

Hoffmann uses *Curculio* Linn. in the sense that *Hylobius* Germar is generally used. For the nut-weevils generally known as *Curculio* Linnaeus, 1758, he uses *Balaninus* Germar, 1817, apparently overlooking Latreille's 1810 designation of a species of nut-weevil as type of *Curculio*.

Hoffmann differs somewhat from the generally accepted plan of arrangement of higher categories of Curculionidae. In this volume, he recognizes the Cleoninae, Curculioninae, and Calandrinae as subfamilies. The last two are about equivalent to Hylobiinae and the old Curculioninae, respectively. He treats as tribes groups listed in the Junk catalog as subfamilies. An interesting compromise is the use of the tribal name Bariini instead of Barini or Baridiini, the former based on *Baris*, the latter on *Baridius*.

Although the arrangement of subfamilies and tribes does not detract from the main value of the book, it tends to obscure the relationships of the French weevil fauna to that of the remainder of the world, thus making this a local faunistic work.

Hoffmann has done a fine piece of work on this very large and difficult family of beetles. In view of the damage that imported weevils can cause in the United States, this volume should be very helpful to quarantine officials and others in recognizing weevils that are accidentally introduced from France and Europe. It is hoped that the final volume on this family will soon be published.

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Chemical Methods of Blood Analysis. S. D. Balakhovskii and I. S. Balakhovskii. State Publishing House of Medical Literature, Moscow, U.S.S.R., ed. 3, 1953. 746 pp. Illus. (In Russian.)

This is a practical, well-illustrated laboratory manual carefully prepared by two outstanding Soviet clinical chemists. The procedures are clearly and logically presented and are followed by clinical interpretations. The sources of error in the various procedures are clearly indicated. All descriptions include precise presentations of methods of calculating the results and of comparing them with average standard values. The illustrations are technically excellent and include sufficient details so that a competent technician can easily comprehend and reproduce the instrumentation or procedures.

In general, the book includes descriptions of numerous modern methods of blood analysis, many of which are not available in clinical laboratory manuals

or hematology handbooks. Some notable omissions, however, should be mentioned. There is no reference to flame photometry methods of analysis of sodium and potassium, and there is no utilization of chromatography.

The book as a whole is done unusually well and is beautifully organized. The index is good. The appendix includes 16 extensive tables containing laboratory data on various blood constituents in man as well as in many laboratory animals.

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Fibrous Proteins and Their Biological Significance. Symposia of the Society for Experimental Biology, No. IX. Academic Press, New York, 1955. vi + 370 pp. Illus. + plates. \$8.

Progress in knowledge of fibrous proteins has been phenomenally great in recent years, and many of the most exciting developments are discussed in detail in this valuable book, based on papers that were presented at a symposium in Leeds in September 1954.

The opening introductory review is appropriately by W. T. Astbury, who has probably done more than any other individual to advance our knowledge of fibrous proteins. F. Sanger gives an excellent discussion of the chemistry of simple proteins, with emphasis on the determination of end groups and of amino acid sequences, including several valuable tables. E. Chargaff gives a brief, but authoritative and provocative, discussion of deoxypentose nucleoproteins. Most of the other papers deal with two great classes of fibrous proteins—the collagens and the muscle proteins.

The structural chemistry of collagens is intensively discussed by R. S. Bear, by J. T. Randall and his collaborators, and by F. O. Schmitt, J. Gross, and J. H. Highberger; the metabolism of collagen is well treated by A. Neuburger; various aspects of the biology of collagens are considered by K. M. Rudall, by D. Carlström, by A. Engström and J. B. Finean, and by S. F. Jackson and R. H. Smith; and collagen diseases are discussed by J. H. Kellgren. The structure and functions of the muscle proteins are considered by K. Bailey and S. V. Perry, while J. Hanson and H. E. Huxley describe in detail their fascinating studies on the fine structure of muscle and its possible significance for contraction. B. R. Malcolm provides some observations on the infrared spectrum of muscle. H. H. Weber discusses the link between metabolism and motility of cells and muscles, with stress on the free energy released by the

breakdown of adenosine triphosphate as the inferred source of the driving energy for these processes.

There are two excellent papers on flagella and cilia of bacteria and animals—one by W. T. Astbury, E. Beighton, and C. Weibull and the other by J. R. G. Bradfield. Only one paper, by J. B. Speakman, discusses keratin, and this paper is extremely interesting. In the last two contributions, D. Mazia discusses the organization of the mitotic apparatus and J. G. Gall discusses the amphibian oocyte nucleus.

