

THE GRASSLANDS OF NEW ZEALAND.

SERIES II. THE TARANAKI BACK-COUNTRY.

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1. FOREST SUCCESSIONS.

THE hill country of New Zealand that has been cleared of forest or that still carries forest has been neglected too much in the past from a grassland-research point of view. Millions of acres of forest have been felled and grassed more or less haphazardly. Those areas which could be stumped and ploughed are among the richest of our grassland areas, but of the unploughable forest lands, out of 11,000,000 acres felled and surface-sown with grass, nearly 4,000,000 acres have reverted to scrub and fern, and this state of reversion is by no means stationary, 500,000 acres having been added to the total, according to official statistics, during the past four years. When it is thus remembered that every year during the past four years some 125,000 acres of our hill country have gone back to secondary growth it will be realized that money spent on research work on that country is amply justified. Every acre of such country that reverts to secondary growth means an average expenditure of fully £2 per acre to clean up and resow, making for each year an expenditure by the hill-country farmers of, say, £250,000 if the deterioration is to be stayed.

The writer hopes to be able to prosecute research more and more closely on our hill country generally, and operations have already been begun in the Whangamomona County. This work is being carried out in co-operation with Mr. J. W. Deem, chief Fields Division officer for the district, and with the assistance of Mr. A. J. Glasson, Fields Instructor in Taranaki. As the work proceeds, the results will be recorded from time to time in the *Journal*, and it is intended that the present article shall be the first of a series appertaining to the country in question.

The Taranaki back-country is decidedly hilly. Geologically speaking, the country is of recent origin, raised up as a great plain from the ocean depths. Upon the surface of this upraised plain nature has plied with its tools—rain, frost, and running water—and has sculptured out the present land-form. The streams cutting down have left the ground unevenly raised, in some places as small or large hillocks, and in other places as hills ranging in varying heights up to 500 ft. or 600 ft. Some of the hills are extremely steep, meeting at the base in narrow V-shaped ravines; others are more gently sloping, often with intervening valleys aggraded so that small areas of flat are formed between the slopes. The hills themselves vary from being bluntly or sharply razorback to easy rolling convex surfaces. From any point of the highest ridges—1,300 ft. above sea-level—the country looks like a billowy sea as hill after hill rises in wave-like regularity, lighted and shaded according to its disposition to the sun. The whole land-form—hills of various