Three bores near New Plymouth Breakwater, out of four sunk to over 1000 ft., resulted in finding in each a quantity of oil at between 900 ft. and 1000 ft., but in conjunction with "papa"—a sedimentary deposit which, although it had at that depth hardened by pressure and exclusion of water, became soft as soon as it came into contact with either water or oil, and thus frustrated all the attempts of the company's staff to bring the oil to the surface.

After several weeks spent in testing the quantity of oil and mud, and finding the latter inexhaustible, drilling was continued in the fourth bore in February, 1896, and was proceeded with to a depth of 1976 ft.

In the course of its operations, the company met with great difficulties and losses, the drilling-tools frequently becoming detached, and connections parting owing to the great depth and the peculiar strata passed through, which, though for the most part "papa," contained small pieces of hard rock which, after being passed by the drill, fell in and jammed the tools in the bore. At 1,358 ft., 1,392 ft., and 1,675 ft. gas and oil were met with, but it was not until 1,976 ft. that any large supply of oil was reached. The "papa" at about 1,865 ft. gave place to soft sandstone, in which also it was found most difficult to "sut off" the water which followed the bore down on the outside of the casing, the result being that after the first explosion of gas and oil in the seam at 1,976 ft. the water in the bore flowed into the oil-seam and effectually forced back the oil and prevented it from flowing or accumulating in the bore so as to permit of it being pumped out. At intervals, however, the gas forced the water out and brought up pure oil to the surface, and it being apparent that there was a very large quantity of oil below, the directors were encouraged to carry on extensive operations by "packing" with a view to "sutting off" the water.

Meanwhile the derrick in which the work was carried on was frequently filled with gas (which was used also instead of fuel), and the floor and sides were constantly drenched with oil. One night there was an explosion, caused by the gas igniting through coming in contact with a lighted lamp at some distance from the bore, and in a moment the whole of the derrick was in flames, and the oil which had accumulated in the shaft outside the bore, and near the derrick, and which was at that time slowly flowing from the bore itself, burned fiercely until the works were completely destroyed. Undismayed by this disaster the directors repaired such of the machinery as was not rendered useless by the fire, and procured other necessary plant, and re-erected the works, the bore being meanwhile plugged up. Mr. Fair, who had hitherto been managing director, finding it necessary to return to Australia, Mr. Samuel, the chairman of directors of the New Zealand Board, succeeded him, and the operations of the company have since been carried out under his superintendence.

When the works were reinstated, the previous operations to free the bore from water, and effectually keep it clear, were resumed. These usually succeeded temporarily, and each time resulted (after a few days spent in pumping from the oil-seam below the water which had entered it from the bore) in a supply of pure oil at the rate of about eight barrels (336 gallons) per diem, but in every instance the strata proved too friable and soft, and the water from above worked round the "packer," and again flooded the bore below and the oil seam. In all, about seventy barrels of oil were obtained, which found a ready sale at 15s. per barrel (barrels being supplied to the company). The Railway Department and other manufacturers of gas found the crude oil most suitable for their purposes, and orders poured in which, however, the company found it impossible to supply.

At length in March, 1897, the directors reluctantly relinquished their efforts, and, leaving the bore still cased, abandoned it and moved the engine and most of the plant in order to commence a new bore about a hundred yards off. This, the fifth bore that has been drilled, was continued with great expedition (electric light being used to prevent risk of explosion), and oil and gas were again encountered between 900 ft. and 1,000 ft.; but the rock, as before, consisted of "papa," and therefore again rendered ineffectual all attempts to exclude water, and caused the bore itself to cave in and fill with oil-mud. The directors have now abandoned all hope of success at this level, and are proceeding to drill deeper with the hope that when the limit of papa is passed, and the lower oil seam between 1,900 ft. and 2,000 ft. is reached, some strata of sufficient hardness and durability will be found to enable them to bring the oil to the surface.

The present company has, in all, bored over 5,600 ft. in its four bores, in three of which oil has been found in quantity which would be payable were it not for the soft strata above and around it. The depth of the present bore is 1,140 ft. We understand that if better results are not obtained from the present bore at the lower level, the directors will abandon their efforts, so far at any rate as the vicinity of the Breakwater is concerned, unless they re-erect their machinery at the last bore, from which the gas continues to rise, and brings a continuous small stream of water with oil in it, of which the company saves about 60 gallons a week regularly.

The oil itself is of the most valuable quality. Professor Boverton Redwood states that: "The oil was of a rich brown colour and quite free from any disagreeable odour. Its specific gravity was ·840 (at 60° Fahr.), its flashing-point 62° Fahr. (Abel test), and that the following are the percentages by weight of the commercial products which the crude oil yields:—

Petroleum spirit	Nil.
Petroleum oil (kerosene), sp. gr., at 60° Fahr., ·811 flashing-point, 78° Fahr. (Abel test), equal 50 per cent. by volume	48·25
Intermediate and heavy oils with solid hydrocarbons (paraffin)	51·25
Coke and loss	0·50."

The Professor concludes a lengthy report by remarking: "The crude oil must therefore be regarded as of an exceptionally valuable description, and the commercial importance attaching to the discovery of such an oil in the locality is undeniably great." Mr. William Skey, the Analyst to the New Zealand Mines Department, in a report on the oil, after describing the results of the tests, remarks: "These results clearly show that this petroleum is of excellent quality and greatly resembles those of the east side of this island, also some of the best American petroleums that are very largely distilled for kerosene;" and he also adds that it has a high commercial value.

It is probable that in any event the company will, before abandoning operations, sink a bore somewhere inland, but in any single bore at a distance from where the oil has already been found there is considerable chance of no oil being struck. Fortunately those directing the destinies of this company have steadily repressed any attempt to "boom" the shares or cause them to change hands for speculative purposes, and therefore they have been hitherto able to continue their operations and retain the absolute confidence of the shareholders, but it can scarcely be expected that the comparatively small number who have provided the funds for this enterprise will continue their expenditure unless some remunerative return is before long obtained. It would be a most deplorable thing in the interests of the district and of the colony if the present company should be compelled to wind up and to discharge its efficient staff and sell its plant, probably to find its way to Australia, where it can be utilised in artesian well boring. As, without any aid from the Government, private individuals have expended some £9,000 to such good effect, so far as boring is concerned, and as they have proved that oil in large quantities does exist in the district, we think that the Government should in the interests of the colony give them some substantial aid to enable them to continue their operations. Probably £1,000 would go far to sink another bore, and we know of no better use to which such a sum could be put by the Government.

"Although No. 3 bore (with a depth of 1,976 ft.) is practically abandoned, and has a set of drilling tools near the bottom, it has for the last year continued to yield water and oil, brought up by gas-pressure below, from which we have regularly saved about 30 gallons of petroleum per week. We bored No. 4 bore to a depth of 2,050 ft., and succeeded (for the first time at any depth over 1,500 ft.) in practically shutting off water, but the result showed that we were off the oil-strata which we had struck in the No. 3 bore, and, although we got oil, it was in very small quantity. We have, accordingly, ceased operations there, but the bore is securely cased and protected and the plant left in position, so that drilling can be resumed at once should it be thought wise to sink deeper. We have now, with a new plant, commenced to sink a bore about