

gather from the widespread literature some part of this organized synthesis will appreciate the size and complexity of the task. These volumes will represent a milestone in the progress of primatology, but this is not to say that they will constitute a definitive work—too little has been studied for that, and what has been done is too varied and dispersed for one worker to produce a perfect synthesis. Yet each generation needs a current summary, and Hill is preparing the best and most inclusive review to date.

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**Lehrbuch und Atlas der Anatomie des Menschen.** Rauber-Kopsch. vol. I, *Allgemeines, Skelettsystem, Muskelsystem, Gefäßsystem*. vol. II, *Eingeweide Nervensystem-Sinnesorgane*. Thieme, Stuttgart, Germany, ed. 19, 1955. vol. I, vii + 736 pp.; vol. II, vii + 768 pp. Illus. \$15.35 per volume.

This 19th edition of one of the standard German works on the anatomy of the human body represents an extensive revision. It again appears in two volumes, as in the time of the original author, Rauber. Volume I comprises the histology of the epithelial, connective, muscular, and nervous tissues, a discussion of the body as a whole, the skeleton and joints, the muscular system, and the vascular system. Volume II deals with the thoracic and abdominal viscera, the nervous system, and the organs of special sense.

All the illustrations have been reproduced *de novo* and are now included within the text, and the text itself has undergone extensive alteration. Since the illustrations are truly magnificent and the text is authoritative, the result is an outstanding combined atlas and textbook. The rather high cost of these books, however, seems likely to limit their use in this country. This is unfortunate, since anatomical books of this superior quality are all too rare.

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**Progress in Organic Chemistry.** vol. 3. J. W. Cook, Ed. Academic Press, New York; Butterworths, London, 1955. viii + 273 pp. \$7.80.

This welcome addition to the "Progress series" consists of five chapters entitled: "Total synthesis of steroids," by J. W. Cornforth of the National Institute for Medical Research, London (43 pages, 56 references); "Non-benzenoid aromatic compounds," by W. Baker and

J. F. W. McOmie of the University of Bristol (36 pages, 129 references); "The fulvenes," by E. D. Bergmann of the Hebrew University, Jerusalem (90 pages, 359 references); "Organic compounds of lithium," by E. A. Braude of the Imperial College of Science and Technology, University of London (45 pages, 201 references); and "Indole alkaloids," by V. Boekelheide of the University of Rochester and V. Prelog of the Swiss Federal Institute of Technology, Zurich (48 pages, 170 references). The physical aspects of the book, including type, formulas, paper, and binding are good.

Although it could be argued that some of the topics have recently been reviewed—for instance, parts of Chapter 2 by P. L. Pauson [*Quart. Revs. London* 9, 39 (1955); *Chem. Revs.* 55, 9 (1955)]—I find the selection attractive and useful. Chapter 1 is a readable and comprehensive account of total synthesis in the steroid field from the early work of Bachmann and coworkers on equilenin to the recent successful efforts of various groups. Considerable attention is devoted to the work carried out at Oxford, although the Harvard, the Merck ("which has the distinction, so far unique, of being stereospecific"), the Ciba, and the two Wisconsin syntheses are extensively discussed. It should be noted that the publication date is 1955, but no references to papers published later than 1953 are included (important papers in 1954 are, for instance: *J. Am. Chem. Soc.* 76, 5014 and 76, 3353). Obviously, the recent work of still another group engaged in steroid synthesis could not be included [compare Stork *et al.*, *J. Am. Chem. Soc.* 78, 501 (1956)].

