

many of the chapters—is excellent. When one adds these positive attributes to the manifold remarks and explanatory footnotes that accompany the text, he concludes that Butkov has written an eminently teachable and useful textbook.

It is certainly the book for the non-theorist professional who needs a readable but careful compendium of the most important mathematics relevant to physics. It is also the book for a course on mathematical physics.

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Money and efficiency

GOVERNMENT CONTRACTING AND TECHNOLOGICAL CHANGE. By Clarence H. Danhof. 472 pp. The Brookings Institution, Washington, D. C., 1968. \$8.75

by JOSEPH AGASSI

Despite obvious merit and usefulness, this volume is disappointing. Clarence Danhof was assigned the objective of examining government-sponsored research in various ways. His historical-background portion is the shortest and best: The unpreparedness for World War II and the atomic spectacular led to legislation against stint but not against waste. The investment developed chiefly as contracts to avoid the possibility of putting too much responsibility—and blame—on any given official.

The present organizational details are piled up, catalog wise, and with no perspective. There is a quote (pages 97, 98) of a long discussion on Parkinson's first law (work expands to cover time allotted to it) in the pseudoscientific language of scientific bureaucrats worthy of any parodist. Parkinson's second law (time spent in committee on budget items varies inversely to their magnitude) is not quoted, but exemplified in various instances, particularly relating to the impact of the legislature (pages 205, 216), that controlled only a minute fraction of the expenditure. The author was also assigned to evaluate the impact of government-sponsored research and its broad implications. On the impact he makes a few cautious and well known observations and on the broad

implications nothing at all. He hardly even discusses the roles of scientific agencies and societies.

But within its limits this is a good compilation, readable, competent, detailed, accurate and useful even though largely out of date. No lobbyist or scientific adviser can afford to overlook it. But it is already out of date as shown by reevaluations made with the change of administration, especially on the armed forces and their role and on the office of scientific adviser to the President. Even before the changeover, the squeeze had rendered obsolete much of this book and its mood.

The general lessons from this volume are rather platitudinous. On the whole the project of government-sponsored research is a magnificent success in spite of some—even many and systematic—terrible howlers. No one knows how to assign priorities and how to prevent conservatism and repetition of some blunders. But much obviously can be done to improve matters, if we only knew how to bring about the implementation of our good counsels.

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A professor in the philosophy department at Boston University, the reviewer specializes in scientific methods and the philosophy of physics.

NEW BOOKS

CONFERENCE PROCEEDINGS

Annals of the IQSY, Vol. 4: Solar-Terrestrial Physics. A. C. Stickland, ed. (Joint IQSY/COSPAR, London, 1967) 414 pp. MIT, Cambridge, Mass., 1969. \$19.50

Science and Technology in Developing Countries. Claire Nader and A. B. Zuhlan, eds. (American Univ. of Beirut, Lebanon, 27 Nov.–2 Dec. 1967) 588 pp. Cambridge Univ. Press, New York, 1969. \$16.00

Gallium Arsenide. Southern Methodist Univ. and IPPS, eds. (Dallas, Tex., Oct. 1968) 244 pp. Institute of Physics and the Physical Society, London, 1969. \$15.00

Symposia on Theoretical Physics and Mathematics, Vol. 9. Alladi Ramakrishnan, ed. (Institute of Mathematical Sciences, Madras, India, Jan. 1968) 277 pp. Plenum, New York, 1969. \$15.00

Les Propriétés Electroniques de Couches Minces. La Société Française de Physique, eds. (Orsay, France, 22–23 June 1967) Presses Universitaires de France, Paris, 1968.

Thermal Conductivity. C. Y. Ho and R.

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