

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.



INDISPENSABLE FOR SOME

Title American Men of Science, 11th ed.

Editors The Jacques Cattell Press

Publisher R. R. Bowker Co., 1965 for A-C volume, five other volumes at six-month intervals

Pages x + 1089 for A-C volume only

Price \$25.00 per volume

Reviewer Louis G. Stang, Jr.

It is a pleasure to review this, the eleventh edition of *American Men of Science*, because it is both good and unique. This is a biographical directory, as the name suggests; it was founded in 1906 by James McKeen Cattell as a manuscript reference list for the Carnegie Institution of Washington, which appropriated \$1000 toward the clerical and office expenses.

The second and third editions were published in 1910 and 1921, respectively. In 1923 the editorship passed to Jacques Cattell, a son of the founder. He retained this position, among others, until his death. During that time the fourth through the tenth editions were published in 1927, 1933, 1938, 1944, 1949, 1955, and 1960.

The growth in size of this directory is of interest since it mirrors the growth of science and engineering during the last 60 years. Beginning with 4000 biographies in 1906, the directory grew until the eighth edition, in 1949, the last to be published in a single volume, contained 50,000 biographies and required vi + 2836 pages, 17.8 x 24.1 cm.

However, the past 16 years are of more interest to today's average reader, since it is the period most familiar to him. During this time, the size of the directory has increased by a factor of 2.6. The eleventh edition will contain 130 000 biographies in the physical and biological sciences, requiring six volumes totalling over 6000 pages measuring the same size as the pages of **Nuclear Applications**. To this will be added another 25 000 to 30 000 biographies in a social and behavioral science section. With each volume appearing at six-month intervals, it will be 1967 before the physical and biological section is completed.

However, bigness is by no means the directory's chief claim to fame for, although comprehensiveness in a work of this kind is a valuable asset, it is no substitute for quality. First, as in the past, the eleventh edition was guided by an advisory committee, appointed by the

National Academy of Sciences's National Research Council and the American Association for the Advancement of Science, and contains the names of many highly placed and well-known figures in science. Second, the criteria for inclusion of a biography in *American Men of Science* remain high, as in previous editions:

"1. Achievement, by reason of experience and training, of a stature in scientific work at least equivalent to that associated with the doctorate degree, coupled with presently continued activity in such work; or

"2. Research activity of high quality in science as evidenced by publication in reputable scientific journals; or, for those whose work cannot be published because of governmental or commercial or industrial security, research activity of high quality in science as evidenced by the judgment of the individual's peers among his immediate co-workers; or

"3. Attainment of a position of substantial responsibility requiring scientific training and experience of approximately the extent described for (1) and (2)".

The third point to be made for the quality and general usefulness of *American Men of Science* is to recall the old saying that "the proof of the pudding is in the eating". Here I feel I can speak with some authority because, except for the *Handbook of Chemistry and Physics*, *American Men of Science* is the only publication that I have used continuously over a 16-year period during which four editions have been issued. It is the only publication that I consult daily in my present capacity as Editor of **Nuclear Applications**. And it is the only publication that I find so indispensable that I have two sets—one for the office and the other for use at home.

For people who deal in some way with many other people in the science and engineering professions, *American Men of Science* will provide names that are correct both as to spelling and preferred usage, preferred mailing addresses that are at least recent enough to be forwardable, field of specialization, place and date of birth, year married and number of children, list of all degrees (both earned and honorary) with dates and names of conferring institutions, academic and industrial positions held with names of organizations and dates, list of professional society memberships, honors and awards, and the individual's own list of research interests and specialization.

Reviewers inherently feel burdened with the responsibility of finding some fault with the publications they have been asked to review, probably to demonstrate their sagacity and the fact that they did, indeed, do more than look at the dust jacket. If I had to find some fault with *American Men of Science*, it would be with the last item. That is, unless the reader knows that the listing of

interests and specialization is supplied by the biographee, himself, he might come away with a slightly erroneous impression about the capabilities of a given individual, because of the differences in the degree of objectivity which each of us applies to an evaluation of our respective interests and the differences in the ways in which we describe our fields of specialization. However, I don't know any practical way of improving this particular item, and as it stands, it provides very useful information, particularly for the reader who realizes the inherent limitations.

Louis G. Stang, Jr., is Editor of Nuclear Applications, a journal of the American Nuclear Society. Additional factual and unbiased information about him can be obtained from American Men of Science, 8th, 9th, 10th, and 11th editions.

SOURCE BOOK FOR SEPARATION CHEMISTS

Title The Solvent Extraction of Metal Chelates

Author Jiri Stary

Publisher MacMillan, 1964

Pages xiv + 240

Price \$8.50

Reviewer L. Newman

This book deals with one major aspect of solvent extraction, namely, the field of metal chelates and its importance in analytical, inorganic, and nuclear technology. The subject matter is well organized—starting with a chapter on the composition and stability of the metal chelates. The author gives a brief, but quite adequate and complete, description of the more recent methods for analyzing data. This is followed by a chapter on the theory of solvent extraction, which is a generalized treatment of the various experimental parameters.

It quickly becomes obvious that the author's main purpose in writing this book is incorporated in the chapter on systems, where a section on each of the following reagents and their derivatives is included: beta-diketones; tropolone; 8-hydroxyquinoline; oximes; nitrosophenols; nitrosoaryhydroxylamines; hydroxamic acids; 1-(2-pyridylazo)-2-naphthol; 8-mercaptoquinoline; dithiocarbamates; xanthates; dialkyl- and diaryl-dithiophosphoric acids; dithiols; and, finally, miscellaneous reagents. Each section begins with a brief description of the physical properties of the reagent, sometimes followed by a statement of a means for purifying the reagent, its partition coefficient, and its general utility. The most significant aspects of this chapter are the detailed tables in which the optimum conditions for the extraction of a given element with a given system are

listed. In many cases, the wavelength at which the metal chelate absorbs is included. These tables should certainly prove to be a main source of information for practicing chemists who are developing new separation and analytical procedures. The inclusion of some extraction curves for a number of elements in the more popular chelate systems should also prove to be quite valuable.

In the final chapter, the author presents what he considers the most selective procedures for the isolation of

each of 48 metals in the form of their chelates. Generally, only one method is given for each element, but it is in sufficient detail for utilization without resorting to the original literature. This chapter will prove most useful for people who wish to use solvent extraction for the separation of an element from a relatively simple system.

The author has wisely omitted subjects such as the techniques of solvent extraction that are adequately covered in other texts. He has done a thorough job in surveying the literature and has included numerous references that have not been readily accessible to the western world. This book will prove to be most valuable as a source book for chemists who are concerned with separation problems.

If one were to find fault with this text, it would be the limitation of material to the field of metal chelates with no discussion of the broad field of ion association systems. How much more complete a source book this could have been, had the author seen fit to include this field! Perhaps he should make this a subject of a future text.

Leonard Newman, Leader of the Analytical Chemistry Group of the Hot Laboratory Division of Brookhaven National Laboratory, will be remembered by readers of Nuclear Applications for a somewhat different kind of book review that he wrote for our June 1965 issue (pp 274-275).

CONCISE TREATMENT OF A COMPLEX SUBJECT

Title Guide to Activation Analysis

Editor William S. Lyon, Jr.

Publisher D. Van Nostrand Co., Inc., 1964

Pages xix + 186

Price \$5.95

Reviewer James L. Brownlee, Jr.

Since its introduction in 1936, the radioactivation method has grown from a highly specialized, seldom-used technique to one that has taken its place among the other highly sensitive methods for trace-element analysis.