

Holiday Science Lectures

Heredity and the Nature of Man.

Theodosius Dobzhansky. Harcourt, Brace, and World, New York, 1964. x + 179 pp. \$4.75.

This book, based on the Holiday Science Lectures sponsored by the American Association for the Advancement of Science, is an outstanding statement of the genetical view of mankind and the humanistic view of genetics. Its five chapters contain a remarkably succinct, completely authoritative statement of biological and evolutionary problems literally vital to all of us.

The first two chapters enliven and unify the discussion by following a historical sequence. Chapter 1, on the nature of heredity, proceeds from the earlier organismic genetics, still so active and fruitful in the hands of this author, among others, to the recent triumphs of molecular genetics. The second chapter relates those facts to human individuality and to the interactions of genotypes and phenotypes. The ever-present and burning problems of race are next treated with calmness and great common sense: races do exist and do differ in genetic qualities; the differences do not warrant any conclusion with respect to overall superiority; race has no sensible connection with human worth and rights.

A chapter on genetic load and radiation hazard reviews evolutionary principles at rather less than the irreducible minimum. The explanation of stated issues involved in induction of harmful mutations also seems insufficient. Yet here, too, what is too briefly said is well said and is worth saying. The final topic, "Whither mankind," includes the interaction of biological and cultural evolution, with special note that natural selection does continue to act strongly within civilized populations and with complex effects, neither all good nor all bad. The author views the human future with mild optimism.

The subjects of this book were earlier treated by Dobzhansky with much greater technical detail and fuller documentation in *Mankind Evolving* [Yale University Press, 1962; reviewed in *Science* **136**, 142 (1962)]. *Heredity and the Nature of Man*, a briefer and simpler restatement, should reach an even wider audience.

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Research Résumé

Spectroscopy and Photochemistry of

Uranyl Compounds. Eugene Rabinowitch and R. Linn Belford. Pergamon, London; Macmillan, New York, 1964. x + 370 pp. Illus. \$12.50.

In the preface the authors state that their aim in writing this book was to provide a comprehensive guide to past work as an aid to active researchers in the field. They have certainly succeeded in this purpose.

In the first two chapters Rabinowitch and Belford present a large amount of data on the ultraviolet and visible absorption and fluorescence spectra of uranyl complexes in the solid state and in solution. Some infrared absorption and Raman spectral studies are also reported. The results are presented in a fairly complete fashion, and the interpretations by the original workers are presented. Work done from 1833 to 1960 is covered. In the chapter on solutions, work on hydrolytic species, as well as on uranyl ions complexed with anions in aqueous solution and in some organic solvents, is considered.

The third chapter, on intensity and decay of uranyl fluorescence, commences with a concentrated presentation of the theory of intensity and decay of fluorescence as it applies to the uranyl ion. A discussion of such work done on fluorescence in crystals and in solutions is then presented.

Chapter four, on the photochemistry of uranyl compounds, begins with a fairly thorough discussion of the photochemical reaction of UO_2^{++} with I^- to form U(IV) and I_2 . Brief mention of photochemical reactions with other inorganic reductants precedes a long section on photochemical reactions of uranyl ions with various organic acids, and finally such reactions with alcohols.

A brief discussion of the present status of the theory of electronic structures and spectra of the uranyl ion is given in the final chapter. It is made clear that much remains to be done toward developing a satisfactory theory.

This book is a very important one for research workers in the field of electronic absorption and fluorescence spectroscopy or photochemistry of uranyl compounds. There are a few typographical errors and careless statements, but they should not cause much trouble. Those who are working in the

field will find that this book saves them countless hours of literature searching and provides a composite picture of the work that has been done. It also indicates in what direction future research may be profitable.

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New Books

Biological and Medical Sciences

Advances in Agronomy. vol. 16. A. G. Norman, Ed. Academic Press, New York, 1964. 426 pp. Illus. \$13.50. Nine papers: "Field plant physiology" by D. E. McCloud, R. J. Bula, and R. H. Shaw; "Crop response to fertilizers in relation to content of 'available' phosphorus" by G. L. Terman, W. M. Hoffman, and B. C. Wright; "Objectives in corn improvement" by G. H. Stringfield; "Salinity in relation to irrigation" by Lowell E. Allison; "Response of plants to the physical effects of soil compaction" by Norman J. Rosenberg; "Nitrate accumulation in crops and nitrate poisoning in animals" by Madison J. Wright and Kenneth L. Davison; "Characterizing soil oxygen conditions with a platinum microelectrode" by L. H. Stolzy and J. Letey; "Some parameters of population variability and their implications in plant breeding" by R. W. Allard and P. E. Hansche; and "Amorphous inorganic materials in soils" by B. D. Mitchell, V. C. Farmer, and W. J. McHardy.

