The discussion of purines, pyrimidines and proteins is appropriately and logically followed by the last chapter which gives a clear account of the apo- and co-enzymes of the oxidation-reduction group. Spectroscopy has played a fundamental rôle in the study of these systems; in fact, the only accurate and specific method for determining the activity of many of the coenzyme linked enzymes is the one provided by the spectrograph.

The author has rendered a great service to the science of spectroscopy as applied to the study and elucidation of problems of biochemical interest. The world-renowned and the progressive firm of Adam Hilger has sponsored the publication of this volume.

Annual Review of Biochemistry, Vol. XII. By James Murray Luck and James H. C. Smith. (Annual Reviews, Inc., Stanford University P.O., California), 1943. Pp. ix + 704 Price $5.00.

The impression created by a cursory glance of the Annual Review for 1943, is one of satisfaction that the progress of biochemical science has not been appreciably affected by the unhappy and emergent conditions imposed on scientific research by the global war; the volume of work as reviewed in the volume appears to be substantial in spite of the fact that much of the work conducted in the central and occupied Europe and in Japan has not generally been available to the reviewers.

The volume consists of twenty-four reviews and covers as usual, the fields of biological oxidations and reductions, enzymes, harmones, vitamins and viruses, metabolism of carbohydrates, fats, proteins, amino acids, minerals and sulphur compounds, the chemistry of steroids, lipins, carbohydrates, proteins and amino acids. Other topics reviewed include animal pigments, synthetic drugs, photosynthesis, carbon-dioxide assimilation by heterotropic organisms, electron microscope in biology and micro-chemistry.

The fat-soluble vitamins has been reviewed by Hickman who is one of the pioneers in the application of the principles of molecular distillation to the isolation and production of integrally pure vitamins and vitamin concentrates. He refers to some of the spectacular achievements in this field, still in the course of publication. The occurrence of what the author calls a post-vitamin (kitol) in whale oil, which on simple distillation gives rise to vitamin A, has been announced. This pyrolytic conversion of kitol into vitamin A represents the first instance of the *in vitro* transformation of a pro-vitamin into a vitamin. The next few years will no doubt witness a rapid development not only in the chemistry and biogenesis of this interesting product but also in the commercial production of vitamin A from this source.

The assimilation of carbon-dioxide by heterotropic organisms has formed the subject-matter of several reviews during the last two years. Another review on the same subject by one of the foremost workers in the field deals with the phenomenon as revealed by micro-organisms and serves to elucidate the mechanism and significance of carbon-dioxide assimilation. Attention should be specially invited to the thought-provoking review on the water-soluble vitamins by Roger J. Williams, who has discussed and critically appraised such of those pieces of work "which contribute new and crucial information regarding the chemistry or bicchemistry of vitamins" and "which are most stimulative of further research along these lines". The relation of the vitamins of the B-complex to general metabolism, to embryonic development, to chemo-therapy, to harmonal control and to some of the diseases like pernicious anæmia and cancer. Particularly interesting is the suggestion that the B-vitamins influence the mental and psychological qualities in man. Reference is made to the unsatisfactory state of the chemistry of pyridoxin and evidence has been adduced to the occurrence of a pseudopyridoxin which, towards certain organisms, is a thousand times more active.

There is a review on the Electron microscope in Biology by L. Marton, a subject which is coming into practical prominence in recent years. With the aid of this new and powerful tool, deeper insight has been gained into the morphology of micro-organisms, the architecture of viruses and the adsorption phenomena.

The chemistry of viruses is discussed by Hoagland, with special reference to the animal viruses which have not been obtained in a state of the same degree of purity which characterises plant viruses. The author sounds a note of warning that "as a consequence of the great advance which has been made in an understanding of the properties of plant viruses, there has been * * * a too hasty extension of ideas gained from these studies to the formation of over simplified concepts of viruses in general, and animal viruses in particular".

In the preceding paras, reference has been made only to a few of the more important high-lights of biochemical research reviewed in the volume. Biochemical investigators throughout the world are familiar with these publications and will continue to eagerly look forward to its annual appearance.