AV Reviews

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Conquest of parasites. 1984. BBC—Penn State Audio-Visual Services, University Park, PA. color video. 45 min. Purchase ¾ in. $298, ½ in. $198; Rental ¾ in. or ½ in. $21.50.

The production of *Conquest of Parasites* was originally done for television. The coverage of parasitic diseases is very general and concentrates almost exclusively on schistosomiosis, filariases, trypanosomiasis and malaria. Several other parasitic diseases are discussed briefly.

The photography in this video is outstanding. Fiber optics were used to photograph living parasites in the lumen of the intestines, the blood vessels and other environments. Various stages in the life cycles of parasites were photographed as they interacted with intermediate hosts. An emphasis was placed on the schistosomes. The microphotography was very well done.

There is good coverage of the four major parasitic diseases previously discussed. This included a picture of an infected individual, a small world map showing the distribution of the disease and the total number of people infected. A larger map with more time on the screen would have been beneficial. This part could have been improved by adding more information on life cycles and the ecological problems associated with them.

Many parts of the video were for shock value and to emphasize the impact of parasites on the populations of underdeveloped and developing countries. People with smallpox, removing *Dracunculus medinensis* by wrapping them around a stick, people suffering from malaria, and animals dying from sleeping sickness were only a few of the examples used.

The second half of the video was devoted primarily to the new fields of research associated with parasitology, namely immunobiology. The producers did an outstanding job of explaining many of the problems associated with trying to develop vaccines and medicines to combat parasitic diseases. The use of three-dimensional computer graphics to represent the invading parasites and antibodies is well done. The graphics enhanced the explanations offered by the narrator.

The English narration is rather stiff and stilted, which detracts from the effectiveness of the film with high school audiences, especially in the second half of the video. The first half of the film holds the attention of a high school audience while the second half is beyond most of them. This video could be much more effective if both the first and second parts were expanded and two separate videos produced.

Advanced classes in biology and college classes will benefit most from this presentation.

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Chesapeake: the twilight estuary. 1985. Sea Grant College, University of Maryland, College Park, MD. 40 min. Rental $40, purchase $500 16mm, $75 ½ in. video.

Fantastic photography, gorgeous scenery, a well written script, excellent narration and a superb historical review of the problems endured by the earth's richest estuary make this an excellent video to use in high school and college classes. In addition, the exciting background music was scored specially for this film and greatly adds to the panoramic impact.

The Chesapeake Bay, the earth's richest estuary, is capable of producing over five hundred thousand acres of underwater grasses when conditions are ideal—a bountiful prairie and ecosystem sustaining a multitude of fauna and flora. Unfortunately, this bounty has declined dramatically over the years because of a decrease in the amount of light available for photosynthesis. This vast estuarian ecosystem is extremely light sensitive, and massive nutrient loading originating from a variety of sources caused a tremendous decline in plant biomass and a resulting loss of habitat for hundreds of species of waterfowl, fish and shellfish.

The film chronicles the EPA-funded ecosystem study including the possible causes of the sea grass decline. Students will benefit greatly from the review of research techniques used to study the estuary, including aerial photography, sediment sampling, sample analysis with liquid chromatography, scanning electron microscopy, fish harvest analyses and computer modeling. The use of computer models was particularly informative as a tool for developing growth curve prediction for the sea grasses, comparing these with actual growth data, and hypothesizing the cause of discrepancies.

A complex mixture of causes resulted in the decline of the grasses: toxic industrial chemicals; agricultural herbicides; sediments from flooding and erosion; and nutrients from sewage plants and animal wastes. The result has been overly enriched waters, abundant growth of microscopic plant forms on the leaves of the sea grasses, oxygen loss and subsequent drastic decline in grasses. Some areas of the estuary have no grasses.

During the past 30 years, the population of the region has increased by four million; 500 waste treatment plants dump 10^9 gallons of treated sewage into the estuary each day; nitrogen and phosphorus content has doubled, primarily from the use of fertilizers; many farms have used 15 pounds of nitrogen per acre; soil erodes into the tributaries at an annual rate of one million tons per year with some farms losing as much as seven tons per acre. Toxic chemicals and herbicides have contributed somewhat to the problem with increased sediment being a greater problem. But the greatest problem is increased nutrients coming from a variety of sources, mostly sewage treatment plants.

The estuarian ecosystem is extremely sensitive to small changes in light. Nutrient enrichment has resulted in increased growth of microscopic plant forms, which then exclude light reaching the grasses.

The only negative comment to be made about the film is that it lacks a study guide. A brief review of several

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