

School, Chicago. Second Edition, revised, with 42 Illustrations. Philadelphia: P. Blakiston's Son and Co. 1909. Price, \$2.50.

A well-known writer (Professor Münsterberg) has recently called attention to the indifferent revision to which the average American text-book is subjected in the preparations of successive editions, in contrast with the more effective German editorial custom. This criticism cannot be applied to Professor Long's "Physiological Chemistry," the first edition of which was reviewed in THIS JOURNAL in 1906. It is satisfactory to note that the new edition has embodied the essential suggestions made in the reviewer's first criticism. The favorable impression there recorded is now enhanced by various useful additions to the volume. They embody a more adequate treatment of the subject of urine, including a chapter of well-selected reactions and methods applicable to urinary analysis. The subject of proteins has received a more up-to-date presentation. The classification and nomenclature introduced by the joint committee of the American Physiological Society and the Society of Biological Chemists (and which corresponds, with minor deviations, to that of the English societies) is referred to, but not followed by the author. In the reviewer's opinion it is to be regretted that Professor Long has not adopted this classification, which seems likely to find wide acceptance in American laboratories. The use of the word "albumin" in a generic sense, the retention of the term "proteid" now about to be discarded by international consent, the employment of the misleading term nucleo-albumin for such compounds (phosphoproteins) as casein and its consequent confusion with nucleoprotein (or Long's nucleoproteid) are unfortunate. The word protein is accepted by the author in many places, yet expressions such as Bence Jones proteid are still retained.

The text has been thoroughly revised, by appropriate omissions as well as by numerous timely additions. Even details in the laboratory directions have been subjected to improvement. As illustrations of this, the modified discussions of protagon, of absorption from the stomach, and of the digestion of fats in that organ, may be quoted. Although one may not always agree with the author's interpretation of certain minor topics which are still subject to controversy, it is safe to say that the revised text-book of Professor Long will meet with a favorable reception because it covers so well the field of instruction usually traversed in physiological chemistry.

LAFAYETTE B. MENDEL.

**Grundlagen und Ergebnisse der Pflanzenchemie.** Nach der Schwedischen Ausgabe bearbeitet von H. EULER. Zweiter Teil: Die allgemeinen Gesetze des Pflanzenlebens. Dritter Teil: Die chemischen Vorgänge im Pflanzenkörper. Braunschweig: Friedrich Vieweg und Sohn. Price, bound, 8 M.

The object of the second volume is to give a brief summary of those principles of physical chemistry which are known to exert an influence

on the phenomena of plant life. Besides a short introduction showing the value of the application of physico-chemical laws to researches in photochemistry, the book contains nine chapters on the gas laws, osmotic pressure, permeability of vegetable membrane, diffusion, mass action, dissociation, solubility, colloids, surface tension, reaction velocity, catalysis, plant enzymes, influence of temperature on chemical reactions, optical isomerism and optical activity. The treatment is brief, elementary and very lucid. In the chapter on catalysis the author rejects Bredig's hypothesis, as lacking in experimental proof, of the catalyzer causing the formation of intermediary products. According to the author, the action of the catalyzer consists in increasing the concentration of the active ions. Thus, the accelerating influence of acids on the hydrolysis of esters is ascribed to the formation of highly dissociated salts of the acids and the esters. In the chapter on the solubility of non-electrolytes in salt solutions the author's results are tabulated, showing the numerical values of the lowering of the solubility for a large number of salts. The chapters on colloids and plant enzymes are exceptionally well elaborated.

The third volume is the most interesting of the whole book. It consists of twelve chapters on the various phenomena taking place in the body of a living plant. Attempts are made to exactly describe these phenomena, and the different theories proposed for their explanation by means of chemical or physico-chemical principles are carefully sifted and tested in the light of well-established experimental data. The book is strictly up to date and is full of suggestions for new and valuable investigations. While it is disappointing to admit that our present state of knowledge is very inadequate for presenting a true picture of the inner workings of plant life, the book serves a useful purpose in bringing together the results of reliable investigators and summing up those conclusions which have been established beyond doubt. The book will form a very valuable acquisition to every well-equipped library. The general make-up of the two volumes is very good. The book contains an author's index, a subject index and a table of corrections. Very few clerical errors have been overlooked. On page 5, lines 22 and 29 from the top, the number 0.821 should be replaced by 0.0821. In the formulas at the bottom of page 6,  $t$  should be replaced by  $s$ .

H. M. GORDIN.