

algae. Each chapter is well-illustrated with diagrams and photographs (black-and-white) from the authors themselves or from the scientific literature.

In addition to the introduction and taxonomic surveys, there is a fascinating chapter on endosymbiosis and the origin of eukaryotic algae. While primary endosymbiosis is well known by most biologists, the discussion of secondary and tertiary symbiosis is probably less familiar. These latter endosymbioses refer to the process by which eukaryotic cells (rather than prokaryotic cells as in primary endosymbiosis) are taken up and integrated into host cells. A dramatic example of this comes from a group of algae known as the cryptomonads. These algae contain a nucleomorph, which is interpreted as the eukaryotic endosymbiont's highly reduced nucleus. Thus, we can see a "missing link" in the process of secondary endosymbiosis.

Although this book is for upper-level undergraduate courses in phycology or aquatic biology, it is so well

written that beginning undergraduates would have no trouble grasping the major concepts. I also recommend its acquisition by college and university libraries.

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YOUNG SCIENCE

The Turnstone Ocean Explorer Books are a series of children's books published by Raintree Steck-Vaughn Publishers (4515 Seton Center Parkway, Ste. 300, Austin, TX 78759). Each book is 64 pp. Hardback \$27.11.

Ocean Detectives: Solving the Mysteries of the Sea. By Mary Cerullo. 2000.

Down to a Sunless Sea: The Strange World of Hydrothermal Vents. By Kate Madin. 2000.

Meteorite!: The Last Days of the Dinosaurs. By Richard Norris. 2000.



Turnstone Publications has partnered with a number of scientific institutions to produce children's science books. The three books considered in this review are from the **Turnstone Ocean Explorer** series that was developed through a partnership with Woods Hole Oceanographic Institute.

In many ways these books are different from most children's science books. A major difference between this series of children's science books and many others is that the authors in this series speak from firsthand experience and describe research projects in which they have personally participated. This first person perspective is captivating. It makes the reader feel that the content is alive and thus it invites questions and analysis.

This particular series of books was written for students in grades 6 through 8. They are well constructed, colorful, attractive books. I found them

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interesting and easy to read. Each gives examples of the use of scientific method to solve particular problems and provides insight into the workings of the scientific enterprise. In addition to their engaging text, these books contain many photographs and illustrations that are useful and informative.

These books were written from a pedagogical perspective that addresses the National Science Education Standards. A visit to the Turnstone Web site (www.turnstonepub.com) provides a checklist of the standards met by each book. The Web sites designed for these books are very well constructed and provide ample information about exercises to accompany the books and links to additional Web sites of interest and activities for both students and teachers.

Clearly one should consider the books of this series when seeking a science book for children. These are the kind of books that have the ability to influence a child's life. They can make the reader think, "I want to do that." There is no question that we can use more science books like these that have the capability to excite children rather than turning them off.

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ECOLOGY

Forest Life—Meadow Life—River Life. By Barbara Taylor. **Tree Life** By Theresa Greenaway. 1998. Each book is 29 pages. \$4.95. These books are part of the **LOOK CLOSER** series by D.K. Publishing (95 Madison Ave., New York, NY 10016). Other titles in the series (not read by the reviewer) include *Pond Life*, *Desert Life*, *Rain Forest Life* and *Tide Pool Life*.



As a young student, my first lessons in ecology were hands-on experiences in the forests, meadows and riparian lowlands of North Carolina. On long walks with my mother and grandmother (both of whom were elementary school teachers), I eagerly learned the names of all the plants, trees and animals we encountered, and observed how these creatures interacted with one another.

Today, thanks to books like those in D.K. Publishing's **Look Closer** series, young students need not muddy their boots to learn about the creatures that live in the forests, meadows, rivers and trees of the world. While I believe that books in general can never replace

hands-on experiences, carefully written materials can provide enriching information for young readers, much as the **Look Closer** books do by showcasing some of the most interesting details about the individual creatures that fill certain niches in various ecosystems. Did you know, for example, that bats are clean animals which regularly groom their wings to keep them in top flying condition? (*River Life*, p. 27)

Each book in D.K. Publishing's **Look Closer** series is a colorful, 30-page collection of information about a featured ecosystem—hence the titles of the books: *River Life*, *Meadow Life*, *Tree Life* and *Forest Life*. The books are designed to be most appropriate for upper elementary and middle school students. However, the information could be easily adapted as a springboard to stimulate the interests of older students.

Facing pages in each book are laid out as sections that detail a featured organism with well-written text and large, clear, full-color photographs. The pleasant, non-linear layout makes cover-to-cover reading unnecessary. Notably, each section includes a drawing of a young person (or part of a young person, like a foot, hand or face) interacting in some way with the featured organisms. Not only is this a novel way to demonstrate ecology's personal relevance to students, but the illustrations help establish size comparisons between the featured organisms and the intended reader.

Each book contains a table of contents, an index and a glossary. The table of contents in each book is followed by a creatively presented visual overview of all the featured species in the book. This overview section is where the Latin name of each species is given, and its native habitat identified. It is important to note that the scientific name of each species is mentioned only in this section, so the text throughout the book is not burdened with Latin. Yet, those who wish to find out more about the featured species from other sources may use the information in this section to do so.

The books successfully present complex biological information in simple language, so that anyone can grasp the concept. Enough information and vocabulary is provided so that more information can be sought later. Readers may end up asking more questions than the books answer, which is why I refer to these books elsewhere in this review as "springboard" material. Additionally, clever writing keeps the attention of the reader. The alder tree's

multifaceted role within in its riverine niche earns it the nickname "Bank Manager" (*River Life*, p. 20), while a description under the heading "Fast Food" explains how the adult puss moth ensures that its caterpillars will have enough to eat (*Tree Life*, p. 20).

Teachers using the **Look Closer** books in science classrooms should keep a few important things in mind. The featured species are not always North American natives. And, in order to find out where a particular species is indigenous, the reader must refer to the overview section at the front of the book, where a general, nonvisual geographic region is recorded for each species.

Additionally, the featured species in each book do not collectively represent a single, extant ecosystem. In other words, all of the individual organisms featured in the *Forest Life* book, for example, would not be found interacting with one another in a single forest. While the reader should not expect to find each book's featured species interacting in a single ecosystem, he or she should be open to discovering parallel species occupying the similar niches in local ecosystems after having read the book. Positioned correctly in the minds of students, this cobbling together of organisms from different localities worldwide can help to cultivate a true appreciation for biodiversity. However, this patchwork approach limits the use of these books in self-contained or local-interest lesson planning, because the featured species may not be native to the local areas around the students' schools or homes. Teachers who wish to point out local examples must identify species that fill similar niches in local ecosystems on their own.

Learning about the individual organisms in various ecosystems—including the species' names, physiological structures and how they interact with one another—is a first step toward building the strong foundation in biology that students need to grasp the vast complexities of ecology. Over all, the books in the **Look Closer** series are useful for teachers and attractive for students, and would augment any classroom or media center collection as a supplemental or enrichment resource. On days when it is not possible to venture outside for an ecology lesson, the books in D.K. Publishing's **Look Closer** series can help teachers bring the outdoors in.

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