subtropical countries as far north as Japan and Florida. It is found in various hot spring areas, at Ranganui Harbour, Motuhora Island and Lake Taupo. The kidney ferns and various species of Hymenophyllum were noted growing luxuriantly on the lava rocks. Among the tree, of particular interest was the hybrid pohutukawa, first recorded by the late Mr. Carse, and named by him Meterosideros sub-tomentosa (Trans. Vol. 57 p. 92). At one place on the path to the filters, members were able to see the hybrid and its two parents M. tomentosa and M. robusta all growing side by side. (Cockayne states this is only one of various hybrid forms. "The Vegetation of New Zealand" p.87)

The highlight of the day was the finding by Miss Thomas and Mr. Cooper of Pterostylis barbata, while specimens were also noted by Mr. Millener near Islington Bay. This orchid has never previously been recorded from Rangitoto. It differs from the other N.Z. species in that its lip is pendulous and hairy and hangs right out of the flower. The weather was broken in the afternoon but cleared for the homeward journey. The Leader was Miss M. Crookes.

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A lecture on ferns was given by Miss M. Crookes on Wednesday October 4th at 8 p.m. We print the following summary:

The fern has a very strange life history. Spores are formed in minute (usually) stalked capsules called sporangia. These are as a rule collected into groups called sori. In some ferns (ex. the genus Polypodium) these form small brown circles on the backs of the fronds. When the spores are ripe they are ejected and blown about by the wind till they find a spot suitable for germination. On germinating they do not give rise to a new fern, but, instead, to a small green scale, usually about half an inch across, known as a prothallus. This bears, when mature, the organs of reproduction. When fertilization has taken place, the egg cell divides and eventually grows into a new fern plant. Water is essential for fertilisation, thus the fern remains an amphibian.

The ferns of the world number over 9000 species. N.Z. has 158, probably more. Ferns are most varied in form, and both vegetative and soral characters are important in classification. The most primitive ferns are the Ophioglossaceae (including the Adder's tongues and the Parsley Fern). Another primitive family includes the King Fern (Marratia fraxineae). Among more advanced,

but still relatively simple ferns, are the umbrella ferns (Gleicheniaceae) the Splitting Ferns (Schizaeaceae) and the Royal Ferns (Osmundaceae) which include our beautiful Princes of Wales Feather (Leptopteris superba). In the next group, which contains the tree ferns and the filmy ferns, the structure of the sorus is more complicated and the sporangia are protected by a covering, the indusium. The sporangia do not (except in rare cases) ripen simultaneously as in the previous group, but one after the other, thus prolonging the sporing season.

The next group, the huge family Polypodiaceae has a great variety of soral forms. The sori are of many different shapes and sizes and with or without protective coverings (indusia). The sporangia ripen in succession, but in no set order.

New Zealand has ferns adapted to all types of conditions. Some require deep shade and a moisture-laden atmosphere (ex. many filmy ferns) while others can endure sunshine and exposure, the rock-loving ferns, (Nothoclaena distans, Pellaea rotundifolia, etc) Others again prefer open country, for instance the bracken (Pteridium esculentum) and the Scented Fern (Paesia scaberula) Some again seek the high country (ex. Polystichum cystostegia and Hypolepis millefolium), while there are two quaint little water ferns specialised for an aquatic life, the red Azolla (Azolla rubra) and the New Zealand Pillwort (Pillularia novae-zelandae)

Fresh and dried specimens were on exhibition at the lecture, but unfortunately time did not permit much discussion of them. At the close of the lecture a hearty vote of thanks was accorded the speaker.

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Owing to the threatening nature of the weather in the early part of the day, a somewhat small gathering met Professor Wall at the Mt. Eden Kiosk to explore the botanical possibilities of the mountain. We noted the spurred Valerian (Kentranthus ruber) with its masses of red flowers. This weed has pretty well taken possession of the bottom of the crater. A small daisy-like shrub with yellow flowers (Osteospermum moniliferum) and (strangely for a member of the daisy family) succulent fruits was seen. Among the larger weeds were various members of the cabbage family, the