Advances in Lipid Research. vol. 2. Rodolfo Paoletti and David Kritchevsky, Eds. Academic Press, New York, 1964. 511 pp. Illus. \$16. Eight papers: "Triglyceride structure" by R. J. VanderWal; "Bacterial lipids" by M. Kates; "Phosphatidylglycerols and lipoamino acids" by Marjorie G. Macfarlane; "The brain phosphoinositides" by J. N. Hawthorne and P. Kemp; "The synthesis of phosphoglycerides and some biochemical applications" by L. L. M. van Deenen and G. H. de Haas; "The lipolytic and esterolytic activity of blood and tissues and problems of atherosclerosis" by T. Zemlényi; "Evaluation of drugs active against experimental atherosclerosis" by Robert Hess; and "Comparative evaluation of lipid biosynthesis *in vitro* and *in vivo*" by P. Favarger.

Arachnida. Theodore Savory. Academic Press, New York, 1964. 303 pp. Illus. \$9.50.

Biochemical Diseases (Chemical Pediatrics). I. Newton Kugelmass. Thomas, Springfield, Ill., 1964. 1249 pp. \$35.50.

Biochemistry of Muscle Contraction. Proceedings of a conference (Dedham, Mass.), May 1962. John Gergely, Ed. Little, Brown, Boston, 1964. 608 pp. Illus. \$18. The papers are presented in the following sections: Myosin (11 papers); Actin (7 papers); Interaction of myosin and actin (9 papers); Structure of striated muscle (4 papers); Smooth muscle, paramyosin, and

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NEW BOOKS

(Continued from page 392)

tropomyosin (7 papers); Energetics of muscle contraction (6 papers); and Theories of muscle contraction (4 papers).

Biomedical Sciences Instrumentation. vol. 2. Proceedings, Second National Symposium (Albuquerque, N.M.), May 1964. William E. Murry and Peter F. Salisbury, Eds. Plenum Press, New York, 1964. 304 pp. Illus. \$12.50. Twenty-five papers presented at the symposium sponsored by the Instrument Society of America; the sessions were Transmission of vibratory energy through tissue: A tool for the measurement of physiological parameters (3 papers); Eye motion: Methods for measurement and their significances (6 papers); Implantable sensors (4 papers); Present problems in physiological monitoring (6 papers); and Biotelemetry and physiology (6 papers).

Bird Structure. An approach through evolution, development, and function in the fowl. D. A. Ede. Hutchinson, London, 1964. 120 pp. Illus. Paper, 15s. Introductory textbook.

The Birds of Costa Rica: Distribution and Ecology (*Bull. Am. Mus. Nat. Hist.* No. 128). Paul Slud. American Museum of Natural History, New York, 1964. 430 pp. Illus. Paper, \$10.

Contributions to Developmental Neuropsychiatry. Paul Schilder. Lauretta Bender, Ed. International Universities Press, New York, 1964. 419 pp. Illus. \$8.50.

Copper and Peroxides in Radiobiology and Medicine. Jack Schubert. Thomas, Springfield, Ill., 1964. 229 pp. Illus. \$9.

Depression. Proceedings of a symposium (Cambridge, England), September 1959. E. Beresford Davies, Ed. Cambridge Univ. Press, New York, 1964. 394 pp. Illus. \$17.50. The papers presented and discussions of the papers are included; the main topics include clinical aspects, psychological and psychopathological aspects, and neuropharmacological aspects of depression and the therapy of depression.

Dynamics in Metazoan Evolution. The origin of the coelom and segments. R. B. Clark. Oxford Univ. Press, New York, 1964. 323 pp. Illus. \$7.70.

