

not eager for more? What do most of us know of Gaultier, of Sutton, of Parsons, of Zammitelli? Can any of you throw light on the elusive Paeser?

Thank you, Professor Wall; more please! And maybe we shall crown you with a Wallia, for Arnoldia we cannot bestow on you. Alas! I find that Wallia is gone too, stolen away back in 1861 by Alefeld to name a walnut! But honour you, we do.

E.H.Allan.

SOIL MICROBIOLOGY.

On Monday, May 15th, Mr. Warcup, a research student at Victoria College gave a lecture to the Botanical Society on Soil Microbiology. He explained to us at the beginning that the soil actually consisted to a considerable extent of living organisms. Many kinds of worms and insects, large and small, and many smaller animals scarcely visible to the human eye lived within the soil. A great variety and a very large number of microscopic plants were also represented. These were soil bacteria, soil algae and soil fungi, and the growth was largely concerned with the decay and breaking down of all the waste organic material which came from the death of larger plants and animals. It was realised that within the soil there lived a very complex community.

Very little work has so far been done in New Zealand in exploring the soil fungi but Mr. Warcup showed that he had made a good beginning. By taking samples of soil from different localities and growing small amounts in petri dishes on sterilised nutrient jelly he had discovered the presence of many different fungi. Particular attention was paid to isolating *Fusarium* spp. because these fungi are important in causing root and stem diseases in many cultivated crops. They do not confine their activities in the soil to dead roots and other dead organic material but can invade growing plants as well. *Fusarium* spp. had been found in virgin bush soil as well as in cultivated farm lands. The fungal colonies, as the spreading plants are called, which were exhibited growing in dishes and tubes, showed the bright colours, especially pink and red which are characteristic of this genus. The writer of this note grew a large number of renga lilies (*Arthropodium cirratum*) from seed but lost a lot of young plants from the evil intervention of a similar *Fusarium* sp. which invaded the stems, reducing them to a mush. Characteristic pink streaks were formed on the dead plants.

One of the lecturer's most interesting exhibits was a dish containing colonies of a soil fungus very like the ordinary bread mould. Colonies of two kinds had been separated and planted side by side. The white cotton wool-like growth had spread from each till it touched its neighbour. Lines of black fructifications formed where the two growths met. The two strains of the fungus were in fact 'plus' and 'minus', that is, they showed a very simple form of sexuality. The two fungi were apparently identical but neither could fruit alone but had to exchange some material with the other before developing the black fructification.

The large amount of sampling and isolating of different fungi which Mr. Warcup had accomplished showed that he already was well acquainted with his very interesting subject.

C. B. Cone.

NATURAL HISTORY IN DEVONSHIRE.

On the evening of July 17th, after the business of the Annual General Meeting, we were entertained by Miss Drake, a visitor to Wellington, and a former President of the Exeter Field Club. In lively fashion she outlined for us the composition and activities of the Club and its background.

The county of Devon, in which Exeter lies, has a flora of some 1142 species, of which about 30 are ferns, one of them the famous *Camanda regalis*. The animals include 300 kinds of birds, various deer, otter, badger, stoat, and hedgehog. The wilds of Dartmoor, covering 3-400 square miles and rising to 2050 feet are

accessible from Exeter. The history of the district has been traced back some 50 thousand years, and there are evidences of the activities of the caveman, Neolithic man, and so on through the bronze and iron ages.

The Exeter Field Club, which is affiliated with the University College of the Southwest, has a membership of over 100, and interests itself in all branches of Natural History. Its bird-watching members, who once organized a mid-night meeting to hear the nightingale, keep useful records of the movements of migrant birds. Butterflies and even spiders come within the Club's orbit. Meetings are held fortnightly. To illustrate the kinds of outings, two actual excursions were described.

The first, to Prestonbury Camp, was attended by some sixty people who travelled in two buses. Many of the wayside plants we know as weeds, but the whortleberry (Vaccinium myrtillus) eaten for preference with Devonshire cream, is one that has not come here.

Prestonbury Camp is an old fortress, sheer on two sides, protected on the other two by a triple vallum. Used from early Bronze or Neolithic times, the camp was attacked and apparently taken by the Romans, of whom traces can still be found. Now, he who would storm the camp must fight the brambles -- just blackberries to us! Devon tea, at the conclusion of the ramble provided opportunity (which our outings so often lack) to discuss finds and ask questions of the leader.

The second excursion took us to the heart of Dartmoor, amongst the pixies, and the whisthounds that are "cold, shivery, desolate, weird, ghostly, soundless, Satan's huntsmen that make strong horses sweat with fear". The objective here was Grimspond, an ancient walled village. On the way we were asked to admire the moor plants -- the sundew (Drosera rotundifolia), angelica, pimpernel and speedwells, the butterwort that spreads its sticky leaves to catch small insects, the bog asphodel, and the dainty cotton-grass whose white fluffy heads were used for swabs in the last war. It was apparently quite fitting that the leader should be engulfed in the mist -- only temporarily however, for he reappeared at tea.

The village of Grimspond was protected by walls of granite ten feet thick to keep off the wild beasts that once roamed the moor. Within, circles mark the sites of the conical huts, and stone seats and beds, and sunken cooking holes may still be seen. By the flints found, and the fact that the dead were buried in a sitting position, it is indicated that the founders of the village were neolithic men -- the hunters and herders of 3000 BC. One question is why they built their homes in this bleak spot -- or was Dartmoor less bleak then? -- and another is, what sort of forest was it that surrounded them and harboured the beasts of prey against which they protected themselves? There is little forest on Dartmoor now.

Exeter itself is a city of great antiquity, being older than London and as old as Rome. Miss Drake referred feelingly to the damage it has suffered in the last four years, and wondered how the evidences of this would be regarded by the Field Clubs of a thousand years hence.

In the discussion that followed the talk, Dr. Oliver pointed out that the Dominion Museum has a good collection of artifacts from the famous cave at Torquay, well-known to the Exeter Club. Miss Drake takes with her our best wishes for her safe return to her home. It is to be hoped that we will not altogether lose this link with a group with inclinations similar to ours, but operating in very different surroundings.

NORTH CAPE PLANTS.

Mr. M. C. Finlayson, who contributed an article on Pittosporum virgatum in Bulletin No. 8, has forwarded an account of a recent trip to North Cape. This is being held over temporarily, but will appear later. Mr. Beddie, another member of the party, is scheduled to give us his version of the story at our October meeting. Acres of pink manuka, big patches of red koromiko growing wild, and camps set up amongst native Hibiscus are just a few of the high lights.