Anatomy

Atlas of Human Anatomy. vols. 1–3. vol. 1, *Osteology, Arthrology and Syndesmology, Myology* (317 pp.); vol. 2, *Splanchnology, Ductless Glands, Heart* (229 pp.); and vol. 3, *Nervous System, Angiology, Sense Organs* (326 pp.). Ferenc Kiss and János Szentágothai. Pergamon, London; Macmillan, New York, ed. 17, 1964. Illus. $17.50.

This atlas, by Ferenc Kiss and János Szentágothai, professor emeritus of anatomy and professor of anatomy, respectively, at the University of Budapest, consists of three attractive cloth-bound volumes which are boxed together. A glossy, high-quality paper is used, and most of the figures are in color. In most cases the terminology is based on the *Nomina Anatomica* (Paris, 1955) with modifications adopted at the International Anatomical Congress (New York, 1960). The figure labels are in Latin, but the legends are in both Latin and English. The figures are good; the lead lines for the labels are easy to follow, and their termination is clearly indicated. Furthermore, they do not interfere with a study of the figure. In some cases the labels are numbered with the key at the bottom of the page. Each volume has two indexes, one for anatomical terms and another for figure legends.

Previous editions of the atlas have been published in Hungarian (five editions), German (four editions), Russian and Bulgarian (one edition), Russian (three editions), and one edition each in Chinese, English, Spanish, and Czech.

In volume 1 the authors consider osteology (149 figures), arthrology and syndesmology (64 figures), myology (104 figures), and muscle origins and insertions (25 figures).

Volume 2 covers the digestive system (81 figures), the respiratory system (40 figures), the urogenital system (66 figures), the ductless glands (7 figures), and the heart (29 figures). Colored cutaway figures are used to show detailed structure of the intestinal wall and villi, the villi, the liver, the spleen, and the kidney. There are also colored figures of injection-corrosion preparations showing the portobiliary lobes of the liver, the hepatic veins, the renal blood vessels, the hypophyseal circulation, and the cardiac vessels. Details of the glomeruli and their associated vessels are shown in photographs of corrosion preparations. There are several figures of the peritoneum and structures within the mesentaries.

Volume 3 is devoted to the central nervous system (94 figures), the peripheral nervous system and blood vessels (91 figures), the autonomic nervous system (6 figures), the lymphatic system (23 figures), the sense organs (47 figures), and the skin and appendages (5 figures). Detailed gross structure of the brain is given in 56 figures; craniocerebral topography in 4 figures, and cranial meninges in 7 figures. The brachial plexus is shown in relation to the scaleni muscles, the axillary artery, and the pectoral girdle.

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Introductory Abstract Algebra

Principles of Modern Algebra. J. Eldon Whitesitt. Addison-Wesley, Reading, Mass., 1964. viii + 262 pp. Illus. $7.50.

This book, which was designed as an introductory abstract algebra text for training teachers of secondary mathematics, follows an outline recommended by the Committee on the Undergraduate Program in Mathematics (CUPM) of the Mathematical Association of America. It is also intended to introduce, in a modest but sufficiently substantial manner, modern algebra to the not too sophisticated sophomore mathematics major. It might well also serve as a textbook for a fifth year of high school mathematics.

The first chapter treats sets, relations, functions, binary operations, and logic; the second is a small but useful zoo of algebraic systems—the integers as old friends (but with a beginning exposure of structural bones), the integers mod 7 and mod 6, permutations, and 2-by-2 matrices. In chapter 3 an adequate but not inspired treatment of mathematical induction precedes a rigorous discussion of the integers as equivalence classes (of ordered pairs of natural numbers) that form an integral domain having certain essential factoring and division properties. The field of rationals is then described, starting from equivalence classes of fractions; representing the rationals on the number line and by decimals leads to defining the positive reals by positive decimals but without pressing on to addition and multiplication. Thus unconstructed, the reals are taken to be what is asserted to be the essentially unique complete ordered field. The complex numbers follow the usual blue print.

