Ecology & Evolution in the Tropics: A Herpetological Perspective

Edited by Maureen A. Donnelly, Brian I. Crother, Craig Guyer, Marvalee H. Wake, and Mary E. White. 2005. University of Chicago Press, Chicago, Illinois. x + 675 pages. 45 USD.

This volume contains most of the papers presented in a symposium held as part of the 2000 joint meeting in La Paz, Baja California, Mexico, of the three major herpetological professional groups in North America: The American Society of Ichthyologists and Herpetologists, the Society for the Study of Amphibians and Reptiles, and the Herpetologist's League. The symposium was organized as a tribute to the submission of the manuscript *The Amphibians and Reptiles of Costa Rica: A Herpetofauna between Two Continents, between Two Seas* (ultimately published in 2002, University of Chicago Press) by Jay Mathers Savage, and the latter's lifetime accomplishments in promoting long-term study of tropical diversity.

The contents are divided somewhat awkwardly but equally (9 chapters each) between (I) Evolution and Biogeography and (II) Ecology, Biogeography and Faunal Studies. The content is heavily weighted (13 of the 18 contributions) on tropical American species, not surprising, perhaps, considering Central and South America's richness in species and diversity. These American studies range from molecular phylogeny of caecilians, diversity of Costa Rican salamanders, an endemic Honduran frog, chromosomal variation in a group of southern Central American frogs, secondary sexual characters in tropical frogs, selection and male reproductive success in a neotropical frog, co-occurrence of hylid frogs in a temporary wetland, frog-eating anurans in the Paraguayan Chaco, biogeography of the anole genus *Norops* and of bothropoid pitvipers, and herpetofaunal analyses of the Rincon Area in Costa Rica, a Guyanan rainforest, and the Guayana highlands. The one Old World contribution is a long-term frog monitoring in Papua New Guinea, The four primarily overview contributions on a wider geographic scale are on phylogenetic taxonomy as a replacement for the Linnean system, on snake phylogeny based on Ribosomal DNA and morphology, elapid relationships, and theories of snake mimicry.

There are 27 contributors, many well known in the herpetological literature, others less so (in order of appearance): Arnold G. Kluge, Marvelee H. Wake, Gabriela Para-Olea, Judy P. Y. Sheen, David B. Wake, W. Ronald Heyer, Rafael O. de Sa, Sarah Muller, Shyh-Hwang Chen, Sharon B. Emerson, Mary E. White, Maria Kelly-Smith, Brian I. Crother, Joseph B. Slowinski, Robin Lawson, Harry W. Green, Roy W. McDiarmid, Karen R. Lips, Craig Guyer, Maureen A. Donnelly, Norman J. Scott Jr., A. Luz Acquino, David P. Bickford, Kirsten E. Nicholson, Steven D. Werman, Roy W. McDiarmid (again), Jay M. Savage, Maureen A. Donnelly (again), Magan H. Chen, Graham G. Watkins, Roy W. McDiarmid (again) and Maureen A. Donnelly (again).

This is not a comprehensive anthology of tropical diversity of amphibians and reptiles but rather selective glimpses from a random assortment of studies. Even as such it samples effectively the range of research into these in the southern climes and their importance in perspective of the variation of these groups in the world. The baseline studies presented are of particular importance in this era of unprecedented habitat destruction and climatic change after a period of relative stability against the background of well publicised observations of amphibian declines and the more poorly studied condition in reptiles.

FRANCIS R. COOK

Emeritus Curator and Researcher, Canadian Museum of Nature, P. O. Box 3443, Station D, Ottawa, Ontario Canada

Fossil Ecosystems of North America: A Guide to the Sites and Their Extraordinary Biotas

By John R. Nudds and Paul A. Selden. 2008. The University of Chicago Press, Chicago. 288 pages, 39 USD Paper.

Fossil Ecosystems of North America is a science book, travel guide, mystery story, and historical saga in one package — a must-read for any naturalist with an interest in fossils, evolution, and geological time. Written by paleontologists John R. Nudds, University of Manchester, and Paul A. Selden, University of Kansas, it is a North American sequel to the 2004 *Evolution of Fossil Ecosystems*, in which the authors focused on 14 renowned fossil sites around the world.

Their new book features just as many sites, all located in North America, including three Canadian locations, one site which spans the Canada-United States border, and another in the Dominican Republic. Each site is covered by one chapter, with sub-sections devoted to its evolutionary context, its discovery and subsequent research, its stratigraphic setting, biota, and paleoecolgy, and comparisons with other similar sites. An appendix, written in true travel guide fashion, provides details on exploring the fossil locations and visiting related museums.

The Canadian sites, interestingly, contain evidence of the oldest biota. They include northern Ontario's Gunflint Chert, Newfoundland's Mistaken Point, and, probably Canada's best known fossil site, the Burgess Shale in British Columbia, also a UNESCO World Heritage Site.

The Gunflint Chert in northern Ontario, discovered in 1953 by geologist Stanley Tyler, has recently been dated at a staggering 1878 million years, which places it in the Paleoproterozoic era. It helps tell the story of