All about Birds: A Short Illustrated History of Ornithology

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

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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

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remarkable field ornithologists in the late twentieth century (e.g., Theodore A. "Ted" Parker III) deserve a place in a history of ornithology dedicated to biographies of ornithologists. It is a pity that they did not receive attention.

Just as it is the rare review that does not contain criticism, it is the rare book that does not contain errors. One such error in this volume is that the last Carolina parakeet died not in 1914—the year that Martha, the last passenger pigeon, died—but in 1918. The two birds died in the same cage in the Cincinnati Zoo. Furthermore, Ernst Mayr's career in America unfolded not exclusively, as is implied, at the American Museum of Natural History but also (for decades) as a professor at Harvard's Museum of Comparative Zoology, where he arguably published his most important syntheses.

For all its shortcomings, this work redeems itself in its sumptuous use of illustration—some 250 images overall, from the sixteenth to the twentieth centuries, and many in color. The artists include painters, engravers, lithographers, and others with household names (e.g., Ulisse Aldrovandi, Lucas Cranach the Elder, Roelant Savery, Mark Catesby, Eleazar Albin, George Edwards, Alexander Wilson, John James Audubon, Louis Agassiz Fuertes) and many without (e.g., Lukas Schan, Alexandre Isidore Leroy de Barde, François-Nicolas Martinet, Georg Foster, Jacques Barraband, Polydore Roux, Jean-Gabriel Prêtre, George Robert Gray, John Gerrard Keulemans, Edward Lear). Anyone lacking encyclopedic knowledge of bird artists will learn something new in every section of this book. Collectively, their remarkable images of birds not only brighten *All About Birds* but awaken the reader, whose aesthetic engagement with birds will be at or near the height of experience by this reading. Despite the cautions expressed in this review, it is the art—together with a text that is unusual for its clarity, an elegant design, and a printing of high quality—that should guarantee a wide readership. This book, no doubt, will reinforce *la passion* in those who already know something of the field and will instill it in all for whom ornithology awaits as revelation.

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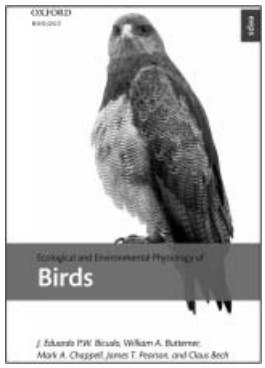
AN ENDURING UNION

Ecological and Environmental Physiology of Birds. J. Eduardo P.W. Bicudo, William A. Buttemer, Mark A. Chappell, James T. Pearson, and Claus Bech. Oxford University Press, 2010. 328 pp., illus. $65.00 (ISBN 9780199228454 paper).

Ecological and Environmental Physiology of Birds is an eclectic summary of current thought in the field of avian ecological physiology. The book is designed to provide a concise and current overview of physiological ecology in birds for graduate students, beginning researchers in comparative physiology, and ornithologists. The contributors to this book are a diverse group of ecological physiologists from around the globe, most with an academic pedigree linking them to early pioneers of the field. Eduardo Bicudo studied with Knut Schmidt-Nielsen, Mark Chappell with George Bartholomew. William Buttemer and James Pearson studied with mentors who were students of Bartholemew. Claus Bech was supervised by Kjell Johansen, who did his PhD work at the University of Oslo, where Per Scholander was a professor of zoophysiology. Each contributor brings his extensive research background to the text, adding to our knowledge of how avian biology functions at a mechanistic level.



Born of a marriage between comparative physiology and natural history, the discipline of ecological physiology is intended to explain how the physiological machinery of organisms enables them to cope with their changing natural environment and how natural selection has modified, and continues to modify, physiological phenotypes to solve difficult environmental problems. The field emerged during the late 1940s and early 1950s with Schmidt-Nielsen's exploration of how kangaroo rats could survive their desert environment without drinking water, Bartholomew's work on the electrolyte balance of birds in deserts and in salt marshes, and Scholander's research on the respiratory physiology of diving marine animals. A common theme in their research was a fascination with the myriad ways in which free-living animals functioned in their natural environments (Schmidt-Nielsen 1987, Dawson 2005, Weibel 2007).

Studies of birds by these scientists played a prominent role in the development of ecological physiology. Interested in how marine birds could survive without drinking freshwater, Schmidt-Nielsen discovered avian nasal salt glands, which are extrarenal structures that allow marine birds to drink seawater. Later, he discovered that airflow in the bird lung is unidirectional (unlike that of mammals), an adaptation that allows birds to fly at high altitudes. Bartholomew modeled how seed-eating birds could survive without drinking and

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