

Book Reviews

Quantitative Risk Assessment for Environmental and Occupational Health, by W.H. Hallenbeck and K.M. Cunningham, Lewis Publishers, P.O. Drawer 519, Chelsea, MI 48118, 1986, ISBN 0-87371-055-X, 200 pages \$39.95 (prepaid).

As noted in the introduction, risk assessment (or cost/benefit ratio) has become a new interdisciplinary methodology essential to inform regulatory decisions including worker exposures, plant emissions and effluents, waste disposal and consumer products. This volume spells out in details what risk assessment is and is not, and how to apply it to typical situations. The authors explain exposure characterization, qualitative evaluation of human and animal studies, risk analysis, and acceptable concentrations (each in a separate chapter) before demonstrating step-by-step how to use the method. One chapter is an example of environmental and occupational exposure to a hypothetical industrial toxicant, assumed to also be a potential carcinogen, and a second chapter deals with the environmental exposure to a natural toxicant, Radon-222 and its daughters. The stepwise approach makes this volume a most valuable teaching aid, even for self-instruction. A basic knowledge of mathematics and statistics is assumed although the appendix includes the lower 1% and upper 99% limits for a binominal variable as well as the equations used in risk assessment. References and index are carefully and professionally included. This is a real gem for anyone who must encounter and perform risk analyses.

H.H. FAWCETT

Indoor Air and Human Health, R.B. Gammage and S.V. Kaye (Eds.), Lewis Publishers, Inc., P.O. Drawer 519, Chelsea, MI 48118, 1985, ISBN 0-87371-006-1, 430 pages \$39.00 (prepaid).

Indoor air quality (IAQ) has been seriously recognized as an important human health factor only within the last decade. This volume records proceedings of the 7th Life Sciences Symposium, October 29-31, 1984, with sponsorship of the Oak Ridge National laboratory, the U.S. D.O.E., the U.S. E.P.A., the Tennessee Valley Authority and the Electric Power Research Institute. Low-level long-time exposures are difficult to evaluate, especially in humans, but this volume stresses the approaches necessary to appreciate and solve the problems.

Included in the volume are major sections on radon (96 pages) recently declared a problem in 1 of 8 American homes as a suspected cause of lung

cancer; microorganisms (57 pages), a well documented source of indoor pollution problems; passive cigarette smoke (68 pages) in homes and other areas which are inadequately ventilated; other combustion products (71 pages) such as those originating in conventional heaters (coal- and wood-fired stoves, fireplaces, gas stoves and space heaters); and volatile organic compounds (VOCs), including nearly ubiquitous formaldehyde, are discussed in 93 pages. References are excellent, and the index adequate to the subject. Overall, this volume should be of great value to anyone who is truly concerned with the scientific aspects of this vital subject.

H.H. FAWCETT

Fire and Smoke: Understanding the Hazards, by the Committee on Fire Toxicology, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC, 1986, 156 pages, paperback, \$16.00.

Fire is probably the oldest known chemical reaction, but the uncertain and incomplete understanding of this primal force is only vaguely appreciated. Especially this is true when one tries to relate materials to fire losses, deaths, and escape times, such as tragically was demonstrated in the recent South African mine fire with loss of 177 lives.

To review and update the knowledge and experiences of the fire sciences and engineers, the Committee on Fire Technology, National Research Council, has produced a most valuable volume. Starting with risk and hazard assessment, a review of fire deaths and the inadequate data base on real causes and effects, the study presents a primer on fire and fire hazards (which is in itself a classic). Status of fire hazard models and test methods, hazards associated with fires (heat, smoke, chemistry and physics of smoke), and laboratory evaluation of the evaluation of smoke potency, are followed by two "real-world" fire scenarios. The volume contains 233 references.

This is a most important and valuable addition to the library of any scientifically-oriented person concerned with control of and human interface considering our primal force, fire.

H.H. FAWCETT

Safety of Reactive Chemicals, by T. Yoshida, Elsevier, Amsterdam, 1987, ISBN 0-444-42748-1, xvi + 404 pages, Dfl. 230.00, \$102.25.

This volume inaugurates a new Elsevier series on Industrial Safety and is