Some Problems in the Genetics of the Fungi: DR. B. O. DODGE ........................................... 379

Chewing as a Technique of Relaxation: PROFESSOR H. L. HOLLINGWORTH .................... 385

Scientific Events:
The British Association in War Time; The Australian National Research Council; Retirement Fund of the Field Museum of Natural History; A Biological Survey of the State of New Hampshire; Library for the History of Medicine at Yale University; The Research Council on Problems of Alcohol .................................................. 387

Scientific Notes and News ........................................... 390

Discussion:
Physiology of the Nervous System: SIR HENRY DALE. The Use of Prontosil as a Vital Dye for Insects and Plants: DR. WALTER CARTER. Formation of a Large Alcohol Bead: DR. C. F. WINANS ........................................... 393

Scientific Books:
Recent Publications of the British Museum (Natural History): PROFESSOR T. D. A. COCKERELL ........................................... 395

Special Articles:
Note on Water in Non-aqueous Solutions: DR. W. J. V. OSTERHOUT and DR. J. W. MURRAY. Cerebral Metabolism during Fever: DR. HAROLD E. HINWICH and OTHERS. Crystalline Salmon Pepsin: DR. EARL R. NORRIS and DANIEL W. ELAM ........ 397

Scientific Apparatus and Laboratory Methods:
Determination of the Velocity of Sound in a Gas; Application to Analysis of Mixtures of Helium, Oxygen and Nitrogen: DR. WILLIAM B. DUBLIN, DR. WALTER M. BOOTHBY and DR. MARVIN M. D. WILLIAMS ........................................... 399

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen CATTELL and published every Friday by THE SCIENCE PRESS

New York City: Grand Central Terminal
Lancaster, Pa.

Garrison, N. Y.

Annual Subscription, $6.00 Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary in the Smithsonian Institution Building, Washington, D. C.


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SOME PROBLEMS IN THE GENETICS OF THE FUNGI

By Dr. B. O. DODGE

THE NEW YORK BOTANICAL GARDEN

INTRODUCTION

Not every one has had an opportunity, or the desire, to study the fungi critically. Most people, however, are more or less familiar with molds, mildews, mushrooms and yeasts. Those of you who were brought up in the country districts may remember how you enjoyed kicking over toadstools and puffing puffballs in each other's faces. The man who collects wild mushrooms in woodlands for food seldom thinks of them as plants. Botanists, on the theory that all living things must be either plants or animals, place the fungi in the plant kingdom. They say that if fungi ever had chlorophyll they have lost it through degeneration, and degenerates make little progress in evolution. It is a very common belief that the fungi are of little economic importance except as they cause decay and disease, and, since they show little evolution, their study would promise little as to throwing light on the great life processes. As a matter of fact, just to mention two examples, the fungi and bacteria are of inestimable value in building the soil and maintaining its fertility. Yeasts rival our boasted billion dollar corn crop, if we count the value of alcohol and other useful products of fermentation.

The old attitude is changing, as witness the interest in sex and genetics of fungi manifested during the past ten or fifteen years. This work will certainly be greatly facilitated in the next decade by the use of growth substances and sex hormones to bring into fertile cultures species of obligate parasites not now all adapted for this type of genetic study. We may

1 Presented at a general session of the Third International Congress for Microbiology, New York, September 6, 1939.