safely be put at 1,100 cubic feet per second. The relative amounts of power obtainable would be as under :—

Station.	Distance from Lake.	Water taken from Junction of Streams.		Water taken fom Lake.	
		Total Fall.	Total Power, b.h.p.	Total Fall.	Power, b.h.p.
	Miles.	Ft.		Ft.	
A	1½	360	24,200	760	75,000
B	2	670	44,900	1,070	105,000
C	4	1,020	67,700	1,420	134,000

In view of the large additional amount of power to be gained, it would be necessary to fully investigate the possibility of closing the underground outlets to the lake, before any scheme for the utilisation of Waikaremoana could be undertaken. The three main outlets may have their feeder-channels at a less depth than the outlets themselves, or they may not. Assuming that the lake-rim is not shattered to a greater depth than 85 ft., the cost of building a concrete watertight wall should not be excessive. The length should not be great, for the width of the arm of the lake leading up to the outlets is only 600 ft., but the outlets are 1,100 ft. apart. The length of the wall would likely lie between these limits. Probably £100,000 to £150,000 would close the outlets if not deeper than say 80 ft. to 90 ft. That the water flows out of the lake either through numerous openings or at a considerable depth may be inferred from the absence of whirlpools in the lake ; also there are numerous small outlets issuing at a lower level than the main streams. This may mean that fissures exist at much greater depths than the main streams ; but all these small and lower outlets may also only mean that the water is flowing down hill through numerous fissures in shattered rock overlying a sloping solid lake-rim, the upper edge of this solid rim not being at any great depth below the lake-surface.

The value of the lake as a source of power will be greatly enhanced—about doubled—should it prove possible to close the underground outlets.

Waikareiti Lake lies north-east of the lower end of Waikaremoana Lake, and drains into it. The area of the lakelet is 2·72 square miles, and its drainage-area is just under ten square miles. Its height above Waikaremoana is given as 700 ft. If this is correct, at the same rate of flow as from Waikaremoana, the power obtainable should be about 4,800 b.h.p. for continuous working. The distance between the two lakes is less than a mile, so that the combined length of flume or drive and pipe should not be much more than a mile.

Nearer to a centre of population, Waikareiti would be most valuable as a cheaply developable power scheme. As it stands it is worth some further preliminary investigation to ascertain its value more exactly, and if a scheme for its utilisation could be reinforced by the diversion of other streams into it.

The proximity of Mokau and Aniwhaniwha Streams suggests the possibility of diverting all the water from them into Waikareiti. If this could be done at reasonable cost, the drainage-area of the lake would be increased to nearly twenty-three square miles. Assuming the mean Waikaremoana flow to hold for this area, the power obtainable would be 11,500 b.h.p. for continuous working. The two diversion races or drives would probably not have a combined length of more than about two miles.

From the small quantity of water to be handled, and the short distance it has to be conveyed, this would be a good scheme to develop for working shorter hours per day, the extra cost for hydraulic works being relatively not so great as in some other schemes.

A power-station below Waikaremoana would be somewhat inaccessible for transport of heavy machinery, and, of course, Waikareiti is more unfavourably situated ; also there would be much rough country to cross with the necessary transmission-lines.

Te Reinga Falls.

These falls are situated just below the junction of the Ruakituri and Hangaroa Rivers. The drainage-area above the falls is 531 square miles. When gauged the flow of water was 2,088 cubic feet per second, but this was much above the low-water flow, which is estimated to be only about one-fourth of that measured. About 125 ft. fall is obtainable by about 20 chains of drive or pipes, and about 6,000 b.h.p. could be got for continuous working, or about 12,000 b.h.p. for all the water half-time. The distance of the falls from Wairoa is twenty miles by road. There is at present no local use for the power. The cost of development should not be great. In addition to the quarter-mile of conduit, there would be two weirs to build—one across the Ruakituri, and one across the Hangaroa. This would likely be cheaper than a single dam across the river below the junction, where the water appears to be very deep. Or a weir could be built almost wholly on the sandstone reef on which the road now runs. This would probably be the cheaper plan. Some storage and perhaps some additional height could be got in this way.

Whakapapa.

The Whakapapa River rises from Tongariro, and flows to join the Wanganui River above the crossing of the North Island Main Trunk Railway. There is a considerable quantity of water flowing in it, and the fall is given as about 3 ft. to 4 ft. per chain. If it were found practicable to carry the water