RECENT LITERATURE
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BOOK REVIEWS

Video Surveillance of Nesting Birds

Birds’ nests have long fascinated ornithologists and, at least in North America, we know much about eggs, incubation, and nestling development. Major gaps remain, however, in our knowledge of nesting behavior, and especially nest fate, because of difficulties observing nests during the critical moments. I am sure many early ornithologists wished they could be a “fly on the wall” to find out what exactly happened at nests during their absence. As revealed in this “Studies in Avian Biology” volume edited by Ribic, Thompson, and Pietz, ornithologists can now spy on nests 24/7, and their efforts have yielded several surprises about the secret lives of birds.

Video surveillance contributes to two main areas of breeding biology: breeding behavior and nest fate. After a synthesis of knowledge gained from the use of video cameras at nests (Part 1), the meat of the book is the series of primary studies on breeding behavior (Part 2) and predation/response to predators (Part 3). A final section (Part 4) provides a guide to choosing and using camera technology in studies of nesting birds.

Researchers deploy video surveillance systems at nests mostly to identify the culprit and modus operandi in predation events. Without cameras, predation is almost never observed, and researchers are left guessing what happened. In traditional studies based on nest checking, nests are often classified as “failed” or “succeeded,” and a species of predator is identified, if possible, based on signs left at the nest. Video cameras, however, reveal a more complicated story. Often, nests were partially depredated by one species of predator, and the remaining eggs or nestlings taken by a second species. In addition, these studies show that predators visited and left signs at nests that had been depredated by another species or where young had already fledged, which would have resulted in researchers assigning the wrong fate or predator based on traditional nest checking. Cameras also revealed unexpected nest predators such as deer and insects, and allowed researchers to measure how the choice to defend a nest influenced adult mortality and reproductive success.

By using video surveillance, researchers were able to break down the major causes of nest failure by predator species, allowing comparisons across time and space that can be used in conservation management. For example, grassland birds are often supposed to suffer from edge effects whereby woody edges facilitate predation by generalist predators such as raccoons (*Procyon lotor*). Management for these birds can include removal of woody vegetation. However, one study showed a reversed edge effect: a grassland-specialist predator, the 13-lined ground squirrel (*Ictidomys tridecemlineatus*), caused higher rates of nest loss toward the grassland interior and, as a result, birds were actually safer nesting near the woody edge. Clearly, in such cases video surveillance at nests can provide critical information for management to increase birds’ breeding success. Another study, somewhat preliminary, suggests that snakes are among the most important predators in grasslands of the northern United States, whereas mammals and fire ants become more important in shrublands and southern forests. As the book shows, with the publication of more camera studies, we should soon be able to identify general patterns of how predator identity varies across latitudes.
and habitats, and adjust conservation strategies accordingly.

In addition to spying on predators, video surveillance provides detailed data on breeding behavior that can otherwise be difficult to observe. Previously, temperature sensors have been used to study nest attendance. However, the studies in this book show that video cameras have several advantages, including less ambiguity about whether a bird is on a nest. They also allow researchers to study hatching and fledging times and nocturnal activity. For example, cameras in one study showed that grassland and shrubland passerines wake on average every 6–28 min to watch for predators at night. The studies on behavior emphasize that although cameras may be deployed to examine one aspect of breeding biology, such as predation, they provide a rich source of data to answer additional questions about adult and nestling behavior.

If you are thinking about using video surveillance in your own work, you will probably appreciate the final chapter of the book, a how-to-guide. The authors go through the basic choices in video-monitoring systems, including lighting, focal length, data storage, color, cables, and optional features such as motion sensors and portable LCD viewing monitors. Helpfully, they discuss which points to consider based on a variety of study objectives, and address what can go wrong in video surveillance.

I found this collection of studies interesting, but was disappointed with the narrow geographic focus. A better title for this volume might have been “Video surveillance of nesting birds in the United States and Canada.” All of the studies were conducted in North America, and nearly all were conducted in temperate grasslands, mainly with open-cup nesters. I was left wondering how relevant the methods and results would be for, say, cavity nesters in tropical forest. With the expansion of video surveillance, I hope soon to see more global comparisons of predation rates by predator taxon, so we can begin to understand the variation in selection pressure on birds breeding in different nest types across a range of habitats and latitudes.

