

Another phase of the subject is the fertilizing value of rain and snow. This is a matter that has received attention during the past two years at the Experimental Farm laboratories. A sample from every rainfall and snowfall is analysed and the nitrogen compounds determined. The atmosphere contains many gases in addition to those two which make up its general composition, oxygen and nitrogen. The combustion of fuel, the oxidation of food in animals, produce gases which find a natural home in the atmosphere. From such sources, and also, no doubt, to some extent from electric discharge, the air receives gaseous nitrogen compounds. The air also contains much dust and in the neighbourhood of cities a considerable quantity of soot. The rain and the snow falling through the atmosphere dissolves these gases and washes out the dust and soot and thus bring not inconsiderable amounts of fertilizing material to the soil. The nitrogen compounds are chiefly ammonia, ammonium salts and nitrates. All these are valuable agriculturally, because they furnish available plant food. During the winter of 1906-07, 85.5 inches of snow fell and this was found to possess nitrogen compounds equivalent to 1 lb. (approximately) nitrogen per acre. Similarly, analyses of last season's rain show that it furnished 3.5 lbs. (approximately) of combined nitrogen per acre. As nitrogen suitable for plant food is worth in a fertilizer about 17 cents per lb. we find that the rain and snow together furnish, in the neighbourhood of Ottawa, about 75 cents worth of plant food per acre.

The soot and dust present in what appears to us the whitest snow is readily made evident by collecting some snow immediately after a fall and allowing it to melt in a clear glass jar—as the snow liquifies the soot will be seen clinging to the sides of the vessel and there will probably be also a deposit at the bottom of the jar.

Snow benefits the farmer and fruit grower in other ways besides fertilizing the land. Thus it lies as a blanket protecting the roots of our fruit trees against excessive cold.

HOW RAIN AND SNOW AFFECT THE HEALTH OF THE WORLD.

The filtering of the atmosphere, the washing of the atmosphere by the rain and snow, have already been referred to; they purify and cleanse the air of both gaseous and solid impurities and further, no doubt, rid it of many microbes. The large amount of absorbent and filtering surface presented by the flakes of snow as they fall perform this useful function to a wonderful degree. In a very large measure the exhilarating character, the crispness, the clarity of our winter air is due to this action of the snow.