BOOK REVIEWS

Selection of books for review is based on the editors' opinions regarding possible reader interest and on the availability of the book to the editors. Occasional selections may include books on topics somewhat peripheral to the subject matter ordinarily considered acceptable.

A FRIGHTENING PICTURE

Title In the Name of Science

Author H. L. Nieburg

Publisher Quadrangle Books, Inc., 1966

Pages ix + 431

Price $7.95

Reviewer A. V. Crewe

In his farewell address, President Eisenhower made the statement that ". . .the conjunction of an immense military establishment and a large arms industry. . ." exerts an influence "felt in every city, every statehouse, every office of the federal government. . .In the councils of government, we must guard against the acquisition of unwarranted influence. . .The potential for the disastrous rise of misplaced power exists and will persist."

Many of us were puzzled by this unique statement. We were, of course, aware of the necessary collaboration by the military and industry, but it seemed strange at that time that the President of the United States would make this comment on the inherent dangers for the first time in a farewell address and present the issue as one of national importance. After all, if the issue were so important, then the President, particularly one with a military background, was surely in the best position to solve it. In this light, his statement takes on the aura of a plea for help.

This book is dedicated to the proposition that Eisenhower was right; that the problem is now worse than it was at that time and, moreover, there is little sign of improvement.

Research and development is a major proportion of the national budget. This year upwards of $20 billion will be spent in this category, and while this itself is a very large number, one of the most significant features of the research and development budget is its extremely rapid growth. All of this is done in the name of science. The name has been misused in the general belief that science is good and the association with it would improve public acceptance. It should be pointed out, however, that very little of this $20 billion is true science. The vast majority of it could better be described by the term *advanced engineering*, for most of the work consists of applying the latest technical knowledge for the solution of primarily military problems. Described in these terms, it is clear that in previous years much of this effort would not have been described as research and development and would not have been identifiable in the normal military budgets. It seems clear, then, that the public concern over this huge expenditure for "R & D" is misplaced. The confusion occurs because it is being done in the name of science and the focus of concern should really be on the sum total of military expenditures.

Another modern feature of the nation's research and development effort has been the successful control of such endeavors by laymen—starting with General Groves in the Manhattan Project, Admiral Rickover in the nuclear submarine program, and now Mr. Webb in the space program.

In this book, Mr. Neiburg points out the evils and abuses of the control of this huge amount of money by the military and by private contractors, and these evils and abuses are truly monumental. We can select two of the principal ones.

Until recently, some of the work of the US Navy was carried out in naval shipyards and some of the work for the army was carried out in their arsenals. This in-house capability had provided these branches of the armed forces with a "yardstick" by which they could measure the performance of industrial contractors and, by the same token, the existence of these yardsticks was known to the contractors who were thereby kept in line. These in-house capabilities were set up for this purpose and achieved the desired result. The Air Force, however, does not have such in-house capability and relies almost exclusively on outside contractors. This device was used to promote and prolong internecine warfare and to enable the Air Force to take advantage over the other armed forces by burying its advanced projects in outside contracts, thereby shielding them from prying eyes. In turn and in due time, the device was used by the other branches so that the yardstick system has now virtually disappeared and the defense research and development effort is almost entirely in the hands of industrial contractors.

The other frightening picture painted by Mr. Neiburg is that of how to achieve success as an industrial contractor. First, you establish a small company to provide one of the armed services with the advice that

it needs, being careful, of course, to be sympathetic with their internal problems. Then, you establish an organization that can provide the hardware called for in the advisory report. Having provided the advice in the first place, it is a relatively simple matter to demonstrate the need for a sole-source purchase of the hardware. Then, by virtue of acquisitions and expenditures financed by these contracts, it becomes easier and easier to acquire prestige, power, and wealth. Of course, one should not neglect to provide employment for the retiring, high-ranking members of the branch of service in question.

Mr. Neiburg's book is an exhaustive analysis of these two problems and many more. It is a frightening document, but it is carefully constructed and well supplied with documentation and liberally sprinkled with pertinent quotations. After reading the book, one cannot help but be convinced that the Vietnam war, or at least some aspects of it, are mere manifestations of the rivalries, jealousies, and struggles for power described in this book. Like any other good book, there are villains and heroes, but unlike many others, there are far more of the former than the latter. The established villains are primarily the Air Force, NASA, organizations such as Thompson-Ramo-Wooldridge, and Congress. The only hero in the book is Secretary McNamara, who is heroic only by comparison. The victims are clearly you and I.

This reviewer has only one regret. The book is long (some 400 pages) and it is written with a dry style which is suited to its purpose because of the need and desire to establish the truth. It does mean, however, that the book may not be widely read, and it *should be* widely read. It would be a great service to this nation if the book could be condensed and brightened so that it would be readily available to the voters.

Albert V. Crewe, a member of the staff of the Enrico Fermi Institute for Nuclear Studies at the University of Chicago, is an authority on high energy physics and electron microscopes. From 1961 until his resignation a few months ago, he was Director of Argonne National Laboratory. In that capacity he had ample opportunity to observe first hand some of the working relationships between big government and big science, a position that makes his review of Nieburg's book carry considerable weight.

DETAILED AND HELPFUL, ALMOST

Title Radiometric Titrations

Authors T. Braun and J. Tölgyessy

Publisher Pergamon Press, 1967

Pages x + 168

Price $8.50

Reviewer M. L. Good

"Radiometric Titrations" describes in detail the experimental applications and the theoretical background of the radiometric determination of equivalence points in various titrimetric procedures. The endpoint in these titrations is obtained by following the radioactivity of one of the reactants. Since the determination of a change in radioactivity of a particular component is required, it is necessary to effect a separation of this component from the remainder of the system. Thus, a "radiometric titration" requires a separation of system components and could be referred to as a separation titration. A discussion of the method must include the theory and application of separation techniques as well as the essentials of the radiometric method. The book makes an effort to accomplish this task and, for the most part, is successful.

The section devoted to precipitation reactions begins with a theoretical discussion of the precipitation process in general and follows with equations derived for specific radiometric procedures. In most cases only the final results of a literature derivation are given, and one is hard pressed to follow logically from one equation to the next. Preferably, in a work of this sort, one would actually follow through one of the derivations and discuss the assumptions, etc., that are made and the accuracy and usefulness of the final results. The same criticism applies to the theoretical section of the chapter on