

treatments, many growers were convinced that soil-inhabiting nematodes are an important burden to plants.

Small groups of plant nematologists are active in various parts of the world, the largest number being in the United States. California has the only university department of nematology, so termed, at the graduate level, but a growing number of universities include specialists in nematology in their plant pathology and entomology departments. Publication of the first American book devoted exclusively to plant nematodes is therefore an event.

Christie is the dean of experimental agricultural nematology in the United States. His book discusses each of the known plant-parasitic nematodes in turn, presenting a well-illustrated and careful compilation of information useful to a wide audience. The book includes no taxonomic keys; it strongly emphasizes life history, injury to plants, and methods of control. The literature citations are adequate.

Plant nematology is at an exciting moment in its history. Study of the subject is gradually gaining support, both from government and in universities. The great complexity of the relations between host and parasite makes it imperative that we employ the full resources of modern biology to achieve the necessary understanding for manipulating these relationships. Christie's book shows the tremendous variety of the nematodes parasitic on plants; it will ease the task of all who seek to become acquainted with these forms.

VICTOR H. DROPKIN

*Nematode Research Laboratory,
U.S. Department of Agriculture,
Seaford, Long Island, New York*

A Method of Anatomy. Descriptive and deductive. J. C. Boileau Grant. Williams and Wilkins, Baltimore, Md., ed. 6, 1958. xxv + 879 pp. Illus. \$11.

Since its original publication in 1937, this book has enjoyed great popularity, and countless numbers of beginning medical students have found it helpful in gaining some understanding of human gross anatomy. The body is considered by regions, rather than by systems as in the larger, standard texts; hence this book in some degree combines the functions of a simplified text and a dissecting manual. It is intended to be, in

the words of the author, "a working instrument designed to make Anatomy rational, interesting and of direct application to the problems of medicine and surgery."

The text of this newest, sixth edition has been considerably revised, and this involved deletions as well as additions. However, the character of the book has not been altered. The most striking change is in the use of the new international anatomical nomenclature, or N.A.P. (*Nomina Anatomica Parisiensia*), which was accepted by the sixth International Congress of Anatomists at Paris in 1955. Happily, however, where the newer terminology differs substantially from that previously in general use, the older B.N.A. (*Basle Nomina Anatomica*) or B.R. (*Birmingham Revision*) terms are also given in brackets. Parenthetically, it is to be hoped that international adoption of the N.A.P., even though the new nomenclature may be inadequate in some respects, will put an end to the unprofitable tinkering with anatomical terminology that has plagued anatomists during the past quarter-century.

The illustrations, all in black-and-white, number 862; of these, 34 are new. Many of the figures are clever diagrams which are quite useful to the student. In general, however, the illustrations are so simplified or even schematic that the book can be most profitably used only in connection with an anatomical atlas.

A useful list of nearly 200 references is appended. This has been kept up to date: 71 are of the last decade, and 36 have been published since the previous edition—hence, since 1952. Regrettably, however, all save four are references to books or papers written in English, and of these, two are cross-references to translations of French publications. Admittedly, the American medical student (and, evidently, his Canadian counterpart as well) shrinks from contact with anything written in a foreign language. Yet it may be questioned whether the anatomist, of all people, with the roots of his science extending back into antiquity, should wittingly acquiesce in and even contribute to the increasing debasement of the humanistic aspects of medicine.

No book can be entirely satisfactory to everyone. In any event, this book is one of the best of the shorter gross-anatomy texts now available in the English language. Its continued popularity seems assured, particularly in view of the cur-

rent trend toward drastic curtailment of the time devoted to anatomy in the medical curriculum. Under these conditions, a shorter text of this sort is especially valuable.

WILLIAM L. STRAUS, JR.

*Department of Anatomy,
Johns Hopkins University
School of Medicine*

The Chemistry and Physics of Clays and Other Ceramic Materials. Alfred B. Searle and Rex W. Grimshaw. Interscience, New York, ed. 3, 1959. 942 pp. Illus. \$16.25.

The appearance, after 25 years, of a third edition of this standard reference volume on the composition and properties of clays will be welcomed enthusiastically by everyone who has any interest in clays and soils. As stated in the preface of the second edition, the object of the authors was to select and coordinate all important facts that appertain to the chemistry and physics of clays and allied materials. It would be impossible for anyone to attain completely such an objective, but the authors are to be congratulated on having come very close to it.

The first chapters in the volume are concerned with the atomic structure of the components of clay materials and with methods of identifying and analyzing these components. These are followed by many chapters which are concerned with the physical properties of clay materials, and the authors are especially concerned with the theories that have been advanced to explain these properties. Throughout the book consideration is given to the occurrence of various types of clay materials, and a brief historical discussion of ceramics is presented at the beginning of the volume. The book is very clearly written and remarkably free from errors. There is a considerable amount of repetition—for example, in the consideration of the characteristics of clay-water systems—but this is perhaps unavoidable in a volume of this kind.