The second half is abstract but with a variety of examples—groups (permutations, rigid plane motions, cyclic subgroups), rings, and fields, including some mention of ideals and extensions. The final chapter defines a polynomial over an integral domain D as a finitely nonzero infinite sequence in D, develops the integral domain of these polynomials, relates it to the polynomials with which the high school student is familiar, and ends by discussing divisibility and factoring.

The development from the familiar to the abstract is appropriately staged, and the exercises are well chosen and well grouped. Although the mathematical style could at times be a little lighter and more direct, and there is some muddiness of phrasing (for example, "Thus subtraction and division are usually not defined for the set" of natural numbers) and occasional vocabulary slips (see pages 25 and 150), this is a serious, hardworking, and successful attempt to carry out the intent of the CUPM outline, and it should serve its purposes.

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Introductory Textbook

Introduction to Molecular Biology. G. H. Haggis, D. Michie, A. R. Muir, K. B. Roberts, and P. M. B. Walker. Wiley, New York, 1964. xii + 401 pp. Illus. $7.50.

The authors of this volume set out to present an introduction to molecular biology intended for students in biological and medical science in their second and third undergraduate years or in their early research years. They also expect that the volume will be useful to physics and chemistry students contemplating work in molecular biology.

To encompass the wide and rapidly growing field of molecular biology and ultrastructural studies, the survey must

necessarily be selective and limited in depth. For the most part the authors have achieved an admirable balance in the topics they cover; they give an adequate and in many cases a stimulatingly written introduction to many subjects, from which point students can go directly to the original papers. There is a marked emphasis on the currently popular molecular genetics and the coding problem; but there is a corresponding deficit in areas that certainly merit more attention than they get. For example, flagella and cilia are barely mentioned; the elegant synthesis of electron microscopic and physicochemical studies on tropocollagen also received scant attention. Any other reviewer would doubtless object to the exclusion of other topics, but such criticisms are almost inevitable on a book of modest size covering so broad a field.

The emphasis on very current research such as the coding problem will perhaps date the book rapidly, but the authors have nevertheless achieved a very clearly written and exceedingly well-illustrated summary of a substantial part of the field of molecular biology. A few of the electron micrographs suffer from low contrast, but it is not clear whether the fault lies with the original choice of micrograph or with the reproduction process. Most of the structural formulae are illustrated as space filling models that are well reproduced.

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Wistar Institute Monographs

The Thymus. A symposium, Philadelphia, Pa., April 1964 (*Wistar Inst. Monogr. No. 2*). Vittorio Defendi and Donald Metcalf, Eds. Wistar Institute Press, Philadelphia, 1964. viii + 145 pp. Illus. Paper, $5.

The thymus has been, for a long time, a stepchild of research. Not even a chapter was devoted to it in some of the great monographs on internal secretion. But this situation is now being corrected by the very intense research work that is going on. The object of this volume, and the purpose of the symposium on which it is based, is to help research by summing up our present knowledge about the function of the thymus. It is very gratifying that the volume was published in a relatively short time (only 4 months) after the symposium was held.

As one of the editors, Defendi, states in his preface, emphasis has been placed on the lines which "at the moment seemed to be the most significant for the understanding of the thymus function." Although the function of the thymus is still a mystery, it is becoming increasingly clear that the gland produces cells with special immunological competence, and, at the same time, also produces some humoral factor. The volume gives a fairly clear picture of the present status of our knowledge with respect to this area, and it will be helpful to researchers working in this field as well as to those who want to enter it.

The book contains 12 articles: R. Auerbach discusses the function of the embryonic thymus; S. L. Clark, Jr., the penetration of proteins and collodial materials into the thymus from the blood stream; G. J. Thornbecke and M. W. Cohen, the immunological competence and responsiveness of the thymus; R. E. B. Billingham and W. K. Silvers, some biological differences between thymocytes and lymphoid cells; D. Metcalf, functional interactions between the thymus and other organs; H. A. Azar, J. Williams, and K. Takatsuki, the development of plasma cells and immunoglobulins in the neonatally thymectomized rats. R. Wilson, K. Sjodin, and M. Bealmar report on thymus studies in germ-free mice. Sensitized reactions in thymectomized animals were discussed by B. H. Waksman, recovery of immunological responsiveness in thymectomized animals by thymus grafting, by J. F. A. P. Miller, and the role of the thymus in carcinogenesis by V. Defendi and R. A. Roose. Remarks about thymocytes were made by W. L. Law, T. A. Dunn, N. Trainin, and R. H. Levey. The discussions that followed the lectures are illuminating.

