

Infectious Diseases of Wild Birds

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BOOK REVIEW

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The following reviews express the opinions of the individual author(s) regarding the value of the book's content for Journal of Wildlife Diseases readers. The reviews are subjective assessments and do not necessarily reflect the opinions of the editors, nor do they establish any official policy of the Wildlife Disease Association.

Infectious Diseases of Wild Birds. Edited by Nancy J. Thomas, D. Bruce Hunter, and Carter T. Atkinson. Blackwell Publishing Professional, 2121 State Avenue, Ames, Iowa 50014, USA. 2007. 504 pp. ISBN 978-0-8138-2812-1. US \$89.99 (hardback).

Review by Ian K. Barker

After incubating for over a decade, *Infectious Diseases of Wild Birds* has hatched. At a meeting in St. Paul, Minnesota, WDA members intent on renewing the series of books on wildlife diseases formerly edited by Davis, Karstad, Trainer, and Anderson, committed themselves to an effort that has produced *Infectious Diseases of Wild Mammals* 3rd ed., *Parasitic Diseases of Wild Mammals* 2nd ed., now the book under review, and an anticipated *Parasitic Diseases of Wild Birds*. I was a participant in that meeting, and since then I have participated in several academic publishing ventures that took years to bring to press. Hence, I understand the angst of both authors and editors involved in this project, during which the original publisher also was bought out. The energy and toil invested by all who contributed to *Infectious Diseases of Wild Birds* is evident in the high quality of the content, which rewards their perseverance.

Covering all significant (and most less significant) viral and bacterial infections and biotoxins affecting wild birds, the 23 chapters are the work of 43 authors from the USA, Canada, the United Kingdom, Germany, Switzerland, Sweden, and Australia. All are well-qualified by diverse experience with their topics. The editors aimed this book at biologists and wildlife managers, biology and veterinary students, professionals in the fields of animal health and wildlife disease, and those with an interest in disease ecology. These targets are hit, in terms of the span, depth, and pitch of the content. Chapters broadly cover etiology; natural history of the host-agent-environment interaction; clinical signs; pathology; diagnosis; and implications of the agents/diseases under consideration for populations of wild birds, domestic animals,

and public health. While discussions focus on free-ranging wild birds, issues as they relate to captive wild and domestic birds are dealt with where relevant. Although clinical aspects are considered, this book does not pretend to be a complete guide to clinical diagnosis or therapy. However, it will be a most useful reference for zoo veterinarians and other clinicians dealing with wildlife in captive collections or rehabilitation facilities.

Each chapter is an excellent first point of reference and portal to the literature on its subject. A number of chapters arguably are the definitive review of relatively well-known diseases of wild birds, or of others that have emerged recently. Those on Newcastle disease, avian pox, circovirus, avian cholera, mycoplasmosis, avian botulism, and algal biotoxins perhaps stand out among a high-quality field in this regard. Highly pathogenic avian influenza virus, which emerged during preparation of this volume, is the subject of a very strong treatment that serves as a firm basis for understanding this still-evolving problem. However, West Nile virus (WNV), by far the most important arbovirus affecting wild birds, is not well served by the context in which it is presented. It is diluted by inclusion in a general chapter on arboviruses that use birds as reservoirs. After a large introductory section on WNV under Etiology, Host Range and Distribution, further discussion is scattered under the various subheadings (Immunity, Diagnosis, etc.) among the many other arboviruses, few of which actually cause disease in birds. As a result, it is hard to get a handle on WNV despite the fact that it dominates the arbovirus chapter. And in comparison with the level of detail devoted to many other diseases, WNV gets relative short shrift. However, the authors relate the key issues about WNV current to the time of writing, and there is much to reward persistent readers. Chapters on comparatively minor topics, such as orthoreoviruses, avian adenoviruses, retroviral infections, erysipelas, *Borrelia*, tularemia, and mycotoxicosis, are handled with authority. They provide ready access to the relatively scant information relevant to uncommon diagnoses and sometimes pesky questions asked by our clientele and students.

Several remind us of the indistinct margins of our knowledge of diseases in wildlife. Indeed, that is a message that can be taken from all chapters; there still is much to be learned.

