

Professor Finston has been engaged in radio-nuclear and analytical chemistry since 1943 when he joined the Manhattan Project at the University of Chicago. During 1945-1950 he was Research Assistant in the Departments of Chemistry and Physics at Ohio State University and was responsible for the separations of cyclotron-produced radioisotopes. From 1950 to 1963 he worked at Brookhaven National Laboratory, becoming Head of the Radiochemical Analysis Section of the Hot Laboratory Division. In 1963 he was appointed Professor of Chemistry, Graduate Division, Brooklyn College of The City University of New York.

### KILOWATTS BY THE GALLON

*Title* Water Desalting and Nuclear Energy

*Author* Michel d'Orival

*Publisher* Verlag Karl Thiemig KG, 1967

*Pages* v + 197

*Price* DM 14.80

*Reviewer* Barnett F. Dodge

This small pocket-sized (4- × 7-in.), paper-covered book packs a surprising amount of useful information. It is divided into four parts. The first deals with the water demand and supply around the world and includes some discussion of the economics of supplying fresh water. The second part, which comprises somewhat more than one-third of the book, is concerned with saline water conversion. It contains a discussion of the theoretical minimum energy requirement for conversion and reasons for the much larger practical requirements, a review of the main desalting processes and evaluation of them from the standpoint of energy consumption, scale, corrosion, heat transfer, materials of construction, fluid circulation and mass transfer, and a discussion of the present status of desalting plants around the world.

The review of processes is an excellent concise description of the

principles, illustrated by simplified flowsheets, of 13 processes classified under the general heads of distillation, crystallization, solvent extraction, membrane and ion exchange. Only processes showing economic promise are included. Table 18 summarizes the salient facts about the processes, and Table 19 provides information on 52 plants having capacities of 250 000 US gallons or more per day in actual operation. A number of other tables in this section summarize much useful information on the three processes that have reached the industrial stage.

Part three discusses the potential role of nuclear energy in desalting. It includes technical and economic data on various proved reactor types, a discussion of nuclear fuel cycles, various concepts for coupling desalting plants to nuclear reactors, a discussion of dual-purpose installations, i.e., those that produce both electric power and fresh water, and a comparison between nuclear and conventional desalination processes.

The fourth part is concerned with various practical aspects of nuclear dual-purpose installations. Methods of allocating cost between power and water are examined in some detail. A typical schedule for the development of a nuclear dual-purpose project is presented in graphical form and discussed with relation to the decisions that have to be made in the promotion of such a project. Various programs and specific projects for the use of nuclear energy are discussed, and, finally, a table summarizes technical and economic data on six proposed plants. An Appendix shows photos taken at five operating plants and of a projected plant for Israel.

The book is well organized and well written and this reviewer could find no errors of significance. Naturally, much of the treatment has to be superficial, but for anyone who wishes to get a good picture of the current situation on desalination, and especially the relation of nuclear energy to it, should consult this book.

*Dr. Barnett F. Dodge, distinguished educator, scientist, and engineer, is Emeritus Professor of Chemical Engineering at Yale University. In addition to his ScD from Harvard (1925), he holds honorary*

*degrees from Yale, Worcester Polytechnic Institute, and Toulouse University. He has lectured extensively, here and abroad as a US State Department and Fulbright lecturer, and as the Reilly lecturer, University of Notre Dame. Interested in the treatment of saline water and industrial waste water, among many other things, he has been consultant to the Office of Saline Water, US Department of the Interior, since 1954.*

### IMPROVING YOUR WRITING

*Title* Communicating Technical Information

*Author* Robert R. Rathbone

*Publisher* Addison-Wesley Publishing Company, 1966

*Pages* vii + 104

*Price* \$1.95

*Reviewer* Jules B. Godel

What would you do if, just after accepting the Assistant Editorship of *Nuclear Applications* and submitting your first paper to that journal, your "editor-boss," with pained expression, asked you to review this book? Feigning self-confidence, I took on the task.

