

Short Reviews

Principles of Animal Biology. By Prof. A. Franklin Shull, with the collaboration of Prof. George R. Larue and Alexander G. Ruthven. (McGraw-Hill Publications in the Zoological Sciences.) Fourth edition. Pp. xiv+400. (New York and London: McGraw-Hill Book Co., Inc., 1934.) 21s. net.

PROF. SHULL'S book is deservedly popular in the United States, and has passed through three editions since it first appeared in 1920. The present (fourth) edition has been thoroughly revised and contains up-to-date material upon which an interesting and instructive introductory course of zoology might very well be built. The content of the subject of zoology has undergone great changes during the last twenty years or so, and it no longer consists largely of studies of structure, a hunt for anatomical comparisons and the making of new species. It is rather the study of function and behaviour which is the present growing point of the subject. The science has in fact become very largely experimental, and in the teaching of zoology changes in the content of courses and in the method of presenting the material have been gradually appearing. In the United States these changes seem to have taken place more rapidly than in Great Britain, and Prof. Shull's book is evidently the outcome of considerable thought and teaching experience.

The book begins with a sketch of the history of biology, proceeds to consider living matter, cells and unicellular and multicellular constitution. Then follows a series of chapters on the general functions of animals, including very good general accounts of breeding habits, embryonic development and genetics, the latter with a number of problems. An account of the principles underlying classification is then given, followed by an outline grouping of the animal kingdom. The last four chapters of the book are particularly good, and it is refreshing to find ecology, geographical distribution, fossils and evolution treated in such a modern manner in a book designed for students as an introduction to the subject.

The book is illustrated with nearly 300 figures, and there is a useful explanatory glossary of technical words. A further good feature is the series of references for further reading given at the end of every chapter. These are nearly all references to modern standard books, and give the particular portions of chapters which are related to the part of the subject discussed.

Gmelins Handbuch der anorganischen Chemie. Achte völlig neu bearbeitete Auflage. Herausgegeben von der deutschen chemischen Gesellschaft. Bearbeitet von R. J. Meyer. System-Nummer 8: *Jod*. Lief. 2. Pp. xviii+xxiii+245-660. (Berlin: Verlag Chemie, G.m.b.H., 1933.) 68.50 gold marks.

WITH the appearance of this number, the volume dealing with the four halogens is complete. The present issue deals at considerable length with com-

pounds of iodine with hydrogen, oxygen, nitrogen and other halogens. Very full details are given of the well-known and often quoted equilibrium between hydrogen, iodine and hydrogen iodide, and the effects of ultra-violet radiation, the electric spark, catalysts and α -rays upon the system are all reviewed. Then follow various methods of preparing the gas and the acid solution. On the large scale, both products are generally prepared by the method commonly used in laboratories, namely, the interaction of iodine, phosphorus and water. A fairly recent American technical process is quoted in which hydrogen is allowed to react upon iodine in the presence of suitable solvents, such as water, acetic acid, carbon tetrachloride, toluene or stannic chloride under a pressure of nearly 500 atmospheres.

The physical properties of hydrogen iodide are fully detailed. The disparity between the diameters of the hydrogen ion and the iodide ion is so pronounced that the dipolar character of the compound is very seriously weakened and the molecules become almost, if not quite, homo-polar. Optical properties are recorded fully with curves showing extinction coefficients of absorption.

Amongst chemical properties we find prominence given to the oxidation of the iodide ion by various reagents and to the metallic iodides. The question of pure solid polyiodides seems to have given rise to considerable differences of opinion, but there is evidence of the existence, at any rate, of hydrates and solvates of KI_3 , KI_7 and of KI_9 . The various oxidation products of the halogens react freely with one another, often in such a fashion that an intermediate product stabilises itself by partial oxidation and partial reduction. The possibilities are very numerous and a useful summary is given of all the stoichiometric and reaction velocity equations involved in these reactions, together with references to pages in the text.

Flora of Syria, Palestine and Sinai: a Handbook of the Flowering Plants and Ferns, Native and Naturalized, from the Taurus to Ras Muhammad and from the Mediterranean Sea to the Syrian Desert. By Dr. George E. Post. Second edition, extensively revised and enlarged by John Edward Dinsmore. (American University of Beirut: Publications of the Faculty of Arts and Sciences, Natural Science Series, No. 1.) Vol. 2. Pp. xviii+928+5 plates. (Beirut: American Press; London: Oxford University Press, 1933.) 42s. net.

THIS volume completes the new (second) edition of Post's well-known flora of Syria, Palestine and Sinai. It has been revised and enlarged by J. E. Dinsmore of the American Colony in Jerusalem. The sequence of families for the Angiosperms is approximately that of the Bentham and Hooker system and the second volume includes the Gamopetalæ from the Compositæ to the Plantaginaceæ, the Incompletæ, the Monocotyledons, and the Vascular Cryptogams.