physical basis and the mechanical theory of aviation, and contains many useful and concisely solved problems that will appeal to amateurs and professionals devoted to the practical study of the aeroplane. A special commendation of the work is that it was awarded the Monthyon prize in 1911 by the French Academy of Sciences.

A. F. ZAHM

Smoke—A Study of Town Air. By J. B. COHEN and A. G. RUSTON. New York, Longmans, Green & Co. 1912.

Among the principal disadvantages attendant upon our modern civilization is the smoke produced wherever soft coal is burned. As in so many other cases, the possibility of doing away with the evil rests, to a great extent, upon the sufficient arousal of public opinion; in this instance, that there may be enacted the legislative measures necessary for the enforcing of the smokeless combustion of soft coal.

The means and methods of burning soft coal without smoke, having been the subject of numerous publications, are well known. But attention to other phases of the subject, which are so necessary for the enlisting of public sympathy, are remarkably lacking.

In point of fact, this little book by Cohen and Ruston is the first attempt to gather what little information we already possess along these lines into such form as to be accessible to and easily comprehended by the general public.

This book, therefore, takes one into a field, new to the average reader, and gives him a point of view different from that to which he is accustomed. It is, thus, eminently worth while.

The first chapter has to do with the chemical composition of soot and shows why it is obnoxious and injurious. Reliable figures are given for the amount of soot formed from a definite amount of coal burned, for the solid impurities in the air—and for the daily soot fall in various towns in England.

The effect of smoke on vegetation is treated with considerable detail and is shown in many cases to be decidedly injurious.

The effect of sulphuric acid in the air upon metal work and vegetation, here gone into at length, while interesting to know, is somewhat out of place, as the smokeless combustion of soft coal will not do away with the acid emitted from our chimneys.

The study of the diminution in the transparency of the air and the increase in fogs due to smoke forms an instructive discussion.

The chapter on the influence of coal-smoke upon health, by Dr. Ascher, is a valuable addition to the book, showing that, "there can be little doubt that coal dust smoke and soot increase the death rate from acute lung diseases."

Altogether it is a clear, concise and, above all, trustworthy collection of data concerning smoke and soot and the damage done by them.

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General Index to a Hand-list of the Genera and Species of Birds. [Nomenclator avium tum fossilium tum viventium.] Volumes I.–V. Edited by W. R. OGILVIE-GRANT. London: Printed by order of the Trustees. Sold by Longmans & Co., 39 Paternoster Row, E. C.; B. Quaritch, 11 Grafton Street, New Bond Street, W.; Dulau & Co., Ltd., 37 Soho Square, W.; and at the British Museum (Natural History), Cromwell Road, S. W. 1912. All rights reserved. 8vo. Pp. vi + 199.

Dr. Richard Bowdler Sharpe's "Hand-list of the Genera and Species of Birds" (5 vols., 8vo) was completed in 1909.[1] Although each of the five volumes (except the first, indexed with volume II.) was supplied with an index, a general index has been prepared, under the editorship of Mr. W. R. Ogilvie-Grant, Dr. Sharpe's successor in charge of the ornithological collections in the British Museum, "to supply a much-felt want." The task of amalgamating the indexes to the five volumes was done mainly by Mr. Grant's chief assistant, Mr. Thomas Wells. We are told in the

[1] Reviewed in SCIENCE, N. S., Vol. XXXI., No. 790, pp. 265–267, February 18, 1910.