

THE FLORA.

Leaving on one side the lower plants—fungi, liverworts, mosses, &c.—and dealing only with those designated “higher”—ferns, lycopods, &c., seed-plants (conifers, grasses, sedges, &c., rushes, &c., orchids, trees, shrubs, semi-woody and herbaceous plants)—the total number of species and hybrid groups between such (57, the estimate low), extending our census to those outside of the area up to the coast-line, is 576 (ferns and their kin 92, conifers 17, monocotyledons 147 and dicotyledons 320), and these belong to 70 families and 202 genera, the largest of which are as follows: (Families) *Filices* (Fern Family), 81 species, &c.; *Compositae* (Daisy Family), 69; *Cyperaceae* (Sedge Family), 46; *Gramineae* (Grass Family), 42; *Rubiaceae* (Karamu Family), 25; *Scrophulariaceae* (Koromiko Family), 24; *Onagraceae* (Willowherb Family), 22; *Orchidaceae* (Orchid Family), 21; *Umbelliferae* (Carrot Family), 18; *Liliaceae* (Lily Family), 17; and *Podocarpaceae* (Rimu Family), 16. (Genera) *Coprosma* (karamus), 21; (Genera) *Carex* (sedges), 19; *Hymenophyllum* (filmy-ferns) and *Celmisea* 18 each; *Epilobium* (willowherbs), 17; *Olearia* (tree-daisies), 13; *Asplenium* (spleenworts), 12; and *Danthonia* (danthonia grasses), 10.

Taking a broad view of the life-forms of the species, &c., the following are the numbers for each class: Trees (many might equally well be classed as shrubs), 48; shrubs, 80; semi-woody plants, 81; herbaceous plants (in a narrow sense), 137; plants of the grass-form, 82; plants of the rush-form, 15; lianes (excluding climbing ferns), 18; epiphytes (excluding epiphytic ferns), 5; parasites, 2; water and swamp plants, 26; and ferns, 81 (tree-ferns, 4; filmy-ferns, 23, of which 18 are epiphytes; herbaceous and semi-woody ferns, 55, of which 2 are lianes and 7 epiphytes).

In regard to the altitudinal distribution of the species, &c., 17 are restricted to the coast-line, and 134 to the lowland belt, while 89 do not ascend above the montane belt or 237 above the subalpine belt, and 97 enter the alpine belt.

For those visiting the reserves who are unacquainted with the names of the species we give the following brief descriptions of some of the most striking, though common elsewhere, together with a few absent in most parts of New Zealand. The wheki (*Dicksonia squarrosa*) is the smaller of the two common tree-ferns, and from its slender trunk project the persistent bases of the old leaves; the green tree-fern (*Homitelia Smithii*) has the old leaf-stalks of former leaves depending from below the spreading crown of large, green leaves (fig. 3); the kiokio (*Blechnum procerum*)—so abundant on banks (fig. 4)—forms with its huge pinnate leaves, up to 10 ft. in length, each clear of its fellows, a perfect mosaic; the umbrella-fern (*Gleichenia Cunninghamii*) lends a rare beauty to the roadside, with its deeply-cut leaflets, white beneath, held out horizontally in tiers one above the other; the crape-fern (*Leplopteris superba*) forms large colonies, the spreading crown of translucent crape-like green to almost black leaves, 2 ft. to 3 ft. long or more, raised on short trunks (Frontispiece); the tall rimu (*Dacrydium cupressinum*) is at once distinguished by its small crown of yellow drooping shoots; that most elegant of grasses, the giant danthonia (*Danthonia Cunninghamii*)—both lowland and subalpine—is a huge tussock with rather broad green leaves, and stems up to 5 ft. high, bearing an open feathery panicle; the broad-leaved cabbage-tree, or toi (*Cordyline indivisa*), is a tuft-tree up to 20 ft. high, crowned by a great head of leaves each about 4 ft. long by 4 in. broad, thick, somewhat elastic, and marked by a handsome yellowish-red midrib; the milk-berry (*Enargea marginata*) is a low-growing, wiry-stemmed plant of the forest-floor, with white flowers and opaque, fair-sized milk-white berries; the huta (*Ascarina lucida*) is a small bushy tree quite striking with its black stems, extremely glossy, green, toothed oblong leaves, 1 in. to 2 in. long, which resemble those of the puketea; the mountain-lily (*Ranunculus Lyallii*)—a giant buttercup, the finest in the world, in which fact, apart from its surpassing beauty, lies its special distinction—is remarkable for its huge bright-green, smooth, saucer-like leaves, raised on stems 1 ft. or more high, and its pure-white flowers, each 2 in. diam., with their delicate petals so numerous that the blossoms look almost double, raised on tall branched stems high above the leaves in open bunches of thirty or more to the one stem; the yellow mountain-lily (*Ranunculus Godleyanus*) is much as *R. Lyallii*, but the flowers are golden-yellow, and the leaves not shield-shape, but broadly oblong—both buttercups are confined to the high mountains; the red horopito (*Wintera colorata*) is a common forest shrub with striking oblong leaves, about 2 in. long, blotched with red and purple, and glaucous beneath; the mountain-broom (*Carmichaelia grandiflora*)—common in scrubs of all kinds and at all altitudes—has spreading, grooved, green branches, numerous small leaves, and small, fragrant pea-like flowers veined with purple; the Westland-quintinia (*Quintinia acutifolia*)—the commonest small tree of Westland forest in general—is distinguished by its slender habit, small pale-lilac flowers in racemes up to 4 in., long and yellowish oblong leaves with wavy margins and green midrib and veins; the bronze-leaf (*Rubus parous*)—a species absent in nearly all parts of New Zealand—forms mats of linear-lanceolate evenly-toothed leaves 1 in. to 2 in. long, delightfully veined, or blotched, bronzy, purplish, yellowish, reddish, &c.—in winter the colour greatly intensified—and bearing in profusion bright scarlet berries up to 1 in. long; the feathery-tute and the thymy-tute (*Coriaria angustissima*, *C. lurida*)—lowland and subalpine—are elegant herbaceous plants which die to the ground in late autumn, the former, with very numerous, extremely narrow leaves about $\frac{1}{4}$ in. long, but the latter with rather broader leaves, and both produce in autumn masses of small shining black berries; the southern-rata (*Matrosideros lucida*)—a medium-sized tree or merely a shrub—has an irregular trunk covered with pale papery bark which hangs in long strips, crowned by a head of far-extending branches bearing glossy bright-green, thick, lanceolate leaves, each about 2 in. long, and, in due season, producing a wealth of bright-crimson blossom—the leaves being almost hidden; the giant-spaniard (*Aciphylla maxima*)—confined to the subalpine belt—has rigid bayonet-like, much divided, huge leaves in great rosettes, and very stout leaf-stalks up to 10 ft. high, or more, which bear small bunches of yellowish, rather insignificant flowers; the lily-valley bush, snowberry, mountain snowberry, and wiry snowberry (*Gaultheria rupestris*, *G. antipoda*, *G. depressa*, *G. perplexa*) occur in open places generally