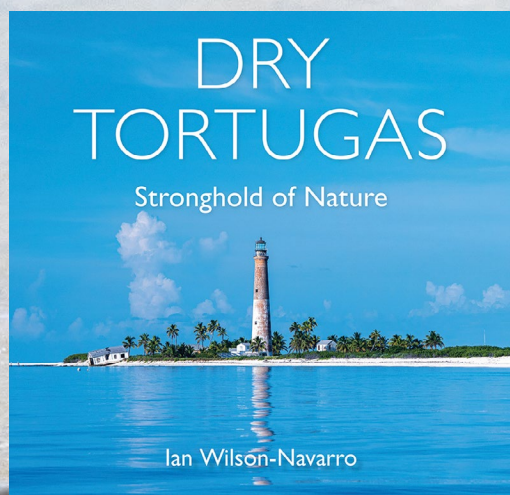


# THE STEM OF IT ALL

Love (and Science) Will Secure Our Relationship to the Planet.

KRISTEN RABE



## Dry Tortugas Stronghold of Nature

Ian Wilson-Navarro, University Press of Florida (OCT 8) Hardcover \$34.95 (234pp), 978-0-8130-7912-7  
ECOLOGY & ENVIRONMENT

Featuring two hundred magnificent photographs, Ian Wilson-Navarro's *Dry Tortugas* reveals a marine sanctuary at the edge of the Florida Keys.

Wilson-Navarro has a lifelong attachment to the seven remote islands and coral reefs of the Dry Tortugas. With photographs as his primary medium, he aims to promote awareness of it for its protection: "It is my mission to document the

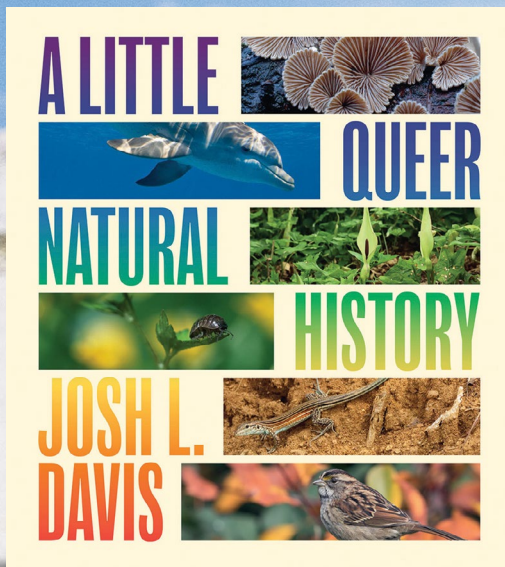
changing landscape, the struggles faced by our reefs and fisheries, and the urgent need for conservation." Four short essays by naturalists and other experts complement this work with their compelling perspectives on the region's biodiversity, including its rare birds, fish, and luminous algae; its "enchanted" history, including early visits by Indigenous people and Ponce de Leon; its role as a military outpost; its protection as a national park; and its vulnerability to climate change.

Still, the stunning photographs are the book's centerpiece. They include intimate views of strange, underwater creatures: a sea fan reflecting the golden light of sunset; a watchful hogfish lingering by a coral; the peering eyes of a queen conch under a grand pink shell; a lively blue crab poised for a fight; and the etched, labyrinthine surface of a brain coral. There are also scenes of the sublime, as with a thicket of sea lilies illuminated under a breathtaking view of the Milky Way. And intermingled with expansive scenes of aqua water are images of human interference and destruction. Piles of decades-old trash, an aging boat house slipping into the sea, bleached and dying coral, and the worn fortress walls of Fort Jefferson, abandoned by the Army in 1874, are jarring reminders of humanity's impact on such ecosystems.

*Dry Tortugas* is an immersive text that celebrates the astonishing beauty and mystery of a remote marine outpost that faces the encroaching threats of development and climate change.

Images on this spread and next page by Ian Wilson-Navarro, from *Dry Tortugas: Stronghold of Nature*. Used with permission from University Press of Florida.





## [A Little Queer Natural History](#)

Josh L. Davis, University of Chicago Press (OCT 10) Softcover \$16 (128pp)  
978-0-226-83703-1, NATURE

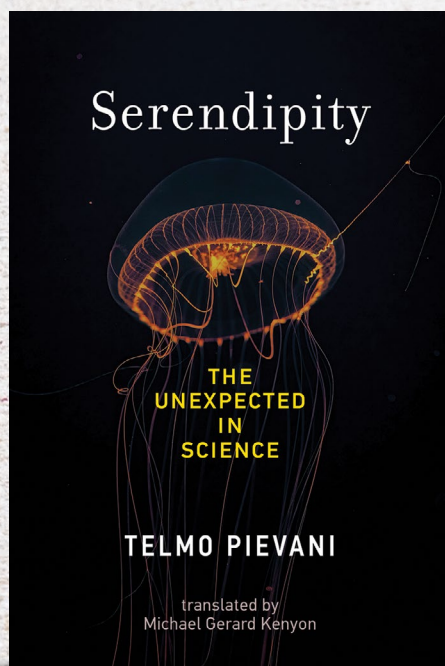
Josh L. Davis's illustrated and informative science text *A Little Queer Natural History* reveals that the natural world is more complex and inclusive than people often assume.

