

Book Reviews

Miller and Evans' Anatomy of the Dog (5th edition)

John W. Hermanson, PhD; Alexander de Lahunta, DVM, PhD; & Howard E. Evans, PhD

981 pages. 2020. Saunders (an imprint of Elsevier). ISBN 978-0-323-54601-0. Price \$175.00.

The fifth edition of *Miller and Evans' Anatomy of the Dog* remains the most comprehensive textbook on the anatomy of the canine body. The book features unique and accurate full-color illustrations and detailed descriptions of anatomic structures that facilitate comprehension of morphological design to accommodate function. The authors take a well-organized systemic approach to explain anatomic structures, and illustrations are comprehensively labeled including structures of particular regions and topographic relationships. Additionally, nerves and blood vessels are well described and illustrated within organs.

The book includes a special introductory chapter on American Kennel Club breed categories that describes breed identification and how it is determined. Additionally, an entire chapter is devoted to early prenatal growth and development of the skeletal system. Some organ developmental features are elucidated, and some common developmental anomalies are discussed with related organs. Given the level of detail provided, those developmental features aid in comprehension of anatomic knowledge. The book also contains MRI and CT images to augment interpretation of anatomic structures. The basic information provided in this book will also facilitate understanding of the anatomy of species other than dogs.

The text includes important details about canine morphology that is well organized and easy to understand, which will make it an invaluable reference for veterinary students, practitioners, and educators. However, the depth of detail and general systemic approach might encumber regular use of the book by typical veterinary students.

The content of this edition has been updated to reflect the latest knowledge regarding development, and nomenclature revisions have been included. New radiographic and CT images have been added, and new illustrative interpretations have been incorporated in the images of the lymphatic system.

Reviewed by Shireen Hafez, DVM, PhD
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Cunningham's Textbook of Veterinary Physiology (6th edition)

Bradley G. Klein, PhD

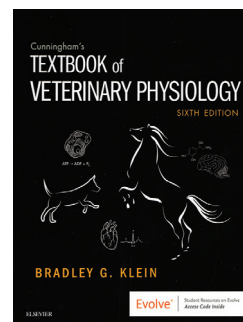
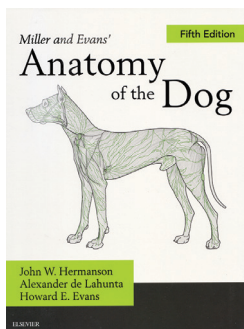
645 pages. 2020. Saunders (an imprint of Elsevier). ISBN 978-0-323-55227-1. Price \$139.00.

The sixth edition of *Cunningham's Textbook of Veterinary Physiology* is appropriate for veterinary students in the preclinical phase of their training. The level of detail is sufficient to support a mechanistic understanding of physiologic processes yet maintain a focus on clinically relevant issues. This book will also be useful to more advanced students or clinicians who are seeking a physiology update or review.

Content includes an introduction to cellular physiology and cancer; a substantial neurophysiology section with basic neuroanatomy; sections on cardiovascular, respiratory, gastrointestinal, and reproductive physiology; and overviews of endocrine physiology, immunology, acid-base homeostasis, and thermoregulation. At the end of each chapter is a brief description explaining the clinical relevance of the presented information. Although students in the early stages of their training programs may find those synopses challenging to understand, that information will become increasingly useful as they progress in their training.

In general, the text is well written and complemented with adequate illustrations. Some illustrations are new and quite good, whereas others are in need of a refresh (eg, low-quality ECG images from 35 years ago). Some features of the book are not consistently helpful. For example, the Key Points provided at the beginning of some chapters are simply a verbatim list of the subheadings in the chapter and do not necessarily represent stand-alone key concepts. The few practice questions provided at the end of each chapter often require only simple recall of facts rather than application of knowledge. Lastly, the supplemental content available online from the publisher is limited in scope and appears to be a subset of short animated and narrated videos drawn from human physiology.

Reviewed by Leslie K. Sprunger, DVM, PhD
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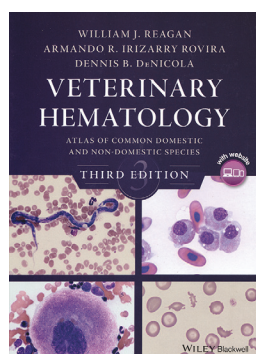
Veterinary Hematology: Atlas of Common Domestic and Non-Domestic Species (3rd edition)

William J. Reagan, DVM, PhD, DACVP;
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& Dennis B. DeNicola, DVM, PhD, DACVP

122 pages. 2019. Wiley Blackwell.
ISBN 978-1-119-06481-7. Price \$69.99.