Dynamic Studies of Metabolic Bone Disease. O. H. Pearson and G. F. Joplin, Eds. Davis, Philadelphia, Pa., 1964. 239 pp. Illus. \$10. Twelve papers: "Study of tracer techniques for bone disease" by Goran C. H. Bauer; "Interpretation of calcium kinetic data" by Robert P. Heaney; "Calcium" accretion and resorption rates in man" by F. W. Lafferty and O. H. Pearson; "The quantitation of bone mineralization as an organ and tissue in osteoporosis" by James S. Arnold; "Disuse osteoporosis" by Robert P. Heaney; "High dietary calcium and osteoporosis" by Leo Lutwak; "The response of osteoporosis to androgens, estrogens, and high calcium intakes" by F. W. Lafferty, G. E. Spencer, and O. H. Pearson; "Effects of corticoids on bone" by Eugene Eisenberg; "Accelerated aging and premature death of bone cells in osteoporosis" by Marshall R. Urist; "Skeletal dynamics in vitamin D resistant rickets" by F. W. Lafferty, C.

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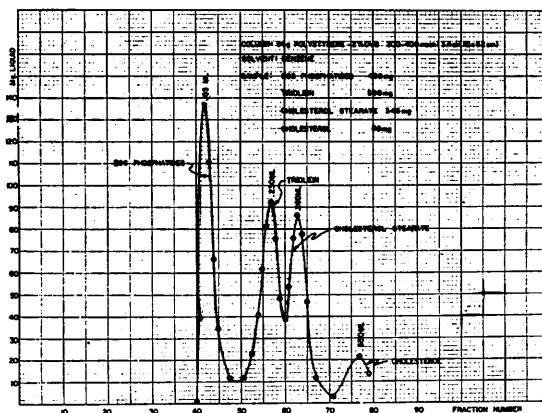
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H. Herndon, and O. H. Pearson; "Isotopic (Ca⁴⁵) analysis of the suppressive action of aspirin on Paget's disease of bone" by Louis V. Avioli and Philip H. Henneman; and "Urinary hydroxyproline as an index of bone metabolism" by Leroy Klein and Paul H. Curtiss, Jr.

Experience in Renal Transplantation. Thomas E. Starzl. Saunders, Philadelphia, 1964. 403 pp. Illus. \$17.

Fabric and Mineral Analysis of Soils. Roy Brewer. Wiley, New York, 1964. 484 pp. Illus. \$15.

Fishes of the Great Lakes Region. Carl L. Hubbs and Karl F. Lagler. Univ. of Michigan Press, Ann Arbor, ed. 3, 1964. 263 pp. Illus. Plates. \$6.95.

Flora Europaea. vol. 1, *Lycopodiaceae to Platanaceae*. T. G. Tutin, V. H. Heywood, N. A. Burges, D. H. Valentine, S. M. Walters, and D. A. Webb, Eds. Cambridge Univ. Press, New York, 1964. 498 pp. Maps. \$16.

Glossary of the British Flora. H. Gilbert-Carter. Cambridge Univ. Press, New York, ed. 3, 1964. 120 pp. \$3.50.

Handbook of Pharmacology. The actions and uses of drugs. Windsor C. Cutting. Appleton, Century, Crofts, New York, ed. 2, 1964. 661 pp. Illus. Paper, \$5.95.

Handbuch der Binnenfischerei Mitteleuropas. R. Demoll, H. N. Maier, and H. H. Wundsch, Eds. vol. 2A, *Anatomie der Fische*. Wilhelm Harder. Schweizerbart'sche, Berlin, 1964. Text, 322 pp.; plates, 121 pp. Illus. Paper, DM. 94; cloth, DM. 103.

An Index to the Collembola. *Bull. Roy. Soc. New Zealand*, No. 7, vols. 1 and 2. J. T. Salmon. Royal Soc. of New Zealand, Wellington, 1964. vol. 1, 144 pp.; vol. 2, 500 pp. Paper.

Instrumentation with Semiconductors. For medical researchers. Clinton C. Brown and George N. Webb. Thomas, Springfield, Ill., 1964. 272 pp. Illus. \$10.50.

International Biomedical Research. First National Institutes of Health, International Symposium (Bethesda, Md.), October and November 1963. Kelly M. West, Ed. U.S. Department of Health, Education, and Welfare, Washington, D.C., 1964. 261 pp. The symposium was concerned with international relationships as they affect, and are affected by, medical science.

