its alteration Products, Fermentation Industries, Milk, Textile Fibres of Vegetable and Animal Origin, Animal Tissues and their Products, Destructive Distillation, Artificial Coloring Matters, Natural Dyes, Bleaching, Dyeing and Textile Printing. A very complete index adds to the convenience and worth of the book. The print is excellent, and numerous illustrations are distributed through the text. It is, as its name indicates, a 'handbook,' in which the various subjects are concisely and clearly explained, important topics being quite fully considered, while details of less importance, which often become so confusing and wearying to the student or general reader, are but slightly touched upon or entirely omitted. It is presumed that the reader who wishes minute and extended descriptions will look for them in the larger works or special literature bearing on the particular point in question.

This book presents, to a greater extent than any other work on the subject, processes and apparatus employed in America and hence will find favor with American readers. A translation which has appeared in German demonstrates, however, that it is also appreciated on the other side of the Atlantic.

It is to be hoped that a companion volume dealing with the inorganic side of technical chemistry may soon appear.

Frank H. Thorp.

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## *SCIENTIFIC JOURNALS.*

### THE AUK, JANUARY.

With the present number '*The Auk*' enters upon its thirteenth year of publication as a quarterly journal of Ornithology, and the official organ of the American Ornithologists' Union. The first article is a memorial sketch of the late George N. Lawrence, of New York City, by D. G. Elliot. Mr. Lawrence died in January, 1895, in the ninetieth year of his age, being the last of the links connecting the present generation of ornithologists with the Audubonian period. He was the last also of the great trio of ornithologists—Cassin, Baird and Lawrence—who from the middle of the century onward laid anew the foundations of American ornithology. For a period of over fifty years Lawrence published almost continously on American birds, more especially on those of the West Indies, Central and South America, on which he was everywhere recognized as a leading authority. Mr. Elliot, from long personal acquaintance with Mr. Lawrence, was well fitted to unfold the tale of his simple life, which he has here done with rare felicity. An excellent portrait of Mr. Lawrence forms a fitting frontispiece to the number.

Mr. Frank M. Chapman, in an article on 'The Standing of *Ardetta neoxena*,' illustrated with a colored plate, gives the technical history of a rare and peculiarly interesting Heron, described about ten years since from a specimen taken in the Florida Everglades, but now known from about fifteen specimens, of which seven have been taken at Toronto, Canada, one each in Michigan and Wisconsin, and the rest in Southern Florida. D. G. Elliot describes two new Ptarmigans from the Aleutian Islands, A. W. Anthony, a new woodpecker from California, Gerrit S. Miller, Jr., a new jay from Mexico, and William Brewster, a new warbler and sparrow from North America. George H. Mackay writes of the Colony of Terns that still, thanks to careful protection, have their home on Muskeget Island, Massachusetts; L. Belding gives a rendering in musical notation of twelve songs of the meadow lark; and Miss Florence A Merriam writes at length on the habits of the Phainopepla in California. Other leading articles treat of the Pine Grosbeak, of an important factor in the study of Western bird life, and of the Thirteenth Congress of the American Ornithologists' Union, held in Washington, November 11–14, 1895. Some fifteen pages are devoted to 'General Notes,' under which are grouped some thirty short articles relating to the occurrence or habits of as many little known birds, while nearly twenty pages are devoted to reviews of current ornithological literature. There are also several pages devoted to obituaries and to various items of ornithological news.

### THE AMERICAN GEOLOGIST, FEBRUARY.

*Notes on the Geology of Eastern California:* By H. W. Fairbanks. This part of the Great Basin, on account of its desert character and re-

moteness, has been little explored geologically; the present paper contains in part data obtained by the author during five months in 1895. The formations represented are divided into sedimentary and igneous, the former of which includes two distinct classes: (1) a metamorphic series, ranging in age from Cambrian through the Triassic, and (2) the unaltered Tertiary and Quaternary beds. The igneous rocks are granitic and volcanic; the former occur frequently as intrusions in the metamorphic series, and the latter consist of tuffs, liparites, andesites and basalts.

*The Association of the Gasteropod Genus Cyclora with Phosphate of Lime Deposits:* By A. M. MILLER. Several specimens of phosphate rock examined showed numerous shells of *Cyclora*. The analysis of the rocks as a whole gave varying percentages of $P_2O_5$ and $Ca_3(PO_4)_2$, while analyses of the *Cyclora* casts showed them to contain a much larger amount of these compounds. In one case 89 per cent. of the material of the casts was found to consist of these compounds.

*The Buchanan Gravels: An Interglacial Deposit in Buchanan County, Iowa:* By SAMUEL CALVIN. These gravels in their typical exposures form beds ten to fifteen feet in thickness, lying above the Kansan drift and below the Iowan. The contrast between the hard undecayed boulders of the Iowan drift and the decayed boulders of the Buchanan gravels and Kansan drift is striking. These gravels are made up of materials derived from the older drift and were probably laid down in water immediately behind the retreating edge of the Kansan.

*Lacroix' Axial Goniometer:* By N. H. WINCHELL. This paper describes and figures a comparatively simple apparatus for easily measuring the optical angle of a mineral; it can be adjusted to any microscope, being inserted in the top of the body tube, and gives the optical angle measured in air.

*Phenomena of Falling Meteorites:* By O. C. FARRINGTON. The author discusses the explosions of meteorites and the sounds which accompany the fall of these bodies. Evidence is given which shows that meteorites sometimes do explode, producing marked detonations.

*Philadelphia Meeting of the Geological Society of America:* By WARREN UPHAM. An account of this meeting is given, together with abstracts of all the papers presented and also abstracts of the discussions following the papers.

Under 'Editorial Comment' notice is made of Prof. James Hall's gold medals, of the Transvaal gold region, and of the geological map of Europe prepared by the International Congress of Geologists. Under 'Personal and Scientific News' abstracts are given of geological papers presented at recent meetings of various scientific societies.

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## *SOCIETIES AND ACADEMIES.*

### THE SCIENTIFIC ASSOCIATION OF THE JOHNS HOPKINS UNIVERSITY, DECEMBER 19.

ONE hundred and twenty-third regular meeting, December 19, 1895. President Remsen in the chair.

The following papers were presented and read:

1. *Theories of Color Sensation and of the Perception of Sound:* By W. J. MATHER.

Mr. Mather gave a brief review of the older theories of color perception, followed by a careful discussion of the present state of our knowledge of this suject. He dwelt especially upon the theories of Mrs. Franklin.

2. *Recent Work on Impregnation in Flowering Plants:* By J. E. HUMPHREY.

Mr. Humphrey showed that until about four years ago impregnation in flowering plants was known to take place only by the growth of the pollen tube across the cavity of the ovary and through the micropyle left by the coats of the ovule. In 1891 Treub described impregnation in Casuarina, the Australian iron-wood, by the downward growth of the pollen-tube through the tissue of the ovary to the chalaza, or stalk of the ovule, and its upward growth through the body of the ovule to the egg-cell. In 1894 Miss Benson found the same thing to occur in several English catkin-bearing plants, the hornbeam, the alder, the hazel, etc.

Nawaschin has just published the results of his studies of the white birch, which agrees closely with the alder. In attempting to ex-