Book Reviews

Handbook of Aqueous Solubility Data. By Samuel H. Yalkowsky and Yan He. CRC Press, Boca Raton, FL. 2003. xii + 1496 pp. 18 × 26 cm. ISBN 0-89493-1532-8. $299.95.

This handbook contains approximately 16 000 aqueous solubility records for more than 4000 organic nonelectrolytes and weak electrolytes. Salts are not included. The data tables contain each compound's molecular formula, name and synonyms, molecular weight, Chemical Abstracts Service registry number, melting point, and boiling point (where available). Solubility data are reported as moles per liter and grams per liter. Each record provides a five-point evaluation of the data according to temperature, purity of the solute, equilibration time and agitation, analytical method, and accuracy and/or precision. Complete reference citations are included in the 68-page reference section. There are three indices: "Molecular Formula", "Chemical Abstracts Service Registry Number", and "Names and Synonyms". The data were extracted from approximately 1800 references in the "AQUASOL dATAbASE", which is available in an online version for a fee.

It is interesting to note that benzene is the compound for which solubility in water has been studied most extensively. There are 177 entries for benzene, including 38 entries for solubilities determined at 25 °C. These solubilities range from 8.961×10^{-3} to 1.770 mol/L. The latter entry has "sic" in the comments column and represents a solubility reported in 1952.

The only narrative in the text is the $1^1/_2$ page introduction. For a description of factors that govern solubility and dissolution rate as well as methods for estimating solubility in aqueous solution, the reader should consult two of Professor Yalkowsky's earlier texts, "Solubility and Solubilization in Aqueous Media" and "Aqueous Solubility: Methods of Estimation for Organic Compounds".

The chemist who deals with pollutants, herbicides, pesticides, and agricultural chemicals might find this book to be useful. However, I find it difficult to imagine that the average medicinal chemist would pull this down from the shelf more than a few times in a lifetime. Chemistry department libraries should have this book if the institution does not already subscribe to the continuously updated online version or to "ACD/Solubility DB", which contains Yalkowsky's data through a licensing arrangement.

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Annual Review of Pharmacology and Toxicology. Volume 43. Edited by A. K. Cho, T. F. Blaschke, P. A. Insel, and H. H. Loh. Annual Reviews, Palo Alto, CA. 2003. vii + 710 pp. 15.5 × 23.5 cm. ISBN 0-8243-0443-8. $70.00.

For nearly half a century, *Annual Review of Pharmacology and Toxicology* has been among the leading monographs in the field. This is supported by recent figures indicating that it has the second highest impact factor of nearly 200 periodicals in pharmacy and pharmacology. Its reputation was built on publishing concise, authoritative, and timely review articles, each of which contains a comprehensive list of references to the primary literature. The value of these reports has grown as the pace of discovery quickened and the volume of literature expanded, making it difficult to remain current in the discipline as a whole. While the number of subfields and topics covered in this edition is more limited than in the past, with drug metabolism, transporters, transcription factors, and cancer being emphasized, the reviews are topical and are of value to anyone with a stake in drug discovery.

In the early years, under Windsor Cuttings' editorship, each edition of *Annual Review of Pharmacology*, as it was then called, provided reviews covering the major areas of the field, with chapter titles such as "Cardiovascular Pharmacology", "Antibacterial Chemotherapy", and "Effects of Drugs on the Central Nervous System". The current edition is more limited and thematic in scope. Thus, there are four chapters on drug metabolism and four on transporters, including both phase I and phase II enzymes, neurotransmitter uptake sites, and P-glycoprotein. There are three chapters on transcription factors, including retinoic acid receptors, the antioxidant response element (ARE), and the aryl hydrocarbon site (AhR), and three chapters on cancer. Curiously, there are two separate reviews on the pharmacology of nitric oxide, one of which is authored by Louis J. Ignarro, a Nobel laureate. Other topics covered in the volume are lung fibrosis, NMDA receptor trafficking, adrenergic receptor polymorphisms, gene therapy, and Alzheimer's disease. Chemists may find particularly interesting the review by Wong and McCammon on computer-aided drug design, which emphasizes the importance of measuring protein flexibility when attempting to develop high-affinity ligands for receptors and enymes. Likewise, the offerings by Sausville, Elsayed, Monga, and Kim and by Rezler, Bearss, and Hurley on new cancer treatments, such as protein kinase and telomerase inhibitors, respectively, will be of value to those engaged in developing new therapies for this condition. Moreover, the chapter by Clancy et al. on potassium channel SAR and drug-induced QT prolongation is of particular importance to pharmaceutical scientists.

In all cases, the literature through 2001 is covered, with a few references to papers published last year. Many of the presentations are enhanced substantially by a generous use of color graphics. The table of contents for the volume and abstracts of the review articles can be accessed through HYPERLINK <http://www.annualreviews.org>.

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