

of 2,050 acres under irrigation, were supplied with water. To increase the effectiveness of the scheme, some large areas for which the owners had refused to enter into irrigation contracts are in process of being resumed, and will be subdivided for closer settlement. At the end of November, 1923, an extensive break occurred in the concrete-lined race in the Manuhierikia Gorge, and temporary measures had to be resorted to to bring in the necessary water-supply. Preparations are now being made for the erection of an iron flume across the unstable ground. During the past year such works as the enlarging of a 3-mile section of the former borough race, the construction of distributary races, and other details were carried out.

Earnsclough Scheme.—Half of this scheme is now completed and is in working-order. An extension which will increase the total area commanded by the races to 2,843 acres is being put in hand. Some small extensions and the completion of details comprised the bulk of the work done on this scheme during the year. The number of irrigators, thirty-five, supplied with water shows an increase of ten over the previous year's figures, the total area under irrigation being 1,110 acres.

Ardgour Scheme.—This scheme has been in working-order during the past season, when water was supplied to eighteen irrigators. The area under irrigation was 1,146 acres, and a substantial increase in this area is to be expected during the current year. The results so far obtained on this scheme have fully justified expectations.

Last Chance Scheme.—The major portion of this scheme is now nearing completion, and the main race is being extended northwards from Butcher's Creek to supply lands lying nearer Alexandra, thus making it possible to throw open a few new Crown sections for settlement. It is expected that the whole scheme will be available for use by the beginning of next irrigation season. During the year ten miles of main race were constructed and 2,000 ft. of steel-pipe siphon lines laid. Water was supplied by means of some auxiliary races to six irrigators on the Fruitlands Settlement, the area under irrigation being 696 acres.

Tarras Scheme.—Construction work on this scheme is now well advanced, and it is hoped to have the scheme generally completed before next irrigation season. During the past year $5\frac{1}{2}$ miles of new main race were constructed, and $4\frac{1}{2}$ miles of the existing main race enlarged. The new concrete headworks are now practically completed, and the work of constructing the steel-pipe siphon lines is in progress. As the land brought under this scheme is of excellent quality and lends itself well to irrigation, most favourable results may be expected when the scheme is in operation.

Teviot River Scheme.—This scheme has been carried out in conjunction with a hydro-electric-power scheme supplying Roxburgh and the surrounding district. The water is drawn from the Teviot River, and after passing through the turbines on the power-house is discharged into the irrigation-canals. The progress of work on this scheme has been of a very satisfactory nature. All work in connection with the power pipe-line and power-house foundations was completed by the end of last December, and the Teviot Power Board was thus enabled to put its power scheme into official commission by the end of March. Work on the irrigation system has been pushed on apace, and it is anticipated that the main scheme will be in operation by the beginning of September, 1924. A future extension of the scheme to lands lying across the Clutha River is being considered. During last irrigation season twenty-six irrigators were supplied with water from a race purchased from a mining company for incorporation in the distribution scheme. During the past year 10 miles 45 chains of irrigation race were constructed, and 2,300 ft. of pipe siphons were laid; a bridge was constructed across the Teviot River to carry 18 in. and 30 in. diameter siphon pipe-lines. The concrete foundations of the power-house were laid, and the pipe-line at the head of the race was generally renovated.

Bengerburn Scheme.—This scheme, which draws its supply from the Bengerburn Stream at Ettrick, was commenced at the request of the settlers, who were, at the time, applying for the forfeiture of certain private water rights held in the Bengerburn. An agreement was arrived at by which the Crown acquired a portion of the water rights, and construction work commenced about the beginning of last November. The scheme has now been brought to a state of completion, and is capable of irrigating an area of 1,000 acres. The works involved were the construction of a small dam, the renovating of $2\frac{1}{2}$ miles of old race, and the construction of 1 mile of new race.

GENERAL SURVEYS.

On the Upper Manuhierikia scheme the permanent survey is now practically completed. The survey for the Roaring Meg scheme (Cromwell Flats and Lowburn) is nearing completion, and an extension of the Roaring Meg scheme to serve Crown lands reserved for settlement on the Pisa Flats is under consideration.

As in previous years, surveys, gaugings of streams, and investigations of rainfall and other matters affecting the irrigation possibilities of many other districts have been carried out. The following are the schemes still under investigation: Hawea Flat, Maniototo, Bendigo Flat, Chapman's Gully, Teviot River Extension, Luggate Burn, and Miller's Flat.

WATER-SUPPLY.

Hanmer.—During the year surveys were made and plans prepared for the provision of a new water-supply at Hanmer. This work involves the supply of 14,000 ft. of 12 in. main, and 1,500 ft. of 6 in. and 6,820 ft. of 4 in. pipe for the reticulation, together with the necessary valves, bends, &c. This material, which is being manufactured from non-corrosive iron, is well in hand, the majority of the pipe having been received.

Rotorua.—A complete new water-supply is being provided for the township. 151 chains of 12 in. cast-iron main was laid, and the balance of the pipes for the completion of the scheme were delivered. The foundation of the Diesel engine as a standby for power-generation was completed, and the erection of the power-house finished.