In a volume of this magnitude every serious student of clays is bound to find some statements with which he disagrees. Thus, I am not in accord with all the statements made concerning bentonite, chert, and ball clays.

The volume could have been substantially shortened if many of the trivia

had been omitted; these in most cases are concerned with simple details which are common knowledge to everyone with any interest in clays and soils. A single example (many can be given) is the detailed discussion of the process of sieving; this could have been shortened or even eliminated.

RALPH E. GRIM

Geology Department,
University of Illinois

New Books

Annual Review of Medicine. vol. 10. David A. Rytand, Ed. Annual Reviews, Palo Alto, Calif., 1959. 455 pp. \$7. Contents: "Infectious diseases (some aspects of salmonellosis)," I. L. Bennett, Jr., and E. W. Hook; "Gastroenterology," J. B. Kirsner, J. E. Dooley, G. E. Scott, S. C. Kraft; "Diseases of the cardiovascular system (excluding hypertension and atherosclerosis)," F. D. Johnston; "Cardiovascular diseases (atherosclerosis)," W. Dock; "Diseases of the cardiovascular system (surgical)," D. E. Harken and W. J. Taylor; "Nutrition and nutritional diseases," G. H. Berryman; "Endocrinology (diabetes)," H. T. Ricketts; "Endocrinology (reproduction)," R. L. Landau; "Endocrinology (surgery of the endocrines)," J. D. Hardy; "Allergy and immunology," W. B. Sherman; "Neoplastic diseases (cancer)," C. Oberling; "Neoplastic diseases (tumor chemotherapy)," R. L. Clark, Jr., and W. W. Sutow; "Diseases of the nervous system," R. N. DeJong; "Psychiatry," T. A. Gonda; "Special therapeutics (transfusions)," S. C. Finch; "Diseases of the skin," S. W. Becker, Jr.; "Pediatrics (noncardiac anomalies)," M. M. Ravitch and R. J. Wilder; "Diseases of the respiratory system," R. S. Mitchell and G. C. Bower; "Environmental medicine," R. A. Kehoe, L. H. Miller, A. Davis, M. Zavan.

Automation and Society. Howard B. Jacobson and Joseph S. Roucek, Eds. Philosophical Library, New York, 1959. 553 pp. \$10.

Beginners' Book of Astronomy. John Sternig. McBride, New York, 1959. 162 pp. \$3.75 (juvenile book).

College Physics. Franklin Miller, Jr. Harcourt, Brace, New York, 1959. 623 pp. \$7.25.

Concise Dictionary of Science. Physics, mathematics, nucleonics, astronomy, chemistry. Frank Gaynor. Philosophical Library, New York, 1959. 546 pp. \$10.

DDT. The insecticide dichlorodiphenyl-trichloroethane and its significance. vol. II. Paul Muller, Ed. Birkhauser, Basel, Switzerland, 1959. 570 pp. F. 66.

The Dentition of the Growing Child. A longitudinal study of dental development between 3 and 18 years of age. Coenraad F. A. Moorrees. Harvard Univ. Press, Cambridge, Mass., 1959. 253 pp. \$5.50.

Developmental Cytology. Dorothea Rudnick, Ed. Ronald Press, New York,

1959. 220 pp. \$7. Contents: "Nuclear and cytoplasmic differentiation in the protozoa," J. R. Preer, Jr.; "Quantitative chromosomal changes and differentiations in plants," C. R. Parten; "Numerical variation of chromosomes in higher animals," T. C. Hsu; "Nuclear and cytoplasmic changes in tumors," G. Klein and E. Klein; "Chromosomal differentiation in insects," W. Beermann; "Changes in nucleoli related to alternations in cellular metabolism," H. F. Stich; "Developmental changes in chloroplasts and their genetic control," D. von Wettstein; "Changes in the fine structure of the cytoplasmic organelles during differentiation," D. W. Fawcett; "Metabolic interactions in cell structures," A. L. Lehninger.

Directory of Periodicals Published by International Organizations. Union of International Associations, Brussels, Belgium, ed. 2, 1959. 251 pp. \$3.

Electric Motors and Generators Illustrated. An up-to-date practical guide for all those interested in the generation and application of electricity. E. T. G. Emery et al. Philosophical Library, New York, 1959. 384 pp. \$12.

Excursion Flora of the British Isles. A. R. Clapham, T. G. Tutin, E. F. Warburg. Cambridge Univ. Press, New York, 1959. 612 pp. \$4.50.

Experimental Techniques in Low-Temperature Physics. Guy Kendall White. Oxford Univ. Press, New York, 1959. 246 pp. \$7.20.

