

IN HIS book *Three Scientists and Their Gods*, Robert Wright explains some of the events that shaped the intellectual development of that distinguished entomologist and the founder of sociobiology, E. O. Wilson. The most extraordinary was a freak fishing accident that happened when Wilson was seven years old. The fish he was hauling from the water struck him in the face and a fin pierced his right eye, causing a serious cataract. The accident left him unable to appreciate nature at a distance, but free to peruse the tiny details of insect anatomy without handicap.

Wright's description of Wilson and his ideas is one of the delights of *From Gaia to Selfish Genes*, an anthology drawn from a wide variety of sources. If you had to take a crash course in modern biological thought, you could do worse than reach for this book.

Many of the unmissable modern masters are here: James Lovelock on Gaia, Lynn Margulis and Dorion Sagan on symbiosis in the cell, Robert Axelrod and William Hamilton on the evolution of cooperation, Wilson on sociobiology and Richard Dawkins on selfish genes and memes. It is a heady mix—one that covers the spectrum from holism to reductionism, without giving houseroom to any but the best writers.

"What a treat," says Connie Barlow in her preface, "to come upon works of literature that

Stephen Young is a science writer.

Bold and shocking biology

From Gaia to Selfish Genes: Selected Writings in the Life Sciences

edited by Connie Barlow, MIT Press, pp 255, £15.75

Stephen Young



Ingram Finn

address the bold and shocking theories of biology today." Repulsed by the "reeking frogs" of the classroom, Barlow found her way back to biology via the vivacious prose in this volume. It is easy to see how.

Lovelock, for example, wins you over immediately with his candid enthusiasm: "Of all the prizes that come from surviving more than 50 years, the best is the freedom to be eccentric... Only the old can happily make fools of themselves." Lovelock's passion for Gaia, eccentric or not, is evident in every line.

Another high point is Axelrod's description of the

computer tournament he devised in order to find the best strategy for prisoner's dilemma—a game in which two players must repeatedly decide whether or not to cooperate. By now everyone must know that the winner was the strategy called tit-for-tat, yet Axelrod's report of the contest remains a gripping story—and one that conveys a real sense of the excitement of science.

Much the same could be said of Dawkins's account of selfish genes, an account which grabs you by the throat from the first page: "We are survival machines—robot vehicles blindly programmed to preserve the

selfish molecules known as genes. This is a truth which still fills me with astonishment."

From Gaia to Selfish Genes is a complex web of ideas, but Barlow finds a common strand at both ends of her search: a challenge to our view of our importance in the scheme of things. If we are a selfish gene's way of making more genes, then we no longer seem entirely in control of our lives. If, on the other hand, the Earth is a living organism, then individual humans, along with hummingbirds and hartebeest, are just subunits in an overall pattern. Either way, our morale takes a knock, albeit from two quite separate directions.

There are many levels in the biological hierarchy—genes, chromosomes, organelles, cells, individual organisms, populations, ecosystems—and the relationship between those levels is an inexhaustible source of controversy. This is therefore a book with a number of different messages. Yet those messages are often so powerful—and the writing so persuasive—that somehow you long for them all to be true.

Bold and shocking biology has that effect on people. □

New Scientist

Noted With Pleasure

THE NEW YORK TIMES BOOK REVIEW

September 22, 1991

The Eternal Word

The biologist Julian Huxley, in 1912, asserted that the success of the written word is due in part to the human desire to outwit death. An excerpt from "The Individual in the Animal Kingdom" is in "From Gaia to Selfish Genes: Selected Writings in the Life Sciences" edited by Connie Barlow (MIT).

By speech first, but far more by writing, and more again by printing, man has been able to put something of himself beyond death. In tradition and in books an integral part of the individual persists, and a part which still works and is active, for it can influence the minds and actions of other

individuals in different places and at different times: a row of black marks on a page can move a man to tears, though the bones of him that wrote it are long ago crumbled to dust. In truth, the whole of the progress of civilization is based on this power. Once more the upward progress of terrestrial life towards individuality has found apparently insurmountable obstacles, gross material difficulties before it, but once more through consciousness it finds wings, and, laughing at matter, flies over lightly where it could not climb.