

proach in functional analysis, introduced by Banach, has permeated most parts of analysis. The present book is an excellent introduction to the subject, with emphasis on the two trends just mentioned. The author, whose large monograph on linear analysis appeared in 1953, has used in the present volume a great deal of balance and restraint. The choice of topics and the structural economy are commendable. Through this book the student may have easy access to more general approaches to measure and integration, such as Bourbaki's or Carathéodory's.

At the outset the equivalence of Zermelo's axiom of choice with those of Kuratowsky and Zorn is proved. The concept of measure is introduced as an additive set function in a semiring of sets. Emphasis is given to the extension process generating an exterior measure on a larger class of sets and then a new measure in the subclass of the corresponding measurable sets. The concept of integral is introduced as the Stone version of the Daniell integral. The very same process of extension mentioned above is here used, starting from any linear operator which satisfies a given set of axioms. The Lebesgue-Stieltjes integral is viewed as a particular case of the previous one, and space is given to Fubini's theorem. Normal linear spaces, Banach spaces, and Hilbert spaces are discussed, with emphasis on the fact that bounded linear functionals on a normal space themselves form a Banach space, the conjugate space. The Radon-Nikodym theorem is given for integrals, and the usual version for measures is deduced as a corollary.

Important complements and applications are given: change of variables in Lebesgue integrals; differentiation of integrals in abstract and Euclidean spaces; the Banach-Steinhaus theorem; unitary transformations in Hilbert spaces (in particular, Fourier transformations); and ergodic theory.

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RIAS, Baltimore, Maryland

World of Learning, 1958-59. Europa Publications, London, 1958. xiii + 1139 pp. \$22.

This useful reference volume gives information on educational, technological, and cultural institutions in more than 100 countries. For each country, information is given about learned societies and research institutions (names, addresses, publications, principal officers, number of members, and sometimes names of members); libraries, museums, and art galleries (names, addresses, size and nature of collections, publications,

names of officers, and sometimes a brief historical description); colleges and universities (names, locations, chief officers, enrollment, and sometimes names of professors).

It includes an introductory section on international agencies—UNESCO, the International Council of Scientific Unions, and others—and an index of institutions.

New Books

Advances in Virus Research. vol. VI. Kenneth M. Smith and Max A. Lauffer, Eds. Academic Press, New York, 1959. 390 pp. \$10. Contents: "The purification of plant viruses" (R. L. Steere); "Biochemistry of plant virus infection" (C. A. Porter); "The spread of plant viruses" (L. Broadbent and C. Martini); "Physiological aspects of bacteriophage genetics" (S. Brenner); "Purification and properties of poliovirus" (F. L. Schaffer and C. E. Schwerdt); "Measles virus" (F. L. Black, M. Reissig, J. L. Melnick); "Kappa and related particles in *Paramecium*" (T. M. Sonneborn).

Annual Review of Entomology. vol. 4. Edward A. Steinhaus, Ed. Annual Reviews, Palo Alto, Calif., 1959. 467 pp. \$7. Contents: "Insect blood cells" (V. B. Wigglesworth); "Culture of insect tissues" (M. F. Day and T. D. C. Grace); "Pheromones (Ectohormones) in insects" (P. Karlson and A. Butenandt); "Insect pigments" (R. I. T. Cromartie); "Taxonomic problems with closely related species" (W. J. Brown); "Ecology of Cerambycidae" (E. G. Linsley); "Biology of Aphids" (J. S. Kennedy and H. L. G. Stroyan); "The biology of parasitic hymenoptera" (R. L. Doutt); "Bioclimatic studies with insects" (P. S. Messenger); "Ethological studies of insect behavior" (G. P. Baerends); "Experimental host-parasite populations" (T. Burnett); "Biological control of weeds with insects" (C. B. Huffaker); "Microbial control of insect pests" (Y. Tanada); "On the mode of action of insecticides" (F. P. W. Winteringham and S. E. Lewis); "Biological assay of insecticide residues" (S. Nagasawa); "Deciduous fruit insects and their control" (M. M. Barnes); "Seed treatment as a method of insect control" (W. H. Lange, Jr.); "Fleas and disease" (W. L. Jellison); "Insects and the epidemiology of malaria" (P. F. Russel).

