

expected to construct correct crystal drawings if the text to which he naturally turns for comparison is lacking in this? If some of the figures had been drawn on a larger scale and then reduced these errors would have been to some extent eliminated.

Fig. 3, p. 51, is given as a combination of the plus and minus diploids. What the author has really drawn is a left gyroid (pentagonal icositetrahedron). Diploids are symmetrical to three principal planes of symmetry whereas gyroids lack these elements. The figure of chrysolite on page 105 is very poor, as the lines of intersection of the bipyramid (111) with both the macro (101) and the brachy (021) domes are incorrect.

The method of determining the position of the axes of the triclinic system is an ingenious one, being a graphic solution of a spherical triangle when three sides are given. The last chapter on twinned crystals is very instructive, as the author gives numerous practical suggestions which are of great service in the construction of these difficult forms.

The work as a whole is a marked contribution to the science of crystal drawing and is a valuable reference book in spite of the errors referred to above. WALTER F. HUNT

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The Chemical Constitution of the Proteins.

R. H. ADERS PLIMMER, D.Sc., Assistant Professor of Physiological Chemistry in, and Fellow of University College, London. In two parts. Part I. London and New York, Longmans, Green and Co. 1908.

This volume forms one of a series of monographs appearing from time to time, covering selected topics in biological chemistry and written by investigators in the subjects dealt with. The contents are divided into the chemical composition of the protein molecule and the chemical constitution of its units, or the discovery and synthesis of the amino acids. The introduction gives a list of the proteins according to the British classification followed by a complete list, with their structural formulæ, of the various protein nuclei

thus far discovered. The first section consists of a short survey of the methods employed for the decomposition of the proteins; this is succeeded by a detailed account of the method of isolation and estimation of the monamino and diamino acids, the former following the ester method of Fischer with some variations suggested by Levene and the latter employing the method described by Kossel. The results of the analyses of the various proteins made by the several authors are given in tabular form. The collection of this data and presentation in compact form forms one of the chief advantages of the book. The second section is but a compilation of data relating to the many protein nuclei covering the date of their discovery, determination of their constitution, and methods of preparations by synthesis. Some of these details have been tabulated at the end with the specific rotatory power of the natural and synthetic amino acids, mentioning by whom the observations were made. The book closes with a complete bibliography including about 500 titles and index.

The function of such a compilation must naturally be somewhat circumscribed. It can only be of value as a bibliography mainly and as a source of supply of somewhat complete data for the busy teacher who would utilize this book rather than investigate the original communications. The synthetic reactions are described by equations with structural formulæ which are undoubtedly a valuable aid to their proper understanding and elucidation. The contents are too detailed for the student; investigators and teachers would probably prefer to consult the original articles.

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By PHILIP B. HAWK, M.S., Ph.D., Professor of Physiological Chemistry in the University of Illinois. Second edition, revised and enlarged. Philadelphia, P. Blakiston's Son & Co. 1909.

In the revision of the book the author has placed at the beginning a new chapter of

twenty pages discussing the enzymes, and the nomenclature of the proteins has been altered to correspond to the system adopted by the American Chemical Society. Otherwise the changes limit themselves to additions of new reactions in order to bring the book up to date. Although the book contains more material, the publishers have decreased the margins and thickness of the paper, so that the book appears smaller. It becomes somewhat difficult to indicate the exact purpose of this volume. At present it is in the transitional stage between a practical manual and a text-book. It is too bulky for a laboratory book; there is too much discussion of theoretical considerations, and many things are introduced which should not under any conception come into a laboratory course in physiological chemistry, *e. g.*, microscopical examination of urine for casts, etc., and counting of red and white blood cells.

Fortunate indeed would be the instructor of physiological chemistry in a medical school who could be allowed enough time in the curriculum to cover one half of the material between the covers. The book serves an excellent purpose as a reference book of test reactions, but in their multiplicity the student or the practitioner who wishes to become acquainted with a few of the most reliable tests would find himself bewildered and require additional advice in the matter. Were it not for its size and the necessity for such a decided picking and choosing of topics adapted for student laboratory work, the book would serve its purpose admirably. The contents are thoroughly reliable and the tests are given with sufficient detail so that the results should be satisfactory. The many figures and colored plates scattered throughout are excellent.

Upon the whole, the author is to be complimented and those interested in the subject congratulated upon the benefit derived by the publication of the revised edition.

H. C. JACKSON

ANTHROPOLOGICAL PUBLICATIONS OF THE UNIVERSITY OF CALIFORNIA IN 1908

THE University of California Publications in American Archeology and Ethnology have

received during 1908 the addition of nine papers. These comprise volume 6, numbers 1, 2 and 3; the completion of the seventh volume, numbers 2 and 3; and volume 8, numbers 1, 2, 3 and 4. These papers embody the further results of the Ethnological and Archeological Survey of California which the university undertook a number of years ago, and which has since been pushed rather steadily towards completion. The weight of work published in the past year has fallen upon the ethnological side of the problem, rather than upon the archeology and linguistics of the state as in previous years.

In this definite field of ethnology a balance has been maintained in some degree between the northern, the southern and the central portions of the state. The two bulkiest papers of the period, Dr. Barrett's "Ethno-geography" and "Basketry" of the Pomo, treat of the peoples of the north-central region. These two are the most exhaustive treatments of their type that have appeared so far. The minuteness of the author's information concerning the region rests on long residence among the Pomo, in addition to extended scientific study. As a counterpoise to this work on the Pomo, four less laborious papers have been devoted to the "Mission" Indians of the extreme southern part of the state. Two of these latter are by Dr. Kroeber and the other two by authors from outside the university. As regards the central portion of the state, the rather varied territory occupied by the Miwok or Moquelumnan tribes offers the problem which is taken up in two of the three remaining papers.

An entirely different aspect of the ethnology of California is invaded by the final paper of the group, by Dr. William J. Sinclair. This paper enters with effect into the question of the geological relation of human remains and artifacts within the state of California. The range covered in the past season's publications is therefore seen to be rather wide. They perhaps contribute more manifoldly than is usual in a brief twelvemonth, to the general information concerning the state on its many sides as an ethnological field.