

but under irrigation are capable of ranking equally, from a productive point of view, with other lands favoured by the most favourable climatic conditions in New Zealand. I am satisfied, as a result of my investigations during the time I have held the portfolio of Public Works, that as an avenue for the expenditure of Public Works funds, irrigation works should take a very high place.

While this is so, it has to be remembered that, from the very nature of the enterprise, irrigation works require most careful planning and investigation; moreover arrangements for finance involve negotiations in many cases with settlers, and detailed discussions with the Departments of Lands and Agriculture, and with Treasury. This accounts for what may appear the delay in putting certain projects in hand, but I am hopeful that before the end of this financial year work in hand will be speeded up, and that one major scheme in Otago, under investigation for some time, will be commenced.

This is the Maniototo Irrigation Scheme, which could supply water to a gross area of 83,000 acres, but as a first development it is proposed to undertake work to supply water to 30,000 acres, at an estimated cost of £393,000. Surveys of distributaries and preparation of estimates and plans in relation to this first stage have occupied the year. Consideration is at present being given to acquiring certain areas of land that would be benefited, but all is in order for an immediate commencement with the work as soon as the Government's final approval is available.

Intensive investigation work into irrigation in Canterbury Province has continued. During the year topographic surveys were carried out on close on 200,000 acres, the stream-gauging is being speeded up by the installation of ten more water-level recorders, and soil-type surveys and soil-moisture determinations have continued. One branch of these investigations will show closely the water that is available for irrigation purposes in Canterbury, and the other will closely define the areas which would definitely benefit by irrigation. It can be said that the standard of this investigation is at least as high as that in any part of the world. I would add that preliminary steps for an extension of this investigation into Marlborough Province have been undertaken. River water-level recorders are being arranged for, and rainfall, wind velocity, and evaporation stations have been established.

Coming now to a brief description of the works in hand, the largest in the Otago District is the Omakau Irrigation Scheme, which will supply water to 14,000 acres. The rock-fill dam across the Manuherikia River, with spillway, spillway-shaft, and valve-chamber, and up-stream pavement slab, was completed. Seven miles of main race and $34\frac{1}{2}$ miles of branch and distributary races were completed, together with associated works such as siphons and intake weirs. These works were brought to a conclusion sufficiently early in the season to enable water to be supplied to 5,000 acres.

Marked improvement has followed in the Ida Valley Scheme by the completion of the Poolburn drainage.

The major work in the Teviot Scheme was the driving and lining of a tunnel 5,078 ft. long to eliminate the main 36 in. pipe-line. Close on one-half of the work was done during the year. Work is in hand on renewing two steel pipe siphons with concrete-lined steel mains.

In the Last Chance Scheme, Butchers Creek Dam, concrete-arch type, was completed, some 1,800 cubic yards of concrete being placed during the year. In addition, a tunnel through schist rock, to improve the race system, was completed, the year's work being some 1,900 ft. of tunnelling.

The Fraser River Dam, of concrete-arch type, in the Earnsclough Scheme made good progress. The purpose of the dam is to augment irrigation supplies to the Earnsclough Flats.

In the Canterbury Province work on the Redcliff Irrigation Scheme was actively carried on to completion. All races and structures were finished and tested, and water can now be supplied to about 5,000 acres.