The book is aimed at the level of the advanced undergraduate student, except for the two chapters by King, which require a good understanding of chemical thermodynamics. Each of the chapters provides a list of references to technical literature and thus serves as a starting point for further study. On the whole, the book provides an interesting, concise review that can be read with profit by students and research workers.

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Introduction to the Theory of Quantized Fields. N. N. Bogoliubov and D. V. Shirkov. Authorized English edition, revised and enlarged by the authors. Translated from the Russian by G. M. Volkoff. Interscience, New York, 1959. xvi + 720 pp. Illus. $17.

This book demonstrates that the effects of the Iron Curtain were not wholly evil. The rapid development of quantum field theory during the years 1945–1953 was carried out almost exclusively by Western and Japanese scientists. The work was done in a hurry, in a confused and disorderly way, as is usual in any rapidly expanding field of science. The men chiefly concerned in the work were too much preoccupied with the next unsolved problem to write a coherent account of what they had already done. The Russians, compelled by force of circumstances to stand outside the battleground, had time to consider and reflect, to organize the new ideas into a balanced and scholarly exposition. As a result, the Russians have produced the two best textbooks on field theory published during the last 10 years, the first, *Quantum Electrodynamics* (by Akhiezer and Berestetskii), and now the book under review.

The emphasis throughout this book is on mathematical precision. For the first time the details of quantum electrodynamics, renormalization, and the subtraction of divergences are presented in a style free of mathematical sloppiness. This means that the customary procedures for obtaining finite results from perturbation theory are rigorously justified, while the attempts to calculate explicitly with infinite quantities are shown to be meaningless. The limits within which the standard methods of field theory are valid have thus been precisely defined.

This is not a textbook for beginners in field theory. For beginners the book by Akhiezer and Berestetskii would be much more suitable. In this book Bogoliubov and Shirkov pay very little attention to the applications of the theory, and they do not discuss any approximation methods other than perturbation theory. The book is addressed to the expert, especially to the mathematically trained person who wishes to understand the basic principles of field theory without following the devious path along which the subject developed historically.

The first eight chapters of the book form a coherent whole, and they describe rather completely the state of field theory as it existed in 1956 before the "dispersion theory approach" became fashionable. Since the ninth and last chapter deals with the subject of dispersion relations which was developing rapidly at that time, it is on a different level. Bogoliubov's proof of dispersion relations has been added as a mathematical appendix to the English addition; it arrived just too late to be included in the Russian edition of the book. Thus, the ninth chapter is inevitably less satisfactory than the rest of the book. The detachment in space and time, which gave the first eight chapters their scholarly and unhurried style, is noticeably absent here.

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New Books

Mathematics, Physical Sciences, and Engineering

Ashford, Theodore Askounes. *From Atoms to Stars.* An introduction to the physical sciences. Holt, Rinehart and Winston, New York, 1960. 654 pp. $8.50.

Atkin, R. H. *Classical Dynamics.* Wiley, New York, 1959. 281 pp. $5.75.

Bauer, Edward L. *A Statistical Manual for Chemists.* Academic Press, New York, 1960. 166 pp. $4.75.

Bentley, K. W. *The Natural Pigments.* vol. 4 of *Chemistry of Natural Products.* Interscience, New York, 1960. 313 pp. $5.

Berl, Walter G., Ed. *Physical Methods in Chemical Analysis.* vol. 1. Academic Press. New York, ed. 2, 1960. 700 pp. $19.

Boucher, H. *Organisation et fonctionnement des machines arithmetiques.* Masson, Paris, 1960. 435 pp. NF. 70.

Brand, J. C. D., and J. C. Speakman. *Molecular Structure.* The physical approach. Arnold, London; St. Martin's Press, New York, 1960. 308 pp. $8.

Branley, Franklyn. *The Moon.* Earth's natural satellite. Crowell, New York, 1960. 114 pp. $3.50 (juvenile book).

Cable, J. Wesley. *Vacuum Processes in Metalworking.* Reinhold, New York; Chapman and Hall, London, 1960. 208 pp. $5.50.

Chapman, Alan J. *Heat Transfer.* Macmillan, New York, 1960. 464 pp. $9.

Chase, Grafton D. *Principles of Radioisotope Methodology.* Burgess, Minneapolis, 1959. 294 pp. $6.

Christiansen, G. S., and Paul H. Garrett. *Structure and Change.* An introduction to the science of matter. Freeman, San Francisco, 1960. 623 pp. $8.75.

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Feigelson, E. M., *et al. Calculation of the Brightness of Light in the Case of Anisotropic Scattering.* Translated from the Russian. Consultants Bureau, New York, 1960. 104 pp. Transactions of the Institute of Atmospheric Physics, No. 1, 1958.

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Goldfarb, Nathan. *An Introduction to Longitudinal Statistical Analysis.* The method of repeated observations from a fixed sample. Free Press, Glencoe, Ill., 1960. 233 pp. $5.

Gould, David F. *Phenolic Resins.* Reinhold, New York; Chapman and Hall, London, 1959. 220 pp. $5.75.

Haaser, Norman B., Joseph P. LaSalle, and Joseph A. Sullivan. *Introduction to Analysis.* vol. 1. Ginn, Boston, 1960. 733 pp. $8.50.

Handbook of Filtration. Eaton-Dikeman, Mt. Holly Springs, Pa., 1960. 125 pp.

Harris Lawson P. *Hydromagnetic Channel Flows.* Technology Press and Wiley, New York, 1960. 96 pp. $2.75.

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Hille, Einar. *Analytic Function Theory.* vol. 1. Ginn, Boston, Mass., 1960. 319 pp. $6.50.

Jones, James B., and George A. Hawkins. *Engineering Thermodynamics.* An introductory textbook. Wiley, New York, 1960. 742 pp. $8.50.