triumphs in mechanics—now in general use were not even faintly foreshadowed twenty-five years ago.

The science of agriculture first makes plain the reason for and the results of the various operations we have just enumerated and then studies the whys and wherefores of the changes brought about by nature through plants and animals. If agriculture as a whole may be said to have for its object the economic production of plants and animals and the materials elaborated by them during their life, agriculture as a science endeavours to ascertain the causes and conditions that lead to the consummation of this object.

Although Botany, Zoology, Physiology and Physics all lend their aid, it will be apparent from what I have said that Chemistry furnishes the basis and a large proportion of the superstructure of scientific agriculture; indeed, so interwoven and intimately connected is chemistry with all branches of farm work that agricultural chemistry and scientific agriculture may be counted as almost synonymous terms, for it is difficult to conceive an agricultural problem that does not make demands upon chemistry for its solution. It is most certainly true that agriculture is fast passing beyond the ranks of empiricism. We recognize that it has entered the realms of science; and the hope for the future of agriculture, as has been well remarked by an eminent English authority, lies in the larger adoption of those methods which science with practice advocates.

Interesting, however, as these considerations are, we must pass to the matter in hand and show wherein assistance has been rendered by the Dominion Government to Canadian agriculture by the chemical researches carried on in our laboratories at Ottawa.

VIRGIN SOILS OF CANADA.

The factors of a soil's fertility may be briefly enumerated as follows:—

1 The amount and availability of its plant food
2 Its mechanical condition or tilth.
3 The conditions of climate, rainfall, temperature, etc.