

ALKALI SOILS

THEIR NATURE AND RECLAMATION

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The past five years have witnessed the preparation for tillage and settlement of many areas in the semi-arid districts of Canada—situated more particularly in parts of British Columbia and Southwestern Alberta. From the attention that is to-day being called to the natural advantages of such districts, more especially for fruit and vegetable growing in British Columbia, and alfalfa and general farming crops in Alberta, the probability is that during the next five years there will be a still larger influx of settlers into these parts and many as yet new and untried areas will be taken up. It is with the object of assisting those who are already occupying ranches, as well as those who propose taking up land, in these semi-arid districts—and in which 'alkali' occurs in places—that the information contained in this bulletin is furnished.

While as yet it may not be definitely settled as to the boundaries of these semi-arid districts, there can be no doubt on two points in regard to many of these areas now under cultivation or at present being exploited, viz.: the necessity of irrigation for ensuring success, and the occurrence in many places of alkali spots or tracts, either naturally present or developed subsequent to occupation through injudicious irrigation. Irrigation has been and is being provided on a comprehensive scale in certain localities but where such large systems are not in existence or are not possible, many individuals have made the effort, each farmer for himself, to establish a local water supply, chiefly from mountain streams. Instances of the former, for example, are to be found working satisfactorily in the Okanagan district; while with regard to the latter, we find the settlers in the valleys of the Columbia, Kootenay and Nicola for the most part dependent on possibly a limited and more or less strictly local source. Successful agriculture under irrigation calls for a special knowledge in the management of water. The primary use of water by irrigation is, of course, to supply the crops' needs, but it may also be employed as an important agent in the reclamation of lands more or less sterile through the presence of certain mineral salts, known commonly as alkali. On the other hand, the injudicious use of irrigation water may injure most severely land capable of producing excellent crops, through causing a 'rise of alkali.' Further, the excessive use of water is to be avoided, even on well drained land, from the fact that such retards the natural maturation or ripening of the crop.

From a consideration of what has been said it will be obvious that the agricultural problems of the semi-arid districts differ widely from those the farmer in other places in Canada has to encounter. Two of these are here more particularly discussed: the reclamation of alkali lands where such naturally occur and the precautions to be taken against the appearance of alkali on lands at present fertile.