While it might find some utility in this role, it is doubtful that it can compete successfully with well-established texts because of its cost, size, and general format. It is the data added to the usual psychiatric text that gives the book a uniqueness and value of its own. One hesitates to single out for mention any individual authors from among so many, but the serious postgraduate student of psychiatry, whatever his professional or educational background, will discover a number of unusual articles in the *Handbook*. For example, to duplicate the material on neurasthenia and hypochondriasis (two fuzzy areas, to say the least), hysteria, phobic reactions, and the obsessive-compulsive disorders would require a great deal of time in a library. The chapters on sexual disfunction in men and in women contain one of the best discussions on impotence and frigidity of which I am aware. The paper on body image brings up-to-date the thinking of one of the few experts in this field. The part concerned with language, speech, and communication is noteworthy. The organic disorders are well covered; there is an interesting chapter (by six authors) on the relationships between basic medical sciences and experimental psychiatry.

I recommend the *Handbook* for any serious student of psychiatry who is working at the post-graduate level.

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Publishing in the U.S.S.R. Indiana University Publications. Slavic and East European Series, vol. 19. Boris I. Gorokhoff. Indiana University, Bloomington, 1959. xvi + 306 pp. $3.

It is generally accepted that there is a relationship between the volume of publishing and sales of books and serials and the cultural and technological level of a given country. The relationship between publishing and the known upsurge of Russian intellectual endeavor, with its emphasis on science and technology, is well illustrated in this first comprehensive treatise on publishing in the U.S.S.R.

Boris I. Gorokhoff, a staff member of the Slavic and Central European division of the Library of Congress, points out that 59,000 books and pamphlets, about 3000 serials, and approximately 9900 newspapers were published in the U.S.S.R. in 1957. In 1958, the total volume of book publishing rose to almost 64,000, while the number of serials increased to 3800, and newspapers exceeded 10,000. Even if we consider the fact that these over-all figures include pamphlets, instructions booklets, "agitators' notebooks," and much other ephemera, these data still project an impressive picture.

Books in the fields of science and technology, including agriculture and medicine, accounted for 33,000 titles, or 56 percent, of the total number of books produced in 1957; in the same year, serials in the same fields totaled 1600 titles, or 53 percent of the total number of serials published. Industrial and agricultural newspapers totaled 110 titles.

A sizable portion of the study is devoted to Soviet scientific and technical publishing. Several sections of chapter 2, "Types of books published," deal with scientific and technical dissertations, patents, and standards. Chapter 7 presents a good cross-section of the publishing "network" and emphasizes the organizational aspects of technical publishing and of the dissemination of technical information. These well-coordinated activities are mostly carried out under the auspices of the various academies of sciences and pertinent ministries, "committees," and institutes. Scientific documentation (for example, abstracting and indexing, reviews and translations of foreign literature) is the principal topic of chapter 8. Other chapters acquaint the reader with Soviet censorship laws, the copyright and royalty system, and the economic and production facets of the publishing and book trade.

The differences between publishing practices and statistics in the United States and the Soviet Union, not to mention the policies and philosophies that shape such practices, are well characterized in the author's "Conclusions," where we read: "In the United States publishing operates on a *laissez-faire* basis, free of any centralized control . . .; in the U.S.S.R. control from the top is a basic feature of the publishing program. . . . [the] underlying basis [of the program] is the promotion of the country's industrial development." In reference to the statistical aspects of publishing, the author finds that "the principal difference [between] the two countries is that books receive a greater emphasis quantitatively in the U.S.S.R. at the expense of journals and newspapers. Consequently, while the publishing facilities of the U.S.S.R. are much more limited (despite its larger population), books come much closer to matching the United States totals than do periodicals and newspapers."

