Hazard Assessment of Chemicals: Current Developments, by J. Saxena and F. Fisher (Eds.), Academic Press, New York, 1982, 461 pages, $49.50, £32.00.

As the readers of this journal are undoubtedly aware, there is currently keen interest and much information evolving on the environmental and health hazards arising from chemicals and their usage. To keep up-to-date is difficult. Periodicals such as this journal report on current research, policies, laws, etc. Another mode of information transfer is the annual series of books produced in hard-bound form. This book is the first in such a series.

This edition contains ten different articles covering a wide variety of topics: (1) Assessment of toxic-substances information sources. (2) Preconcentration of trace metals from aquatic environmental samples. (3) The reproductive toxicology of aquatic contaminants. (4) Partition coefficient and water solubility in environmental chemistry. (5) Chemical carcinogens: *in vitro* metabolism and activation. (6) Modelling of toxic spills into waterways. (7) Environmental and laboratory rates of volatilization of toxic chemicals from water. (8) Estimation of exposure to hazardous chemicals. (9) Structure — activity in hazard assessment. (10) Awareness: sources, distribution, environmental impact and health effects.

Because of the vast amount of information available on chemicals that affect and impact human health and the environment, about the only way to handle and access the large data bank is by computers. Thus, appropriately, in the first chapter on toxic-substances information sources, Anthony Lee (Technical Resources Inc., Washington, DC) cites 15 commercial data bases including AGRICOLA (agriculture), APLIT (American Petroleum Institute), APTIC (USEPA — Air), CAS77/CAS2276 (Chemical Abstracts) and COMPENDEX (Engineering Index). The information contained in each data base is briefly discussed. Lee briefly cites some of the most important major hardcopy references but, as he notes, space precluded publishing lists of other references. Perhaps a journal article could focus on that topic?

Benedict of the University of Florida, Gainesville, has written authoritatively in the sixth chapter on Modelling of Toxic Spills into Water. He has been involved in modelling for several years, having developed one of the early toxic-spills analytical models, and presented it at the 1978 National Conference and Control of Hazardous Material Spills, in Miami. In his chapter, Benedict reviews the current status and all the limitations of modelling toxic spills into water courses. The review includes basic equations, methods of their solution and, finally, specific presentation of some existing models of potential usefulness.

Another area attracting much current research attention is that of transboundary transfer of pollutants — soil to water, water to air, etc. Much work in the United States is being sponsored by the US EPA, while in Canada McKay at the University of Toronto, has done a significant amount

of work and made a major contribution in oil spill-modelling. In the book, he has written an 85-page review (chapter 7) on the current information available on the mechanisms and rates of the volatilization process as well as laboratory techniques for determining those rates.

This volume is a fine start to what I hope will be a long series of annual volumes devoted to the hazard assessment of chemicals. The serious worker in the field will very much want to read the new volume each year.

GARY F. BENNETT

Environmental Risk Analysis for Chemicals, by R.D. Conway (Ed.), Van Nostrand Reinhold Co., London, 1981, 558 pages, $31.90.

One of the current U.S. environmental debates concerns the National Contingency Plan which has recently been issued by the U.S. Environmental Protection Agency. Among the issues addressed in the plan are the federal guidelines for the clean-up of hazardous waste sites; missing from the plan, and of great concern to many environmentalist organizations is how far the clean-up should go or what amount or concentration of toxic chemicals may be left at a site or, put succinctly, "how clean is clean?"

Although no contribution to this book focuses specifically on that debate, the information and techniques presented form a sound scientific basis for assisting in rational decision — i.e. what is the risk imposed by chemicals? Conway begins the book with a chapter he has written himself to introduce the concept of risk analysis which he describes in two steps with quotations taken from the scientific literature:

— risk is a measure of the probability and severity of adverse effects,
— analysis describes the collection and examination of technical and scientific data.

He then discusses tiered testing models with detailed examples of the methodology used by two major chemical companies.

There is a section on modeling that seems out of place in the introductory chapter and is so brief as to be inadequate. Some of Neely's excellent work in compartmental modeling is shown but other significant literature such as Thibodeaux's book on Chemodynamics is not. The chapter ends with a good, but brief, review of U.S. Federal laws that deal with hazardous chemicals: TSCA, CWA, RCRA and CAA.

In the third chapter, Conway and two other contributors do return to the subject of modeling — at least they deal with the beginning of the process — i.e. on the mode of entry of chemicals into the environment. They cite sources, mode of entry, medium (air, water or soil) that receives the chemical, dilution, transport and cumulative effects.

Other chapters address the unique problem of the risk of chemicals to: (1) the aquatic environment, (2) the atmosphere, and (3) the terrestrial