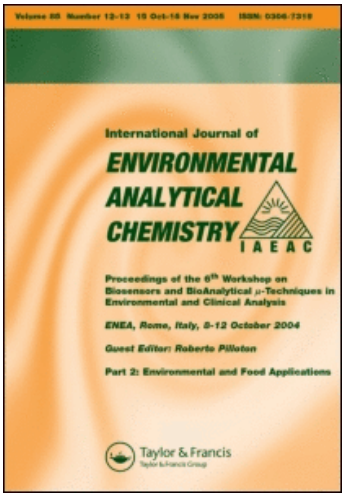

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Book Reviews

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Book Reviews

AN ASSESSMENT OF MERCURY IN THE ENVIRONMENT, National Academy of Sciences, Washington, D.C., 1978 (185 pp), price $8.00.

The report was prepared by a Panel on Mercury of the Coordinating Committee for Scientific and Technical Assessments of Environmental Pollutants as a result of a request of the U.S. Environmental Protection Agency to the National Research Council of the National Academy of Sciences. The responsibility was assigned to the Environmental Studies Board of the Commission on Natural Resources.

The aim was to use it as a basis for possible regulatory action on pollutants in the U.S.A. It is based on an extensive search and review of the general scientific literature. Hence it is a rather important book for those who are concerned with the subject, although it cannot be considered, as an encyclopedia of information on mercury.

The report consists of two parts: the impact of mercury on the environment and the effects of mercury on human health, with as an introduction, some chapters on mercury cycles, forms of occurrence, kinetics or transformations, mechanisms by which it is transported and accumulated.

Special emphasis is laid upon facts that are unsufficiently known and need further investigation.

One of the conclusions is that man's influence on the global mercury cycle is less than previously was assumed. According to mathematical models based on assumptions that have been questionable in the light of recent data. However, the mercury levels in water courses, air and soil are increasing. Whether this is the case in biological specimens too, could not reliably be determined using models, but bioaccumulation of methylmercury, as formed by chemical methylation in the environment, proceeds very rapidly in acquatic systems. The mechanism of the protective action of selenium is not fully clear. As the direct threat of elevated mercury levels is mainly posed to the bottom of the food chain, the major risk for animals and human beings is indicated by consumption patterns. Dose-response relationships have been determined after the large epidemic in

1972 in Iraq, but also in this and in previous epidemics the data (concentrations of organic and inorganic mercury in biological samples and quantification of clinical effects) were sometimes incomplete. Data from experiments on possible genetic, reproductive, carcinogenic and teratogenic effects of mercury compounds are meager, according to the report.

The book gives a good review of the whole field. The text is rather compact, surveyable and conveniently arranged. The conclusions are clear.

The literature list gives some 375 references; as far as can be seen no important literature up till the beginning of 1977 has been overlooked. An appendix gives the analytical methods for mercury, with another 50 references. Much progress has been made since the book has been written, but that does not diminish its value.

In accordance with the aim of the book some tables which are specific for the U.S. are included (current status of sport and commercial fisheries with respect to mercury pollution, mercury emissions in the U.S., etc.)

The layout of the book is rather simple; the price is reasonable.

P. BOS

ENVIRONMENTAL POLLUTANTS—DETECTION AND MEASUREMENT, T. Y. Yoriba, J. R. Coleman, B. E. Dahneke and I. Feldman (Editors). Plenum Publishing Corp., New York 1978, price $51.00 (500 pp.).

The title of this book is too general and indicates to this reviewer that it is a rather comprehensive volume of methods for the detection and measurement of environmental pollutants. It is not. For example, the detection and measurement of PCB's or phthalates is absent. Chromatography (gas or liquid) as an analytical tool is not included. This volume, in fact, represents the proceedings of the 10th Rochester International Conference on Environmental Toxicity (which could have been a more appropriate title) held at the University of Rochester in May 1977. Each session of the conference is given a separate section in the book. The first is on specification of analytical problems which includes historical discussion, and strategies for pollution monitoring. Session 2 deals with familiar problems—analysis of air pollutants which are possible human carcinogens, ion selective electrodes, atomic absorption for trace metals, source identification of oil spills, and raman spectroscopy. Session 3 includes

methods for field use such as gas permeation, plane photometry and the use of lasers for air pollution monitoring. Session 4 is concerned with high-spatial resolution microscope methods including several topics on electron spectroscopy techniques. The final session, on physical analytical methods deals with time-of-flight spectroscopy, neutron activation for trace metals, faman effect, mass spectrometry and x-ray analysis. For most part, the subjects are covered well. The articles show how useful the various techniques are for detecting and measuring environmental pollutants. As to be expected the book is rather incoherent. However, it should be useful as an information source for the specialist working in these specific areas.

J. F. LAWRENCE

THE ELEMENTAL COMPOSITION OF HUMAN TISSUES AND BODY FLUIDS by G. V. Iyengar, W. E. Kollmer and H. J. M. Bowen. Verlag Chemie, Weinheim, New York 1978. xviii+150 pp., with 130 tables. Softcover. Approx. DM58,–. ISBN 3-527-25759-4.

This book is a compilation of data for normal adult tissues and body fluids cited from the literature. Many sensitive analytical methods allowing routine measurement of trace elements in biological samples have recently become available, and consequently a wealth of data has accumulated. Interest in the application of trace element analyses in biological and medical work has simultaneously been stimulated by the discovery of more elements found to be essential to the body, as well as by the recognition of environmental hazards from toxic elements. This compilation is an attempt to select relevant and vital data from the widespread biomedical and analytical literature and make it easily available to those who often need data concerning human tissues. Data has been restricted to healthy adult tissues since the distribution of elements in maternal, fetal and infant tissue deviates from that of adults and is not very well documented.

The book will be of interest to physicians, biologists, chemists, biochemists, clinical pathologists, radiobiologists, health physicists, environmental scientists and analytical chemists.