

stage of its existence ; and in order to make it a commercial success a large expenditure will have to be made in laying down pipes to convey it from the springs to Gisborne, and also in the erection of refining-works at that place.

The distance that pipes would have to be laid is about thirty-five miles, which is only a short distance in comparison to the pipe-lines in America, which are 600 miles in length. The head also on the pipe will be sufficient to cause the crude oil to run without pressure ; the only thing to be determined is whether the temperature during the winter months will congeal the parafine which exists in the crude oil. If this takes place additional pressure will have to be applied.

From the present prospects there is every probability of the oil developing into a very large industry. I think there is little doubt that a large supply will be obtained, but it becomes a question now of capital to develop the springs and make them a commercial success. This will take time even if capital is at once forthcoming, and, although I have little doubt as to the ultimate success, still, I think, that two years will yet elapse before the company will be in a position to supply.

MINERVA COMPANY.

This is a company, recently formed, in 50,000 shares of £1 each ; £5,000 of the capital is paid up, out of which £3,000 has been expended. This company hold a lease of 200 acres of land on Mr. Henry Campbell's station, for which the proprietor of the land receives 10 per cent. of the gross proceeds of the crude oil extracted from the ground. Boring operations were commenced on the 5th December last, and on the 4th January, the date of my visit, the bore was down for 222ft., and 100ft. from the surface was tubed with stone pipe 13½in. in diameter.

Mr. Stubbs, the manager of this company, accompanied me all over the district and gave me much valuable information respecting the places where oil shows on the surface. He, having been largely interested in all the oil companies in the district, and intimately connected with their workings for the last fourteen years, has kept records of the different strata gone through, as well as a diary showing the progress made day by day in boring. He was therefore in a position to give authentic information as to the progress made and the difficulties the companies had to contend with. It is from this information that I am able to give sections of two of the deepest bores in the oil-belt.

The machinery and plant of the Minerva Company is similar to that previously described and shown on plan attached. The steam-engine used for working the machinery has a 10in. cylinder, American make, and fitted up with superheating apparatus, very compact, strong, and cheaply got up ; the cost, landed in the colony, being only £60. There is a very cheap and ingenious contrivance for working the barrel which winds up the sand-pump. It slides out and into gear by means of a lever, and is worked by a level-pulley being pressed against the wooden wheel on the crank-shaft. The whole thing sits on a skew, but the pulley on the top of the derrick is placed at right angles to the line of winding-barrel. All barrels, wheels, and pullies are made of wood, and answer the purpose extremely well. The whole of the brakes and starting-bars are fixed close alongside the borehole, so that one man can attend to them as well as the boring operations.

The Minerva Company carries on boring by three shifts of two men, day and night continuously—Sundays excepted. During the time of my visit the first sandstone bands were struck at 221ft., which gave off a large quantity of carburetted-hydrogen gas. This band corresponds with that found in the South Pacific Company's borehole at 470ft. The manager is therefore of opinion that he will strike oil at 250ft. less depth than it was got in the South Pacific Company's bore.

To test the quantity of gas given off in the borehole the manager, after clearing out the hole with the sand-pump, dropped a small piece of ignited waste down the borehole, which produced a loud explosion, sending water and mud out at the top. The distance that this company's bore is from the one where oil is found is about four and a half miles.

The cost of stone piping 13½in. in diameter is about 2s. 6d. per foot landed at Gisborne, but the malleable iron pipes, with screwed couplings outside, having an inside diameter of 8in., cost about 10s. per foot.

Southern Cross Company.

This company's workings are situate on the northern and western side of the Waiapu River, about forty-five miles in a north-easterly direction from the South Pacific Company's leasehold. I did not visit this locality, as all boring operations are suspended.

This company was formed in January, 1881, with a capital of £48,000, of which amount £46,000 have been actually expended in boring operations, plant, and machinery. During the time the company was at work seven boreholes were put down, varying in depth from 150ft. to 1,820ft. ; the latter being the depth of the last borehole when the cable attached to the rods broke, leaving the rods in the bottom of the hole, and, after trying for seven months to recover them without success, the company finally suspended operations.

In all the holes that the company put down a considerable quantity of carburetted-hydrogen gas was met with, and in the last hole a little oil was found.

From all information I could get respecting the oil-belt, it would seem to go under the sea at the East Cape. Several people at Gisborne stated that oil is found at Horoera Point, and that it can be seen on the surface of the ocean in fine weather. There have been no indications of oil found, as far as I could learn, eastward of the line dotted red, and shown on the map as the probable boundary of the oil-belt. The surface-rocks are, however, of the same character all over the district, and the depth of the papa rock seems to increase to the northward and eastward.

The following is a section of the last bore put down by the Southern Cross Company, from information received from Mr. Stubbs :—

Annexed is a plan, marked C, of the refining plant which the company propose erecting at Gisborne as soon as the oil-supply is fully established and a pipe-line laid down.