## Books

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**Chambers Biology Dictionary** — Peter M.B. Walker, Ed. More than 10,000 terms from biology, genetics and behavioral science defined for the student, teacher and scientist, with more difficult terms explained further. Cambridge U Pr, 1989, 324 p., line drawings, paperback, \$14.95.

The End of Nature — Bill McKibben. The author describes how combustion of fossil fuels, slash-and-burn agriculture and many other human practices are changing the Earth's atmosphere through excessive release of carbon dioxide. McKibben explains that scientists are just beginning to measure the impact of these emissions on the greenhouse effect, the ozone layer, sea levels and other natural phenomena. He documents current environmental changes, relates what could happen in the future and suggests ways to reorder our lives to best preserve the Earth. Random, 1989, 226 p., hardcover, \$19.95.

The Endangered Kingdom: The Struggle to Save America's Wildlife — Roger L. DiSilvestro. Examines the history, philosophy, methodology, and successes and failures of U.S. wildlife management policies. Profiles the management history of a dozen threatened North American species, documenting the often devastating effects of human encroachment on wildlife habitat. Does not cover species' natural history. Wiley, 1989, 241 p., hardcover, \$19.95.

Images of the Ice Age — Paul G. Bahn and Jean Vertut. Surveys past and current theories about Ice Age art, focusing on cave paintings and sculpture found in France and Spain. Discusses the sites studied, how the art is dated, the forms and techniques used by the artists, the subject matter depicted and the "meaning" of the art. Beautifully illustrated with an extensive bibliography. Facts on File, 1989, 240 p., color & b/w illus., hardcover, \$35.00.

The Life Era: Cosmic Selection and Conscious Evolution - Eric Chaisson. In this sequel to Cosmic Dawn, the author addresses four major aspects of cosmic evolution: scientists' views of cosmic evolution and how they have changed over time; the current efforts to explain the physical and biological order of our world; theories of the origin of the universe, including the theory that it self-originated out of nothing; and the implications of the Life Era, in which cosmic selection would replace natural selection and survival and extinction would be determined by the choices of humans. Chaisson urges adoption of a set of global ethics if humans as a species are to have a future in the cosmos. Originally published in hardcover by Atlantic Monthly in 1987. Norton, 1989, 259 p., illus., paperback, \$8.95.

The Nocturnal Naturalist: Exploring the Outdoors at Night—Cathy Johnson. A year of journal entries about the nocturnal natural history of the Ozark lakes, the Missouri woodlands, a Nevada desert and the author's small hometown in Missouri. Describes turtles that brave the highways, crickets invading the house in search of warmth, and tornadoes at twilight. Globe Pequot, 1989, 226 p., illus., hardcover, \$17.95.

**Our Kind:** Who We Are, Where We Came From, Where We Are Going — Marvin Harris. A noted anthropologist of popular culture offers his observations on wide-ranging topics such as hominid ancestry, ties between sexism and warfare, dietary preferences, incest avoidance, the quest for power, and the animistic roots of religion. A thought-provoking book for the general reader interested in human society's evolution from hunter-gatherer bands to nation-states. Har-Row, 1989, 547 p., hardcover, \$24.95.

**The Science of Mind** — Kenneth A. Klivington. A well-illustrated introduction to the fundamentals of neuroscience for the general reader. Covers brain/mind connections, dreams, illness, biological clocks, senses, language and more. Clear prose and full-page, full-color illustrations and photographs make this a valuable reference and interesting reading. MIT, 1989, 239 p., color illus., hardcover, \$29.95.

Supersense: Perception in the Animal World—John Downer. The author is a wildlife photographer and zoologist who produces a nature television series called "Supersense." In this beautifully illustrated book he reveals remarkable sensory achievements such as the visual acuity of the pit viper, the sound-guided movement of bats, and insects' ability to perceive a variety of cues signaling swarming and reproduction. Some fascinating stories emerge from this man who believes that human perception is relatively undeveloped compared with that of animals. Henry Holt, 1989, 160 p., color illus., hardcover,

## Does God Play Dice?

The Mathematics of Chaos

By Ian Stewart

Basil Blackwell, 1989, 317 pages,  $6\frac{1}{4}$ " x  $9\frac{1}{4}$ ", hardcover, \$19.95. ISBN 0-631-16847-8

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"You believe in a God who plays dice, and I in complete law and order." Albert Einstein

Einstein did not believe that 'God plays dice'. He laid the foundations for today's thinking that the universe is governed by the immutable laws of physics — there is no room for chance. Does God Play Dice? explains the astonishing new theories of chaotic systems that obey simple laws but which are neither constant nor predictable. Stewart reveals a universe in which nothing may be as it seems, where familiar geometrical shapes such as circles and ellipses give way to infinitely complex structures known as 'fractals'. He explains how the fluttering of a butterfly's wing can change the weather and how the gravitational attraction of a creature in a distant galaxy can change the fate of the solar system. In lay person's terms Does God Play Dice? tells the story of this entirely new science and the implications chaos has for notions of predictability and the verification of scientific theories. Chaos is a whole new world of ideas and possibilities, a fundamental insight into nature itself, and it brings us closer to an understanding of literally everything.

— from the publisher

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