

INTO THE JUNGLE: GREAT ADVENTURES IN THE SEARCH FOR EVOLUTION.

By Sean B. Carroll; illustrated by Leanne M. Olds and Sean B. Carroll. Benjamin Cummings. San Francisco (California): Pearson Education. \$21.40 (paper). xi + 207 p.; ill.; index. ISBN: 978-0-321-55671-4. 2009.

The author is renowned for his innovative scientific work at the intersection of evolution and development; with *Into the Jungle*, he seeks to develop his readers' understanding of evolutionary biology through a series of stories about how scientific discoveries are made. As a professor at an institution without science majors, I am always on the lookout for books that empower my students to understand important themes in ecology and evolution without getting bogged down in technical details. This volume is just such a resource for instructors of introductory courses in evolution, the history of evolutionary biology, or the philosophy of science.

The book is composed of nine carefully selected stories from the annals of evolutionary science. The first part provides a valuable account of the explorations made by Darwin, Wallace, and Bates, allowing readers to connect the work of these important pioneers through their common experience of austere and sometimes brutal travel to exotic locations. Subsequent parts trace the sometimes meandering paths of fossil hunters Eugène DuBois and Roy Chapman Andrews and illuminate the discoveries of the K-T boundary by Luis and Walter Alvarez, coelacanths by Marjorie Courtenay-Latimer, the explanation for the sickle-cell allele by Anthony Allison, and icefish by Johan Ruud and Arthur DeVries.

The entertaining nature of these stories will allow readers to painlessly assimilate key concepts of evolutionary biology. Examples of natural selection and adaptation are weaved throughout all of the stories, and a substantial portion will empower readers to think critically about the nature of genetics. The book deftly conveys that the real process of science is messy and fraught with difficulty and uncertainty. Scientists are not just brilliant people who effortlessly devise transcendent theories, they are also obsessive, competitive, and sometimes downright crazy characters. More than we sometimes realize, our most insightful scientists rely on a fair amount of serendipity: being born at the right time, visiting the right places, and capitalizing on the observations of other inquiring minds. Carroll's volume brings this more accurate picture of science to life for all students of evolutionary biology.

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BEHAVIOR

ZOO ANIMALS: BEHAVIOUR, MANAGEMENT, AND WELFARE.

By Geoff Hosey, Vicky Melfi, and Sheila Pankhurst. Oxford and New York: Oxford University Press. \$50.00 (paper). xxii + 661 p.; ill.; index. ISBN: 978-0-19-923306-9. 2009.

It is surprising that it has taken this long for someone to write a comprehensive book on zoo animals. With this voluminous, yet pithy, contribution, Hosey et al. have invaded an unoccupied niche. Given the quality of the work, I predict that this invasion will take root and grow, finding its way to the shelves of most biologists and researchers who work in zoos.

There is much to admire in this volume. Almost no concept important to zoo biology—or zoo culture—goes unmentioned. It is a well-referenced review, highlighting much of the relevant literature on zoo animal biology and management. The authors' prose is engaging and accessible, while avoiding the pitfalls of oversimplification. To the extent that it has a shortcoming, perhaps it is trying to be all things for all people. What I missed most in this book was a stronger theoretical framework that can be used to drive zoo research but, then, this also reflects the current realities. This research is not devoid of theory, but can be rather superficial. By contrast, zoo researchers are well ahead of the game in keeping their studies meaningful and immediately applicable.

Readers will enjoy having everything they ever wanted to know about zoo animals in a single volume. The authors sketch out the evolutionary trajectory of zoos, from the menageries of yesteryear to the sustainable zoos of today, devoted to conservation and portrayal of ecosystem interconnectedness in exhibits. A mandatory (and somewhat mundane) discussion of animal identification, recordkeeping, and husbandry issues will be of interest to those concerned with the practical aspects of animal management, but the heart of the book tackles behavior and welfare. Environmental enrichment, the primary tool used to combat welfare problems, also gets extended play. These are the topics covered most authoritatively and comprehensively. Readers will also find a solid chapter on the emerging conservation role that zoos can play.

By contrast, the chapter on captive breeding is a disappointment. Although it contains a section on constraints on reproduction, notably lacking are the compelling stories that illustrate how research programs, theoretically driven, have tackled and overcome problems in captive breeding. Sociobiology,