Historian's Handbook. A key to the study and writing of history. Wood Gray et al. Houghton Mifflin, Boston, 1959. 58 pp. \$1. The purpose of the *Handbook* is to introduce the college freshman and general reader to the nature of history and to offer ideas for effective study, to guide the advanced student when he prepares a term paper or thesis, and to serve as a reference manual.

Our Earth. The properties of our planet, how they were discovered, and how they came into being. Arthur Beiser. Dutton, New York, 1959. 123 pp. \$3.25.

Preliminary Archaeological Investigations in the Sierra de Tamalipas, Mexico.

Transactions, vol. 48, pt. 6. Richard S. MacNeish. American Philosophical Soc., Philadelphia 6, 1958. 210 pp. \$5.

Progress in Metal Physics. vol. 7. Bruce Chalmers and R. King, Eds. Pergamon, New York and London, 1958. 416 pp. \$16. Contents: "Equilibrium, diffusion and imperfections in semi-conductors" (J. N. Hobstetter); "The physical metallurgy of titanium alloys" (R. I. Jaffee); "Thermodynamics and kinetics of martensitic transformations" (L. Kaufman and M. Cohen); "The stored energy of cold work" (A. L. Titchener); "The properties of metals at low temperatures" (H. M. Rosenberg).

Radioisotopes in Scientific Research. Proceedings of the International Conference held in Paris in September 1957 under the auspices of the United Nations Educational, Scientific and Cultural Organization, vol. I, *Research with Radioisotopes in Physics and Industry*, 782 pp., \$22.50; vol. II, *Research with Radioisotopes in Chemistry and Geology*, 762 pp., \$22.50; vol. III, *Research with Radioisotopes in Human and Animal Biology and Medicine*, 763 pp., \$22.50; vol. IV, *Research with Radioisotopes in Plant Biology and Some General Problems*, 791 pp., \$22.50 (vols. 1-4, \$80 per set). R. C. Extermann, Ed. Pergamon, New York and London, 1958.

Reproduction and Infertility, Third Symposium. Colorado State University, Fort Collins, Colorado. Sponsored by the College of Veterinary Medicine and the Agricultural Experiment Station. F. X. Gassner, Ed. Pergamon, New York and London, 1958. 273 pp. \$6.50.

River Basin Surveys Papers. Bull. 169. Inter-Agency Archeological Salvage Program No. 9-14. Frank H. H. Roberts, Jr., Ed. Smithsonian Institution, Washington, D.C., 1958 (order from Supt. of Documents, GPO, Washington 25). 401 pp. \$3.25.

Safe Handling of Radio-isotopes. International Atomic Energy Agency, Vienna, Austria, 1958. 99 pp.

Semiconductor Abstracts. vol. IV, 1956 issue. Abstracts of literature on semiconducting and luminescent materials and their applications. Compiled by Battelle Memorial Inst.; sponsored by Electrochemical Soc., Inc. Wiley, New York, 1959. 456 pp. \$12.

Statistical Quality Control. An introduction for management. Douglas H. W. Allan. Reinhold, New York; Chapman & Hall, London, 1959. 129 pp. \$3.50.

A Taxonomic Study of the North American Licinini with Notes on the Old World Species of the Genus Diplocheila Brulle (Coleoptera). Memoirs, No. 16. George E. Ball. American Entomological Soc., Philadelphia, Pa., 1959. 263 pp. \$10.

Textbook of Physiology and Biochemistry. George H. Bell, J. Norman Davidson, Harold Scarborough. Williams and Wilkins, Baltimore, ed. 4, 1959. 1066 pp.

Time, Life, and Man. The fossil record. R. A. Stirton. Wiley, New York; Chapman & Hall, London, 1959. 569 pp. \$9.

Work Measurement. Virgil H. Rotroff. Reinhold, New York; Chapman & Hall, London, 1959. 203 pp. \$4.85.