

Book Reviews

Rita Hoots

Department Editor

CONCEPT MAPPING

Thinking Connections: Concept Maps for Life Science. By Frederick Burggraf. 1998. Critical Thinking Books & Software (P.O. Box 448, Pacific Grove, CA 93950-0448). 139 pp. Paperback \$21.95.

 I received this book of concept maps for review while I was teaching college prep biology in summer school. Concept maps are used to demonstrate relationships between ideas. I tried several of the concept maps with my students who found them to be a helpful supplement. This book begins with some background as to the learning theory and use of the maps. Although the book is aimed at middle school life science, my biology students found it useful as a quick review. Thirty-five topics are covered including cell biology, plants, animals and human body systems. Each topic is covered in two levels; the lower-challenge maps have "more seed words, fewer technical words, shorter word lists, and fewer connectors and simpler paths" (p. v).

All of the mapping symbols are explained in the book's teacher section. Some of the maps, e.g., Bacteria, contain pictures that are cut and pasted onto the map. Others, e.g. Flagellates, contain diagrams of the organism that students label as part of the exercise.

Rita Hoots, Book Reviews Editor, is a Professor at Woodland Community College and teaches classes in the biological sciences, human anatomy, and chemistry. Her various degrees in the sciences, counseling, and education come from the City University of New York, University of Wisconsin-Madison, California State University-Sacramento, and the University of California-Berkeley. Before entering the education field, Hoots was for many years a researcher in cell ultrastructure and immunology. Her predominant passion in education is directed to the popularization and illumination of science for the public. Her address is: **Science Dept., Woodland Community College, 41605 Gibson Rd., Woodland, CA 95776; e-mail: rahoos@ix.netcom.com.**

In the back of the book are concept files, which are outlines of the major ideas required for completing the maps. These are suggested to be used in conjunction with the map if your curriculum does not cover all of the concepts necessary. A practice map, Means of Transportation, is provided at the beginning to teach students how to complete and use these maps.

The only objection I had to the maps was the failure to use scientific names for phyla. Instead of using the term Green Algae, I would have preferred Chlorophyta. This is something I can easily have my students add to the maps.

This is an excellent book that would be useful for students who have trouble making connections between concepts. Teachers needing materials for students whose primary language is not English or who do not have strong reading skills will find these maps a valuable tool. Whether used as study material, portfolio assessment, testing material, or as writing exercises, this book is a valuable teaching tool all life science teachers should utilize. I know I will.

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CORAL REEF ECOLOGY

The Enchanted Braid—Coming to Terms with Nature on the Coral Reef. By Osha Gray Davidson. 1998. John Wiley & Sons (605 Third Ave., New York, NY 10158-0012). 269 pp. Hardcover \$24.95.

 The term "enchanted braid" refers to the complexity of coral organisms themselves (existing as a conglomerate of animal polyp, vegetative algae and mineral calcium carbonate) as well as the complexity of the reef in which these organisms exist. Davidson's book gives an excellent background in the evolution, physiology, taxonomy, pathology and ecology of several coral reefs. His diving experiences off Key West in Florida, the Philippines, Australia and Central America provide numerous examples

with which he illustrates his colorful narrative.

Davidson describes the history of the coral reef as well as mankind's experiences in developing an understanding of this complex ecosystem. His quotes from Darwin and Rachel Carson put our relationship with the coral reef in a chronological perspective.

One of the most captivating chapters goes into great detail on the reproductive processes in several species of coral reef fish. A central section contains 23 magnificent color photographs. Once the author has painted a picture of just how glorious and complex the reef can be, he describes several current human activities that are destroying the coral reefs today. Blast and cyanide fishing are two methods used to harvest reef fish that directly destroy the reef in the process. Deforestation, resulting in an increase of river sediments running off, also can kill off coral organisms. The author cites evidence that global warming is contributing to "coral bleaching." On a more optimistic note, a "sustainable use" project between Silliman University and Apo Island off the Philippines has shown promising results.

Environmentalists and zoologists will find this book entertaining and valuable. It is not too technical to appeal to the weekend naturalist as well.

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MOLECULAR MEDICINE

The New Healers—The Promise and Problems of Molecular Medicine in the 21st Century. By William R. Clark. 1997. Oxford University Press (198 Madison Ave., New York, NY 10016). 245 pp. Hardcover \$27.50.

 In this slender volume, Professor William Clark has done the public and the profession a great service. In an age when scientists are frequently criticized for their unwillingness or inability to explain the relevance of their work, he has taken on and successfully accomplished an