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## REPRODUCTION AND INHERITANCE IN ASCOMYCETES<sup>1</sup>

By Dr. B. O. DODGE

THE NEW YORK BOTANICAL GARDEN

It is only within the last few years that students of the rusts and ascomycetes have obtained definite information about the processes actually involved in fertilization. Some of my associates have suggested that in view of this added knowledge it might be well to bring together in review on this program available information bearing on sex, maleness and femaleness as related particularly to heterothallism, incompatibilities and sterilities in the fungi. This did not seem to be advisable, however. Certainly by the time the naturalists hold their next regular quarter-century symposium on sex the mycologists will be in a better position to contribute positively to such a program.

<sup>1</sup> Address of the retiring vice-president and chairman of the Section for the Botanical Sciences, American Association for the Advancement of Science, St. Louis, December 31, 1935.

Although some of the topics presented for your consideration to-day may incidentally have a bearing on questions relating to sex in general, they are brought forward primarily to indicate some further profitable lines for thought as well as research in connection with the ascomycetes.

Muller believes that the essence of sexuality is Mendelian recombinations. While morphological differentiations are enhancing, they are secondary and dispensable. Allen has long studied sexuality and inheritance in the dioecious Bryophyta where differentiation of antheridial and archegonial haploid plants is clear cut and probably has a chromosomal basis. He would not be inclined to accept, as applying to his group, the theory of relative sexuality according to which all organisms, simple or complex, haploid as