

## THE NITROGEN COMPOUNDS IN RAIN AND SNOW.

It may be remembered that one of our addresses at the opening meeting of last winter's lecture course was on "Rain and Snow," the lecturer, Mr. Frank T. Shutt, Chemist of the Experimental Farms, outlining their influence upon the industries, the agriculture and the health of the world.

Perhaps the most interesting part of the paper from the strictly Canadian point of view was the presentation of certain data concerning the nitrogen content of snow—the first of the kind, so far as was known, obtained in the Dominion. The fertilizing value of the "blanket of white" was clearly shown, the 1,000 tons (approximately) of snow per acre which falls during the winter at Ottawa containing a considerable amount of this all important element of plant food—nitrogen—in readily assimilable forms.

For some time past every fall of snow and rain has been analysed at the Chemical Laboratory of the Central Experimental Farm, Ottawa, and in the forth-coming report of that institution further interesting data on this subject will appear. From these results we have been permitted to make the following summary:

For the year ending February 29th, 1908, there fell 24.05 inches of rain and 133. inches of snow, making a total precipitation of 37.35 inches—10 inches of snow being reckoned as the equivalent of 1 inch of rain. The total amount of nitrogen in this precipitation amounted to 4.323 lbs. per acre, and of this approximately 75% or 3.243 lbs. was present in the rain, and 25% or 1.080 lbs. in the snow. We further learn that the solvent action of rain is much greater than that of snow, i.e. that rain is much richer, weight for weight, in nitrogen compounds, than snow. Rain, therefore, is the better or more thorough cleansing agent of the atmosphere as regards the ammonia and other gases present that contain nitrogen compounds. Another point brought out by this work is that the first portion of the rain or snowfall is richer than that which falls subsequently and that the period elapsing between the falls has a marked effect on the composition.

Data of a similar character have been obtained in many European and other countries and this work is therefore both useful and interesting for the purpose of comparison. It may be cited as an illustration of one of the many valuable researches undertaken by the Experimental Farm system.