models that aim to predict potential range shifts and broad-scale community reshuffling. Finally, there is a clear taxonomic, geographic, and disciplinary bias. Most examples come from plants or large vertebrates in Arctic ecosystems, with a strong focus at the population level. This shortage, however, provides ample opportunities for exploring more thoroughly and widely the ecological patterns and processes reported in this volume. Overall, the book is clearly recommendable, especially for anyone interested in how ongoing and future climate change will affect high-latitude ecosystems.

W. DANIEL KISSLING, *Institute for Biodiversity & Ecosystem Dynamics, University of Amsterdam, Amsterdam, The Netherlands*

THE SIXTH EXTINCTION: AN UNNATURAL HISTORY.

By Elizabeth Kolbert. New York: Henry Holt and Company. $28.00. xiii + 319 p.; ill.; index. ISBN: 978-0-8050-9299-8 (hc); 978-0-8050-9311-7 (eb). 2014.

This volume traces an ongoing mass extinction event in the current geological epoch. The Anthropocene or Holocene extinction appears to journalist Elizabeth Kolbert—author of *Field Notes from a Catastrophe: Man, Nature, and Climate Change* (2006. New York: Bloomsbury Publishing)—as an inevitable outcome of human expansion. She uses examples from the geological and historical past to place the resulting loss of fauna and flora in a broader context of the history of life on Earth. The book traces historical conception of mass extinction to revolutionary France and the work of French naturalist Georges Cuvier, who theorized that life on Earth had been disturbed by multiple cataclysms. Earth has suffered five such catastrophic episodes, from the Ordovician to the Cretaceous. Kolbert portrays humankind as the driving force behind the sixth extinction in the Anthropocene.

Past mass extinctions are more than points of historical or scientific interest to the author. These ancient cataclysms warn of the future consequences of human actions. So the sudden annihilation of the hugely successful ammonites following the K-T asteroid impact at the end of the Cretaceous period demonstrates the fragility of seemingly ubiquitous species, including our own to catastrophic environmental change. Kolbert's book is also an environmentalist tract in this sense, covering ongoing work to preserve global biodiversity and citing studies of ocean acidification alongside accounts of cryogenic cell banks and the ultrasound scanning of pregnant rhinos.

Chapters of the book are organized around an extinct or endangered species, each indicative of the damage inflicted by sudden cataclysms, which all too often involve humans. The great auk is an early entry, the flightless seabird suffering centuries of exploitation through egg collecting and overhunting, culminating in its extinction in 1844. Contemporary environmental damage and erosion of biodiversity take greater prominence as the volume progresses. A visceral account of white-nose syndrome, a fungal disease that threatens North American bat populations, is presented as an ongoing legacy of the transatlantic Columbian exchange. The disease exists in a benign form in Europe, but may have first emerged in North American bats via Howe Caverns, a popular New York State tourist attraction. Modern transportation has led to a reworking of the biosphere through the often inadvertent transfer of species, including the lethal genus of chytrid fungi currently wiping out amphibians on a global scale.

The Sixth Extinction places our understanding of mass extinction in a historic and prehistoric context, through an engaging and accessible manner, the author regularly drawing upon her own global travels. Kolbert offers an extensive introduction to the history of life and death on Earth, with a take-home message on the erosion of biodiversity in the Anthropocene. In the book's closing paragraphs, the author muses that human deprecation of the natural world may stem from our biological makeup, due to a driving passion for expansion and exploration, or "madness gene." If humankind is itself a virulent and invasive species, the Anthropocene extinction cannot truly be considered an "unnatural history." Instead, the sixth extinction appears to be another Cuvierian catastrophe, bearing all the hallmarks of its five precursors.

MATTHEW HOLMES, *Centre for the History & Philosophy of Science, University of Leeds, Leeds, United Kingdom*

EVOLUTION

THE PRINCETON GUIDE TO EVOLUTION.

Editor-in-Chief: Jonathan B. Losos; edited by David A. Baum, Douglas J. Futuyma, Hopi E. Hoekstra, Richard E. Lenski, Allen J. Moore, Catherine L. Peichel, Dolph Schluter, and Michael C. Whitlock; Advisors: Michael J. Donoghue et al. Princeton (New Jersey): Princeton University Press. $99.00. xiii + 853 p. + 7 pl.; ill.; index. ISBN: 978-0-691-14977-6. 2014.

This is an excellent guide to evolution; such a volume is long overdue. It is comprehensive, the entries are clearly written, and the array of contributors is drawn from among the very top re-