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The Unfeathered Bird

Upon seeing the dust cover—a peacock’s skeleton with retained train feathers cocked in display—I was immediately intrigued. This hardcover coffee table book first attracted me with its illustrations, and I flipped through the pages as if I were strolling through an art gallery. Although feathers typically dominate birds’ appearances, the underlying structure is the foundation of birds’ forms. Therefore, seeing birds stripped of feathers and skin, but illustrated in a lifelike position, is a fascinating treatment. All plates are line drawings rendered in sepia (some as duotones adding shades of gray or blue). Some illustrate the entire bird whereas others are simpler illustrations of more specific sections of the anatomy (e.g., skull, legs, and feet). Coming from a similar science-art-museum background, I was particularly interested in not just the author–artist’s skills, but also the accuracy of her drawings. I found myself identifying bones, counting feather follicles, examining muscle attachments, studying how she executed a particular pose, and marveling at characters that would be otherwise obscured by integument. Illustrations (e.g., Rock “Dove,” *Columba livia*, pp. 252–253, and Rook, *Corvus frugilegus*, pp. 272–273) that show progressive stages as exterior layers are removed (without feathers, without skin, and only bones remaining) provide an exceptional educational exercise.

As a museum preparator, I have also had “unfeathered” contact with many of the subjects illustrated in the book. As a scientist, I would have liked captions associated with each image to highlight and discuss the skeletal or muscular anatomy pictured. Occasional abbreviated notes on the drawings, such as a “d” for digit (but without further interpretation), are not particularly useful, especially for the layperson, the apparent target audience. Image captions sometimes refer to a particular feature (such as the preen gland, cloaca, a reversible outer toe, or coracoids), but nothing on the image itself (such as an arrow) identifies that particular feature. From personal experience, I knew where to look for features mentioned, but someone without an
anatomical or ornithological background would not have a clue. There is considerable wasted “white space” (or actually beige) on many plates and on the text pages that could have been put to better use, whether with more elaborate captions or additional illustrations; emptiness, in my opinion, does not improve the artistic aspects of the book. Many image captions simply consist of species identification. In most cases, why a skeleton is deliberately posed in a certain way is not mentioned. For example, why is the Manx Shearwater (Puffinus puffinus, pp. 128–129) resting on its belly? What is the significance of the tropicbird and frigatebird together in flight? Perhaps all will be revealed when I read the associated text? I must admit, as I first studied all the illustrations, with each additional one the urge grew stronger to break off and dive into the text to search for elaboration. The birds shown complete, whether as a skeleton or musculature, are nicely depicted—the illustrations are simple, but well executed. Drawings highlight a particular species to show characters representative of a family or order. Therefore, drawings of skulls, legs and feet, and pectinate claws are numerous. For example, illustrations of owls highlight the entire skull, in particular noting asymmetry of external ear openings (Tawny Owl, Strix aluco, p. 48, and Northern Saw-whet Owl, Aegolius acadicus, p. 49). On examination of the relative proportions of the bones or muscles, images are thought provoking: I imagined how each bird would appear recloaked by skin and feathers. Those in lifelike poses are quite interesting to examine, not just for bones and form, but also for perspective. For example, which direction is the Eurasian Oystercatcher’s (Haematopus ostralegus, p. 197) head facing? By the way, I did take the book into the LSUMNS collection to compare illustrations with skeletal material. Upon closer inspection, I found that proportions in some illustrations seemed a bit inaccurate (e.g., the Glossy Ibis, Plegadis falcinellus, pp. 178–179). But these problems are relatively insignificant; the illustrations accurately depict even fine details such as shape of sternal notches or raised nubs where secondaries once attached (e.g., along the ulna of a Painted Stork, Mycteria leucocephala, p. 175). Although some drawings impart a subliminal sense of a bird’s size by having the skull or skeleton dominating a whole page or sprawling across two facing pages, explicit reference to scale are lacking—another missed opportunity.

