

pH value and of tyrosine as a basic amino acid. The authors do not include themselves in the author index. The subject index has an admirable number of headings, but several additional pages on which significant information is given could have been cited for at least one of these ("urea").

The most serious limitation of this book presumably is not the authors' fault. Since the completion of the manuscript, wool research has seen many extremely interesting developments that would demand a place in a new edition. These include a great variety of evidence of differences among parts of the cortex; further information on the nature of the epicuticle; studies showing individual wool fiber differences in structure, mechanical properties, and composition; detailed description of the formation of wool fiber structure at the microscopic level; determination of amino acids that occur in wool with free alpha carboxyl groups; and, indeed, additional data applying to almost every section.

In spite of these limitations, this book is a valuable supplement and companion to other recent textile handbooks because of its different coverage and viewpoint.

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Sovereign Reason. And other studies in the philosophy of science. Ernest Nagel. Free Press, Glencoe, Ill., 1954. 315 pp. \$5.

Scientists are not uniformly the best interpreters of their procedures and their theoretical discoveries. . . . The philosophy of science which practicing scientists profess on ceremonial and other occasions when they discuss the broader significance of their enterprise . . . is often but an echo of philosophical ideas uncritically acquired in their youth. [p. 15]

The scientific public will therefore welcome the availability, in a single volume, of these 16 previously published essays on the logic of science by one of the most technically competent and noted contemporary philosophers of science.

In examining the views of C. S. Peirce, J. Dewey, A. N. Whitehead, B. Russell, A. S. Eddington, H. Reichenbach, and B. Blanshard, Ernest Nagel devotes particular attention to four paramount issues: (i) the articulation of the relationships between the abstract, theoretical concepts and objects of science to the materials of ordinary, familiar experience; (ii) the interpretation and "justification" of the probable inferences that furnish the warrant for the conclusions of empirical science; (iii) problems generated by the perennial quest for a total view of the universe; and (iv) the social determinants and social consequences of scientific activity, and the bearing of these findings on systems of individual and social value.

At a time when large-scale attempts are being made to persuade the American public that a theological renaissance is a sufficient or a necessary theoretical

basis for the preservation of democracy in a technological age, it is particularly useful to have this author's essay on "Malicious philosophies of science," which gives a telling refutation of the shoddy argumentation underlying such attempts and presents a vigorous defense of secular naturalism. He writes:

. . . during periods of social crisis . . . spokesmen for institutional and philosophic theologies find a ready audience for a systematic disparagement of the achievements of empirical science. Ideas which the advance of knowledge had partially driven underground during periods of fair social weather, are then insolently proclaimed as panaceas for public and private ills. [p. 18]

Knowledge of biology and hygiene are indeed not sufficient for an adequate conception of the moral life; but if one may judge from the historical functions of some philosophic and theologic ideas in perpetuating economic inequality and human slavery, and in sanctioning the brutal shedding of human blood, neither is a knowledge of philosophy and theology. [p. 34]

Space permits only one critical remark. Although Nagel takes issue with Whitehead's definition of the points of mathematical physics by the method of "extensive abstraction," he concedes to Whitehead that "points so defined have all the requisite mathematical properties" (p. 40). I have shown recently [*British J. Phil. Science* 4, 215 (1953)] that the philosophic defects of Whitehead's method issue in mathematical inadequacies. On page 39, last line, the term *with* should read *without*, and there are typographic errors on pages 13, 29, 32n, 38, 63, 85, 92, 96, and 299.

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New Books

Einführung in die Energetik und Kinetik biologischer Vorgänge. W. Bladergroen. Wepf, Basel, Switzerland, 1955. 368 pp. F. 28.

The Technique and Significance of Oestrogen Determinations. Memoirs of the Society for Endocrinology, No. 3. P. Eckstein and S. Zuckerman, Eds. Cambridge Univ. Press, New York, 1955. 96 pp. \$3.75.

Fundamental Formulas of Physics. Donald H. Menzel, Ed. Prentice-Hall, New York, 1955. 765 pp. \$10.65.

Plastics Tooling. Malcolm W. Riley. Reinhold, New York, 1955. 123 pp. \$2.50.

Die Submikroskopische Struktur des Cytoplasmas. Proto-plasmatologia, vol. II, A2. A. Frey-Wyssling. Springer, Vienna, 1955. 244 pp. \$10.10 (Subscriber's, \$8.10).

