

bird-portraiture, but its unrivalled merits are due to the original descriptions of the birds in their native surroundings, written by one who is intensely imbued with an all-round love of Nature, and endowed with a graceful pen—a combination which has imparted a fascination to the graphic descriptions of experiences in many cases unique. A number of the haunts were reached only after extraordinary difficulties had been overcome by the author's indomitable perseverance, and in the company of savages, some of whom were only "nominally safe." Thus were the facts respecting the home-life of certain little-known or wholly unknown species obtained, and the photographs of their abodes, which have been beautifully reproduced in photogravure, secured. The coloured plates, twenty-four in number, are excellent, especially those by Mr. G. E. Lodge and Mr. Grönvold, while a series of maps illustrating the distribution of the various species adds to the worth of a valuable and noteworthy contribution to ornithological literature.

W. E. C.

### Bütschli's Lectures on Comparative Anatomy.

*Vorlesungen über vergleichende Anatomie.* By Prof. Otto Bütschli. 3 Lieferung: *Sinnesorgane und Leuchtorgane.* Pp. iii+643-931+xiv. (Berlin: Julius Springer, 1921.) 48 marks.

THE first two parts of this text-book have already been reviewed in NATURE (in 1911, July 27, p. 104; and 1913, August 7, p. 577), and the distinctive merits of the work have been indicated. In the third part the excellence of the semi-diagrammatic illustrations and the lucidity of the exposition are fully maintained, although the author died in 1917, leaving the work unfinished. The difficult task of completing the work for this volume and seeing it through the press has been achieved with conspicuous success by Drs. Blochmann and Clara Hamburger.

The work deals with the sense-organs and the light-emitting mechanisms of both invertebrate and vertebrate animals, and, as in the preceding volumes, each structure is considered from a broad, comparative point of view, and illustrated with a wealth of diagrams. The reader can thus acquire easily a clear conception of the varied forms assumed throughout the animal kingdom by the series of sensory organs in the skin, the peripheral instruments of smell and taste, and the organs of equilibration, hearing, vision, and light-production. This method of treatment is of special interest and importance to the vertebrate morphologist. The latter experiences an increasing diffi-

culty in discovering what is known about invertebrate anatomy, some of which often becomes of crucial importance in his researches. These considerations apply with special force to the sense-organs, and especially to those of vision, the understanding of the structure of which in invertebrate animals is essential for the adequate appreciation of the nature of the nervous arrangements in the eyes of vertebrates. The vast significance of the evolution of the sense-organs and their nervous connections with the evolution of vertebrate animals gives an additional interest to the text, supplemented as it is by the fascinating series of diagrams, which have been admirably chosen and clearly reproduced.

It is unfortunate that the authors, who must have sifted a vast array of writings in collecting the material for this volume, have omitted all bibliographical references, the inclusion of which would have trebled the value of the work. This is particularly to be regretted in the case of the light-emitting organs, for it is difficult for those who become interested in the elusive physico-chemical problems of these remarkable structures to get on to the track of the biological literature relating to them.

G. ELLIOT SMITH.

### Earth-structure.

*Der Bau der Erde.* By Prof. Leopold Kober. Pp. iv+324+2 plates. (Berlin: Gebrüder Borntraeger, 1921.) 80 marks.

THIS handsomely printed work, with a frontispiece, a folded map of general earth-structure, and line-illustrations in the text, is, in spite of its nominal price, a welcome sign of scientific recovery. The absence of an index is surely an accident which its well-known publishers will redress. Perhaps the most striking feature, and one that will encourage general use, is its crisp lucidity of style. We have selected at random ten consecutive sentences. They contain a total of 133 words, and one consists of six words only. This shows the German-Austrian language at its best, and we should like to attend Prof. Kober's lectures. His main thesis is that the building of folded mountain-chains is a process of "revolution" following on one of "evolution," in which geosynclinals have been formed. A geosynclinal represents what we sometimes regard as an epoch of quiescence. Its sinking base ultimately becomes nipped between two rigid masses of the lower crust, and the sedimentary accumulation rises in folds and overfolds at the surface. Mountain-building is the close of a cycle, and is a manifestation of the continuous contraction of the sub-