Computer Software Reviews

Get-a-Ref. Version 4.2. DatAid, Inc., P.O. Box 8865, Madison, WI. List price $250. Graduate student price $100.

Get-a-Ref is a reference handling program for IBM PC/XT/AT/PS and compatible computers. Get-a-Ref is RAM-resident. The program is designed to be used either alone or within word processing programs including Word Perfect 4.0–5.1, Microsoft Word, FrameWork II, Wordstar, DisplayWrite 3 and WordMarc (or any other program that operates in a text mode). Get-a-Ref is loaded before the word processing program and then activated using ALT-R. The program allows searches of the reference database and can be used to insert information from the database directly into a word processing document in a user defined format. Separate programs are included for sorting of references, defining reference formats, and converting screen dumps from electronic databases such as Chemical Abstracts, BIOSIS, IRIS and MedLine directly into Get-a-Ref records.

The memory resident program occupies 107 kB of RAM and can be unloaded during use of a word processing program, if desired. Files can be as large as 2000 MB or 32000 references. Individual reference records can be as large as 16000 characters or 255 lines. The program can be used with either a two floppy drive system or a hard disk. Certainly use of a hard disk is preferable.

Get-aRef effectively performs the functions it claims are provided. The program is easy to learn based on pull down menus, although users must consult the manual initially. On-line context sensitive help is usually not available, although a one-sentence help line is displayed on the bottom of the screen for the currently active menu item. Most functions become quite intuitive after using the program for a short time. The software is specifically designed to be used as a scientific reference manager and performs this job well. It is not as well suited to other jobs as other text database programs such as Notebook II. The ability of Get-a-Ref to work as a RAM resident program accessed in a word processing program is very convenient. Although Get-a-Ref searches entire records rather than keywords, its selection capabilities are rapid.

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Book Reviews*

Advances in Physical Organic Chemistry, Volume 25. Edited by D. Bethell (University of Liverpool). Academic: London and San Diego. 1989. ix + 474 pp. $120.00. ISBN 0-12-033525-5.

This volume is the 25th in the series which started in 1963. Each volume has presented three or four reviews of topics in the field, and this volume continues that tradition with three substantial reviews. The first review, by U. Berg and J. Sandstrom, which runs to about 100 pages, one-fifth of the volume, is titled Static and Dynamic Stereochemistry of Alkyl and Analogous Groups and is confined to orientations with respect to single bonds. After a short general discussion of intra- and intermolecular interactions, the methods of study are reviewed. Since about a dozen methods are covered, each is given only a very brief coverage. The major part of the review is made up of a discussion of the conformations about sp^3–sp^3 bonds and sp^3–sp^2 bonds in a selected variety of different molecules. This is a highly condensed review with a large amount of material covered in a small number of words. More than 450 references are quoted up to 1987.

The second review, by G. R. J. Thatcher and R. Kluger, on the Mechanism and Catalysis of Nucleophilic Substitution in Phosphate Esters covers more than 250 pages and constitutes half of the volume. The authors begin by tackling the problem of the name of the reaction which they are writing about, having astutely dodged the question in the title. They conclude that the reaction is "a nominal transfer of monomeric metaphosphate" or more correctly "a metaphosphatylation process". However, they admit that people will continue to refer to them as phosphate transfers or phosphorylations. The major part of this review is centered on a comprehensive account of the addition–elimination mechanisms with short sections on the dissociative mechanisms, the biological mechanisms, and the special catalysis of phosphate–ester hydrolysis. The material, based on more than 300 references through 1987 with two or three from 1988, is presented in a clear and logical sequence.

The final review is by M. Ballester, titled Perchloro-organic Chemistry: Structure and Reaction Pathways. The review is presented as "the results of variable physical organic significance reached by the author and his numerous coworkers in this domain". Indeed, over one-third of the more than 200 references are citations of the author's work. However, this is not a criticism of the review, which is enhanced by the authority of the author. The review begins with a very brief section on the perchlorination process by the reagent BMC, which is presumed to react via the chlorinating species SCl_3^+. The reader is left to deduce the origin of the BMC nomenclature of this reagent which was discovered by Ballester and Molinet in 1954. The body of the review covers nucleophilic attack, thermal and photochemical reactions, and electrophilic alkylation of chlorocarbons, followed by sections on perchlorocompounds containing oxygen functions, triple bonds and nitrogen groups. It concludes with sections on perchlorinated organic radicals and the spectroscopy of chlorocarbons. The review is well written and the material is clearly presented.

Overall, these three reviews maintain the high standards established by this series. Its stated aim "to bring before a wide readership among the chemical community substantial, authoritative and considered reviews" is fully met in this 25th volume. Although a personal subscription to this series is only for the independently wealthy chemist, no chemical library can be without Advances in Physical Organic Chemistry on its shelves.

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New Fluorinating Agents in Organic Synthesis. Edited by L. German and S. Zemskov (Institute of Organoelement Compounds and Institute of Inorganic Chemistry). Springer-Verlag: New York and Berlin. 1989. 283 pp. $145.00. ISBN 0-387-51160-1.

This monograph, an English version of the Russian book published in 1987, is a review of seven selected types of reagents suitable for laboratory preparations of organic fluoro compounds. The chapters Xenon Difluoride (34 pages, 136 references), Some "Electrophilic" Fluorination Agents (34 pages, 105 references), and Hypofluorites and their Applications in Organic Synthesis (48 pages, 239 references) discuss introduction of fluorine by addition and substitution reactions that occur using fluorides with fluorine bonded to xenon, oxygen, or nitrogen. These three chapters are especially welcomed because the topics discussed therein have not been reviewed in readily available journals.

The chapter Higher Fluorides of Group V and VI Elements (23 pages, 94 references) concentrates mainly on fluorides of pentavalent phosphorus, arsenic, antimony, vanadium, and others and on hexafluorides of molybdenum, tungsten, and uranium. The chapter Halogen Fluorides in Organic Synthesis (56 pages, 166 references) describes the use of fluorides of chlorine, bromine, and iodine, either as such or prepared in situ.

The two last chapters, New Uses of Sulfur Tetrafluoride in Organic Synthesis (57 pages, 133 references) and Fluorinations of Organic Compounds with Fluorosulfuranes (17 pages, 117 references) deal with replacement by fluorine of halogen, and of oxygen in hydroxy compounds, oxo compound, and carboxylic acids.

A common feature of the seven reviews is a brief description of the syntheses of the fluorinating agents, their reactions with organic compounds, and exemplification of the applications in the form of abridged experimental procedures (the total of 47). The procedures are lacking in the chapter on sulfur tetrafluoride; enough of them are in the reviews in *Organic Reactions* (*Vol. 21*, p 1; *34*, 319).

The inclusion of the procedures makes the book especially useful to an experienced bench chemist who often does not need to see the original literature for carrying out the fluorinations. It would have been helpful to print the procedures in italics to distinguish them from the text. The

*Unsigned book reviews are by the Book Review Editor.