

The Career of a Hazardous Substance

DDT: Scientists, Citizens, and Public Policy. THOMAS R. DUNLAP. Princeton University Press, Princeton, N.J., 1981. viii, 318 pp. \$18.50.

In recent years, a pattern has emerged in the histories of public response to hazardous substances. A new substance, which appears to fill a need, is invented and widely adopted despite some early indications of low-intensity adverse effect. Years of widespread use begin to arouse concern among some scientists and the public, and a governmental agency is persuaded to limit use of the substance; this limitation proves difficult to enforce because people are not convinced it is necessary and because the tests on which enforcement is based are slow and expensive. Public concern mounts, hearings are held, and finally, years or decades later, a legislature or agency restricts or bans the substance. Manufacturers and users appeal, delaying the effects of these policies still longer. In a variant of this pattern, a disaster calls attention to the effects which have been accumulating gradually over the years, occasioning a more immediate response.

DDT was one of the earliest and most widely used chemicals whose rise and fall fits the now-standard pattern. Thomas Dunlap tells its story in *DDT: Scientists, Citizens, and Public Policy*, from the time it was brought dramatically to public attention by containing a typhus epidemic in Naples during World War II to its quiet demise at the hands of the Environmental Protection Agency in 1972. The book is perhaps the most detailed case study of a hazardous substance yet undertaken, although, as its subtitle indicates, that is not its only purpose.

Despite its formal division into three sections, the book falls into two main parts. The first explains the origins of the profession of economic entomology and shows how the profession's ethos came to include almost unquestioning support of insecticides in general and DDT in particular. This part is a good study in the history and sociology of science and a useful contribution to our understanding of professionalism. Throughout this section the reader will also find other material that serves as the basis for understanding subsequent policy regarding

DDT, including the mutual dependence of the profession, its clients, and the Department of Agriculture; the conflict between those (mostly in the Public Health Service) who preferred epidemiological evidence and those (primarily in the Food and Drug Administration) who preferred laboratory evidence of toxicity; and the shift to applicants of the burden of proof for safety of (some) new products. These themes, which apply to other substances as well, are frequently discussed elsewhere, although seldom have the complex interactions involved been so carefully documented in one place.

The second part of the book details the Wisconsin DDT hearing of 1968-69 and the EPA hearing of 1971-72. The former led to the banning of DDT, first in the state and later throughout the nation. The Wisconsin hearing in particular was important as one of the first uses of litigation based on scientific evidence by a group opposed to existing policy. The hearings illustrate a common pattern in which because of ambiguities in the supporting data scientists are free to reach opposite conclusions about whether the risk associated with a substance is acceptable. Dunlap recounts so much of the evidence and questioning in the hearings that any scientist thinking of giving evidence in court would be well advised to read this account and take to heart its lessons. So, for that matter, would would-be environmental lawyers.

The theme that is intended to tie the two sections of the book together is the ideology of the economic entomologists. As one of the bases of the manufacturer-user-agency-expert bloc that was unresponsive to requests for change in the policy toward DDT, the ideology was in some sense responsible for the hearings. The expert testimony of the economic entomologists at the hearing—belittling health and environmental effects and stressing economic benefits of using DDT—is the public statement of this ideology. The hearings were the means by which the ideology and its institutional superstructure were challenged. These points are almost lost, however, in the welter of names, newspaper headlines, and internal Environmental Defense Fund politics that are included in the account of the hearings.

The two parts are tied together only in

the last five pages of the epilogue, where Dunlap summarizes his argument and describes changes in the professional ideology of economic entomologists that are occurring as a result of the events surrounding DDT and related chemicals. This short treatment is not enough to overcome the sense that this is almost two books. Either part of the book could be read independently, although each contributes something important to the other.

The final section is also one of the few places in the book in which the author addresses the issue raised by the subtitle—scientists, policy, and citizens—explicitly. The reader who is familiar with the complexities of trying to obtain an informed public policy when scientists disagree, important economic interests are at stake, and citizens must choose among risks (here, for example, between the risk of long-term damage to the environment and possibly health and the immediate risk of malaria, typhus, or lice) will immediately understand the points implicit in the case of DDT. Readers new to these issues or even to certain aspects of them might have appreciated more guidance from the author. Again, it is only in the epilogue that other substances are mentioned, so that the reader cannot learn from this book that the lessons of DDT are of immediate use in our treatment of myriad other substances. The otherwise excellent discussion of "safety" and "acceptable risk" in particular could have been used to show how little we have progressed in the last decade in our abilities to provide adequate institutional responses to different definitions of these terms.

DDT tells a readable story. Several appendixes and a list of abbreviations provide technical aid to the general reader, who could also have profited from a chronology, given the author's tendency to provide many names and few dates. The meticulous documentation will serve future students of the subject well. However, because of the author's tendency to keep his analysis implicit and because of the lack of comparative materials, the general reader will not find here lessons of broad applicability, while the specialist will find only further confirmation of what he or she already knows. Perhaps both can gain most from reading about the litigation, since that technique may take on renewed importance for environmentalists in today's altered political climate.

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