Information Resources in Toxicology, by Philip Wexler, Elsevier/North Holland, New York, Amsterdam, Oxford, 1982, ISBN 0-444-00616-8, 291 pages plus index, Dfl. 113.00, $50.00.

As pointed out in the preface, the literature in toxicology is proliferating at a phenomenal rate, and many on-line services are available. However, little attention has been given to directing the seeker to the major sources of information.

In this volume, the basic books are covered, such as general textbooks, analytical, biotoxins, carcinogenesis, mutagenesis, teratogenesis, and by use, such as cosmetics, drugs, foods, metals, pesticides, and veterinary toxicology. Special monographs are covered, such as the IARC Monographs and scientific publications, and the NAS/NRC studies of environmental pollutants. Audiovisuals, microforms and card files, abstracts and other current awareness publications are noted. Organizations are classified by governmental, nongovernmental, and federal coordinative groups. Legislation and regulations are presented, and international activities given. Education, such as universities offering graduate programs in toxicity, are noted, as is information handling, and journal articles. Especially significant is the directory of poison control centers in the U.S., each with telephone number and address (unfortunately, the Canadian centers are not included).

In general, the book is an interesting check-list and directory for anyone who wonders who knows what in the field of toxicity.

H.H. FAWCETT

Trace Substances and Health, A Handbook, Part II, by Paul M. Newberne (Ed.), Marcel Dekker, Inc., New York and Basel, 1982, 155 pages plus author and subject index, $27.50.

The first part of this series dealt with natural and man-made agents which become a part of our bodies and which may have beneficial or detrimental effects on health or length of life. This volume discusses nitrates and nitrites in foods and in biological systems, nitrosamines, plant toxins, and seafood biotoxicants. Each major chapter is written by persons with known expertise or experimental experience. The chapter on nitrates and nitrites, authored by Paul Newberne of M.I.T., is 45 pages, including 127 references, and discusses the toxic effects of nitrate and nitrite on man and animals, the use of nitrite and nitrate in meat preservation, botulism, nitrite as a direct cause of cancer, the M.I.T. nitrite study (1980) which, after reviewing 50,000 histologic slides, found relatively small numbers and incidence percentages of lymphoreticular tumors in the study, but tended to rule out the possibility that the carcinogenic effect of nitrite was a result of the formation of nitrosamines in the diet of the animals. In addition, treatment of

animal studies and relation to human conditions, the risk assessment problem, and the probable fate of nitrite as a food additive are included.

Nitrosamines are covered by Adrianne E. Rogers in 33 pages with 103 references. Several interesting tables supplement the text. For example, the various nitrosamines present in foods range from a low of 0.1 to 10 in alcoholic beverages, to a high of "up to 3000" μg/kg in meat cures. The LD_{50} of several nitrosamines are tabulated, and range from 20 mg/kg for *N*-nitrosodimethylamine in rats by i.p. to 2500 mg/kg for *N*-nitrosodibutylamine by s.c. in the European hamster. The influence of species and route of administration of *N*-nitrosodibutylamine carcinogenesis is tabulated, showing significant differences both in route and species of animals used. Several of the dietary and chemical manipulations that alter nitrosamine carcinogenesis are discussed and tabulated. Such items as copper deficiency and disulfiram show significant effects in modifying the incidence of tumors.

Plant toxins, as discussed by A. Robin Mattocks of the Medical Research Council Laboratories in Surrey, England, covers 28 pages, including 221 references. The widespread nature of the problem, the difference in both mode of action and chronic vs. acute effects of ingestion (the usual route of entry), plant carcinogens, such as the pyrrolizidine alkaloids, the bracken (fern) carcinogens, cycasin and related glycosides, tannins, safrole, and miscellaneous carcinogens, and the mutagens, teratogens and fetotoxins, liver toxins, and lung poisons are other topics. Detection and analysis procedures are referenced.

Seafood biotoxicants, as treated by John C. Wekell of NOAA and John Liston, University of Washington, covers 44 pages with 178 references. Although known since the Fifth Dynasty of Egypt, the toxic effects of marine animals are still not widely discussed until a major outbreak of a toxic effect. Intoxications from ciguatera, shellfish, puffer fish poisoning (tetrodotoxin or TTX), scombroid poisoning, and other seafoods are noted, and relative toxicity of some substances tabulated.

The book is well indexed, and should be a valued addition to anyone concerned with references to the subjects discussed.

H.H. FAWCETT

HAZOP and HAZAN: Notes on the Identification and Assessment of Hazards, by T.A. Kletz, Institution of Chemical Engineers, Rugby, 1983, ISBN 0-85295-165-5, 81 pages, paperback, £8.00 incl. postage and packing.

The IChemE, under its information exchange scheme, has published this addition to its series of Hazard Workshop Training Modules. The author will be well known to many people for his work in the field of chemical plant safety, particularly during his long career with ICI, from which company he recently retired. This set of notes is presented as an aid to training in the