

Ruapehu and the adjacent forest-areas are far without the park, and this at an altitude of 3,700 ft. and more. Moreover, the southern and western boundaries pass over spurs of Ruapehu at more than an altitude of 4,000 ft. *In fact, the park at present is, with few exceptions, a true desert.*

It has been shown in the introduction what an important rôle plants and plant formations play with regard to scenery, and that these special expressions of nature in the park are really far more uncommon than are the volcanoes themselves and the thermal phenomena connected therewith. Thus in any national domain representations of the special plant-life of the district should be the first care, and a national park of the importance of that of Tongariro should contain typical examples of every primitive formation which is to be found in the neighbourhood.

It seems, then, imperative that the boundaries of the park should be extended, and the accompanying map shows what Mr. E. Phillips Turner and myself consider to be the smallest area that should be included in the park.

In this choice we have been guided by certain principles—namely, (1) that no land should be included which is of economic value, either for agriculture or as having forests containing milling-timber; (2) the adding to the park examples of all the special plant formations of the region which are not already within its boundaries. From this it may be seen that, large as the proposed area undoubtedly is, no one can object to its size on economic grounds. Further, these have also been attended to in our third principle—the retention of the forest covering on slopes liable to denudation, as a protection for the farms of the future. This last principle surely requires no special explanation when it is borne in mind how disastrous has been the custom in the past of removing the natural forest covering from steep slopes, turning them finally into deep gullies and barren wastes.

Certain areas proposed to be included in the park are either Maori or private lands, and such should undoubtedly be acquired. Especially is this important in the case of the forest covering of the south and west Ruapehu spurs, where, if merely the Crown land is added, a considerable area would be liable to destruction of forest and consequent denudation, which would detract much from the value of the new boundaries from the climatic standpoint, and from the value of the important farm-lands along the Main Trunk line.

From the details given in the body of the report it can be seen that the park contains much of great interest, and will in consequence year by year increase in importance as a resort not only for tourists, but for our own citizens. The high altitude, the dry, bracing air, the number of interesting sights, render it especially a resort for those requiring a complete change and who are worn out with city life. At the present time the accommodation is quite of a primitive type (Photo. No. 29), and as the park becomes better known so will more adequate accommodation be called for. The hot springs at Ketetahi have a considerable repute locally as a cure for various diseases. The water is of several distinct classes, and the high altitude should, for certain constitutions, add much to their efficiency.

IX. FAUNA OF THE PARK.

(A.) INDIGENOUS.

Compared with the settled parts of the Dominion, the bird-life of the park is abundant—indeed, it is probably much as it has ever been. In the forests of the proposed new boundaries are large flocks of whiteheads (*Clitonyx albigapilla*) and paroquets (*Platycercus novæ-zealandiæ*). Specially abundant is the rifleman (*Acanthidositta chloris*), numbers of these birds being round our camp all the time we were there, and coming constantly into the cooking-tent. The following birds are also quite plentiful: The tui (*Prosthemadera novæ-zealandiæ*), the kaka (*Nestor meridionalis*), the pigeon (*Carpophaga novæ-zealandiæ*), the morepork owl (*Spiloglaux novæ-zealandiæ*), the North Island tomtit (*Myiomoira toitoi*), the pied fantail (*Rhipidura flabellifera*), the shining cuckoo (*Chrysococcyx lucidus*), the long-tailed cuckoo (*Eudynamis taitensis*), the grey warbler (*Gerygone flaviventris*), and the New Zealand pipit (*Anthus novæ-zealandiæ*). A few North Island wekas (*Oxydromus Greyi*) were seen on the south of Ruapehu. The North Island kiwi (*Apteryx Bulleri*) is said to be in abundance in some parts of the Kaimanawas, and also is stated to occur in the forest near the Waihohehu. The mutton-bird ("titi" of the Maoris), Buonaparte's shearwater (*Puffinus tenuirostris*), is very common, flying near the camp at night, uttering strange cries. It nests in deep holes, honeycombing the loose ground of the shrub-steppe on old lava slopes and river-banks. Finally the New Zealand dotterel (*Charadrius obscurus*) is frequent during the summer on the barren slopes of the volcanoes.

As for the invertebrata, the park affords an interesting field for the entomologist. There appear to be a considerable number of species of insects. Right on the summit of Ruapehu and Ngauruhoe was an abundance of beetles, ladybirds, and diptera, while a species of spider is very common amongst the scoria at a high altitude. Grasshoppers are numerous, and the cry of the cicada sounds all day long in the beech forests and scrubs. A number of insects were collected, but there has been no time as yet for their determination by specialists.

(B.) INTRODUCED.

The introduced animals are chiefly important on account of the damage they may do to the vegetation.

The grass lands in the vicinity of the park, excepting to the south-east, have never been let for grazing purposes. At the same time, the Natives own land in close proximity, and their cattle or the wild progeny of these have roamed at large over the Crown lands. Especially is this the case at the north end of Tongariro, where the pasture is much richer than elsewhere. Also, for a long time there have been herds of wild horses pasturing on the grass-steppe. Quite recently, too, a few sambar deer have been liberated. Hares also are very abundant. But, so far as I was able to observe, all the above have not been in sufficient numbers as yet to work much, if any, change in the vegetation, though this fact is no excuse for their presence in what is virtually a sanctuary for the indigenous plants and animals