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BOOK REVIEW

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Nancy Carr, Joseph Coulson, Mike Levine, Gary Schoepfel, Donald Whitfield, Mark Stefanski (eds): The nature of life: readings in biology

The Great Book Foundation, Chicago, IL, 2001. 291 pp, 23.5×18.5 cm (ISBN: 1-880323-86-9) US$ 19.95

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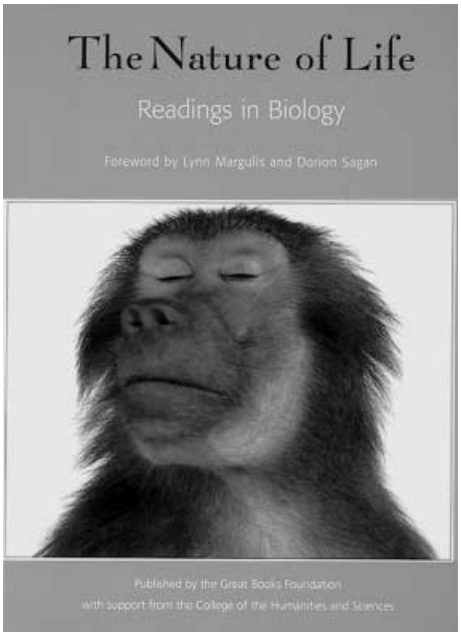
Have you ever dreamt you were a baleen whale? Did you know that the baleen whale refines raw material? that this huge animal feeds at the source itself by imbibing great numbers of tiny krill and other plankton? *The nature of life: readings in biology* also allows us to "feed at the source", albeit intellectually rather than nutritionally. This anthology provides us with a wide range of raw material but also leaves us hungry in the sense that it represents only a fraction of the wealth of source material that has accumulated since Aristotle. An anthology implies a limited selection, in this case of topics and approaches related to biology. Understanding how a topic is approached in biology grants us insight into its conceptual background. This can be appreciated by the fact that, some, if not all, of the authors of *Readings in biology* have changed their initial approach to a particular problem in biology, subsequently modifying their hypotheses and elements of their theories throughout their careers. Darwin is an example, although the changes that he made invalidate neither his contribution nor his dedication to the search for the nature of life.

This anthology deals with specific questions in the biological sciences, considering, at the same time, science as a process. That means keeping in mind the need for experimental procedures, forming hypotheses deduced from the results, and then designing further experiments to test new concepts. The editors, also responsible for selection of the topics, feel that the historical pathway along which biological science has developed is in debt to the ancients, because their deep observations, deductions and assumptions influenced their scientific outlook. By recognizing this, we can understand the assumptions that underlie science in our own time and thus become more able to ask the searching questions that can lead to further scientific progress.



The writers chosen for this anthology are those whose work is most directly related to contemporary science. Karl Lorenz, founder of modern ethology, the study of animal behavior, established the term "imprinting" in his work on young birds, but the concept can perhaps also be applied to other species, humans included. Lorenz shared the Nobel Prize in Physiology or Medicine with Niko Tinbergen and Karl von Frisch in 1973. It was the first time that the prize had been given to ethologists. James D. Watson, winner jointly with Francis Crick and Maurice Wilkins of the 1962 Nobel Prize in Physiology or Medicine for their discovery of the molecular structure of DNA, has been a great promoter of the Human Genome Project in its first stages. Paleontologist Stephen

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Jay Gould's contribution "Just is the middle" poses questions about his own position on the nature of life and behavior. Lynn Margulis opens, and also closes, the collection with a poem by her Amherst, Massachusetts, next-door neighbor, Emily Dickinson, whose work she much admires. They, Emily and Lynn, represent two ways to approach and to try to understand nature. Margulis' contributions impel the mind to question and to search for answers. This should be the aim of a collection of readings in biology (and in any subject). Margulis calls attention to the power of ideas, because, she says, from big ideas come actions that may lead to revolutions, to new inventions and even to wars. And this approach is what differentiates this anthology from traditional textbooks, which offer more information than knowledge and stimulate memory more than curiosity, one of the most important building bricks of science and an essential trait of its practitioners.

Selected classical contributions by Aristotle and Lucretius are also included in this anthology. Works by Darwin, Gregor Mendel and Claude Bernard are examples of the need for intellectual and advanced experimental tools to change the concept, and consequently the future of science. Other authors whose writings appear in *Readings in biology* are: Richard Dawkins, a controversial researcher and science writer who argues that behavior can be explained by genes and evolution; Rachel Carson, a pioneer in warning against the uncontrolled and extensive use of pesticides, who was ostracized by the scientific community because of her ideas and was even threatened by chemical companies, and who only recently has been recognized as a pioneer in defending the environment; Edward O. Wilson, a leading proponent of sociobiology, a discipline that integrates and synthesizes ideas from the natural and social sciences. Wilson's ideas are also controversial in the sense that he directly relates human behavior to genetics and thus subject to natural selection.

The contents of *The nature of life: readings in biology* follows the themes of the U.S. Advanced Placement Program Biology curriculum and is structured to allow students to explore the contents, while considering the discussion questions as well as applications of the material. Further information can be obtained by consulting the bibliography. A short biography of the authors provides the most essential information about their contributions to science and scientific thought.