

Classroom Technology Reviews

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Genetic Engineering. 1998. Hawkhill Associates, Inc. (125 East Gilman St., Madison, WI 53703, (800) 422-4295, www.hawkhill.com). Videotape. 32 min. Price: \$79.

 Teaching upper level high school and beginning college biology students about genetic engineering is always a challenge. The science involved and the products that are the result of this technology is the easy part; separating the science from the ethics and morals issues that are involved is the difficult part for the teacher. This video makes an excellent starting point for this sort of discussion.

An explanation of what constitutes biotechnology and genetic engineering begins the video. From there several scientists and environmentalists present their opinions of the uses of biotechnology. For example, one topic covered is the introduction of transgenic plants that are resistant to various fungi or insects, thus increasing the crop yield for the farmer. Jeremy Rifkin from the Foundation on Economic Trends in Washington, DC asserts that transgenic organisms should never be introduced into the environment since no screening for predicted ecological risk assessment is in place. However, Richard Burgess from the University of Wisconsin-Madison argues that since the chemical composition of the organisms is known, science already can screen these organisms for toxins. He further points out that there are strict guideline permits required if either the host or enzyme presents a problem. The

only thing these two men agree on is that biotechnology is of great importance in the diagnosis of genetic disorders.

The video then moves into the area of the Human Genome Project and the area of cloning. The 1997 Presidential Committee Report on Human Cloning is discussed in detail. They emphasize that the cloning of a child from a somatic cell is morally and ethically wrong but that the cloning of cells or of human DNA may help in the cure of diseases. For example, if blood stem cells can be mutated and cloned so that they are resistant to HIV, a cure for AIDS may be found.

I perceive that one of the jobs of an educator is to present balanced information to students so that they can make informed decisions about current topics. The video does an excellent job of presenting both sides of many issues involving biotechnology. After watching the video, I would hope that students would be able to become engaged in a meaningful and informed discussion of the topic of biotechnology.

The video also comes with an optional 32-page pamphlet called "The Gene" (\$2.25 each; \$1.95 in quantities of 10 or more) that very briefly covers early genetics discoveries (Mendel to Watson and Crick), the workings of a gene (Central Dogma and cellular divisions), and recombinant DNA techniques. The pamphlet presentation is too superficial to be used as a primary reference in upper level high school or lower level college biology classes. It may, however, be useful for a non-classroom presentation of the video where the adult audience lacks basic scientific knowledge.

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Protozoa Systems. 1998. EME Corporation (10 Central Parkway, P.O. Box 1949, Stuart, FL 34995, (561) 219-2206). CD-ROM for Macintosh®/Windows®. Price \$99 (Shipping \$7.75).

System Recommendations

Macintosh

- PowerPC
- 16 MB RAM

- 2X CD-ROM
- System 7.5 + QuickTime® 2.5
- VGA 640 x 480
- Sound card

IBM

- 486/66 DX (Pentium preferred)
- 16 MB RAM
- 2 X CD-ROM
- SVGA 256 color display
- Windows® 95 or higher QuickTime® 2.5
- Sound card



This CD-ROM provides live video of three major groups of protozoa using one example from each. The three genera highlighted are Paramecium, Amoeba and Euglena. It is a good single concept CD-ROM that will help students review information about protozoa. The brief surveys, between 9 and 12 minutes long, focus on the structures and functions of these protozoa. The menu for each genus contains five or six specific topics such as locomotion, digestion and reproduction which are shown in live video and can be manipulated to repeat the action, to fast forward, or to stop. Audio clearly describes the action on the screen. When structures or functions are first mentioned, arrows appear to identify them.

The live action in this video is fascinating and easily attracts one's interest. Many of the sequences are photographed well and show stunning images. However, the lighting of some of the views is less than optimal and in some instances images are out of focus. Overall, the video images of these protozoa are quite good.

The real advantage of this CD-ROM is that students can work individually at a computer terminal to view these organisms. They can control how many times they view the action, the sequence of items to be seen, and the topics to be studied. This makes it an excellent supplement to a lab, where a student may be fortunate to observe a single Paramecium fission event, for example.

This CD-ROM does not encompass a wide range of organisms, nor does it aspire to clarify taxonomic relationships within the protozoa. It is

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designed as a review of the protozoa as presented in a general biology course.

