plantations near Silverstream. The association of *C. cornuta* with pine-trees was first noted on the lower slopes of the Kaitake Range near New Plymouth. Though only occasional in the adjacent bush, there were tremendous colonies in the dense mulch of rotting needles in the extensive pine plantations. There may well be some mycorrhizal association between this orchid and one of the pine-forest fungi.

Some Notes on Peat

N. T. Moar

Many unreclaimed peat deposits are a potential asset to the economy of New Zealand. To make use of these deposits it is first necessary that the nature of each deposit be studied.

Mires—bogs, swamps and similar areas formed under high water-table or constant saturation of the soil—are classified according to the nature and source of the water supply. *Topogenous* mires are formed by a topographic barrier, such as sand dunes, causing a ponding back of stream, river, or spring. The mires at Plimmerton, Paekakariki and Gollans Valley, for example, are topogenous mires. Climate is not of primary importance in the formation of this type. *Ombrogenous* mires depend upon direct rainfall for their water supply. The climate is generally cool. *Soligenous* mires receive their water by seepage and drainage from surrounding slopes as well as by direct rainfall.

Peat is a deposit of partially decayed organic material that has accumulated under the anaerobic conditions associated with constant saturation in mires. There are different types of peat formed from the plants characteristic of each type of mire. Six types are recognized: *algal*, *moss*, *fern*, *sedge*, *rush* and *wood*. A peat can be identified in the field by colour, texture, and the presence of plant fragments, but laboratory examination is often necessary.

By studying successive layers of peat, the sequence of plant communities can be determined and the history of a mire traced. The nature of the substratum is important in the early stages of peat formation. The mire at Plimmerton, for instance, was found to have been an inlet of the sea cut off by a gravel bar, thus forming a shallow lagoon. The lagoon was gradually filled by a clay deposit on which a community of *Phormium tenax* developed. Peat deposition began; and for the greater part sedge peat was formed, indicating the presence of a high water-table swamp vegetation. Seeds of *Eleocharis acuta* and *Carex secta* were found in the peat.

As many New Zealand peat deposits have a high mineral content, it is suggested that they will prove of value for agriculture and horticulture. Before reclamation is attempted the depth of peat and the nature and slope of the underlying strata should be determined—useful knowledge when drainage work begins.