Book Reviews

Principles of jet propulsion and gas turbines. M. J. Zucrow. New York: John Wiley; London: Chapman & Hall, 1948. Pp. xiv + 563. (Illustrated.) $6.50.

This lucid and useful volume contains 61 pages of introductory review of fundamental principles relating to fluid momentum and energy, 86 pages treating gas-flow thermodynamics, 67 pages on airplane and propeller performance, 102 pages on gas turbines and turbojet engines, 93 pages on compressors and turbines, and 70 pages on rocket motors. There are also short chapters on the combustion chamber and high-temperature metallurgy and a chapter of data on the properties of air. There is almost no discussion of the ramjet, the pulse jet, or the solid propellant type of rocket motor.

The treatment of the subject is from the engineering point of view and is in detailed, almost handbook, style. Numerical examples are frequent, and algebraic relations are often supplemented by tables and graphs. The bibliographies at the end of each chapter are quite extensive and, in fact, tend to repeat themselves from one chapter to the next. The effect of the considerable documentation with numerous algebraic steps, tables, and curves might at times be a little confusing to a student in search of a discussion of physical principles.

This book is the first thoroughly quantitative treatment of its subject to appear in the United States since World War II and should fill a definite need for a reference book and undergraduate teaching text, particularly when supplemented with exercises and problems for the student. Some of the review of elementary material available elsewhere may seem repetitious to workers in jet propulsion, but this material will, on the other hand, increase the convenience and value of the book as a source volume for students. The author is to be commended on his thorough and painstaking exposition of an almost encyclopedic body of information.

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Advances in military medicine. (Science in World War II: Office of Scientific Research and Development.) (2 vols.) C. Andrus, *et al.* (Eds.) Boston: Atlantic-Little, Brown, 1948. Vol. I: Pp. liv + 472; Vol. II: Pp. xvii + 473–900. (Illustrated.) $12.50 for set.

This two-volume history of the work of the Committee on Medical Research of the Office of Scientific Research and Development provides a massive testimonial to the fact that out of the destruction of war can come medical and scientific advances of value to all mankind.

More than 60 authors, under a distinguished board of editors, all of whom were major contributors to the advances here described, have written the 54 chapters comprising this record of achievement. The editors include such well-known luminaries as E. C. Andrus, D. W. Bronk, G. A. Carden, Jr., M. C. Winternitz, J. S. Lockwood, J. T. Wearn, and C. S. Keefer. Contributing some of the chapters themselves, they have done a skillful job of organizing a heterogeneous collection of essays by many authors into a most impressive and unified record of wartime progress in medical research.

It is, of course, impossible in a short space to do more than briefly indicate something of the contents of this publication, one of the more important of the OSRD histories issued under the general title "Science in World War II."

Volume I opens with a foreword by Dr. Alfred N. Richards outlining the organizational history of the CMR, of which he was chairman. Then follow sections on Medicine, Surgery, Aviation Medicine, and Physiology. Each of the sections is further subdivided into chapters wherein are treated such subjects as Infectious Diseases, Tropical Diseases, Medical Problems of Convalescence, Experimental Wound Healing, The Burn Problem, The Repair of Peripheral Nerve Lesions, The Effects of Acceleration, Anoxia and Oxygen Equipment, Shock, The History of Plasma Fractionation, and Methods of Preservation of Whole Blood.

Volume II includes a series of reports on more specialized problems such as protective clothing, chemical warfare agents, adrenocorticalsteroids, and sensory devices. Here the reader will also find accounts of such well-known subjects as the development of penicillin, the antimalarial program, and the introduction of DDT.

The almost bewildering variety and complexity of the problems discussed in this work are merely a reflection of the medical, surgical, psychological, and sanitary problems involved in fighting a global war from the arctic to the tropics, in jungles and deserts, under the sea, and in the clouds.

All those who were associated with the work of the Committee on Medical Research will certainly wish to own this record, and all medical scientists will find in these books much food for thought, not merely on the problems which still remain to be solved but on methods which may lead to their solution.

Finally, attention is called to a most elaborate and valuable bibliography of those OSRD reports which have already appeared in scientific and medical journals. In addition, there is a list of OSRD Medical Research Contracts sponsored by the Committee on Medical Research. This is arranged by subject in tabular form, including the contract number, the contractor, and the investigator.

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