SCIENTIFIC BOOKS

THE MYXOMYCETES

The Myxomycetes. By THOMAS H. MACBRIDE and G. W. MARTIN. The Macmillan Company. Pp. 1–339, 21 plates. 1934.

THE publication of "The Myxomycetes" and the death of Dr. T. H. MacBride in March, 1934, close a record of publications upon a single group, which has continued over forty years. To an American mycologist, any time in those forty years, the sight of a Myxomycete automatically suggested Dr. MacBride. It is to be hoped that his junior author may carry on for a similar period.

The authors define the class Myxomycetes, as "characterized by an assimilative phase consisting of a naked, multinucleate, mobile mass of protoplasm, the plasmodium, and a reproductive phase, consisting in most cases of a membranous spore case." They include in the Class Myxomycetes two subclasses, the Exosporeae with the single genus Ceratiomyxa and the Myxogastres or Endosporeae with about four hundred species whose fruit bodies are among the curious and beautiful growths to be found in the forest. After a historical résumé of discovery and nomenclature, including the controversy as to their plant or animal nature, they conclude that "their actual study has been left almost entirely to the botanists," whose rulings as to nomenclature within the group are accepted and applied in this volume.

They exclude the Acrasieae, the Plasmodiophoraceae, the Labyrinthuleae and the Hydromyxales. This disposes of the forms so microscopic as to baffle the discriminating collector in the field. The book, then, covers the group well known to the botanist in the field, in the laboratory, and in the herbarium as Myxomycetes, or to the zoologist as Mycetozoa.

About 375 accepted species are distributed into sixty genera, of which 34 are monotypic. The large genera are carefully "keyed." The index gives page references to about 1,450 specific names arranged alphabetically under the generic names. A specific name with a checkered generic record is sometimes hard to find. A separate list of about 400 additional names is given in the appendix, of which only a few are assigned as synonyms. Citations of place of publication for this list do not appear, hence many of them would be difficult to verify. Even the authority cited for a specific name in certain cases does not appear in the "Bibliography."

One new species, *Badhamia gracilis* MacBride, appears on page 35, and one new name, *Physarum listeri* MacBride, for *P. luteo-album* Lister, appears on page 62. They drop two generic names used in MacBride's 1922 edition of "The North American Slime Moulds," and introduce thirteen generic names not recognized there.

The entire history of the group, together with the controversies, the advances in the study of the physiology and cytology, and the information for collection and preservation of specimens, totals fourteen pages. Pages 15 to 306 are devoted to classification and description. Twenty-one plates carrying 573 figures complete the book. The plates, as in MacBride's previous books, lose much of definiteness by appearing as half-tones instead of line drawings, but they add much to the utility of the text.

Theories as to cell and nuclear constitution are reviewed, with the conclusion that spores germinate into flagellate swarm cells which eventually become nonmotile, divide and resume the flagellate form. Rapid multiplication is thus provided for, but eventually the swarm cells fuse in pairs and the zygotes so formed develop into the plasmodia. The data discussed are cytological and morphological—*i.e.*, descriptive, rather than physiological.

Unfortunately, the whole function of the group in nature is dismissed with the note that they "are of no direct economic importance." Reference to their vegetative habits is prefaced by the word "probably." They thus remain in this, as in previous manuals, as curiosities of the herbarium whose claim is limited to the form and beauty of their fruit bodies.

One looks in vain for adequate designation of the habitat of most species; the forest or the wood-lot seems to have been assumed for all of them. "Locality" may be Europe, Texas, Japan, Iowa—which is not very definite assistance to the collector. There was, perhaps, a time when such generalization was excusable. To-day with the mounting demand for information as to the part played by any microorganism in the economy of nature on the one hand, and with the demand for simple assistance to the collector on the other, it would seem that the authors should have given us more tangible information where possible.

The flaws noted only emphasize the size of the task accomplished. Every worker in the field will welcome a book which brings the descriptive literature of this group into a critically arranged manual. Such a book makes identification possible to the worker who can not command all the necessary journals in half a dozen languages, or obtain the mass of reprints that carry the new species and genera described since

MacBride published his second edition of the "North American Slime Moulds" in 1922.

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EMERGENT EVOLUTION

The Universe and Life. By H. S. JENNINGS. Yale University Press, New Haven. Pp. 1–94. $1.50. 1933.

THE deed of gift of the Dwight Harrington Terry Foundation, in paraphrase, seeks the construction of a broadened and purified religion in the application to human welfare of scientific and philosophical truths as they become available. The criterion by which any endeavor originated on this foundation must be judged therefore is its aptness for integration into the defined pattern. What contribution have biological experience and philosophy, as interpreted by the zoologist, to make in our practical application of the known facts of evolutionary progress to the management of life. Professor Jennings set himself this theme and he treats it as a problem in emergent evolution governed by the principle of trial and error. We should of course expect the author to approach his subject from this angle and we search hopefully through the pages for evidence of a constructive practical philosophy to crown the author's long and valiant struggle against the mechanistic interpretation of biology. Is modern scientific specialization the most appropriate training for such a purpose? One need not invoke the doctrine of predestination to induce a zest for living, but its substitution by trial and error affords no thrill. The materials for living, thanks to chemistry and physics, are far more familiar to the public than the fabric of life. Hence a biological philosophy requires greater elaboration and illustration to make it fit within the reader's experience. Professor Jennings takes this course, though apparently biology must await the accumulation of much new knowledge before it can construct even a pattern to set before us, let alone a lodestone to keep at our side.

In the plain impressive words of Marcus Aurelius "the universe is either a confusion and a dispersion, or it is unity, order and providence." The reviewer believes that biosocial applications essential to the fulness of modern life may burst the doors of the laboratory from without, insistently thundering for attention.

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SOCIETIES AND MEETINGS

THE TWELFTH INTERNATIONAL VETERINARY CONGRESS

COMING to the United States for the first time in the 71 years since its organization, the International Veterinary Congress held its twelfth session from August 13 to 18, 1934, at the Waldorf-Astoria Hotel, New York City. The congress received official government sanction through the opening address of welcome by Hon. M. L. Wilson, Assistant Secretary of Agriculture, in addition to the designated patronage of President Franklin D. Roosevelt and the vice-patronage of the Secretary of Agriculture, Henry A. Wallace. The object of the conference previously had been sanctioned by the State Department.

Convening for the purpose of reporting scientific progress throughout the world in veterinary science and allied technical fields, the delegates presented and discussed papers in general and sectional meetings throughout the week. The program included the following general topics:

Pathology, bacteriology and contagious diseases.
Medicine, surgery and obstetrics.
Fowl diseases.
Combating enzootic diseases under a state veterinary service.
Relationship of veterinary science to animal breeding and public health. Legal protection of practises of veterinary science.
Veterinary parasitology and parasitic diseases.
Tropical diseases.
Animal breeding and dietetics.
Veterinary control of marketing of milk.
New researches on filterable viruses.
New researches on contagious abortion.
Hygiene of meat and milk.

The foregoing topics were discussed in 81 scientific papers which subsequently will be published in the proceedings of the congress. In view of the international character of the gathering, summaries of the papers had previously been printed in four languages—English, French, German and Spanish—and were distributed to members of the congress as a basis for discussion.

To attempt in this brief account a résumé of the various papers reporting the results of new research and developments in the regulatory field would be so sketchy as to do a scientific injustice to the papers. Suffice it to say that they dealt with new and improved methods for protecting live stock of the world from a wide range of diseases and conditions which tend to reduce the value of such animals to mankind and