Surveys.—The survey and plans of the Manuherikia River from Chatto Creek to the mouth of the Manorburn River were completed, and the preliminary survey of the possible Lauder scheme reservoir was commenced.

HYDRO-ELECTRIC POWER.

Lake Coleridge Electric-power Supply.

The financial result of the operation of the Lake Coleridge system for the year ending 31st March, 1920, has been still more satisfactory than for the previous years. The power-house load has been increased during the year to such an extent that at the end of the year it was carrying an overload of 1,400 horse-power, or 17 per cent. The revenue for the year was £45,831, and the expenses were as follow :—

	£
Working-expenses	17,759
Interest	16,863
Depreciation reserve	7,624
	£42,246

The result of the year's operations is thus a net profit of £3,585 towards the reduction of the deficit on the four previous years of working. This result is very satisfactory.

From other points of view the results have been even more satisfactory. The output for the year from the power-house was over 33,000,000 units. To have generated this in a large economical steam plant using the class of coal now available would have taken 45,000 tons of fuel, worth from £100,000 to £120,000. But the steam plants that have actually been replaced by Lake Coleridge power were by no means as efficient as is assumed above, and in practical running they actually consumed up to three or four times the above amount of coal, or its value in oil, kerosene, and petrol. Thus the saving in fuel to the public of Canterbury is probably in the neighbourhood of £300,000, for which they have paid to the Department £45,831 —or, allowing for the distributing-costs of the twelve retailing authorities, about £110,000. The shipping and handling alone of the above 45,000 tons of coal per year (150 tons per day) would have been a large item. And, apart from the saving, the comfort that has been given in ten thousand homes, the increasing efficiency in dozens of workshops and factories, and the security and reliability of the hydro-electric-power supply during the trying period of the railway restrictions and coal shortage, are advantages of even greater importance to the consumers than the cash saving of £200,000.

As the result of this success the demand now in sight is far in excess of the supply, and even of the capacity of the scheme as now laid out—with a total of 16,000 horse-power. Plans are in hand for further extension to a capacity of an additional 26,000 horse-power (20,000 kilowatts), with distribution-lines to Banks Peninsula, Kowai County, Oxford, Ellesmere County, Methven, Ashburton, and Timaru.

It is anticipated that the fifth unit (4,000 h.p.), the pipe-line for which is now under construction, will be completed by the winter of 1921. This will only serve to relieve the overload on the present plant, to give a reasonably safe margin of standby capacity (2,000 h.p.), and to enable a few urgent consumers who have been waiting for some time to be connected up.

Contracts were recently placed for the generating-plant for the final unit (4,000 h.p.), and it is anticipated that this will be ready for operation for the winter of 1922. One thousand horse-power of the capacity of this unit is to be reserved for the South Canterbury line.

Horahora Power-station.

During the year the Horahora power-station was purchased from the Waihi Gold-mining Company, and was operated on behalf of the Department for the last five months of the financial year. The maximum load reserved for the Waihi Mine is 3,300 h.p., out of a total plant capacity of 8,400 h.p. Allowing one unit of 1,400 h.p. as a standby and 1,300 h.p. to cover special industries and losses, this leaves 2,400 h.p. available for distribution by the local authorities.

Four Electric-power Boards have been formed to undertake this distribution—viz., Thames Valley, Cambridge, Te Awamutu, and Central—together with the Hamilton and Waihi Boroughs, and as soon as the necessary plant is available for effecting the distribution the available power will be rapidly absorbed.