

SCIENCE

VOL. LXVII

JUNE 22, 1928

No. 1747

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SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

New York City: Grand Central Terminal.

Lancaster, Pa.

Garrison, N. Y.

Annual Subscription, \$6.00. Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

THE DIFFERENTIATION OF SPECIES¹

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.

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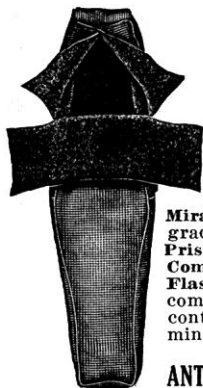
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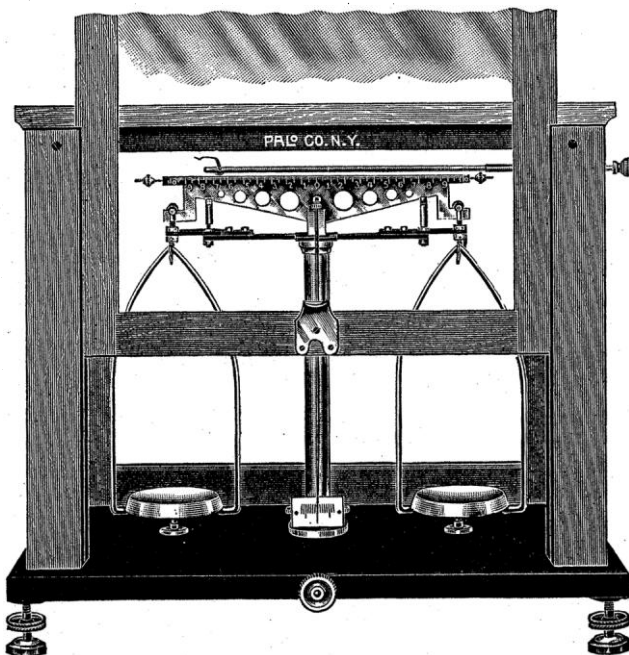
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