

At the same time we feel it our duty to point out that the silt brought down by the river during the past thirty years has altered the country to such an extent, and the conditions of settlement in the interior have also altered so considerably during the last quarter of a century, that places formerly recommended as suitable sites for storage-reservoirs are now no longer available for the purpose.

GENERAL.

On reviewing the evidence relative to the drainage of the plain as a whole, we found the testimony to be extremely contradictory. The views of the settlers on the upper and lower ends are totally at variance as to the best methods to be adopted.

WESTERN PORTION OF PLAIN.

On the land on the western side of the river we found that a scheme known as the "block system" had been adopted. Briefly, the system amounts to this: The district is divided into separate blocks, and at the south-western end of each block drains have been constructed and led into the river at the nearest practicable point, and the water discharged there by gravitation when the river is sufficiently low, but when there is no outflow into the river the water backs into and fills up the several drains. It then overflows the drains and finds its way into another drain at the outlet of which there may be a pumping station. The water still further down the plain flows either by way of one of these cross-drains into the river, or through what is known as "Berkeley Estate" to a pumping plant worked by the company owning the estate. The objections urged against the "block system" of drainage by its opponents were that the drains could not discharge into the river at any time after the river reached half flood-level, the result being that the water has then to find its way over the country or into drains which are not at present capable of carrying the extra flood-water. The upper blocks were therefore to a certain extent being drained to the detriment of those lying lower down. On account of mismanagement the "block system" has become partially a failure.

A proposal in lieu of the "block system" was strongly advocated by a good many witnesses—namely, to carry the water by a central channel from the upper end of the plain down to a point immediately opposite the Maori Kaik. Into this channel the various existing cross-drains and others were to be discharged. This proposal, if carried into effect, would drain an area of approximately 20,000 acres. The discharge at the Maori Kaik would be by gravitation while the river remained at its normal level, and in times of freshes or floods the water would be discharged by a powerful pumping plant established there. The opponents to this particular scheme are the settlers at the lower end of the plain, and especially those interested in the Berkeley Estate. They urged that if this scheme were adopted it would be impossible in time of flood to cope with the abnormal discharge of water.

Other witnesses asserted that if the head-waters of what was formerly part of Lee Creek were conveyed back into the creek by a channel along the Outram-Berwick Road there would be no difficulty in coping with the drainage of the land below that road-line. This would not only reduce the area to be drained from, say, 20,000 to 16,000 acres, but would greatly diminish the sudden flow of water from the various gullies running into the head of the plain.

The portion of the Lee Creek which runs through a part of the plain drains the land on the north-western side of that creek only, as the bed of the creek lies at a higher level than the portion of the plain to the south-eastern side of it. Consequently it is of little or no value to the drainage of the interior of the plain. Towards its outlet it has already been straightened and improved. Further up, the creek remains in its natural state, and is a menace to the land on the south-eastern side through the water overflowing its banks. It will therefore be necessary in any scheme for this creek to be dealt with in a comprehensive manner. This leads to the question of the silting-up of the outlet of the creek and Lake Waipori. It has been suggested by a number of witnesses that the only means of dealing with this difficulty is by dredging a channel through the Waipori Lake and its outlet towards the Taieri River. By this means the outlet of the creek could be deepened and a fall obtained thereby sufficient to carry all the water of the Lee and the drainage leading into it.

Returning to the question of the drainage of the central part of the West Taieri, and taking into account the evidence adduced and our own observations, it appears to us that the most feasible scheme is that of a main channel down the centre of the plain to a point of discharge opposite the Maori Kaik. The channel would be brought to the lowest possible point in the river, at which the tidal rise is only 2 ft. 3 in., and as according to the evidence the flood-water seldom reaches a high level there, as compared with a rise of up to 15 ft. at points further up the river, an earlier discharge by gravitation after floods would be assured. Such a scheme would necessitate only one powerful pumping plant for this main outlet. Of course, the success of such a scheme would largely depend upon whether its practicability could be assured after an engineering survey had been carried out.

By reference to the suggestion made by the witnesses towards the improvement of the Lee Creek and its outlet, we are of opinion that any effective scheme can only be carried out in the direction of dredging the lake, deepening and widening Lee Creek, and erecting embankments on the south-east side of that creek.

EASTERN PORTION OF PLAIN.

Starting on the eastern side of the Taieri River, the two most important questions are (a) the embankment of the river, and (b) the control of the Silverstream.

A portion of the embankment of the river has already been carried out from near the West Taieri Traffic Bridge to about the Mosgiel-Outram Railway. From that point to Allanton little or no embankments have been erected. The result is that the greater part of that portion of the