# BRIEFLY NOTED: A Birds of the World Quartet

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## A Birds of the World Quartet

**Birds of the World**.—Les Beletsky. 2006. Johns Hopkins University Press, Baltimore, Maryland. 513 pp., 1690 color illustrations, 6 tables. ISBN 978-0-8018-8429-2. $50.00 (cloth in plastic slipcover).

This is a book aimed at beginning to intermediate birders, and which is designed to provide a general introduction to worldwide avian diversity. The book is divided into a short (11-page) Introduction, the "family" accounts, which make up the bulk of the book, and a concluding section entitled *Avian Diversity and Biogeography*, followed by a two-page bibliography, consisting only of books, rather than primary literature, and a useful index. The Introduction first discusses why people are attracted to birds and then describes the general layout of the accounts of bird groups, with one- to several-paragraph summaries of classification, diversity, distribution, morphology, ecology, behavior, and conservation status, which are the subsections that are treated in each group account. The group accounts make up the bulk of the book and are generally arranged by taxonomic families, but in some cases, several families are lumped (e.g., ratites). A total of 133 of these "family" accounts are included, and nearly 1300 species are illustrated. Some species illustrations include both male and female (for strongly sexually dimorphic species), and some include immature plumage illustrations, if juveniles differ substantially from the adults (e.g., gulls). The illustrations were produced by several artists and are of the two-dimensional field guide variety, but nevertheless, they are generally of very good quality, although in some cases, the color seems a little washed out (e.g., Horned Lark [*Eremophila alpestris*], Blackburnian Warbler [*Dendroica fusca*]) or a little off (e.g., Scott's Oriole [*Icterus parisorum*] and Yellow Grosbeak [*Pheucticus chrysopeplus*] are a little too green, and the red for the Red Knot [*Calidris canutus*] is not bright enough). The illustrations do, however, effectively serve their purpose of providing a general sense of the physical appearance of birds in the different families, and I greatly enjoyed perusing them.

Each "family" account is limited to two pages, so, necessarily, only very general characteristics of the group are treated. The classification section describes the general characteristics of the family, the order to which the family belongs, relationships with closely related families or orders, and any questions regarding classification of certain species within the group. The accounts also briefly and generally treat species diversity, distribution, habitat affinities, behaviors, breeding systems, and conservation status of the families. Because the family accounts are short, they tend to be very general in their coverage of material. For example, in the wood warbler account, Beletsky notes that

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migratory warblers are territorial during the breeding season, but makes no mention of the winter territoriality that occurs in many of these migratory species. As another example, Beletsky points out that hummingbirds have very high metabolic rates and food demands, and that they may quickly starve if deprived from feeding, but does not discuss their regular use of torpor as an energy-saving mechanism.

The conservation status section typically just lists the potential threats facing the group and how many species are vulnerable, threatened, or endangered (following Birdlife International's *Threatened Birds of the World*), without denoting the particular species. However, in some cases, species of conservation concern are specifically listed or discussed, such as the Kirtland's Warbler (*Dendroica kirtlandii*), which is misnamed as Kirkland's Warbler in the wood warbler account.

The section treating avian diversity and biogeography is organized mainly as a series of general questions, such as "How Many Kinds of Birds are There?" or "How are Bird Species Distributed?", followed by discussions of a paragraph to several pages that attempt to answer these general questions. I thought this section provided a nice overview of some of the big general questions in avian diversity and biogeography, but the treatments of these questions were rather cursory, as would be expected for a book serving as a general introduction to birds of the world. The avian diversity section begins with a presentation of the biological species concept and a discussion of its shortcomings, which is then followed by a treatment of how molecular data have revised our concept of species and have resulted in an increase in the overall numbers of bird species in recent years. Other species concepts are not presented in this discussion, however. Other topics of avian diversity and biogeography discussed in this section include species diversity in birds compared to other terrestrial vertebrates, the density and diversity of different families and orders of birds, zoogeographic regions of the world and their characteristic birds, tropical diversity, island biogeography, and understanding the current decline in avian diversity. The discussion of this latter topic correctly relates recent declines in many bird species to human activities. Six useful tables are scattered throughout this section and cover the largest bird families, bird species diversity comparisons by country (two tables), endemism by country, bird families with the most and least restricted-range species, and countries with more than 30 threatened bird species.

This book admirably serves its purpose of providing a general introduction to the world's birds, and the general treatment of avian diversity and biogeography should serve as a good starting point for further questions in these areas. It is not, however, an academic text, and while it might serve as a useful supplement to lectures on worldwide bird diversity in an ornithology course, it will be of little use to practicing ornithologists.

**The Clements Checklist of Birds of the World.**—James F. Clements. 2007. Sixth Edition. Cornell University Press, Ithaca, New York. 864 pp. ISBN 978-0-8014-4501-9. $59.95 (cloth).

