

aim has been to reconcile the preservation of the scenery with the farmers' interest. Wherever it seemed required, gaps have been left to give access to the back portions of the lands affected; also fertile terraces of any considerable size have been omitted from the reservation.

In February I made a visit to the Catlin's River district, and have advised several reservations of the beautiful banks of the Maclellan River as far as it is now navigable. Now that the railway has been extended to this district many holiday-seekers will be drawn to it from Dunedin and the southern towns. I also visited the Caberfeidh Range in this locality, and have recommended resumption of the summit of the range for climatic purposes. I think it advisable that the higher slopes of all wooded ranges be reserved, as it is from them (when the low country is settled) that the streams derive their main supply; also, when cleared of bush and put down in grass they gradually deteriorate, and generally in a few years nothing is seen on them but scrub and bracken alternating with landslips or shingle-slides. The deforesting of high steep hills in this country always catches the eye of any foreign scientist touring the Dominion; and when asked by the newspaper reporter for his impressions, he never omits to call attention to this regrettable fact.

In March I visited the Waitomo, Hangatiki, and Marakopa districts to investigate complaints as to boundaries that had been made by settlers adjoining scenic reserves that had been lately made to secure the Piripiri Caves, the Marakopa Falls, Ngahuinga Bluff, and other fine features there.

In addition to the foregoing field inspections, I have also inspected reservations at Ohakune, Rangataua, Lower Wanganui, Waharangi Block, &c. In connection with my field-work there is, of course, a good deal of clerical and draughting work that has to be done between the various inspections. The completion of the Wanganui and Mokau surveys will leave me freer for inspections in other parts of the Dominion.

#### *Fencing.*

As settlement is progressing so fast we shall have to face the question of fencing the most important reservations, such as those along the Wanganui and Main Trunk Railway. Some of our reserves at the present time, through not being fenced, merely become cheap grazing-resorts for settlers' stock. Having made ample reserves, it now remains for us to see that their preservation is ensured, and for this the exclusion of stock is necessary.

#### *Noxious Weeds.*

During the past year my work has been almost solely the acquisition of new reserves, and in doing this care is taken to omit land with noxious weeds. Some of the reserves, however, on the lower Wanganui were found to be badly infested with blackberry. One near Ranana, though from the river very beautiful, was such a tangled mass of blackberry that its eradication would have costs hundreds of pounds, and also destroyed the scenic value of the land. As this piece of land had not been finally taken, I advised that it be not acquired, but left to the Native owners. In the other instances arrangements were made for the eradication or cutting-down of the weeds.

#### *Fires.*

Owing to the abnormally wet summer and autumn I have not seen much damage done last year by fire. In some few places, however, small fires did occur, but whether by accident or design it is impossible to say. In one province of the Dominion of Canada there are in summer over eight hundred fire rangers employed, as the Canadians realize that the only way to secure their valuable forest reserves is to have men out in the field to prevent the occurrence of fires, or to extinguish them in their incipency. In my report of last year I pointed out how successive burnings of the scrub and herbaceous vegetation on poor lands destroys the fertility of the soil by killing the nitrogen-producing bacteria that exist in myriads in the superficial soil layers. As this is a fact of such vast importance (and should be known by all officers who have control of our lands) it is time that effective measures should be taken to prevent the wholesale burnings that are permitted on Crown lands and short-lease grazing-runs. There is no doubt, I think, that many pastoral runs that carried thirty years ago, say, ten thousand sheep, do not now carry more than three-quarters that number—a diminution brought about principally by deterioration of the native pasture from frequent burnings-off. The present impoverished condition of the lands north of Auckland (gum lands) and in the central volcanic plateau has to a considerable extent been brought about by excessive burnings. This is proved by the fact that newly cleared forest lands in those localities and on the same (mineralogically) soil are comparatively fertile. Before the settlement of the white man the Maoris used to burn off huge tracts, as one may find from Sir Joseph Banks's journal. The existence, too, of sound trunks of trees in swamps, and charred logs in fern and tussock country, proves that a great deal of our open country has formerly been wooded. The stopping of this indiscriminate burning on reserves and other Crown property is a matter so important that I venture to repeat my suggestion that during the summer special rangers should be employed to follow up cases with a view to prosecuting the culprit. One or two substantial fines in different parts of the Dominion would probably deter others from repeating the offence.

#### *Damage by Stock.*

Most of our reserves which are not fenced are invaded more or less by stock; so far, though in some cases the damage is considerable, in no case is it irreparable. Strangely enough, many people interested in scenery and forest preservation think stock do not damage forest. This, of course, is contrary to the experience of all forest experts. Early-Wilmot and Stebbing have shown how in India, Baluchistan, &c., forests have been destroyed (gradually, of course) by the excessive grazing of stock, principally goats. Hutchings shows the same to be the case in the islands of the eastern Mediterranean. Pinchot and other American writers call attention to the deterioration of American forests from the