

and experimental approaches to this very timely and practical problem. Alexander's paper summarizing his systematic studies of primary chemical effects of radiation, using certain polymers as models, is outstanding. His experimental work, using appropriate polymers with selected additives and aromatic side chains, has demonstrated the occurrence in these systems of a number of postulated mechanisms that indicate that the so-called direct effects of ionizing radiation on molecules are not necessarily inevitable, but may be subject to a variety of modifying factors.

For those who are especially interested in minimizing the effects of whole-body radiation in mammals, there are several papers on the subject with lively discussions by Bacq, Patt, Mogat, Alexander, and others. The reader interested in enhancing radiation effects on tumors will be fascinated by Mitchell's report of his extensive studies with radiosensitizers.

In the field of genetics, there are five papers with discussions dealing with the mechanisms involved in chromosome breaks and rearrangements. In addition, there are interesting papers dealing with the effects of physiologic state, ion density, types of ionizing radiation, and post-irradiation factors on the number and nature of the surviving mutants.

There are also a number of papers dealing with the effects of ionizing radiation on a variety of biochemical compounds and enzyme systems.

In short, this volume, although it is not calculated to give complete coverage to the entire field of radiobiology, does include a large amount of first-rate material dealing with certain very active areas of research.

C. L. DUNHAM

U.S. Atomic Energy Commission

## Books Reviewed in The Scientific Monthly

### December

*The Facts of Life*, C. D. Darlington (Macmillan). Reviewed by H. P. Papazian.

*Man on Earth*, J. Hawkes (Cressent). Reviewed by J. D. Lovell.

*The Equatorie of the Planetis*, D. J. Price, Ed. (Cambridge Univ. Press). Reviewed by G. M. Smith.

*Pomp and Pestilence*, R. Hare (Philosophical Library). Reviewed by M. H. Adams.

*Apes, Angels, and Victorians*, W. Irvine (McGraw-Hill). Reviewed by G. Hardin.

*Human Physiology*, W. B. Youmans (Macmillan). Reviewed by F. A. Hitchcock.

*Cells and Societies*, J. T. Bonner (Princeton Univ. Press). Reviewed by C. R. Carpenter.

*Bird Recognition 3*, J. Fisher (Penguin Books). Reviewed by W. H. Drury, Jr.

*Plane Trigonometry*, C. R. Wylie, Jr. (McGraw-Hill). Reviewed by L. M. Kells.

*School Facilities for Science Instruction*, J. S. Richardson, Ed. (National Science Teachers Assoc.).

*Studies in Mathematics and Mechanics*, Presented to Richard von Mises by friends, colleagues, and pupils (Academic Press). Reviewed by A. Rosenthal.

*Astronomy*, R. H. Baker (Van Nostrand). Reviewed by A. P. Linnell.

*Introductory Applied Physics*, N. C. Harris and E. M. M. Hemmerling (McGraw-Hill). Reviewed by M. W. White.

*Sir Isaac Newton*, E. N. daC. Andrade (Collins).

*Minnesota's Rocks and Waters*, G. M. Schwartz and G. A. Thiel (Univ. of Minnesota Press).

*Ferns of Tennessee*, J. M. Shaver (George Peabody College for Teachers). Reviewed by C. V. Morton.

*The Encyclopedia of Child Care and Guidance*, S. Matsner Gruenberg, Ed. (Doubleday).

*Educators Guide to Free Films*, M. F. Horkheimer and J. W. Diffor (Educators Progress Service).

*Mammals*, H. S. Zim and D. F. Hoffmeister (Simon and Schuster).

*Plant Life in Malaya*, R. E. Holttum (Longmans, Green).

*Your Career in Physics*, P. Pollack (Dutton). Reviewed by J. S. Coleman.

*Plants without Flowers*, H. Bastin (Philosophical Library). Reviewed by G. M. Smith.

## Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

*Clinical Testing of Dental Caries Preventives*. Report of a conference to develop uniform standards and procedures in clinical studies of dental caries. American Dental Assoc., Chicago, 1955. 67 pp. Single copy, free.

*Alfred P. Sloan Foundation, Report for the Year, 1953-1954*. The Foundation, New York 20, 1955. 127 pp.

