Confrontations Close to Home

Contaminated Communities. The Social and Psychological Impacts of Residential Toxic Exposure. MICHAEL R. EDELSTEIN. Westview, Boulder, CO, 1988. xx, 217 pp. $33.

The experience and thoughts of residents of a New Jersey community faced with news that a toxic landfill has contaminated their wells make up the substantive core of *Contaminated Communities*. The findings of the case study, based on and enriched by extensive quotes from interviews, are compared with the findings of case studies of other communities done by Edelstein (usually in the role of consultant to citizens' groups or law firms) and other social scientists.

Edelstein notes that the problem of dealing with toxic exposure, which he analyzes with a model of phases of coping like those used in studies of natural disasters, is compounded by the "technological" nature of the disaster. Among other things, from the outset the "victims" must interact with government officials, who have the unenviable positions of being the bearers of bad news, interpreters of that news, and protectors or remediators of the public against the effects of the bad news. In some situations, as in Legler, New Jersey, the government may also be the cause of the problem. Accordingly, much of the stress and distress people experience comes not from direct exposure to toxic compounds but from direct exposure to government officials and technology experts. The process of encounter may be "disabling" for both sides, and some people may give up or lapse into depression, but it may also be "enabling," prodding citizens to organize and engage in political and legal action. The effectiveness of the latter course is given testimony by the current stalemate in hazardous waste siting in much of the United States.

Accordingly, communities are not impacted so much as they are created by exposure to toxic chemicals. The "enabling" process is one in which private troubles become public issues and whereby a community of the afflicted is created. The boundary of contamination becomes the boundary of a community of shared interests and values that is created in the "enabling" process. This may be therapeutic for some people, in that it offsets the stigmatization and attrition of social support from other networks of relationship that usually follow news of toxic exposure. It is clearly therapeutic in the larger sense, in that community development means greater political pressure on officials and a better chance of cleanup and compensation. However, the formation of a sustainable community does not always happen. As elsewhere in the book, Edelstein tries to address the question of the conditions under which it does or does not happen by comparing the case at hand with other cases and with the findings of other kinds of research (that is, surveys).

The flawed process of communication is also depicted in cognitive terms. There are fundamentally different modes of thought and significance involved in determining acceptable risk. For example, "technocratic" government officials and scientists are likely to see type I errors as "errors of rashness," to be avoided, and type II errors as "errors of caution," and preferable. But "democratic" citizens concerned about their health and that of their children, and about property values, are more likely to see a type I error as the conservative and hence preferable choice: better to err on the side of exaggerating the problem than to risk not seeing the problem that might be there. Edelstein's analyses of the differing paradigms for acceptable risk and of citizen-government interaction are not wholly original, but they provide a useful summary of the literature and background to the problem of risk communications.

Many and diverse are the psychosocial impacts of toxic exposure at Legler (Jackson Township), New Jersey, Love Canal, New York, Times Beach, Missouri and other neighborhoods in which homeowners and families have been forced to confront the problem of hazardous waste disposal in the most immediate and frightening way. The cognitive impacts are particularly dramatic. Those people who accept that the problem exists are forced to reassess the most fundamental assumptions of their culture ("lifescape") about health, the natural environment, the meaning of the home, and the role of government. It is this reassessment, and search for alternatives, that leads many to view grass-roots protests over toxic exposure as the vanguard of a major social movement and potential cultural change of the most fundamental kind. Near the end of the book, the NIMBY ("Not in My Back Yard") phenomenon is discussed in the context of a new social movement (which has taken state and national form) and Lois Gibbs's counter slogan: "Not in Anyone's Back Yard." Edelstein is clearly influenced by Habermas and other critical political theorists and tentatively starts, in the concluding chapter, to articulate a more fundamental analysis of the contradictions in modern industrial society that may make it impossible to resolve hazardous waste problems and protect people from them short of the radical social and cultural change that would be required to lead to substantial source reduction.

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Physical Mineralogy

Structural and Magnetic Phase Transitions in Minerals. S. GHOSE, J. M D. COEY, and E. SALJE, Eds. Springer-Verlag, New York, 1988. xii, 244 pp., illus. $59.50. Advances in Physical Geochemistry, vol. 7. From a symposium, Stanford, CA, July 1986.

Significant changes have been occurring in the geological sciences (now called earth sciences). Suddenly earth scientists are embracing other disciplines, holding meetings with physicists, chemists, and materials scientists, and establishing common ground.

This book illustrates the new togetherness with studies of phase transitions in minerals. The editors have been in the forefront of the earth scientists who are hardly distinguishable from physicists, chemists, and materials scientists and so are admirably suited to produce a book such as this.

The book's 12 chapters come from an international group of scientists of widely differing backgrounds. Topics covered range from the Landau thermodynamic theory of transitions in feldspars to the study of incommensurate phases, where the lattice does not correspond to the true unit cell repeat expected in most crystal structures. Both these subjects have tended to be the province of the physicist, more as curiosities than as of direct applicability to the real world. However, we now know that even a crystalline material as complicated and as abundant as feldspar (which makes up much of the earth's crust) responds to temperature change in a way that can be explained well by relatively simple theoretical physics. That has been, for me, one of the surprises of the new earth sciences. And when incommensurate phases were discovered, who would have thought that they would have any