

being made in understanding echinoderm paleobiology are impressive in their diversity and extent, and are well showcased in this book.

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DINOSAURS: A CONCISE NATURAL HISTORY.

By David E. Fastovsky and David B. Weishampel; illustrations by John Sibbick. Cambridge and New York: Cambridge University Press. \$140.00 (hardcover); \$70.00 (paper). xiv + 379 p.; ill.; index of subjects and index of genera. ISBN: 978-0-521-88996-4 (hc); 978-0-521-71902-5 (pb). 2009.

University dinosaur courses are important vehicles for teaching core principles of evolution and geology to nonscience majors. Their popularity has spurred a proliferation of related textbooks. Most of the volumes that I am familiar with are pedantic summaries of the biological and geological literature. Here, Fastovsky and Weishampel provide a hypothesis-driven text for a general audience. This is hard and they have done well in producing the finest book of its kind available so far.

First, the text is well integrated with illustration. Instead of the norm, which is to cop illustrations from other sources, this volume is full of commissioned drawings by John Sibbick—one of the best paleoillustrators in the world. This does not just make for a more aesthetic book, it provides real integration between text and pictures, allowing the images to tell a lot of the story.

The writing is precise, complete with learning objectives, study questions, and selected readings presented in each chapter. The authors give a balanced account of many issues (extinction, gigantism, endothermy, and flight), while at the same time providing (usually via sidebars) interesting anecdotal material. The volume is based on a solid phylogenetic approach where characters are mapped on accompanying cladograms.

This publication is expensive. I am sure a chunk of this offsets Sibbick's drawings, but for this price I would expect better-quality production (paper, printing, and binding). My hardcover copy did not survive a reading without pages falling out (albeit it was on a road trip) or sticking together with only a little moisture. Although the line graphics are crisp, the photographs are murky. These issues aside, *Dinosaurs: A Concise Natural History* is a great volume, one that will have appeal both as a textbook in a dinosaur course and as an excellent choice for anyone who is supervising directed studies students, or for nonspecialists who want to find out what is going on in the contemporary dinosaur world. It is a fine

volume and I have already recommended it to several colleagues and students.

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ECOLOGY

ECOLOGICAL MODELS AND DATA IN R.

By Benjamin M. Bolker. Princeton (New Jersey): Princeton University Press. \$55.00. xi + 396 p.; ill.; index of R arguments, functions, and packages and general index. ISBN: 978-0-691-12522-0. 2008.

With the growing popularity of the use of the R language in scientific data analysis, particularly in the field of ecology, *Ecological Models and Data in R* is a valuable resource for anyone who needs a concise, yet thorough, introduction to these applications. Two notable aspects of this volume are the large number of detailed examples that readers can work out on their own and the relaxed tone in which Bolker uses to transmit complicated mathematical methods, making the text approachable and quite readable. The thorough introductions of the more advanced techniques of Maximum Likelihood, Bayesian, and dynamic statistical methods are particularly noteworthy for their clarity.

This textbook is most appropriate for graduate students, researchers, and professionals who are already somewhat familiar with statistics and ecology, as well as have a basic knowledge of mathematics and computational techniques. Many of the more mathematically rigorous topics, such as the chapter on Probability and Stochastic Distributions for Ecological Models, move rapidly, covering only major mathematical points. Thus, foreknowledge will allow readers to gain the most benefit in the shortest amount of time. However, even a novice with the equivalent of a one-semester course in introductory statistics will benefit from this volume, given time and patience.

Ecological Models and Data in R would make an ideal accompaniment for a graduate-level course in ecological statistics and modeling techniques where an instructor could aid the students in some of the more complicated topics. This would also be an excellent resource for any scientist who wishes to get up to speed on contemporary modeling techniques using a rapidly expanding statistical language.

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