

## ENVIRONMENT

**Life, Temperature, and the Earth**

By David Schwartzman. 1999. Columbia University Press, New York. 241 pages. U.S. \$27.50.

There is more to *Life, Temperature, and the Earth* than its title indicates – which is interesting enough in itself. But when I received the book, I was delighted to find that it is also an update and modification of important aspects of the Gaia hypothesis in light of geochemical, geophysical, mathematical, and paleontological data.

The author, David Schwartzman, starts by outlining a theory of biospheric evolution, basically describing the coevolution of climate and life in Chapter 1, “Climatic Evolution: From Homeostatic Gaia to Geophysiology.” He also gives a brief history of the Gaia concept – from Lovelock’s early theories to the development of Gaia-related thought through the 1980s and 1990s.

In Chapter 2, “The Biogeochemical Cycle of Carbon,” Schwartzman explains the carbon cycle, describing it on a geological time scale, and discussing its centrality in contemporary greenhouse debates. In Chapter 3, “Faint Young Sun Paradox and Climate Stabilization,” he talks about the standard model of solar luminosity variation over geologic time, the faint young sun paradox, and challenges to the standard model.

Chapters 3 to 5 deal with weathering from a biotic perspective – something naturalists would find particularly interesting. Schwartzman introduces readers

to weathering and soil formation, then discusses biotic enhancement of weathering, and the influence of tectonics on climate and weathering. He also looks at field studies and at estimates of biotic enhancement of weathering.

The next two chapters, 7 and 8, are a discussion of Earth’s surface temperature. Schwartzman traces Earth’s surface temperature history and posits a much warmer Precambrian Earth surface than conventionally believed. He then explores the possible constraints of these warmer temperatures on microbial evolution.

Schwartzman continues with a chapter on the theory of a self-organizing biosphere, followed by implications of all the theories and data discussed to that point on bioastronomy – basically looking at the habitability of terrestrial planets. In the final chapter, he summarizes his main conclusions and suggests future directions for research in fields like climatology, geochemistry, geology, geomorphology, paleontology, biology, biophysics, and biochemistry.

Needless to say, the book is quite scientific, and I must confess I didn’t understand all of it. But a reader with perseverance, a keen interest in theories surrounding the concept of a self-organizing biosphere, and a good grasp of the sciences involved, would find this book a worthwhile and fascinating read.

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**City Wilds: Essays and Stories about Urban Nature**

Edited by Terrell F. Dixon. 2002. University of Georgia Press, Athens, Georgia, USA. xviii + 311 pages. Cloth U.S. \$45; paper U.S. \$19.95.

*City Wilds* is a collection of thirty-five wildly diverse stories, both fiction and non-fiction, about nature in the city and people’s experiences with it. It’s an intriguing subject because, as Dixon emphasizes in his introduction, we tend to view “wildness” as being far off in wilderness areas.

Yet urban centres are filled with wildness too, as the stories illustrate. And it is increasingly important to raise awareness about urban nature and protect it because, Dixon points out, “The time is past when most city dwellers could draw on knowledge of nature gained during a youth spent in a small village or in the countryside. For the increasing numbers of Americans born in cities, any first-hand, day-to-day knowledge of nature comes from urban nature.”

Robert Michael Pyle brings that point home eloquently and directly in his piece “The Extinction of Experience.” He talks about growing up with intimate

exposure to nature in the city of his childhood: “I grew up in a landscape lavishly scattered with unofficial countryside – vacant lots aplenty, a neglected so-called park where weeds had their way, yesterday’s farms, and the endless open ground of the High Line Canal looping off east and west. These were the leftovers of the early suburban leap. They were rich with possibility. I could catch a bug, grab a crawdad, run screaming from a giant garden spider; intimacy abounded.”

These childhood experiences helped shape the lepidopterist and nature writer he later became. And, he stresses, that kind of urban nature experience and intimacy is essential to the survival of our planet.

Most of the other pieces don’t make this point as directly. But they demonstrate it. From paddling the varied, and sometimes dangerous, waters surrounding New York City, to fly fishing on a downtown creek (a “Zen fishing paradise”) that cannot support fish. From planting a flower from childhood memory on an inner city fire escape, to continuing a family farming tradition by cultivating a hidden city vegetable plot. From studying insects, eye to eye, in urban “waste places,”