International Review of Connective Tissue Research. vol. 2. David A. Hall, Ed. Academic Press, New York, 1964. 364 pp. Illus. \$13. Seven papers: "The precipitation of collagen fibers from solution" by G. C. Wood; "Elastic tissue" by John P. Ayer; "Chemistry and metabolism of connective tissue glycosaminoglycans (mucopolysaccharides)" by Helen Muir; "The physiology of the connective tissues of the reproductive tract" by R. D. Harkness; "Diseases of collagen and related tissues" by L. E. Glynn; "Aging of the collagen fiber" by F. Verzár; and "Mucopolysaccharides, collagen, and nonfibrillar proteins in inflammation" by Albert Delaunay and Suzanne Bazin.

Intersexuality in Vertebrates, Including Man. C. N. Armstrong and A. J. Marshall, Eds. Academic Press, New York, 1964. 489 pp. Illus. \$14. Seven papers: "Chromosome deviations and sex in ver-

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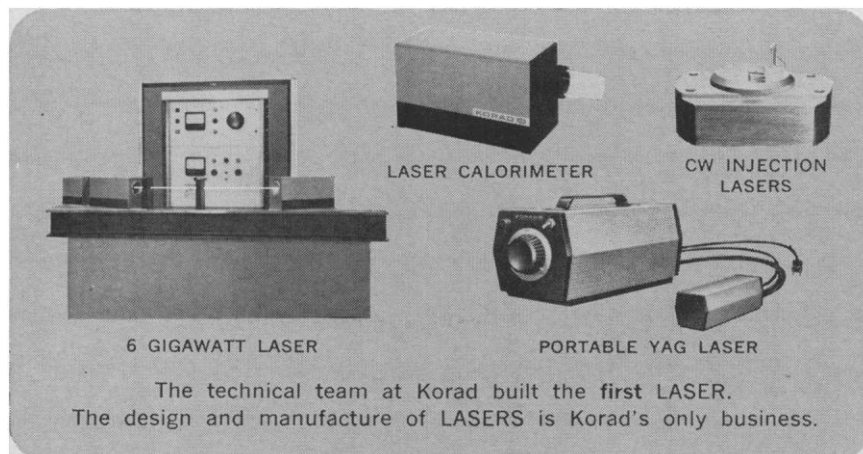
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tebrates" by R. A. Beatty; "Intersexuality in fishes" by James W. Atz; "Intersexuality in amphibians" by Charles L. Foote; "Intersexuality in reptiles" by Thomas R. Forbes; "Intersexuality in birds" by Elsie Taber; "Intersexuality in mammals" by Joyce Bruner-Lorand; and "Intersexuality in man" by C. N. Armstrong. Introduction by A. J. Marshall.

Mammals of the World. vols. 1-3. Ernest P. Walker and others. Johns Hopkins Press, Baltimore, Md., 1964. vol. 1, 692 pp.; vol. 2, 865 pp. Illus. vols. 1 and 2, \$25; vol. 3, *A Classified Bibliography*, 783 pp., \$12.50; 3 vols., \$37.50.

Mental Retardation. A review of research. Harvey A. Stevens and Rick Heber, Eds. Univ. of Chicago Press, Chicago, Ill., 1964. 516 pp. Illus. \$12.50. Thirteen papers: "Overview" by Harvey A. Stevens; "Psychological evaluation and differential diagnosis" by Arthur L. Benton; "Research in education" by Samuel A. Kirk; "Research in learning and performance" by M. Ray Denny; "Personality" by Rick Heber; "Relation of environmental factors to intellectual functioning" by Boyd R. McCandless; "Social and occupational adjustment" by Herbert Goldstein; "Epidemiology" by Ernest M. Gruenberg; "Biochemical and clinical correlations" by Harry A. Waisman and Theo Gerritsen; "Genetics in Mental Retardation" by V. Elving Anderson; "Teratogenesis of the central nervous system" by F. Clarke Fraser; "Neuropathology" by N. Malamud; and "Behavioral disturbances in the mentally retarded" by Delton C. Beier.

