

nouncement of new software, we will be providing more of that type of information. I encourage any readers who have software they have developed either to distribute themselves or for public domain to send me an announcement of the program. I will be glad to list it in the column.

There were many comments asking for information about software on specific topics (marine biology, evolution, genetics, population dynamics, test generators). Such information will be developed as such software is reviewed. I found those comments encouraging because they demonstrate there are people who are interested in finding software to use.

Some comments asked for more information about general software such as word processors, data bases and spreadsheets, and how they can be used. As I wrote last month, I intend at least one column along those lines.

Finally, there was one negative comment to the effect that biology is the study of life and not computers. That comment indicates to me that we still have some work to do to educate some teachers as to the ways in which the study of life can be facilitated by using computers. A computer is a tool, just like a microscope, balance, spectrophotometer, calculator or text book. If such tools are used well, they can greatly increase our students' appreciation of life around them.

## New Software (and Hardware)

Thornton Associates, Inc., (1432 Main Street (RTE. 117), Waltham, MA 02154) has announced a new product called the SPI™ System. It is described as "an intelligent sensor processor interface for data acquisition and analysis." It is intended for use on the IBM PC and Apple IIe. The system includes an interface unit which is priced starting at \$950 (including host software), probes which range from \$35 to \$75, and probe specific software starting at \$89.

The American Heart Association is distributing two diskettes. The first, called "Heart Anatomy and Physiology," is intended for secondary level students. The second is called "Heart Medley," intended for primary level students. We have received versions written for Apple II series computers which currently are being reviewed. No information about price or other computer versions was supplied, but the documentation referred people to their local heart associations for information.

# AV Reviews

Rachel Hays  
Department Editor

**Critical thinking.** 1986. Educational Dimensions Group, Stamford, CT. 2-part sound-filmstrip. 29 min. Purchase \$80, video \$89.95.

A hot-and-cold collection of loosely associated photographs begins Part I of *Critical Thinking*. Don't give up, for the taped portion carries you through rather nicely into a strong presentation that would be most appropriate for middle and junior high schools and into the lower high school grades. With proper teacher preparation utilizing the well prepared Teacher's Guide, upper elementary schools also could benefit.

The examples and explanations of critical thinking approaches to problem solving are excellent and well presented. They stimulate interest in problem-solving that can be further pursued as a follow-up. Each of the selected examples were new and presented fresh problems to solve rather than the same old puzzles we are used to seeing. Again though, I found myself distracted by much of the photo-association near the end.

The audio portion might be suitable by itself if the user encounters student disinterest or straying concentration.

There is very little audio-visual material available for rent or purchase on this important topic. *Critical Thinking* is certainly a worthwhile selection, especially for the middle grades.

Tommy A. Rigsby, Sr.  
Marion Abramson Senior High  
New Orleans, LA

**Insects are amazing.** 1987. National Geographic Society. Washington, D.C. 2 sound filmstrips. 28 min. Purchase: \$62.95.

*What is an Insect?* and *Helpful and Harmful Insects* are excellent materials for use in grades K-3 though some older children may also benefit from them. The helpful guide for the first filmstrip suggests a finding field trip as preparation for the filmstrip. There is no follow-up suggested for that activity. Perhaps, you could guide a col-

lection and use it in another of the suggested preparation activities—listing things your students know about insects. Then, after the filmstrip, have them sort the insects and noninsects before returning them to the collection area. Students will have seen characteristics that all insects share, different kinds of mouth parts and how they work, details of insect eyes, insect communication and protection from enemies. The silk worm is used to illustrate life stages.

Another field trip following the second filmstrip will give your students an opportunity to practice recognizing insect damage and harmful and helpful insects. Pollinating, honey making, and breaking down large organic debris are helpful roles insects play. That last role leads into a discussion of the judgment that goes into discerning between helpful and harmful. This discussion is appropriate to the concluding topic of chemical sprays to control insects.

This set will make a great addition to any elementary school resource center. Most suggestions in the guide are complete enough that even those teachers who are not science oriented can create fun science classes.

Rachel Hays  
Weld County SD 6  
Greeley, CO

**The dragon and the damsel.** 1985. London Scientific Films. London, England (available from Pennsylvania State University). Video. 24 min. Purchase: 1/2" \$129, 3/4" 198; rental \$16.50.

This is an excellent program on the order Odonata of the class Insecta, which is not apparent by the title.

**Rachel Hays** is the editor of the Audio Visual Review section of ABT. She teaches science at Heath Junior High School, in Colorado's Weld County School District #6. She holds a Ph.D. in Botany from the University of California, Davis, and has taught courses at the college level. With a B.S. from San Diego State University, Hays went on to the University of California, Davis for her M.S. degree. For several years, Hays has done research for the Natural Resources Ecology Laboratory at Fort Collins, CO, studying nutrient cycling and soil organisms. She has published articles in several popular and scientific periodicals. Her address is: 6921 Buckhorn Ct., Loveland, CO 80537.

