Progress in Biochemistry

Annual Review of Biochemistry. Edited by James Murray Luck. Vol. 3. Pp. viii+558. (Stanford University, Calif.; Stanford University Press; London: H. K. Lewis and Co., Ltd., 1934.) 5 dollars.

RESEARCH workers and others interested in biochemistry have already begun to look forward to the date of the appearance of this review of the literature of the previous year. The volume appears with commendable punctuality; it is once again international in character, the twenty-six sections being written by experts working in Europe as well as in America. There is a tendency to make the reviews more critical in nature and less like mere reports: they gain in value accordingly.

A number of new subjects are selected which might be described as topical; in some of these a good deal of confusion exists, so that a critical review helps to bring clarity; in others there is definite progress to record. A stage is being reached when more definite views as to the course of metabolism are emerging, as, for example, the series of changes during glycolysis in muscle for which a new scheme has been put forward by Embden, whose tragic death is so greatly to be deplored, and substantiated by the work in particular of Myerhof. The series of changes from glycogen and glucose to lactic acid involving the formation of hexosediphosphate, the intermediate formation of pyruvic acid among other substances, and the action of enzymes at various stages, illustrate the complexity of the fermentation process, which not so long ago was regarded as a direct simplification of the glucose molecule. Even the phosphorylation is complex, for it apparently requires a co-enzyme system of adenosinetriphosphate, magnesium and inorganic phosphate. In explaining metabolism the biochemist seems to have abandoned any hope of simplicity.

One of the most useful reviews is that of Rosenheim and King on the sterols, a subject in which brilliant progress has been made. A new cholane formula devised by these authors which consists essentially of a reduced phenanthrene ring system has satisfied all the tests applied to it, and its adoption has acted as a stimulus to other work as, for example, the constitution of the œstrogenic hormones established by Marrian and Butenandt. It is remarkable that the phenanthrene nucleus is common to such physiologically active substances as calciferol, cardiacglycosides (strophanthin), toad poison (bufotoxin), carcinogenic hydrocarbons and œstrogenic hormones.

Hormones and vitamins still attract attention, likewise the animal pigments. A novel review is that on energy metabolism in nutrition, complete with symbols *SDA* and *BMR*, which is disproportionately long. On the other hand, the summary of biochemical and nutritional studies in the field of dentistry is a welcome sign of the entry of chemistry into this important subject.

More than a word of praise should be accorded to the excellent structural formulæ and the general printing of the book. E. F. A.

Short Reviews

Geomorphologie. Von Prof. Dr. Fritz Machatschek. Zweite Auflage. Pp. iv+154. (Leipzig und Berlin: B. G. Teubner, 1934.) 4.50 gold marks.

DURING the fifteen years which have elapsed since this little book first appeared, the science of geomorphology has undergone certain marked changes both in scope and application. This is seen, not least, in the important results which have been obtained by the application of geomorphological principles to the elucidation of problems connected with the deformation of the earth's crust, especially within the belts of young fold mountains. It is an important branch of geographical as well as geological science and, for this reason, a short yet comprehensive account of modern methods and results, suitable for the student, is very desirable. The present volume provides such an elementary textbook, and forms an admirable introduction to the study of the surface morphology of the earth.

The subject is treated from the genetical point of view throughout the book. For this purpose two main methods of investigation are employed: (1) a consideration of the different forces active at the surface of the earth and their ability to produce land forms; (2) a critical analysis of existing land forms in relation to their origin and development.

The first four chapters are of a general nature and deal with the physical and chemical forces which can be regarded as active agents in the modification of the earth's crust. The remainder of the book is devoted to a critical analysis of land forms under varying climatic and structural conditions. Five main types are recognised as follow: (1) the normal cycle of erosion; (2) erosion in humid climates; (3) erosion under polar conditions; (4) erosion in arid climates; and (5) islands and coasts. Within each type the modifying influence of structure is fully discussed.

Finally, the author provides a most useful appendix in which about one hundred terms of foreign origin are defined. The concise yet comprehensive nature of this little book should recommend it as one of the most useful textbooks available for the use of the elementary student.