Why Did the Chicken Cross the World? The Epic Saga of the Bird That Powers Civilization

Author: Gowaty, Patricia Adair

Source: The Auk, 134(4) : 919-921

Published By: American Ornithological Society

URL: https://doi.org/10.1642/AUK-17-88.1

The BioOne Digital Library (https://bioone.org/) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses

Downloaded From: https://staging.bioone.org/journals/The-Auk on 23 Mar 2025
Terms of Use: https://staging.bioone.org/terms-of-use

The Auk
Ornithological Advances
AmericanOrnithology.org

Volume 134, 2017, pp. 919–921
DOI: 10.1642/AUK-17-88.1

BOOK REVIEW

Why Did the Chicken Cross the World? The Epic Saga of the Bird That Powers Civilization

Reviewed by Patricia Adair Gowaty

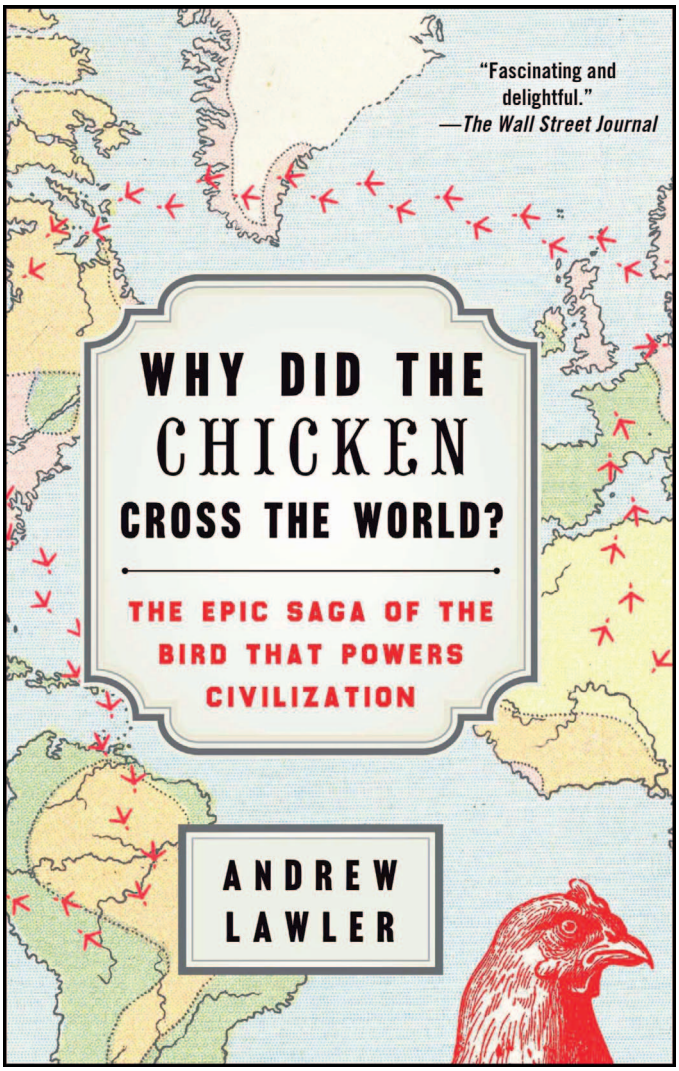
Ecology and Evolutionary Biology, University of California Los Angeles, Los Angeles, California, USA
gowaty@eeb.ucla.edu

Published September 27, 2017

Why Did the Chicken Cross the World? The Epic Saga of the Bird That Powers Civilization by Andrew Lawler. 2014. Atria, New York, NY, USA. 324 pp. $26.00 (hardcover). ISBN 978-1-4767-2989-3.

In their multitudes, 20 billion domesticated chickens (*Gallus gallus domesticus*) are the most numerically dominant vertebrate species on Earth (there are only about 7 billion rats). There are 10 times more chickens than Red-billed Quelea (*Quelea quelea*) and 3 times more chickens than humans.

You could call chickens human "companions," but there are only a relative handful of humans who know their chickens the way people know their dogs. Rather, most of us eat chicken meat and eggs, and we exploit chicken eggs in gargantuan numbers to make antiviral drugs and vaccines. Pope Francis, it is said, eats a boiled chicken breast each day. Chickens are social, obviously adaptable, and the source of thoughtful controversy over how they are reared, killed, and packaged for human consumption. Andrew Lawler's astonishing book not only details a substantial amount of bad news for chickens, but it also serves as an insightful compendium of human history, wars, sociology, and adaptability. However, the most interesting parts of the book for me are those regarding what we know—surprisingly little—about the natural history, ecology, and evolution of chickens.



Until I read Lawler's book, I had not thought too seriously about what wild chickens might tell us about social behavior and variation in individual reproductive careers. Today's chickens live long enough under natural conditions to have very, very complex social lives: The expected life span of a chicken not meant for the kitchen pot is 10–15 yr, not unlike the expected life span of my dog. But what do we know about the life span and reproductive trajectories of wild-living chickens or their purported progenitors, wild-living Red Junglefowl (*Gallus gallus*)? As someone who has documented the lives from egg to death of thousands of individual Eastern Bluebirds (*Sialia sialis*) and found them to be distress-

© 2017 American Ornithological Society. ISSN 0004-8038, electronic ISSN 1938-4254
Direct all requests to reproduce journal content to the AOS Publications Office at pubs@americanornithology.org

Downloaded From: https://staging.bioone.org/journals/The-Auk on 23 Mar 2025
Terms of Use: https://staging.bioone.org/terms-of-use

ingly short-lived, I could not help imagining what the individual life histories and reproductive careers of long-lived wild chickens might tell us. Lawler is loud and clear that the natural history and biology of chickens is a compelling subdiscipline of ornithology, and my take is that there remain rich rewards for students of wild chicken natural history.

