

Act provides that "in any special or ordinary gum-digging license hereafter issued or renewed under the principal Act the Commissioner issuing or renewing the same may insert a condition that the Minister shall have the right, in priority to all other persons, to purchase all kauri-gum obtained by the holder of such license at not less than the current market price, and on the breach of any such condition the Commissioner may, with the consent of the Minister, cancel the license." And section 10 of the Kauri-gum Industry Amendment Act, 1910, empowers the Minister to make regulations for "the grading of kauri-gum."

"FACE-DIGGING" OPERATIONS.

The "face-digging" operations were continued during the greater part of the year. The various works are situated at Mangawai, Waiharara, and Waihopo.

Mangawai is a small township on the east coast, on an inlet of the same name, situated about seventeen miles south of the entrance to the Whangarei Harbour. The Port of Mangawai is navigable for boats drawing about 6 ft. of water. The works are about three-quarters of a mile from the village, on what is known as the Mangawai or Coal Hill Kauri-gum Reserve. The reserve comprises an area of 3,669 acres, of which about 800 acres is rich gum-bearing swamp land. The face-digging works were started on the eastern boundary adjoining Mr. Hogan's property. The swamp area being dealt with contains about 200 acres, and the whole of this area had been dug over and extensively potholed for the past forty years.

Waiharara is a kauri-gum settlement on the western shores of Rangaunu Bay, about twenty miles west of the Town of Mangonui. The port of Waiharara is Kaimaunau, which lies about three miles and a quarter to the north-east. Goods are transported from Waiharara to Kaimaunau by launch and punt. Two areas were worked at Waiharara: one at Pausina's Swamp, about a mile from the Waiharara boat-landing, and the other at the Big Flat, a mile farther to the westward. Pausina's Swamp comprises about 300 acres, of which 165 acres is rich swamp and the balance consists of gentle slopes of sandy clay soil. The Big Flat contains an area of 900 acres, and is all land of good quality. The flat is surrounded by an amphitheatre of low sandstone hills nowhere exceeding 250 ft. in height above sea-level. This area of land, when all the gum has been recovered from it, offers exceptional facilities for intense cultivation for fruit and general farming purposes. Lying to the south of Big Flat, and separated from it by a low range of sandstone hills, lies Waiparera Lake, which covers an area of 265 acres. The lake has an average depth of about 12 ft., and the surface of the water is 65 ft. above the level of the Big Flat. A tunnel of 7 chains long through a sandstone ridge is all that is necessary to make the waters of the lake available for irrigation of the Big Flat and several thousand acres of land adjoining.

Waihopo is situated at the northern end of the Houhora Harbour, about twenty-five miles from the North Cape. The port of shipment is Pukeuui, on the southern side of the harbour, about two miles from the entrance. There is a boat-landing at Waihopo, from whence goods are transported by launch and punt to Pukeuui, the distance being about four miles. The locality of the works at Waihopo is the Bulldog Flat, situated within a half a mile of the boat-landing. The flat comprises an area of 800 acres of peat swamp; the land is fairly good, and will prove suitable for farming when it has been brought into a fit state for cultivation.

Owing to the wetness of the season, and to the fact that many of the best workers had left the works for military duty, the results obtained were not as satisfactory as for last year. For these and other reasons on my return from America I advised that the works should be discontinued until arrangements could be made for the introduction of labour-saving machinery for the production and saving of the gum. In response to my recommendation this proposal was given effect to, and the works were closed down at the end of December.

An area of about 250 acres has been turned over since the "face-digging" works commenced, the land has been left with a fairly level surface, and all timber (with the exception of a small area at Pausina's Swamp) has been thrown up on the surface.

It was necessary to drain the lands before they could be dug and the gum recovered. The drainage has been carried out systematically, and is a permanent improvement to the land.

The process adopted in face digging was to turn over the whole of the soil from the surface down to the solid sandstone formation. The areas treated were shallow swamps averaging about 3 ft. deep, though very much deeper in places. Only what appeared to be gum-bearing soil was taken out for treatment, together with the gum that was disclosed in turning the ground over. These lands had during the past twenty-five years been worked by the gum-diggers, and had been intensely potholed. Careful tests which have been made by Dr. MacLaurin of the soil in one of the areas of land which has been turned over by face digging clearly proved that there is still a large amount of gum remaining in the land which has not been saved in spite of the care taken in the digging operations. It is therefore essential that methods should be adopted in the future for treating the whole of the soil so that practically the whole of the gum will be recovered. It will have to be determined what is the best type of appliance for achieving this end; it may be found that some form of dredge is best adapted for the purpose. The face-digging operations have demonstrated that the gum lands of New Zealand are not only of great value, but also that they can be converted from a wilderness condition into lands suitable for successful settlement, and that the process of reclamation may be made a source of profit. Last autumn Mr. Rowan, Fields Inspector of the Department of Agriculture, made an inspection of the lands which have been turned over at Mangawai, Waiharara, and at Waihopo, with a view to finding out what areas could be prepared for fruitgrowing and other farming. The following is a synopsis of Mr. Rowan's reports, which are dated 14th and 15th June, 1916:—