omitted to mention at which end the sequence started. Further, if this grouping followed evolutionary development we should expect it to conform to main taxonomic classes; but it seems more random. In Lindsaea for instance, the only markedly dimorphic species is L linearis. Boedijn, mentioned above, says of Aspidiaceae: "Most species produce only a single type of frond, but some form sterile as well as fertile ones." That is, the difference cuts across the family classification.

Greta Stevenson in her book tabulates the N.Z. genera of ferns in order of evolution as arranged by Christensen; it is not at all parallel with amount of dimorphism as I have observed. But it is doubtful in our present state of knowledge, whether we can with any degree of confidence decide the evolutionary history of ferns, or whether such a table is little more than conjecture. Marguerite Crookes, in reply to my enquiry, examined the writings of Copeland, the American fern expert, who has listed the dimorphic genera fairly fully; on the general principle he seems to regard uniformity of fronds as more primitive than dimorphism.

The subject appears one which could provide a fascinating and rewarding field study if carried right through our range of ferns, examining each at frequent intervals over two or more seasons. I would be greatly delighted to see a young, capable and enthusiastic fern lover take it up. The Waitakeres, with 100 of our 150 N.Z. species of ferns, would not be a bad place to start.

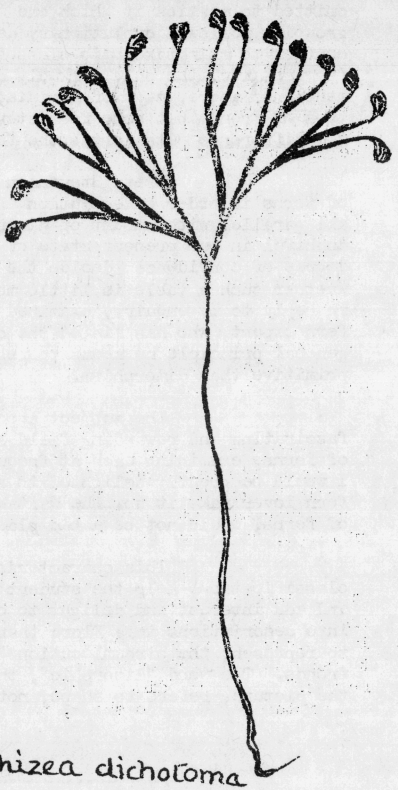
This characteristic if fully described might assist in classification, help the student and collector of ferns in identification, and add interest and delight to our bush rambles. To incorporate it into descriptions in a Flora there seems to be a need for a single term to represent the circumlocution "having separate fertile and sterile fronds." The word "dimorphic", though necessarily retained to complete the picture, refers to shape, not reproduction.

WAIMAUKU AND MURIWAI

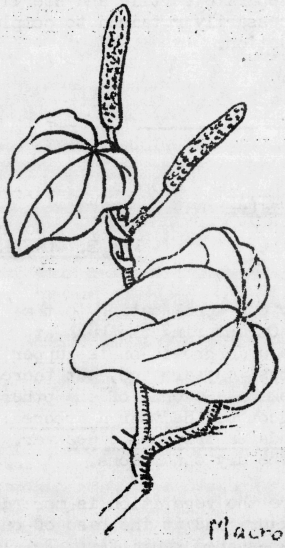
Mrs B. WORMALD

We had a perfect day for our April outing to the University Reserve and the Muriwai area. On entering the bush at Waimauku it was disappointing to find the undergrowth on the upper slopes more sparse than on a former visit some years ago, but there is good regeneration of young kauri and tanekaha. Several of the other plants noted were species of Olearia, pigeonwood Hedycarya arborea, an Alseuosmia and clumps of the fern Lindsaea trichomanoides var. trichomanoides growing well in spite of the dry conditions.

On the lower slopes where the vegetation is more dense there are some quite large, well shaped kauri and at the base of one of these we found Schizaea dichotoma, the fan-shaped kauri fern. We also saw some early plants of Acianthus fornicatus var. sinclairii in bud.



Schizea dichotoma



Macropiper excelsa

After lunch, which we had on a nice grassy area on the side of the road, we drove to Naughton's bush Camp where we saw the well preserved remains of a Maori pah. Here, the bush is quite different though so close, the many nikaus giving it a tropical appearance. On the slope overlooking the Muriwai Lakes we saw hinau Elaeocarpus dentatus and, growing together on a tree nearby, the orchid Drymoanthus adversus, formerly known as Sarcochilus adversus, and Bulbophyllum pygmaeum. A third orchid, Earina autumnalis was in flower nearby. Carmichaelia sp. grew quite thickly on the banks of the road.

As we still had some time we drove to the Muriwai beach where some of us climbed the cliff and others relaxed on the beach. Many of the small coastal plants had gone from the roadside owing to more space being made for parking, but on the pathway up the cliff we saw Lobelia anceps in flower, Samolus repens and very healthy kawakawa, Macropiper excelsa, growing in low thick bushes, their leaves unspoilt by caterpillar.

We walked over to Maori Bay to see what damage is being done by quarrying to the unique cliff formations. We were appalled by the large area destroyed and hope the rest of the cliff will be left. Many thanks to our leader for a very interesting day.

NOTES ON WAIPUNGA RIVER AND BALL'S CLEARING, PUKETITIRI

Mrs N. BEDFORD

There is a rest area beside the Waipunga River on the Taupo to Napier road past the stop to look at the falls - close by is the junction of the Okoeke River with the Waipunga. Here is to be found an astonishing array of divaricating shrubs in a very small area. Dominated by a large and beautiful Nothofagus truncata, crowded together were to be found Melicytus micranthus, Neomyrtus pedunculata, the bright green climber Muehlenbeckia australis, Elaeocarpus hookerianus, Aristotelia fruticosa, Plagianthus betulinus, Carpodetus serratus, an enchanting juvenile and adults in flower; two attractive looking climbers Rubus schmidelioides and Rubus australis; also Paratrophis microphylla, Pennantia corymbosa (adults in flower), Melicope simplex with articulated petiole, Myrsine divaricata and Hoheria angustifolia. The most arresting of all were Podocarpus spicatus, matai, juveniles 6' - 10' high with tortuous cascading growth and occasional leaves, very decorative indeed. Coprosma propinqua and Leptospermum scoparium were also present - a grand opportunity to see and learn them all.

Ball's Clearing, Puketitiri. The amazing thing is that this reserve exists at all, as all the surrounding country has long been grazed judging by the vintage of most farm-houses. Lovely country with the Mungahururu Range, and the more dramatic Kaweka Range. Many of the shrubs found at Waipunga were present, but with a difference. The entrance to the area and for some considerable distance was dominated