Sources and Fates of Aquatic Pollutants, edited by R.A. Hites and S.J. Eisenreich, American Chemical Society, Washington, DC, 1987, 558 pp. Price $119.95.

This book uses a holistic approach to study the processes controlling the transport and fate of inorganic and organic species in limnic and marine environments. The processes described are air-water, water column, and water-sediment, which together with selected case studies are presented in sixteen papers.

Mathematical modelling provides a useful framework to bring together large amounts of diverse data, an approach which is well illustrated in this book. Where appropriate the fundamentals of chemistry and physics are considered in order to account for the transfer of pollutants, for example the octanol-water partition coefficients for organic compounds, where theory and practice are considered for water-particle and vapour-particle partitioning.

Historical records of atmospheric contamination related to dioxin in lake sediments are discussed on the basis that if the chemical-physical properties are known, the dominant transfer processes can be identified. Pollutant transfer behavior in fogs is described; in some areas this can constitute a major transfer route to the land. The importance of the air-sea transfer of trace elements is illustrated for the SEAREX project at Enewetak Atoll in the Pacific, where the continent of Asia is the source of material. In relation to oceans and lakes, mechanisms controlling trace element distributions are described, and it is suggested that lakes may provide suitable models for the oceans as they are usually more accessible than the open sea. In the discussion on metal speciation in natural waters, observed and predicted partitions are compared for 10 elements, and anomalies are pointed out. Ion budgets and alkalinity in lakes indicate the need to develop quantitative models for pore water profile compositions and sediment diagenesis. The nature of the surfaces of sediments is important for the uptake and loss of pollutants; there is a need to improve our knowledge of the real composition of these surfaces, and in particular we need to know more about how surfaces change with time and how molecular characteristics of sorbate molecules interact at surfaces.

In both lakes and oceans, seasonal variability in the amount and composition of particulate debris mediates the composition and long-term behaviour of pollutants and contaminants. In many studies, naturally-occurring and man-made radionuclides provide useful tracers. Once dated sediment profiles have been established, it is possible to examine the distribution of pollutants with time and to consider the effect of such processes as diffusion and recycling on element redistribution.

Throughout this book, possible models are discussed in relation to theory and practice. I would therefore recommend the book to a wide audience, as models do provide a useful framework for explaining complex processes, and this is likely to be a more helpful approach than concentrating upon one process in the hope that it will provide all the answers.

A basic problem in presenting such a book is to bring together details of individual measurements and to extract quantitative aspects which are appropriate to a model; a balance has to be achieved, and this book provides a number of examples which indicate that progress is being made, albeit whilst uncovering further problems.

Plymouth (United Kingdom) E.I. Hamilton

Tobacco: A Major International Health Hazard (IARC. No. 74), edited by D. Zaridze and R. Peto, Oxford University Press, 1986, 324 pp. Price: £20.00.

Although the adverse effects of smoking on people's health have been known for many years, the habit remains one of the most serious public health problems in developed and developing countries. By the end of this century, the number of deaths from lung cancer caused by smoking will exceed one million. Smoking also contributes to a number of diseases which may eventually cause death or the impairment of a healthy existence. Even the inhalation of tobacco smoke from 'passive exposure' (see *Environmental Methods of Analysis and Exposure Measurement, Vol. 9 Passive Smoking*, Eds I.K. O'Neill, K.D. Brunnemann, B. Dodet and D. Hoffmann, IARC Publ. 81, 1987, 372.pp. Price: £30.00) is now considered to involve a risk of developing lung cancer. Chewing tobacco is becoming popular in some areas, but this can lead to forms of cancer of the mouth.

This book presents the proceedings of an international meeting held in Moscow in June, 1985. The main recommendations of the meeting were to discourage continuation of the habit of smoking; to ensure that the real risk to health from smoking is understood as well as to draw attention to the benefits which ensue when the habit is stopped; the ultimate elimination of all tobacco consumption; the immediate introduction of an upper limit of 15 mg of cigarette tar; and finally, to establish in each country where there is an appreciable number of smokers adequate monitoring of tobacco-related diseases over a long period of time.

The detrimental effects of smoking on health and the premature deaths it causes can be difficult to identify, and have to be considered country by country in order to take into account local factors which interact with the disease process, e.g., interactions with alcohol, asbestos, diet, degree of atmospheric pollution, etc. The risk of cancer is now known to be related to the length of time a person has been smoking rather than to daily dose, and also to the age when they first took up smoking.

Patterns of disease in relation to smoking are described for the USSR, Japan, Shanghai and various developing countries. In the developing countries, lung cancer mortality is often relatively low and the habit is socially acceptable. Indeed, in many of these countries the revenue from smoking is an important source of revenue; for example, in Malaysia the revenue from smoking in 1982