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# Review Of "Fifty Animals that Changed the Course of History" By E. Chaline

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COLORADO FLORA: EASTERN SLOPE: A FIELD GUIDE TO THE VASCULAR PLANTS. *Fourth Edition.*

By William A. Weber and Ronald C. Wittmann. Boulder (Colorado): University Press of Colorado. \$27.95 (paper). liii + 555 p.; ill.; index. ISBN: 978-1-60732-140-8 (pb); 978-1-60732-141-5 (eb). 2012.

COLORADO FLORA: WESTERN SLOPE: A FIELD GUIDE TO THE VASCULAR PLANTS. *Fourth Edition.*

By William A. Weber and Ronald C. Wittmann. Boulder (Colorado): University Press of Colorado. \$27.95 (paper). li + 532 p.; ill.; index. ISBN: 978-1-60732-142-2 (pb); 978-1-60732-143-9 (eb). 2012.



## MYCOLOGY

### 21ST CENTURY GUIDEBOOK TO FUNGI.

By David Moore, Geoffrey D. Robson, and Anthony P. J. Trinci. Cambridge and New York: Cambridge University Press. \$135.00 (hardcover); \$65.00 (paper). xii + 627 p. + 64 pl.; ill.; index. ISBN: 978-1-107-00676-8 (hc); 978-0-521-18695-7 (pb). [A companion CD features a hyperlinked version of the book and the fully integrated World of Cyberfungi website.] 2011.

With roughly 100,000 described species and possibly millions of unnamed species, fungi make up one of the major clades of eukaryotes. Fungi play key roles in the carbon cycle, as decayers, mutualistic symbionts, or damaging parasites of primary producers. The impact of fungi on human affairs is massive, both positive (e.g., as sources of antibiotics or biofuels) and negative (e.g., as pathogens and agents of spoilage). Moore et al. have taken on a major challenge in writing a guidebook to this ancient branch of the tree of life, and have succeeded marvelously. The range of topics treated here is vast, from evolutionary origins and classification, to cell biology, genetics, ecology, and biotechnology and bioinformatics. Throughout, there is extensive reference to the primary literature. All textbooks are out of date as soon as they are published, but the information here will be of lasting value and the connection to the literature will enable students and researchers to follow citations and quickly get up to speed on the latest advances. I paid particular attention to the sections on phylogeny and classification, which draw heavily on the 2007 Assembling the Fungal Tree of Life (AFTOL) classification of fungi and the 2006 "Deep Hypha" volume of *Mycologia* (Volume 98, Issue 6). This material will provide a solid ground-

ing in modern fungal phylogenetics. As a nonspecialist, I found the sections on industrial mycology and other unfamiliar topics to be compact and informative—as a guidebook should be.

The printed version of this text is massive, and in its paperback form it is an unwieldy, floppy handful. Fortunately, there is an excellent companion CD included with the hard copy that makes for easy browsing and encourages readers to explore content and surf connections in this very rich volume (including links to references on JSTOR, Science Direct, and other publisher's websites). The CD provides all of the convenience of a website, with none of the concerns about stability, broken links, or unanticipated changes in content. Indeed, one wishes that the publisher would make the volume available as a CD alone.

As encyclopedic as this text is, it still manages to have a personal, occasionally quirky tone. For example, in section 17.15 on penicillin and other pharmaceuticals, we learn that the Lord Carnarvon, who discovered Tutankhamun's tomb in 1922, died of a *Staphylococcus* infection (which now can be cured with fungus-derived antibiotics). Such passages may make the text somewhat longer than it absolutely needs to be, but they also make for lively reading that has the potential to engage students (and, on the CD, length is not such an issue).

This remarkably comprehensive volume will be useful to every scientist and educator whose work touches on the fungi, and it is coming out just as the tsunami of fungal genomes is gathering. This *21st Century Guidebook to Fungi* will provide a wealth of background information necessary for interpreting the coming flood of data from various "omics" technologies in fungal biology.

DAVID S. HIBBETT, *Biology, Clark University, Worcester, Massachusetts*



## ZOOLOGY

### FIFTY ANIMALS THAT CHANGED THE COURSE OF HISTORY.

By Eric Chaline. Buffalo (New York): Firefly Books. \$29.95. 224 p.; ill.; index. ISBN: 978-1-55407-897-4. 2011.

