

Cortaderia sp., reported to be here but found no trace. A scarce species virtually destroyed by stock.

This naturally brings one to the subject of conservation. It would seem that before the advent of man most of the island was clothed in forest and the island teemed with countless birds. The Moriori probably arrived in the vicinity of 950 A.D. and lived primitively in the thick coastal forests. The European settled in the early 1800's and the Maori arrived in 1835, by which time cropping, grazing and burning were well established. The resinous *Dracophyllums* burn easily, as does the thick peat below; fires of this type last for ages and cause untold damage. The introduction of sheep, cattle, horses, wild pigs and opossums soon played havoc on the island too, and this situation is slowly continuing. Unless something is done fairly soon to remedy the situation, little or no regeneration of the existing trees, shrubs and other indigenous plants will take place and the island could become a virtual desert. Only by fencing off various areas from wandering stock and by introducing a measure of opossum control, will some relief be obtained.

A logical area to start would be in the existing southern tableland forests where a considerable area could be reserved. The Government should also encourage every landowner of say twenty acres or more, to play his part by ring fencing smaller areas from stock. If the island contained such reserves of coastal land, lagoon and lake areas, bogs and swamps, tree and forest zones - just an acre or two, or ten acres, on every property then regeneration would be assured. Such sanctuaries of plant and bird life offer so many benefits - let us hope that a move on Chatham Island is made soon.

BOOK REVIEW

"FERNS AND FERN ALLIES OF NEW ZEALAND," by Eric Heath and R.J. Chinnock
(A Reed Book, \$4.95.)

Members will be interested to know that a new book on ferns and fern allies has recently been published. It is a book of particular interest to the field botanist. In all, eighty-eight species of ferns and eighteen species of fern allies are described and beautifully figured in the excellent coloured illustrations by Eric Heath. These high quality illustrations should be of great assistance to collectors, making for a quick recognition of species. Mr Chinnock's descriptions are clear and also brief, since the illustrations tell us so much.

The book is prefixed by a brief and lucid explanation of technical terms and a short account of the fern life cycle is also included. A point might be mentioned here. While it is true that a large number of ferns have heart-shaped prothalli, this is not invariably so. In the Hymenophyllaceae, for instance, the prothalli may be ribbon-

shaped or filamentous. It is hoped that members who have a special interest in ferns may be able to acquire this book, which will make for easier fern identification of the species listed.

This work divides the ferns into groups, where possible under their popular names, for instance as spleenworts, filmy ferns, crane ferns etc.

Mr Chinmook has recently done research on Tmesipteris and it is of interest that he lists three species instead of the single one given in Flora of New Zealand, Vol.1. Spotting points of the 3 species are:-

- Tmesipteris elongata - Leafy appendages dull green (not shiny or glossy).
- Tmesipteris tannensis - Synangium tapering at ends, not rounded as in other two species.
- Tmesipteris lanceolata - Synangia confined to lower part of the stem.

The book contains a concluding section dealing with fern propagation which includes an account of the growing of ferns from spores. It ends with a glossary and index.

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FERTILITY AND DIMORPHISM IN FERNS; MY GROPE FOR KNOWLEDGE

A.D. MEAD

Cheeseman (Manual, 1925) in his general description of ferns says: "Sporangia usually arranged in groups (sori) on the under surface or margins of the fertile fronds, which are either similar to the sterile fronds, or narrower and more restricted." Allan (Flora, 1961) has it: "Fertile and infertile leaves sometimes sharply differentiated."

These statements seem to imply that all ferns habitually have separate fertile and sterile fronds. Reading Cockayne "N.Z. Plants and their Story" I find: "In some ferns only certain leaves bear spores."

Faced with a seeming discrepancy of this sort, the proper course is to get out into the bush and look for oneself. I speedily found that in some ferns all fronds, except the unfolding young ones, carried spores, while others had clearly distinct fertile and sterile fronds, and in nearly all such cases this difference was