The book profiles the sexual behaviors of an array of creatures, including unisexual whiptail lizards that lay fertilized eggs without encountering sperm and common pill woodlice whose sex is determined by a parasitic bacterium. In all, the unique sexual adaptations of twenty-nine plants and animals are detailed, including green sea turtles and splitgill mushrooms. The topics include homosexual behaviors observed among apes, giraffes, penguins, and sheep, as well as hermaphroditic, asexual, and gender-fluid behaviors. For instance, parrotfish are sequential hermaphrodites, meaning they produce male and female sex cells and change sex as they age. Colonies of clownfish are led by a dominant female; when she dies, the largest male changes sex to take her place. In the insect world, female barklice evolved a “penis” that they insert into the male “vagina” to extract packages of sperm and nutrients. Plants and fungi also evolved diverse strategies to reproduce.

The descriptions are factual and straightforward, and the gorgeous color photographs are devoted to depicting the creatures in their environments. Emphasizing changing historical perceptions, the book highlights the work of leading researchers over the past few centuries. For

instance, in 1923, John Peacock Ritchie was the first to photograph male mute swan couples raising chicks on a Scottish loch. He persisted in describing queer behavior, despite his colleagues' skepticism. And the book notes that, historically, scientific literature described homosexual behavior as bizarre, abhorrent, or immoral: a 1987 paper described queer behavior in Mazarine blue butterflies via “A Note on the Apparent Lowering of Moral Standards in the Lepidoptera.”

An absorbing and meticulous science text, *A Little Queer Natural History* shares an important perspective on the natural world.



## [Serendipity](#) [The Unexpected in Science](#)

Telmo Pievani, Michael Gerard Kenyon (Translator), The MIT Press (SEP 3) Hardcover \$26.95  
(216pp), 978-0-262-04915-3, HISTORY

Telmo Pievani's provocative book *Serendipity* integrates literature, philosophy, and science to explore an idea crucial to scientific discovery.

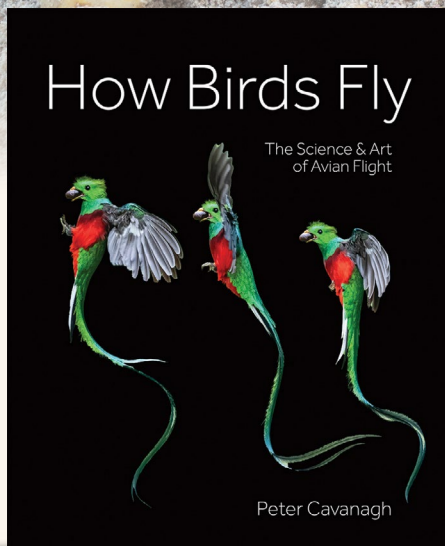
Pievani notes that in the Persian fairy tale “The Three Princes of Serendip,” wandering men try to make sense of what they see. Horace Walpole, misinterpreting the tale, coined the word “serendipity” in 1754 to mean “accidental sagacity” or “discovering things you are not in quest of.” The term was used in religious studies and medicine before it “broke through the invisible barrier” in the mid-twentieth century to be used in science.

Pievani distinguishes between weak serendipity (discovering what you were looking for through good luck) and strong serendipity (discovering something you really were not looking for). His book makes frequent reference to Robert Merton, who “rightly pointed out” that chance observation is serendipitous only if it deviates from expectations and is “somehow disorienting” as well as useful and relevant. Citing numerous examples, from the profound to the practical, it describes the discoveries of penicillin, X-rays, cornflakes, nonstick coatings, and radio pulsations from interplanetary space. It also details the invention of Velcro after its creator pulled burdock burrs from his clothes and the development of Post-it notes after a researcher applied a failed adhesive to bookmark a hymnal.

Probing philosophical questions are considered: If serendipity is the unexpected bursting onto the scene, what are the roles of planning, preparation, and tenacity? Can serendipitous randomness ever become “too democratic”? That is, can anyone discover wonderful things? Do “errors” in research contribute to unexpected outcomes? Looking ahead, the book argues for a “slower science” that is “free from the pressure to arrive at certain results” due to competition, economic and market interests, or social emergencies.

*Serendipity* is a comprehensive, penetrating analysis of the role of the unexpected in scientific exploration.





