BioOne COMPLETE

Bird Migration and Global Change

Author: Ramenofsky, Marilyn

Source: BioScience, 61(9) : 727-728

Published By: American Institute of Biological Sciences

URL: https://doi.org/10.1525/bio.2011.61.9.13

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Downloaded From: https://bioone.org/journals/BioScience on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

expect that I will return to this book from time to time, rereading it for the pure pleasure, as I do *Bumblebee Economics* or good novels. A popular book on natural history that also makes a scientific contribution while ranking as great literature is a rare bird indeed.

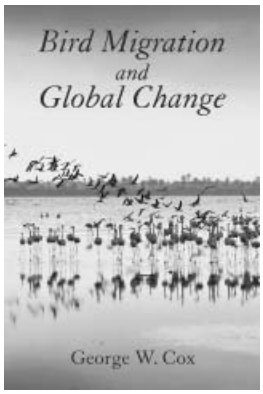
RONALD C. YDENBERG
Ronald C. Ydenberg (ydenberg@sfu.ca) is a professor and director of the Centre for Wildlife Ecology at Simon Fraser University in Burnaby, British Columbia, Canada.

THE INCONVENIENT TRUTHS ABOUT CLIMATE CHANGE AND BIRD MIGRATION

Bird Migration and Global Change. George W. Cox. Island Press, 2010. 297 pp., illus. $45.00 (ISBN 9781597266888 paper).

Bird Migration and Global Change is a compendium of factual material—recorded alterations in the behavior, breeding, and annual schedules of migratory birds—that offers insight into the compelling issues of a planet in flux. The intended purpose of the book is to provide a comprehensive account of interrelated topics, including meteorological conditions, climatological events, alterations of temperature, air and oceanic currents, ecological habitats, and biota—all features that affect migratory species. It is thorough in its treatment of the subject, well organized and divided into geographic delineations of ecological habitats, which call to mind R. H. MacArthur's *Geographical Ecology.* Although this new book is not the only text of its type on the market, its contribution to the field of migration is of critical importance, because it recounts past and current events and provides a roadmap for the practices of conservation in a valiant effort to preserve migratory species—particularly those at risk.

doi: 10.1525/bio.2011.61.9.13



This book is a valuable resource not only for the compilation of facts but also for its broad scope, with many inspired tables but only a few figures. The chapters are short, with clearly defined subdivisions, and each has a definitive summary. Author George W. Cox, a professor emeritus of biology at San Diego State University, is a life-long student of birds and their migrations. He moves through species descriptions quickly; some are more in depth than others, and some cases are more anecdotal in nature. The strongest chapters are those in which the empirical data are most firm—for example, chapter 8 ("High latitude species of land birds: Palearctic long-distance migrants"), chapter 12 ("Shorebirds"), and chapter 16 ("Oceanic birds: Southern Hemisphere"). In other chapters, the text is more of a call to action for those lesser-known species of birds, whose survival is impinged by current climatic conditions. Cox also relates a number of personal field experiences in both the Arctic and the Antarctic, which adds endearing touches throughout the book.

Structured consistently throughout, the text begins with basic climatic information then applies these facts to both avian taxonomic and geographical divisions. The breadth of information is commendable, as is the scholarship of the writing. The aspects of bird migration covered include behavior, physiology, flight routes, timing, and distance. The issues of physiological responses to change and genetic potential for adaptation are also addressed. However the book's strengths lie in the ecological and climatological realms; the chapters on the physiological and genetic aspects of birds are the weakest. I suggest that the book is best used as resource material and would be less effective as an undergraduate textbook.

Bird Migration and Global Change represents a heartfelt effort by the author, who has pulled together a tremendous amount of information from a wide array of fields. This contribution to science gives its readers an appreciation and awareness of the vast number of migratory bird species and their geographical habitats—habitats that offer seasonal resources to support migration and breeding but which are vulnerable to climatic alterations. With time, availability of such resources may improve or worsen; however, issues of projected changes in the phenotypes of migrants and, ultimately, their evolution are discussed offering some hopeful notes on a rather dire subject in the final chapters. Data from both molecular and behavioral studies certainly suggest that genetic heterogeneity within populations of migrants may contribute to adaptations by individuals to changing environmental conditions.

It is worth noting that although global climate change is imminent, the planet has historically undergone dramatic shifts in temperature, oxygen content, and precipitation, during which many migrant populations appeared or disappeared. The period of climatic change referenced in the book ranges from 1970 to the early years of the twenty-first century. To estimate changes beyond these dates, Cox relies on climatic models, which come with a measurable degree of uncertainty, given the vagaries of planetary and meteorological events and the resulting impact on migrants. This approach points to the continued need for more complete and accurate monitoring of environmental conditions, in relation to the responses of migrants. To his

Downloaded From: https://bioone.org/journals/BioScience on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use

credit, Cox has provided a valuable guide for continuing research in the realm of bird migration biology.

