

## BOOK REVIEW

## Extinctions on Islands: A Classic Revisited

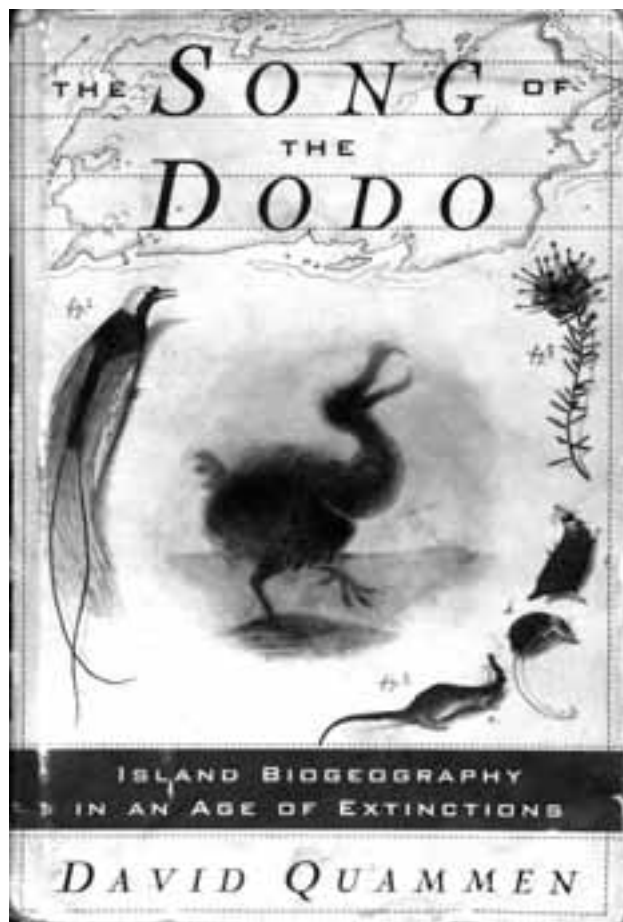
*The Song of the Dodo: Island Biogeography in an Age of Extinctions.* David Quammen. 1996. Scriber, New York. 702 pp. 15 maps, glossary, source notes, bibliography, index. Clothbound. \$32.50 (Touchstone Paperback edition, \$20.00).

Move over Gould, Watson, Leopold, Darwin, and Wilson. The required reading list for biology students, professionals, and serious nature-lovers has expanded — *The Song of the Dodo: Island Biogeography in an Age of Extinctions* by science journalist David Quammen should definitely be included. *The Song of the Dodo* takes the reader on exciting adventures through the work of island biogeographers and studies of evolution and extinction. This book is not only educational, but also thrilling and highly entertaining — and can be enjoyed even by readers who are not familiar with island biogeography and the study of evolving species. Well-written and researched, this volume reads like a travelogue of fascinating animals and places while inspiring the reader to take action to curb habitat destruction and species extinction.

*The Song of the Dodo* is organized into ten sections, each of which covers one issue relevant to the world of island biogeography. The author begins with a brief introduction entitled, “Thirty-Six Persian Throw Rugs,” an analogy he effectively uses to focus the reader’s attention on the “unraveling of ecosystems.” He also introduces one of the themes of the book, namely that most of us are not up to date on the subject of ecosystem decay and the field of island biogeography. In the following section, “The Man Who Knew Islands,” the author defines biogeography (the study of the facts and the patterns of species distribution) and goes on to use examples of islands like Bali and Lombok to introduce some of the facts on which biogeographers rely when they ask questions pertinent to the discipline. In this section, the author also pays homage to Alfred Russel Wallace and his studies in the Malay Archipelago and the Amazon Basin. The reader is pulled into the life of Wallace and travels with him as he develops his own hypotheses concerning the evolution of species. The author also takes a look at Charles Darwin and his travels, including his famous studies in the Galápagos Islands. Quammen skillfully brings to life the quest to form theories and the race to see who can first publish their hypotheses on the evolution of species.