A review on nonbenzenoid aromatics is timely, and Chapter 2 provides a valuable survey of a fascinating field through 1953; yet, in some respects, the chapter is somewhat disappointing. The treatment is sketchy; for example, under the promising heading of "Heterocyclic benzenoid compounds," one finds 21 lines of discussion (the use of the term *penta-valent nitrogen* on p. 47 is surprising). The cyclobutadiene problem is treated, without critical comments, in ten lines, although a more adequate coverage (two pages) is given for diphenylene. Incidentally, the recent preparation of benzocyclobutene [Cava, *J. Am. Chem. Soc.* 78, 500 (1956)] does not bear out the implied instability (p. 51) of this structure. Some of the arguments concerning stability, or lack of it, in certain systems—for example, those on pages 63 and 76—are not very enlightening.

The review on fulvenes is excellent and truly comprehensive. In addition to dealing with the preparative aspects of fulvene chemistry, the author devotes considerable attention to the theory of

the structure of these compounds; in this respect, the author stresses the results from molecular orbital theory. Regardless of his individual degree of competence in, and inclination toward, these approximate calculations, the reader will find the emphasis on physical data that follows from this approach highly rewarding.

Lithium alkyls, alkenyls, alkynyls and aryls, as well as heterocyclic lithium derivatives and dilithium compounds are treated in Chapter 4. A commendable attempt to rationalize the reactions of organolithiums is made, although in some cases—such as in dealing with additions to unconjugated olefins—the explanations are of necessity vague. This chapter will undoubtedly be widely consulted.

The discussion of indole alkaloids includes the yohimbine, corynantheinalstonine, cinchonine, and erythrina types. The selection of topics is dictated by sound reasons, and the limited scope of the coverage permits a detailed and fruitful treatment. It is of interest to note that considerable attention is given to structural relationships and biogenetical schemes, in keeping with current trends in alkaloid research.

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**Official Methods of Analysis of the Association of Official Agricultural Chemists.** William Horowitz, Ed. H. J. Fisher, A. H. Robertson, and Helen Reynolds, Committee on Editing Methods of Analysis. Association of Official Agricultural Chemists, Washington, D.C., ed. 8, 1955. xvi + 1008 pp. Illus. Domestic, \$12; foreign, \$12.50.

The editorial board charged with the revision of the 1950 edition of this book undoubtedly had a mandate to stay within the confines of a single volume. This they accomplished by the free use of abbreviations and cross references, which sometimes makes the book more difficult to use than it would be if more space had been available.

The book covers methods for the analysis of agricultural materials ranging from fertilizer and cattle feeds to cosmetics, hormones, and drugs. The general coverage is nearly the same as that of the 1950 edition, but the field in each category has been somewhat broadened. Many of the older methods have been discarded, and newer techniques have been introduced. Practically every chapter shows important changes and improvements. Methods have been simplified or improved by the introduction of

instrumentation, chromatography, flame photometry, spectrophotometric and fluorometric determinations, and spectrographic techniques. Courage and hard labor were required to develop the portions of the book dealing with hormones and the newer pesticides.

An analyst dealing with agricultural and related products needs this book. Since the wealth of information contained in it gives the impression that the book is bursting at the seams, the editorial board may face the task of issuing two volumes in 1960.

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**Preventive Medicine in World War II.** vol. III, *Personal Health Measures and Immunization*. Ebbe Curtis Hoff, Ed. Office of the Surgeon General, Department of the Army, Washington, D.C., 1955 (order from Supt. of Documents, GPO, Washington 25). 394 pp. \$3.25.

This volume has eight chapters covering manpower selection, personal hygiene, clothing, nutrition, malnutrition and deficiency diseases, preventive psychiatry, accidental trauma, and army immunization progress. The four appendices deal with the administrative requirements for vaccination for yellow fever, cholera, and typhus and for immunization of overseas areas by diseases.

## New Books

*Automata Studies*. C. E. Shannon and J. McCarthy. Princeton University Press, Princeton, N.J., 1956. 285 pp. Paper, \$4.

*The Legacy of Sigmund Freud*. Jacob A. Arlow. International Universities Press, New York, 1956. 96 pp. \$2.

*The Unknown—Is It Nearer?* Eric J. Dingwall and John Langdon-Davies. New American Library, New York 22, 1956. 160 pp. Paper, \$0.35.