The whole symposium is on a very high level, and the papers that were presented are indispensable to anyone who is seriously concerned with understanding the nature of the fibrous proteins and their functions in biology. The illustrations are numerous and excellent. The discussion reveals our ignorance of both the structures of collagen and the true molecular basis of cell motility and muscular contraction in spite of all the fascinating information that has been obtained. Recent studies by Rich and Crick [*Nature* 176, 915 (1955)] and by Cowan, McGavin, and North [*Nature* 176, 1062 (1955)] may represent major steps in the elucidation of the former problem. In any case, those who are still searching for the answers to such problems will find the material presented in this book indispensable.

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Dielectric Behavior and Structure. Dielectric constant and loss, dipole moment and molecular structure. Charles Phelps Smyth. McGraw-Hill, New York-London, 1955. x + 441 pp. Illus. \$9.

The last two decades have been marked by rapid growth in both theoretical and experimental knowledge of dielectric behavior. As a result, the field of dielectrics has reached a point where it is no longer convenient to treat thoroughly both aspects in a single concise volume. Several authoritative textbooks have appeared recently in which major emphasis has been devoted to general foundations and theory. *Dielectric Behavior and Structure*, on the other hand, has been written primarily from the viewpoint of the experimentalist who is concerned with utilizing dielectric measurements to obtain specific information regarding the structure of liquids and solids and of individual molecules. In subject matter, it bears little resemblance to the author's earlier monograph. Progress during the intervening years, to which Smyth and his associates at Prince-

ton University have made a foremost contribution, has provided a large reservoir of new information and led to many new or revised interpretations.

The general concepts and various theoretical and empirical relationships pertaining to dielectric constant, loss, and dipole moment are discussed in the first two chapters. Although this treatment is necessarily brief and rather noncritical, the reader will find it well documented with references to the original literature and to other recent textbooks. The next four chapters are devoted to a consideration and interpretation of data on the dielectric constant of and dielectric loss in a variety of liquid and solid systems that represent varied types of behavior. The chapter on solids, for example, contains a discussion of polar and nonpolar crystalline solids, ionic crystals, glasses, polymers, ferroelectrics, and electrets. Following a short chapter on methods of measuring dielectric constant and loss are six chapters on dipole moments and their relationship to molecular structure. The various classes of inorganic, organic, and organometallic compounds are treated in systematic fashion. Two concluding chapters deal with amino acids and proteins and with atomic and electronic polarization.

The book appears to be well organized, adequately indexed, and relatively free from typographical errors. It can be recommended for those who are interested in a lucid account of the application of dielectrics to the problems of structural chemistry. Its reference value to the student and research worker alike is considerably enhanced by the inclusion of many figures and tables and by nearly 1500 literature citations.

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Arctic Research. The current status of research and some immediate problems in the North American Arctic and Subarctic. Spec. Publ. No. 2 of The Arctic Institute of North America (reprinted from *Arctic*, vol. 7, Nos. 3 and 4, pages 113-366). Diana Rowley, Ed. Arctic Institute of North America, Montreal, Canada, 1955. 261 pp. Illus. \$3.50; members, \$3.

This is a collection of research papers in the physical, biological, and social sciences about the arctic and subarctic of North America. The principal topics covered in the physical sciences are meteorology, geology and geomorphology, glaciology, permafrost, geophysical research and exploration, the ionosphere, geodetic investigations, oceanography, tidal data, and sea ice; topics in the biological sciences are limnology, marine

ecology, botany, soil resources and agriculture, wildlife research, invertebrate zoology, entomology, and biological research; topics in the social sciences are archeological research, human ecology, human geographic research, settlement and transportation, and cold acclimatization in the Eskimo. All articles have bibliographies; lists of field and library projects sponsored by the Arctic Institute are included. There is an index and a folding map inside the back cover.

New Books

The Technique of Operative Surgery, vol. 1, *The Operations of the Billroth II Type* (in three languages). Raimund Wittmoser. English translation by John C. Foster; French translation by A. Jost. Maudrich, Vienna, 1956. 350 pp. \$12.84.

Mechanical Engineering Practice. A laboratory reference text. Charles F. Shoop and George L. Tuve. McGraw-Hill, New York, ed. 5, 1956. 471 pp. \$7.

Expanding Universes. E. Schrodinger. Cambridge University Press, Cambridge, 1956. 93 pp. \$3.50.

Statistics, A New Approach. W. Allen Wallis and Harry V. Roberts. Free Press, Glencoe, Ill., 1956. 646 pp. \$6.

The Laws of Nature. R. E. Peierls. Scribner's, New York, 1956. 284 pp. \$4.50.

Essentials of Quantitative Analysis. An introduction to the basic unit operations. A. A. Benedetti-Pichler. Ronald, New York, 1956. 666 pp. \$15.

Les Mécanismes cérébraux de la prise de conscience. Neuropsychologie, psychanalyse, et psychologie animale. Paul Chaudard. Masson, Paris, 1956. 240 pp. F. 1300.

