erythromyeloblastosis. The brief article by K. M. Smith on "Morphology and development of insect viruses" is, as might be expected, stronger on morphology than on development.

The review by Maramorosch of the "Multiplication of plant viruses in insect vectors" is a convincing presentation of the evidence that certain viruses have both insect and plant hosts. Further evidence for this conclusion is presented in the paper by L. O. Kunkel on "Cross protection between strains of yellows-type viruses." Interference between related strains of the aster yellows virus occurs in the insect host as well as in the plant host. The chief criticism that one might make concerns the editorial policy of including a review on the "Current status of bacterial transformations" by Ephrussi-Taylor in a volume entitled *Advances in Virus Research*. There has been no dearth of good reviews on bacterial transformation in recent years, and there are many neglected topics that might more legitimately be classified as virus research. In science as in politics there is often a maldistribution of press agents.

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A Symposium on Inorganic Nitrogen Metabolism: Function of Metallo-Flavoproteins. Sponsored by the McCollum-Pratt Institute of the Johns Hopkins University. William D. McElroy and Bentley Glass, Eds. Johns Hopkins University Press, Baltimore, 1956. 728 pp. Illus. $10.

The sixth annual symposium of the McCollum-Pratt Institute is reported with the very high standard of excellence that is now expected. The subject is a very involved one with sufficient exact knowledge in some aspects to afford points of departure for the more unknown parts such as the reduction of nitrite to the level of ammonia.

Four leading topics are the reduction of nitrate and nitrite, the processes of denitrification, the nature of xanthine oxidase, and the significance of metalloproteins in electron transport. The functioning of molybdenum in nitrate reduction, xanthine oxidation, and nitrogen fixation is interwoven with the agricultural observations on its essentiality for plant and possibly animal nutrition. Other topics are nitrification, nitrogen fixation, and ammonia metabolism. There are 36 articles contributed by 62 authors, covering about all that is known on the several topics except that of electron transport. Each is well bulwarked with diagrams and tabular material.

Recorded discussions are an important part of these symposia. In this instance, they are extensive (60 pages) and serve to bring out interesting parts of the topics as well as to present some original short contributions. They are unusual, too, because they do not stray far from the central theme.

Bentley Glass again has supplied an excellent summary of the symposium (63 pages) showing his capacity both as an editor and as a dispassionate student of what others find. If one has an interest in the subject but is not a research worker in any of the several aspects, he should read this summary first and thus be led back to the original works.

An instance singled out by Glass exemplifies the tone of the work. Speaking of the work of Helmut Beinert and Frederick L. Crane on fatty acid oxidation, he quotes, " 'When we proceed to "isolate" these enzymes we wreck this whole edifice and obtain the associated flavoprotein dehydrogenases as one fragment and the connecting leads, electron transferring flavoprotein and the diaphorase, as another fragment. The terminal electron-transferring system is what we flush down the drain as insoluble. . . . We are then surprised about the headaches we experience in trying to reassemble the parts.' " Glass adds on his own account, "Perhaps the most significant change in point of view in biochemistry in recent years is, in fact, the growing realization on the part of biochemists that they will ultimately have to take into account the existence of organization on the biological level."

An adornment of the time is surely the great progress that is being made in all aspects of enzymology and in knowledge of the pathways of biological reactions. No more faithful picure can be gained of this scene than from the reports of these symposia.

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The Blood-Brain Barrier with Special Regard to the Use of Radioactive Isotopes. Louis Bakay. Thomas, Springfield, Ill., 1956. 154 pp. Illus. $5.50.

This book is primarily concerned with the penetration of radioactive ions into normal and abnormal brain tissues. The book is written within the framework of the author's personal experience with the uptake of phosphorus-32 labeled inorganic phosphate; only two pages are devoted to the uptake of other ions by brain tissue. Most of the information presented was derived by the author from autoradiography of brain slices and from direct counting of brain tissue samples following the intravenous injection of radioactive phosphate. Of the 32 illustrations, 18 are autoradiographs and 12 depict the temporal and spatial distribution of phosphorus-32 following its injection into patients and experimental animals. The author has had considerable experience with the differential uptake of phosphorus-32 by brain tumors, and the section of the book that deals with this topic will be of particular interest to neurosurgeons.

The book is written loosely from the point of view of style, organization, and scientific accuracy. Permeability is treated throughout in terms of penetration rates without consideration of either the driving force or the area available for the penetration process. In addition to conceptual errors, there are numerous grammatical mistakes and typographical errors. Direct quotations from other authors are not always provided with quotation marks. The comprehensive title and chapter headings in the table of contents may be somewhat misleading. There are 12 chapters that nominally cover the history, anatomy, physiology, and pathology of the blood-brain barrier. Actually, the book deals only superficially with these topics, and the reader who seeks a scholarly presentation of the field as a whole may be better advised to read the excellent chapter on cerebrospinal fluid given in Davson's *Textbook of General Physiology*.

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Bone, an Introduction to the Physiology of Skeletal Tissue. Franklin C. McLean and Marshall R. Urist. University of Chicago Press, Chicago, Ill., 1955. xii + 182 pp. Illus. $6.

This is the first of a series of publications in *The Scientist's Library: Biology and Medicine*. The object of the series can be inferred from the following statement by Peter P. H. De Bruyn in the preface: "The authors have been asked to emphasize introductory concepts and problems, and the present status of their subjects, and to clarify terminology and methods of approach instead of limiting themselves to detailed accounts of current factual knowledge. The authors have also been asked to assume a common level of scientific competence rather than to attempt popularization of the subject matter."

The topics covered in this book are bone as a tissue; histogenesis of bone; structure and chemical composition of the bone matrix; chemistry and crystal structure of the bone mineral; dynamics of calcification; enzymes and bone; re-