Book Reviews

The collected papers of C. S. Hudson. (Vol. I.) Raymond M. Hann and Nelson K. Richtmeyer. (Eds.) New York: Academic Press, 1946. Pp. xxxv + 898. (Illustrated.) $15.00.

To celebrate the occasion of the 65th birthday of C. S. Hudson, the Division of Sugar Chemistry and Technology of the American Chemical Society undertook the publication of these "Collected Papers" in recognition of Dr. Hudson's contributions to the chemical literature during more than four decades.

Volume I comprises 118 papers from a total of 247. The papers are placed in groups arranged according to subjects. No changes have been made in the original texts except where minor errors have been encountered. The titles of the sections follow: (I) The Forms of Milk Sugar. Physical Chemistry of Solutions. Mutarotation of Sugars. (II) Enzymes: Studies of Invertase, Amylases, and Emulsin. (III) Preparation of Sugars. (IV) Rules of Isorotation. Acetyl Derivatures of Sugars and Glycosides. (V) Lactone, Phenylhydrazide, Amide and Benzimidazole Rules.

The papers of this brilliant scientist, collected as they are here, will be indispensable to those who follow the sugar field closely. Much of the fundamental work on sugars which led to a clarification of their characteristics and their structures is found in them.

Of no minor interest is Dr. Hudson's autobiography, which is included. It is a permanent record of the life of the leading sugar chemist in the United States and one who has done much for the prestige of American science.

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X-ray diffraction studies in biology and medicine. Mona Spiegel-Adolf and George C. Henny. New York: Grune and Stratton, 1947. Pp. viii + 215. (Illustrated.) $5.50.

In the preface the authors present this book as the first "comprehensive survey on x-ray diffraction in biology and medicine in the English language." As such it is welcomed and should serve a purpose. They have also taken "the opportunity to review [their] own diversified studies in this field during the last ten years and to present them in the framework of the pertaining literature against a broader background. Since this presentation is made for the use of the biologist and research physician, purely physical and mathematical discussions have been omitted wherever it was possible to do so without sacrificing accuracy." It is in these aims and their embodiment in the text that one finds limitations to the usefulness of the book.

The physician or biologist will be prepared neither to read critically nor to conduct research reliably in the field by mastering the introductory three chapters on theory, practice, and pattern interpretation, without recourse to much wider perusal of the references cited. By avoiding or sketching briefly the more technical phases of the physics, mathematics, and crystallography of x-ray diffraction investigation, the authors have failed to furnish adequate background for even an appreciation of the scope and significance of the contributions which x-ray diffraction has and can make to biological sciences.

Chapters IV through XII summarize special aspects of diffraction studies, covering applications to carbohydrates, amino acids and derivatives, proteins, nucleic acids and nucleoproteins, muscle, lipids, nerves, steroids, and finally, bones, teeth, and concretions. Perhaps the most useful features of the book are the bibliographies at the ends of these chapters. Unfortunately, each list cannot be trusted to be complete, even up to the date (1945, some 1946) at which the references terminate. For example, work at Pasadena on amino acids, at Ames on amylose, and the more recent views of Cox on pyranose ring structure are either missing or scarcely mentioned.

In all of the discussion the vital structural significance of diffraction data is pretty much neglected. Measurement of a spacing has little but identificational importance, without relation to its crystallographic or structural implication. Often the final steps of diffraction analysis are impossible in complex systems, but where they can be carried out, even partially, the information thus gained is of primary importance and should not be slighted to avoid physical and mathematical complications. Only brief mention is given to the Fourier projections which are so rapidly becoming an essential part of the language in which the results of diffraction study are expressed.

The book is attractively bound, printed on excellent paper, and profusely illustrated. Many of the reproduced "diffractograms" seem unnecessary, however. About 60 per cent of them are of diffuse unoriented or powder type, corresponding to the unwarrantedly large proportion of the text devoted to the simpler but also less significant facts that can be deduced from diffraction-poor diagrams.

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Scientific Book Register

CLARK, HUBERT LYMAN. *The echinoderm fauna of Australia; its composition and its origin.* (Publ. 566.) Washington, D. C.: Carnegie Institution of Washington, 1947. Pp. iv + 567. $4.00, paper; $4.50, cloth.

LEIGHTON, DOROTHEA, and KLUCKHOHN, CLYDE. *The Navaho individual and his development.* Cambridge, Mass.: Harvard Univ. Press; London, Engl.: Oxford Univ. Press, 1947. Pp. xi + 277. (Illustrated.) $4.50.

MACDOUGALL, W. B. *Plants of Grand Canyon National Park.* (Rev.) (Bull. No. 10.) Grand Canyon, Ariz.: Grand Canyon National History Association, 1947. Pp. 126. $.50.

NATHAN, DAVID S., and HELMER, OLAF. *Analytic geometry.* New York: Prentice-Hall, 1947. Pp. x + 402. (Illustrated.) $3.50.

THOMAS, ISLYN. *Injection molding of plastics.* New York: Reinhold, 1947. Pp. viii + 534. (Illustrated.) $10.00.

WISELOGLE, FREDERICK Y. (Ed.) *A survey of antimalarial drugs, 1941–1945.* Ann Arbor, Mich.: J. W. Edwards, 1946. Vol. I: Pp. xi + 536; Vol. II, Pt. 1: Pp. 987; Vol. II, Pt. 2: Pp. 988–1921. $30.00.