MARILYN RAMENOFSKY
Marilyn Ramenofsky (mramenofs@ucdavis.edu) is an adjunct professor in the Department of Neurobiology, Physiology, and Behavior at the University of California, Davis. Her article "Hormones in migration and reproductive cycles of birds" was recently published in an edited volume by Academic Press titled Hormones and Reproduction in Vertebrates.

BIRDS, ORNITHOLOGY, AND PASSION

All About Birds: A Short Illustrated History of Ornithology. Valérie Chansigaud. Princeton University Press, 2010. 240 pp., illus. $29.95 (ISBN 9780691145198 cloth).

First appearing in print in Paris in 2007 as *Histoire de l'ornithologie*, *All About Birds: A Short Illustrated History of Ornithology* is advertised by its French publisher as "une histoire illustrée de l'amour de l'homme pour l'oiseau" [an illustrated story of man's love for birds]. Author and environmental scientist Valérie Chansigaud not only attempts—successfully—to write for a wide audience of amateurs, real and would-be ornithologists, and other scholars with this brief and accessible account but also tries to move them—as the ornithologists about whom she writes were themselves moved—from a time and place in which they know relatively little about their discipline to one in which they become "mad" about ornithology—what the French publisher calls "de l'ignorance à la passion."

As the subtitle states, *All About Birds* is both illustrated and short, lacking in footnotes and with a bibliography of only 40-odd titles. Chansigaud's abbreviated course on the history of ornithology is chronological, comprising sections on Antiquity, the Middle Ages, the Renaissance, the seventeenth century, the eighteenth century, the nineteenth century, and the twentieth century. Brief biographical sketches are provided on well over 100 ornithologists, and somewhat longer accounts (of several paragraphs) are given for 25 of these. Thus, we discover that Caspar Schwenckfeld (1563–1609) was born in Silesia; became a physician; developed a strong interest in animals (because, in them, he could see the hand of God); drew closely on Ulisse Aldrovandi and Conrad Gessner; and described 150 species of birds and classified them on the basis of habitat, mobility, feeding, foot structure, and color. Readers also learn that John Gould (1804–1881), "one of the most important illustrators of the nineteenth century," was trained in drawing by his father (who worked in the royal gardens at Windsor); had a long-standing interest in birds; learned taxidermy; married an illustrator; conserved the ornithological collections at the Zoological Society in London; and published voluminously on birds of the Himalayas, Europe, Australia, Asia, Great Britain, and New Guinea. He also identified the finches that Darwin brought home on the HMS *Beagle*.

As with any brief account *sans* references, the information found in *All About Birds* is noticeably lacking in moorings and seems anecdotal. For example, compare Chansigaud's rosy treatment of the previously mentioned "important illustrator," Gould, who is discussed immediately following John James Audubon in a section on the nineteenth century, titled "When science becomes art, or the golden age of ornithological illustration," with that in Michael Waters's *A Concise History of Ornithology* (2003). Waters wrote that he could not ignore Gould because of his productivity, yet he finds him not just unschooled but highly ambitious, devious, ruthless, and—most significant for this comparative exercise—a pathetic artist who drew not a single plate that he published.



Moreover, it is impossible to include everything in any short book, and so questions about selectivity arise and often remain unanswered. For example, the ornithological knowledge of indigenous people around the world, as well as their artistic works depicting birds, influenced or not by the artistic conventions of the people included in this book, are lip-deep in *All About Birds*. Equally superficial is the treatment of the domestication of birds—an unwise omission given their global importance to the millions of people who have eaten them, commodified them, fought with them, used them in divination rituals, and, to various ends, bred them and studied the descent of their traits. An example of the last of these (and not least of this group) was Charles Darwin, whose theory of evolution by natural selection might first have occurred to him as he contemplated the famous Galapagos finches, but really took form when he became a fancier of pigeons. (See "The Galapagos Archipelago" in *The Voyage of the* Beagle and "On the breeds of the domestic pigeon" in *On the Origin of Species*.) Furthermore, the history of ornithology in *All About Birds* seems reduced primarily to classification, over which many ornithologists have admittedly obsessed. Yet ornithological research embraces far more than systematics—namely, physiology, communication, migration, navigation, social systems, sexual behavior and mating systems, development, and conservation. Finally, some

doi:10.1525/bio.2011.61.9.14

Downloaded From: https://bioone.org/journals/BioScience on 28 Mar 2024
Terms of Use: https://bioone.org/terms-of-use