This sixth edition of *Clements Checklist of Birds of the World* continues the tradition of the previous five editions in providing a comprehensive listing of the world's birds along with a brief encapsulated description of the species' ranges. The book begins with a memorial foreword to the late J. F. Clements by Jared Diamond. This is followed by a foreword, entitled "The ABA and the Clements Checklist," by Anthony W. White and a preface, entitled "The Cornell Laboratory of Ornithology and the Clements Checklist," by John W. Fitzpatrick. These forewords and preface provide some of the history of the development of the checklist and its evolution to its current form, but do not give a detailed account of the decisions on classification and taxonomy used in the book. The checklist follows a rather traditional classification system and arranges species differently than, for example the AOU *Checklist of North American Birds* (1998). A few examples of such differences include loons, grebes, Procellariiformes, pelicans and cormorants, and waders all being listed before waterfowl; vireos being listed just before finches and wood warblers, and euphonias being included with finches. Because the taxonomy and classification used in the book vary from other similar efforts, some discussion of how the classification used in the book was derived would have been useful.

Following the two forewords and the preface are a list of abbreviations used in the checklist and a list of avian orders and families treated in the text, with the number of species for each family listed. Nowhere in the text is the total number of bird species included in the checklist listed, but I added up the species numbers from the orders and families list and came up with a total of 9930 species, of which 5893 (or 59.3%) are passerine birds. After the list of orders and families comes the main checklist, which forms the bulk of the book. The checklist is set up similarly to previous editions of the book, with common and scientific names for each species followed by a brief summary range description, which includes both summer and winter ranges for migratory species. Currently recognized, or at least suggested, subspecies, with range descriptions, are also included in this edition, similar to the fifth edition. For example, 14 subspecies of Dark-eyed Junco (*Junco hyemalis*) are listed, not all of which are recognized by all authors (AOU 1998), as are three species of Ruby-crowned Kinglets (*Regulus calendula*), including the Guadalupe Island subspecies, *R. c. obscurus*, which is now considered extinct (Quintana-Barrios et al. 2006). Nevertheless, the listing of subspecies is useful, as new molecular studies may elevate some of these subspecies to full species status in the future.

The checklist is followed by a list of bird species becoming extinct since 1600 and two appendices, both listing the same information: total number of species and number of endemic species for geographic regions of the world (usually countries, but, for example, the contiguous United States is treated separately from Alaska and Hawaii). Appendix A arranges the list of countries in descending order based on the total number of species present; Appendix B arranges the same list in descending order by the number of endemic species present. Both lists are useful for biogeographic analyses. A bibliography follows the appendices and consists of two separate sections, one for major family references and another for general references. The bibliography consists mainly of books but also includes some references from the primary literature. Thorough indexes are provided for both scientific and English common names. A final feature of the book worth mentioning are color-coded maps on the front and back inside covers that show the distribution of the number of bird species and the number of endemic bird species for different countries, which basically provide similar information to the two appendices in map form.

This book is really designed for birders, which is why the American Birding Association has endorsed this checklist as its official world bird checklist, but it is also very useful as a general ornithological reference, providing taxonomic and general distribution information for the world's birds. For example, I often consulted previous editions of this book when I was reading though scientific papers and was confronted with the scientific name for an unknown species from a region of the world for which I was unfamiliar with the avifauna. This newest edition of the checklist will serve as a great reference in this regard.

**Handbook of the Birds of the World. Volume 12: Picathartes to Tits and Chickadees**.—edited by Josep del Hoyo, Andrew Elliott, and David A. Christie. 2007. Lynx Edicions, Barcelona, Spain. ISBN 84-96553-42-2. $265.00 (cloth).

Volume 12 in the *Handbook of the Birds of the World* series follows a similar format to previous editions and covers 15 avian families: Picathartidae, Timaliidae, Paradoxornithidae, Pomatastamidae, Orthonychidae, Eupetidae, Pachycephalidae, Petroicidae, Maluridae, Dasyornithidae, Acanthizidae, Epthianuridae, Neosittidae, Climacteridae, and Paridae. This volume includes a foreword by K. J. Caley reviewing fossil birds worldwide, which is followed by the family accounts and species accounts that form the bulk of the book. The format of these accounts will be familiar to followers of this series. Family accounts include subheadings covering systematics, morphological aspects, habitat, general habits, voice, food and feeding, breeding, movements, relationship with man, and status and conservation. A general bibliography listing authors and dates of reference works follows each family account, with full citations listed in the General References section at the end of the book. Species accounts follow the family accounts and treat each species within the family individually. The species accounts are systematically organized and include sections on taxonomy, subspecies and distribution, descriptive notes, habitat, food and feeding, breeding, movements, status and conservation, and a species-specific bibliography. As in the previous volumes, numerous stunning photos accompany the family accounts, and the species accounts are accompanied by high-quality, field guide–type illustrations of the individual species, showing subspecies variation and sexual dimorphism in plumage, where applicable. One drawback of these accounts is that citations are not provided in the text of either the family or species accounts, even when referring to results of specific studies. This practice shortens the book (which is desirable since these volumes are already mammoth tomes), but limits its usefulness as a "jumping off point" for digging further into the primary literature.

