

## BOOK REVIEW

**Paseriformes del Occidente de México: Morfometría, Datación y Sexado**, by Santiago Guallar, Eduardo Santana, Sarahy Contreras, Heriberto Verdugo, and Anna Gallés (2009). Published by the Institut de Cultura de Barcelona, Spain; 488 pages, hundreds of graphs and illustrations; available for free online at [http://w3.bcn.es/V01/Serveis/NoticiesV01/NoticiesListatNoticiesCtl/0,2138,418159056\\_418914204\\_2\\_1264006434,00.html?accio=detall&home](http://w3.bcn.es/V01/Serveis/NoticiesV01/NoticiesListatNoticiesCtl/0,2138,418159056_418914204_2_1264006434,00.html?accio=detall&home).

Molt is a difficult topic for most ornithologists to comprehend, yet it is a vital component of almost all aspects of avian natural history. Conservation of birds will necessitate protecting locations and habitats for molt, but because birds become very retiring while molting we have almost no understanding of their requirements for this process on a species-specific basis. Our ability to determine the age and sex of birds, essential to tracking population demography, also depends almost entirely on an understanding of molt. In North America and Europe we are slowly making progress on this subject, but for the Neotropical Region we are still in the dark. For the 2006 North American Ornithological Congress in Veracruz, Mexico, I reviewed the literature and my unpublished notes and calculated that we had some (but often very little) information on molt for only 24% of 934 species of resident neotropical landbirds, and for only 8% of the species did we have information on both extent and timing of molts.

*Paseriformes del Occidente de México: Morfometría, Datación y Sexado* by Santiago Guallar and collaborators (hereafter “POM”), despite lacking the word *muda* (“molt”) in its title (and I understand that this is my bias), is the most comprehensive treatment of molt in Latin American birds to date. It covers 76 species of passerine birds that occur in the biogeographically diverse Sierra de Manantlán region of Jalisco, Mexico, 52 of which are resident species or have resident breeding populations. Only *Birds of El Salvador* by D. R. Dickey and A. J. van Rossem (1938) treats molt in more neotropical species (89), but these treatments are far less detailed than those in *POM*. Furthermore, *POM* adds substantial value to our understanding of molt by also treating the poorly known winter-ground molts of 24 winter visitors, by placing molt strategies of both resident and migratory species within biogeographical and ecological contexts, and by linking molt with criteria for determining age and sex for each species. Biometric data on 11 characters (wing length, tail length, tarsus, mass, etc.), exceedingly complete feather-specific data on wing and tail morphology, and information on skull-ossification rates and reproductive characters defining breeding seasons round out the contribution for these 76 species, making it one of the most comprehensive collection of such data for any specific avifauna in the world.

The published version of *POM* is a full 488 pages, including 142 pages of introductory material, 330 pages devoted to the 76 species accounts, and 16 pages listing 523 citations to the published scientific literature. Only a limited number of copies were printed, but the entire volume is retrievable for free on line (see above), making it easily available to biologists worldwide. The entire volume is in Spanish, which will also enable access to the Latin American biologists who need the information most, although English-only North American ornithologists may have difficulty using it. Perhaps an English translation can be considered.

The introductory material includes full details on the methods and terminology used to obtain capture data, examples and considerations of ways to analyze these data, and comprehensive summaries on use of morphometrics, sex-specific plumage and reproductive characters, molt, and age-determination criteria, all of which is considered in the context of a species' annual molt and breeding cycle. The ecological biogeography of the study area is well described, and summarized findings are related to information on altitude, climate, and conservation requirements of the region. The

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introductory sections on morphometrics and molt are full of graphs and charts correlating these aspects of natural history with the surrounding environment and proposing hypotheses for how these surroundings shape life-history traits in this avifauna. Cutting-edge analyses consider trade-offs between wing morphology and migration, age, and bird mass, and between biometrics and molt strategies. A full 45 pages are devoted to methods of determining age and sex in captured birds, making it the most comprehensive Latin American treatment of this subject in existence. Seven full pages are devoted to explaining the layout and presentation of the species accounts.

My only disappointment with *POM* is the choice of an antiquated European molt and plumage terminology for use in the species accounts, rather than the clearly more scientifically defensible Humphrey–Parkes (H-P) system used by most American ornithologists (including most in the neotropics) to trace molt and plumage homologies in an evolutionary context. I suppose in some respects it is unfortunate that Philip Humphrey and Ken Parkes were Americans; otherwise, Europeans such as Guallar and others in “Britain and the World” would more likely accept H-P terminology. Anti-Americanism may well be justified in some arenas, but I believe the theater of molt and plumage terminology is not one of them.

Reasons given for using European molt nomenclature (p. 28) are brief and outdated, and I believe that the use of it results in some misconceptions. Adult tropical landbirds largely have protracted prebasic molts and lack inserted prealternate molts, so tracing presumed homologies under the H-P system is not difficult, but in *POM* the complete molt seems to be called by different names depending on where and when it occurs, making molt strategies difficult if not impossible to be placed into an evolutionary context. Under European systems, furthermore, a single protracted prebasic molt can be called a “post-nuptial” molt when it starts and a “pre-nuptial” molt when it ends, leading to the conclusion that there are two molts when in fact there is only a single protracted molt. Especially in the tropics it is important that molt terminology be divorced from terms related to breeding seasonality (as the H-P system does), given the protracted and variably seasonal breeding seasons, along with suspended molts, of many tropical species, as well as among some of the North Temperate Zone such as doves and crossbills.

The species accounts are absolute works of art. A heading with a photo of the species is followed by a general description, complete biometric and morphometric data presented in three tables, a thorough section on ageing and sexing the species, and a detailed section on molt with shaded diagrams showing the extent of molt. There are often additional graphs and a description of the annual cycle accompanied by easy-to-understand visual charts. For most of the tropical species these are the first descriptions of these characters, and I can’t wait to delve into the details on such genera as *Sittasomus*, *Mitrephanes*, *Myiozetetes*, *Henicorina*, *Melanotis*, *Cardellina*, *Granatellus*, *Diglossa*, *Cyanocompsa*, etc., and to learn more about winter-ground molts and plumages in migratory species of *Vireo*, *Catharus*, *Dendroica*, etc. Some day we will be able to put together an “Identification Guide” to neotropical birds, and *POM* plugs a large geographical hole, around which we can fill in gaps of knowledge about molts and plumages. I highly recommend it to the next generation of ornithologists, who, I am convinced, will develop information on molt strategies and these other topics to a greater extent than previous and current generations.

A version of this review first appeared (in Catalan) in the Catalan Ornithological Institute Bulletin *l'Abellerol*: [www.ornitologia.org/publicacions/abellerol42.pdf](http://www.ornitologia.org/publicacions/abellerol42.pdf).

Peter Pyle