

APPENDIX No. 2

other countries, the growth of trees has been the means of arresting the run off of freshets, spring and rain water from the ground, thereby keeping the moisture in the earth sufficiently long to permit the vegetation to sprout out with sufficient strength to enable the same to stand the heat of the more advanced season without much more need of water. By referring to the Canadian Forestry Association's report for 1901, pages 22 and 23, I find two very interesting reports made therein by Mrs. Zina Y. Card, and by Mr. Wm. Pearce, which show what an important factor irrigation has been in the successful effort in tree growing in that country.

GOVERNMENT EXPLORATORY IRRIGATION SURVEYS.

I may state that in addition the government have carried on extensive exploratory irrigation surveys covering important portions of that part of the North-west, so as to ascertain from the general contour of the country where the most eligible locations were situated for the construction in the future of different irrigation works. The effect of these surveys, moreover, has been to prevent the possibility of the launching of wild-cat schemes by speculative promoters not possessed of the requisite data to give assurance that their schemes were feasible, and who, by inducing the investment of large amounts of capital in works which could not be carried out, might cause the investors serious financial loss, which would, of course, be greatly detrimental to the good name of the country.

Another valuable result of these exploratory irrigation surveys has been to furnish the department with complete records, for office use, of the water supply at different stages of all the rivers and streams, so that to-day when an application is filed in connection with a district where such surveys have been made, the department is able at once to judge pretty closely from its records whether the stream affected carries a sufficient body of water to justify the granting of the application. These surveys cover large tracts of the country, such, for instance, as the St. Mary and Bow rivers basins. What is known as a basin in irrigation is the land surrounding the main stream and tributaries, which is capable of being irrigated by the same. So, to get at that basin and to ascertain what proportion of the area can be irrigated in the same, the government—

By Mr. Gilmour :

Q. You mean the Dominion government ?

A. Yes, the government are making surveys to that end. The result of these surveys has fully justified the expenditure for, as I have already stated, by the construction of the works carried out by the Canadian North-west Irrigation Company, for which the company were enabled to partly utilize the government surveys, large tracts which were only suitable for grazing purposes have been rendered most valuable for cultivation, and large tracts which were thought to be useless for any purpose whatever have been made very valuable for grazing purposes, and these latter mentioned lands are now being disposed of by the company at from \$3 to \$4 per acre, although in some cases the water does not actually touch them. The explanation of this is that before irrigation was introduced the large herds of cattle would bunch round a spot where they could be near the natural water supply, and, with herds numbering from 6,000 to 10,000 head, the grass was soon eaten entirely off, as the cattle would not go far away to the more arid portions where they could not have ready access to water. Then, the areas near water where grass was good were not large enough to give subsistence to these herds sufficient to bring them into good condition for marketing direct off the range.

I have here some photographs showing where cattle can now graze, and where, previous to the year 1890, before irrigation was started there, they could not feed, as there was not sufficient grass, and because they would have to go too far for water.