

tion, and also those indigenous animals whose presence depends upon forest or meadow, may exist unmolested and remain intact, year by year increasing in interest for us and for our descendants. Nor is it merely the individual species which are interesting, but equally important and of greater moment to the scenery is the manner in which they are associated together. Thus, the brown steppe of waving tussock is a special feature of the landscape, the dull-coloured and reddish carpet of shrubs which clothes the barren slopes is another, while even the gloomy scoria deserts are enlivened by the silvery cushions of a moss-like seed-plant or the delicate snow-white blossoms of a gentian (Photos. 3, 4).

The national parks are five in number, each offering special and peculiar attractions. In the North Island are two of these domains—one, Mount Egmont, which includes a considerable area of fine mixed forest round its base, then a subalpine forest of cedar and totara, and above this meadows of alpine flowers reaching far on to its scoria slopes; and the other, the region of dying but still active volcanoes described in this report.

In the South Island is the Arthur's Pass or Waimakariri Park, which includes the far-famed Otira Gorge, the glacier scenery at the source of the Waimakariri, Lake Minchin, a spot of extreme loveliness hidden in the recesses of the Snowcup Range, many noble virgin forests of the mountain-beech, ancient glacial lakes, and beautiful alpine and subalpine meadows containing a rich and varied flora. Then, further to the south lies the Mount Cook Park, with an abundant vegetation differing considerably from the above and equal in interest, but the region is specially marked out by its extensive glaciation and the presence of the loftiest peaks of the Southern Alps. Finally, there are the world-famed Sounds of Otago, where again another vegetation flourishes, imperfectly known as yet, but which, clothing even the wall-like cliffs or dipping almost into the calm waters, marks these majestic fiords as distinct from like ice-carved depths elsewhere.

The vegetation of these various national parks, then, is a priceless possession of the people, but one which to the majority is at best but a name. The plants, it is true, have in some measure been collected and classified, though even this work is far from complete. But here botanical knowledge for the most part ends. Little as yet has been written either as to the combinations of species which form the covering of the land, or regarding their life-forms and the contrivances by which they, in more or less harmony with soil and climate, exist. Nor have even catalogues been published of these great open-air museums—collections which surely rival those stored up in our cities. This report, then, seeks in some measure to supply what is distinctly a national want. That it is complete is not to be expected. A thorough examination of a district so extensive as the Tongariro Park would occupy much more time than I was able to devote, and would also need investigations at all seasons of the year. All that is attempted is to give a general idea of the plant-covering, with some details as to the most important plant formations and life-forms of the species. In time to come, as the population of the Dominion increases, the scientific workers will also increase in numbers, and reports such as this should be of use to these future investigators for comparative purposes. At the present time, too, it is hoped that they may be of assistance to present students, and perhaps help to arouse an interest in our unique plant-life, and assist also in building up a popular sentiment towards its protection.

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II. HISTORY OF SCIENTIFIC INVESTIGATION.

Until comparatively recently the chain of active volcanoes and the adjacent plateau were forbidden ground for the white man. Notwithstanding this, during the first half of the last century, before the "King" movement shut up so much of the centre of the North Island from the colonist, more than one traveller of a scientific bent had managed to evade the Native guardians of the place, and had penetrated into the tabooed region. Mr. J. C. Bidwill, so well known in connection with the alpine flora of New Zealand, was the first white man to ascend Ngauruhoe, and gives a most graphic account of what was then both a difficult and daring feat. The account of the ascent he published in 1841 in his very interesting little book, "Rambles in New Zealand" (2). Bidwill had with him finally two lads he had brought from Tauranga and several people from Roto-iti. "As usual, the men carried the children, and the women the potatoes, &c. The procession was closed by one or two pigs, which, from the opposition they made to the efforts of the drivers, seemed to have as great a dread of Tongadido as the Mowries themselves" (2, p. 47). "We were on Tongadido all day, but the peak was never visible in consequence of the mist which covered the upper regions." The Natives, who were in a state of terror, maintained the ascent of the mountain was impossible, although close to the cone (2, p. 47). Not far from its base the explorer passed the night with a fire made probably from two of the shrubs now bearing his name. Next morning he started for the summit with two Natives, who, especially as they declared the mountain had been making a noise in the night, could not be persuaded to go within a mile of the base of the cone. "As I was toiling up a very steep hill I heard a noise which caused me to look up, and saw that the mountain was in a state of eruption. A thick column of black smoke rose up for some distance and then spread out like a mushroom. As I was directly to windward I could see nothing more, and could not tell whether anything dropped from the cloud as it passed away. The noise, which was very loud and not unlike that of the safety-valve of a steam-engine, lasted about half an hour and then ceased, after two or three sudden interruptions; the smoke continued to ascend for some time afterwards, but was less dense. I could see no fire, nor do