

and benefits of programs, 6. Programs for smoking cessation and 7. Program implementation and outcomes. A list of useful references is given at the end of the book. An index is also provided.

The topics are explained very well in each chapter. A description of the problem is given and statements are supported by references. Some data on smoking are compiled in the form of tables. Qualitative aspects of each topic is covered in detail. Emphasis is placed on the health risk due to smoking in the work place. Regulatory aspects are reviewed in depth.

The book will be useful for scientists involved in environmental safety. Others involved in the environmental field can read the book as a starting point. The book can be used as a reference book for environmental health courses.

ASHOK KUMAR

Evaluation of Environmental Data for Regulatory and Impact Assessment, by S. Ramamoorthy and E. Baddaloo, Studies in Environmental Science, Vol. 41, Elsevier, Amsterdam, 1991, ISBN 0-444-88530-7, viii + 466 pp. (6 page index included), Dfl. 300 (\$150).

This book by two members of the staff of the Environmental Assessment Division, Alberta Environment, Canada, is No. 41 in the Elsevier Studies in Environmental Science Series. An extensive chapter on the analytical techniques currently employed in the detection and quantification of environmental materials also covers the influence physicochemical parameters have on aquatic organisms. However, it then merges into a discussion of methods for testing toxicity, in both aquatic species and mammals, but without a thorough treatment of either topic.

A chapter on the quality of analytical data reports on sample size parameters, quality control programs, quality assessment and detection limits, with illustrations of tests for flagging outliers in sets of analyses. Fate processes, such as sorption-desorption, biological and chemical transformation, etc., which influence toxicity assessment, as well as multi-tier toxicity testing, mutagenicity, hazard assessment strategy and various types of tests are discussed.

There is extensive coverage of scoring systems, especially those used by the Canadian government, to evaluate chemicals for testing, along with an explanation of the various parameters, namely exposure, volume of use, release to the environment, degradation in air, soil or water, and bioconcentration which determine the score. This leads to a description of the decision tree used to place chemicals in the testing hierarchy, with special emphasis on physicochemical processes which affect the level of exposure.

A chapter on hazard evaluation also covers ecological and, to a small extent,

mammalian toxicity tests. These include long term, developmental and reproductive toxicity, mutagenicity, safety factors, and thresholds or non-thresholds.

The chapter on databases for impact assessment is definitely for regulatory use, with sections on data requirements for premanufacture testing, lists of Canadian Government databases, and a repetition of factors considered in the evaluation of a chemical. Various models for risk assessment are discussed in another chapter, which relies heavily on the 1983 book *Risk in the Federal Government* and U.S. government reports.

In a summary chapter, the relative costs of treatment technologies to remove inorganic contaminants from water, the cardinal rules of risk communication, risk reduction and risk benefit are all mentioned for the regulatory decision-makers.

This book would serve as an overview for those entering a regulatory agency such as the U.S. EPA. However, the descriptions of most tests are not sufficient to be of value unless many other references are consulted. A disconcerting fact was that most of the tables, illustrations, charts, etc., are from other authors, although with proper credit to these authors. Furthermore, the authors are not current in several respects. They mention the Bioassay Program of the National Cancer Institute when that effort was transferred to the National Toxicology Program in 1978; 5 million chemicals are said to be in the Chemical Abstracts Registry when there are over 11 million; while there is no mention of newer risk models using pharmacokinetics or the multistage models of Moolgavkar and his associates.

The book would have been improved by having a stricter edit. There is much repetition in various chapters, many misspelled words, and numerous instances of poor or erroneous grammatical usage.

ELIZABETH K. WEISBURGER AND HOWARD H. FAWCETT

Improving Safety in the Chemical Laboratory, A practical guide, 2nd edn., edited by Jay A. Young, Wiley/Interscience, New York, NY, 1991, ISBN 0-471-53036, 406 pp., \$75.00.

To raise the quality of a first edition in 4 years, to what may well become a classic, is a real achievement. Professor Young, the editor, has assembled 18 highly qualified authors for the 22 chapters (some classified as appendices) and, in addition to the expected treatment of the OSHA Chemical Laboratory Standard (Occupational Exposures to Hazardous Chemicals in Laboratories, effective 31 January 1991), has presented outlines on general laboratory safety, as well as highlights of the Canadian and U.K. regulations. Since the U.S. regulations cut across agency lines, it necessitates viewpoints from OSHA, EPA, NIOSH, Nuclear Regulatory Commission and others.