Solely considering emotion evoked by each image and its sparse caption, unfettered by reading associated text, van Grouw’s images flow across the page and show excellent anatomical detail. All are instructional, and some poses could even be interpreted as humorous. I could not help wondering how someone outside the life sciences community would interpret images obviously associated with death: a Barn Owl (Tyto alba, pp. 50–51) in various stages of feather removal, or a Eurasian Buzzard (Buteo buteo, p. 39) with skin removed and only flight feathers remaining. Somewhat creepier, even from my museum preparator background, were the images of domesticated birds—apparently a prelude to the author’s next book. Would drawings of her unfeathered “pet” birds, for example, the macaw (p. 56) holding a pencil or the budgie (p. 57) eyeing its own reflection, be considered morbid to a less scientific audience? Obviously, this concerned the author (or publisher) and prompted van Grouw’s disclaimer: “I must assure readers that no birds were harmed during the making of this book. I relied exclusively on the goodwill of birds dying naturally in places where they could be found and on the goodwill of a great many people who picked them up for me. Also on zoos, taxidermists, aviculturalists <sic> and museums.” Considering that van Grouw has worked with and prepared specimens for a museum, prominently missing is an acknowledgment of the value of scientific specimens. In fact, her message is to the contrary (from her website discussing the book) “as bird curators at the Natural History Museum’s collections at Tring, this is in fact an entirely unconnected venture for a completely different purpose.” Also included: “Pans of stuff you wouldn’t want to look at too closely began to appear on the stove.” Cleaning and articulating skeletal material is a monumental effort, and it appears that for van Grouw this was a personal project because nowhere does it state that specimens were prepared for a museum collection. Regardless of their ultimate deposition, strong wording regarding appropriate permits to possess wild birds should have been included to avoid suggesting to hobbyists with similar artistic interests that they too can salvage wild birds and render them into skeletons on their home stove.

After my stroll through the “art gallery,” I proceeded back through the text looking for further insights into the author’s unfeathered subjects. The book is divided into two parts. The
first, *Generic*, introduces a bird’s basic structural anatomy divided into four sections: trunk, head and neck, hind limbs, and wings and tail. In short, a review of basic bird anatomy geared for the general reader. The primary focus is on the skeleton and how skeletal characters manifest day-to-day activities of a bird. Also included is an introduction to feathers and flight, and to other avian characters such as salt glands, crop, and uropygial gland. But, as mentioned, the illustrations are not labeled, so it may not be easy to associate features being discussed in the text back to illustrations. Part two, *Specific*, profiles most bird orders (ratites lumped together, cuckoos missing) following the taxonomic order Systema Naturae. Adopting this organization, says the author, avoids having to choose a current taxonomy and implies by virtue of its taxonomic naiveté that the classification best highlights character convergence. As per Systema Naturae, *Specific* is divided into six chapters. Each chapter has sections covering related taxa, however, diverging from Linnaeus’ named genera. My initial impression was that this arrangement seemed like a clever idea; I enjoyed Linnaeus’ group descriptions that introduce each chapter (including whether representatives of that order tasted good). But, in using this archaic classification, the author often ends up repeating how groups are now considered related. Lest we forget, Linnaeus’ 12th edition was published in 1766, a time when relatively few taxa were known to science, when systematics and taxonomy were in their infancy, and a century before Darwin. Anseres, for example, included all birds with webbed feet. The author also had to take various liberties to assign into Linnaean order the species/orders/families that were still unknown in Linnaeus’ time. For example, Kagus (*Rhynochetus jubatus*) and Shoebills (*Balaeniceps rex*) are included in Grallae, even though Linnaeus never saw these birds, which were described in the middle of the 19th century. The author also does not otherwise strictly follow Systema Naturae. For example, Linnaeus’ “shrikes” are not included in Accipitres (or elsewhere), and other genera initially in Picae (now Passeriformes) are not included there. Perhaps a better approach would have been to step back not so far in time, but only before molecular analyses, when morphological characters were the primary taxonomic tools, for example, using Alexander Wetmore’s 1960 classification. Although the book follows Linnaean taxonomy for general organization, fortunately the *Howard and Moore Complete Checklist of the Birds of the World*, 3rd edition (E. C. Dickinson, ed., 2003, Princeton) is used for species nomenclature. Each order or family’s section has several pages of general facts to address its form and associated function—occasionally straying off-topic to discuss related taxa (because of the Linnaean taxonomy used) before returning to subject. Answered were my questions about why the shearwater is resting on its belly or the rationale behind illustrating a frigatebird chasing a tropicbird. Representation of families is good for nonpasserine orders, with many illustrated and discussed to some degree. Only a few passerine families are highlighted, including several that show spectacular adaptive radiations, such as Vangidae and Darwin’s Finches; Hawaiian Honeycreepers are omitted (with an apology in the acknowledgments). Three subchapters are devoted to domestic birds (waterfowl, gamebirds/domestic fowl, and pigeons)—highlighting artificial selection to produce avian “monstrosities.”

