

for diœcious Bryophytes. There is no *a priori* reason why in certain forms the sex of the whole sporophyte may not be determined in the zygote as is the case in the diœcious flowering plants and in *Mucor Mucedo*. The determination of the sex of the spores in a capsule apparently takes place at or but slightly before their formation. An attempt to suppress the formation of spores of one sex in the capsule would appear, therefore, more promising than attempts to change the sex of a spore or of a protonema already formed.

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Le Mallatie Crittogamiche delle Piante Coltivate. DOTT. VITTORIO PEGLION, Professore die Biologia agraria nella R. Università di Bologna. 2a edizione, 1906. Casale Monferrato. 12mo., pp. viii + 323.

It is difficult for Americans to realize the great progress that is being made in Italy in the applied sciences. In botany, at least, few investigators take pains to acquire a working knowledge of the Italian language, and in consequence Italian work is best known to us through German and French reviews. The above work is a case in point: although issued over a year ago, no mention of it appears to have been made in any publication in the English language.

The book is one of a series now numbering somewhat over fifty—the Biblioteca Agraria Ottavi—all of which deal with some phase of technical agriculture, and in general represent the best Italian thought along their particular lines. No attempt has been made in this book to exhaust the subject of plant pathology, but the information contained is condensed and up to date: in many cases forming the best summary of knowledge on the given subject that the reviewer has seen in any language. But little attention is paid to mycology; the taxonomic position of the parasite does not determine the order of discussion; in other words, the book is written from the standpoint of the disease itself—making it almost unique among works on plant pathol-

ogy. There is no index, but a very full table of contents; there are practically no illustrations. The book is printed in large, clear type, generally free from errors. In one place a curious transposition of paragraphs has occurred, which the author, *in litteris*, corrects as follows: the matter from and including the title 'La Peronospora del Frumento' on p. 96, to the beginning of the last paragraph on p. 97, should be interpolated between the second and third paragraphs of p. 93 following the words ' * * * come suol farsi.' Also the matter beginning at the bottom of p. 97 with the words 'Quando si approssima * * * ' and ending on p. 99 with ' * * * contestata da diversi studiosi.' should be interpolated on p. 102 before the words 'Quando una uredospora, od una * * * '.

The book opens with a chapter of generalities, after which two chapters are devoted to fungicides and the methods of applying them. A much greater number and variety of fungicides appear to be in common use than have been found practicable in America. It is interesting to note how, owing to field conditions, the knapsack type of sprayer is almost exclusively used. With cheap and efficient labor the results of such spraying should be, and apparently are, much better than those obtained here by the wholesale use of power and other large sprayers.

The remaining chapters are devoted to specific diseases of the following plants: wheat, oats, barley, corn, rye, rice, alfalfa, beans, peas, potatoes, beet, cabbage, turnip and other cruciferae, hemp, flax, tobacco, watermelon, strawberry, onion, tomato, grape, pear, apple, peach, plum, olive, citrous fruits, mulberry. Three chapters are devoted to diseases attacking plants in the seed-bed, to the treatment of wounds, and to the various forms of root-rot of trees. It is unfortunate that the author has not seen fit to include some bibliographical matter under these various heads; or at least to bring Voglino's bibliography (1895) down to date.

This book is of especial interest to American plant pathologists at this time on account of its discussion of the diseases of the semi-tropical plants, largely untreated in other

general works. It amply merits translation into English and other languages.

HAVEN METCALF

U. S. DEPARTMENT OF AGRICULTURE

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for January contains the following articles: 'Note on the Habits of Fierasfer,' by Edwin Linton, describing the manner in which the fish enters tail first the body of a holothurian. 'Records of Pennsylvania Fishes,' by Henry Fowler, giving definite localities for many species. 'Specific Name of *Necturus maculosus*,' by F. C. Waite. *Tetradactylus* is unavailable as a specific name, not because it refers to a generic character, but because it was not applied as a scientific name; what Lacépède wrote was *Protéotétradactyle*. Under 'Volvox for Laboratory Use,' Bertram G. Smith tells how it may be kept and J. A. Cushman records seven species of 'Ostracoda from Southeastern Massachusetts.'

The Museum's Journal of Great Britain has for its leading articles 'How to Promote Interest in Museum Collections,' by H. Conwentz, and 'Children and the Cult of the Beautiful,' by Beatrice V. Vernon. The first applies particularly to what may be termed local museums, and we doubt if many of the suggestions would prove to be practicable in a large institution. Miss Vernon's article deals largely with art museums and Mr. Harlan I. Smith will find in it methods akin to his interrogative label.

The Zoological Society Bulletin for January is an unusually good number. We can only note among other articles those on 'The Goat Herd,' 'An Almost Extinct Bird' (the California Vulture), the 'African Vipers,' 'The Frigate Birds' and 'Collecting for the Aquarium.' It is announced that the last of the large buildings are expected to be completed by the end of 1908, and that the attendance for the year was 1,300,000. A green turtle received at the aquarium weighed 540 pounds; the length of the upper shell was 4 feet 6 inches. It may be seen from this how large a thousand-pound turtle would be. The

attendance at the aquarium during 1906 was something over 2,000,000.

The Museum News, of the Brooklyn Institute for February announces the installation of a group of Atlantic walrus. The principal article in the Children's Museum section is on the muskrat and states that in the Hackensack marshes the muskrats seem to live in houses throughout the year, the summer houses being more loosely built than the winter home.

The Fortnightly Review for January contains an article by E. Ray Lankester describing in some detail the work carried on at the British Museum during the past eight years under his immediate supervision.

SOCIETIES AND ACADEMIES

THE ST. LOUIS CHEMICAL SOCIETY

At the regular meeting of the society on January 14, Mr. A. H. Kelling presented a paper entitled 'Sewage Purification.' Pollution of water supplies, and the danger of infection resulting from the habits of the house fly, were dwelt on as showing the importance of the subject. The three methods by precipitation, by means of sewage farms, and by means of septic tanks and filtration were then treated in considerable detail. After the discussion, which followed the presentation of this paper, Dr. Andrews presented a paper, which favorably discussed the probable appearance of some official interpretations of certain regulations contained in the last issue of the U. S. Pharmacopœia, with reference to the Pure Food and Drugs Act.

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Corresponding Secretary.

DISCUSSION AND CORRESPONDENCE

GENETIC LOGIC

TO THE EDITOR OF SCIENCE: Dr. Tawney's criticism of my book on 'Genetic Logic,' in your issue of February 1, calls for a word or two of comment.

He is mistaken in supposing the 'dualism of control' as I develop it represents my own view of the nature of reality.

Being the 'knower's logic' that I am de-