Book Reviews

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Book Reviews

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The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.

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Handbook of the Birds of the World, vol. 15: Weavers to New World Warblers.—Josep del Hoyo, Andrew Elliott, and David Christie, Eds. 2010. Lynx Edicions, Barcelona, Spain. 879 pp., 60 color plates, 495 photographs, 614 distribution maps. ISBN 9788496553682. Hardcover, $304.—The penultimate volume in this landmark series provokes the now expected praise that almost all reviewers of previous volumes have noted: expert authors have again produced the family overview chapters and species accounts that are valuable compilations; competent artists have illustrated all species in each family, as well as many distinctive subspecies and age–sex categories; and talented photographers have captured images that are not only spectacular but also biologically informative. Families covered are Ploceidae (weavers), Viduidae (whydahs and indigobirds), Estrildidae (waxbills), Vireonidae (vireos), Fringillidae (finches), Drepanididae (Hawaiian honeycreepers), Peucedramidae (Olive Warbler), and Parulidae (wood-warblers). The format and contents of the family chapters are consistent with earlier volumes (see previous reviews in *The Auk* for details) and will be familiar to users of the *Handbook of the Birds of the World* (HBW). The quality of the plates in this volume, in terms of capturing true postures and shapes, is in my opinion better than in any previous HBW volume.

In the tradition of HBW, the foreword is actually a review of a broad topic, in this case exceptionally broad: "Conservation of the world's birds: the view from 2010" by S. Buchart, N. Collar, A. Stattersfield, and L. Bennun. This 50+ page chapter is a gold mine of summary statistics, case studies, and literature citations (~400) that succinctly covers every major threat to bird populations. As a good review should, it allows the reader to catch up on topics for which the primary literature is often scattered and, in the case of conservation, often "gray." The graphics should be useful to anyone teaching courses that involve bird conservation—they provide the quantification needed to avoid conjecture and assumption.

For me, the HBW family review chapters are essential reading for a synopsis of a bird family's biology. Naturally, the more unfamiliar the family, the more I learn. Such was particularly the case for the Ploceidae chapter by A. J. F. K. Craig, who, with 35+ years of research on various weavers, has produced an exceptionally thorough review of their biology. Because many weavers thrive in captivity, the physiological and behavioral literature is unusually rich. Craig successfully illuminates the many features of ploceid biology that make them one of the most interesting passerine families. In addition to their well-studied and unrivaled intricacy in nest architecture, few bird families match their diversity in social systems. The accompanying photographs illustrate these features beautifully. The gallery of nest photographs will amaze anyone with an interest in birds. Although I had some grasp of the distinctive features of ploceid biology, I did not know that certain species forage on branches like nuthatches or that others specialize in searching hanging dead leaves. Likewise, I had no idea that one species is likely the primary pollinator of certain aloes. I did know that the Red-billed Quelea (*Quelea quelea*) is considered by many to be the most abundant bird on the planet, but I was still shocked at figures such as 6,000 nests per tree and 31 million nests in a single colony.

The Viduidae are reviewed by Robert Payne, who has been publishing on this family and their sister family the Estrildidae for more than 40 years. The family consists of only two genera and 20 species, all endemic to the Afrotropics, and it is the only family composed entirely of brood parasites. The complex host–parasite relationships with their primary hosts (the Estrildidae) have been the focus of Payne's research, and his succinct summary of these and their complex speciation patterns is the highlight of the chapter. Briefly, both male and female young viduids learn the song of their host species; the males then sing these songs when mature, and females are attracted to them. Host switching then provides a mechanism for speciation (leading to major revision in species limits as a consequence of Payne's research), and up to three species may be syntopic. Mouth-lining markings of the nestlings of the parasite species mimic those of their host species, and their eggs are essentially indistinguishable. All in all, this is the most complex and "tightest" host–parasite system in birds. By contrast, the recent addition to the family, the Cuckoo Finch (*Anomalospiza imberbis*), a former member of the Ploceidae, parasitizes members of the Cisticolidae, does not engage in vocal mimicry, and removes host species' eggs.