The third edition of *Veterinary Hematology: Atlas of Common Domestic and Non-Domestic Species* continues to include the wide variety of species featured in the second edition and also provides an introduction to amphibian hematology. New to this edition is a chapter on interpretation of hematology analyzer graphics, with an emphasis on the Idexx ProCyte Dx Hematology analyzer and histograms generated by impedance analyzers. The book consists primarily of photomicrographs with fairly brief accompanying text. The authors point out that the text is not intended to be comprehensive, and readers may need to consult more detailed references to fully evaluate the clinical importance of microscopic findings. The images throughout the book are of high quality and include examples of normal and abnormal findings, as well as common artifacts, across multiple species. This book will be particularly helpful when an unfamiliar cell or morphological variant is encountered during blood smear evaluation because it is sufficiently concise to allow users to scan the relevant chapter and find a matching image. A helpful glossary and 2 simple semiquantitative grading schemes for evaluation of RBC morphology and toxic changes in neutrophils are provided to assist readers new to hematology. This atlas is ideal for veterinarians and veterinary students and technicians who are seeking a broad introduction to blood smear evaluation of companion, farm, laboratory, and exotic animals. It will also be beneficial for experienced hematologists who occasionally evaluate blood smears from uncommon species.

Reviewed by Unity Jeffery, VetMB, PhD, DACVP
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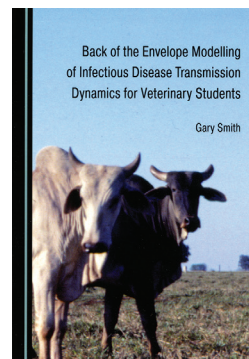


Back of the Envelope Modelling of Infectious Disease Transmission Dynamics for Veterinary Students

Gary Smith, DPhil

493 pages. 2019. Cambridge Scholars Publishing.
ISBN 978-1-5275-3537-4. Price \$101.20.

Back of the Envelope Modelling of Infectious Disease Transmission Dynamics for Veterinary Students consists of 21 chapters. Although the title may suggest an ad hoc, quick method for evaluating or understanding disease transmission, the content delivers much more. The initial chapters introduce basic aspects of disease transmission model-



ling in conversational terms that appear designed to provide an intuitive understanding of the practicalities and mathematics of modelling disease transmission. Equations are used to illustrate the intuitive understanding, and readers are directed to the final chapter for derivations and proofs of the equations.

Subsequent chapters build on the foundation established to continue development of understanding, still with equations used to support concepts that are intuitively explained. Differences between epidemic and endemic models, methods to estimate parameters, and equilibria are discussed. A series of chapters focused on specific disease examples and development of specifics for different transmission routes, host heterogeneities, control strategies, and model validation follow.

The book does a good job of introducing disease transmission concepts with a minimum of necessary mathematics. Because most veterinary students have limited training in mathematics, this book will fill an important niche for interested students. The contents are likely a stretch for most veterinary students; however, those with motivation to understand disease transmission and students in masters-level epidemiology courses will benefit greatly from the contents presented in this book. It is also an excellent introduction to disease transmission modelling for those who wish to progress to more advanced methods.

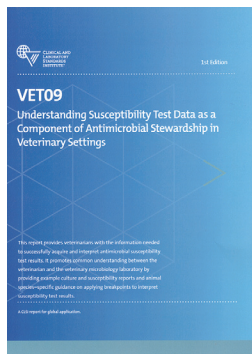
Reviewed by Michael Sanderson, DVM, MS,
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Understanding Susceptibility Test Data as a Component of Antimicrobial Stewardship in Veterinary Settings (CLSI report Vet09)

Document Development Committee on Understanding AST Data in Veterinary Settings and the Subcommittee on Veterinary Antimicrobial Susceptibility Testing

135 pages. 2019. Clinical and Laboratory Standards Institute. ISBN 978-1-68440-050-8. Price \$50.00.