St. Paul's Journeys in the Greek Orient. Studies in Biblical Archaeology No. 4. Henri Metzger. Philosophical Library, New York, 1955. 75 pp. \$2.75.

Rapid Calculations. A. H. Russell. Emerson Books, New York, 1956. 287 pp. \$2.95.

Introduction to Plasticity. Aris Phillips. Ronald, New York, 1956. 230 pp. \$7.

The Americana Annual, 1956. An encyclopedia of the events of 1955. Lavinia P. Dudley and John J. Smith. Americana Corp., New York, 1956. 866 pp.

XIVth International Congress of Pure and Applied Chemistry. Main congress lectures and lectures in the sections. Birkhäuser, Basel, Switzerland, 1955. 287 pp. F. 32.

Radiation Biology, vol. III, *Visible and Near-Visible Light*. Alexander Hollaender, Ed. McGraw-Hill, New York, 1956. \$10.

General Botany. William T. Taylor and Richard J. Weber. Van Nostrand, Princeton, N.J., 1956. 376 pp. \$5.75.

The Prevention of Cruelty to Children. Leslie George Housden. Philosophical Library, New York, 1956. 406 pp. \$7.50.

World Symposium on Applied Solar Energy, Proceedings. Held at Phoenix, Ariz., 1-5, Nov. 1955. Sponsored by Association for Applied Solar Energy, Stanford Research Institute, and University of Arizona. Association for Applied Solar Energy, Phoenix, Ariz., 1956. 304 pp. \$5.

Noradrenaline. Chemistry, physiology, pharmacology and clinical aspects. U. S. von Euler. Thomas, Springfield, Ill., 1956. 382 pp. \$11.50.

An Outline of Social Psychology. Muzafer Sherif and Carolyn W. Sherif. Harper, New York, rev. ed., 1956. 792 pp. \$6.

Police Drugs. Jean Rolin; translated by Laurence J. Bendit. Appendix on *Narcosis* by Edward V. Saher. Philosophical Library, New York, 1956. 194 pp. \$4.75.

The New Psychology for Leadership. Based on researches in group dynamics and human relations. Donald A. Laird and Eleanor C. Laird. McGraw-Hill, New York, 1956. 226 pp. \$4.

Psychoanalysis and Psychotherapy. Developments in theory, technique, and training. Franz Alexander. Norton, New York, 1956. 299 pp. \$4.75.

Wonder World of Microbes. Madeleine P. Grant. Whittlesey House, McGraw-Hill, New York, 1956. 160 pp. \$2.75.

Trigonometrical Series. Antoni Zygmund. Chelsea, New York, ed. 2, 1952. 329 pp. Cloth, \$4.95; paper, \$1.50.

Tables of Weber Parabolic Cylinder Functions. Computed by Scientific Computing Service Limited. Mathematical introduction by J. C. P. Miller. Her Majesty's Stationery Office, London, 1955 (order from British Information Service, New York). 233 pp. \$11.68.

Surface Area. Lamberto Cesari. Princeton University Press, Princeton, N.J., 1956. 595 pp. \$8.50.

The World of Plant Life. Clarence J. Hylander. Macmillan, New York, ed. 2, 1956. 653 pp. \$8.95.

Man, His Life, His Education, His Happiness. A. Da. Silva Mello (translated from the Portuguese by M. B. Fierz). Philosophical Library, New York, 1956. 729 pp. \$6.

Modern Chemical Processes. A series of articles describing chemical manufacturing plants. vol. 4. Editors of *Industrial and Engineering Chemistry* and the technical staffs of the cooperating organizations. Reinhold, New York; Chapman & Hall, London, 1956. 202 pp. \$5.

Handbuch der Laplace-Transformation, vol. II, *Anwendungen der Laplace-Transformation*. Gustav Doetsch. Birkhäuser, Basel-Stuttgart, 1955. 436 pp. DM. 52.

Faculty Requirements and Standards in Collegiate Schools of Business. Proceedings of a Conference on Professional Education for Business held 27-29 Oct. 1955 at Arden House, Harriman Campus of Columbia University. American Association of Collegiate Schools of Business, New York, 1955. 216 pp.

Geometrical Optics. L. C. Martin. Philosophical Library, New York, 1956. 215 pp. \$7.50.

Germanium Diodes. S. D. Boon. Philips Technical Library, Eindhoven, Netherlands, 1956. 85 pp.

Genetics. The modern science of heredity. Edward O. Dodson. Saunders, Philadelphia, 1956. 329 pp.

Chemical Applications of Spectroscopy, vol. IX of *Technique of Organic Chemistry*. W. West, Ed. Interscience, New York, 1956. 787 pp. \$15.