

agents, activators and fillers, curing agents, ester plasticizers, accelerators, retarders, antidegradants, blowing agents and solvents. The physiological effects of chemicals, the toxicological testing and atmospheric monitoring aspects are well presented. Perhaps most valuable to the average "non-rubber expert", such as this reviewer, are the bibliography, and the chemical trade names index (from Al to Wingstay), and chemical names index (from acetone to zinc stearate). This is a most excellent, highly specialized source of data which should be useful to the rubber and related industries.

H.H. FAWCETT

Disaster Management: Warning Response and Community Relocation, by R.W. Perry and A.H. Mushkatel, (Quorum) Greenwood Press, Westport, CT and London, 1984, 280 pages, \$ 35.00.

From earliest times to the present, the importance of planning for warning, evacuation, and often relocation of persons from both natural and man-made threats has been recognized by social scientists, but largely ignored by engineers and physical scientists. This book, by two professors at Arizona State University, is based on studies of the American National Science Foundation, the Ohio State University Disaster Research Center, and the earlier studies at the National Academy of Sciences by Charles Fritz and others.

After the recent Mexico City propane and Bhopal, India methyl isocyanate tragedies, considerable soul-searching is obviously indicated as to the industry/community/governmental/environmental interfaces, and the responsibilities of each component to set up and effectively insure adequate disaster control.

A model of evacuation warning compliance is presented in Chapter 2, followed by sociological theory and warning response studied. The authors next match their models with "real-world" incidents, derived from the Riverine flood warning responses. Chapter 4, pages 101-135, "Citizen Response to a Hazardous Materials Emergency", will be of most interest to industrial planners, since it delineates the various problems which arise when a community is threatened by a propane-rail tank car incident. Especially interesting in this book is the difference in responses to the questionnaire between whites, blacks, and Mexican-Americans, since ethnic background is frequently overlooked in such studies.

In the appendix, the questionnaire instrument used for the studies in the book is recorded. It is followed by the references, which are unusually well done, and comprehensive, making it possible for any serious student to have access to a considerable volume of data.

The book, especially Chapter 4 and the appendix, should be of much value in understanding disaster management, whether from "natural" or "man-made" emergencies from nuclear attacks to accidental chemical

release. In the conclusion, the authors stress that technical competence must be combined with political knowledge and sensitivity to the needs of persons who are affected by the disaster.

H.H. FAWCETT

Human and Environmental Risks of Chlorinated Dioxins and Related Compounds, by Richard E. Tucker, Alvin L. Long, and Allan P. Gray (Eds.), Plenum Publishing Corp., New York and London, 1983, 823 pages, \$95.00.

This book records 56 papers and panel reports presented to an International Symposium on Chlorinated Dioxins and Related Compounds, held October 25–29, 1981 in Arlington, Virginia. Participants from 20 countries representing a wide spectrum of academic disciplines contributed to insuring a balanced “update” on these compounds. As more is known of the human and ecological effects, even at the very low (ppb and ppt) levels, this book will doubtlessly serve as a reference point to what was understood in 1981.

Nine major topics are covered by the papers and reports:

1. Definition of the Problem (5 papers)
2. Analytical Chemistry (6 papers)
3. Environmental Chemistry (8 papers)
4. Environmental Toxicology (6 papers)
5. Biochemistry and Metabolism (8 papers)
6. Animal Toxicology (3 papers)
7. Human Observations (5 papers)
8. Risk Assessment (5 papers)
9. Laboratory Safety and Waste Management (9 papers), plus seven panel reports.

As D.G. Barnes of USEPA noted in his paper, there is considerable confusion and misunderstanding in use of the term “dioxin”: while the 2,3,7,8-tetrachlorodibenzo-dioxin (TCDD) is a very serious candidate for concern, other substances in the family of dioxins do not possess the same degree of toxicity. For that reason, care must be exercised as to exact data and generalizations. No attempt was made to white-wash the potential problems: the Vietnam exposures to Agent Orange containing small amounts of dioxin (TCDD) and industrial exposures both in the United States and in Seveso, Italy are analyzed in terms of human and environmental impact.

The risk assessment section is especially interesting, since ultimately laws and regulations are evolved, hopefully with the best scientific judgment available. How this judgment evolves for toxic materials, such as TCDD, is enumerated in detail by L. Mark Wine, a lawyer. The importance of human data is stressed, even though the data may lack adequate dose–response data.