Veterinary practitioners are becoming increasingly aware of the importance of bacterial culture and susceptibility test (BC&ST) results for direction in developing antimicrobial treatment regimens. However, the ability to take full advantage of those results is occasionally hampered by a lack of understanding on how to interpret them and apply that information to clinical patients. The Clinical and Laboratory Standards Institute (CLSI) has recently released a publication entitled *Understanding Susceptibility Test Data as a Component of Antimicrobial Stewardship in Veterinary Settings* that is intended to help veterinarians and microbiologists better understand and apply BC&ST results in clinical settings. For years, the CLSI has worked to ensure that BC&STs, which are in vitro methods, are as relevant as possible to in vivo settings so that the information can be reliably used to guide prudent antimicrobial use in diseased patients. This publication represents a robust consensus of experts on the use of BC&ST results to guide development of antimicrobial treatment regimens in veterinary patients. Most domestic species, as well as fish, are addressed in this publication. The beginning of each chapter consists of a bulleted list of topics covered along with highlighted important points. Chapters 1, 2, and 4 will be most useful for general practitioners. The introductory chapter (chapter 1) is important because it contains a glossary. Chapter 2 reminds readers that quality BC&ST procedures must be standardized so that the results can be applied to clinical patients. It includes a description of antimicrobial distribution in the body, the relationship between drug concentrations and efficacy (eg, the difference between time- and concentration-dependent drugs), and other points (eg, drug formulation and the effects of host and microbial factors) that must be considered when designing an antimicrobial treatment regimen. It also includes some helpful hints on how to avoid overinterpreting BC&ST data. Chapter 3 addresses BC&ST methods. Chapter 4 is particularly



useful because it describes the information provided on most BC&ST reports and provides some pearls of wisdom as to what that information does and does not mean. The remaining chapters (chapters 5 through 10) provide information that is most likely to be useful for specialists who are familiar with the use of BC&ST results. These chapters discuss determination of breakpoints and factors that affect those calculations for each model drug in each major species, as well as the use of human breakpoints when necessary. References, including sources of pharmacokinetic and pharmacodynamic information, are provided separately. This publication does not provide actual breakpoints, but it does have a well-organized set of appendices, which contains information about where breakpoints for specific species, tissues (when available), and drugs can be found in other CLSI publications. This publication will prove most useful for individuals involved in teaching appropriate antimicrobial use either in the classroom or a clinical setting and will be eye-opening for anyone who takes the time to study and apply its contents to veterinary patients.

Reviewed by Dawn M. Boothe, DVM, PhD
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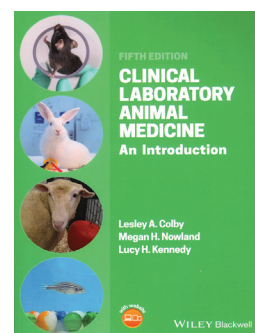
Clinical Laboratory Animal Medicine: An Introduction (5th edition)

Lesley A. Colby, DVM, MS, DACLAM;
Megan H. Nowland, DVM, DACLAM;
& Lucy H. Kennedy, DVM, DACLAM

489 pages. 2020. Wiley Blackwell.
ISBN 978-1-119-48956-6. Price \$74.99.

When a book's title includes the words "An Introduction," one often automatically assumes that it is not an extensive, all-encompassing tome where answers to almost every question can be found. But oh, what an introduction is provided in the fifth edition of *Clinical Laboratory Animal Medicine: An Introduction*!

The first 3 chapters provide neophyte students and seasoned private practice professionals with an introduction to laboratory animal medicine that includes ethical considerations, laws, regulations, guidelines, and policies governing the care and use of laboratory animals; principles of laboratory animal facility design; and housing and support equipment used in animal facilities. This introductory information will be beneficial to nonscientist and community members of institutional animal care and use com-



mittees, as well as animal science and preveterinary students, and veterinary technicians and veterinarians who provide part-time services at small biomedical and educational facilities.

Eleven chapters are devoted to species commonly used as laboratory animals, such as chinchillas, ferrets, gerbils, guinea pigs, hamsters, mice, nonhuman primates, rabbits, and rats. This edition has been expanded to include additional chapters on agricultural species used in research (ie, cattle, goats, pigs, and sheep). It also has a new chapter on zebrafish. Species-specific chapters include information on behavior, anatomic and physiologic features, husbandry, breeding and reproduction, handling and restraint, sample collection and drug administration techniques, anesthesia, surgery and postoperative care, and common disease conditions and applicable treat-

ments. The comprehensive nature of the information presented will make this book useful for veterinarians who treat exotic animals and pocket pets as well as those who work in laboratory animal facilities.

Each chapter concludes with a review quiz, which is valuable for self-review or for use by instructors in animal science, preveterinary, and veterinary courses. The book has a companion website where individuals can access complementary slide presentations, additional images, and editable chapter review exercises and answers. I predict this book will be instrumental in training the next generation of laboratory animal scientists, veterinary technicians, and veterinarians.

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