

out making the language weep like Marco in *Talk to Her*. Ironically, two of the most successful in this regard untangle Almodóvar's gleeful gender mash-ups and divide up the boys and the girls.

Leo Bersani and Ulysse Dutoit's "Almodóvar's Girls" digs deep into narrative structure to look at, well, Almodóvar's girls as both characters and, more importantly, storytellers. The writers conduct a nifty dance between art and life and even manage to have some semantic fun with the title of "All About My Mother." Which brings us to Marsha Kinder's "All About the Brothers," a smooth cross-textual analysis of *Law of Desire* and the underrated *Bad Education* that even makes room for the *Godfather* trilogy and Kieslowski's *Three Colors*.

*All About Almodóvar* is a fine survey for the hardcore cinema studies student or insatiable Pedro fanatic with a dictionary at the ready. But don't pick it up looking for pleasure or for an introduction to the Almodóvar oeuvre. For that there's always Faber and Faber's *Almodóvar on Almodóvar*. Or, better yet, a repeat engagement with the films themselves.

**Chris Vognar**, *Movie Critic at the Dallas Morning News*, was the 2009 *Arts and Culture Fellow at the Nieman Foundation for Journalism at Harvard University*. His favorite Almodóvar film is *Bad Education*, which he has found to be a rather unpopular choice.

## Lessons From Lizards

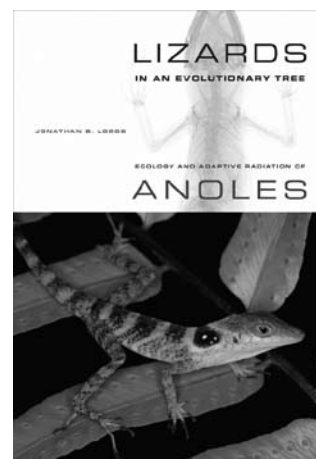
A REVIEW BY JAVIER A. RODRÍGUEZ-ROBLES

**Lizards in an Evolutionary Tree: Ecology and Adaptive Radiation of Anoles**, By Jonathan B. Losos, *Berkeley, California: University of California Press, 2009, 507 pp.*

In the natural and social sciences, as in any other scholarly discipline, certain researchers become intimately associated with the study of particular topics. Think about Walter Álvarez and the impact theory that a comet or asteroid struck the Earth 65 million of years and caused the extinction of countless marine and terrestrial species, including the most famous organisms of all, the dinosaurs. Or about Jared Diamond and the rise and collapse of human societies; Thomas Eisner and the chemical ecology of insects; Harry W. Greene and Richard Shine and the biology of snakes; James Lovelock and the Gaia hypothesis that Earth is a living organism; and Ian Thornton and the post-eruption ecology of the Indonesian volcanic island of Krakatau. These researchers' books on their preferred subjects are eagerly anticipated—at least by some of us—and carefully read, not only because the tomes summarize a wealth of painstaking data and observations collected by the authors and their collaborators and colleagues, but also because the volumes almost invariably present novel and exciting insights, syntheses

and hypotheses.

Jonathan B. Losos has been studying lizards of the genus *Anolis* since 1982. He began working with these animals as an undergraduate student at Harvard University, and after spending 21 years catching and observing them throughout the West Indies and Central and South America while at three other prestigious institutions, has continued his investigations of *Anolis* back at Harvard since 2006, this time as Professor of Organismic and Evolutionary Biology and Curator in Herpetology at the Museum of Comparative Zoology. Since 1985, Losos has published 90 journal articles and book chapters (as of January 2010) that specifically address various aspects of the biology of *Anolis*. This integrative and influential body of work has made him the leading researcher on these largely small lizards, and in the process a world-renowned ecologist and evolutionary biologist. The publication of Losos' *Lizards in an Evolutionary Tree: Ecology and Adaptive Radiation of Anoles* was thus a noteworthy event, and those who were expecting an authoritative contribution will not be disappointed. (My goal in the following paragraphs is not to offer a detailed critique of the biological concepts discussed in the book—reviews published



in scientific journals will likely do that—but to provide a more general perspective for the readers of *ReVista*.)

*Anolis* lizards are the most conspicuous, abundant and diverse diurnal vertebrates inhabiting terrestrial ecosystems on islands of the West Indies. These characteristics make these reptiles ideal organisms to test and generate hypotheses about the ecology and evolution of biological communities. Indeed, anoles have figured prominently in investigations of several fundamental topics in the life sciences, including interspecific competition, adaptation, geographic differentiation, evolutionary diversification, the dynamics of the establishment of populations in new habitats, and the principles that govern the assemblage and organization of communities. Having played a major role in many of these findings, Losos is in an exceptional position to synthesize the lessons that we have learned from anoles.

