

studied and evaluated the 9,000-page transcript.

This book is a truly magnificent contribution to the scientific literature dealing with environmental affairs. It may offend those whose published results indicate they were motivated less by a search for scientific truth than by environmentalist advocacy. It will outrage "environmentalist" organizations whose existence depends upon continued obfuscation of environmental issues. It will astonish scientists who have previously been unaware of how many fantasies some of their colleagues have been espousing as "fact." It should dismay conscientious readers who have accepted much of the environmentalist propaganda, but who will now realize how badly they were deceived. *Ecological Sanity* will be an extremely interesting text for many biology and ecology courses, as well as a very valuable reference source. It is certainly a fascinating exposé of some of the remarkable frauds which have been successfully perpetuated for years by a few American environmental scientists. Perhaps it will hinder the acceptance of similar fraudulent allegations by laymen, legislators, students and sincere scientists in the future.

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Evolution

EVOLUTION

by Jay M. Savage. 3rd ed., 1977. Holt, Rinehart and Winston (383 Madison Avenue, New York 10017). 184 p. Price not given.

Seven years are usually sufficient to warrant the updating and revision of most textbooks, especially evolutionary ones. Bold new theories have rapidly emerged during these last seven years on sociobiology, molecular evolution, numerical taxonomy, and origin of life. In addition, there are many new mathematical and chemical tools that have either been developed for evolutionary studies or have become much more widely used (mathematical evolutionary ecology, protein electrophoresis, DNA hybridization, pattern recognition and cluster analysis, L-isoleucine to D-alloisoleucine dating methods, crossimmuno-electrophoresis, etc.). The rather startling hypothesis of King and Wilson that humans differ more from their ancestors qualitatively than quantitatively because of ontogenetic processes, not phylogenetic divergences of primary sequences, has also upset many apple carts.

Thus it is with anticipation that we would look forward to a new text on evolution dedicated not to "enumerating the so-called proofs of evolution" but to surveying "the several theories proposed to explain the process". And, it was hoped Savage might write a general book that dealt with unresolved problems (grist for a scientist's mill), such as the specialist treatment of Barbara J. Stahl's *Vertebrate History: Problems in Evolution*.

Savage has one whole new chapter on the origin of life. However, despite his lip service to close attention to experiments, he only presents results from one lab and even his single reference to a current book on the topic omits one of the two authors. Instead of experimental data and inferences therefrom, we are given the author's armchair speculations on this topic, as well as on human consciousness, because of his purpose of "countering the more extreme concepts of reductionism, mechanization, and rigid scientific materialism with alternate views." Savage's alternative "evolutionary imperative" smacks of teleology and his interpretation of consciousness (which is a goal of his in this edition which was not listed as such in his prior edition) is speculative not theoretical.

Savage mentions a few new theories in passing, such as Non-Darwinian evolution and sociobiology; otherwise the book is not substantially different from the earlier edition. Readers are directed to Dobzhansky, Ayala, Stebbins, and Valentine's *Evolution* for a closer look at both experiments and philosophy in evolutionary theory. They also share Savage's counter contemporary views, but present their views more substantively.

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THE ULTIMATE EXPERIMENT: MAN-MADE EVOLUTION

by Nicholas Wade. 1977. Walker and Company (720 Fifth Avenue, New York 10019). 162 p. \$8.95.

This short book is an up-to-date, well-documented account of the controversy surrounding recombinant DNA research. It is a genuinely interesting book that deals with this bitter debate from the time it began in 1973 to the present. The author packs an enormous amount of factual and historical information in the space of a few pages. After a brief discussion of the biological potential of gene splicing experiments, he explains the fundamentals of the DNA mechanism, gene splic-

ing techniques, the conference at Asilomar and the resulting political and scientific controversies, and finally, presents an overview of the hazards and potential of future human genetic engineering.

The writing style is clear and succinct. The book is designed for the informed general reader who wishes a concise, nontechnical explanation of the recombinant DNA controversy. The book more than meets the needs of such a reader. I highly recommend Wade's book to all science teachers and to beginning biology students at both the high school and college levels.

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EVOLUTION

by David H. Ost. 2nd ed., 1977. Programmed Biology Studies. Educational Methods (500 North Dearborn Street, Chicago 60610). 203 p. \$4.45.

Programmed texts can be fun to work with. They unfold their information in small bits, organized in frames and one must (should) answer the questions associated with each frame before going on to the next. Ost's contribution to the Programmed Biology Studies series is presented in 320 frames organized into five chapters. He treats "Variation, a Product of Evolution" in 41 frames including a "framed" end-of-chapter review quiz. "Continuity and Variation," "Mechanics of Evolution," "Evolution: A Synthetic Theory," and "The Human Species and Evolution" in 94, 61, 56, and 68 frames respectively. The chapters are preceded by a message to the student along with directions on how to use a programmed text and followed by answers to end-of-chapter review questions and suggested references. In keeping with a book of this type, there is no index.

The book should be valuable as a supplement to a high school general biology course. It is a primer and should be treated as such. For some readers it may seem to be lacking in depth. As a first view of a very complex subject, however, it may have considerable utility particularly if used in concert with other materials.

The differences between naming and classifying (p. 5) or hybrid vigor and the consequences of heterozygosis (p. 141) are lost and perhaps should be in a primer. One of the answers (p. 14), purported to be true, states that "The genetic concept of species is just as accurate as the morphological concept. How they are to be used will determine their individual usefulness." Amazing, but