

Book Review

Clinical Avian Medicine. G. J. Harrison and T. L. Lightfoot. Spix Publishing, Inc, Palm Beach, FL, USA. 2006. 1008 pp. Price \$249. ISBN 00-9754994-0-8.

In their new book, *Clinical Avian Medicine*, editors Harrison and Lightfoot have distilled a massive amount of information from decades of clinical experience and cutting-edge research into this 1008-page, 2-volume clinical text. The 42 chapters and 3 appendices are written by 50 international authors, many of whom have made extensive contributions to the advancement of avian medicine. Thus, different perspectives and experiences are found in each of the chapters, though content varies among chapters. Over 1300 full-color photographs beautifully illustrate various concepts and lesions discussed in the text. Updates on disease agents, such as *Chlamydophila psittaci* and *Macrorhabdus*, are discussed, as well as advancements in avian endoscopic techniques, microsurgery, and imaging techniques. Chapters 1 through 15 are contained in Volume I and chapters 16 through 42 are in Volume II.

Chapter 1 discusses the changes in avian clinical practice and the equipment, the facilities, and the staff required to build a successful and progressive avian practice. Tables provide contact information for various veterinary organizations, journals, and Web sites devoted to avian medicine. Pet ownership of birds is discussed in Chapter 2, and the characteristics of different species are described. A detailed table with guidelines for selecting a particular species based on their general traits (both good and bad) and the numerous photographs in this chapter are great references for some of the more popular species kept as pets.

Chapter 3, divided into 3 sections, is a thorough, extensive chapter on behavior. Section I provides a foundation for understanding the behavior of companion psittacine birds. Free-range behaviors are discussed as a means of predicting and interpreting behaviors seen in captive birds. Methods of teaching companion birds appropriate behaviors are discussed as proactive techniques for eliminating or decreasing problem behaviors. In Section II, behavioral development and needs of the neonate, nestling, fledgling, weanling, and juvenile psittacine bird are discussed. Puberty and adult psittacine bird behavior is discussed in the final section, and problem behaviors, such as chewing, screaming, and biting, are presented. A short discussion on feather destruction and self-mutilation lists possible causes of feather-destructive behavior, and the reader is referred to other chapters and other references for more information.

Nutritional disorders and related diseases are presented in 2 sections of Chapter 4. The first section details the nutritional requirements of birds by discussing the roles of carbohydrates, proteins, and lipids in avian metabolism. This section then goes on to discuss various vitamins and minerals, including dietary sources and requirements, as well as the consequences of deficiencies and toxicities. Numerous tables and charts detail the vitamin or mineral content of various natural and formulated diets. The second section focuses on nutritional disorders and introduces the concept of the "improper diet cascade," where imbalanced diets result in multisystemic abnormalities. Specific conditions, such as iron storage disease, goiter, and atherosclerosis, are discussed, and treatment options are offered where available. Microphotographs of typical fecal Gram's stain findings and interpretations are also included. Suggestions for converting birds to a formulated diet are outlined at the end of this chapter. In Chapter 5, the roles of vitamin D₃, parathyroid hormone, calcitonin, estrogen, and prostaglandins in regulating calcium metabolism are discussed. Data from studies that investigated the effects of husbandry on calcium metabolism emphasize the importance of a proper diet (containing adequate calcium and vitamin D) and exposure to ultraviolet-B radiation in preventing osteodystrophy.

In Chapter 6, methods of maximizing information from the physical examination are described. The authors stress the importance of a thorough history that includes detailed questions on husbandry and diet. Important physical findings are discussed, as well as pictured, and an example of a physical examination form is provided.

Chapter 7 covers emergency care by first describing various stabilization techniques and supportive care measures and then delves into various emergencies that are commonly encountered. In Chapter 8, pain and pharmacologic control of pain are discussed. Chapter 9 is a formulary in a table format, which is organized in alphabetical order by the drug name. This is in contrast to most other formularies where drugs are separated by class or use of the drug. Within each drug citation, there are divisions for specific species and different dosages. Each citation is referenced and notes whether the dose was obtained from pharmacokinetic studies or anecdotal sources. Though somewhat confusing to interpret initially, this formulary allows for the selection of drug dosages based on published clinical studies versus anecdotal information.

Chapter 10 introduces the field of integrative therapies, including chiropractic therapy, acupuncture,

herbal therapy, nutraceutical supplements, homeopathy, flower essence therapy, aromatherapy, and energy therapy. Though the chapter offers good descriptions of each type of therapy and has detailed tables of various remedies, it is probably best understood by those already practicing holistic and integrative medicine. The second half of this chapter describes specific conditions where integrative therapies have been used. A table for holistic resources and organizations is included.

Chapter 11 delves into the subject of low-risk pest management, which is an especially pertinent topic, because avian species can be particularly vulnerable to chemical pesticides. Various indoor and outdoor strategies for control of various insects, mice, and weeds are recommended.

In Chapters 12 through 19, the various organ systems (cardiovascular, integument, gastrointestinal, hepatic, renal, nervous, reproductive, and endocrine) are covered. Each section briefly introduces specific avian anatomic and physiologic considerations before expanding on diagnostic tests that can be used. Specific disorders and diseases of each of the organ systems are discussed, and treatment options are noted when applicable. Because each chapter is written by a different author, the layout and content deviates somewhat among chapters.

A short overview of tumors is presented in Chapter 20, which is divided into 2 sections. In Section I, different types of neoplasms are described. The section opens up with a candid statement on how many treatment protocols for neoplasms in birds are based on anecdotal experiences rather than published studies. As each type of tumor is described, various treatment protocols that have been used (though not necessarily validated with scientific studies) are suggested. Section II details the prevalence of different types of neoplasms found in 22 avian orders seen at a specialty diagnostic service. Much of the information is organized in table format. More detailed descriptions of specific tumors in particular avian species are described at the end of the chapter.

