

Book Reviews

Rodger W. Bybee
Guest Book Review Editor

ATMOSPHERE-BIOSPHERE INTERACTIONS: TOWARD A BETTER UNDERSTANDING OF THE ECOLOGICAL CONSEQUENCES OF FOSSIL FUEL COMBUSTION

by the Committee on the Atmosphere and the Biosphere, Board on Agriculture and Renewable Resources, Commission on Natural Resources, National Research Council. 1981. National Academy Press (2101 Constitution Avenue, N.W., Washington, DC 20418).

Man is indisputably a geological force of global proportions. Interactions of the atmosphere and biosphere are so widespread that there is evidence of accumulated heavy metals in arctic plants and elevated lead levels in the snow and ice of the antarctic regions. This report by a blue-ribbon panel of the National Research Council composed of experts in limnology, soil science, geochemistry, botany, ecology, atmospheric sciences, hydrology, and air-pollution engineering attempts to document that evidence and raise concern over what to do about air pollution.

The report is valuable because it is concise and based on very broad literature; the bibliography alone is about 20% of the body of the report. After explaining the fossil fuel scenario and giving an historical overview, the report devotes separate chapters to biogenic emissions to the atmosphere, anthropogenic sources, atmospheric transport, transformation and deposition, biologic accumulation and the effect of atmospheric contaminants, general areas of research, and finally, acid precipitation. Each chapter has a short but valuable summary.

National polls show that Americans are very much concerned about air and water pollution and have been concerned for more than a decade. They continue to place a very high value on clean air and water. The Committee on the Atmosphere and the Biosphere shows us just how difficult it is to define ex-

plicitly what cleanliness means in a global sense although they are able to define pollutants in a narrow sense. The report of the committee does not give specific solutions to the dilemma of industrial progress and clean air. They do say that pollutants must be reduced, but they do not say how we should go about achieving those reductions.

This report probably is not valuable as a classroom book because it is highly technical and not meant for laypersons. The best students should find it a useful starting place for entering the rather sizable and confusing literature on air pollution. It would be valuable to any teacher trying to increase the background of knowledge needed to present the technical and scientific aspects of air pollution.

C.E. Buchwald
Carleton College
Northfield, Minnesota

ACID RAIN: A PLAGUE UPON THE WATERS

by Robert Ostmann, Jr. 1982. Dillon Press, Inc. (500 South Third Street, Minneapolis, MN 55415). 208 p. \$12.95 hardback.

Robert Ostmann is a journalist who specializes in environmental reporting. He spent two years doing research for this book and many more covering acid rain for the *Minneapolis Star*. Ostmann has written a very readable and understandable introduction to acid rain. *Acid Rain* is directed toward the average reader and as such has little scientific-technical language. The journalistic style is both a strength and weakness. On the strong side, I found the book easy reading. It flowed well, had interesting facts and figures, and made excellent use of analogies. Use of a leaking basement faucet as a means of thinking about different groups' proposed solutions to acid rain was superb use of metaphor. For example, some groups wish to wait until the water is up to the first floor; some will let the

faucet run and pump the basement; some see the leak, but claim it is not their problem; and so on.

On the weak side, some of the discussion was sensational. While it held one's interest, there was a feeling that very complex issues were being presented with a simplicity and trendiness. While on the topic of weaknesses, the diagrams and charts were not very good. Their production was poor and several had little or no explanation.

Ostmann's orientation is clear from the first chapter—"A Threat to Planet Earth." He makes the point that acid rain is not new, but public awareness of acid rain is new. Along the way he introduces some of the researchers and concepts important for further reading. The second chapter continues with introductions to the destructive processes of acids and the various effects of acid rain on plants, trees, humans, and materials.

There is a chapter I thought extremely interesting, and a new dimension among books and articles on acid rain. "The Acid Rain Pioneers" is a fascinating chapter concerning the dilemmas faced by scientists studying acid rain. (I imagine that the discussions would generalize to scientists studying other environmental problems as well.) Should the scientist make public his/her results and advocate remedies, or should the scientist publish his results in scientific journals and leave the advocacy to others? Ostmann interviewed scientists such as Gene Likens, Svante Odén, Eville Gorham, and William Lewis for the book, and the manner in which these individuals resolved the dilemma provides far more than interesting reading.

The last chapters of the book chronicle the political dimensions of acid rain. "A Test of American Will" should be insightful to anyone who ever wondered how things do and do not get done in Washington. The last chapters on the politics of acid rain and