gramme? What possibilities are there for taking the will of citizens into account when formulating policies? Which organisational forms can ensure both effective decision-making and democratic accountability? For Lagadec, major risks pose a direct challenge to our systems of government and he has much to say about the "easy temptation of authoritarianism" in the face of these. However, the author also appreciates the difficulties for the ordinary citizen in coming to terms with complex and uncertain threats to health and safety. It is for this reason that Lagadec advocates a general "training for responsible doubt" (although he is less than explicit about what this training would actually entail).

The book concludes with a plea that we should look again at the regulatory bodies which are responsible for managing hazards in the 1980s. Lagadec has strong doubt about the effectiveness of many of these authorities; he argues that we may well be embarking onto the "ocean of major risk" in "skiffs" which are far too frail. The obvious consequence of this would be that "at the first real storm we shall drown".

G.A. IRWIN

Handbook of Carcinogens and Hazardous Substances: Chemical and Trace Analysis, by Malcolm C. Bowman (Ed.), Marcel Dekker, Inc., New York and Basel, 1982, 750 pages.

If ever a book appeared at the right time, this volume qualifies. When the US and other nations are concerned about chemical contamination from a variety of sources, including hazardous wastes, the need is great for an authorative work of reference to the analytical methods which may be used to determine the degree to which a substance, alone or in combination, is present in air, water, and soil. In addition, this volume presents short but definitive statements on the toxicology of the materials about which analytical methods are described.

The ten chapters are written by scientists with excellent credentials in the toxicity/analytical interface. An overview of chemical carcinogens by Thomas J. Haley brings this topic into perspective and contains 119 references. Chapter 2, on alkylating agents, is co-authored by Alexej B. Borkovec and Charles W. Woods and contains an excellent table on conditions for gas chromatographic analysis of alkyl halides both by the NIOSH and OSHA references. Similar data are tabulated for sampling and chromatographic conditions for phosphate esters and epoxides; 117 references end this chapter. Aromatic amines and azo compounds, by Charles R. Nony, discusses the analytical methods developed for use in the aromatic amine program of the National Center for Toxicological Research during the past eight years. Spectrophotofluorometric (SPF) and gas chromatographic (GC) analysis approaches to various amines and azo compounds in foods and urine are well presented,

complete with curves representing the data. This chapter has 135 references. The chapter on estrogens, by E.D. Helton, M.C. Williams, and R.H. Purdy, discusses the present understanding of these important natural compounds and their metabolism. The physical constants of estrogen hormones are tabulated, and the analytical methods for quantitative analysis and identification are given, followed by 116 references. The chapter on mycotoxins by A.E. Pohland and C.W. Thorpe is especially timely, as the recurring news of investigations of alleged "yellow rain" will testify. T-2 is only one of many mycotoxins discussed, backed up with 168 references. The chapter on *N*-nitrosamines and *N*-nitroso compounds is by Ira S. Krull and D.H. Fine; it discusses the analytical aspects of the compounds, backed by 253 references. "Pesticides and Related Substances", co-authored by M.A. Luke and Herbert T. Masumoto, discusses the wide variety of pesticides in terms of the recoveries obtained from the Luke Multiresidue Procedure, and has an excellent table of proximate water, fat, and sugar contents in foods and feeds (i.e. water, fat, and sugar). Retention values for a gas chromatographic column for several dozen pesticides are shown; 36 references are given, and citations to official methods of the Association of Official Analytical Chemists. Chapter 8, on polynuclear aromatic hydrocarbons, is a critical review of the state-of-the-art knowledge relating to the measurements of PAHs; 182 references are offered. Chapter 9 is on toxic metals and metalloids, by W.M. Blakemore. Elements known to have injurious effects at high concentrations are cited: beryllium, chromium, manganese, cobalt, nickel, cadmium, tin, lead, arsenic, phosphorus, selenium, tellurium, mercury, vanadium, copper, and silver; 40 references are given. Chapter 10, "Halogenated Contaminants: Dibenzo-*p*-dioxins and Dibenzofurans", is by Lawrence Fishbein, and could not be more timely than today's newspapers in terms of Times Beach, the Binghamton State Office Building, and the current "dioxin" hunt in many places; 131 references are cited.

Overall, the book is a "goldmine" for anyone who wants to know the latest approach to "how much of what" is in the environment.

H.H. FAWCETT

The Scientific Management of Hazardous Wastes, by C.B. Cope, W.H. Fuller and S.L. Willetts, Cambridge University Press, Cambridge, 1983, ISBN-0-521-251001, 480 pages incl. index, £35.00.

This is a well researched, comprehensive text dealing with the science and administration of waste disposal in the U.K., providing an excellent source of references. It is written in a lively, conversational manner in which the authors have succeeded in a presentation which, whilst sufficiently detailed to be of interest to those experienced in the field, provides clear and concise descriptions which are capable of being understood by those new to waste disposal.