

I INTRODUCTION.

At the suggestion of Dr. Briton-Jones this investigation into the conditions favouring the development of bacterial disease in cotton, was undertaken and attempts have been made to determine what are the physiological conditions of the plant which increase the susceptibility to attack and what factors influence the development and spread of the disease.

The disease is manifested on the cotton plant in various ways according as the different parts be attacked and it has been described under various names. The first account is due to Atkinson who in 1892 described the form on the leaves under the name of "Angular Leaf Spot"-he failed to isolate the causal organism and to bring about successful inoculations. E. F. Smith in 1901 isolated a bacterium which he named *Pseudomonas malvacearum* and he proved its pathogenicity. A full account of the cultural and other characteristics of the bacterium are given in his book on Bacterial Diseases of Plants, 1920, together with an accurate description of the disease.

For a good many years the identity of the organism causing the phase on the stems known as Black Arm disease was not fully established to be the same as that on the leaves and the one causing the "Bacterial Boll Rot". But it has now been conclusively proved by many workers by means of inoculation experiments.

The

The disease has been reported from nearly all cotton growing countries and numerous descriptions have appeared. The physiology of the bacterium has been worked out, but few of the published accounts have made any reference to the condition in which the plant is most liable to attack and it was with this point of view in mind that the work of which this is an account, was undertaken. In any attempt to control the disease in the field such knowledge is of first importance. A discussion of the control methods that have been suggested will be found below.

---