

In certain plant families the roots contain a fungus which grows partly in the soil and partly inside the root cells where it stores up food material which is later digested by the roots. This combination, known as mycorrhiza or 'fungus rooted', occurs fairly commonly e.g. in all pine trees, where the mycorrhiza fungus may often be seen forming fructifications, toadstools, above ground under the trees. The prothallus ~~or~~ underground stage of Lycopodium is mycorrhizic, depending entirely on its fungus. In orchids the fungus infects not only the roots but the whole plant, even the seed, so that the seedling is associated from the first with its vitally necessary partner. Heaths and epacrids are mycorrhiza plants and many others that are hard to transplant like the gentians, may have difficulty in establishing in a new home because the fungus they need is not provided for them.

The perfect partnership seems to have been achieved in lichens, each of which is a compound of two distinct plants, one an alga, one a fungus. Lichens have been artificially synthesized by bringing the proper two organisms together. So successful is the symbiosis that the dual organism, the lichen, can live where neither constituent could live alone.

This last point was emphasised by Dr. Oliver's reference to the collections of the Byrd Expedition in Queen Marie Land where the majority of the plants found were lichens, some eighty species in all.

PAKURATAHI FORKS.

The Society was fortunate in having a glorious day for the trip to Pakuratahi Forks on November 1st. Beyond the turnoff from the main road, north of Kaitoke, Nothofagus truncata in flower, Olea cunninghamii, and Plagianthus betulinus in bloom were the first things to attract our attention.

Over the river we entered fine beech forest, where some lovely clumps of Clematis gleamed in patches of sunlight.

Beyond this was rimu forest, with rata next in abundance. Some of the rata trees bore evidence of having started life high up above the ground and some still held a dead rimu in their grasp. Others of the tall forest trees were rewarewa, totara, tawa, kāmahi, and hinau.

The small tree layer and undergrowth were fairly dense and ferns were plentiful. The little white crucifer, Cardamine heterophylla, was in flower and in the wetter places were many liverworts; Marchantia with antheridia and archegoniophores, Anthoceros and Monoclea bearing sporangia. Some of the latter was collected and has since been sent to England for the use of students.

In the more open places Gaultheria antipoda was coming out and the dainty, waxy flowers of Libertia ixioides made a lovely show in the sun. We noticed the leaves of Libertia - flat and grass-like in comparison with the keeled ones of Dianella intermedia which was growing nearby. Lycopodium volubile was fertile but not in great quantity.

The high water mark and damage done by the heavy spring rains were evident, and a lacebark log, lacerated so that the innumerable layers of perforated inner bark were easily seen, interested many of the members.

In the rocks along the river Carmichaelia odorata was in bud. Hebe catarractae was there and Oxalis lactea and Pratia angulata were flowering on an old log. On the damp cliffs opposite the sunny shingly beach where we lunched Gnaphalium lyallii was flowering profusely.

In all, over 90 species were recorded and the members who were present had a profitable and very pleasant day.

Primrose Self.

A WEED EXTRAORDINARY.

To those interested in the alien plants that intrude into our flora there sometimes come thrills, as unexpected plants come under their notice. Not so long ago there came to me the pretty little spotted orchis, so dear to the wanderer in the English woods. This was gracing the lawn at the far-famed "Tutira". Still more recently that enthusiastic naturalist Mr. J. E. Attwood, found a delicate little English Euphrasia near the Chateau Tongariro. And now, again from Tutira, there is Lathraea clandestina, l'herbe cachée or amourette of the French. This is a parasite, related to the common toothwort of England, and grows on the roots of willows and poplars. The leaves are close-crowded waxy-white fleshy scales and the tight clusters