I was able to run the CD-ROM on both Windows® and Macintosh® computers. It ran well in both formats. Both systems were easy to use, loaded readily, and could be manipulated easily by someone with limited computer experience. However, I thought the sound came through weakly in both formats.

With screen setting higher than those recommended, the program's window fills only a portion of the lower right of the screen. Unlike most windows, this one cannot be moved. I found this a bit restrictive. It would have been useful to be able to move the window when using the applications, such as word processing. While other programs can be run simultaneously with "Protozoa Systems," they cannot interact. I could not cut and paste text from the program to the word processor.

In addition to the "Protozoa Systems" tutorial itself, the CD-ROM includes Internet Explorer® 2.0 and QuickTime®. This older version of Internet Explorer® has been updated, but the QuickTime® seems current.

After viewing the material about any of the protozoa, students may select quizzes from the menu to help review. The quizzes are multiple choice exercises permitting the viewer to click on the correct answer. Incorrect answers elicit an "Incorrect. Please try again," with the first error. The second error brings, "The correct answer is..." A correct answer brings "Good. The answer is..." It would be useful to provide a hint or review of the material for wrong responses, especially on the second try. This would be especially helpful for students who are having difficulty.

Instructional materials such as this CD-ROM are beneficial in the classroom, but are particularly important for individual student tutorials. This particular CD-ROM would be very

good in general biology classes that stress structure and function of protozoa.

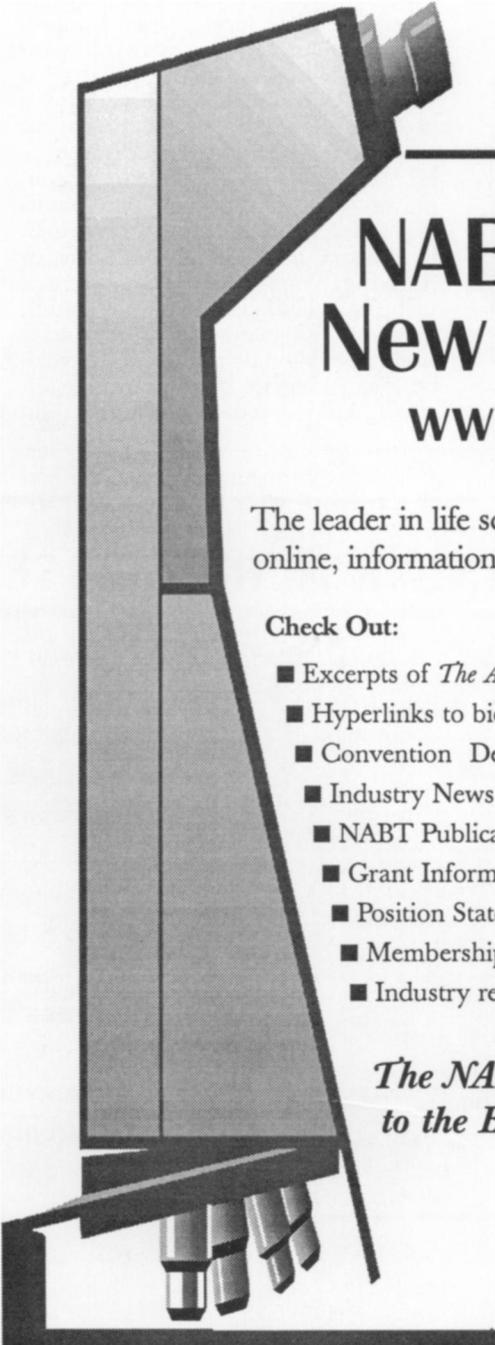
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Darwin, Second Edition (CD-ROM).
1997. Pete Goldie, Ph.D. Lightbinders, Inc. (2325 Third St., Suite 324, San Francisco, CA 94107). Price: \$49.95.



This CD-ROM is a collection of works by Charles Darwin. It also includes a bibliography

of his works, a biographical dictionary, a time line, and a short video on Down House, Darwin's home. All this is interlinked by DynaText® Program which makes it possible to mark text, make personal notes, and hyperlink to terms or people. It is possible to search for key words and phrases within a work or among various works and to view sections of several texts at once for comparison. Because this is not a glitzy, multimedia event but a tool for serious research and an excellent resource on Darwin's life, it would be useful for teachers and advanced students.



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