Methodology of Isolates. A symposium organized by the Problem Commission of Neurogenetics, World Federation of Neurology (The Hague, Netherlands), September 1963. D. Klein, Ed. Karger, Basel, Switzerland, 1964. 140 pp. Illus. Paper, \$7. Thirteen papers: "Some remarks on the theoretical basis of the investigation of isolates" by F. Vogel; "Genetic studies on the Xavante Indians of the Brazilian Mato Grosso" by J. V. Neel, P. C. Junqueira, F. M. Salzano, F. Keiter, and D. Maybury-Lewis; "An evaluation of the Kuru genetic hypothesis" by G. R. Williams, A. Fischer, J. L. Fischer, and L. T. Kurland; "The biochemical recognition of the carrier state of infantile amaurotic family idiocy" by B. W. Volk, S. M. Aranson, and A. Saifer; "Metabolic defects in some isolates of Israel" by E. Goldschmidt and L. Cividalli; "Studies in isolates" by G. R. Fraser; "Considerations on the isolate problem based on research in population genetics" by W. F. Haberlandt; "Manifestations of a recessive gene for microcephaly in a population isolate" by H. W. Kloepper, R. V. Platou, and W. J. Hansche; "Studies on human population genetics and anthropology in isolates on the Aland Islands" by A. W. Eriksson and H. Forsius; "Démographie et généalogie de différents types d'isolats" by R. Gessain; "Heredoataxia in western Norway: Some experiences from a preliminary investigation" by H. Skre; "Isolat et diffusion des mutations chez l'homme" by J. Sutter; "Geographical distribution of some isolates with neuro-genetical afflictions in Switzerland" by D. Klein and F. Ammann.

Methods in Medical Research. vol. 10. H. N. Eisen, G. D. Snell, J. L. Strominger,

and I. Lieberman, Eds. Year Book Medical Publishers, Chicago, 1964. 389 pp. Illus. \$11.50. The 48 papers are grouped under the following headings: Methods for Study of Histocompatibility Genes and Isoantigens (9 papers); Some Methods Applicable to Study of Experimental Hypersensitivity (23 papers); Resistance to Chemotherapeutic Agents (10 papers); and Methods with Cultures of Dispersed Animal Cells (5 papers).

A Model of the Brain. J. Z. Young. Oxford Univ. Press, New York, 1964. 358 pp. Illus. \$8.

Oral Histology: Inheritance and Development. D. Vincent Provenza. Lippincott, Philadelphia, 1964. 562 pp. Illus. \$14.

Oxygen in the Animal Organism. Proceedings of a symposium (London), September 1963. Frank Dickens and Eric Neil, Eds. Pergamon, London; Macmillan, New York, 1964. 712 pp. Illus. \$22.50. Contains some 32 papers, and the discussions of the papers, presented at the symposium which was jointly sponsored by the International Union of Biochemistry and the International Union of Physiological Sciences.

Patterns of Mammalian Reproduction. S. A. Aspell. Cornell Univ. Press, Ithaca, N.Y., ed. 2, 1964. 684 pp. \$9.75.

Plant Growth and Development. A. Carl Leopold. McGraw-Hill, New York, 1964. 480 pp. Illus. \$12.50.

Programmed Genetics. vol. 2, *Chromosome Behavior*. Chester A. Lawson and Mary Alice Burmester. Heath, Boston, 1964. 148 pp. Illus. Paper, \$2.95.

