Only a few relatively minor defects are apparent. The bibliography might well have been made more extensive. Its 80 references include only a few reviews and chiefly recent articles from which (one hopes) it should be possible to trace back the relevant literature. In view of the role of vitamin A in keratinization in vertebrate tissue, the statement (p. 107) that it has no role apart from production of visual pigments may be questioned. It would have been of interest to include a discussion of the metabolic role (or of the little that is known about it) of the numerous symbiotic microorganisms of insects. But these are small matters compared to the positive values of this highly readable book.

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Radiation Research

Advances in Radiation Biology. vol. 1. Leroy G. Augenstein, Ronald Mason, and Henry Quastler, Eds. Academic Press, New York, 1964. x + 285 pp. Illus. $11.

Until recently there were no review series devoted especially to the biological aspects of radiation research. Now there are two; the one reviewed here, *Advances in Radiation Research*, and *Current Topics in Radiation Research*, which was reviewed in the 7 May 1965 issue of *Science*. It is regrettable that this duplication has occurred. Both volumes contain well-written articles, but there is certainly no need for two review series in this one field. It is also regrettable that the present series, which offers no more in content than the other, should be appreciably more expensive.

In the first article, on the radiation chemistry of aqueous solutions, Harold A. Schwarz gives a very clear, succinct picture of the present knowledge of the radiation chemistry of water. The evidence for various products of irradiated water is summarized and evaluated, and some emphasis is placed upon the importance of rate constants.

In another chapter Gordon Tollin provides an excellent review of the various physical processes in photosynthetic energy conversion. He discusses the absorption and emission of light, energy transfer, and electronic charge migration, with special emphasis on photosynthetic pigments in vitro. Attempts are made to relate these theories and observations to the energy conversion processes in photosynthesis, but they demonstrate the difficulty in making the connection between the simplified in vitro systems and the organized system in the cell.

Donald E. Wimber's chapter on intracellular irradiation with tritium should be read by all those who use this radionuclide for labeling purposes, for it is clear that the biological effects of the radiation from tritium are not negligible in many situations. Wimber gives a well-balanced account of the still rather scanty evidence on this problem.

The effects of small doses of radiation, in the order of a few tens of rads down to even fractions of a rad, are reviewed by Arne Forssberg. The information on this subject has been quite scattered, and it is valuable to have it brought together in a careful and critical review.

The chapter by J. Liebster and J. Kopoldová, on the radiation chemistry of amino acids, is a long and careful compilation of the many reactions for which there is some evidence; each amino acid or group of amino acids is discussed in turn. The chapter will probably be of great use to investigators in this field, but it will be less useful than the other chapters to those who want a succinct picture of a field other than their own.

In the final chapter, "The relative role of ionization and excitation processes in the radiation inactivation of enzymes," Leroy G. Augenstein, Tor Brustad, and Ronald Mason emphasize the theory of energy absorption and conversion processes. These authors make a particular point of studies on the temperature dependence of inactivation by radiation and point out the difficulties with the simpler ionization models for radiation action.

In general this is a well-written volume that will repay reading by anyone in the field.

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Erratum: In my review of *Principles of Dynamics*, by Donald T. Greenwood [*Science* **148**, 810 (1965)], I cited errors in Problem 5-9 and Eqs. (8-308). The author has shown me that he is in fact correct in both instances.—E. E. ZAJAC.

New Books

General

From Semaphore to Satellite. Anthony R. Michaelis. International Telecommunication Union, Geneva, 1965. 343 pp. Illus. $9.50.

Galileo: The Man, His Work, His Misfortunes. James Brodrick. Harper and Row, New York, 1965. 152 pp. Illus. $3.50.

Grasses of the Texas Coastal Bend (Calhoun, Refugio, Aransas, San Patricio, and northern Kleberg counties). Frank W. Gould and Thadis W. Box. Texas A&M Univ. Press, College Station, 1965. 197 pp. Illus. $3.25.

The Habitable Earth. Ronald Fraser. Basic Books, New York, 1965. 155 pp. Illus. $4.50. Science and Discovery Series.

Hegel: Reinterpretation, Texts, and Commentary. Walter Kaufmann. Doubleday, Garden City, N.Y., 1965. 498 pp. $6.95.

Human Diversity: The Nature and Significance of Differences among Men. Kenneth Mather. Free Press (Macmillan), New York, 1965. 134 pp. Illus. $5.95.

An Illustrated Elementary Classification of Minerals, Rocks, and Fossils. H. C. Curwen. Pergamon, London; Macmillan, New York, 1965. 195 pp. Illus. $6.50.

Industrial Wastewater Control. A textbook and reference work. C. Fred Gurnham, Ed. Academic Press, New York, 1965. Twenty-four papers on the following topics: Food products—Animal (4 papers); Food products—Vegetable (4 papers); Mining (3 papers); Mineral products (4 papers); Manufactured products (6 papers); and General industries (3 papers). Chemical Technology Series of Monographs, edited by Raymond F. Baddour.

Mental Retardation: Its Nature and Incidence. A population survey of the state of Delaware. Joseph F. Jastak, Halsey M. MacPhee, and Martin Whiteman. Univ. of Delaware Press, Newark, 1963. 204 pp. $6 (order from the University Bookstore, Univ. of Delaware).

Missions to the Niger. vol 1, *The Journal of Friedrich Hornemann's Travels from Cairo to Murzuk in the Years, 1797–98*; [and] *The Letters of Major Alexander Gordon Laing, 1824–26*. E. W. Bovill, Ed. Published for the Hakluyt Society by Cambridge Univ. Press, New York, 1964. 420 pp. Illus. $7.50.

The New Priesthood: The Scientific Elite and the Uses of Power. Ralph E. Lapp. Harper and Row, New York, 1965. 254 pp. $4.95.

On the Nature of Things. Lucretius. Wendell Clausen, Ed. Translated by H. A. J. Munro. Washington Square Press, New York, ed. 2, 1965. 205 pp. Paper, 60¢.

Physiatric Dictionary. Glossary of physical medicine and rehabilitation. Herman L. Kamenetz. Thomas, Springfield, Ill., 1965. 181 pp. $6.75.

Priestly Lectures. The 39th annual lectures (April 1965). pt. 1, *Chemical and Biological Studies with Deuterium* by Joseph Katz; pt. 2, *Chemistry in Liquid Metal Solvents* by Harold M. Feder, Phi Lambda Upsilon, Pennsylvania State Univ., University Park, 1965. 145 pp. Illus. Paper, $3.25.

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