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Payne, naturally, also reviews the Estrildidae and again provides a broad review of the biology of the family, which includes an extensive literature, both descriptive and experimental, based on captives. The Zebra Finch (*Taeniopygia* [*guttata*] *castanotis*) alone is the subject of perhaps more than 5,000 research papers; as of this writing, the Web of Science alone lists over 3,400 (likely more than any other bird besides poultry). Compared to the previous two families, the waxbills have more species, more colorful and complex plumage patterns, and are more widely distributed, but their biology is not as fascinating, at least to me. Perhaps the highlight is their unprecedented development of color and pattern in the mouths of nestlings, often supplemented with conspicuous papillae and other swellings; this includes species not subject to brood parasitism.

Oddballs and outliers that caught my attention in the relatively homogeneous Estrildidae are few. The Locust Finch (*Paludipasser locustella*) is a completely terrestrial grassland species. By contrast, the species in *Parmoptila* and *Nigrita* are relatively long-billed insectivores of forest canopy, and *Parmoptila* feed heavily on ants. The Pale-fronted Negrofinch (*Nigrita luteifrons*) feeds frequently on scale insects and oil palm fruit. The bill-size morphs in *Pyrenestes* (seedcrackers) have few equivalents in birds. Species in several genera regularly eat filamentous algae picked from water. The Pink-billed Parrotfinch (*Erythrura kleinschmidti*) of Vitu Levu is a striking example of insular niche expansion: it is a largely insectivorous forest species with an oversized bill that forages on branches, probes rotting wood, and pulls apart dead leaf clusters, but also feeds extensively on fruit—in other words, a mini-barbet that has diverged strongly from the grass-seed-eating behavior of the majority of estrildids.

The Vireonidae, a family in the corvoid radiation, is awkwardly included in this volume because of the now refuted view that they were related to the "nine-primaried" oscine families in this volume. Although authors D. Brewer and R. Orenstein have little direct research experience with the family, few others currently can really make such claims, and the authors have done an excellent job in compiling information on this family. They appropriately emphasize the recent findings from DNA sequencing that reveal that vireos also occur in the Old World: the ex-babbler genera *Erpornis* and *Pteruthius*. This amazing discovery has been underpublicized. When our first specimens of *Erpornis* arrived at LSU in 2002, I proclaimed them convergent on *Hylophilus* greenlets and was about to include them in a teaching lab as an example of convergence when Rob Moyle pointed out that Cibois et al.'s paper had just revealed their vireonid relationship. Within New World vireos, as the authors note, a comprehensive revision of their classification awaits more thorough taxon sampling. An easy prediction is that such a gene-based analysis will fracture broadly defined *Vireo* and *Hylophilus* into multiple genera.

Unlike the previous three, the vireos are not a glamorous family with off-the-charts features, and the family chapter did not reveal to me any juicy tidbits worth trumpeting here. Actually, the authors missed some of the only marginally interesting vireo outliers. Several greenlets in *Hylophilus* have an unusual foraging technique of persistently grasping the outer margins of large leaves rather than using adjacent stems for access; this accounts for the acrobatic upside-down foraging behavior mentioned for most species. Ironically, such behavior is mentioned for the Noronha Vireo (*Vireo gracilirostris*) in its photo caption as an example of insular specialization but without reference to *Hylophilus*. Although vocal copying by the White-eyed Vireo (*V. griseus*) is mentioned in its species account, vocal copying is not mentioned in the Voice section of the family chapter. This species' song includes "perfect" copies of the call notes of so many species that it represents a potential hazard to those doing bird surveys by sound. Is it really the only vireo that does this so professionally? Could vocal mimicry in this species reflect the membership of vireos in the corvoid assemblage, in which vocal copying is not uncommon?

The Fringillidae, the largest family in this volume, is reviewed by N. Collar and I. Newton, with species accounts by P. Clement (author of a Helm–Princeton book on the family). Found nearly globally and with an extensive research literature, including experimental and avicultural, this family is a tough one to review. Web of Science shows 487 hits just on "*Carduelis*" (vs. just 395 for "*Vireo*," which represents both a genus and an English name). Yet the authors have again done a remarkable job. Exclusion of the Drepanididae, a group embedded within this family, as well as the ex-tanagers *Euphonia* and *Chlorophonia*, reduced the workload. As summarized by Collar and Newton, despite the volume of research on the family, current generic boundaries, based largely on plumage and morphology, conceal the true within-family relationships, as revealed by DNA sequence data, to an unusual degree; thus, expect major overhauls over the next few years. As also noted by Collar and Newton, much of the biology of this lineage is driven by their dependence to varying degrees on the seeds of dicots, more so than for any other bird family.

