

IRRIGATION IN SOUTH ALBERTA

The demand of the Alberta farmer for further irrigation extension in Southern Alberta and Southwest Saskatchewan, so emphatically raised at the recent Irrigation Convention is apparently being heard, for already the Minister of the Interior, accompanied by the Superintendent of the Reclamation Service, and the Minister of Colonization and Immigration, has visited the West and discussed the situation with bodies of farmers at Maple Creek, Raymond, Lethbridge, Macleod, Calgary, etc. And they have promised that further surveys for that purpose will be undertaken without delay.

For a long time many claimed that irrigation was unnecessary in Western Canada. Conditions of drought do not regularly occur there, and quite apart from the fact that the scientific principles of dry farming have now obtained a great following, there was not, they insisted, the same urgency for irrigation as in other less fortunate countries, where the rainfall is usually so small as to make agriculture impossible without it.

When one looks back over the history of irrigation in the West and remembers the strenuous opposition the movement met with from the public generally, one is struck with the radical right-about-face in sentiment, for not only is it now admitted to be advantageous, but farmers throughout practically the whole of the south demand its extension if agriculture is to be permanently successful. Doubtless, experience of the past two years with a rainfall in Southern Alberta of less than 10 in., and the bumper crops raised by irrigators, is responsible for this unanimous change in opinion.

The semi-arid portion of Alberta occupies a belt approximately 190 miles in width north of the state of Montana, and extends from the mountains on the west across the entire southern base of the province, emerging into the more humid climate of Saskatchewan at the eastern limits of the Cypress Hills. Dr. Samuel Porter, consulting irrigation engineer of the United States Department of Agriculture, who a few years ago thoroughly investigated irrigation conditions in Alberta, gave it as his opinion that in portions of these provinces the natural rainfall is insufficient for profitable farming, and that the main issue would be not so much whether irrigation is necessary or not, but rather, just how long profitable crops could be grown without it. And his prediction has proved correct.

Many arguments can be advanced in favor of irrigation being in all ways superior to dry farming. Irrigation, when practically applied, is the best kind of farming because it is the only system that permits of the most intelligent treatment of every individual crop to suit its requirements. It eliminates the necessity of summer fallow and elaborate treatment of the soil in order to conserve moisture. The basis of all true agricultural prosperity is mixed farming, and irrigation is especially adapted to it. By its means special fodder crops, such as alfalfa, clover, vetch, etc., the success of which without water, is problematical, can be raised. In every case where it has been put to the test in competition with ordinary farming methods, it has been proved to increase production from 25 to 100 per cent. From the point of view of the community which depends upon the agricultural class for its own business, it has proved highly desirable, because it means smaller farm units, closer settlement, intensive farming, increased trade, and a larger spending capacity per head of the tributary population.

Admitting the truth of the fore-

going, it is clear that the primary reason for irrigation is crop insurance.

Irrigation in Western Canada is most largely practiced in Southern Alberta. At Lethbridge, the Dominion Government maintains an experimental farm, at which careful records are kept of yields obtained from the operation of both irrigated and non-irrigated areas, and while, with a measure of truth, it may be claimed that results on experimental farms may be obtained that are not within the reach of busy farmers, the records are of deep interest and afford certified data which cannot be assailed. The Government is entirely neutral in these methods of farming, and at no time has any attempt been made to demonstrate the advantages of irrigation over dry land farming. One-half of the farm lies below the ditch and is irrigated; the other half is above the ditch, and the latest methods of dry farming have been practiced.

On the dry land farm, an attempt has been made to solve the problems that the dry-land farmer is confronted with, the best methods of summer fallow, weed control, soil drifting, etc., and on the irrigated part, the question that the irrigator is particularly interested in. On both portions of the farm, the same crops have been raised for the past eleven years, from 1908 to 1919. W. H. Fairfield, the farm superintendent (who prior to coming to Canada was engaged in similar work in the United States), has kept a careful record of all crops grown on this farm, and the result has proved beyond the least shadow of doubt the advantages of irrigation towards increased production in that country. The increase in bushels of wheat (Marquis) was 23, of oats (Bamber) 38, of barley (Chevalier) 35, of peas (all varieties) 14, potatoes (Irish Cobbler) 250, (and other crops in like proportion). Only in one case in the whole eleven-year period did the irrigated crop fall below the dry land crop, that exception being peas in 1916, and it is only fair to point out that on the dry land the crops have been summer fallowed, which means but one crop every other year, while on the irrigated land, a crop of some kind has been produced year in and year out. The annual precipitation for the eleven years is 15.51, the highest being 28.05, the lowest 7.62.