The foreword on fossil birds provided a very nice survey, arranged taxonomically from primitive to advanced taxa, of the diversity of fossil birds. Each order, subclass, infraclass or other grouping of fossil birds treated included a listing of the number of fossil species and genera in that taxon. The accounts of fossils from each taxon cover geologic ages of the fossils along with biogeographical and evolutionary patterns of the group. The survey of fossil birds begins with a discussion of avian origins and what *Archaeopteryx* and the recently discovered Cretaceous fossils of feathered dinosaurs and early birds from China add to this discussion. Other Cretaceous birds, including the Enantiornithes, Ichthyornithiformes, and Hesperornithiformes, are also treated before moving on to fossils of Neornithine birds. The incongruence between the fossil record, which suggests a Tertiary origin of most modern avian orders, and molecular clock data, which suggest a Cretaceous origin for many of these groups, is addressed briefly with Caley's mentioning (p. 31) that the "limited fossil record of neornithine birds from the Cretaceous and Paleocene," according to recent work (citing Ericson et al. 2006), "may be a real phenomenon rather than an artifact of the fossil record." If so, this supports the contention of Feduccia (2003), derived from the fossil record, that birds underwent an explosive radiation in the Tertiary.

One example of an interesting tidbit from this survey of fossil Neornithine birds is that *Gastornis gigantea* (formerly *Diatryma*), the giant heavy-billed flightless bird from the Eocene of North America, is now regarded as closely related to the Anseriformes, rather than the Gruiformes as in most previous classifications, and that features of the bill suggest that it was herbivorous rather than carnivorous, although debate still exists regarding this latter conclusion. *Diatryma* is treated as a carnivore in the most recent ornithology textbooks (Gill 2007, Podulka et al. 2004). In another interesting example of a contested phylogenetic placement of a taxon, Caley states that the New World vultures, traditionally classified along with the Falconiformes, are revealed by both molecular and morphological work to be more closely related to the storks (Ciconiiformes), which is the current classification accepted by the AOU (1998). However, recent molecular evidence suggests that New World vultures may indeed be allied with the Falconiformes (Ericson et al. 2006), as traditionally suggested, so the final word on classification of New World vultures likely has yet to be written.

One general comment regarding the family accounts is that figures presenting the most recent phylogenies, showing the relationships among species within the families, are not provided, except in a few of these accounts, where figures showing the main subdivisions of the family are presented, but not in a phylogenetic framework. The omission of such figures makes the text of the systematics sections somewhat difficult to follow. Nevertheless, the family accounts are extremely well done and lavishly illustrated. Even the figure captions accompanying the photographs are very informative.

Given the large research interest in parids in both the Old and New World, I read the Paridae family account in detail and will limit my specific comments on the family accounts to this one. The Paridae account provides a very nice overview of the biology of this avian family and forges many important connections between various aspects of parid biology. For example, one important distinction within the parids is their social organization into flocks, which is treated under the "General Habitats" subsection. Parids are divided into pair-territorial species, where the breeding pair mates for life and remains on their breeding territory year-round; group-territorial species, where the breeding pair forms the flock nucleus of a stable flock consisting of another adult pair and, usually, one to several juveniles; and true flocking species, where the breeding pair may form the nucleus of a flock, but the flock composition changes over time. This flocking behavior is related to other aspects of parid biology including food hoarding (pair- and group-territorial species tend to cache food, whereas true flocking species generally don't), plumage badges and agonistic encounters (plumage badges are better developed in flocking species, which tend to show increased agonistic interactions compared to pair- and group-territorial species), cooperative breeding (many African *Parus* species are cooperatively breeding pair- or group-territorial species), and movements (pair- and group-territorial species are largely sedentary). Detailing the connections between different aspects of parid biology is a strength of this account. Perhaps reflecting my physiological bias, I was, however, somewhat disappointed that the use of nocturnal hypothermia in parids was not discussed in more detail in the family account, as it is an important energy-saving mechanism in winter that is used routinely within the family and likely enhances overwinter survival in cold climates.

In summary, this volume, like its predecessors, will serve as a fantastic reference for information regarding the families treated therein. It will be useful as a general review of the biology of the treated families and as an entry point for literature searches regarding a wide variety of topics in bird biology for academic and professional ornithologists. It will also serve as an unparalleled reference for amateur ornithologists and birders. The price is high enough so that most users will have to access the books through libraries, but given the information content and the illustrations, the price is still a bargain.