My penchant for pointing out gee-whiz facts continues for the Fringillidae. The large, brown, massive-billed Sao Tome Grosbeak, currently in the monotypic genus *Neospiza*, is apparently sister to a sympatric run-of-the-mill *Serinus* species and thus provides another example of spectacular phenotypic diversification on islands. Am I the only one who didn't know that the Hawfinch (*Coccothraustes coccothraustes*) has uniquely truncated secondaries that increase exposure of the oddly shaped primaries when perched? Members of the diverse radiation of fringillids in the Himalayas, Roborovski's Rosefinch (*Kozlowia roborowskii*) seldom occurs below 4,500 m and Brandt's Rosy-Finch (*Leucosticte brandti*) occurs as high as 6,000 m (!). The photo of the wine-red Vinaceous Rosefinch (*Carpodacus vinaceus*) eating rosy-pink flowers is surreal. Brambling (*Fringilla montifringilla*) roosts may contain 10 million individuals. Some species of the Fringillidae are famous for irruptive movements driven by variation in seed crops, but four individual Common Redpolls (*Carduelis flammea*) recorded more than 8,000 km apart in different winters, including one in Michigan one year and far eastern Russia in another, takes this to new extremes. Then, of course, we have the fascinating evolutionary system but seemingly intractable taxonomic problem of species limits in the Red Crossbill (*Loxia curvirostra*) complex; as noted by Collar and Newton, similarities to the *Pyrenestes* situation in the Estrildidae suggest treatment of this complex as a single species composed of multiple demes adapted to local seed crops.

The Drepanididae, ranked as a family separate from the Fringillidae mainly for convenience, is reviewed by—who else—D. Pratt, who has been publishing on this group for over 40 years and who has authored the Oxford University Press book on the family. That expertise is evident in the comprehensive family chapter. Particularly informative is the history of the study of the relationships of this lineage, whose once controversial relationship to the Fringillidae has now been confirmed by virtually

every type of data that can be applied to determining phylogeny, and also includes a highly unusual data type: body odor. Endemic to the Hawaiian islands, the rapid morphological diversification of the "dreps" into multiple morphotypes that encompass much of the range of variation among families of passerines is one of the planet's great examples of adaptive radiation. Bark-rippers, branch-probers, snail-eaters, and professional flower-pollinators have all emerged within 5 million years from the inoculation of these islands by a cardueline finch prototype. Pratt's beautiful illustrations facilitate the appreciation of this radiation. Tragically, virtually every species in the surviving members of the family is currently of conservation concern if not critically endangered.

As Pratt notes, any summary of the biology of this lineage is severely handicapped by the high percentage of extinct species. At least 16 species are known to have gone extinct since 1600, and it is unlikely the true scope of extinctions will ever be known because the lowlands were nearly completely deforested by native Hawaiian people before first contact with Europeans (and lowland forests typically contain the richest avifaunas of a region). The arrival of Europeans catalyzed a new wave of extinctions caused by introduced diseases, plants, predators, and herbivores that eliminated native vegetation. Pratt succinctly summarizes this depressing history.

An appropriately brief chapter on the monospecific Peucedramidae by J. Curson is highlighted by the history of classification of the Olive Warbler (*Peucedramus taeniatus*). At one time comfortably included in *Dendroica* in the Parulidae, its lack of clear relationship to any New World family was demonstrated by a variety of evidence first gathered by W. George. Genetic data have yet to firmly establish a sister relationship to any other family, but the Prunellidae is a leading candidate. In any case, the Olive Warbler is the only member of a lineage long isolated from other passerines and represents a dramatic example of morphological conservatism despite this independent history.