Fundamentals of Physical Chemistry. H. D. Crockford and Samuel B. Knight. Wiley, New York; Chapman & Hall, London, 1959. 481 pp. \$6.95.

General Circuit Theory. Gordon Newstead. Methuen, London; Wiley, New York, 1959. 151 pp. \$3.

The Geochemistry of Rare and Dispersed Chemical Elements in Soils. Translated from the Russian. A. P. Vinogradov. Published for the Geochemical Soc. by Consultants Bureau, New York, 1959. 209 pp. \$9.50.

Group Theory. And its application to the quantum mechanics of atomic spectra. Eugene P. Wigner. Translated from the German by J. J. Griffin. Academic Press, New York, expanded ed., 1959. 383 pp. \$8.80.

Handbuch der Physik. vol. 52, *Astrophysics III: The Solar System*. S. Flügge, Ed. Springer, Berlin, 1959. 608 pp. DM. 148.

Index Kewensis, Plantarum Phanerogamarum. 1951-1955. George Taylor, Ed. Oxford Univ. Press, New York, 1959. 162 pp. \$12.

Junior Colleges and Specialized Schools and Colleges. Porter Sargent, Boston, Mass., ed. 3, 1959. 448 pp. \$5.

Mechanical Man. Beril Becker. Putnam's, New York, 1959. 192 pp. \$2.95 (juvenile book).

Methods of Biochemical Analysis. vol. 7. David Glick, Ed. Interscience, New York, 1959. 362 pp. \$9.50.

Methods of Experimental Physics. vol. 1, *Classical Methods*. Immanuel Estermann, Ed. Academic Press, New York, 1959. 608 pp. \$12.80.

A Modern Introduction to College Mathematics. Israel H. Rose. Wiley, New York; Chapman & Hall, London, 1959. 551 pp. \$6.50.

Orthogonal Functions. G. Sansone. Translated from the Italian by Ainsley H. Diamond. Interscience, New York, rev. English ed., 1959. 423 pp. \$11.

Plane Trigonometry. Nathan O. Miles. Wiley, New York, 1959. 245 pp. \$3.95.

The Rainbow. From myth to mathematics. Carl B. Boyer. Yoseloff, New York, 1959. 376 pp. \$10.

The Romance of Chemistry. From ancient alchemy to nuclear fission. Keith Gordon Irwin. Viking, New York, 1959. 159 pp. \$3.75.

The Story of the Plant Kingdom. Original edition by Merle C. Coulter; revised by Howard J. Dittmer. Univ. of Chicago Press, Chicago, 1959. 335 pp. \$5. The original version was written in 1935 to serve as a textbook in botany under the new Chicago College Plan. The text was used in that division of the plan called "Introduction to Biological Sciences."

Strong and Elwyn's Human Neuroanatomy. Raymond C. Truex. Williams & Wilkins, Baltimore, Md., ed. 4, 1959. 524 pp. \$10.

They Explored! Humboldt, Livingston, Fremont, Hedin, Scott, Herzog. Rhoda Hoff and Helmut de Terra. Walck, New York, 1959. 120 pp. \$3.25.

Treatise on Invertebrate Paleontology. Part O. Arthropoda 1: Arthropoda—general features, Protarthropoda, Euarthropoda—general features, Trilobitomorpha. Raymond C. Moore, Ed. Univ. of Kansas Press, Lawrence, 1959 (order from Geological Soc. of America, New York). 579 pp.

Uranium and Other Miracle Metals. Fred Reinfeld. Sterling, New York, 1959. 128 pp. \$3.95.

Virus Growth and Variation. Ninth symposium of the Society for General Microbiology held at the Senate House, University of London, April 1959. Cambridge Univ. Press, New York, 1959. 278 pp. \$7. Contents: "Viruses: a survey of some current problems," S. E. Luria; "Growth of bacteriophage," E. Kellenberger; "The multiplication of viruses in plants," B. D. Harrison; "Some observations concerning the reproduction of RNA-containing animal viruses," W. Schafer; "Studies of mixed infections with NDV, poliovirus and influenza," G. K. Hirst; "Viral interference," A. Isaacs; "Host-controlled variation in animal viruses," J. M. Hoskins; "Growth studies with Herpes virus," M. G. P. Stoker; "Special interactions between virus and cell in the Rous sarcoma," H. Rubin; "Studies on vaccinia virus in HeLa cells," H. B. Maitland and R. Postlethwaite; "The chemical approach to the study of animal virus growth," P. D. Cooper; "Fluorescence microscopy: observation of virus growth with aminoacridines," E. S. Anderson, J. A. Armstrong, J. S. F. Niven; "Electron-microscopic observations on adenoviruses and viruses of the influenza group," C. Morgan and H. M. Rose.