## SCIENCE

## FRIDAY, AUGUST 24, 1917

## CONTENTS

The Importance of Mold Action in Soils: Dr. P. E. BROWN	171
The U. S. Biological Station at Beaufort: DR. SAMUEL F. HILDEBRAND	775
Philippe de Vilmorin: DR. PAUL POPENOE	178
Scientific Events:—	
Iron Ore and Pig Iron; Research in Aero- nautics	179
Scientific Notes and News	182
University and Educational News	182
Discussion and Correspondence:	
Teaching Chemistry and Teaching Chemists: HARRY A. CURTIS. Another Phase of Aca- demic Freedom: Professor Ernest Shaw Reynolds	182
Quotations:	
War Bread	185
Scientific Books:—	
Keyser on the Human Worth of Rigorous Thinking: Professor G. A. Miller	186
Equations as Statements about Things: DR. DAVID L. WEBSTER	187
Special Articles:	
On the Swelling and "Solution" of Pro- tein in Polybasic Acids and their Salts: PROFESSOR MARTIN H. FISCHER, MARIAN O. HOOKER, MARTIN BENZINGER, WARD D. COFFMAN. Mites attacking Orchard and Field Crops in Utah: R. W. DOANE. The Occurrence of Mannite in Silage and its Possible Utilization in the Manufacture of Explosives: ARTHUE W. DOX, G. P. PLAI- SANCE	189
The North Carolina Academy of Science: Dr. E. W. GUDGER	193

## THE IMPORTANCE OF MOLD ACTION IN SOILS<sup>1</sup>

THE development of soil bacteriology during the last decade has been truly remarkable. Many fundamental problems connected with the occurrence and activities of bacteria in soils have been attacked and considerable progress has been made toward their solution. While much work still remains to be done along this line, results already secured show, in a rather definite way, the importance of bacterial action in soils from the fertility standpoint.

According to recent investigations, however, bacteria are not the only microorganisms which exert an influence on soil fertility. Molds, protozoa and algæ have been found quite commonly, and evidently their action, especially that of molds, must also be considered in determining the crop-producing power of soils. The subject of microorganic life in the soil has, therefore, been considerably broadened and complicated.

The occurrence of molds in soils has been noted many times in the past in connection with bacteriological and other studies and various investigations have dealt in a more or less general way with the action of these organisms. It is only within the last year, however, that an attempt has been made in a logical and comprehensive manner to study the occurrence, distribution and activities of molds in soils, and to solve some of the fundamental problems which arise in connection with the growth of these organisms. The results secured at the New Jer-

<sup>1</sup> Paper presented at the meeting of the Society of American Bacteriologists, at New Haven, Conn., December 27, 1916.

MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrisonon-Hudson, N. Y.