

IMPRESSIONS OF WEST AUSTRALIAN BOTANY.

On 21st October last Dr. Allan addressed a meeting of some 30 members and friends, telling something of his visit to Perth in August to attend the meeting of the Australian and New Zealand Association for the Advancement of Science, and giving a broad account of the vegetation of West Australia.

The colour and fragrance of West Australian flowers has been famous since the first 40 species were sent home by Dampier in 1699. Later visiting botanists were Ostenfeld, Domin and Diels, the latter after visits in 1901 and 1905 producing an account of the flora of some 6000 species and of the vegetation. The present Govt. Botanist, Mr. C. A. Gardner, is actively pushing forward the study of native plants.

Dr. Allan's first impressions were from 7000' up in the air over the Nullarbor Plains, a vast expanse of red with splashes of yellow and here and there the silver sheen of salt pans.

At Perth the meetings were held at the University, where in the grounds are pohutukawa, variegated ngaio, hybrid Hebes like those at Bluff. Three rooms were filled with West Australian flowers, all in bloom and Mr. Gardner showed coloured films of vegetation and plants for the benefit of those who were able to see for themselves only places near Perth.

Between the University and the town lies King's Park, a wonderful reserve of 1000 acres of virgin bush, practically untouched although the big trees have been taken out. The only introduced plant was a row of red-flowering gum, itself belonging to West Australia. Trees are represented by Eucalypts (jarrah, tuart), she-oak, Banksias, and the nearly related Dryandra.

The shrubs were nearly all flowering, the blooms being most small but very plentiful, and of all colours of the spectrum.

The Geraldton wax-flower (Chamaelaucium uncinatum) is like manuka in habit and flower, the petals dark crimson to white with a waxy sheen. A dwarf Acacia had yellow buttons and sharp prickles. Three Hardenbergias had pretty blue flowers and there was the coral plant, a vivid red. Kangaroo paws of different kinds and heath-like plants with long racemes of pink flowers. Amongst the herbs was the rush lily (Sowerbaea laxiflora) in hundreds and thousands in its spring pride of pink and yellowish mauve flowers; the milkmaids, starry amaryllids with white umbels; and the three petalled fringe lilies. It was too early for orchids, but there was a sundew like our Drosera auriculatam but taller and with large pure white flowers. Macrozamia, like dwarf palms throughout the park played a role similar to our kauri 'grasses' (Cahrias and Astelias). No snakes were seen but there were ant hills in the park 2 feet tall and the ants could climb at least waist high!

Coloured pictures of many of the flowers mentioned were on display, many of them in the fine book of water colours and colour photographs edited by Mr. Gardner.

Phytogeography. Diels pointed out the very important influence of climate and soil differences and divided off a South West province from a central and northern Eremean—the latter presumably suitable only for eremites. Gardner has delimited the boundary between these two and has defined and named a Northern Province.

The North has a summer rain that is monsoonal, then a long period of drought. There is a Palaeotropic element in the flora that is largely unfamiliar to us, though it does contain Spinifex hirsutus (though the one at Perth looks very different from ours), Sideroxylon (Planchonella), Persoonia, Eugenia, and the kangaroo grass (Themeda triandra) that is at the moment arousing some interest in Marlborough. Where there is most rain in the North is woodland, then monsoonal savannah woodland with Themeda, and in the drier interior true savannah with just scattered trees.

The South-West Province is well defined with Eucalypt forest and sand heath. There is winter rain with short summer drought, the total precipitation at Albany being about 65". Here the Antarctic and Austral elements are stronger and there are more genera familiar to us, e.g. Leptospermum, Dracophyllum, Archeria, Leucopogon, Cyathodes, Forstera, Knightia.

At the two ends of the South West Province are two areas of numerous endemics with no cross connections. The transition between the South West and the Eremean Provinces has a capricious climate and carries a woodland vegetation of Eucalypts and Acacias. The true desert has Hakea and Hibiscus and the small-flowered Solanaceous Duboisia that has become important as a source of a substitute for digitalin morphine. Surrounding the desert is a steppe dominated by Triodia, bushes, a metre high and three metres across and almost as spiky as Aciphyllas. South of the Triodia is the mulga country with Myoporum (related to ngaios) Plagianthus (ribbonwoods), Swainsona (legumes with swollen pods), and Dodonaea (related to akeake). Here is a Neo-Australian element composed of species which Gardner seems convinced have developed anew from various elements from north and south in response to the impact of the Eremean environment. Ephemeric convergence is conspicuous, e.g., members of quite distinct families are vegetatively much alike so that it takes a botanist to distinguish between them. This similarity is due, Gardner urges, to the direct influence of the environment, not to selection by it.

Timber trees. Australia has hard wood trees and needs soft woods. Working inland from the southwest coast comes first a forest of karri (Eucalyptus diversicolor) with trees averaging 150 feet tall and sometimes reaching 300 feet with clean boles to 120 feet. Further in the jarrah (Eucalyptus marginata) predominates, some 90 feet high. The white gum (on pipe-clay soils) is 70 feet high and within that as an enclave the York gum predominates. Red gum is coastal and outside that again is the tuart gum. The karri prefers soils from granites and greensand rocks, the jarrah occurs on lateritic soils, and the tuart gum only on littoral limestones. The relation of New Zealand tree distribution to underlying soils is beginning to be recognized but nowhere is it so dramatically clear as in West Australia. The "forest" is more exactly an open woodland.

Both ecologically and floristically much remains to be done in West Australia to build on the solid foundation already laid.

THE INDIGENOUS VEGETATION OF CAMPBELL ISLAND.

On the evening of Nov. 17, 1947, a gathering of members and friends had the pleasure of listening to Mr. W. B. Brockie, whose story ran as follows:

Since the subject of my talk was announced in your programme a few months ago, I have procured lantern slides of a number of