As expected in such a compendium, the currency of information varies. Most chapters cite sources into 2004 or 2005, and for some rapidly evolving topics such as avian influenza, 2006. However, in a few cases sources subsequent to 2001 or 2002 are rare, likely reflecting asynchronous submission of chapters and variation in subsequent revision. Nevertheless, each chapter consolidates authoritative information essential to understanding the disease in question, which in any case needs to be supplemented by consultation of more recent literature as time passes. Many have benefited by inclusion of unpublished information from databases at the National Wildlife Health Center and the Southeastern Wildlife Disease Cooperative in the USA, and the Canadian Cooperative Wildlife Health Centre. And citation of 'grey' literature and attributed personal communications has permitted inclusion of recent or unpublished information that might have been omitted were only journal sources used. The usual caveats apply to interpretation of such material, but it has been sought out and evaluated by authors whose judgment I trust. I commend the editors for allowing them this freedom.

Fortunately, authors also had the license in many cases to provide considerable historical context and very thorough tables summarizing susceptible species, distribution of incidents of disease in space and time, etc. These provide depth to the presentations, and validate the chapter as a review that has gone back to its scientific roots. Maps and illustrations are found in all but seven chapters. They assist the reader in understanding disease distribution, epidemiological concepts, clinical signs, and gross, microscopic or ultrastructural lesions. A few chapters might have benefited from more illustrations. Most figures are of high quality, but one is badly pixilated (Fig. 6.2), and a better image of polyoma inclusions, difficult to portray at the best of times, might have replaced Fig. 10.1. The typography is clear and easy to read, the paper of high quality, and the binding and full-color paper on hardboard covers are the current industry standard. I trust that they will withstand the heavy use that I will be giving them.

There is a 27-page index that, while probably adequate for searches along agent- or subject-based axes, is very difficult to search on a host basis to create with confidence a complete host-agent/disease checklist. In a

book organized along agent lines, covering diseases of many host species in several chapters, this is a significant deficiency. Most host entries are alphabetical under the first word of common names of species, or under adjectives derived from taxonomic terminology, but not under names of higher taxa. For example, in seeking diseases of Columbidae, I found entries for "Columbid Circovirus"; "Columbiformes, avian chlamydiosis and"; "Doves, avian cholera and"; "Mourning doves" with three subheadings; "Pigeon circovirus" with numerous subheadings; "Pigeonpox"; "Pigeons. *See also* Rock Pigeons" with multiple entries (none for pox); "Rock Doves" with three entries (including pox); and "Rock Pigeons" (the most complete list of entries, but not completely overlapping "Pigeons", and still missing pox). Of course, "Rock Pigeon" supplanted "Rock Dove" as the common name for *Columba livia* with the AOU and BOU during the preparation of the book.

I sought pigeon herpesvirus in vain in the index, missing the fact that it was listed as "HV" under "Pigeons"; no other viruses are named by acronym there. When I checked the chapter on Herpesvirus infections (there are no entries for the various viruses under "Herpesviruses" in the index), I found it referred to as "Smadel's Disease" (a term I was chagrined to realize that I had missed in my many years patrolling the left field of biology; indexed by that name only under "Pigeons").

If my editorial experience is reflected here, the format of the index was imposed by the publishers, with little control by the editors, and it was prepared under pressure at the end of the production schedule. The few extra days required for an informed editor, rather than an indexer or indexing software, to prepare a logical, consistent, complete index taking into account host taxa would have benefited users considerably.

As expected in a volume of this complexity, I found a short list of minor editorial issues, missing references, errors in spelling and taxonomic terminology, and trivial scientific misstatements, none of which will lead the reader far astray. Omissions usually are a matter of editorial judgment, and there are few in this volume. But I missed mention of Usutu virus, a mosquito-borne flavivirus of the Japanese Encephalitis group that emerged as a cause of West Nile virus-like disease in wild birds in Austria in 2001; *Reimerella anatipetifer*, a well-known sporadic cause of pneumonia, septicemia, and polyserositis in free-living and captive waterfowl; and *Escherichia coli* septicemia of young waterfowl, probably more a disease of captivity. Otherwise, this volume

encompasses the curriculum of the infectious and biotoxic disease modules in the avian component of my graduate course on comparative pathology of wildlife.

Invest in *Infectious Diseases of Wild Birds*, if it is at all relevant to your interest in wildlife diseases, and ensure that it is in your institutional library. It is a comprehensive and authoritative source of one-stop shopping

for information in the field, and it should be for years to come. You cannot help but learn something of value there. I certainly have!

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