The Viking Rocket Story. Milton W. Rosen. Harper, New York, 1955. 242 pp. \$3.75.

The Continuum and Other Types of Serial Order. With an introduction to Cantor's transfinite numbers. Edward V. Huntington. Dover, New York, ed. 2, 1955. 82 pp. Cloth, \$2.75; paper, \$1.

Bird Recognition. No. III. James Fisher. Penguin Books, Baltimore 11, 1955. 159 pp. \$0.85.

Almost Periodic Functions. A. S. Besicovitch. Dover, New York, 1955 (Reissue of ed. 1, published by Cambridge Univ. Press). 180 pp. Cloth, \$3.50; paper, \$1.75.

- Co-ordination of Galactic Research.* Symposium No. 1 of International Astronomical Union, 22-27 June 1953, at Groningen, Netherlands. A Blaauw, Ed. Cambridge Univ. Press, New York, 1955. 58 pp. \$1.50.
- Dust is Dangerous.* C. N. Davies. Faber & Faber, London; de Graff, New York, 1955. 116 pp. \$4.50.
- The Chemistry of Synthetic Dyes and Pigments.* H. A. Lubs, Ed. Reinhold, New York, 1955. 734 pp. \$18.50.
- Canadian Cancer Conference.* vol. I. Proceedings of the first Canadian Cancer Research Conference, 16-19 June 1954 at Honey Harbour, Ontario. R. W. Begg, Ed. Academic Press, New York, 1955. 443 pp. \$8.80.
- Annual Review of Medicine.* vol. 6. David A. Ryland and John Anderson, Eds. Annual Reviews, Stanford, Calif., 1955. 459 pp. \$7.
- The Dynamical Theory of Gases.* J. H. Jeans. Dover, New York, ed. 1955. 444 pp. Cloth, \$3.95; paper, \$2.
- Die Selbstgestaltung des Lebendigen.* Synoptische theorie des Lebens als ein Beitrag zu den philosophischen Grundlagen der Naturwissenschaft. Karl Friederichs. Reinhardt, Munchen-Basel, 1955. 221 pp. Cloth, F. 20.50; paper, F. 18.
- The Chemistry of Petroleum Hydrocarbons.* vols. II and III. Benjamin T. Brooks, Stewart S. Kurtz, Jr., Cecil E. Boord, and Louis Schmerling, Eds. Reinhold, New York, 1955. vol. II, 442 pp., \$13.50; vol. III, 690 pp., \$18.
- Advanced Part of a Treatise on the Dynamics of a System of Rigid Bodies.* Being part II of a treatise on the whole subject. Edward John Routh. Dover, New York, ed. 6, 1955. 484 pp. Cloth, \$3.95; paper, \$1.95.
- A Laboratory Manual for Introduction to Chemistry.* R. T. Sanderson and William E. Bennett. Wiley, New York; Chapman & Hall, London, 1955. 182 pp. \$3.
- The Facts of Life.* C. D. Darlington. Macmillan, New York, 1955. 467 pp. \$7.
- Psychische Hygiene.* Ernst Brezina and Erwin Stransky. Maudrich, Wien-Bonn, Germany, 1955. 282 pp. \$8.25.
- Neuropharmacology.* Transactions of the First Conference 26-28 May 1954, Princeton, N.J. Harold A. Abramson, Ed. Josiah Macy, Jr. Foundation, New York, 1955. 210 pp. \$4.25.
- The Hypophyseal Growth Hormone, Nature and Actions.* Richmond W. Smith, Oliver H. Gaebler, and C. N. H. Long, Eds. Blakiston Div., McGraw-Hill, New York-London, 1955. 576 pp. \$12.
- Current Trends in Psychology and the Behavioral Sciences.* J. T. Wilson, C. S. Ford, B. F. Skinner, G. Bergmann, F. A. Beach, and K. Pribram. Univ. of Pittsburgh Press, Pittsburgh, 1954. 142 pp. \$4.
- Manganese.* Metallurgy of the rarer metals, No. 3. A. H. Scully. Academic Press, New York; Butterworths, London, 1955. 305 pp. \$6.50.
- Thermodynamics.* From the classic and generalized standpoints. Joseph Louis Finck. Bookman, New York, 1955. 224 pp. \$7.50.
- Beta- and Gamma-Ray Spectroscopy.* Kai Siegbahn, Ed. Interscience, New York; North-Holland, Amsterdam, 1955. 959 pp. \$20.