Lawler's first chapter throws the reader into modern controversies of chicken phylogeny and introduces us to the biggest names in wild chicken biology, Beebe and Brisbin, and begins with descriptions of the exploration and discovery of Red Junglefowl, long thought to be the ancestors of chickens. These remarkable adventure stories start with the initial discoveries of William Beebe, the celebrity scientist who first brought Red Junglefowl to the United States in the earliest decades of the 20th century. Beebe made it clear that Red Junglefowl were wild and wonderful, "like an untamable leopard, low-hung tails, slightly bent legs, head low, always intent, listening, watching, almost never motionless" (p. 8). What Beebe started has implications for what we *can know* today about the origin and phylogeny of chickens. He argued that the lack of an eclipse plumage among chickens indicated "an infusion of the blood of native village birds into the wild genome" (p. 14). His idea was the first statement of introgression between Red Junglefowl and domesticated chickens. Despite the certainties reflected in the scientific name they share, modern controversy dogs the conclusion that chickens evolved *from* Red Junglefowl. The development of that contested story line is my favorite part of the book.

The genetic evidence of linkage between Red Junglefowl and chickens could be a matter of introgressed chicken genes as human populations with their chicken minions encroached steadily into previously wild places. But the exciting part of this bit of the story is about inveterate natural historians. Lehr Brisbin, an AOU Fellow, along with other "chickenists," managed to culture over decades the progeny of Red Junglefowl while disallowing any local interbreeding with domestic chickens, and thereby carefully managed the populations to retain their wildness (think of their culturing practices, which included almost never handling their charges, as the opposite of the experiments that produced the tame silver foxes of Russia). Brisbin argued at the 1995 annual meeting of the AOU that pure-bred Red Junglefowl might be the most endangered bird species in the world—a claim in keeping with Beebe's much earlier suggestion that it was not so much that Red Junglefowl were disappearing, but that interbreeding with domestic chickens challenged the genetic integrity of the wild populations. A. Townsend Peterson, another AOU Fellow, took Brisbin's 1995 bait, exclaiming that pure Red Junglefowl were surely still to be found in some remote areas. The two passionate naturalists then joined forces to test their alternative hypotheses. Their studies of museum specimens and modern genetic studies have raised international concern that the genetically pure wild ancestor of the most important bird for extant human populations may now be reduced to several carefully managed captive research flocks, totaling probably no more than 200–300 individual birds in the care of only a few institutions in North America. The debates continue and make for wonderful reading in the primary literature, as well as in Lawler's wild stories.

Lawler's chicken views made me realize that ornithology textbooks should include "The Chicken Chapter." As an undergraduate, I learned the fundamentals of vertebrate anatomy partly from bones and muscles of chicken carcasses, and chicken eggs were the stars of my 1965 embryology course, but my graduate courses in ornithology barely mentioned chickens. I know from modern literature that the classic experiments proving the efficiency of group selection via evaluation of the fitness benefits of individuals versus groups were done on chickens: Happier chickens evolve under group selection. What interests me now is the comparative demography of pariah, free-range, and poultry-house chickens. Even more, I'm interested in the comparative associated demography of introgressed Red Junglefowl and chickens, and the demography of free-living "pure" line Red Junglefowl. It may be too late to answer such questions, but these demographic metrics—life span and reproduction—are the very stuff of evolution, and the differences between wild-living Red Junglefowl and modern pariah chickens may tell us volumes about evolutionary mechanisms. Yet, with all we know about chickens and the teasers we have about Red Junglefowl, I found zero studies in a Web of Science search on their demography. It is almost as though they don't have a life history. Yet there are nine poultry science departments in universities within the United States, each almost completely dedicated to the study of human exploitation of chickens and turkeys. Much of what poultry scientists discover, however, is basic avian physiology, along with how to keep your chickens healthy and productive, which carry over to most or at least many other bird species. No matter how one spins it, much remains for avian scientists to do, when a common Google question is "Are chickens birds?" The basic biology of chickens includes their (contested) phylogeny, their natural history, their ecology, and their social behavior in the wild, in the barnyard, under porches, and as "re-wilded" pariahs.

The only thing I can complain about is the book's title. It was more than *one* chicken that crossed the world. Of course, I'm quibbling. As an evolutionary biologist, I'm interested in the within-population, between-individual variation that was the substrate for farmers' and fanciers' selective breeding, which created the diversity of chickens included in *Gallus gallus domesticus* that contributed to

Downloaded From: https://staging.bioone.org/journals/The-Auk on 23 Mar 2025
Terms of Use: https://staging.bioone.org/terms-of-use

our cultures, our religious ceremonies, our wars, our dinner tables, our disease cures, and even our ornaments. The book really is about all kinds of chicken diversity in interaction with our own.

Even a cursory page-flipping of Lawler's extraordinary book would inspire most readers to deeper respect for chickens: Some ancients thought chickens were gods! I'm giving it as a New Year's present to old friends more interested in human history than in the natural history of other animals, in hopes that they will gain a better appreciation for the most common source of protein in most of their diets.

Book Review Editor: Jay Mager, j-mager@onu.edu

Downloaded From: https://staging.bioone.org/journals/The-Auk on 23 Mar 2025
Terms of Use: https://staging.bioone.org/terms-of-use