

flowers were collected near Big Bay. Large heads of flowers on the Hohera glabrata looked like masses of cherry blossoms. Specimens were collected of two Olearias, the holly-leaved O. ilicifolia and O. avicenniaefolia and Wintera colorata with its reddish leaves was noted everywhere.

Two species of Carmichaelia were collected and near Lake McKerrow grew beautiful weeping kowhais, Sophora microphylla, many species of Coprosmas, two Myrtus, M. obcordata and M. pedunculata, and masses of flowering epiphytic orchids, Dendrobium Cunninghamii and Earina mucronata.

The open river flats were carpeted with Pratia angulata, Viola Cunninghamii, Cotula squalida, Helichrysum bellidioides, Potentilla anserina, Lagenophora Sp., and many other small but beautiful flowering herbs. A few ground orchids were noted, mainly Caladenia bifolia and Pterostylis Banksii. On the forest floor were to be found specimens of Enargia parviflora with its lovely creamy flowers, the dwarf iris, Libertia pulchella and the giant tree moss Dendroligotrichum dendroides. Of the sedges three specimens of Uncina were collected, five Carices, one Schoenus, S. pauciflora, and one Juncus.

- K. Wood and P. Hynes.

(The Genus Hypolepis presents frequent difficulty as regards identification. According to Carse the different species hybridized freely, consequently there are forms that cannot readily be referred to any one species. It is a pity our sharp-eyed friends had so little time to spend in this interesting vicinity. Ed.)

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From the other end of New Zealand comes an account by Mr. Jessop of a recent trip to the Waipoua Kauri Forest. Though the senior member of our Society, Mr. Jessop continues to roam the countryside with unabated enthusiasm. In forwarding his notes, Mr. Jessop says nothing about the Kauri themselves, as he feels they have already been so fully discussed, "Only those growths," he remarks, "which strike the stranger have been mentioned."

## RAMBLING IN THE WAIPOUA FOREST

To a botanist one of the most interesting places in the Waipoua forest is a flat-topped spur in the S.W. corner. The foresters say it has on it samples of everything that grows in the forest. The western end where it leaves the main ridge is flat with a mature podsol soil much beloved of manoaos and taxads which dominate there. The pink pine Daerydium Kirkii with its abrupt transition from juvenile to adult leaves at once takes one's eye, it runs from seedlings to mature trees of a height and size seldom seen. Of the silver pine D. Colensoi, a few mature trees only were seen. Toatoas (Phyllocladus glauca) and Tanekaha (Phyllocladus trichomanoides) are very numerous, the largest, 2 feet or so in diameter, have number discs on them for H.Q. reference. Tawaris (Ixerba brexioides) rival the taxads in size, but are not in such numbers.

Among others of less height are Quintinia serrata, Pittosporum Kirkii with its festoons of large cuspidate capsules, P. cornifolium, Myrtus pedunculata, Alseuosmia linariifolia, Nothopanax anomalum and Dracophyllum latifolium var matthewsii.

The undergrowth is pure kauri grass (Astelia trinervia) with a few woolly tree-ferns (Dicksonia lanata) among it, stemless as is usual on volcanic ground.

The epiphytic orchids and filmy ferns share with Metrosideros albiflora the trunks of most of the trees.

In the mixed bush are to be found Hypolepis distans and the rarer H. rugosula (Syn. Dryopteris punctata) on the rocks in the gully beautiful clumps of Mecodium sanguinolentum and flexuosum (australe) the latter particularly large.

The open country between the forest and the coast has the parasite, Cassytha paniculata, very far south of its usual habitat. It is completely parasitic, its leafless strings climb over the teatree and form an impenetrable barrier, it is attached to the scrub by small discs, easily detached and has surely chosen a most unpalatable host.

Pomaderris Edgerleyi is very noticeable on account of its dense ferruginous tomentum and shares the ground with a prostrate form of Leucopogon fasciculatus. Epacris pauciflora is not uncommon.

The Toronui which the main road crosses at the H.Q. turn off well repays the wading one has to do. Hebe diosmaefolia, Gnaphalium keriense, Pimelia prostrata and Ackama rosaefolia (a lovely sight in December), Loxosoma Cunninghamii, Sphaerocionium ferrugineum and others make it worth while.

- J.W. Jessop.

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### SOMETHING ABOUT CHROMOSOMES

- E.J. Godley

There is a very frail connection between one generation and the next in living organisms. Two tiny cells, the male and female gametes, bridge the gap, and carry within them all the vast potentialities of development which will make a new organism. The pattern of development is determined by genes aggregated in a linear order to form chromosomes, and these are found in the nucleus of both the male and female gametes. Offspring resemble parents because they have received their chromosomes from the parents. Genes cause certain characteristics in the parents and the descendants of these genes cause the same characteristics in the offspring.

Any pollen grain of a potato plant has 24 chromosomes in its nucleus, and the same number is found in the egg cells or ovules of the flower. On fertilisation the nucleus of the pollen grain fuses with the nucleus of ovule and the chromosomes added together give a fertilised egg with 48. From this cell all the cells of the body are derived. Cells increase in number by mitotic division, which ensures that such daughter cell resulting from a division has chromosomes identical with those of the parent cell. When the time comes for reproduction a special division called meiosis produces gametes with half the normal chromosome number. The normal number is restored on fertilisation.

Chromosomes in plants are best seen in regions where cells are actively dividing, i.e. root tips, or at pollen formation in the young flower. Here are some chromosome