

The following is a brief description of the works in hand or completed during the year:—

The Omakau Scheme has now been completed, and last season fifty-nine farmers irrigated 7,000 acres. The sales of water rose from 4,032 acre feet to 10,380 acre feet.

An extension of 3,000 acres, called the Dunstan Scheme, was completed, and some sales of water were made towards the end of the season.

On the Earnsclough Scheme the Fraser Dam, 102 ft. in height and containing 12,560 cubic yards of concrete, was completed.

The value of this dam was amply demonstrated during the drought, and an adequate supply of water was maintained where shortage would have resulted in a large loss of production.

On the Manuherekia Scheme a 78-chain tunnel is completed, and the concrete lining is in hand.

The renewal of pipes on the Teviot Scheme to replace the old mining-pipes has been completed.

The only new work authorized in Central Otago is a small extension of the Ida Valley Scheme at German Hill.

On the Ashburton-Lyndhurst Scheme the area to be irrigated was increased from 25,500 acres net to 34,000 acres net.

The total length of race-construction completed to date is 44 miles, involving 222,000 cubic yards of excavation, or 65 per cent. of the total.

The number of special concrete structures completed during the year was 364, making a total of 470 to date, or 30 per cent. of the total involved in the scheme.

The year was marked by the introduction of new types of earth-moving machinery, which have greatly accelerated this phase of the work.

A demonstration area of 36 acres was levelled and sown in fine class pasture in the autumn of 1937. This has been regularly irrigated, and during the season approximately ten ewes and their lambs were carried to the acre. The pasture was in nowise taxed, and the indications are that this figure is likely to be frequently equalled or exceeded throughout the area of the scheme. The soil type in this case is slightly below the average for the whole scheme.

The construction of the Rangitata Diversion Race was continued during the year, and a decision was made to keep the capacity of this race to 900 cusecs for its whole length to the Rakaia River, so as to utilize the winter flow of the race for the generation of electricity. A fall of 320 ft. is available at this point which will enable a maximum power of 30,000 h.p. to be generated.

The race will therefore serve a dual purpose of irrigation in summer and the generation of electricity in the winter.

The total length of this race is 41 miles, requiring approximately 2,900,000 cubic yards of excavation.

The work completed to date is 370,000 cubic yards of excavation over a completely or partially completed length of 14 miles.

One heavy-traffic bridge has been built over the race, and a commencement will shortly be made of the numerous large structures such as syphons, drops, regulating-gates, and intake.

Modern machinery has been employed throughout the work, and its completion is scheduled for the spring of 1940.

During the year a further extension of the Canterbury Irrigation, known as the Mayfields-Hinds Scheme, was authorized, and construction work is now proceeding.

It embraces an area of approximately 110,000 acres lying between the Rangitata and Hinds Rivers, and approximately 54,000 acres will be irrigated.

The water will be taken from the Rangitata River, and the main race will have a capacity of 450 cusecs.

In all, there will be a length of 230 miles of races involving 900,000 cubic yards of excavation and approximately 2,000 concrete structures.

The work completed at present is the establishment of camps and buildings to accommodate the 145 workmen to be employed on the work. At present 60 men are employed, and the materials and machinery are coming to hand.

The revenue for the year on the Otago Central Schemes was £27,190, and the working-expenses £27,054, which includes £6,725 for the replacement of pipe-lines on the Teviot Scheme.