The thesis of *Lizards in an Evolutionary Tree* is that interactions among species of *Anolis* significantly affect the ecology of these lizards,

and that these interactions are the main force that has driven and continues to affect the evolutionary dynamics of anoles. Two specific themes permeate the volume. First, that despite the remarkable diversity exhibited by the nearly 400 *Anolis* species, the same set of habitat specialists that share similarities in morphology, ecology and behavior (“ecomorphs”) *independently* evolved and co-occurs in communities throughout each of the four main islands of the Greater Antilles. Second, that this repeated evolution (convergence) of *entire communities* is the best documented case of this phenomenon. The strong emphasis on species from islands of the Caribbean Sea is a function of the voluminous number of studies on these West Indian animals, compared to their counterparts in Central and South America, where *Anolis* are conspicuously less common and much more difficult to observe. Losos’ lengthy and detailed—but not dogmatic—arguments in support of his contentions are persuasive.

The book is very well written. The arguments are precisely laid out and the paragraphs and sections flow and are logically arranged. Most of the nonessential information is relegated to 477 footnotes, a practice that enhances the cohesiveness of the text. In particular, the discussions of life history and population biology, social behavior and sexual selection, habitat use, and community ecology (Chapters 8-11) represent succinct and lucid syntheses of the available information.

*Lizards in an Evolution-*

*ary Tree* is an educational text. Although I am somewhat familiar with various aspects of anole biology, I benefited from reading the book. In a few instances, I even revised my lecture notes to use *Anolis* case studies to illustrate important biological concepts in my courses. Further, the chapters on phylogenetics and evolutionary inference, speciation and geographic differentiation, and evolution of an adaptive radiation are excellent examples of the interplay between theory and data. I would not be surprised if these chapters become recommended reading for graduate students and others interested in these topics, irrespective of whether or not they study anoles, for Losos’ presentation is a primer on the advantages and shortcomings of various analytical approaches, as well as on the importance of taking into consideration methodological limitations when phrasing research questions.

I appreciate the “honest writing” style that characterizes the book. We sometimes dismiss alternative perspectives without adequate consideration, or, through clever word choice, sidestep arguments that do not support our opinions, perhaps in part because of the understandable concern that discussing dissenting views may weaken our theses, and thus increase the likelihood that a journal or book editor will deem our work as too inconclusive and decline to publish it. Losos does not force the readers to accept his points of view. He states his favored interpretations of ecological and

evolutionary patterns and processes, but does not shy away from presenting lengthy contrasting explanations, providing the reader with the opportunity to determine whether or not she agrees with the author’s position. Losos also clearly indicates when he believes that the preponderance of the evidence supports his contentions and when his preferences represent his educated guess.

The extensive literature review conducted during the preparation of the book constitutes yet another strong point of the volume. The 74 pages of references list approximately 1,400 publications that include seminal, recent, comprehensive and little known works. This intimate familiarity with the literature allows Losos to assess the state of the current knowledge of the topics he addresses, to place them in an appropriate context, and to suggest promising avenues for future research.

Reviewers feel compelled to find fault with the works they are asked to assess, and I am no exception. Occasionally, the reader needs to be familiar with various technical terms to fully understand the arguments being developed (I had to look up a couple of terms myself). Other reservations involve aspects of the book’s design. The color scheme of some graphs actually decreases the effectiveness of the illustrations by making the patterns depicted by the data more difficult to distinguish. In several cases simpler, black and white figures would have been more effective. Further, graphs

sometimes have unnecessary features such as shading that do not enhance the information content of the figure, and therefore violate a basic principle of graphic design: to maximize the data/ink ratio. Additional criticisms include the lack of coordinates in all maps and the uneven quality of the photographs, which vary from exceptional to acceptable. Yet, none of these complaints constitutes a major distraction.

Approximately ten years ago, Losos remarked that he wanted to write a book about *Anolis*, but that he did not feel that he knew enough about these lizards to warrant such an effort at the time. Evidently, he eventually reached his self-defined knowledge threshold, and *Lizards in an Evolutionary Tree* is a scholarly treatise by a respected researcher who succeeded in his goal “to make this book the first place people look when they have a question about anoles.” Of broader significance, we can now become better acquainted with animals whose study has significantly increased our understanding of fundamental ecological and evolutionary principles.

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