Within the framework of a brief review, it is not possible to list all the interesting points of this very useful compilation. The work that has gone into the writing of this comprehensive "first" on Soviet publishing will make it a useful reference tool for students of Soviet affairs, scientists, and librarians. Boris Gorokhoff's book, along with Paul Horecky's companion volume, *Libraries and Bibliographic Centers in the Soviet Union*, should be required reading for courses in library reference, documentation, and publishing.

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The Viruses. Biochemical, biological, and biophysical properties. vol. 1, *General Virology*. F. M. Burnet and W. M. Stanley, Eds. Academic Press, New York, 1959. xvii + 609 pp. Illus. $16.50.

This is the first in a series of three volumes edited by Burnet and Stanley; the other two bear the subtitles *Plant and Bacterial Viruses* and *Animal Viruses*. In the words of the editors, "The present work was designed to provide a relatively comprehensive account of current knowledge of viruses regarded, not as agents of disease, but as biological entities whose properties can be studied in the laboratory by the methods of experimental biochemistry, biology, and biophysics."

Volume 1, *General Virology*, opens with a brief introductory chapter by Burnet and Stanley on the basic philosophy of virus research. This chapter is followed by Cohen's detailed discussion of the structure and chemistry of the host cell, with special emphasis on the synthesis of macromolecules. Attention is then given to the physical, chemical, and biological properties of virus particles. General discussions are contributed by Schachman and Williams (on physical properties), Schwerdt (on the relation between particle count and biological function), Gard and Maaløe (on inactivation), and Burnet (on immunological properties); Fraenkel-Con-

rat, Evans, Schäfer, and Bergold consider the comparative chemistry of plant, bacterial, animal, and insect viruses, respectively. The volume closes with Luria's comparative survey of the interaction of host cell and infective particle in virus multiplication.

When the science of virology has progressed to a point where 13 different authorities are required to produce a single volume on general virology, the comments of a single reviewer on their efforts seem almost ridiculous. I will make myself no more ridiculous than necessary by simply observing that this encyclopedic treatise on viruses is the most ambitious yet attempted and will probably be without rival for many years. Its appearance at a time when the study of viruses is assuming a central role in biological research should stimulate both the initiation of new work and the critical reappraisal of present results and objectives.

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Science and Civilisation in China. vol. 3, *Mathematics and the Sciences of the Heavens and the Earth.* Joseph Needham and Wang Ling. Cambridge University Press, New York, 1959. xlvii + 877 pp. Illus. + plates. $27.50.

This third volume deals with the history of Chinese science in a number of particular fields—mathematics, astronomy, geography and cartography, geology, seismology, and mineralogy—and gives very profuse documentation from Chinese sources. Chinese developments are compared with those of Europe, India, and the Arab world during the same periods, and there is discussion of possible influences of one civilization on another.

In mathematics the concept of zero, in the sense of leaving a blank space on the counting board for some particular power of ten, is traced to at least the 4th century B.C., although the use of an actual symbol for zero came very much later. Negative numbers, which did not appear in Indian mathematics until the 7th century A.D., were used by Chinese mathematicians in the 1st century B.C. Compared with the Greeks, Chinese mathematicians were not so much interested in questions of rigorous proof and were interested in algebra rather than in geometry. However, a largely independent Chinese development of mathematics remained, in some respects, ahead of Western development until at least the 14th century. A value of π calculated in the 5th century was more accurate than any European calculation made before the end of the 16th century.

In China, astronomy was always officially supported because of the importance attached to the calendar and to astrology. Influences from India and the Arab world can be traced. There was a great deal of observation and star mapping, based on equatorial coordinates and the development of pretelescopic instruments, including elaborate water clocks, but comparatively little was done on the problem of planetary motion.

In both mathematics and astronomy there was a marked decline under the Ming dynasty (from 1368). The Jesuits, who reached China at the end of the 16th century, underestimated indigenous Chinese science because, by that time, a good deal had been forgotten.

Map making reached a high point in the 12th century, but most of the other sciences discussed do not seem to have got beyond the recording of observations and purely speculative theorizing.

