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and engineers. Rather, such decisions are political and military and will continue to be resolved in the political and military sphere. Scientists, faced with the simple fact that he who forges the arrows does not control the bow, will thus have individually to decide whether to continue at forging arrows. Reid's account of past examples does little to simplify the task.

Joel A. Snow

Head, Office of Interdisciplinary Research
National Science Foundation

Solid State Physics

Ryogo Kubo,
Takeo Nagamiya, eds.

840 pp. McGraw-Hill, New York, 1969.
\$19.50

Some years ago, a newspaper article on the rise of solid state identified its start with the 1940 book *The Modern Theory of Solids* by Frederick Seitz. Since then, the field has amply arrived, and the books in English have multiplied a hundred fold, diversifying over the feasible specializations, levels of treatment and categories of reader.

Is it possible to write a present-day equivalent of the Seitz classic? A comprehensive physicist's solid-state text needs to convey a ramified universe of experimental fact and an elaborate theoretical structure, and then present them interwoven in a duly speculative and critical spirit. This has, of course, grown to a very formidable undertaking. This book, the joint work of six Japanese physicists including the two named above, may be considered in this category. In quality of organization and exposition, unfortunately, much of it is disappointing.

The book is divided into five sections. "Structure and Electron Theory of Solids" is about one third of the whole in length and mainly a conventional solid-state course in itself. It covers the solid types and crystal structures, lattice modes, electron states and dynamics, electron transport phenomena, superconductivity and nuclear resonance. Then follows "Electronic Phenomena in Nearly Perfect Crystals," which deals with defects, localized states and electron statistics, trapping and recombination, photoeffects and electron scattering; "Magnetism," one quarter of the whole and the longest, and perhaps the most advanced of the specialized sections; "Dielectrics" and "Crystal Lattice Defects." These are correctly described on the dust jacket as "loosely coupled." They were first published separately in 1955 as Iwanami *Modern Physics* monographs, and were combined in 1961 into the original *Solid State Physics*, which was revised for a second edition in 1966 and again for the present translation into English.

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Most of the content is at a general graduate level, and the appropriate physics prerequisites are assumed. There is relatively little more advanced material. The coverage of today's solid-state field is as broad and comprehensive as one could ask. It is understandable that a lot of the older content should be retained in this present edition (and much of the experimental material is no worse for being long in the tooth). Some duplication of topics, among the five parts, is nothing amiss. But it is a pity that the opportunity was not taken to replace some pedestrian and unenlightening exposition or to provide, with a meager first appearance of a notion, directions to ampler versions elsewhere in the book. Perhaps from sampling more in part one than elsewhere, I found the text a discouragingly flat progression of items, so that the student would get little indication of which were the more important in implications or in need of deeper study. It passes over opportunities to help him build a unified understanding of a topic.

It appears to me that this book would be useful as a supplementary text, together with an intensively pedagogical work such as J. M. Ziman's *Electrons and Phonons* (Oxford U. P., 1960), for a graduate course and as a reference work on the professional's shelves. As a handbook, it covers at least adequately a great deal of essential material.

Peter J. Price
IBM Research Division

new books

CONFERENCE PROCEEDINGS

Developments in High Energy Physics (Conf. proc. IX Internationale Universitätswochen für Kernphysik 1970 der Karl-Franzens-Universität Graz, Schladming, Austria, 23 Feb.-7 Mar. 1970). P. Urban, ed. 633 pp. Springer-Verlag, New York, 1970. \$30.00

Handling of Nuclear Information (Conf. proc. 16-20 Feb. 1970, Vienna). 671 pp. International Atomic Energy Agency, Vienna, 1970. \$18.00

Methods and Problems of Theoretical Physics. J. E. Bowcock, ed. 440 pp. American Elsevier (North-Holland), New York, 1970. \$21.75

Proceedings of the Third Hawaii Topical Conference in Particle Physics (Conf. proc. University of Hawaii, Honolulu, Hawaii, 18-29 Aug. 1969). W. A. Simmons, S. F. Tuan, eds. 169 pp. Western Periodicals, Los Angeles, Calif., 1970.

Spectrum Formation in Stars With Steady-State Extended Atmospheres (Conf. proc. International Astronomical Union Colloquium No. 2, Commission 36,