THE BOTANICAL GARDENS.

Those members, a dozen or more, who spent the mild afternoon of June 17th in the Botanical Gardens were fortunate in having Mr. Stirling as their host. Under his guidance even those who frequently pass that way saw much that was of fresh and special interest.

Right at the main gate attention was drawn to Cotoneaster serotina, too often an agent in the spread of fireblight. In the main drive we were reminded that in an avenue the plants used should have outstanding qualities that they display over as long a season as possible. Flowering cherries, though used extensively, have a very short flowering period, whereas the phoenix palms remain graceful and beautiful at all seasons of the year.

Leptospermum "Keatleyi" with a good number of big pink flowers was showing its worth for the winter months. Coming after the birds and the schoolchildren, we had to hunt to find seeds on the Irish yew (Taxus baccata) but we did see a few, with their red fleshy arils bright amongst the sombre foliage. The flowering cherries, that make one want to visit the Gardens at least every other day in spring so as not to miss them at their best, have so far escaped the cherry disease, which Mr. Stirling told us is threatening the life of many a beautiful tree in the city.

Passing by the striking variegated karaka near the band rotunda, we spent some time with the pohutukawa nearer the street. Its single trunk, some two feet through, is almost completely enclosed in a tight mesh of adventitious roots. These descend in large numbers also from the lower boughs, some of them wiry and thin and ending in active-looking white tips, some woody and an inch or more in diameter, terminating below in a tuft of the thinner kind, much like a donkey's tail. It would be interesting to see what these would do on making contact with the ground at a foot or more from the base of the trunk, but up till now the tips have always been injured when still three or four feet from the ground --the height at which they can be reached by the owners of restless pocket-knives. A less regularly shaped tree on the edge of the gully in Hobson Street shows a probable later stage in development. Mr. Stirling pointed out that this tree in the Gardens is growing almost entirely on rock, and suggested that this fact might have something to do with the extraordinary development of aerial roots.

Crossing the little stream we were taken to see the big compost bins. Here 25 yards of vegetable matter and attached soil and stable refuse break down in eight weeks to a volume of ten yards. Aeration is provided from below, and the internal temperature can be controlled by adjusting the size of the air inlet. After four weeks in the first bin the material is turned as it goes into the second bin, where after another four weeks, it becomes ready for use.

Proceeding still near the Glenmore Street frontage, we came on Acacia baileyana, which Dr. Newman greeted as the Cootamundra wattle. He told us that this species is endemic in Australia to a strip of country only 60 X 30 miles, and demonstrated on the first flowering inflorescences how the pistil matures before the anthers appear -- a nice example of protogyny.

The big old pines on the hillside above are reputed to have been planted by Dr. Hector, one of the foremost fathers of science in New Zealand. They form a natural nursery now for hundreds of seedlings of native plants, especially the bird-carried karamus and cabbage-trees.

Noting various items of interest, we made our way over the hill and down into the glen, where, near the main path, we saw the biggest rata in the Gardens. Its "trunk" is about a foot through, and still shows on one side the remains of a tree-fern on which the seedling rata evidently had its first beginnings, at a height of ten feet or so from the ground. On a grassy slope nearby, a pohutukawa had been shaped to show its possibility as an avenue tree, with a slim, clean, straight trunk and a shapely rounded head well suited to street

Mr.Stirling had kept his brightest spot to the last. In the native plantation above the fern-house, the passion-vine (Tetrapathaea tetrandra) spreads its shining leaves over a bank of tree tops. Its gay orange fruits, each nearly an inch across, hung in clusters of a dozen or more, and there must have been scores of clusters, making a brave show in the late winter light.

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A NOTE ON PITTOSPORUM POLLINATION.

In the first week in January 1938, plants matching fairly well Cheeseman's description of Pittosporum pimeloides var reflexum were collected at Fairburns, Mongonui County, Far North Auckland. They were growing on the side of a steepish track on a semi-cleared ridge of kauri bush. They were planted in tins in a mixture of sand and leaf mould and set out in a sheltered sunny position. One was given away early in 1942. The remaining one, in a tin 5" wide and 8" tall is flourishing, and increasing by suckers. It does not seem to be growing any taller. It is now 8½" high and has 26 stems, seven of these "main" stems, as it were, the rest new thin growth.

The first flowers came in 1940, the flowering season being April-May, with a few stragglers in June. The flowers are unisexual, female flowers being smaller, slightly later than the main lot of bloom.

Up till 1942 I had never seen a capsule, so wondered about pollination. I noted that at night the flowers have a very strong sweet scent, and that the plant is literally swarming with tiny moths seeking the nectar. Pollen must be transferred by this means. To make sure I picked some male flowers and transferred some of their pollen to stigmas of female flowers by means of a fine paint brush, marking the branches done with cotton.

When no seeds were formed I concluded that the plant requires cross-pollination. I had no second plant of this kind and it was too early for flowers of other species obtainable here. Then, in the first week in June, I had a trip to Whangaruru on the coast and found there some P.cornifolium flowers which I brought home. By this time there were only four flowers left on my plant. I hand-pollinated as before and got two "takes", one of which withered almost immediately. The other one made a little capsule which ripened and was just beginning to split open when the plant was knocked over and the capsule lost.

In 1943 and 1944 there were good shows of flowers, but no other pollen was obtained. The plant as before failed to self-pollinate.

E.K.Pickmere, Whangarei.

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"SPORTING" FERNS.

Prompted by the Presidential Address on variability in plants, Mrs.Duguid, Secretary of the Levin Flora Club, brought along to our July meeting an exhibit of fronds of ferns that had been growing in her garden for about 5 years.

An Asplenium which most people would agree had affinites with A.lucidum came originally, as small plants, from among boulders on the face of Cape Turnagain. Two plants were represented, one less, one more "abnormal". Mrs.Duguid's note about the latter says "It has very mixed fronds, about a quarter of them having the rhachis divided towards the tip into two or three. Many of the pinnae are cut into deep lobes, and most have a sharp saw-like edge."

Pellaea falcata from Herbertville is now a well-established clump about a foot across. "This autumn (1944) it has developed fronds with divided pinnae. Normal fronds are also present. The ones which are abnormal have a twist, making the pinnae stand at a tilted angle in relation to the rhachis instead of being flat." A normal leaf from the same clump was shown for contrast.

With the added note that Blechnum fluviatile (usually a well-behaved plant) growing in the same garden produces fronds with tufted tips during the period of greatest growth in spring, one cannot help wondering if there is some local condition inducing this sort of growth. An extract of autumn crocus root (colchicine) has far-reaching effects on the mechanism of growth in plants and it is not impossible that "abnormalities" of this kind may some day be traced to similar chemical influences.

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#10 page 8 thus