

ternator shafts are lubricated by ring oilers, which keep a continuous stream of oil running through them; this causes perfect lubrication, great economy in oil, as the oil is used over and over again, and they will run for months without the slightest attention.

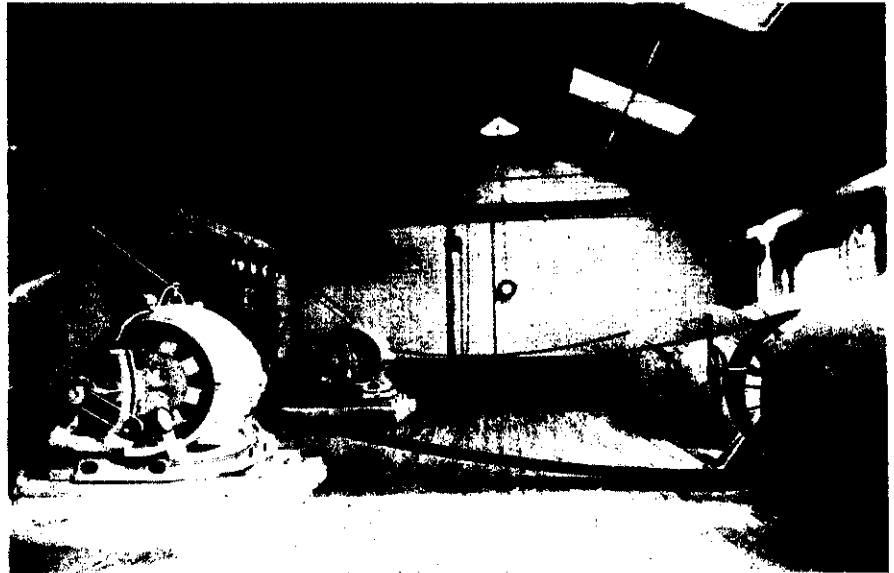
Between the two alternators is placed a very handsome switchboard, consisting of massive polished slate panels set in a wrought iron framework. Fixed on these panels are the various switches, safety fuses, regulating and recording apparatus for controlling the electric current supplied by the alternators, and for connecting either or both of them to the supply mains. A three-ton overhead travelling crane is provided for lifting various parts of the machinery for inspection or repairs. The Okere works are under the very efficient management of Mr. White, who, with his assistant, are the only two white men resident at Okere. The state of the works reflects the greatest credit on Mr. White, of whose unflinching courtesy visitors to Okere speak in the highest possible terms.

The electric current is conveyed from the power-house to Rotorua, a distance of 13 miles, by means of two small bare copper cables about a quarter of an inch in diameter, which are supported upon large porcelain insulators, attached by means of a wooden arm to light iron poles. The poles really consist of railway rails, twenty-four feet in length, and weighing about 40lbs to the yard. A telephone wire is also carried by the same poles, connecting the power-house with Rotorua.

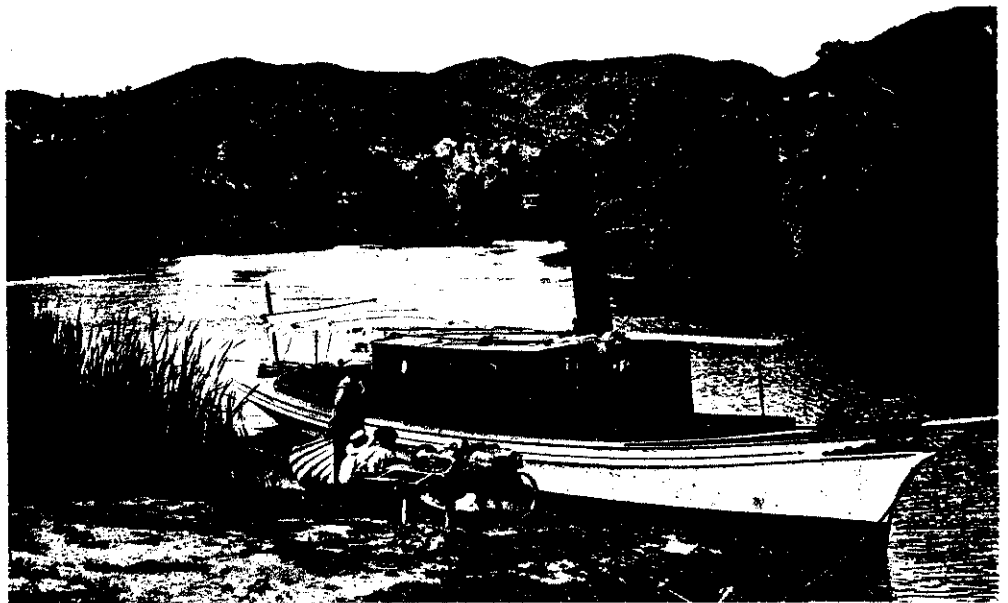
The main line (above described) terminates at the pump-house in Rotorua, which is a neat and substantial building, the first, and at present, the only brick building in Rotorua.

The sewerage system at Rotorua is a gravitation one—that is to say, the sewerage discharges from the various buildings into the drains and flows thence to a large underground brick and concrete tank situated near the pump-house. The pumps lift the sewage matter into a rising main, which carries it to two large filter beds situated about a mile and a-half from the township. Each pump is driven by an eight horse-power electric motor, and is capable of lifting 400 to 450 gallons of sewage matter per minute. Although both pumps can, if necessary, work together, it is only intended to use one at a time, as one pump can empty the tank in an hour and a-half, the second one being intended as a reserve.

As the electric current is generated at a pressure of about 4000 volts at the power-house, for economy of transmission, it is necessary to reduce this pressure at Rotorua before it can be used for pumping or general lighting purposes. This is effected by means of what are technically known as transformers, two of which can be seen, one on each side of the pump-house, distributing switch-board. A very small quantity of current at high pressure passes into the transformers, and is there "transformed," or reduced to a comparatively low pressure and large quantity. The two transformers referred to are used to supply low pressure current to the electric motors that drive the pumps. From the pump-house the high pressure current is distributed to various parts of the township, for lighting the streets, sanatorium grounds, bath-houses, Government and private buildings. The copper conductors which carry the current are protected with a cover of India-rubber and other insulating materials, and supported by large porcelain insulators fixed to wooden (totara) poles, which are painted white, with dark chocolate coloured bases, and present a very neat and pleasing appearance, and are a decided contrast to what is usually seen in the way of poles and overhead wires in most of our New Zealand cities and towns. The sanatorium grounds and streets of Rotorua are lighted by arc lamps, 21 in number. These lamps, of which one is shown in illustration No. 7, are placed at the intersection of the



INTERIOR OF POWER-HOUSE, OKERE FALLS.



THE LANDING PLACE, OKERE.



A REACH OF THE RIVER BELOW THE FALLS. A GREAT PLACE FOR TROUT.

(Continued on page 969.)

How Our Great Sanatorium is Lighted.