

a bore-hole from the bottom of the Kapanga Company's shaft, at 1,000ft. below the surface. At Waihi, richer stone is being got at the lowest level in the mine than was obtained near the surface; and also in the Crown Mine, at Karangahake, the richest ore is being obtained at the deepest level. All these discoveries have given more encouragement to continue prospecting operations. Large prospecting areas in the back country, where scarcely any prospecting has been done, have been applied for, and an offer has been made to deposit a considerable sum of money as an earnest that all conditions with regard to systematic prospecting operations on the areas applied for will be complied with.

Two parties were equipped last year to prospect the south-western portion of the Middle Island, between the Waiiau River and Dusky Sound. One of the parties found gold in several of the beds of the creeks flowing into Chalky Inlet, but so far no ground payable for working has been discovered. This part of the country is very difficult of access, and, being devoid of any tracks, prospecting is not carried on to any distance from the shore-line. There is also a difficulty in obtaining regular supplies of provisions. I have deemed it desirable to have pigs, goats, and some deer turned out in the vicinity of the western sounds, so that in a few years men going into the interior can obtain food in the event of flooded streams preventing them getting back to their principal store *dépôt* on the coast-line. Captain Fairchild has taken considerable interest in this matter, and has already turned out two lots of pigs.

The total amount expended in subsidies last year towards prospecting was £2,379; and the amount of liabilities on authorities issued up to the 31st March last was £3,007.

#### GEOLOGICAL EXPLORATION.

The geological explorations carried on last year by the Mining Geologist were confined to the West Coast, between the Buller and Teremakau Rivers. About two years ago a geological exploration was made between the Teremakau and the Mikonui Rivers. The great object to be attained is to systematically carry on these explorations so that a complete geological map of the whole colony can be prepared. Instead of making a hurried examination of isolated tracts of country, the explorations in future will be carried on so as to join on to what has already been done, and by this means the different formations can be shown on a map, which will give indications to the miner where to look for the different metals and minerals the colony contains.

A great deal of information was obtained last year in a part of the colony hitherto but little explored, between the Ocean Beach and the Inangahua River at Reefton; this includes a block of triangular form, the sides of which are about fifty miles in length. A geological map of this part of the colony, with the portion of Westland previously explored, and also showing the result of the explorations made in the upper Buller district, will be published with the departmental reports for this year.

#### MINING MACHINERY.

Information has been collected, as in former years, with regard to the improved appliances for carrying on mining operations, and especially in respect to the cyanide process for the treatment of ores containing gold and silver. Any improved method in the pulverisation of ores, gold-saving appliances, hydraulic elevating, and dredging machinery, tends to admit of lower-grade ores and gravels being operated on successfully, thereby extending the sphere of mining operations. No doubt each person who brings out a new improvement in mining machinery and appliances will naturally claim that his improvement is superior to all others. But by giving publicity to the different machines and appliances, as improved from time to time, we may induce further improvements to be made by other people, which will be of ultimate benefit to the colony generally. Plans of different machines, as well as appliances for the extraction of gold and silver, will be found in the Inspecting Engineer's Report on Goldfields, pages 185 to 255.