'dichotamous' system, now so generally and so deservedly popular. They are based primarily on length of wing, and there are usually several successive categories of equal rank. The objections to this arrangement are partly overcome by the use of very large type for the main headings.

The books are intended primarily for sportsmen and others "who are interested in birds and would like to know their names, but often find it no easy task to identify them by the 'bird books.'". That they fulfill this purpose admirably will be evident to all who use them. The paper and press work are good and the prices remarkably low.

Mr. Cory has made many contributions to ornithology, the most important of which relate to the 'Birds of the West Indies.' His entertaining 'Hunting and Fishing in Florida,' published about a year ago, gained him a wider circle of readers, but it is doubtful if any of his writings will prove so helpful to so large a class as the two that form the subject of this review.

C.H. M.

Les gaz de l'atmosphère. Par H. HENRIET. Paris, Gauthier-Villars et Fils; Masson et Cie.

This short treatise presents the reader in concise form a great deal of useful information with regard to the composition, methods of analysis, and rôle played by the various constituents, of the atmosphere. While the references to recent work would seem to indicate that the book is abreast of the times, the fact that, with few exceptions, the investigations noted are those by French scientists only is not calculated to inspire confidence in the author's conclusions. In the text, although the names of others than Frenchmen occasionally appear, there is no reference to any paper not printed in a French journal. In a bibliography whose length should guarantee its completeness, there is the title of one English book and that of one Italian memoir; the remainder are all French. On the other hand, as the book is evidently written for Frenchmen, it may be that the author gave only such references as would be readily available in almost any public library in France. On the whole, this defect will militate against the use of M. Henriet's convenient little book by others than his fellow-countrymen.

W. W. R.

Argon, a New Constituent of the Atmosphere. By LORD RAYLEIGH and PROFESSOR WILLIAM RAMSAY. Washington, The Smithsonian Institution. 1896.

This paper is published by the Smithsonian Institution in the form in which it was presented in competition for one of the Hodgkins Fund prizes. It remains but to notice that it differs from the abstract which appeared in the *Proceedings of the Royal Society*,* in that it contains detailed accounts of experiments and results omitted in many cases from the abstract; and from the fuller paper in the *Transactions*,† since the latter incorporates the results of later experiments in several directions.

It may be as well to call attention to a typographical error in the formula (p. 35) which indicates the relation between the velocity of sound in a gas and the ratio of the specific heats: 'N' should be '$\sqrt{\ }$'

W. W. R.

Atmospheric Actinometry and the Actinic Constitution of the Atmosphere. By E. DUCLAUX. Washington, The Smithsonian Institution. 1896.

This paper is a translation of that presented by M. Duclaux in competition for one of the Hodgkins Fund prizes. It represents an endeavor to measure the quantity and effect of the actinic solar rays, as distinguished from the luminous and calorific, under varying atmospheric and climatic conditions.

The reagent employed for these measurements is a solution of oxalic acid; this is rapidly oxidized by actinic rays, is not affected by the luminous rays and scarcely at all by the calorific, while the reaction is but slightly exothermic. From the summary of results the following may be noted as of special interest: The 'daily combustion' varies from one day to another much more than any other meteorological phenomenon. It shows the influence of the seasons and manifestly exhibits a maximum in the

* Vol. 57, p. 265. This paper also was published in this country, *e. g.*, *American Chemical Journal*, Vol. 17, p. 225.

† Vol. 186, p. 187.