This is a fun read. Each animal has its own section and each section is anywhere from two (Dodo, Carp, and Cochineal) to eight pages (Human) in length. Chaline's book is visually pleasing. The basic template for each section includes a short introductory paragraph defending the choice of the animal as one

of the inclusive 50; this is followed by text describing the animal's importance to history. The author uses different fonts to set off these functional elements. There are some striking photographs and drawings that highlight each section. Wide margins provide space for informational boxes about the animal's range, phylogenetic class, size, and historic value (edible, medicinal, commercial, or practical). Special interest boxes, set off in yet another font and highlighted in pale gray, present some intriguing aspect of the animal's contribution to history.

As with any book of lists, there will be disagreements. Is an animal's inclusion really justified? And what about excluded animals? For example, I found the inclusion of the Atlantic Cod and the Spanish Fly puzzling. And the exclusion of the tick (a major disease-spreading animal) and the tuna (a primary food source for millions) is questionable. And why include sections on both the dog and the wolf? And why not include animals that have contributed so much to important biological concepts such as the African Clawed Toad (*Xenopus*) in development or the squid in neurobiology?

There are also issues of inaccurate or misleading statements. For example, Chaline considers the fruit fly "quite unimpressive" (p. 68), even though he quotes Nobel Prize winner Christiane Nüsslein-Volhard referring to the fruit fly as a "living being of great beauty and harmony" (p. 69). The author also states that Mendel's principles were rediscovered in 1900 by William Bateson and Hugo de Vries. Mendel's historic research was rediscovered independently by Carl Correns, de Vries, and Erich Tschermak von Seysenegg in 1900. Bateson became a strong advocate of Mendelism after the rediscovery.

Although one can disagree with any book of lists, I admire Chaline's attempt to create and justify such an interesting and thought-provoking list. The inaccuracies are disconcerting and certainly call into question the ultimate value of the volume. Nevertheless, it is well written and a pleasure to read.

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#### FOREST ENTOMOLOGY: A GLOBAL PERSPECTIVE.

By William M. Ciesla. Hoboken (New Jersey): Wiley-Blackwell. \$129.95. xi + 400 p. + 81 pl.; ill.; subject and taxonomic index and host index. ISBN: 978-1-4443-3314-5. [This book has a companion website: [www.wiley.com/go/ciesla/forest](http://www.wiley.com/go/ciesla/forest).] 2011.

I often find myself staring out of my office window during periods of low travel funding, wondering what forest insect challenges look like in other parts of the world. Now during such droughts I can con-

tent myself with a copy of William Ciesla's recent contribution to the wide world of forest insects. The book begins with a biogeographic overview of the world's forests before covering the basics of forest and insect population dynamics and human interactions, providing a logical segue to invasion biology. Following requisite sections on monitoring and management, the latter two-thirds of the volume provides an overview of insects and taxonomy before covering feeding guilds: foliage feeders, bark and wood-boring insects, sucking and galling insects, shoot and tip insects, and those affecting reproductive structures of trees or young seedlings. An informative section on insects of importance to wood products concludes the work. As a global overview, the book comfortably blankets all of the major forest insects one might expect to see in a worldwide tour. Conversely, the text does not necessarily serve as an encyclopedic reference for potentially obscure phloeophages in far-flung places. Scattered throughout are 81 stunning color plates (and many more black-and-white figures), showing not just insects but forest damage and practitioners engaged in management around the world. With species movement rapidly shrinking the globe, this work is a timely contribution truly transnational in scope.

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#### ECOLOGY AND EVOLUTION OF POECILIID FISHES.

Edited by Jonathan P. Evans, Andrea Pilaastro, and Ingo Schlupp. Chicago (Illinois): University of Chicago Press. \$75.00. xiii + 409 p.; ill.; author, taxonomic, and subject indexes. ISBN: 978-0-226-22274-5. 2011.

This book is a worthy successor to Meffe and Snellson's *Ecology and Evolution of Livebearing Fishes (Poeciliidae)* (1989. Englewood Cliffs (NJ): Prentice Hall), and promises to emulate its predecessor by becoming an indispensable reference for workers in the field. One of the most attractive features of the new book is its success in handling a challenge inherent in any compilation of work on poeciliid fishes: the family contains several "model systems" (notably the guppy, *Poecilia reticulata* and species of the genus *Xiphophorus*, the swordtails and platy fishes) that have been foci of attention for a very long time by biologists of almost every description, and other groups (e.g., *Poeciliopsis* unisexuals and their bisexual ancestral species) that have perhaps not quite achieved "model" status, but are still important research subjects. Reviews of recent and/or ongoing work on just these more widely known species could easily fill a volume of this size. However, the family contains perhaps 225 additional species in more than 20 additional genera and quite a few of these have reproductive, life-history, and/or ecological adaptations of potential general interest, and several