

of biology, the study of life, and said that modern biological study began with Darwin's visit to the Galapagos Islands fifty years ago. "Activity of protoplasm cannot be called life. Vital phenomena are distinguished by what is done, not by the constituents of the organism. There is no necessary connection between life and protoplasm. The common characteristic in all life is education. Life is education, and education is life. Kick a stone and a dog; the difference in the result is caused by education." He then referred to examples of natural difference in life as caused by education, and adjustment by education to varied circumstances. "The common characteristic in all these forms of life, from the highest to the lowest, is education. If, then, life is education, in seeking the latter we are advancing the former."

At the close of the lecture, Dr. Brooks was tendered a reception by the lyceum, at its building, Jackson hall, where letters and speeches from old members showed that their interest was still great.

The lyceum is the only active college society in this country which has its own building. It has now about twenty working-members, and holds its meetings every week, at which reports are given by members appointed in advance, on the subject which they are studying. Since Dr. S. F. Clarke took the professorship of natural history in the college, a strong interest in biology has been aroused in the society.

Among the members who have devoted themselves to science after graduation, the following are the best known: Professor Addison Ballard, '42; Mr. William H. Edwards, '42; Prof. W. D. Whitney, '45; Hon. D. A. Wells, '47; Dr. P. A. Chadbourne, '48; Dr. William Goodell, '51; Prof. Henry A. Ward, '55; Professor James Orton, '55; Mr. Samuel H. Scudder, '57; Dr. R. H. Ward, '58; Dr. E. W. Morley, '60; Prof. F. H. Snow, '62; Dr. G. Stanley Hall, '67; Dr. W. K. Brooks, '70; Dr. E. A. Birge, '73; and Mr. J. S. Kingsley, '75.

THE UNITED STATES AT THE FISHERIES EXHIBITION.

It is impossible to do much more than indicate the contents of this immense volume of over thirteen hundred pages. It is entitled 'Descriptive catalogues;' but, as observed by Mr. Goode, it really partakes of the character of a report on the part played by the United-States exhibit at the London fisheries exhibition, — not only that of the government, but also that due to private American exhibitors. A considerable part of the volume was printed, and distributed to visitors, during the exhibition.

There is a short introduction by the commissioner, followed by some data from the census; a list of forty-two gold, fifty-five silver,

Report upon the exhibit of the fisheries and fish-culture of the United States, made at the London fisheries exhibition, 1883. Prepared under the direction of G. BROWN GOODE. (U. S. nat. mus., bull. 27.) Washington, Government, 1884 [1885]. 8°.

and thirty bronze medallists; beside some fifty other awards to American exhibitors, followed by a report on the collective exhibits of the U. S. national museum and the U. S. fish-commission. It is needless to say that every branch of the subject is thoroughly presented, either by specimens, models, illustrations, or literature. There is included under these a useful series of catalogues by Messrs. Rathbun (Economic invertebrates, except mollusks), Ridgway (Water-birds), Winslow (Economic mollusks), Brown (Whale-fishery), Bean (Fishes, and illustrations of fishes), Rathbun (Scientific appliances for deep-sea investigation), True (Aquatic mammals), Capt. Collins (Vessels and boats), Earll (Fishing-tackle and appliances), Clark (Fishery products), and Earll (Fish-culture).

The catalogues of birds and fishes are of particular interest and value, apart from their present connection, to all interested in those departments of biology. The catalogues of mollusks and other invertebrates are necessarily much less complete, and are expanded and improved from the centennial catalogues of Messrs. Dall and Rathbun, prepared for Philadelphia.

The volume is a monument of well-systematized labor, but would probably have been more convenient for reference if it had been divided into two volumes. The anthropologist, ornithologist, ichthyologist, fisherman, or manufacturer can hardly fail to find useful and welcome information in these pages; while, by the staff of the commission and museum, the book can hardly be contemplated without a feeling of thankfulness that the period of extraordinary drudgery, apart from their usual and regular duties, which the volume commemorates, is at last entirely over.

PHYSICS OF THE EARTH.

This is an admirable book. Dr. Günther, whose thoroughness has been well shown in his earlier writings, makes many physicists, mathematicians, and geographers his debtors by preparing so able a work on the subjects where they meet on common ground; and, if all teachers of physical geography and geology had the good fortune to possess the advanced training that this volume gives and requires, we should hear less from the classical men of the insufficient discipline afforded to the scholars in our secondary schools by their natural-his-

Lehrbuch der geophysik und physikalischen geographie. Von SIEGMUND GÜNTHER. Band I. Stuttgart, Enke, 1884. 10+418 p. 8°.