Similar results to these have been experienced on the Canada Land & Irrigation Company's farm near Medicine Hat, and on the C.P.R. experimental farms at Strathmore and Brooks, while many individual cases of results attained by farmers throughout the whole territory may be cited. Alfalfa production is becoming general on the irrigated lands, and at prices running from \$35 upwards, is alone a great source of income to the producer.

A large amount of capital has been expended by corporations in the western provinces during the past ten or fifteen years in providing additional water supplies to supplement the scanty rainfall. Of these corporations the C.P.R., with approximately fifteen million dollars, is the heaviest investor, and though for many years considerable criticism has been levelled at the company, it is now clear that the investment purely as a financial undertaking and quite apart from the benefits being derived from the individual on the land and the country as a whole, is justifying itself.

The Canadian Pacific has developed in Southern Alberta the largest individual project on the American continent, with an area greater than the total irrigated area in either Colorado or California. Its irrigable area exceeds 600,000 acres,

while the total length of its canals and ditches is greater than Canada's longest river, the Mackenzie, or the rail distance from Vancouver to Halifax. Surveys originally made by the Dominion Government determined that for 150 miles southeasterly from Calgary and approximately 20 miles north and south of the C.P.R. main line, was a district admirably suited to irrigation both in gentle slope of the land and character of the soil. The western section of this block is now thickly settled, with settlement on the eastern block being taken up as fast as the land can be placed on the market. Spontaneous recognition of the value of irrigation by those who have it not and want it, is evident in the constant daily stream of letters of application received by the company, and the interesting fact in connection therewith is that many of those who now demand it formerly turned it down when they might have had it.

A further area of 100,000 acres in the Lethbridge district, originally developed by the Alberta Railway & Irrigation Company, was acquired by the Canadian Pacific Railway, and has now reached a remarkable stage of development and prosperity.

The agitation of the farmers is for further irrigation and irrigation quickly. The farmers claim, with justification, that it is a life and death issue for them; if they are to remain on the land they must have it; if they do not get it, the only alternative is their exodus. Already the Government has a lien on their lands for seed, food and other assistance, amounting to four million dollars, and from the point of view of the Government alone, it is a business proposition. As a result of the recent meeting between Dominion Government officials and the farmers, referred to above, the Government have promised further immediate surveys of 500,000 acres, which, added to the million and a half already known to be irrigable, will give a total irrigable acreage of two million. A recent statement attributed to the Dominion Superintendent of the Reclamation Service places the land in Alberta and Saskatchewan that requires irrigation at 54,000,000 acres, and that is not all, for a further great area of 12 million acres, lying between the North and South Saskatchewan and the Battle and Red Deer rivers, is declared by engineers to be irrigable, which, with plenty of water available, will prove to be among the best productive portions of the Canadian West. To irrigate the 500,000 acres above referred to will cost, it is estimated, \$50,000,000.

That the vast sums of money invested by the Canadian Pacific in its irrigation enterprises above outlined is sound, is now beyond all question. With 600,000 acres of irrigable land between the cities of Calgary and Medicine Hat producing bumper crops year in and year out, it is not difficult to calculate the effect on the company's freight and passenger revenue, and on the prosperity of these cities and the province as a whole, for it is clear that the greater crop production the greater general prosperity. The greatness as well as the happiness of any people depends on the prosperity of its rural population. Irrigationists say that one way to become a better farmer is to become a better irrigator. Sir John Wilcox always claimed that the Garden of Eden was an irrigated farm with alfalfa, fruit trees and cattle on it.

The far-sightedness of the C.P.R. executive in foreseeing the necessity of irrigation in Southern Alberta and authorizing the design and construction of its vast irrigation system, has within the past two years, been clearly demonstrated.

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