

population and community responses. As the summary of a symposium, the book is organized into 26 papers and 18 poster summaries that are typically multidisciplinary in nature.

Comparing the decline of forest ecosystems in several geographic locations, the book offers special emphasis on understanding ecological principles to better predict and mitigate the deleterious effects of air pollutants. Redundancy, or the capacity for ecosystems to perform important functions in a variety of ways, is an important general theme introduced early in the book and developed throughout in special case studies.

The book is divided into the presentations in six sessions: purpose and overview of the symposium; factors that induce stress and contribute to the decline of forests; evidence of effects on North American and European forests; effects of airborne chemicals on components of forest ecosystems; forest management perspectives; and directions for future research and management. The Public Information Session which accompanies the treatment of evidence is particularly useful in explaining pollution sources and symptomatology in plants. The papers tend to reinforce an awareness of air pollution problems in forests and a sense of urgency about alleviating the problem. The six appendices include a comprehensive bibliography and biographical sketches of contributors along with other useful source material for the serious student.

While exhaustive, this book lacks the clarity that thoughtful and extended transitions among the six sessions could provide. The inconsistency of the type, presentation of data and general body of the separate papers further interfere with an efficient reading of the text. The book is a benchmark treatment of a complex and elaborate problem. I recommend it to university libraries for four groups of readers: professional researchers; graduate students in ecology and selected undergraduates; government policy makers in environmental offices; and the interested public (with special attention to the Public Information Session).

This book serves as a reference for those interested in both general and specific information about the effects of air pollution in forest ecosystems.

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## EVOLUTION

### EVOLUTIONARY THEORY: THE UNFINISHED SYNTHESIS

by Robert G.B. Reid. 1985. Cornell University Press (124 Roberts Place, Ithaca, NY 14851). 405 p. hardback, price not given.

This volume presents a philosophical and historical review of evolutionary thought. It indicates that in the author's view the so-called neo-Darwinian synthesis places restrictions on evolutionary theory that are best left open, hence the title, unfinished synthesis.

Four complementary evolutionary theories are sometimes acknowledged. The first of these is the reality of evolution itself. This is not questioned, and creationists looking for alternatives will find sparse mention and little comfort. Secondly, the theory of the history of evolution and its variations and perturbations takes up much of the volume. The third or ecological theory which is sometimes called the synthetic theory is the one most in vogue presently. This is followed by a fourth epigenetic theory of macro-evolution from which Reid marshalls and documents extensive evidence.

The 17 chapters analyze Darwinism, giving the academic arguments against the selection mechanism, the cases both favoring and opposing the various aspects of Lamarckism, some unorthodox interpretations of many philosophers, biologists and other thinkers, many of whom have anti-Darwinian views, and, finally, a holistic statement which leaves the reader with the option of an unfinished synthesis instead of the orthodoxy of neo-Darwinism.

The book has extensive endnotes for each chapter and an exhaustive list of references.

The style is frequently philosophical and may seem strange to the biology teacher. One suggestion is to read the first and last chapters before reading through the rest of the volume. It cannot help but stimulate thought and discussion for the careful reader.

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## GENERAL

### THE NATURE OF SCIENCE

by Frederick Aicken. 1985. Heine-  
mann Educational Books, Inc. (70

Court Street, Portsmouth, NH  
03801). 130 p. \$13.50 softback.

In *The Nature of Science*, Frederick Aicken presents a series of essays dealing with scientific methods and the influence that science has had on the development of Western culture. The author has set for himself an ambitious task. The small volume he has produced can provide only a sketchy introduction.

Aicken attempts, in a mere 130 pages, to illustrate what he refers to as, "the wider view of science." In addition to a discussion of scientific methods, the author's "wider view" includes the "study of the effects of science on literature, religion, and political thought." The author also treats the reader to his views on the failings of science education and provides some suggestions to remedy the situation. The present book is intended as a step in the right direction.

The preceding description may lead one to believe that the book would suffer from the author's failure to narrow the scope of his work; however, his intention is not to present an exhaustive exposition of any one topic. The aim of the book, which is in keeping with the author's educational philosophy outlined in the latter part of the final essay, is to pose questions to the reader and provide some guidance in answering those questions. The author has managed his task well. The book should serve to stimulate the thoughtful reader to delve more deeply into a topic. It may also provide a point of focus for classroom discussion of the impact of science on society.

An attractive feature of the book is a list of thoughtfully chosen quotations followed by a list of questions at the beginning of each essay. Many of the questions are thought-provoking and open-ended enough to stimulate discussion or further research. The essays are brief and only suggest possible answers to the questions.

The author's style is clear and direct throughout most of the book. Occasionally, there are short passages in which the author relies too heavily on the subordinate clause and the reader may lose sight of the point of the passage. In addition, an occasional typographical error may detract from the flow of ideas. Despite these minor difficulties, the book is well written at a level that is suitable for high school students and up. There are also a number of clearly drawn illustrations which highlight points made in the text.

A selection of readings is provided