Using macrophotography, close-up photography and slow motion camera techniques, this program outlines the differences and similarities between the two members of the order Odonata, the dragonflies and damselflies. Discussed initially are the physiological similarities of these two insects, their food sources and the territoriality of the males. Male dragonflies fly to patrol their territory while damselfly males perch.

The video explores courtship and reproductive behaviors and explains how they are different. It also describes the egg-laying behavior of the different species of damselflies, including the unique behavior of the Emerald damselfly. Both adults of Emerald damselflies immerse themselves in water for up to 15 minutes (male still attached to the female) while the female lays her eggs in aquatic vegetation. In the spring, the eggs hatch into prolarvae which last for a few seconds before emerging as a nymph (naiad) which exists as a highly effective predator. Also indicated is the predatory effectiveness of the adults. The aquatic larvae live for one to three years in forms which are adapted to the environment. The film shows metamorphosis into adulthood, which occurs after the period as a naiad.

Offering an explanation of thermal regulation, in particular the increase in body temperature required to fly, the program discusses behavior necessary to decrease body temperature. The question of where adult dragonflies go at night is answered.

The complete life history of the order is illustrated in this program which can be adapted for use in most introductory biology courses as well as in zoology and entomology. It could be used in all grades from junior high through college.

Paul C. Makarewicz  
East Hartford High School  
East Hartford, CT 06118

# Book Reviews

## CREATIONISM

### FALLACIES OF CREATIONISM

by Willard Young. 1985. Detselig Enterprises Limited (P.O. Box G399 Calgary, Alberta, Canada T3A 2G3). 302 p. \$19.50.

Willard Young does a fine job of exposing much of the nonsense that advocates of creationism are spreading across the continent. His main theme, which he develops very well, is that creationism is necessarily a religious product. He explains at considerable length why it is absurd to contemplate *scientific* creationism. At its base, "scientific" creationists have conducted no experiments, gathered no data, and have no real theoretical structure to present. At best, they carp about and criticize alleged shortcomings in evolutionary theory while producing nothing themselves. At worst, they retreat into Biblical references as their source for scientific knowledge! With creationists clamoring ever more loudly for "equal time" for scientific creationism, it is good to be reminded and convinced, if necessary, that there really is no such thing.

Young presents an excellent and timely analysis of the various creationist organizations and activities. His presentation about the tactics of these groups should be required reading for all biologists, especially for teachers of biology. There is a seductive pseudo-rationalism in some of the creationist's writing which along with their distortion of data, partial quotes and lifting things out of context makes for a heady brew for the unwary.

This book does a fine job of clearing up the brouhaha about the Second Law of Thermodynamics which creationists love to cite wrongly. It also brings one up-to-date on the arguments about the origin of life, the age of the earth, the nature of the fossil record and the origin and evolution of man. In all Young punctures the creationists' hot air balloon again and again.

Young's major conclusion, that "... as science, Creationism is a fraud," becomes abundantly clear throughout. I highly recommend this book for any readers who are helping

themselves and others sort out the nonsense the creationist establishment is producing.

Elwood B. Ehrle  
Western Michigan University  
Kalamazoo, MI 49008

## ELEMENTARY SCIENCE

### PRIMARY SCIENCE . . . TAKING THE PLUNGE

ed. by Wynne Harlen. 1st ed., 1985. Heinemann Education Books Ltd. (22 Bedford Square, London, WC1B3HH) 116 p. \$15.00 softback.

This rather short book is intended for prospective and inservice teachers of the British school system, primary level. For the American educational system this can be interpreted as grades K-8. The book's uses are twofold. It would be an excellent supplement or resource in undergraduate or graduate elementary science methods courses, or it could be justifiably used as an assigned textbook for these same courses.

The text is exceedingly well written, interesting, and, most importantly, practical and functional. The eight chapters include topics such as making a start in teaching science, handling student questions, student record keeping, and helping students to raise questions, to observe, to plan investigations and to take into account their own ideas. Each chapter is practical and utilitarian and includes a summary and specific guidelines for implementation. Moreover, each chapter is based on the various authors' experiences and is soundly grounded on research into the teaching and learning of science.

Like all books, there are shortcomings, albeit, in this text's case the deficiencies are quite minor. For example, the addresses and institutions of the contributing authors are not provided. This oversight makes it difficult to communicate with an author if a reader were more interested in a particular topic. There are a few line drawings, but more illustrations would be helpful in clarifying certain ideas. This is not a criticism, but readers need to be apprised that this book was not written as a "methods" textbook. For example, there are no chapters on storing equipment, student evaluation, objectives, children's intellectual development, etc. Nor are the chapters sequenced in any particular order. In essence, the reader can choose a topic as it relates to their specific priority or concern. In this re-