

SCIENCE

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EDITORIAL

Toxic Terror; Phantom Risks

The public has long been subjected to a one-sided portrayal of risks of environmental hazards, particularly industrial chemicals. Only a few individuals have attempted to bring balance into the picture. They have faced a self-serving, formidable de facto alliance of media, well-heeled environmental organizations, federal regulators, and the plaintiffs' bar. Two recently published books provide well-documented surveys of fiction and reality with respect to risks to human health. One is entitled *Toxic Terror**; the other, *Phantom Risk*†. The two volumes address some of the same specific topics, but they supplement each other. In *Toxic Terror* considerable attention is devoted to books by doomsayers. Specific quotations of predictions of enormous effects on health and even human existence are presented and cited. Many of the predictions point specifically to cancer. None of the dire predictions has come true. In addition to books, exaggerations of the media, including *Time*, *Life*, *Newsweek*, and *The New York Times* are displayed. Celebrities such as Jane Fonda are quoted: "Few people need convincing these days that we are in the midst of a cancer epidemic." The consumer advocacy groups share some of the attention with the comment that they "...focus heavily on the problems of the environment in their fund-raising and membership appeals." In a chapter on food safety, the infamous attack on Alar is detailed. Other chapters are devoted to evaluations of such risks as those presented by pesticides, PCBs, asbestos, dioxin, and nuclear power.

The book entitled *Phantom Risk* deals with some of the above chemicals as well as other environmental hazards. Emphasis, however, is different. A litigation industry has arisen in which claims of damage are decided by juries who have been exposed to assertions described in *Toxic Terror*. Paid experts testify on behalf of the plaintiffs. In the book real risks are evaluated in a series of chapters, each prepared by knowledgeable scientists who have reviewed relevant literature. The scope of *Phantom Risk* is established in opening sentences. "*Phantom risk* is not lung cancer from smoking.... By *phantom risk* we mean cause-and-effect relationships whose very existence is unproven and perhaps unprovable.... The book explores two interesting problems. The first is the great disparity between the ease with which a controversy about a suspected hazard can begin and the difficulty in resolving the nature of the connection, if any, between the suspected hazard and a health effect. The second [problem] is the havoc the resulting confusion wreaks in the courts." An example cited is the long series of litigations involving Bendectin. It is a drug successful in easing the discomforts of morning sickness. However, there is a high (2 to 3%) natural incidence of birth defects. Epidemiologic studies of incidence of birth defects showed that there was no statistically significant difference between the outcomes of pregnancy in users and nonusers of Bendectin. Nevertheless, lawsuit after lawsuit was filed and although defendants won most of them, they tired of the litigation and stopped producing Bendectin.

The book devotes 14 chapters to health risks that have been attended with litigation. In general, authors of the chapters indicate that risks have been overstated. Often, results of poorly conducted preliminary studies were given extensive publicity leading to damage suits. A host of follow-up studies revealed that the initial findings were not valid.

In some instances, as with PCBs and dioxin, reviews of the scientific literature indicate that potential human health effects have been greatly overstated. "In massive doses (compared with typical environmental exposures) some PCB mixtures produce cancer in laboratory animals. However, there is no convincing evidence that PCBs cause human illness [at low doses]...epidemiologic evidence linking TCDD and human cancers...is equivocal and appears to be growing weaker as more studies are reported."

Publication of these two important books comes at an auspicious time. They cite growing scientific evidence that is destroying the basis of the cancer scare. Reviews of the accumulating history of the utterances of the doomsayers reveal their lack of judgment, respect for facts, and honesty. Their assertions are not a sound basis for wasting trillions of dollars on phantom risks.

Philip H. Abelson

*E. M. Whelan, *Toxic Terror: The Truth Behind the Cancer Scares* (Prometheus Books, Buffalo, NY, ed 2, 1993)

†K. R. Foster, D. E. Bernstein, P. W. Huber, Eds., *Phantom Risks. Scientific Inference and the Law* (MIT Press, Cambridge, MA, 1993).