being about three times as great on the south and west margins as along the north and east coast, where two hundred feet appear to be the limit of raised marine terraces and beaches. Appended to the report are lists of the mammalia, birds, food fishes and plants found in Labrador, as well as an appendix by Mr. Ferrier on the microscopical structure of some of the rocks collected, and one by Mr. Eaton on the meteorology of the peninsula.

Frank D. Adams.
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L' Evolution de commerce dans les diverses races humaines. Par Ch. Letourneau, Professeur à L' École d' Anthropologie. Paris, Vigot Freres. 1897. Pp. 581.

Professor Letourneau has made it his special branch to write about the development of arts and institutions. In the volume before us he takes up commerce, and aims to show its beginning and its growth in the various races and nations of humanity. Beginning with animals of lower species he is obliged to acknowledge that he finds no traces of commerce among them, and tells but one doubtful story of the possible interchange of values between a bird and a man.

In the lower races he discovers still little which is really commerce. When they give in exchange they appear to think each party makes a true gift to the other, and the mercantile idea is not present. Perhaps here he overlooks a peculiarity of human nature which exists in the highest as well as the lowest civilization. There is, for instance, a sort of pride which while expecting exchange on equal terms declines to recognize it as such. It is illustrated in the American custom of 'treating.'

Leaving this aside, the author pursues his investigations among the negro races of Papua and Africa, discovering in them a strong commercial instinct. In Polynesia he recognizes a widespread commerce, but his chapter on that of Ancient America is very much short of what the reader has a right to expect. The authorities whom he quotes are mostly second-hand, such as Prescott and Bancroft, and he does not seem to be acquainted with the valuable articles of Professor Rau on this topic. Hence we are not surprised to find on page 173 the assertion that the Indians considered commerce of the least possible importance; whereas, every one acquainted with the facts knows that it was one of their most active avocations.

He is more at home when dealing with the early commerce of China, Japan, Egypt and the Arabs, who next occupy his attention. Of their activity in this direction he presents a well written sketch. The classical epochs of Greece and Rome are described in their commercial relations, and from them he passes on to mediæval and modern life, of which he gives a hasty outline. His final chapter is intended to embrace the survey of his results and the forecast of what commerce may be in the future. In this prophetic utterance he indulges in some of those dreams of a possible future society with which he delights to amuse his readers, but for which he acknowledges his hopes are faint.

The work is well printed and has a carefully arranged table of contents and a sufficient index.

D. G. Brinton.

How to Know the Shore Birds (Limicolæ) of North America. By Charles B. Cory. Boston, Little, Brown & Co. 1897. Small 4to. Pp. 89. Price in paper, 75 cents.

How to Know the Ducks, Geese and Swans of North America. By the same author and publisher. Pp. 95. Price in paper, $1.00.

These publications are a departure in the way of ornithological literature. Each consists of a key, with figures of heads, bills and tails, followed by plain descriptions of the species, with additional illustrations and a paragraph or two on the range and eggs. The illustrations are half-tone reproductions of wash drawings by Edward Knobel, and while not equal in artistic merit to those of Fuertes, Ridgway or Thompson are excellent for purposes of identification, and some are admirable as pictures, particularly the one of a group of Labrador ducks. In the case of the shore birds, where the beginner is often confused by strikingly different seasonal plumages, both summer and winter dress are shown; and in the case of the water birds having different sexual plumages, pictures of both male and female are given.

The keys do not conform to the modern

'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.