for a course in physical metallurgy. A few errors appear in the text. On page 45, in the illustrative problem, E equals 3.97×10^{-12}, not 3.97×10^{-22}; on page 66 it is stated that thorium is a nuclear fuel (it is actually a fertile material which can be converted by neutron absorption into a fuel); on page 77, in Fig. 4a, the Cs ion appears in the sodium chloride structure; and on page 184 the ends of the tie line at the base of Fig. 6–13 extend beyond the phases in equilibrium. Finally, the section on metals in nuclear engineering seems out of place at the end of chapter 3. In future editions this section should be amplified.

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A History of Western Technology. Friedrich Klemm. Translated by Dorothea Waley Singer. Scribner's, New York, 1959. 401 pp. Illus. + plates. $6.50.

This is a translation of a work originally published in Germany in 1954, in the series *Orbis Academicus, Histories of Scientific Problems in Documents and Descriptions.* The body of the book consists of selections from the sources, connected by the author's commentary. Such an approach to the history of technology seems never to have been tried before, and the author shows it to be surprisingly rewarding in this field, which is generally thought to be wanting in written records.

The author, who is librarian of the famous Deutsches Museum, shows himself to be steeped in the little-known literature of early technology. Not only has he quoted from such authors as the Italians Alberti, Martini, Filarete, and Fontana, and the Germans Glauber, Boeckler, Leupold, and Calvoer, but he has woven the quotations into what is surely the most readable history of technology yet published. If the German writers are favored, they are less favored here than they are neglected in most works on this subject.

As is usual in one-volume histories of technology (of which there are very few), the earlier periods are treated in a leisurely fashion, and later periods with increasing brevity, and the 20th century with a bare snapshot. Klemm's exposition of the Middle Ages and of the era that followed, through the 17th century, is outstanding, and as this is the darkest age of technology, this section gives his book its greatest distinction. Some of the source materials quoted are as thought-provoking as they are unusual. Examples are the Council Decrees of 16th-century Nürnberg in the matter of the inventive "red metal turner" Hans Spaichl, and the quoted impressions of European visitors to the Philadelphia Fair of 1876.

The translation is generally satisfactory, and it is gratifying to have this outstanding book rendered so promptly into English. It is very much to be regretted, however, that the publisher of the English edition saw fit to omit so much of the priceless accessory documentation contained in the German edition. The footnotes referring to sources and secondary works have been retained, but the bibliography has been reduced from ten pages to four (the reduction is actually greater than this would indicate, for the pages of the German editions are closely packed), through the elimination of all but English works. Omitted entirely from the English edition are a 6-page chronology of events in the history of technology and a 17-page bibliography of sources. Anyone seriously interested in further reading in the subject must, therefore, have recourse to the original.

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New Books

Analytical and Canonical Formalism in Physics. André Mercier. North-Holland, Amsterdam; Interscience, New York, 1959. 229 pp. $6.75.

The Chemistry of Organic Compounds. A year's course in organic chemistry. James Bryant Conant and Albert Harold Blatt. Macmillan, New York, ed. 5, 1959. 660 pp. $7.75.

Ground Water Hydrology. David Keith Todd. Wiley, New York; Chapman & Hall, London, 1959. 348 pp. $10.75.

The Hand of Life. The story of the Weizmann Institute. Ritchie Calder. Weidenfeld and Nicolson, London, 1959. 78 pp. 30s.

Handbuch der Physik. vol. 41, pt. 1, *Nuclear Reactions 2: Theory,* 587 pp., DM. 145; vol. 44, *Nuclear Instrumentation* 1, 480 pp., DM. 125; vol. 53, *Astrophysics 4: Stellar Systems,* 573 pp., DM. 142. S. Flügge, Ed. Springer, Berlin, 1959.

High Temperature Materials. R. F. Hehemann and G. Mervin Ault, Eds. Wiley, New York; Chapman & Hall, London, 1959. 560 pp. $17.50. The papers in this volume are the results of the symposium on recent developments in high temperature materials that was held 16–17 April 1957 in Cleveland, Ohio. The symposium was sponsored by the Metallurgical Society and the American Institute of Mining, Metallurgical, and Petroleum Engineers. Thirty-four papers by 51 contributors are presented under the following general sections: "Cobalt- and nickel-base alloys," "Cermets and intermetallics," "Refractory metals," "Strengthening by dispersion of insoluble particles," "Vacuum melting and its effects on properties," "Effect of testing environment on properties," "Oxidation resistance."

Methods of Vegetation Study. Edwin Allen Phillips. Holt, New York, 1959. 107 pp. $2.95.

Microbiology, Yesterday and Today. Vernon Bryson, Ed. Inst. of Microbiology, Rutgers Univ., New Brunswick, N.J., 1959. 127 pp. $4. This volume consists of the proceedings of a symposium held at the institute on 5 June 1958 in honor of the 70th birthday of Selman A. Waksman. The contents of the volume are: "Microbial biochemistry and its development" (J. H. Quastel); "Antibiotics—a new field for microbiological research and perspectives for the future" (H. B. Woodruff); "Episodes in immunochemistry" (M. Heidelberger); "Bacterial classification—problems and developments" (S. T. Cowan); "Some contributions of genetics to microbiology" (V. Bryson); "Aspects of Russian microbiology" (G. K. Skriabin); "Microbiology yesterday and today" (S. A. Waksman).

National Tuberculosis Association, 1904–1955. Virginia Cameron and Esmond R. Long. National Tuberculosis Assoc., New York, 1959. 335 pp. $5.

Principles and Practice of Gas Chromatography. Robert L. Pecsok, Ed. Wiley, New York; Chapman & Hall, London, 1959. 238 pp. $6.75. This book is the result of a course in gas chromatography offered by the University of California in February 1959. The 13 chapters are based on lectures by C. M. Drew, S. A. Greene, H. S. Knight, and H. W. Patton.

Push and Pull. The story of energy. Paul Blackwood. McGraw-Hill, New York, 1959. 190 pp. $3 (juvenile book).

Recent Advances in the Chemistry of Cellulose and Starch. J. Honeyman, Ed. Interscience, New York, 1959. 366 pp. $9.25.

Subcellular Particles. A symposium. Teru Hayashi, Ed. Ronald, New York, 1959. 221 pp. $6.

Survey Adjustment and Least Squares. Hume F. Rainsford. Ungar, New York, 1958. 334 pp. $9.50.

Traité de Chimie Biologique. vol. 2, pt. 1, *Substances minérales—glucides;* pt. 2, *Vitamines, lipides, stérides, caroténoides, fermentations, photosynthèse.* Louis Genevois. Presses Universitaires de France, Paris, 1959. 880 pp. Paper, F. 2200.

Ultracentrifugation in Biochemistry. Howard K. Schachman. Academic Press, New York, 1959. 284 pp. $8.80.

The Viruses. Biochemical, biological, and biophysical properties. vol. 3, *Animal Viruses.* F. M. Burnet and W. M. Stanley, Eds. Academic Press, New York, 1959. 445 pp. $12.