



Diseases of Poultry, 12th Edition

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Source: Journal of Wildlife Diseases, 45(1) : 251-256

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-45.1.251>

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BOOK REVIEWS

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Journal of Wildlife Diseases, 45(1), 2009, pp. 251–256

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Diseases of Poultry, 12th Edition. Edited by Y. Mohamed Saif, Aly M. Fadly, John R. Glisson, Larry R. McDougald, Lisa K. Nolan, and David E. Swayne, Editors. Blackwell Publishing, Ames, Iowa, USA. 1324 pp. ISBN 978-0813807188. US \$219.99 (hardback).

Review by Marilyn G. Spalding

The 12th edition of *Diseases of Poultry* is a “must have” reference for those involved in avian diagnostics, and it continues to be a basic foundation for those engaged in avian disease research. First published in 1943, *Diseases of Poultry* has been reissued every four to seven years. I started with the 8th edition and have never questioned my purchase of each subsequent edition. Over 65 years of publication, the editors, contributors, and chapters have been refined, reshuffled, added to, and evolved—some of them more than others. The current impressive list of 96 contributing authors includes dozens of familiar names in the wildlife disease arena. The bulk of its 1,323 pages—weighing in at close to five pounds on my (very inaccurate) bathroom scale—will keep one fit, if handled daily.

Although I have relied on this reference for many years, in reviewing the new edition, I was surprised to find that the first two chapters contain a rather thorough compilation of information about the principals of disease diagnosis, prevention, epidemiology, and treatment of poultry—information that would be useful to individuals involved in the housing of wild birds used in research and also to researchers unfamiliar with the poultry industry. The first chapter covers invaluable, up-to-date information on such topics as biosecurity, coping with sources of infection, necropsy techniques and sample collection, quarantine, housing, feeding, and data interpretation. An introduction to avian immunology, expanded with this edition into a separate chapter, covers host factors for disease resistance.

Because the domestic chicken is second only to the mouse among animals studied for health research, this extensive compilation of existing knowledge on diseases impacting chickens around the world is especially useful—it may be the best single source of methodology and results available. In many chapters, the host section provides a brief list of wild bird species that share the diseases; however, the coverage of wild birds varies between chapters. Thus, this reference provides an excellent foundation for the understanding of a disease, but readers seeking extensive information about its application to wild birds will require supplemental references.

The kind of detailed information available for each of the roughly 120-plus diseases is clearly illustrated by the list of sections and subheadings in the chapter on pox, as one example. The introduction gives a definition of the disease, synonyms, economic significance, and public health significance. A history of the disease is followed by information on etiology, morphology, chemical composition, viral replication, and susceptibility to chemical and physical agents. The strain classification includes subheadings of polypeptides and genomic differences in avian pox viruses, as well as nonessential and immunomodulatory genes. A section on laboratory host systems addressing birds, avian embryos, cell culture, cytopathic effects, and plaque formation is followed by pathology and epidemiology, incidence and distribution, natural and experimental hosts, transmission, incubation period and clinical signs, morbidity and mortality, and pathology (gross and microscopic and ultrastructural). Following the natural history of pox, the chapter provides a section on diagnosis, with subheadings of microscopy, isolation and identification of virus (bird inoculation, avian embryo inoculation, and cell culture), serology and protection tests—including immunodiffusion, passive hemagglutination, neutralization, fluorescent antibody, immunoperoxidase, ELISA, immunoblotting, molecular methods (restriction endonuclease analysis of avian pox virus DNA,

genomic fragments as diagnostic probes, and polymerase chain reaction), and differential diagnosis. This breadth on diagnosis is followed by texts on intervention strategies, management procedures, immunization, fowl pox vaccine, pigeon pox vaccine, canary pox vaccine, quail pox vaccine, turkey pox vaccine, prophylactic vaccination, and in vivo vaccination. A final section entitled "Recombinant Fowl Pox Virus Vaccines" includes sections on the potential of pneumococcal polysaccharide vaccine (PPV) as a polyvalent vaccine with discussion about the nonessential region, regulatory sequences (promoters), donor plasmid for generation of recombinant viruses, and procedure for selection of recombinant viruses. Three more subtitles follow: recombinant fowl pox virus (FPV) vaccines, avian pox viruses as expression vectors for genes from mammalian pathogen, and treatment. After this exhaustive detail, an unexpectedly short and to-the-point section on treatment contains this single sentence, "No specific treatment exists for birds infected with avian pox viruses." One hundred and fifty one references are listed for this chapter.

Will the older versions suffice? I perused several chapters for degree and quality of change and found notable enhancements in the chapter on infectious bursal disease. In this chapter, an author has been added and the number of pages increased from 18 to 23. Since the new edition also has a smaller font size, the amount of new information should be greater than page numbers suggest. The editors revised this chapter with changes and additions to the text as well as by adding a new table, while the literature citations increased from 205 to 305 (an average of about 20 new references per year). Some chapters, however, have no dis-

cernable change other than minor wording, such as the chapter on cestodes and trematodes.

Important changes in the 12th edition of *Diseases of Poultry* include the expansion of the introduction to the avian immune system, an expansion which reflects the recent rapid changes in this important topic. This introduction now constitutes a full chapter, with the addition of two authors. The influenza chapter is also longer, with 98 new references and more extensive information on history, prevention, and control. The final chapter, entitled "Emerging Diseases and Diseases of Complex or Unknown Etiology," covers poultry diseases that have not yet been fully characterized. With the exception of a few chapters, photographs and drawings are generally identical in the new edition. The quality of the color plates is not as good as in the 11th edition, whereas black and white prints and line drawings appear similar or better.

In spite of its thoroughness and detail regarding diseases of domestic fowl, this edition of *Diseases of Poultry* still does not offer extensive coverage of the diseases of wild birds. The strong suit of the tome is commercial poultry, zoo, and exotic companion birds. For this reason, I would recommend two shelf companions, *Infectious Diseases of Wild Birds* and *Parasitic Diseases of Wild Birds* edited by Nancy Thomas, Bruce Hunter, and Carter Atkinson (also published by Blackwell). The three would make an excellent starter set for avian disease researchers.

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