SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, MARCH 29, 1901.

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MSS. intended for publication and books, etc., intended or review should be sent to the responsible editor, Professor J. McKeen Cattell Garrison-on-Hudson, N. Y.

*THE EMBRYOLOGICAL BASIS OF PATHOLOGY.**

EMBRYOLOGY is the basis upon which pathological science must be erected. Pathology is even more a superstructure upon embryology than is anatomy. Anatomy, in its descriptive form, may stand by itself and have usefulness. Pathology cannot be built up as a merely descriptive science. It fails of its true purpose unless it discovers the causes of diseases. Now since function is dependent on structure, the aim of the pathologist must be first to discover the causes of morbid structure. In brief, pathology at the present time deals chiefly with problems of the development of anatomical forms. Pathology and embryology might almost be united in a single comprehensive study—morphogeny. Let us then try, for this evening at least, to free ourselves from the conception of an essential difference between normal and abnormal structure, a conception which, I believe, domineers too largely over our daily thoughts. This belief of mine I hope to justify to-night.

Simple description is indispensable, it furnishes the virgin facts; but facts do not develop by parthenogenesis into science; they must be saturated with the stimulus of study, with the stimulus of knowledge of their history, their antecedents, their causation, then we may see them evolving

* The Middleton Goldsmith lecture delivered before the New York Pathological Society, March 26, 1901.

decisions of the courts. His work in connection with the harmonic telegraph, a very interesting invention which belongs to him, led him to an understanding of the principles underlying the telephone, and the caveat which he filed in the patent office showed that he was very close to the realization of his ideas in this direction. Nevertheless, the fact that Mr. Bell had shown and described an apparatus capable of actually transmitting speech and one which survives to-day as the receiving instrument, gave him a more positive claim which, in connection with other technical and legal facts, resulted in a final decision in his favor. The telautograph, like the harmonic telegraph, has not yet become of great practical value, although both are ingenious and beautiful devices. It would seem that Dr. Gray had been most unfortunate with his inventions in spite of his natural genius. It was not due, however, to lack of mental clearness or grasp, but more likely resulted from insufficient business ability. The books which he has recently written reflect very faithfully the mind of the man. To him science was not abstruse or formal, but a familiar, matter-of-fact and attractive subject. In a clear and picturesque style, he treats the principles and applications of electricity as well as other branches of science. These books could be understood sufficiently to be interesting even by the least technical of readers. On the other hand those well acquainted with the subjects would find at least a new point of view. It is notoriously difficult to write a really satisfactory scientific book of an elementary character. This inherent difficulty is magnified by the fact that most persons who undertake it are not masters of their subject. No such criticism can be made of Dr. Gray, and the lucidity of his ideas and his language are adapted to the task. The writer was well acquainted with Dr. Gray personally and knew his great enthusiasm for science, which is another quality necessary in the writer of an elementary work, in order to inspire his readers who are beginners or those who have comparatively little taste for such matters. For these reasons the series of books that Dr. Gray has written are to be recommended as interesting and instructive to the general or even casual reader, but they are too conversational for use as text-books, except perhaps to supplement other more formal works.

F. B. Crocker.

Columbia University.

March 6, 1901.

BOOKS RECEIVED.

Hygiene and Public Health. Louis Parkes and Henry Kenwood. Philadelphia, P. Blakiston's Son & Co.; London, H. K. Lewis. 1901. Pp. xix + 732.

The Agricultural Experiment Stations in the United States. A. C. True and V. A. Clark. Washington Government Printing Office. 1900. Pp. 636.

Experimental Psychology, a Manual of Laboratory Practice. Edward Bradford Titchener. New York and London, The Macmillan Company. 1901. Pp. xviii + 214.

The Human Nature Club. Edward Thorndike. New York, London and Bombay, Longmans, Green & Co. 1901. Pp. vii + 235.

Practical Organic Chemistry. Julius B. Cohen. New York and London, The Macmillan Company. 1899. Pp. xiii + 200.

Practical Gas-Fitting. Paul N. Hasluck. London, Paris, New York and Melbourne, Cassell & Company, Limited. 1900. Pp. 160.

A Manual of Elementary Science. R. A. Gregory and A. T. Simmons. New York and London, The Macmillan Company. 1901. Pp. viii + 429.

The Industrial Revolution. Charles Beard. New York, The Macmillan Company. 1901. Pp. x + 105. 40 cts.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON.

The 336th regular meeting was held on Saturday evening, March 9th.

C. W. Stiles presented a note on a recent visit to Texas, whither he had been called to investigate a disease of cattle ascribed to the presence of a parasite in the lungs. He had discovered that the disease was really due to a parasite of the genus *Strongylus* which infested the fourth stomach of the animals infected.

Barton W. Evermann read a paper on 'The Feeding Habits of the Coot and other Water Birds,' based upon observations made at Lake Maxinkuckee, Indiana, by Dr. Evermann and Mr. H. Walton Clark. In 1899 the observations