

the treatment of soils, the composition and application of fertilizers—natural and artificial—the relative value of cattle foods, &c., &c.

As far as time permits analyses are made for farmers of matters pertaining to agriculture, when the results would be of interest and value to a large portion of the community. In this connection it may be stated that most useful work has been done by the examination of farmers' water supplies and in calling attention to the danger of drinking water polluted by drainage from the barnyard. For health in the farmer's family, for thrifty stock and wholesome dairy products, pure water is indispensable.

The naturally occurring fertilizers of Canada, peat, mucks, marsh, mud, marl, &c., have been examined in large numbers during the past five years, so that now a large amount of data has accumulated on this important question. These data go to show that in many districts of Canada materials (easily and cheaply obtainable) occur that contain notable quantities of the essential elements of plant food. The knowledge of the composition and value of these deposits will allow farmers in many parts to enrich their fields at small cost.

During the past year an investigation has been made into the character and absorptive qualities of moss litter, as found in many Canadian bogs. The results show that it compares most favourably, from all standpoints, with the litter prepared on the continent.

Original investigations have been pursued to learn the feeding value of various Canadian fodder crops. To this end a large number of native grasses have been analysed at several stages of growth, and extensive chemical examinations of the corn fodder crop have also been made. Chief among the results are the following: That of our native grasses, *Poa pratensis*, or June grass, stands pre-eminent as a pasture grass; that Austrian Brome Grass (*Bromus inermis*), an introduced perennial, has shown itself to be a very nutritious grass, as well as a heavy cropper; that red top for low lands and orchard grass for shady places are both excellent in composition and worthy of cultivation. The chemical data in this investigation go to prove that a large loss in the feeding qualities of the grass results when it is allowed to ripen before being cut for hay. Cutting should be at or shortly after the flowering period. The composition of the corn crop at several periods of growth has been ascertained, and practical deductions made which will prove of great value in the cultivation of this excellent and cheap fodder.

The virgin soils, representing large areas in the Dominion, have been under examination for some years past, and the reports of this division give the analytical and physical data obtained, with deductions therefrom and suggestions as to profitable treatment of the soil. It has been shown that Canada possesses many soils of equal fertility to the most productive in the world, these remarks having especial reference to the prairie soils of Manitoba and the North-west Territories and the alluvial soils of both the Pacific and Atlantic coasts.

Practical assistance to special branches of agriculture, such as horticulture and the dairying industry, has been afforded, and a perusal of the annual reports will show that already a large amount of most useful information for the guidance of Canadian farmers has been obtained and published.