*Bacterial Anatomy*. Sixth symposium of the Society for General Microbiology held at the Royal Institution, London, April 1956. E. T. C. Spooner and B. A. D. Stocker, Eds. Cambridge University Press, New York, 1956. 360 pp. \$6.

*Birthplace of the Winds*. Ted Bank, II. Crowell, New York, 1956. 274 pp. \$4.50.

*The Conquest of Mt. McKinley*. Belmore Browne. Houghton Mifflin, Boston, new ed., 1956. 381 pp. \$6.

*Deliver Us from Evil*. The story of Viet Nam's flight to freedom. Thomas A. Dooley. Farrar, Straus and Cudahy, New York, 1956. \$3.50.

*The Descent of Pierre Saint-Martin*. Norbert Casteret. Translated by John Warrington. Philosophical Library, New York, 1956. 160 pp. \$4.75.

*Rockets and Guided Missiles*. John Humphries. Macmillan, New York, 1956. 229 pp. \$6.

*Irrationalzahlen*. Oskar Perron. Chelsea, New York, ed. 2, 1951. 199 pp. Cloth, \$3.25; paper, \$1.50.

*Introduction to the Theory of Groups of Finite Order*. Robert D. Carmichael. Dover, New York (unaltered republication of ed. 1, 1937), 1956. 447 pp. Cloth, \$3.95; paper, \$2.

*Electric Circuit Theory and the Operational Calculus*. John R. Carson. Chelsea, New York, ed. 2, 1953. 197 pp. Cloth, \$3.95; paper, \$1.88.

*Color Atlas of Oral Pathology*. Histology and embryology, developmental disturbances, diseases of the teeth and supporting structures, diseases of the oral mucosa and jaws, neoplasms. U.S. Naval Dental School, National Naval Medical Center. Lippincott, Philadelphia, 1956. 188 pp. \$12.

*New Concepts in Flowering-Plant Taxonomy*. J. Heslop-Harrison. Harvard University Press, Cambridge, Mass., 1956. 135 pp. \$1.25.

*Grundlagen der Allgemeinen Vitalchemie in Einzeldarstellungen*. vol. I, *Die physikalische Grundlage des lebenden Systems: Atom und Molekül*. Karl Kaindl. 1955. 201 pp. S.192. vol. II, *Die physikalisch-chemische Grundlage des lebenden Systems: Ordnungszustände und Reaktionsgeschehen*. Karl Kaindl and Stefan Holzel. 1956. 138 pp. S.186. Urban & Schwarzenberg, Vienna-Innsbruck, Austria.

*Famous Problems of Elementary Geometry*. F. Klein. Translated by Wooster Woodruff Beman and David Eugene Smith. Notes by Raymond Clare Archibald. Dover, New York, rev. ed. 2, 1956. 92 pp. Cloth, \$1.50; paper, \$1.

*Exceptional Children*. Florence L. Goodenough assisted by Lois M. Rynkiewicz. Appleton-Century-Crofts, New York, 1956. 428 pp. \$4.50.

*Experimental Thermochemistry*. Measurement of heats of reaction. Prepared under the International Union of Pure and Applied Chemistry by the Subcommittee of Experimental Thermochemistry. Frederick D. Rossini, Ed. Interscience, New York, 1956. 326 pp. \$7.80.

*The Thirteen Books of Euclid's Elements*. Translated from the text of Heiberg with introduction and commentary by Thomas L. Heath. 3 vols. Dover, New York, rev. ed. 2, 1956. 432 pp.; 436 pp.; 546 pp. Paper, \$5.85 (set of 3 vols.).

*Great Men*. Psychoanalytic studies. Edward Hitschmann. Sydney G. Margolin, Ed. International Universities Press, New York, 1956. 278 pp. \$4.

