

that had been entirely covered by the sand. Mr. T. Walsh said that he knew of several swamps that had been obliterated by the sand-drift during his twenty-four years' residence in the district. Mr. P. Shine, who lives at Waiharera, said that he was sure that the sand had encroached a mile during the last sixteen years, and he could point out a place where there used to be a lake (near Kaikino) which was now a sandy waste. Mr. P. Kosovich said the sand was encroaching very fast, and he could point out a place where the sand had advanced over 200 yards since he came to Waiharera, six years previously. Mr. James Steed, of Waiharera, where he had resided for the past twenty-two years, offered to point out the sites of some small lakes which he had shot over a few years ago which were now lost in the sand. Mr. F. J. Hagger, who had lived at Kaimaumu for twelve years, expressed the opinion that the sand-drift would in course of time submerge the whole peninsula. Mr. J. Dragicevich, a farmer residing near Ahipara for the past eight years, said that during that period the sand had encroached on his land from 50 to 100 yards.

Mr. T. S. Houston, J.P., of Ahipara, was also very emphatic on the question, and said that during his residence of twenty-three years at Ahipara he had always regarded the sand-drift as a serious menace to the country, and that it was particularly so to the large area of valuable lands now being dealt with under the Kaitaia Land Drainage Act of 1913. Mr. Houston also expressed the opinion that the adjoining settlers, if advised as to the right method of procedure and supplied with the proper plants, would gladly undertake the work of planting and taking care of the plants.

In that valuable report on the dune areas of New Zealand, presented to Parliament in 1911, Dr. Cockayne says: "A great proportion of the dune areas as they at present exist are in the first place a constant menace to the surrounding lands, and in the second are themselves valueless. Large areas which were firmly fixed by nature when the early settlers arrived are now in a state of great instability, and not only useless in themselves, but daily encroach upon, and so render valueless, the neighbouring fertile ground. The checking of such encroachment is obviously the first aim of dune-reclamation in this country. But the amelioration of the sand areas goes much further than this, and the final goal should be their improvement as a whole through their occupation by a continuous plant covering that shall be of commercial value."

In another part of the report Dr. Cockayne points out that "The conditions governing the plant-life of a dune area are extremely severe, and bring about a state of affairs very similar to that of a desert. But between this latter and the dune there is the important economic difference that the one can be made fertile only by irrigation, whereas the other has a sufficient rainfall, and the sand drifting propensity has alone to be dealt with."

And again, in the introductory remarks of the report he says, "Although certain owners of dune areas are fully aware of the sand-drift evil, and are making brave efforts to overcome it, these are in no few instances misdirected. Others, again, are doing nothing; they recognize the need for action, but have no idea as to the methods to be pursued. Some even hold the most strange or dangerous views, such as that the sand did not originally come from the seashore, or that a belt of shrubs will stop a wandering dune. Even where the best successes have been won there has been only a planting of marram-grass (*Ammophila arenaria*) or tree-lupin (*Lupinus arboreus*), which is at most but a makeshift, except under special circumstances. The final treatment of dunes should assuredly be afforestation, and yet by many this is thought to be impossible, and, except in a few specially favourable localities, nothing of the kind has been attempted."

All through this exhaustive report it is made abundantly clear that the checking and reclamation of these sandy wastes must be carried out in accordance with the best methods of the recognized authorities, and it is suggested that a carefully prepared summary of Dr. Cockayne's recommendations should be issued in small pamphlet form and widely distributed in districts affected by the sand-drift question.