**How Birds Fly**  
**The Science and Art**  
**of Avian Flight**

Peter Cavanagh, Firefly Books (OCT 1) Hardcover \$49.95 (336pp) 978-0-228-10486-5 NATURE

Peter Cavanagh's *How Birds Fly* is an enlightening examination of the aerodynamics of bird flight.

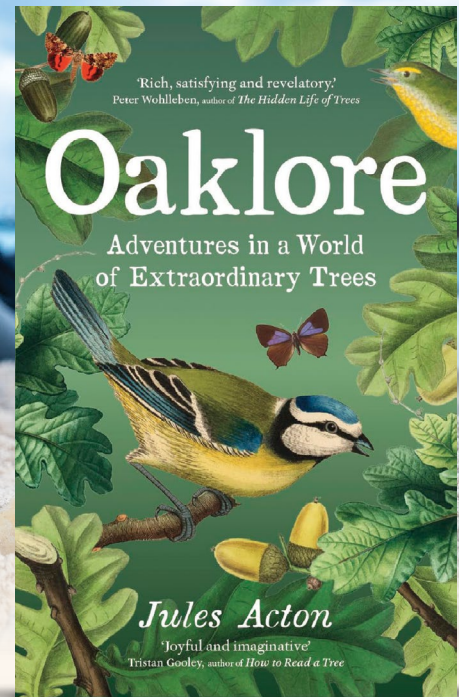
A rare science book that includes dazzling photographs of birds from around the globe, including hum-

mingbirds, songbirds, raptors, and waterbirds, this text is illuminative and descriptive. Its chapters cover the full range of bird flight, including the “rules” for lifting and landing, perching, soaring, flapping, hovering, navigating, changing direction, and migrating. In an intriguing summary of the physics of avian aerodynamics, it explains that the subtle interactions between a bird’s flapping wings and the surrounding air are a “deeply complex mathematical puzzle.”

The book’s depictions of bird anatomy yield insights, as with those regarding birds’ dense bones, which include noncircular cross sections that add strength; elsewhere, the book reveals that birds’ breathing systems are different from those found in mammals, involving air sacs that control airflow and “pneumatic” bones. Boxed features summarize the leading research, as with an examination of whether water birds use an internal compass to land along the geomagnetic north-south axis. Also discussed are theories about how and why birds evolved the ability to fly and why some birds, including kiwis and penguins, are flightless.

There are hundreds of breathtaking photographs that use color and composition to highlight views of avian behavior, including the startling wingspan of a Gray-Crowned Crane, the prehistoric visage of the Hoatzin, and the braking wing beat of a Black-billed Mountain Toucan maneuvering to land. Dozens of instructive illustrations further inform and clarify the book’s scientific descriptions of avian biomechanics and anatomy. Discussions of the principles of human flight round the book out, with profiles of the Wright brothers and other pioneers in the study of aviation.

Impressive in its scope and beauty, *How Birds Fly* is a luminous study of the phenomenon of avian flight.



★ **Oaklore**  
**Adventures in a World of Extraordinary Trees**

Jules Acton, Greystone Books (SEP 3) Hardcover \$24.95 (272pp), 978-1-77164-966-7, NATURE

Jules Acton’s comprehensive and delightful book *Oaklore* covers the science, history, and mythology of Great Britain’s oak trees.

Noting that only 13 percent of the United Kingdom is covered by trees, this intriguing book focuses on the oak trees characteristic of the remaining woodland. An oak tree can live for hundreds of years, Acton writes, and is essential within thriving, diverse ecosystems at all stages in its life cycle, including its “lingering afterlife.” And an astonishing 2,300 species of plants, animals, and fungi find food and shelter in Britain’s oak trees, including 300 species that depend entirely on oak trees for their existence.

The book is loaded with fascinating insights and anecdotes. Dozens of species are described in detail, from the nuthatch and red squirrel to the spotted longhorn beetle and the elusive purple hairstreak butterfly. There are engaging descriptions of historic oaks across the country, too, including the Bowthorpe, with a girth of forty-two feet and an estimated age of over one thousand years. And an extended discussion of oak galls (small growths on oak buds and leaves that “house” beneficial wasps and their eggs) reveals that oak gall ink was used in writing the Magna Carta, Shakespeare’s plays, and the US’s Declaration of Independence.

The prose is nimble and witty, as when Acton describes the laughing “yaffle sound” of the green woodpecker (“If I’m going to feel mocked I’d like it done by wildlife”) and the advantages of observing lichen (“They don’t whizz about”). Attractive illustrations and practical tips, such as suggestions for identifying bird songs or baking with acorn flour, pair with the book’s consideration of the challenges posed by development and climate change.

Clever and utterly charming, *Oaklore* is a creative study of one of Britain’s most distinctive and important trees. ♥