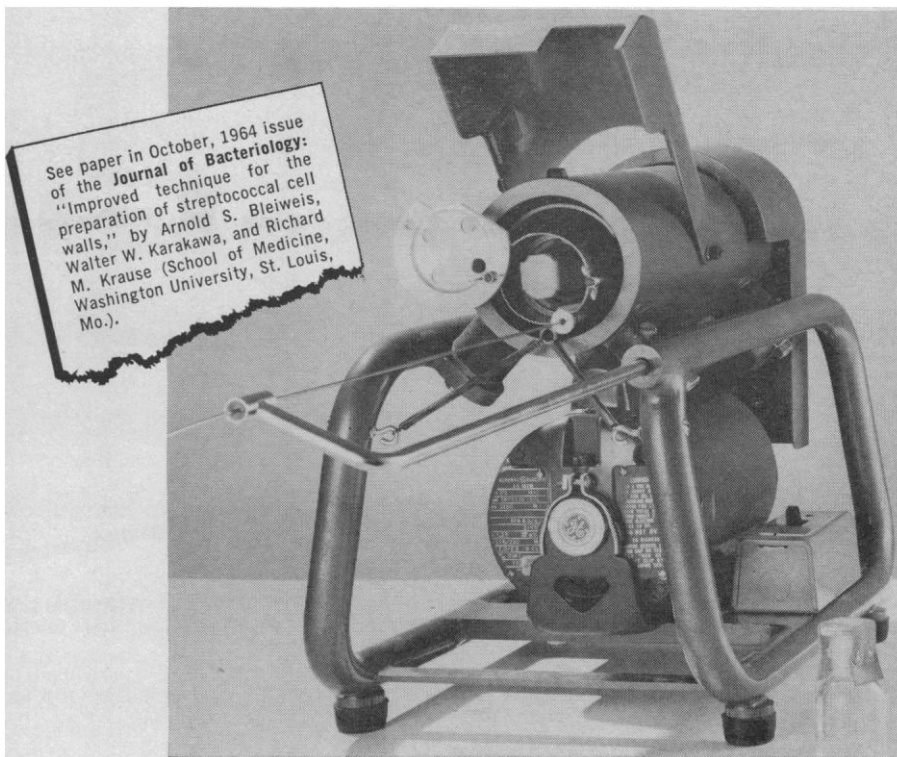
Progress in Hematology. vol. 4. Carl V. Moore and Elmer B. Brown, Eds. Grune and Stratton, New York, 1964. 319 pp. Illus. \$13.75. Ten papers: "Heme synthesis in erythroid cells" by S. Granick and Richard D. Levere; "Methemoglobinemia in man" by Ernest R. Jaffé and Paul Heller; "Erythropoietin" by Robert D. Lange and Vera Pavlovic-Kentera; "Chemistry of the ABH blood group substances" by Gerald Schiffman and Donald M. Marcus; "Lead poisoning: Hematologic aspects" by Robert C. Griggs; "Chloramphenicol toxicity: Clinical features and pathogenesis" by Adel A. Yunis and Gordon R. Bloomberg; "Myeloma proteins and macroglobulins: Hallmarks of disease and models of antibodies" by George M. Bernier and Frank W. Putnam; "Recent advances in acute leukemia" by Emil J. Freireich and Emil Frei, III; "Von Willebrand's disease" by Emily M. Barrow and John B. Graham; and "Platelet and leukocyte isoantigens and their antibodies: Serologic, physiologic, and clinical studies" by N. Raphael Shulman, Victor J. Marder, Marilyn C. Hiller, and Ellen Collier.

Pulsatile Blood Flow. Proceedings of the First International Symposium (Philadelphia), April 1963. E. O. Attinger, Ed. McGraw-Hill, New York, 1964. 476 pp. Illus. \$17.50. Some 26 papers on various physical and physiological aspects of arterial hemodynamics.

The Rabbit in Eye Research. Compiled and edited by Jack H. Prince. Thomas, Springfield, Ill., 1964. 668 pp. Illus. \$37. Contributors are Charles D. Diesem, Irma Eglitis, Ake Holmberg, V. Everett Kinsey, David G. McConnell, Sven Erik Nilsson, Jack H. Prince, D. V. N. Reddy, Gordon L. Ruskell, and Fritiof S. Sjöstrand.

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Selenium. Geobotany, biochemistry, toxicity, and nutrition. Irene Rosenfeld and Orville A. Beath. Academic Press, New York, 1964. 423 pp. Illus. \$15.

Serum Proteins and the Dysproteinemias. F. William Sunderman and F. William Sunderman, Jr., Eds. Lippincott, Philadelphia, 1964. 473 pp. Illus. Forty-five papers; proceedings of an applied seminar on the serum proteins and the dysproteinemias (Washington, D.C.), which was held under the auspices of the Association of Clinical Scientists.

Somatic Cell Genetics. Fourth Macy Conference on Genetics, Princeton, N.J. Robert S. Krooth, Ed. Univ. of Michigan Press, Ann Arbor, 1964. 303 pp. Illus. \$10. Ten papers: "The study of gross chromosomal abnormalities" by Jerome Lejeune; "Summary of technical problems" by Harry S. Eagle; "Introduction to the study of markers in cell cultures" by Stanley M. Gartler; "Study of the H-2 locus in murine cell cultures" by Leonard A. Herzenberg; "Study of galactosemia, acatalasemia, and other human metabolic mutants in cell culture" by Robert S. Krooth; "Study of glucose-6-phosphate dehydrogenase mutants in human cell culture" by Stanley M. Gartler; "Cellular expression of *in vitro* infection with oncogenic virus" by Hilary Koprowski and Klaus E. Bayreuther; "Drug resistance as a genetic marker" by Wacław Szybalski; "Chromosomal markers" by Boris Ephrussi; and "Criteria for the proof of virogeny in mammalian cells" by Hilary Koprowski.

