BOOK REVIEWS

BIRDS IN THE HAND: THREE ORNITHOLOGICAL GEMS


This trio of texts brings joy to exploring the rich diversity of bird life on earth. They present a wonderful span, from the exotic charm of hardy and gregarious penguins, to the tropical jewel-like wonder of hummingbirds, to the fascinating science to be learned behind our more familiar backyard birds. Any of these would be an enriching and pleasurable read by itself, all three together provide a wealth of visual splendor and intellectual reward.

Penguins: The Ultimate Guide is just that – a comprehensive presentation of the habits, habitats, science, and conservation of the world’s 18 species of penguin. The many beautiful photographs emphasize penguin diversity in a multitude of habitats. Information ranges from the strictly scientific (such as penguin evolutionary lineage) to cultural (did you know that Penguin books were published to provide “intelligent” cheap books, a means of “converting book-borrowers into book buyers?”). The text is both a guide and a fascinating overview of everything “penguin,” richly illustrated with beautiful photographs and diagrams on each page.

The book is divided into three sections. ‘Life Between Two Worlds’ presents the biology of penguins, including a discussion of the adaptations to life as swimming birds. This is followed by presentations of each of the major penguin groups, such as the “Jackass” (Galapagos, Humboldt, Magellanic, and African penguins), the “Cresteds” (Snares, Fiordland, Royal, and Macaroni), the “Rockhoppers,” and, of course, the famous “Monarchs of the South” (the Kings and Emperors). The second section provides wide-ranging and fascinating brief articles on penguin science and conservation. For example, one article discusses the antimicrobial peptide that allows fasting male King Penguins to preserve food in their stomach for several weeks to feed their newly hatched chicks, which is of significant interest and medical potential. Other articles examine color-providing pigments and feather structures in fossil and extant penguin species, a study of the Adélie Penguin’s adaptations to climate change, tracking penguins at sea and across the ice, the threats to the Galapagos penguin (the only equatorial penguin), and more. The final section focuses on the natural history of each of the 18 penguin species. Introductory pages and tables show general penguin characteristics, range, and populations status. Then each species is summarized in a two-page spread including taxonomy, a range map, description and coloration, size, weight, voice, population data, breeding, food, and principal threats.

It would be hard to find a group of birds more different from penguins than the tiny, jewel-like, consummate flyers that are the hummingbirds. Hummingbirds is impossible to resist: the inconceivable beauty and remarkable hardiness of these tiny creatures are presented in thoughtful text and stunning photographs. Orenstein’s text occupies the first 69 pages of the book, with sections on hummingbird evolution, flight, feeding, color, and conservation. Orenstein’s love and expertise for these “most extraordinary birds” – the beija-flores (flower-kissers) – is evident throughout. And such wonder is well deserved: as he introduces them, he notes that “no other birds fly with such precision and aerial mobility... none live at such an extreme metabolic pace... this tiny gem in your garden... is a marvel.” His text is clear and interesting, emphasizing hummingbirds’ biology and ecology. The variety of species is discussed, as well as their feeding adaptations and nutrient requirements, the physical source of their beautiful coloration, the astounding feats of migration, their coevolution with flowers, their breeding behavior, and issues of conservation. A portfolio of photographs by Michael and Patricia Fogden follows the text. It is difficult to describe the astonishing beauty of these photographs: each page reveals another living “glittering fragment of the rainbow.” Each picture is so clear and vibrant it feels like you could count each bird’s feathers, touch the delicate lichen of their tiny nests, and watch as they delicately sip, hover, and preen. These photographs make Hummingbirds one of the most beautiful (and informative) books you could add to your natural history library.