The last family in this volume, the Parulidae (called "New Word warblers" in HBW), is reviewed by J. Curson, who was the lead author on the 1994 Helm identification guide for the family. Curson was constrained to follow predetermined, somewhat traditional family limits, so the Parulidae here include several genera that, as Curson notes, are definitely not part of this lineage: *Granatellus*, *Icteria*, *Zeledonia*, *Microligea*, *Teretistris*, and *Xenoligea*. Inclusion of these taxa complicates summaries of the biology of the family. Further, the recent comprehensive revision of the family by I. Lovette and colleagues indicates that most traditional genera are not monophyletic; thus, any summaries using traditional generic boundaries are compromised. Fortunately, Curson was savvy to most of this new information and included it in the Systematics section; however, in several instances, he notes that a feature is unusual for the family when the taxon showing this feature is, in fact, not part of the family (e.g., use of feet in holding food by the Yellow-breasted Chat [*Icteria virens*] and the mossy ball nest of the Wrenthrush [*Zeledonia coronata*]).

Because *Auk* readers are likely more familiar with this family than any other in the volume, my penchant for highlighting oddballs is muted because most are familiar with nuggets such as the migration route of the Blackpoll Warbler (*Dendroica striata*) and the bark-foraging specialization of the Black-and-white Warbler (*Mniotilta varia*). Even so, the parulids are a relatively homogeneous group in most aspects of their biology. From the global perspective, their primary highlight in my view is the explosive (and recent) diversification in plumage color and patterns in the *Dendroica–Setophaga* group. So, here I digress to whining and quibbling. Curson implies that fallouts of migrating warblers are restricted to the Texas coast, when in fact they are a feature of the entire Gulf Coast and are at least as spectacular in my home state Louisiana as in Texas. Curiously, Curson also calls them "falls" rather than the long-established and evocative term "fallout." Although the autumn vagrancy of eastern warblers to the Pacific Coast of North America is emphasized, the spring pulse of vagrant warblers to the region is not; the latter, however, is biologically more intriguing because its peak is in June, long past typical migration periods. The 1992 influx of southeastern warblers in the western United States is mentioned, but evidently overlooked was Patten and Marantz's *Auk* paper that documented more than "several" records of Hooded Warblers and Northern Parulas (i.e., 76 and 138 records, respectively, including successful nesting records for both). Although coverage of migration routes and vagrancy is extensive, with almost an entire page devoted to records of vagrants in Bermuda and Europe, the Movements section largely neglects two decades of important research by P. Marra, S. Sillett, T. Sherry, R. Holmes, and collaborators that focuses on linking migration biology to events on the wintering and breeding areas; wood-warblers have been the workhorses of studies of connectivity. In general, the family chapter would have been improved greatly by collaboration with an active researcher based in North America.

As every reviewer of HBW has noted, these volumes represent a monumental achievement in ornithology. Although relatively expensive, they are in fact an amazing bargain. For a researcher, the family chapters and species accounts, backed by an immense bibliography, provide a valuable entry-level resource. For bird enthusiasts, the stunning photos, the outstanding "field guide" plates, the range maps, and the synopses of habitat, behavior, and voice all make these volumes valuable bookshelf references. Considering the number of pages, the volume of color photos and plates, the expertise of the authors, and the sheer volume of information, HBW volumes provide more bang-for-buck than any bird books with which I am familiar. Joining the global bandwagon chorus of praise, I congratulate the editors and staff of HBW. These volumes, including the current one, illuminate and celebrate the diversity of birds.—J. V. Remsen, Jr., *Museum of Natural Science and Department of Biological Sciences, Louisiana State University, Baton Rouge, Louisiana 70803, USA. E-mail: najames@LSU.edu.*

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Bird Migration and Global Change.—George W. Cox. 2010. Island Press, Washington, D.C. x + 291 pp., 9 text figures. ISBN 9781597266888 (paper); 9781597266871 (cloth). $45.00 (paper), $90.00 (cloth).

Effects of Climate Change on Birds.—Anders Pape Møller, Wolfgang Fielder, and Peter Berthold, Eds. 2010. Oxford University Press, New York. x + 321 pp., 9 color plates, 71 text figures.