- Steinmetz: Maker of Lightning.* Sigmund A. Lavine. Dodd, Mead, New York, 1955. 241 pp. \$3.
- Your Career in Physics.* Philip Pollack. Dutton, New York, 1955. 127 pp. \$2.75.
- Practical Medical Mycology.* Edmund L. Keeney. Thomas, Springfield, Ill., 1955. 145 pp. \$4.50.
- General Physics.* Oswald Blackwood and William Kelly. Wiley, New York; Chapman & Hall, London, ed. 2, 1955. 704 pp. \$6.75.
- Scientific Writing.* Meta R. Emberger and Marian R. Hall. W. Earl Britton, Ed. Harcourt, Brace, New York, 1955. 468 pp.
- Photosynthesis.* Monograph on biochemical subjects. Robert Hill and C. P. Whittingham. Methuen, London; Wiley, New York, 1955. 165 pp. \$2.
- Tables of Sines and Cosines for Radian Arguments.* NBS Applied Math. Ser. No. 43. National Bureau of Standards, Washington 25, 1955 (Order from Supt. of Documents, GPO, Washington 25). 275 pp. \$3.
- Some Fundamentals of Combustion.* Gas Turbine Ser., vol. 2. D. B. Spalding. Academic Press, New York; Butterworths, London, 1955. 250 pp. \$7.50.
- Polarographic Techniques.* Louis Meites. Interscience, New York-London, 1955. 317 pp. \$6.
- The Botany of Cook's Voyages and Its Unexpected Significance in Relation to Anthropology, Biogeography and History.* vol. 14, No. 5/6. Elmer Drew Merrill. Chronica Botanica, Waltham, Mass.; Stechert-Hafner, New York, 1954. 119 pp. \$4.75.
- Clinical Endocrinology.* For practitioners and students. Laurence Martin and Martin Hynes. Little, Brown, Boston, ed. 2, 1954. 253 pp. \$5.50.
- The Elements of Astronomy.* A nonmathematical textbook for use as an introduction to the subject in colleges, universities, etc., and the general reader. Edward Arthur Fath. McGraw-Hill, New York-London, ed. 5, 1955. 369 pp. \$5.50.
- Unified Algebra and Trigonometry.* Elbridge P. Vance. Addison-Wesley, Cambridge, 1955. 354 pp. \$4.50.
- Principles of Medical Statistics.* A. Bradford Hill. Oxford Univ. Press, New York, ed. 6, 1955. 314 pp. \$4.
- Outside Readings in Geography.* Fred E. Dohrs, Lawrence M. Sommers, and Donald R. Petterson. Crowell, New York, 1955. 805 pp. \$2.95.
- Electrochemistry in Biology and Medicine.* Theodore Shedlovsky, Ed. Wiley, New York; Chapman & Hall, London, 1955. 369 pp. \$10.50.
- Introduction to the Philosophy of Being.* George P. Klubertanz. Appleton-Century-Crofts, New York, 1955. 300 pp. \$3.
- Basic Lubrication Practice.* Allen F. Brewer. Reinhold, New York, 1955. 286 pp. \$6.75.
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- Morbidity in the Municipal Hospitals of the City of New York.* Marta Fraenkel and Carl L. Erhardt. Russell Sage Foundation, New York, 1955. 229 pp. \$4.50.
- Perinatal Mortality in New York City: Responsible Factors.* A study of 955 deaths by the Subcommittee on Neonatal Mortality, Committee on Public Health Relations, New York Acad. of Medicine. Schuyler G. Kohl. Harvard Univ. Press, Cambridge, 1955. 111 pp. \$2.50.
- College Algebra and Plane Trigonometry.* Abraham Spitzbart and Ross H. Bardell. Addison-Wesley, Cambridge, 1955. 408 pp. \$4.50.
- The Nucleic Acids: Chemistry and Biology.* vol. II. Erwin Chargaff and J. N. Davidson, Eds. Academic Press, New York, 1955. 576 pp. \$14.50.
- The House on Nauset Marsh.* Wyman Richardson. Norton, New York, 1955. 223 pp. \$3.75.
- Biochemistry: An Introductory Textbook.* Felix Haurowitz. Wiley, New York; Chapman & Hall, London, 1955. 485 pp. \$6.75.