

the colour blind are described. In this chapter, as in others, the author shows his appreciation of the physiological aspects of the subject. The section on photochemistry deals with the photographic process, the bleaching of the visual purple, the spectral sensibility curve of *Volvox globator*, and the photo-sensory process of the clam, *Mya Arenaria*. The two concluding chapters deal with phototherapy and dangerous light sources, such as the quartz mercury arc, iron and tungsten arcs, which emit ultra-violet radiations of wave-lengths shorter than 2930 Å.U., and cause a painful inflammation of the eyes and skin. The last chapter deals with the psychology of colour. The book is very well illustrated. F. W. EDWARDS-GREEN.

Die Fernrohre und Entfernungsmesser. Von Dr. A. König (Naturwissenschaftliche Monographien und Lehrbücher, Band 5). Pp. vii+207. (Berlin: J. Springer, 1923.) 7s. 6d.

THIS book expresses the views of one whose academic knowledge is supplemented by considerable practical experience; it contains, therefore, much information that a designer of optical instruments will appreciate. There are three sections dealing comprehensively with the various types and details of telescopes, micro-meters, and rangefinders.

The author has unconsciously rather impaired the agreeable impression of impartiality created by the text through the association of the name of his firm with so many of the instruments illustrated. For example, it might be concluded that the well-known design of dial sight which reflects so much credit upon another German firm was attributable to Messrs. Carl Zeiss.

Many of the illustrations have been reproduced from other works and are already well known, and the author has not completely solved the very difficult problem of representing without confusion the paths of rays through prisms of complex form. He describes the theoretical Ramsden eyepiece which has the field lens in the focal plane, but illustrates the practical Ramsden having the field lens $f/4$ beyond the focus. Too favourable an impression of the practical clearness of optical glass is created by indicating the absorption for $\lambda = 0.48 \mu$. The date and place of Kepler's death as given do not agree with those inscribed upon his tomb, and stereoscopic rangefinders are advocated for reasons that are no longer accepted by responsible German naval officers.

Notwithstanding these and other minor criticisms that might be expressed, Dr. König's book is an excellent one that should prove most useful to all directly or indirectly interested in the science of optical instruments. JAMES WEIR FRENCH.

Die europäischen Bienen (Apidae). Bearbeitet von Prof. Dr. H. Friese. Lieferung 2. Pp. 113-208 + Tafeln 8-13. 10s. Lieferung 3. Pp. 209-304 + Tafeln 14-19. 5s. Lieferung 4. Pp. 305-400 + Tafeln 20-25. 5s. (Berlin und Leipzig: W. de Gruyter und Co., 1922-1923.)

THE first part of this work has already been noticed in our columns. Parts II. to IV., which have recently come to hand, are devoted to an account of the behaviour, nesting habits, distribution, parasites, etc., of

typical members of the various genera of European bees. The classification adopted is essentially biological, bees being treated as solitary, social, and parasitic as the case may be. Perhaps the best feature in the book is the descriptions of the nesting habits, which are accompanied by numerous figures, and practically all the plates are devoted to various phases of this subject. The majority of the illustrations are original and of a high standard of excellence, and many of the plates are exceedingly attractive. The value of others is somewhat marred by the addition of too much extraneous scenery in the shape of hills, roads, etc., as well as buildings. The author's object no doubt is to portray the surroundings in which the species live. The genera *Osmia*, *Halictus*, and *Chalcidoma* are particularly well treated. *Chalcidoma* occupies no less than six of the plates, but the great genus *Andrena* scarcely seems to come in for its adequate share of illustration. We look forward to the appearance of the final instalment of the work, and can cordially recommend the parts already issued as a trustworthy and very readable presentation of the habits and economy of the insects of which it treats.

Elements of Natural Science. By W. Bernard Smith. Part 2. Pp. viii+268. (London: E. Arnold and Co., 1923.) 5s. 6d.

PUBLIC School science masters have not yet arrived at complete agreement as to how and what science should be taught in general education. The majority of their pupils are not destined for careers and professions in which a definite training in any one branch of science is essential; yet all, in this age which has realised that science is power, should be taught something of the scientific method, and should gain at least an introduction to each of the subjects on which personal and national welfare depend. Mr. Bernard Smith has here made an interesting attempt to steer a safe course between the Scylla of specialist teaching and the Charybdis of smattering, but in places sails perilously near the whirlpool. This Part II. is concerned with electricity and magnetism, astronomy, geology, biology, physiology, and hygiene, and the principles of agriculture. Of these the first three are handled rather more successfully than the others; but throughout the needs of an ordinarily intelligent and well-educated "man in the street" have been kept in mind.

Chemistry, Inorganic and Organic: With Experiments.

By C. L. Bloxam. Eleventh edition, revised by A. G. Bloxam and Dr. S. Judd Lewis. Pp. x+832. (London: J. and A. Churchill, 1923.) 36s. net.

THE first edition of Bloxam's textbook was published in 1867. It must evidently have undergone very extensive revision. There can be scarcely a page of the original book left. The revision in the present edition has been wisely and thoroughly done, and the book is one which will be found most useful for reference purposes in schools or institutions where large treatises are not available. It covers the whole of chemistry in an interesting manner, and the descriptions of experiments are especially noteworthy. Many of these were new to the reviewer. The book will probably be found most useful to medical and pharmaceutical students for reference purposes, although it has a wider appeal.