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.

Charles J. Bicak
California State College
Bakersfield, CA 93311

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 sparce 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 Lamarkism, 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.

Paul Daniel
Miami University
Oxford, OH 45056

GENERAL

THE NATURE OF SCIENCE
by Frederick Aicken. 1985. Heinemann 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

for each essay. The readings have been selected from an extensive literature. The level of difficulty of the suggested books varies widely and the reader might have benefited from a ranking of the books. However, the list does provide some guidance for the reader who chooses to delve more deeply into a topic.

This book comes at a time when educational reformers are calling for a shift in emphasis on science content toward greater emphasis on the interaction of science, technology and society. Science is frequently taught as a body of facts about nature. This view of science lacks relevance for many students. Science should be taught as an active process of inquiry which has greatly influenced, and will continue to influence, student's lives. An appreciation of the importance of science in shaping Western culture and an understanding of its potential to improve or imperil the average citizen's life will enrich the student's understanding of his world. More importantly, an understanding of the impact of science on society and the role that the average citizen can play in shaping science policy is essential for effective participation in a democracy. This book is a useful resource for teachers who would like to make a positive step in this direction.

Robert Cooper
New Hope-Solebury Jr-Sr High School
New Hope, PA 18938

THE MUSEUM OF SCIENCE AND INDUSTRY BASIC LIST OF CHILDREN'S SCIENCE BOOKS, 1973-1984 compiled by Bernice Richter and Duane Wenzel. 1985. Museum of Science and Industry (57th St. & Lake Shore Drive, Chicago, IL 60637). 154 p. $11.25 softback.

The Museum of Science and Industry Basic List of Children's Books, 1973-1984, is a retrospective edition of the bibliography compiled for the annual Children's Science Book Fair and a cooperative publishing effort of The Museum of Science and Industry and The American Library Association.

Encompassing the last 12 years of children's publishing in science, the list reviews 1,400 books for grades K-12 with a special focus on elementary, middle and junior high school. The potential purchaser should realize, despite the use of "K-12" that 15-20 percent of the titles, by this reviewer's count, have reading levels above the sixth grade. However, there is a wide variation of reading level designations among the book topics with approximately 40 percent of the entries for astronomy being above six. Also included in the publication is a list of 100 adult resource books developed to help parents and teachers interpret science material to children.

An introduction details the evaluation process and the rating system used to compile the *Basic List.* Staff members of the museum's Kresge Library evaluated the books on the basis of eight significant criteria. Each book was independently evaluated and a final rating determined after a discussion of the book's strengths and weaknesses. The books were rated on a five-point scale from excellent to not recommended. Purchasers should use the rating system to make comparisons among books on a similar topic.

The 1,400 books are divided into 17 topics including Aviation/Space, Biography, Careers, Mathematics/Computer Science, Earth Sciences and Technology. In order to manage the enterprise, the compilers divided the 12 annual Children's Science Book Fair listings into the periods 1973-1979 and 1980-1984. For purposes of the *Basic List,* only those books with excellent or very good ratings were retained for 1973-1979. On the other hand, each title for 1980-1984 was rated on the five-point scale of excellent, very good, good, acceptable and not recommended. Books are arranged alphabetically by title within each of the 17 categories. Each entry contains: (1) a complete bibliographic description of the book; (2) a summary of the general content; (3) the reading level; (4) a rating symbol; and (5) when available, citations to other publications for additional reviews.

The number of books in each of the 17 topics varies greatly. Approximately one-third of the 111 pages of entries concerns the life sciences. Only two pages relate to physics/chemistry. Why does this condition exist? Is it a problem? The reviewers/compilers should not be faulted because apparently there are simply few books written in certain areas. One should inquire, accepting a dearth of titles in some topics, why this situation prevails. Do writers focus on topics most in demand. Are writers less interested in physics/chemistry? It was pleasing to note that six pages were devoted to environment/conservation. Why only two pages each to biography and careers? Hopefully, teachers and parents, by rethinking the total situation, will influence writers/publishers to make available a more adequate balance of books.

The *Basic List* is a quality product. It is complete, well organized, of appropriate length, and 1985 vintage. Much effort was devoted to its development. The collaboration between The Museum of Science and Industry and The American Library Association provides both a wider distribution of the books and lends credibility to the *Basic List.* Joint efforts of this nature bode well for the children who read these books.

Science trade books are an important and effective means for helping pupils learn about science, develop a respect for science and scientists and a procedure for stimulating an interest in reading. The *Basic List* should be of value for librarians, teachers and parents as an aid in securing quality books, planning classroom activities and encouraging reading at home. Compliments to the compilers for cross-checking the entries against the 1984-1985 edition of Bowker's *Books in Print* in an attempt to identify out-of-date materials. The bibliography is well worth its price.

Harry McAnarney
Kansas State University
Manhattan, KS 66506