

and misleading statements throughout the text (for example, "The most modern development of the polarization microscope is the interference microscope"; "Its [DNA] metabolism is not very well known"; "... all grain counts made with tritium as a label are suspect, and so are all theories founded on these counts"). The specialist can overlook these deficiencies, or read between the lines where necessary, but for the beginning student or general reader who wants a brief review of the rapidly moving field of chemical cytology, Kuyper's book is not very satisfactory.

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Basic Medical Science

A History of American Pathology.

Esmond R. Long. Thomas, Springfield, Ill., 1962. 474 pp. Illus. \$12.50.

This is an important book—as important to American medicine as a whole as it is to American pathology. The author has succeeded in producing an extraordinarily readable and informative book that should be required reading for everyone interested in the past, present, or future of medicine in America.

The work is divided first with respect to time, beginning with the 16th and 17th centuries and continuing to the present day; it is then subdivided with respect to space (with attention to geographic considerations), specialties, general and special pathology, societies and journals, the effects of the greatly increased support of medical research, in which pathology has shared, and current trends in the practice of pathology as a profession.

American pathology divides itself naturally into two periods: pre- and post-Welch. This is noted in stating: "So began, in 1886, the history of the Pathological Department at Johns Hopkins University, which was to revolutionize not only the teaching of pathology in this country, but in large measure that of every branch of medicine as well." It is further noted that: "After the middle of the century the trend in American visiting was toward central Europe, and, whatever the terminal objective, whether medicine or surgery or a specialty like ophthalmology, it was recognized as sound common sense to acquire a good back-

ground in pathology," which was mainly pathological anatomy.

This continued for many decades thereafter; there was, in fact, no other course open to anyone who aspired to a knowledge of the fundamentals of medicine, in preparation for any branch of clinical medicine; not until the first quarter of this century did medicine, surgery, and the specialties themselves begin to offer alternate pathways. In a brief section entitled "Current trends in pathology," the author calls attention to "the apparent conflict between the old time traditional pathological anatomy and experimental pathology, on the one hand, and clinical pathology as a hospital service function on the other." This conflict he regards as more apparent than real, and he concludes that "it appears clear that pathology, wherever its teaching and research are principally conducted, will be coordinated more closely than has ever been the case before not only with clinical medicine but with the basic sciences in biology, and with physics, chemistry and mathematics as well."

The book illustrates a difficulty encountered by all writers on the history of medicine, and doubtless by those in other fields as well. Although the author is able to treat the early history of American pathology at a leisurely pace and to give as much as several pages to the contributions of a single worker, the tempo is stepped up as the modern period is approached, and as more and more names and topics clamor for attention. That this leads to longer and longer sentences and to fewer words per person and per topic, to the extent that the book comes to resemble a compendium, is not peculiar to this work; it reflects the rapidity with which medicine has grown to a point at which it has become almost unmanageable.

The author states that: "The history, while stressing the growth of ideas, is devoted in large measure to a record of the men and women who made contributions of significance. The number of these is large, and inevitably, the account of each is condensed." Perhaps the only answer is greater selectivity, such as is apparent in the choice of 55 photographs of leaders in pathology for reproduction. Many names could have been omitted, especially of those who are still living and whose position in the history of American pathology is not yet secure.

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Russian Résumé

Plasticity of Crystals. K. V. Klassen-Neklyudova, Ed. Translated from the Russian. Consultants Bureau, New York, 1962. 196 pp. Illus. \$12.50.

This "Authorized translation from the Russian" of an integrated "collection" of papers written during 1957 and 1958 by the Laboratory of the Mechanical Properties of Crystals (Institute of Crystallography, Academy of Science of the U.S.S.R.), is printed on unsized paper from typescript, with an unjustified right margin.

The book represents a résumé, written especially for Russian scientists, of the present status of our knowledge of the plastic deformation of crystals. There are six chapters: "Physical basis of plasticity and strength of crystals" (7 pages) by M. V. Klassen-Neklyudova; "Time and temperature dependence of plasticity characteristics in monocrystals" (52 pages) by V. R. Regel; "Plastic deformation not inducing asterism in Laue spots" (7 pages) by A. A. Urusovskaya; "Formation of regions with a reoriented lattice as a result of deformation of mono- and polycrystals" (38 pages) by A. A. Urusovskaya; "Description of the simplest phenomena of plastic deformation from the viewpoint of dislocation theory" (42 pages) by V. L. Indenbom; and "Effect of grain disorientation angles on the structure and properties of intercrystalline boundaries" (49 pages) by V. F. Miuskov.

Klassen-Neklyudova's chapter serves as an introduction. He explains that, although the plasticity of crystals was a topic of early interest to Russian scientists, such as Joffe, the popularity of nuclear physics forced crystal plasticity into the background. When dislocation theory directed renewed attention to crystal plasticity, the interest of the Russians was again stimulated, but their progress was held up until standard works could be translated. This book is intended to fill the gap in the Russian literature, which occurred between writing the standard works and their translation; systematic description of the present problems is also attempted. This initial chapter also outlines the other chapters.

Regel is concerned with the behavior of single crystals as a function of time and temperature. The relevant experimental work is brought together, and the general physical theories proposed to explain them are discussed. Although