### Editor’s Note

Although the review of a book first published nearly a decade ago may seem odd, the subject matter and the readability of Quammen’s book, combined with its relevance to the conservation and natural history of reptiles, caused me to solicit this review. I hope it encourages a few more readers to explore Quammen’s world. R. Powell



In the third section, “So Huge a Bignes,” Quammen addresses the main subject of the book: the relationship between the evolution and extinction of species. He emphasizes that evolution is best understood while simultaneously examining extinction by stating that “... the evolution of strange species on islands is a process that, once illuminated, casts light onto its dark double, which is the ultimate subject of this book: the extinction of species in a world that has been hacked into pieces.” This section of the book provides several examples of species around the world that have or are rapidly disappearing, using events leading to declines in the numbers and kinds of tortoises to introduce features peculiar to island communities. These include dispersal ability, size changes, and the loss of defensive adaptations. In “Rarity Unto Death,” the fourth section, Quammen passionately describes the extinction of several species. Of these, the extinction of the Dodo on the island of Mauritius is noteworthy. Until humans invaded Mauritius, the Dodo thrived, living in a balanced ecosystem. With the intro-

duction by the Portuguese of domestic mammals, the Dodos quickly expired. On Tasmania, the Thylacine (a hyena-like creature often called a Tasmanian “wolf”) and the Aborigines both became extinct shortly after the British arrived. The plight of Tasmania’s Aborigines provided fuel for Quammen’s thoughts about the extinction of a human culture.

In “Preston’s Bell,” Quammen takes a close look at the species-area relationship, emphasizing that “less area harbors fewer species.” He goes on to tell the story of Frank Preston and how he came to apply a bell curve to his data on communities of birds and insects. Preston saw a pattern, biological communities contained a few very rare species, many fairly abundant species, and a few species that are very abundant. With this pattern in mind, Quammen related the story of Preston’s Bell to his own adventures while searching for Komodo Dragons. The sixth section of the book, “The Coming Thing,” examines Robert MacArthur and Edward Wilson’s theories on species reaching equilibrium on assortments of islands. MacArthur and Wilson hypothesized that, because new species were continually arriving and old species were continually becoming extinct, species eventually reach an equilibrium. MacArthur and Wilson used a mathematical model to foretell the specifics of equilibrium on any island. A highlight of this section is Quammen’s personal interview with Wilson, in which they discussed MacArthur and the impact of their work on the very fundamentals of population biology.



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Galápagos Land Iguana (*Conolophus subcristatus*): two species are currently recognized, although some data suggest that they are mere geographic variants and other data provide support for even greater variation among populations on the various islands of the archipelago. Land Iguanas were among the species encountered by Charles Darwin during his sojourn in the islands. Like many island endemics, they evolved in an environment largely free of predators and competitors and are extremely vulnerable to human activities that alter habitats and expose them to invasive carnivores and to herbivorous mammals that deplete the vegetation on which they depend.

The seventh section of the volume takes the author to the world of Tom Lovejoy, “The Hedgehog of the Amazon.” Quammen examined the SLOSS (single large or several small) debate and its effect on the creation of the Minimum Critical Size of Ecosystems Project. The author goes on to suggest that it might be Tom Lovejoy that needs to be thanked for those instances where larger natural reserves have been set aside. “The Song of the Indri” (the largest surviving lemur) shifts Quammen’s travels and thoughts to Madagascar. Using the question: “How rare is too rare?” he extends the thoughts of minimum critical size to the world of population genetics and genetic drift. Once again, the author beautifully weaves the “soul” of biology (in this case, the story of the life and death of the guide, Bedo) into the world of professional science.

“World in Pieces” takes the reader from island ecosystems to the work of Carl Jones and the Kestrels of Mauritius and the primate work of Karen Strier in Brazil. Quammen summarizes his concerns about the patterns seen in these examples and others: “All over the planet, the distributional maps of imperiled species are patchy. The patches are winking. In some instances they’re winking off and on, but in many instances they’re merely winking off.” In the final section of the book, Quammen takes the reader back to the travels and thoughts of Wallace. In “Message from Aru,” we are reminded of the fragility of the natural world and Wallace’s warning in 1869: “...should civilized man ever reach these distant lands, and bring moral, intellectual, and physical light into the recesses of these virgin forests, we may be sure that he will so disturb the nicely balanced relations of organic and inorganic nature as to cause the disappearance, and finally the extinction” of all too many species. For Quammen, it comes down to a question: Has it already happened, or do we still have time?

Readers of *The Song of the Dodo* will learn much about the research that has gone into the study of evolution and extinction — but the book is anything but a dry tome reciting facts, names, and dates. The author captures you and takes you into the minds of Charles Darwin, Alfred Wallace, Robert MacArthur, and other scientists during their quests for new insights. Quammen’s gift is the story-telling that draws the reader into the events that led to each of many amazing discoveries. By incorporating exhilarating stories with educational information, the author painlessly teaches us the jargon of island biogeography, making this book an easy read for people who have little background in evolutionary biology and may have forgotten most of what they learned in high-school biology classes.

Although the subject matter is often depressing and the history of such an arcane discipline as island biogeography hardly seems appealing, this book is interesting and understandable — and often as entertaining as a best-selling novel. The occasionally hilarious, seat-gripping stories of well-known scientists combined with the depth of information make the book hard to set aside.

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