The book, according to the author, "has a modest function: to serve as an inexpensive self-improvement guide for engineers and scientists whether on the job or in the classroom." Coverage includes improving the writing of abstracts, titles, technical descriptions, conclusions, and recommendations. The text also details how to eliminate mechanical noise,<sup>a</sup> edit someone else's writing, and organize subject matter effectively.

The chapter on semantic and mechanical noise, written from the reader's viewpoint, was particularly useful, and my complaint is that the author didn't expand this important section. Semantic noise covers choice of correct words, clarity, avoidance of roundabout expressions

<sup>a</sup>Defined as factors which alter the intended message.

and -ize and -wise suffixes, and the proper use of some rules of grammar that many of us have long forgotten. Mechanical noise deals with poor quality of copy, overcrowded text, inadequate labeling, and other problems that make even well-written manuscripts difficult to read.

This book will not help the sophisticated writer nor transform an illiterate into an "instant writer." Instead, it is for those of us who "wish to inspect ourselves as writers" with the aim of self-improvement.

*Communicating Technical Information* is a gem of a book.

*Jules B. Godel has been at Brookhaven National Laboratory for over 16 years, where he helped to design the Medical Research and High Flux Beam Reactors. Presently, he is the Mechanical Engineering Section Head at the Department of Chemistry. Would-be authors who have not read Mr. Rathbone's book should note that one of Jules' functions, as Assistant Editor of Nuclear Applications, is to check revised manuscripts (other than his own) for general readability and compliance with suggestions from the Editor and the reviewers.*

#### VALUABLE REFERENCE ON PLUTONIUM

**Title** Analytical Chemistry of Plutonium

**Authors** M. S. Milyukova, N. I. Gusev, I. G. Sentyurin, and I. S. Sklyarenko

**Editor** P. N. Palei

**Translator** J. Schmorak

**Publisher** Daniel Davey & Co., Inc., 1967

**Pages** xiii + 369

**Price** \$21.00

**Reviewer** D. B. James

This volume is the ninth in a series of monographs, "Analytical Chemistry of the Elements." Supported by the Vernadskii Institute of

Geochemistry and Analytical Chemistry of the Academy of Sciences of the USSR, the series is ambitiously intended to include eventually some fifty volumes.

The work is a well-edited combination of the individual efforts of four authors. While the 739-citation bibliography reflects the unfortunate inaccessibility of the Western literature to Russian authors, it provides an excellent compilation of the Russian literature for the Western analyst.

The deplorable lethargy of our system of editing, translating, and publishing is clearly emphasized. Although the Russian manuscript was completed in 1963, the number of references in the bibliography to the literature of 1962 is less than a fourth that of previous years. Thus this work has reached that analyst who does not read Russian nearly five years after it was prepared. Such a waste is unfortunate in our rapidly changing scientific community and prohibitive in a field so vital as plutonium chemistry. The editorial board for the series has promised to publish "in the near

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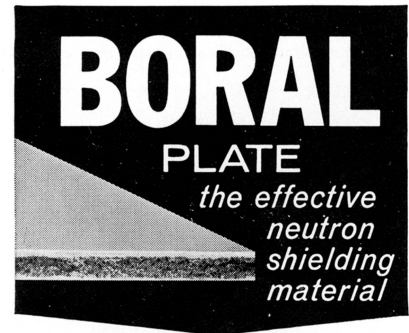
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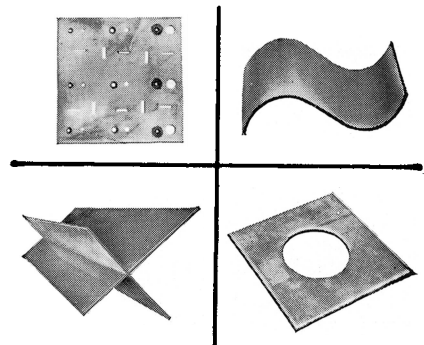
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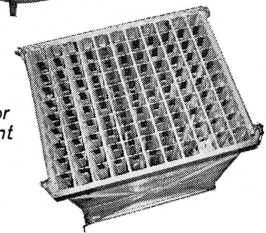
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