*Intermediate Analysis*. An introduction to the theory of functions of one real variable. John M. H. Olmsted. Appleton-Century-Crofts, New York, 1956. 305 pp. \$6.

*The Human Heredity Handbook*. Amram Scheinfeld. Lippincott, Philadelphia, 1956. 276 pp. \$3.95.

*Methods in Personality Assessment*. Human behavior in complex social situations. George G. Stern, Morris I. Stein, Benjamin S. Bloom. Free Press, Glencoe, Ill., 1956. 271 pp. \$6.

## Miscellaneous Publications

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

*Bryozoa of the United States Navy's 1947-1948 Antarctic Expedition, I-IV*. Proceedings of the U.S. National Museum, vol. 105, No. 3358, 97 pp. Mary D. Rogick. Smithsonian Institution, Washington, D.C., 1956.

*New Discoveries*. Wonders in our planetary world. Frederick Benario. Hillcrest Publishing Corp., Flushing, N.Y., 1956. 68 pp.

*The Physiology of the Melanophores of the Isopod Idothea Exotica*. Tulane Studies in Zoology, vol. 3, No. 8. Milton Fingerman. 10 pp., \$0.30. *Osmotic Behavior and Bleeding of the Oyster Crassostrea Virginica*. vol. 3, No. 9. Milton Fingerman and Laurence D. Fairbanks. 18 pp. \$0.50. Tulane University, New Orleans, La., 1956.

*General Education in Engineering*. A report of the humanistic-social research project. American Society for Engineering Education, 1956 (order from W. Leighton Collins, University of Illinois, Urbana). 122 pp. \$0.25.

*Ecological Monographs, Twenty-Year Index, Volumes 1-20, 1931-1950*. Donald B. Lawrence and Elizabeth G. Lawrence, Committee on Index. Duke University Press, Durham, N.C., 1956. 44 pp. \$2.50.

*General Features of Algal Growth in Sewage Oxidation Ponds*. Publ. No. 13. State Water Pollution Control Board, Sacramento, Calif., 1955. 48 pp. \$0.75.

*Recherches sur la constitution de l'os adulte*. J. Vincent. Université Catholique de Louvain, Brussels, Belgium, 1955. 153 pp.

*Scientific Institutions of Mexico*. vol. 3. UNESCO, Montevideo, Uruguay, 1955. 76 pp.

*Development, Growth, and State of the Atomic Industry*. Hearings before the Joint Committee on Atomic Energy, Congress of the United States, Eighty-Fourth Congress, second session. pt. 1, section 202, Statutory Hearings. 7, 8, 15, 16, and 23 February 1956. Supt. of Documents, GPO, Washington 25, 1956. 320 pp. \$0.75.

*Symposium on Marine and Fresh-Water Plankton in the Indo-Pacific*. Bangkok, Thailand, 25 and 26 January 1954. Indo-Pacific Fisheries Council, Bangkok, and Science Co-operation Office for South East Asia, Djakarta, Indonesia, 1954. 111 pp. \$1.

*Ascites Tumors as Tools in Quantitative Oncology*. Annals, vol. 63, art. 5. Roy W. Miner, Ed. 394 pp. New York Academy of Sciences, New York, 1956.

*On the Status and Relations of Crocodylus Mindorensis*. Philippine Zoological Expedition 1946-1947. Fieldiana: Zoology, vol. 33, No. 5. Karl P. Schmidt. 5 pp. \$0.15. *A New Genus of Minute Fungus-Pore Beetles from Oregon*. Coleoptera: Ptiliidae. vol. 34, No. 38. Henry S. Dybas. 8 pp. \$0.20. *A New Snake of the Genus Tantilla from West Texas*. vol. 34, No. 39. Sherman A. Minton, Jr. 4 pp. \$0.15. *Dinosaurs, Predator and Prey*. Rainer Zangerl. 12 pp. \$0.25. Chicago Natural History Museum, Chicago, Ill., 1956.