*International Scientific Radio Union, Proceedings of the XIth General Assembly*, vol. X, pt. 3. Commission III on Ionospheric Radio. The Union, Brussels, 1955. 194 pp. \$4.

*Oak Ridge Institute of Nuclear Studies, Ninth Annual Report*. 30 June 1955. Atomic Energy Commission, Oak Ridge, Tenn., 1955. 72 pp.

*Illinois Trees: Their Diseases*. Circular 46. J. Cedric Carter. Illinois Natural History Survey Div., Urbana, 1955. 99 pp. Single copy, free.

*Physical-Chemical Properties of Ethane-Nitrogen Mixtures*. Research Bull. 26. B. E. Eakin, R. T. Ellington, and D. C. Gami. Inst. of Gas Technology, Chicago 6, Ill., 1955. \$5.

*The American Museum of Natural History, Eighty-Sixth Annual Report, July 1954 through June 1955*. The Museum, New York, 1955. 84 pp.

*The American Species of Aeschynomene*. Contributions from the U.S. National Herbarium. vol. 32, pt. 1. Smithsonian Institution, Washington, 1955 (Order from Supt. of Documents, GPO, Washington 25), 172 pp. \$0.75.

*Strengths and Weaknesses of the Junior High Schools*. Report of the National Conference on Junior High Schools, Washington, D.C., 25-26 February 1955. Circular No. 441. Compiled by Walter H. Gaumnitz. U.S. Office of Education, Washington, 1955 (Order from Supt. of Documents, GPO, Washington 25). 56 pp. \$0.40.

*Life and Death of the Soil*. Robert C. Sherman. Science Research Associates, Chicago 10, 1955. 48 pp. \$0.60.

*Making the Years Count*. New York State Joint Legislative Committee on Problems of the Aging. The Committee, 1955. 162 pp. Single copy, free (Send request to Thomas C. Desmond, Chairman, 94 Broadway, Newburgh, N.Y.).

*The Writings of David Barnard Steinman Relating to the Design, Construction and History of Bridges, Including Contributions to the Development of the Engineering Profession, 1909-1954*. A bibliography. Engineering and Science Ser., No. 67. Library staff. Rensselaer Polytechnic Institute, Troy, N.Y., 1955. 28 pp.

*Conference on the Plasma Proteins and Cellular Elements of the Blood*. 15 November 1954. Protein Foundation, Inc., and Commission on Plasma Fractionation and Related Processes, Cambridge 38, Mass., 1955. 76 pp.

*An Engineering Pilot Study to Determine the Comparative Injury Potential of Steering Wheel Assembly Designs (Automotive)*. Sections I-III. Andrew J. White. Motor Vehicle Research, Inc., South Lee, N.H., 1955. 23 pp.

*Educational Directory, 1954-55*. pt. 1, Federal Government and States. U.S. Office of Education, Washington, 1955 (Order from Supt. of Documents, GPO, Washington 25). 56 pp. \$0.25.

*Planning Florida's Health Leadership: Medical Education in the University*. vol. 5, Medical Center Study Ser. Louis J. Maloff, Ed. Univ. of Florida Press, Gainesville, 1955. 161 pp. \$1.50.

*On the Dynamics of Wind-Driven Ocean Currents*. vol. 2, No. 4, Meteorological Papers. Gerhard Neumann. New York Univ. Press, New York, 1955. 32 pp.

*Longitudinal Study of Individual Development*. Techniques for appraising developmental status and progress. Leland H. Stott. Merrill-Palmer School, Detroit, Mich., 1955. 115 pp. \$2.75.

*Baccalaureate Origins of Science Doctorates Awarded in the United States, 1936-1950*. Publ. 382. National Acad. of Science-National Research Council, Washington 25, 1955. 158 pp. \$2.

*Ninetieth Annual Report of the Surgeon General, U.S. Navy, to the Secretary of the Navy*. Relative to statistics of diseases and injuries in the U.S. Navy for the calendar year 1954. Government Printing Office, Washington, 1955. 183 pp.

*The Story of Cosmic Rays*. W. F. G. Swann. Sky Publishing, Cambridge, Mass., 1955.