

## SOIL PHYSICS.

When so much depends upon the crops grown from year to year, there can be no question as to the importance of a very thorough and persistent study of the soil in its relation to heat, moisture, and fertility, as affected by humus, tillage operations, etc. It used to be thought that a chemical analysis of a soil, showing its various constituents, was all that was necessary; but it was at length shown by experiment that land might contain all the constituents of plant food in due proportion, and still be unproductive, owing to a lack of moisture, or a sodden condition due to a deficiency of vegetable matter in the soil, or the fact that the ingredients of the soil had not been worked over and exposed to the frost and atmosphere in such a way as to make them available for plant food. Hence the importance of studying the physical condition of the soil—the results of underdraining, the effects of various tillage operations on the retention of moisture for the use of plants, and the power which humus, or vegetable matter, has to retain heat and water in the soil. These and many other important problems come under the head of Soil Physics.

Our Professor of Physics, J. B. Reynolds, B.A., has commenced a series of investigations under this head, and will push the work along as fast as he can, consistently with the large amount of teaching which is required of him. Last year he found by actual tests on plots in the College Experimental Grounds, that soil which was kept open by stirring the surface as often as was necessary to prevent a crust from forming, contained 37 per cent more moisture in the first two feet, measured from the surface, during the month of July, than the same kind of soil in an adjoining plot, the surface of which was not disturbed. Hence the value of stirring the earth around trees and shrubs in dry weather, and the need for frequent cultivation of corn, roots, potatoes, etc., during the summer months.

## BIOLOGY AND GEOLOGY.

After twenty years of faithful service in the College, J. Hoyes Panton, M.A., F.G.S., Professor of Biology and Geology, died on the 2nd February last. No one could serve an institution more faithfully and conscientiously than Professor Panton served the Ontario Agricultural College. He was a man of rare integrity and devotion to duty—a good scholar, a hard-worker, a clear and impressive lecturer; and he possessed exceptional skill in simplifying and popularizing the facts and teachings of science for farmers and others who had not received a scientific training. His death was a great loss to the College.

As Professor Panton's illness began in August, 1897, we had to arrange as best we could for the work of the department from October, 1897, to June, 1898. Most of the advanced work was done by F. C. Harrison, Bacteriologist; the entomology was taken by H. L. Hutt, Horticulturist; some classes in botany and zoology were taught by J. O. Macdonald, Fellow in Biology; and most of the practical work in zoology was done by Dr. John McCrae, of the General Hospital, Toronto.

On the 15th September, Wm. Lochhead, B.A., M.S., of the London Collegiate Institute, a teacher well and favorably known throughout the Province, was appointed Professor of Biology and Geology, and M. W. Doherty, B.S.A., a graduate who took a post-graduate course and the degree of M.A. in Cornell University, was appointed Assistant in Biology.

The department is fairly well equipped, and good work is expected both for the students in attendance and for farmers and others who may want information about noxious weeds or troublesome insects.

## CHEMISTRY.

A. E. Shuttleworth, B.A.Sc, Ph.D., Professor of Chemistry, has been in Germany for a year and seven months (May 15, 1897, to December 13, 1898), most of the time at Göttingen University, studying and doing laboratory work in agricultural chemistry.