There is a short section speculating on the failure of China to develop modern science. "Apparently a mercantile culture alone was able to do what agrarian bureaucratic civilisation could not—bring to fusion point the formerly separated disciplines of mathematics and nature knowledge" (page 168). The arguments for this conclusion seem cogent, and research on the reasons for the actual decline of science during the Ming dynasty might yield more and interesting evidence.

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New Books

The Alkaloids. vol. 6, *Chemistry and Physiology.* Supplement to vols. 1 and 2. R. H. F. Manske, Ed. Academic Press, New York, 1960. 454 pp. $14.

Biological Problems of Grafting. A symposium. P. B. Medawar, Chairman. Thomas, Springfield, Ill., 1959. 465 pp. $12.50. The symposium, sponsored jointly by the University of Liège and the Council for International Organizations of Medical Sciences, was held in Liège, Belgium, 18–21 March 1959.

Industrial Electronics and Control. Royce G. Kloeffler. Wiley, New York; Chapman and Hall, London, ed. 2, 1960. 549 pp. $10.

An Introduction to Animal Husbandry in the Tropics. G. Williamson and W. J. A. Payne. Longmans, Green, New York, 1959. 454 pp. 48s.

An Introduction to Social Biology. Alan Dale. Thomas, Springfield, Ill., ed. 3 (reprinted with revisions), 1959. 442 pp. $6.50.

Men and Moments in the History of Science. Herbert M. Evans, Ed. Univ. of Washington Press, Seattle, 1959. 234 pp. $4.50.

Standard Handbook for Telescope Making. N. E. Howard. Crowell, New York, 1959. 336 pp. $5.95.

Statistical Independence in Probability, Analysis and Number Theory. Mark Kac. Wiley, New York, 1959. 104 pp. $3.

Structural Methods for the Exploration Geologist. Peter C. Badgley. Harper, New York, 1959. 295 pp. $7.50.

Telemetering Systems. Perry A. Borden and Wilfrid J. Mayo-Wells. Reinhold, New York; Chapman and Hall, London, 1959. 358 pp. $8.50.

Thermodynamics. An introduction to the physical theories of equilibrium thermostatics and irreversible thermodynamics. Herbert B. Callen. Wiley, New York, 1960. 391 pp. $8.75.

Miscellaneous Publications

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

Antibiotics in Medicine. No. 1, vol. 16, *British Medical Bulletin.* Medical Dept., British Council, London, 1959. 88 pp. $3.25.

Carnegie Institution of Washington, Yearbook, 1958. 511 pp. $1.

Fishhooks. Special Publ. No. 47. Kenneth P. Emory, William J. Bonk, Yosihiko H. Sinoto. Bernice P. Bishop Museum Press, Honolulu, 1959. 45 pp. $2.50.

Gnotobiotic Technology, Proceedings of the Second Symposium. Held at the University of Notre Dame, 8–9 May 1959. Philip C. Trexler, Chairman. Univ. of Notre Dame Press, Notre Dame, Ind., 1960. 194 pp. $5.

Handbook of Pottery Types of Nayarit, Mexico. Misc. Papers, Archaeological Ser. No. 1. George E. Fay. Dept. of Sociology and Anthropology, Southern State College, Magnolia, Ark., 1960. 50 pp.

Heat Transfer, Chicago. Chemical Engineering Progress Symp. Ser. No. 29, vol. 55. American Institute of Chemical Engineers. New York, 1959. 216 pp.

Liberal Education and Nursing. Charles H. Russell. Teachers College, Columbia Univ., New York, 1959. 152 pp. $3.

Proceedings of the United States National Museum. vol. 109, *Marine Mollusca of Point Barrow, Alaska,* Nettie MacGinitie, 150 pp.; vol. 110, *A Revision of American Bats of the Genera* Euderma *and* Plecotus, Charles O. Handley, Jr., 142 pp. Smithsonian Institution, Washington, D.C., 1959.