The next several chapters (Chapters 21–26) have detailed descriptions of diagnostic tests available to avian practitioners. Chapter 21 discusses the benefit of screening new birds for diseases. Tests for some of the more common infectious diseases are described, as well as the rationale for choosing particular tests. In Chapter 22, methods of blood-sample collection are described and pictured. This chapter also has many diagrams and tables that describe the preparation and methods of interpreting the blood film. Especially noteworthy are the hematology images, which have detailed descriptions and are clearly labeled. Chapter 23 covers the diagnostic value of biochemical testing. Analytes are organized in alphabetical order for easy referencing. Descriptions of method, physiology, and diagnostic value for each analyte are provided. A table of differential diagnoses based on biochemical abnormalities is valuable as a quick reference. The diagnostic value of endoscopy is discussed in Chapter 24. The

chapter starts with a short section on equipment but then delves into techniques and approaches used in birds. This particular chapter contains many helpful images that are invaluable in aiding clinicians in understanding the utility of endoscopy and what they may expect to see. In Chapter 25, advances in diagnostic imaging are succinctly discussed. Most of the text focuses on radiology and ultrasonography, which are readily accessible to most practitioners. Descriptions of computed tomography, magnetic resonance imaging, myelography, and excretory urography are mentioned but do not go into great detail. A step-by-step necropsy protocol is outlined in Chapter 26, and excellent descriptions of normal organs, as well as commonly seen pathologic findings are provided in the text and labeled photographs.

Chapters 27 through 32 present updates and monographs on specific diseases, such as avian chlamydiosis, mycobacteriosis, various mycoses, macrorhabdosis, toxicooses, and viruses. Though all are organized a little differently, each chapter discusses clinical signs, applicable diagnostic tests, and treatments for each clinical disorder. The amount of detail provided for each clinical disorder also varies (even within each chapter), because some of the information is collected from clinical studies, whereas other information is based on anecdotal observations.

Considerations in anesthesia and monitoring are discussed in Chapter 33. Unique aspects of avian anatomy in relation to anesthesia are reviewed, and inhalant and injectable anesthetics are discussed. Patient monitoring is also discussed. Surgical procedures are described in Chapters 34 (orthopedic) and 35 (soft tissue). Principals of orthopedic repair and various methods of fracture fixation are discussed before more detailed descriptions of managing specific types of fractures. Complications related to fractures, such as osteomyelitis and bumblefoot, are discussed at the end of the chapter. Chapter 35 (soft-tissue surgery) starts with a discussion on patient evaluation and preparation, followed by a detailed section on instrumentation, including radiosurgery and laser surgery. The rest of the chapter contains descriptions of the pathophysiology and surgical techniques for specific conditions and is organized by regions of the body (ie, skin, respiratory system, reproductive tract, gastrointestinal tract). This chapter contains many step-by-step photographs, which help to illustrate the procedures. Though most of the images are easy to follow, a few of the images are out of focus or are difficult to interpret. An effort was made to clarify some images by labeling the photographs. In these cases, it may have been easier to follow the description of the surgery if a figurative line diagram were used to illustrate the procedure.

Though most of the text focuses on psittacine bird and passerine bird diseases and therapeutics, Chapters 36 through 42 provide information on the management of nonpsittacine birds, including waterfowl, racing pigeons, passerine birds, raptors, and ratites. Husbandry, handling, and diseases specific to each order are

discussed in each of these chapters. Chapter 42 further discusses special considerations in the management of birds kept in a zoo or a park setting. Caging, husbandry, and quarantine procedures are discussed. The pros and cons of mixed species exhibits are described, and examples of successful mixed-species exhibits are offered.

The 3 appendices are tables of avian hematologic and biochemical reference ranges. Though by no means comprehensive, the appendices provide a quick reference for most of the more common psittacine birds seen in clinical practice.

Throughout the text, information from scientific studies has been included whenever possible. However, a large amount of information is still obtained from anecdotal experiences. The authors, for the most part, indicate when clinical studies versus personal experiences are being discussed. Most of the chapters are heavily referenced, which allows readers to locate the source of the information. Many of the chapters also cross-reference certain topics to other chapters or provide suggestions for further reading if more detailed information is sought. *Clinical Avian Medicine* is an excellent, comprehensive update to avian literature. It is easy to understand and presents clinically relevant information. This text is an invaluable reference for any

practitioner who sees birds and will no doubt be used frequently.—Reviewed by **Sue Chen, DVM**, Gulf Coast Avian and Exotics, 1111 West Loop, Suite 110, Houston, TX 77027, USA.

Clinical Avian Medicine. G. J. Harrison and T. L. Lightfoot. Spix Publishing Inc, Palm Beach, FL, USA. 2006. Price US \$129.00. ISBN 00-9754994-1-6 CAM-AMPA DVD.

The 2-volume set, *Clinical Avian Medicine*, is also available in a CD-ROM version, formatted for use with Adobe Acrobat Reader 6.0 or higher (available online as freeware). All sections of the text are bookmarked for efficient referencing. Color is preserved in the figures and the tables. A search engine is available for key words and phrases, increasing the power of this CD-ROM, which is an excellent reference and useful addition to the avian practitioner's digital library. The CD-ROM also includes a digital version of *Avian Medicine: Principles and Application* (Ritchie BW, Harrison GJ, Harrison LR, eds. Lake Worth, FL: Wingers Publishing; 1994).—Additional review of the CD-ROM version written by **Lauren Powers, DVM, Dipl ABVP (Avian)**, Carolina Veterinary Specialists, 12117 Statesville Rd, Huntersville, NC, USA.

