dicates a beginning, as there is an almost unexplored gap between northern California and Prince William Sound, while among the Aleutian Islands pycnogonids are rather abundant, and would probably, on thorough exploration, add considerably to the number of four species now known from that region.

The book concludes with an excellent index and well sustains the high reputation which the earlier volumes of this important series have maintained.

W. H. Dall.

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Chemie der Eiweisskörper. Von Dr. Otto Cohnheim, A. o. Professor an der Universität Heidelberg. Zweite vollständig neu bearbeitete Auflage. Braunschweig, F. Vieweg und Sohn. 1904.

The first edition of Cohnheim's 'Chemie der Eiweisskörper,' published in 1900, speedily gained a wide circulation among physiological chemists and won for itself a place as a most useful book of reference. No other comprehensive and satisfactory compilation of the literature on proteids had been attempted since Drechsel's article in Ladenburg's 'Handwörterbuch,' published in 1885. The appearance of a new edition by Cohnheim, so completely revised in some parts that it almost deserves to be called a new book, testifies the popularity which the work has enjoyed and above all the rapid progress which the study of proteid chemistry has made in this brief period of four years. An era of classification in which new proteids were isolated and their physical and chemical properties investigated, has been followed by renewed interest in the chemical structure of the albuminous substances. The recent fruitful researches of Emil Fischer, Kossel and others bear witness to the advances which improved methods of study can inaugurate. Accordingly, we find in the new volume an entire chapter devoted to the chemical constitution of the proteids. This, as well as other parts of the book, is characterized not only by the completeness and accuracy of the list of references to the literature, including the earlier pioneer work, but also by the exercise of critique in the presentation of such detailed data. It is this selective and unbiased treatment which makes a compilation readable.

Without attempting any detailed review, it may be of interest to refer to some of the more noteworthy changes or innovations in the present edition. The molecular structure characteristic of the proteids and serving to define them is summarized in the following words:

> Die wichtigste Gruppierung ist nun sicher die oben besprochene Säureamidbindung der α-Amidosäuren, und man kann daraufhin Körper wie das Glycylglycin und seine Homologen als die einfachste Eiweisskörper bezeichnen. Richtiger ist es aber wohl, Kossel zu folgen, und auch die zweite Verbindungsform, wie sie im Arginin vorliegt, als notwendig für den Eiweissbegriff anzusehen. Danach hat man als Eiweisskörper Säureamide aus α-Amidosäuren zu bezeichnen, von denen eine das Arginin ist.
>
> Unter diese Definition fallen zweifellos alle Peptone und auch die komplizierteren Peptide, ebenso die Protamine, deren Abtrennung von den Eiweisskörpern bei den breiten chemischen und genetischen Übergangen zwischen ihnen und den anderen Eiweisskörpern durchaus willkurlich erscheint. Die von Löw und Hofmeister versuchte Heranziehung des physiologischen Elementes hat bei einer chemischen Definition Bedenken und ist unzulässig, seit es wahrscheinlich geworden ist, dass der Tierkörper sein Eiweiss aus allen stickstoffhaltigen Verbindungen aufbauen kann, die für seine Fermente zugänglich sind (p. 71).

The discussion of the physical and physico-chemical properties of proteids has been modified to conform with changing ideas. This is especially evident in Chapter V. in the treatment of the salt-like compounds of the proteids. The twofold behavior of the latter towards acids and bases, assigned in the earlier edition to their character as pseudo-acid and pseudo-base (Hantzsch), has given way to a somewhat different interpretation. The unique combining properties of the proteids are now attributed by the author to the amido-acid complexes which form the molecule, since simple amido-acids are known to show precisely similar reactions. In the classification of the proteids no notable change is introduced. Casein is still referred to under the most unsuitable designation of nucleoalbumin, not, however, without at length indicating its specific character as a phosphorus-containing

compound (phosphorhaltiges Eiweiss). The vegetable proteids have not yet received the attention which, in the reviewer's opinion, they deserve. The crystallized vegetable proteids are dismissed with a few words (p. 149) and without any adequate references to the methods of obtaining them, although their preparation has already assumed commercial proportions; the crystallization of egg- and serum-albumin, on the other hand, is carefully considered. It must be said to the credit of Professor Cohnheim that he has, in contrast to most continental writers, shown appreciation of the important work by American investigators in the domain of the vegetable proteids in the present edition.

The greatly enlarged chapter (II.) on cleavage products, beginning with a brief historical review, is excellent in every respect and ought to be warmly welcomed for its exhaustive reference list. The compounds obtained by the action of acids or digestive enzymes are very properly discussed in a separate group as fundamental (primäre Spaltungsprodukte); and the quantitative relations are compiled so far as known. The existence of diaminoacetic acid (Drechsel) is now rendered doubtful (p. 33). In principle the distinction between anti- and hemi-proteid derivatives is still maintained. The chapter on albumoses and peptones has been adapted to the modified system of analysis and nomenclature introduced by the Hofmeister school, the so-called peptids and plasteins also being added. A brief résumé of the behavior of proteids towards the aniline dyes (p. 114) will interest histologists.

The special part of the book, dealing with the individual proteids, is more encyclopædic in character and the innovations are naturally less conspicuous. One receives everywhere an impression of first-hand acquaintance with the literature and must admire the industry and good judgment of the author. Finally, even the most casual examination of this work of three hundred pages can not fail to impress the reader with the growing importance and interest which the study of the proteids is attaining in biology. LAFAYETTE B. MENDEL.

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SCIENTIFIC JOURNALS AND ARTICLES.

The *American Journal of Science* for October contains the following articles:

'New Devonian Formation in Colorado': W. CROSS.

'Upper Devonian Fish Remains from Colorado': C. R. EASTMAN.

'Fossil Turtles belonging to the Marsh Collection in Yale University Museum': O. P. HAY.

'Air Radiation': C. C. HUTCHINS and J. C. PEARSON.

'Uintacrinus and Hemiaster in the Vancouver Cretaceous': J. F. WHITEAVES.

'Separation of the most Volatile Gases from the Air without Liquefaction': J. DEWAR.

'Absorption and Thermal Evolution of Gases occluded in Charcoal at Low Temperatures': J. DEWAR.

'Studies in the Cyperaceæ': T. HOLM.

The Popular Science Monthly for September contains articles on 'The Development of the Theory of Electrolytic Dissociation,' by Svante Arrhenius; the 'Conservation of Human Energy, Preservation of Beauty,' by J. Madison Taylor; 'Art in Industry,' by Frank T. Carlton; 'Some Plants which Entrap Insects,' by Forrest Shreve. This last is very fully illustrated, and calls attention to some of the insects that are adapted for life on or about some insectivorous plants. 'Hebrew, Magyar and Levantine Immigration' is discussed by Allan McLaughlin in an article which is not very encouraging for the United States, in general, and decidedly discouraging to dwellers in New York. Richard L. Sandwick makes a plea for 'More Men (as teachers) in Public Schools,' Charles R. Eastman presents 'A Second Century Criticism of Virgil's Etna' and Robert MacDougall considers 'The Evolution of the Human Hand.' The concluding article, by Simon Newcomb, tells of the International Congress of Arts and Science at St. Louis.

DISCUSSION AND CORRESPONDENCE.

A RECENT PALEONTOLOGICAL INDUCTION.

THE concept of arboreal 'horses' already thrice discussed in the current volume of SCIENCE, or even concepts of fabled Pegasi, are, from a philosophical standpoint, rational and legitimate products of human conscious-