The text is written in a conversational style, with each chapter discussing aspects of skeletal, or, to a lesser degree, muscular characters. It was good to review numbers of bones per digit, which vertebrae are elongated in the neck of an anhinga versus a heron, that Ciconiiformes have a raised hallux, and so on. Although the book is promoted as a “richly illustrated book on bird anatomy,” this is more of a primer than a textbook of anatomy. Conspicuously absent are labels on illustrations to identify bones or muscle groups. Thus, a huge opportunity is missed—even handwritten scribbles next to a sketch would have made this book so much more informative. It did inspire me to get out a couple of my old ornithological texts to revisit this material. Text generally sticks to the theme of discussing aspects of associated illustrations. However, in the case of the Snowy Sheathbill (*Chionis albus*, pp. 200–201), for example, the illustration of a skull is not integrated with the commentary in the text (an unwholesome lifestyle, and “wholly terrestrial,” but “totally reliant on the sea”); the trained eye will note an indentation where one of the pair of rather large salt glands would sit, but there is no mention of that. Some chapters or subchapters diverge from the primary discussion of anatomy into
fun facts. For example, it’s difficult to perceive a connection between anatomy and that grebe chicks are attractively striped and carried on the backs of their parents, much less figure out the comment that a grebe is the “ultimate bathroom toy.” Oilbirds (*Steatornis caripensis*) are mentioned in the text but do not have a corresponding illustration. In general, I found the chapters enjoyable and easy to read, imparting the aura of a type of bird as the eye moves through the associated illustrations.

The text is more or less jargon free, proclaimed as an important objective in the introduction. But some inadvertent slips do occur, such as the reference to “true rails” as having long slender bills (“true rails” or members of *Rallus*) and technical ornithological or anatomical terms are not altogether lacking. The author does not avoid using words likely foreign to a general readership, such as tapetum, or pygostyle, or zygodactyl. However, the reader would not learn, for example, what a desmognathous palate is or the name of the tendon that secures the tensor patagii muscle, even though the latter is illustrated prominently in more than one image. Regardless, there is plenty of information about very basic anatomy and how design exemplifies function. The section on penguins has illustrations that show both musculature and skeletal characters. The illustration (p. 105) of the Little Penguin (*Eudyptula minor*) is terrific: a skeleton within a faint outline of the bird’s body with feathered wings and intact feet.

The book could have benefited from closer editorial scrutiny. I found some discussions garbled or ambiguous, and a few errors did jump out, best typified by the hummingbird account, for example, that only male hummingbirds are iridescent, that no hummingbird has iridescent flight feathers because iridescent feathers are structurally weak, and that the tongue draws in liquids via capillary action. After discussing the phenomenon of torpor, the author suggests that <all?> North American hummingbird species traverse the Gulf of Mexico to escape the long cold winter nights. The hummingbird section also ends abruptly as if the next page is missing. Perhaps hummingbirds are not her strong point. Regarding feather tracts (See Screamers section, p. 220), the author does not include Coliiformes among birds lacking aperitia. In the discussion of storm-petrels, it is stated that they seldom alight on the water’s surface (storm-petrels regularly raft) and that they have more functional primaries than do albatrosses (both have 10). More errors likely await the careful reader. The species index of English and scientific names is useful, but beware of numerous inconsistencies in content, and prepare for frustration searching common names sorted strictly alphabetically rather than by group (e.g., Common Black-headed Gull instead of Gull, Common Black-headed). No chapters, topics, or terms are indexed, so revisiting a particular discussion requires relying on memory of the species for which it was discussed.

