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 and1990s.

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 perseverence, 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,"

to letting childhood imagination run wild in an abandoned lot that "could hide things for a thousand years. There beneath the roots of soggy flowers were the bones of murdered pirates and dinosaurs, the eye of a unicorn turned to coal."

It is impossible to do justice to thirty-five stories in one review. So I'll tell you that they're all interesting and personal – some serious or funny, some joyful or sad, some a combination – and that in all their far-flung diversity, each illustrates that all-important intimacy. It's something Lisa Couturier expresses with particular feeling in her "Reversing the Tides" piece about the magic of natural enclaves near resilient urban waterways that "In all their woundedness … manage to give life."

Here's what she says about her chick monitoring work at a heronry on a delta near New York City: "When our work is finished, we emerge from the heronry carrying an assortment of dog ticks on our bodies and splattered with what we call splooj (our word for the large and liquid bowel movements of baby birds), bird pee, and regurgitant … But I also carry a gift: an intimacy with the spirits, sounds, and touches of birds. The snowy egret nestlings, so fearful even as I try to calm them, wrap their long reptilian-skinned toes around my fingers in an effort, I guess, to feel safe. The excrutiatingly shy glossy ibises lay limp in my lap while I stroked their dark brown feathers. And although the black-crowned night herons assertively nip at me, I admire their aggressiveness; it helps them survive. The colours, habits, feathers, pecks, personalities, smells, movements, eyes, and cries of these birds are inside of me. I, quite simply, love them."

It is a love and an intimacy naturalists can easily identify with. And *City Wilds* is a story collection book-loving naturalists would appreciate. I myself read the book too quickly the first time around. I would like to go back and re-read many of the stories, one at a time, with space in between to savour each one … intimately.

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Conservation Biology

By Andrew S. Pullin. 2002. Cambridge University Press, Cambridge, United Kingdom; New York, USA. 345 pages. Cloth U.S. $120; paper U.S. $45.

The discipline of conservation biology has taken a prominent position among the sciences. As demand for highly trained practitioners of conservation biology increases, so does the number of general text books available for use by educators. '*Conservation Biology'* by Andrew Pullin is a newcomer to the list of possible texts vying for position as 'the' penultimate learning resource. This specific book was intended to serve as an undergraduate text or supplementary reader and assumes a background in basic ecology. Pullin incorporated three significant changes that alter the cosmetics and content substantially over other undergraduate level texts. First, his book focuses more on the United Kingdom and Europe than on North America as seen in other leading texts. Second, unlike the other competing texts in the field of conservation biology, he has excluded material that does not fall within the realms of natural science such as policy, economics, and other human dimensions. Third, he has included information that has not been well covered in other treatments such as the conservation of "processes". Each of these changes is worth further discussion as these are really what differentiate this text from the others.

The decision to expand the geographical focus of the text beyond primarily North American focus is admirable. This expansion in focus would have been particularly evident had Pullin incorporated more human dimension sections that discuss policy and legislation that is typically based exclusively on issues from the United States (e.g., US Endangered Species Act). In the end, the text is clearly regional, emphasizing the United Kingdom and the rest of Europe. As such, this text would be particularly relevant to undergraduate courses in those locales. Pullin does provide some excellent examples from the rest of the world, but I believe that room still exists for a "non-regional" and balanced treatment that is globally applicable. Unfortunately, this text does not fill that void.

Pullin has omitted much of the material on human dimensions due to what is described as a traditional poor treatment in other conservation biology texts. I agree that few if any of the existing conservation biology texts are sufficient on their own at presenting social science and economic issues, but they do serve as starting points. By excluding human dimensions from the table of contents, it only helps to polarize the natural sciences from the social sciences. Indeed, one of the themes that makes conservation biology unique is its interdisciplinary nature and this point should be emphasized, particularly in an undergraduate text.

The text is also arranged in a manner that differs from convention. Foremost, I want to state my excitement about the chapters on landscape ecology (12) and the conservation of evolutionary processes (13). These chapters are rather unique to conservation biology texts and are well deserving of inclusion. These chapters are well written, interesting, and worthy of dissemination to students. However, there are several earlier chapters for which the same can not be said. The first section on biodiversity and global ecosystems (Chapters 1 and 2) is extremely simplistic and is not appropriate for this text. The author prefaces