Steroid Analysis by Gas Liquid Chromatography. A. Anne Patti and Arthur A. Stein. Thomas, Springfield, Ill., 1964. 103 pp. Illus. \$5.50.

Strahlenschutz in Forschung und Praxis. vol. 4. Hans-Joachim Melching, Wolfgang Frik, Hubert Keim, Hans-Adolf Ladner, and Konrad Schröder. Eds. Rombach, Freiburg, Germany, 1964. 380 pp. Illus. DM. 72.

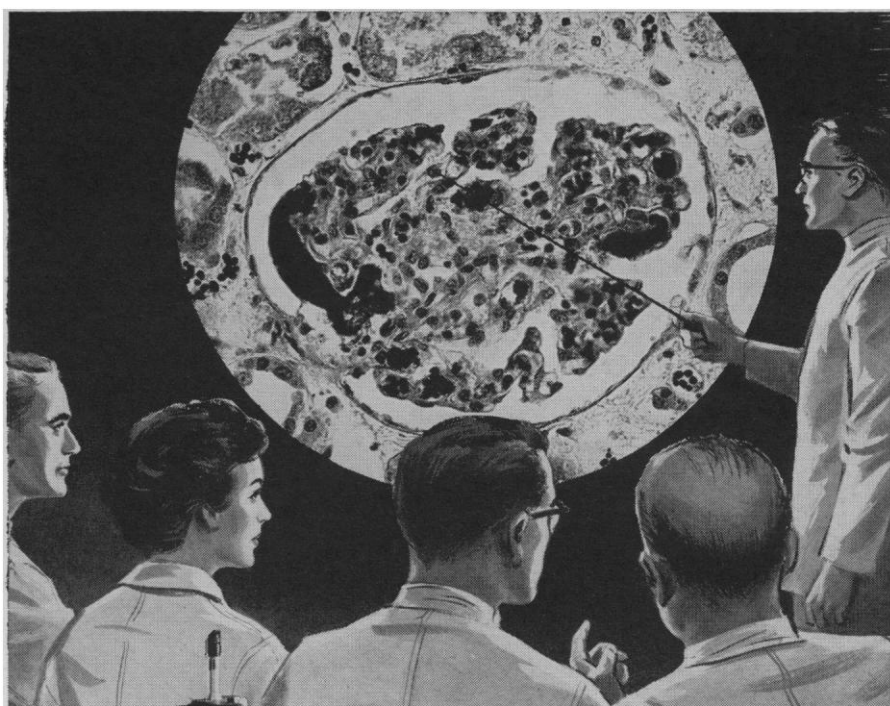
Symposium on Molecular Action of Mutagenic and Carcinogenic Agents. Held at Gatlinburg, Tenn., in April 1964. Alexander Hollaender, Ed. Oak Ridge National Laboratory, Oak Ridge, Tenn., 1964. 199 pp. Illus. Paper. Twelve papers reprinted from *Journal of Cellular and Comparative Physiology*.

Tetrapyrrole Biosynthesis and Its Regulation. June Lascelles. Benjamin, New York, 1964. 144 pp. Illus. \$7.70.

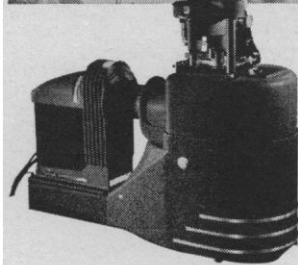
Thermophilic Fungi. An account of their biology, activities, and classification. Donald G. Cooney and Ralph Emerson. Freeman, San Francisco, Calif., 1964. 200 pp. Illus. \$5.

The Thymus in Immunobiology. Proceedings of a symposium (Minneapolis, Minn.), 1962. Robert A. Good and Ann E. Gabrielsen, Eds. Harper and Row, New York, 1964. 800 pp. Illus. \$24.50. A conference sponsored by the University of Minnesota, the National Foundation, and the Committee on Tissue Transplantation, Division of Medical Sciences, National Academy of Sciences-National Research Council. Thirty-six papers.

Zinsser's Microbiology. David T. Smith, Norman F. Conant, John R. Overman, and others. Appleton, Century, Crofts (Meredith), New York, ed. 13, 1964. 1232 pp. Illus.



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