All in all, this is a great book: the illustrations are fun to browse, it provides a good introduction to avian skeletal anatomy and the major bird groups, and it is interesting to read. The illustrations speak for themselves as a springboard for further study. For those with more than a passing interest in birds or bird anatomy, this book is guaranteed to provoke interest to learn more and, despite a few shortcomings, I recommend it highly.

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**A Guide to the Birds of Trinidad and Tobago (3rd Edition)**


The assertion that significant contributions to ornithology can be made by amateurs is certainly exemplified by Richard ffrench. After visiting Trinidad and Tobago in 1956, he took up residence in 1958 and began keeping detailed notes on the bird life of the islands. From 1961 until 1972, G. A. C. Herklots’ *The Birds of Trinidad and Tobago* (1961) was the authority on the islands’ avifauna, but that all changed in 1973 when ffrench published *A Guide to the Birds of Trinidad and Tobago*. Although lacking illustrations of all the species that occur on the islands, it contained 28 superb plates by John O’Neill and eight “portraits” by Don Eckelberry. Despite receiving a rather critical review by Bond (1974), additional information and demand warranted revised editions in 1976
and 1980. Finally, in 1991 a second edition was published. Updated with ffrench’s copious notes and many more illustrations, this book was to become his magnum opus. A criticism of both editions was that all the natural history information had created more of a handbook than a field guide (Bond 1974, Bildstein 1992). This concern persists with the third edition.

In 2007, the evolution of this classic work seemingly ended with the death of Richard ffrench (Don Eckelberry had passed away in 2001), but the 3rd edition, completed by a team of collaborators spearheaded by O’Neill and Geoffrey Gibbs, culminates ffrench’s contribution. According to O’Neill, art coordinator for the third edition, “Despite the problems of his illness, the advances of modern technology allowed us to show him copies of almost all the new plates.” Addressing the continued concern over too few species illustrated, the third edition includes 40 plates. To accomplish this, O’Neill worked with illustrators John Ander- ton, Dale Dyer, Debby Kaspari, Daniel Lane, John Schmitt, John Sill, and Barry Van Dusen. Despite having eight artists involved with the creation of the plates, they flow remarkably in style. My only concerns are that some of the illustrations are small (10 mm), which can be a challenge for aging eyes like mine! In addition, given this is likely the last edition, and hence the one likely to be maintained in reference libraries, it would have been nice if the portraits by Eckelberry could have been retained.

Unlike most field guides, the book includes considerable detail that develops both the history of ornithology in Trinidad and Tobago and the evolution of the book itself. The book starts with several introductory articles, including a tribute to Eckelberry, a description of the role of the Asa Wright Nature Center, and four forwards and prefacing that acknowledge the contributors and describe the process of bringing the volume to publication. After an Introduction, the environment and conservation of the islands are discussed. Species profiles follow using a rather standard format, with sections for habitat and status, range and subspecies, description, measurements, voice, food, nesting, behavior, and notes. Bond (1974) commented on the first edition that a map showing where species were encountered would have been a positive addition. This request has been partially met with a map of some 92 labeled landmarks, although few species accounts mention locations of sightings.

Those desiring to use the book as a field guide will likely applaud the additional plates, even though the increased number was also accompanied by an overall increase in pages from 470 in the first edition to 570, resulting in a book weighing in at nearly two pounds. This contrasts with the recently published Helm Series publication Field Guide to the Birds of Trinidad & Tobago (Kenefick et al. 2008), which is half the weight. The slim field guide relied heavily on earlier editions of ffrench; the reader eager for more information about the natural history of the island’s avifauna should choose the new edition of ffrench. For example, when I visited Trinidad as part of an exploratory effort in 1991 to consider the reintroduction of Red Siskins (Carduelis cucullata), ffrench’s well-referenced historical information of not only the siskin, but other small seed-eating species, was indispensable. The 3rd edition includes valuable recent information.

Finally, for those desiring to learn more about the life of ffrench, a tribute to him was published in 2002, including an excellent biography by his friend Peter Bacon (Hayes and Temple 2002).

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