**CRC Handbook of Avian Body Masses, Second edition.**—edited by John B. Dunning Jr. 2008. CRC Press/Taylor and Francis Group, Boca Raton, Florida. 665 pp. ISBN 1-4200-6444-4. $119.95 (hardcover).

The second edition of Dunning's *Handbook of Avian Body Masses*, like the first, provides a compilation of body masses of birds from all over the world. The first edition, published in 1992, contained mass data for 6283 species; this edition increases that total to 8734. Body mass data for numerous species from poorly covered areas in the first edition have been added, and better data (e.g., increased sample size or samples from a single locality replacing pooled samples from the previous edition) for numerous species are included in this edition. Despite these improvements, Dunning notes that species coverage is still better for the western hemisphere (particularly for species data published in English-literature journals) than for species data published in European or Asian journals and in non-English language journals. Nonetheless, the total species covered in this edition is an impressive 88% of the world's bird species.

The book is divided into three main parts: Part I provides body-mass data in tabular form for the 8734 species and makes up the bulk of the book; Part II, by Eugene P. Odum, provides body mass and composition for migrant birds in the eastern United States and is a carryover from the first edition; Part III is an extensive bibliography of sources used in the compilation of the mass data. An index of family and genus names is provided at the end of the book. Part I begins with an introduction describing data collection and sources, definitions of terms used in the body mass tables, comparisons of the first and second editions, cautionary notes on use of the mass data, and acknowledgements. A CD of body-mass data is included along with the book; this CD contains Excel files with the same data as presented in the book.

Dunning follows several conventions for inclusion of mass data in the book. Mass data for a species generally came from the study with the largest sample size or from the study with the most complete descriptive statistics if sample sizes are equal. Data were generally not combined from several sources unless the overall sample size for a particular species was <10 individuals. Mass data were generally derived from breeding birds when possible, but data from other seasons were included if breeding season data were not available. Data were preferentially collected from adult birds, but data from independent juveniles were included if adult data were not available. For sexually dimorphic species, mass data from both males and females were included, where possible. These conventions all seem reasonable for providing a first approximation of body mass for listed species. However, these data do not attempt to treat mass variation in birds, a topic of considerable interest among ornithologists, except for a few species where masses from different geographic locales are provided. Consequently, mass variation associated with geography, season, migration, phase of the nesting cycle, and molt is beyond the scope of the book. For example, the body mass provided for Black-capped Chickadee (*Poecile atricapillus*) is 10.8 g (from Pennsylvania), whereas the mean summer body mass of this species from our studies in South Dakota is 13.1 g (Cooper and Swanson 1994). Thus, these data should not replace measurement of mass in specific locales as part of ornithological studies. The author treats these shortcomings of the dataset in the "Limitations and Uses of Mass Data" section of the Introduction.

For species names, Dunning generally follows the fifth edition of Clements's *Checklist of Birds of the World* (Clements1998), but follows the seventh edition of the AOU *Checklist of North American Birds* (American Ornithologists' Union 1998) or the *Handbook of Birds of the World* series published by Lynx Edicions (del Hoyo et al. 1992–2007), when the Clements checklist diverges from these references. Thus, current taxonomy is not followed in terms of species order (e.g., loons and grebes precede waterfowl; vireos occur just before wood warblers). The table of mass data in Part I is organized by families and includes species name (scientific and English), sex (if known), sample size, mean mass, standard deviation (if provided in the original reference), mass range (minimum and maximum values, if available), season (if noted), location of capture (if noted), and the reference for the data.

The table of body masses and composition for migrant birds from eastern North America in Part II is the same table included in the previous edition and provides a previously unpublished dataset of fat storage by migratory birds from the studies of Odum and colleagues the 1960s. This table provides data on wet mass, dry mass, fat free mass, and ash free mass (for most species). Only 43 species are included in this table, but the dry mass, fat-free mass (measured after manual fat extraction, rather than the typical Soxhlet procedure), and ash-free mass are useful data for modeling energy storage and use during migration. This table includes the species' scientific name, the age or sex class (which is useful for examining variation among adults and juveniles in energy storage and use), sample size, mean mass, standard deviation, and mass range (minimum and maximum values). Part III is a very thorough literature cited.

These data are likely to be most useful for allometric modeling of physiological and ecological functions in birds and will be of most use to professional ornithologists interested in pursuing such questions. The impressive number of species makes large-scale comparative studies of allometric functions possible, which is a big positive of the book. The literature cited section is also a valuable reference.—DAVID L. SWANSON, Department of Biology, University of South Dakota, Vermillion, SD 57069; E-mail: david.swanson@usd.edu.

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