

SCIENCE

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SOME PROBLEMS IN THE LIFE HISTORY OF PATHOGENIC MICROORGANISMS.*

OUR knowledge of the profound influence which the microscopic organisms, known as the bacteria, exercise in the life of the globe, may be considered an acquisition of the last quarter century. The surmises and hypotheses of the half century preceding were then made over into well-attested facts.

The activities of microorganisms manifest themselves in many different ways. The functions carried on by the bacteria of the soil are known to be of fundamental importance to higher plant life. The work of the bacteria producing fermentation, putrefaction and decay is of similar importance in preparing the way for the soil bacteria and ministering to the wants of higher organisms. Out of this latter class there has arisen a group which has given these microorganisms all the notoriety they possess. It is a small group, but formidable in that it is in partial opposition to the higher forms of vegetable and animal life. It is these parasitic forms to which I shall devote my address, as it is they which have preoccupied my attention for some years. In thus passing over large groups of bacteria I simply register my inability to properly present their claims, and I trust that others here present will fully supplement my paper by dealing with them in deserving fashion.

While bacteriology, strictly speaking,

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* Address, Section Bacteriology, International Congress of Arts and Science, St. Louis, Mo., September 24, 1904.

distance from its origin or centrum, is erroneously defined as 'the intensity at the epicenter'; and the diagram on page 186 indicates the intensity of a shock in the locus technically called the pleistoseist as about four ninths of its intensity at the epicenter, whereas the text shows the ratio to be three fourths. Slips of this character, which might have been eliminated by more careful revision of copy and proof, will doubtless be avoided in subsequent editions. They detract but slightly from the general value of the work, which may be commended to the public as a lucid, attractive, and at the same time scientific presentation of a subject so difficult that its modern aspect is little understood outside the circle of its special students.

G. K. GILBERT.

SCIENTIFIC JOURNALS AND ARTICLES.

The American Naturalist for October has papers on 'The Anatomy of the Coniferales' (concluding article), by D. P. Penhallow; 'Studies of the Plant Cell, IV.,' by B. M. Davis, and 'The Affinities of the Ophioglossaceæ and Marsiliaceæ,' by D. H. Campbell.

The Popular Science Monthly for December contains the following articles: 'The Reclamation Service,' by F. H. Newell (deals with the problems of irrigating the arid regions of the west); 'Chinese and Japanese Immigration,' by Allan McLaughlin; 'The Status of American College Professors,' by John J. Stevenson; 'A Decade of Library Progress in America,' by William W. Bishop; 'Nature's Hieroglyphics,' by Richard S. Lull (treats of the fossil footprints of the Connecticut Valley); 'The Present Problems of Physiological Chemistry,' by R. H. Chittenden; 'The Agricultural Distribution of Immigrants,' by Robert DeC. Ward; 'The Conceptions and Methods of Psychology,' by J. McKeen Cattell. There are also shorter articles and notes on the progress of science, the latter including the two hundredth anniversary of the death of Locke and the two hundred and fiftieth anniversary of Columbia University.

The American Museum Journal for October is devoted mainly to an extensive and fully

illustrated paper by W. Beutenmüller on 'The Insect-Galls of the Vicinity of New York City.' It also contains many notes relating to the progress of the museum in adding to or installing its collections. The number contains the index to the volume for 1904.

The Museums Journal of Great Britain has articles on 'A Simple Method of Drilling Glass,' 'The Museum Conference at Warrington,' 'The Hankfield Museum, Halifax,' and many notes from various museums. There is an instalment of the museum's directory of Great Britain which brings the matter down to Manchester.

Bird Lore for November-December contains articles on 'How to Study a Bird,' by Ernest Thompson Seton; 'Some Familiar Florida Birds,' by F. W. Roe; 'Bird Life of a Swiss City,' by Wendell Prime; and 'Young Flamingos,' by Frank M. Chapman. There is the seventh paper on 'The Migration of Warblers,' by W. W. Cooke; 'Bird Lore's Christmas Census' and Notes, Reviews, Editorials and the very full Audubon Department.

SOCIETIES AND ACADEMIES.

THE CONVOCATION WEEK MEETINGS OF SCIENTIFIC SOCIETIES.

THE American Association for the Advancement of Science, the American Society of Naturalists and the following societies will meet at Philadelphia, Pa., during the week beginning December 24, 1904:

The American Association for the Advancement of Science.—The week beginning on December 27, President, Professor W. G. Farlow; permanent secretary, Dr. L. O. Howard, Cosmos Club, Washington, D. C.; general secretary, President Charles S. Howe, Case School, Cleveland, Ohio; secretary of the council, Professor Clarence A. Waldo, Purdue University, Lafayette, Ind.

Local Executive Committee.—President, Provost Charles C. Harrison; vice-president, Professor Edgar F. Smith; secretary, Dr. Philip P. Calvert; treasurer, Dr. Samuel G. Dixon; chairman of the executive committee, Provost Charles C. Harrison; of the committee on reception and entertainment, Mrs. Charles C. Harrison; of the committee on hotels and boarding houses, Professor Amos P. Brown; of the committee on meeting places and