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THE DIFFERENTIATION OF SPECIES[1]

WITH the lapse of another year, it is again my privilege and my obligation to present what is technically known as a "presidential address." This occasion is one of particular personal interest, for it marks the close of continuous active service to the academy throughout a period of more than three decades, during which it has been my privilege to serve in almost every designated capacity. And with the close of this evening, I shall pass to the long and venerable list of ex-presidents, however unworthy that association may be with the notable men of science of our community who have directed the life and work of our institution.

A choice of subjects is inevitably controlled by circumstances; the topic must be general in scope, it must be of timely interest, and it ought to be one with which the speaker is familiar, at least to some extent. I have chosen to discuss briefly some aspects of evolution. No other is more comprehensive or more fundamental. Each of the natural sciences, with its own materials and by its own methods, has demonstrated the reality of incessant change, in the heavenly bodies, in mountains and seas and continents, and in the wide array of plants and animals that constitute the organic world.

The further circumstance determining this choice is the fact that for more than twenty odd years I have been engaged in the study of a definite group of animal organisms in an effort to understand the processes by which evolution comes about in wild nature. The natural history of animals is like that of plants, and hence this topic is directly related to botanical generalization. It is of real concern to the geologist also, who, as paleontologist, must deal with the bygone organisms that have lived and have passed away. It is axiomatic, of course, that the student of fossil species can not observe directly the dynamics of specific evolution; what he may know about the actual processes of transmutation can be learned only by the study of existing organisms and their changes, which he then projects into the past—precisely as the geologist can not see his age-old strata in process of

[1] Address of the retiring president, delivered at the annual meeting of the New York Academy of Sciences, December 19, 1927. Photographic illustrations of topographic features, specimens and tabulated statistics, which were employed at the time, are necessarily omitted here.

NEW SCIENTIFIC BOOKS

The Institute for Government Research, Washington, D. C.

THE PROBLEM OF INDIAN ADMINISTRATION. Lewis Merriam and associates. pp. xxii + 872.

Report of a survey of the economic and social conditions of the American Indians, containing the following sections: A General Policy for Indian Affairs; Health; Education; General Economic Conditions; Family and Community Life and the Activities of Women; Migrated Indians; Legal Aspects of the Indian Problem, and Missionary Activities.

Longmans Green and Company, New York

INTERMEDIATE ELECTRICITY AND MAGNETISM. R. A. Houston. pp. x + 170. 155 diagrams. $1.75.

Treats of the fundamental facts of magnetism, magnetic measurements, terrestrial magnetism, electrostatics, Ohm's law, electrolysis, induced currents, cathode rays, X-rays and radioactivity. An additional chapter on electrical oscillations and waves is included.

The D. Van Nostrand Company, New York

STORAGE BATTERIES. Morton Arendt. pp. v + 285. Illustrated. $4.50.

Such material as can be readily applied to every-day problems relating to the manufacture and assembling of storage batteries, to questions having to do with their upkeep and care, and to their application and usage comprise the scope of this book.

Prentice-Hall, New York

GENERAL CHEMISTRY. Azariah T. Lincoln and George B. Banks. 133 figures. pp. xxii + 681. $3.50.

Suited for a first-year course in college. The material is so arranged that several sizes and types of courses can be offered, depending on the group of students concerned and the amount of time available.

Allyn and Bacon, Boston

SECOND COURSE IN THE NEW MATHEMATICS. Edward I. Edgerton and Perry A. Carpenter. pp xi + 369. $1.20.

This is the second-year volume of a mathematics series for junior high schools. The first part of the book is devoted to saving time in the use of fundamental processes. The second part makes specific application of the New Mathematics to business.

Boni and Liveright, New York

GROWING INTO LIFE. David Seabury. pp. xviii + 715. $5.00.

The author finds alarming the large number of young people and children who have become mental cases, through ignorant training given by parents and faulty ethics. He shows the causes of mental difficulties, the cure and prevention of them. For parents and teachers and every one interested in the welfare of children.