SOIL SURVEY PROBLEMS OF THE CANADIAN WEST.

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While I was called upon to speak to you on Soil Survey Problems of the Canadian West, I intend to confine my remarks particularly to conditions in Saskatchewan, the central of the three Prairie Provinces of Western Canada. Agricultural conditions are very much alike in Alberta, Manitoba and Saskatchewan, so that most of what I have to say will apply equally to the three provinces.

It is astonishing how little the conditions, both climatic and agricultural, of our Prairie Provinces are understood by the people to the South of us. Soil survey problems with us are the result of our peculiar conditions and in order, therefore, to present these problems to you, it will be necessary that you understand something of those conditions.

The Province of Saskatchewan extends from the 49th to the 60th parallel, the states of Minnesota and North Dakota being immediately to the South. The area is 251,706 square miles, equal almost to that of Texas. Of this the Department of the Interior has calculated that 94,000,000 acres are suitable for agricultural purposes, though this appears to be a somewhat liberal estimate. The cultivable area is estimated at about 58 to 60 million acres or a little over one and a half times the total land area of Michigan. Of this 58 to 60 millions of acres, only 23 millions are at present under cultivation.

The great bulk of our cultivable land consists of open prairie similar in all respects to the Great Plains Region, of which indeed it is but a continuation. Immediately north of the prairie is a narrow strip, 70 to 100 miles wide, known as the Park Belt, so called because it resembles a park. The prairie here interrupted with scattered poplar scrub and bluff, but most of the land can be brought under cultivation without much clearing. North of the Park Belt lies the forested areas, the trees consisting mainly of poplar and some tamarack, and farther north the jack pine, spruce and balsam.

The total precipitation varies in the province from about 13 inches to 21 inches, with a general average of 15 to 16 inches. The driest part is believed to be the south-west corner; actual averages show the area between Medicine Hat and Lethbridge in Alberta to be the driest area in Western Canada and the average annual rainfall increases in all directions from this centre. At Winnipeg, for example, the rainfall is 17 to 19 inches. The northerly portions of the province of Saskatchewan may show some increase in precipitation over southerly parts, but the factors of hot winds and evaporation probably are actually more important from the standpoint of crop production.

The growing season in the north is three or four weeks shorter than in the south. For example, the average length of season as measured by 3° of frost is 117 days at Prince Albert, as compared with 152 days at Maple Creek.