MR. L. A. BORRADAILE, M.A., of Selwyn College, has been appointed university lecturer in zoology at Cambridge University.

DISCUSSION AND CORRESPONDENCE

COTTON ANTHRACNOSE

SINCE Dr. Atkinson's work on cotton anthracnose, 1890–3, little has been done on this now important disease. Recent work here has brought out some very interesting points which in a way confirm some of Dr. Atkinson's theories in connection with the infection of seed and seedlings. Last winter while working with seed taken from a field where the disease occurred the previous summer, I found anthracnose occurring in a number of germination tests. This led me to search for the fungus in the tissue of the seed. I found that by taking bolls which were slightly diseased and mature it was an easy matter to find the fungus filaments beneath the seed coats and in the tissues of the cotyledons. The spores of the fungus are also readily found between the seed coats and the cotyledons of mature seed. Numerous inoculation experiments during the past summer show that the fungus seems to prefer the seed and lint to other portions of the plant. In fact, in some cases the attack is confined to these parts, there being no sign of the disease on the walls of the bolls. In some cases where the bolls mature and the cotton opens out with no sign of disease other than slight discoloration of the lint, the fungus will be found on such lint and in the seed. Such seed, of course, when planted produce diseased seedlings and thus spread the disease. This season numerous outbreaks of anthracnose in various sections of this state have been traced to diseased seed. Some of these occurred where cotton had never been planted before. From an economic standpoint this phase of the problem seems to be very important. The south is now sustaining a loss of millions of dollars annually from anthracnose. It has been estimated that the state of Georgia loses over $14,000,000 annually and a very conservative estimate of the loss of South Carolina would be from $400,000 to $500,000 annually.

Since the twentieth of last July I have been unable to isolate the fungus from the fields where cotton was planted last year. From this it seems that a one year's rotation with disease-free seed might eliminate the disease.

Interesting results have also been obtained in reference to seed treatment, method of infection of the bolls, resistance of different varieties of cotton, breeding resistant strains, etc., all of which will be published at an early date in report of the South Carolina Experiment Station.

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Botanist
SOUTH CAROLINA EXPERIMENT STATION
October 26, 1909

METAPHYSICS AND MENDELISM

There are reasons for regarding man as a chimpanzee on which an additional element, "manness," has been superposed. There you have man expressed or explained in terms of his anthropoid ancestor. The characters of a frog are undoubtedly latent in the frog's tadpole. What is to hinder, therefore, expressing or explaining the frog in terms of the tadpole by saying the tadpole carries the characters of the frog? The logic is sound in the statement that the tadpole contains frog factors or "frogness." The question is merely as to the helpfulness of sound logic used that way.[1]

The helpfulness of sound logic, aside from its use as a mental discipline, is usually based on its relevance to the matter under discussion. As regards the chimpanzee we shall doubtless all agree with the learned Californian if he will advance scientific proof that in homo-simian hybrids "chimpanzeeness" and "manness" behave toward each other in Mendelian ratio; for it is Mendelian inheritance, it must be remembered, that the English scientists are talking about. If the tadpole contained the potentiality of developing either into a frog or, let us say, a salamander, according to circumstances under experimental control, we might consider "frogness" as a factor, the presence or absence of which would have a determinative influence in development.

[1] "The Hypothesis of 'Presence and Absence' in Mendelian Inheritance," W. E. Ritter, SCIENCE, September 17, 1909.