The third of our ornithological gems, Welcome to Subirdia, is a more rough-cut stone. Marzluff focuses on our more “ordinary” ornithological friends of the backyard feeder and skies, primarily in the Seattle area. Subirdia’s primary focus is on
ecological connections: how nature coexists with—and even, in some cases, thrives with—human development. The constant cost/benefit equation of each species’ fight for survival appears repeatedly. Fascinating observations come forward. For example, songbirds (not surprisingly) do not like to nest near the nest of a Cooper’s hawk (a choice observed to result in 7% higher mortality), but nesting success decreases as well if the birds nest too far away from the hawk—in this case, losing the hawk’s “protective shield” against other predators such as jays and squirrels. One of Marzluff’s students who studied bird populations of industrial sites found, to his surprise, that “one-third of the business sites equaled or exceeded the diversity [he] observed in the richest forest reserve.” It is a mixed story of fascinating complexity: presentation of intentional stewardship at industrial sites can enhance diversity and species survival, but the clearing of native lands for managed land use such as golf courses can lead to local extinction. Of particular interest to biologists and biology teachers, this book describes the design and results of many graduate-student studies that have explored the human–wildlife interface, examining behavior, song, distribution, DNA, and many other markers of survival and change in suburban species. He presents, as well, a thoughtful list of how humans can be “good neighbors” to their wildlife (did you know that more gas is spilled annually filling up lawn mowers than was released in the Exxon Valdez disaster?). Suburbia suffers occasionally by being a bit repetitive, and, from a science point of view, study data could have been enhanced through graphic presentation. But these are fairly minor points in an otherwise rich and rewarding read.

Each one of these texts would be a valuable addition to the libraries of both birders and biologists. Practically each page reveals fascinating information about the birds themselves, but also how we study them. Students could use these texts to study individual species, examine diverse ecology, and learn how scientists think and work. Finally, given that “today it is impossible to think of animals without concern for man’s impact on them,” each of these texts further the reader’s understanding of humans’ effects on ecosystems and species. Penguins, Hummingbirds, and Suburbia make a diverse, and very rewarding, threesome.

**Penguins**
**Hummingbirds**
**Welcome to Suburbia**

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**NATURAL SELECTION**


*The Course of Nature* is an illustrated primer on the science of genetics and evolution. It was written to accompany *The Origin of Species* in a college colloquium. On its own, *The Course of Nature* concisely introduces the reader to the concepts of DNA, mutation, protein synthesis, and the role of genetics in natural selection. The illustrations complement the text and, in some cases, provide additional material for discussion. Used in an AP Biology class, *The Course of Nature* makes an excellent supplement to the traditional text. With some scaffolding or by employing close-reading strategies, *The Course of Nature* can be used in an introductory biology class as well.

The book is relatively short, and each page of text is partnered with an illustration. The chapters take the reader through the basics of molecular genetics. Chapter 1 is a brief overview of the creation of the universe. The author uses the metaphor of molecules of water in the oceans to describe the smallness of atoms. In this way, he sets the stage for describing the interaction of molecules that result in proteins. Chapter 2 continues the journey in deep time with a description of the evolution of early life.

Chapter 3 is a lovely sojourn through the structure of DNA. It is such a clear and concise description of base-pairing, the sugar–phosphate backbone, and Watson and Crick’s discovery of its helical shape, that I might scrap lecturing on this information forever, in place of a class discussion of the text. The illustrations on pages 34 and 38 are especially effective at conveying these ideas in a playful way.

While some of the concepts in this book will seem oversimplified to those who study or teach biology, *The Course of Nature* is ideal for the student or adult who wants to learn the basic tenants of molecular biology and how it interplays with natural selection and evolution.

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**FASCINATING BIRDS & FROGS**


*Weird Birds* and *Weird Frogs* by Chris Earley are a delightful introduction to some weird and wild avian and amphibian creatures. *Weird Birds* features beautiful full-color photographs of 59 birds, including the very serious Eurasian Eagle-Owl and the regal Resplendent Quetzal. *Weird Frogs* includes an intimate look at 58 amphibians like the exotic Vietnamese Mossy Frog and the familiar Common Spadefoot Toad.

Each photograph is accompanied by a paragraph or two describing the habitat, life cycle, or interesting facts about each bird or frog. The books are written for ages 10 and up, but my three- and six-year-olds were so captivated with the pictures that we read the text together, and learned lots of new words as a result. One of my favorites was Darwin’s Frog, who swallows up the fertilized eggs...