Science

From Gaia to Selfish Genes: Selected Writings in the Life Sciences, edited by Connie Barlow. Cambridge, MA: MIT Press, 1991. 273p. $17.50. 0-262-02323-7; 90-13550. alk.

From Gaia to Selfish Genes offers a grand tour of the new thinking in biology. It begins with James Lovelock's Gaia hypothesis, which sees the earth as the "biosphere"—a self-regulating system within which human beings may simply be cells—and ends with the theory that we mortals are merely "robot vehicles blindly programmed to preserve the selfish molecules known as genes," in Richard Dawkins's words. In between, the proponents of systems theory and game theory, of sociobiology and cultural evolution, have their say. And at the end, six of the thirty-odd contributors offer personal reflections on the disparate philosophies and deep dilemmas of biologists themselves.

Much of the book's appeal lies in the humanity of the writers. Lovelock, for one, does science in a lab by his cottage in the Cornwall countryside, a deliciously independent enterprise fueled by the proceeds from his various patents and inventions. (His electron-capture detector remains, after thirty-five years, the most sensitive instrument for analyzing the air.)

E. O. Wilson's pioneering research on ants has given credence to the field of sociobiology, the study of the biological basis of human behavior. That view, pro and con, is clearly laid out here, but a reader also remembers what steered Wilson to his small-scale studies: at age seven he thwacked himself in the right eye, rendering it nearly useless. With his depth perception dulled, he is, in his own words, "the last to spot a hawk sitting in a tree, but I can examine the hairs and contours of an insect's body without the aid of a magnifying glass."

Then there is microbiologist Lynn Margulis, by turns musing the mudflats of Baja California, cycling off to her lab at the University of Massachusetts at five in the morning, and dropping a grandson off at preschool on her way to hear a student defend his thesis. This merging of personal and professional aptly reflects her studies of biological composites wrought by symbiosis. Among her theories: that tail-bearing cells such as sperm were sired long ago by "rapid whiplashing spirochetes."

In her writing, Margulis often collaborates with Dorion Sagan (her son from her first marriage to Carl Sagan), who offers this thoughtful reflection on science writing itself: that it is "Abrahamic"—"always at a remove, journalistic, powerless like Abraham who in the Bible reports...not what God said but what Moses told him God said." Scientists may undermine the mystique of science by waxing poetic, but Dorion Sagan believes that this empowers the rest of us to move "to a more enlightened [attitude] in which we begin to think things over for ourselves."

This is ultimately the point of this excellent anthology. Fortunately, an expert editorial hand condensed, rearranged, and, above all, selected the most salient and evocative passages; the result is an almost flawless weaving, with one section segueing so neatly into the next that the book reads effortlessly. Amusing yet highly appropriate (and nicely captioned) illustrations accompany the text. The bibliography at the end is thoroughly, even joyfully, annotated. And with these considerable virtues, the book is still offered at a reasonable price that will, I hope, attract both young biologists and others whose interest in the subject was snuffed out by the "thousand-and-one facts and the reeking frogs of our school days," as Connie Barlow well puts it. *From Gaia to Selfish Genes* is quite simply a gem.

—Peg Padnos