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New Books

Biological and Medical Sciences

The Cytoplasm in Heredity. D. Wilkie. Methuen, London; Wiley, New York, 1964. 123 pp. Illus. $3.50.

Diagnostic Virology. G. D. Hsiung and J. R. Henderson. Yale Univ. Press, New Haven, Conn., 1964. 133 pp. Illus. Paper, $4.50.

Distribution and Taxonomy of Mammals of Nebraska. J. Knox Jones, Jr. Univ. of Kansas, Lawrence, 1964. 356 pp. Illus. (order from the Univ. of Kansas, Museum of Natural History, Lawrence). 25¢.

Dynamic Clinical Studies with Radioisotopes. Proceedings of a symposium (Oak Ridge, Tenn.), October 1963. Ralph M. Kniseley, W. Newlon Tauxe, and Elizabeth B. Anderson, Eds. U.S. Atomic Energy Commission, Washington, D.C., 1964 (order from U.S. Department of Commerce, Washington, D.C.). 640 pp. Illus. Paper, $4.50.

The Emergence of Biological Organization. Henry Quastler. Yale Univ. Press, New Haven, Conn., 1964. 95 pp. Illus. $3.75.

Experimental Endocrinology. A sourcebook of basic techniques. M. X. Zarrow, J. M. Yochim, and J. L. McCarthy. With a chapter by R. C. Sanborn. Academic Press, New York, 1964. 535 pp. Illus. $15.

International Review of Cytology. vol. 17. G. H. Bourne and J. F. Danielli, Eds. Academic Press, New York, 1964. 409 pp. Illus. $16. Six papers: "The growth of plant cell walls" by K. Wilson; "Reproduction and heredity in trypanosomes" by P. J. Walker; "The blood platelet: Electron microscopic studies" by J. F. David-Ferreira; "The histochemistry of mucopolysaccharides" by Robert C. Curran; "Respiratory tissue: Structure, histophysiology, cytodynamics (pt. 2). New approaches and interpretations" by Felix D. Bertalanffy; and "The cells of the adenohypophysis and their functional significance" by Marc Herlant.

Isotopes in Biology. George Wolf. Academic Press, New York, 1964. 183 pp. Illus. Paper, $2.45; cloth, $5.50.

The Mosses of Michigan. Henry T. Darlington. Cranbrook Inst. of Science, Bloomfield Hills, Mich., 1964. 224 pp. Illus. $12.

Die Nucleinsauren. Eine einfuhrende Darstellung ihrer Chemie, Biochemie, und Funktionen. Eberhard Harbers. Thieme, Stuttgart, Germany, 1964. 315 pp. Illus. DM. 68.

Outlines of a Theory of the Light Sense. Ewald Hering. Translated from the German edition (1925) by Leo M. Hurvich and Dorothea Jameson. Harvard Univ. Press, Cambridge, Mass., 1964. 347 pp. Illus. $9.95.

Progress in Angiography. Compiled and edited by Manuel Viamonte, Jr., and Raymond E. Parks. Thomas, Springfield, Ill., 1964. 574 pp. Illus. $29.50. Thirty-six papers presented at a meeting held in March 1963; contributors include Herbert L. Abrams, Charles T. Dotter, Benjamin Felson, Harry W. Fischer, Owings W. Kincaid, J. Stauffer Lehman, Russell H. Morgan, Donald L. McRae, Olle Olsson, Robert A. Schobinger, F. Mason Sones, Jr., Israel Steinberg, Juan M. Taveras, Donald Altman, Robert J. Boucek, Agustin Castellanos, Sr., Francisco A. Hernandez, William P. Murphy, Jr., Leonard S. Sommer, and Manuel Viamonte, Jr.