

suggest the importance of this volume. Beginning with the statement that the International Physicians for the Prevention of Nuclear War (IPPNW) is a fact-finding group dedicated to studying the effects of nuclear production and testing by several nations, it notes that approximately 1900 nuclear tests have been conducted, 518 of which were in the atmosphere, under water or in the space. The shroud of security is slowly being lifted, and we now can note releases from tests by the US, UK, the former USSR, France, China and India.

Tests were conducted under water, at remote islands in the Pacific and in Australia, as well as underground and in the atmosphere. While guidelines have existed for decades as an upper limit to human exposures, in the early days of US nuclear weapons testing, the official limit was 3.9 rads per year for the public downwind of atmospheric tests, but action tended not to be taken until doses reached or exceeded the level at which immediate radiation symptoms became manifest, namely about 100 rads. About half the fallout from atmospheric testing returned to earth near the test sites and in the downwind areas within a few hundred kilometers of the test locations, while the rest was deposited around the globe, in a non-uniform manner. With underground tests, fallout from venting is essentially like fallout from an atmospheric test. Radionuclides from underground testing include strontium-90 (generation rate of 0.1 megacurie/megaton with half-life of 28.8 years), cesium-137 (generation rate 0.16 megacurie/megaton, half-life 30.2 years) and plutonium-239 (150 curies per test, half-life 24,400 years). The question arises as to the long-range health effects which includes the induction of cancer. The majority of cancer cases will arise from exposures in the northern hemisphere, and estimates of fatal cancer from nuclear weapon testing are included, based on the best evidence and data available.

This is a very sobering volume and must be read in its entirety to be appreciated. One can only hope that diplomatic, not nuclear weapons, can be used in future disagreements. As the shield of security thins, and nuclear environmental decontamination continues, we recommend this volume to anyone concerned about the long-term welfare and health of the human race.

HOWARD H. FAWCETT

In Search of Safety: Chemicals and Cancer Risk, by John D. Graham, Laura C. Green and Marc J. Roberts, Harvard University Press, Cambridge, MA, 1988, ISBN 0-674-44636-4, 260 pp., \$14.90 (paperback).

This book is a thoughtful treatise about the nature of environmental regulatory controversy and the role played by science and scientists in setting environmental regulatory policy. The authors adequately describe the regulatory process and do justice to the often conflicting evidence about hazards, the ex-

tent of risks from chemical exposure, and the pressures exerted by various political agencies and special interest groups.

More research and better technical information about science-intensive policy decisions seem to raise more questions than they answer and to increase both the disagreement among experts and the polarization of the public policy debate. The authors approach this issue by undertaking in-depth case studies of formaldehyde and benzene, tracing the regulatory histories of these two chemicals. Though the particular examples are chemical-specific, many of the lessons learned from the environmental regulatory process involving these two chemicals can be applied more broadly to the general setting of environmental policy and the entire question of scientific "evidence" as it applies to the policy-making process.

One of the most important points the authors make is that regulators, scientists, interest groups, judges, journalists, and ordinary citizens can benefit from a more realistic and honest view of the ability of science and scientists to resolve disputes about chemical carcinogens. The authors posit as a solution their "neoseparationist" view, that only by recognizing the limited role of science as a resolver of conflict can the conflict between scientific evidence and policy decisions be addressed explicitly and democratically.

This book is of manageable length and is well-referenced and well-written, without the unexplained jargon replete in many books dealing with risk and regulatory policy. The socially and scientifically relevant topic should appeal to those involved with the regulatory process on many levels, whether scientist, policy-maker or concerned citizen.

BONNIE P. BLAYLOCK and CURTIS C. TRAVIS

Toil and Toxics: Workplace Struggles and Political Strategies for Occupational Health, by James C. Robinson, University of California Press, Berkeley, CA, 1991, ISBN 0-520-07164-6, 246 pp., \$29.95.

Toil and Toxics is an in-depth examination of workplace hazards and the political options available to both workers and management concerned with occupational safety and health. Providing a historical, economic and political analysis of worker efforts to control workplace hazards, Robinson tells us which strategies have been effective in the past and which hold the most promise for the future.

The author uses statistical data on workers, firms, labor unions, and working conditions spanning a thirty-year period to address issues critical to achieving and maintaining safety in the workplace. In the beginning chapters, he discusses the effects of health and safety risks on quit rates and layoff rates, unionization, strikes and labor productivity. In addition, Robinson demon-