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Book Review

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Veterinary Immunology—Principles and Practice. 2nd Edition. By Michael J. Day and Ronald D. Schultz. CRC Press, Boca Raton, Florida, USA. 2014. 317 pp. ISBN: 978-1-4822-2462-7. US $49.95 paperback; Kindle $22.00.

Review by Laurie A. Baeten

Veterinary Immunology—Principles and Practices, second edition, is a general review of the state of knowledge in veterinary immunology. The book was designed as a textbook for use in a veterinary curriculum and is reminiscent of my own veterinary immunology course, which was taught by the coauthor. The text incorporates a review of basic immunologic concepts with an introduction to clinical immunology and immunopathologic mechanisms in domestic species. The text is enhanced with high-quality photographs and helpful images and diagrams. It also incorporates useful abbreviations and glossary pages.

In the second edition, the authors include new knowledge gained in immunology since the first edition, which is focused mainly on clinically oriented advances. The formatting of the second edition is a welcome improvement, with easier referencing of images by chapter (rather than sequential numbering). It also includes a much-appreciated increase in font size and boldface text in the image legends, glossary, and abbreviations sections. However, the quality of the cover and page thickness make it less durable than the first edition—in my hands at least!

The text contains 22 thoughtfully organized chapters. Although emphasis is placed on the state of knowledge of immunologic processes in small domestic animals (i.e., dogs and cats), it includes brief coverage for other domestic species (e.g., cattle, horses, poultry, pigs) where pertinent. The first nine chapters cover the basic concepts of host immunologic responses with classification of innate vs. adaptive immunity, a comprehensive review of components of the immune system, and a brief discussion of common serologic tests. The remaining chapters are focused on clinical immunology and review various immunologic mechanisms, immunopathology, and cancer/neoplasia immunology. Additional chapters introduce the reader to current practices in immunotherapy and vaccination. The last chapter provides a series of clinical case studies highlighting the most-relevant, immune-mediated disease processes in domestic species.

Having spent the last 5 yr catching up with the massive increase in knowledge in the field of immunology over the last two decades, I appreciate the ability of the authors to introduce basic concepts with clear definitions followed by clinical examples and interspersed with historical anecdotes. The incorporation of boldface text at the introduction of new terms or concepts makes it easier to scan pages for referencing key materials. The inclusion of objectives and a key point summary in each chapter enhances its usefulness as a reference. In addition, consistent use of symbols and descriptive legends eases interpretation of the images and diagrams. However, this text is less comprehensive than other veterinary immunology textbooks I have read. In terms of content, I particularly miss the incorporation of summary tables high-

lighting key concepts such as cytokines, cell markers/receptors, complement proteins, blood groupings, and immunoglobulin classifications.

For my fellow *Journal of Wildlife Diseases* readers, this textbook may be useful as a general immunology reference. The basic immunologic concepts in the first half of the book are well described, albeit briefly. The information on serologic testing (Chapter 4) provides a comprehensive review with helpful diagrams and images of common diagnostic testing methods used in the clinical laboratory. A significant missed opportunity in this chapter was the lack of a description of the alternative secondary antibodies (i.e., protein A/G) currently available, which allow for cross-species testing in some diagnostic modalities. This is an important advancement for serologic detection in wildlife species, particularly for those infectious diseases that cross the wildlife-livestock-human interface.

When introduced to a new infectious agent, I like to remind myself that the state of disease is a battle between a protective or pathologic host immune response and the pathogen's struggle for survival by manipulation of the host's response. In that regard, the descriptions of the immune response to infectious agents (Chapter 13) might be a helpful resource for wildlife disease specialists. It is here that the authors introduce the basic immunologic response to each pathogen class (e.g., viral, bacterial, fungal, protozoal, and helminth). While concise, I find that the brevity with emphasis on one pathogen type (enteric) as the descriptive example diminishes the complexities of the different host/agent interactions.

The coverage of vaccination (Chapter 20) would also be a valuable resource for wildlife disease specialists. It provides a concise review of the theory of immunization followed by a summary of each of the vaccine types available. With the rapid advancements in vaccinology in the last decade, this chapter provides a good review of each of the new vaccine types available for use in domestic species.

In all, the second edition of *Veterinary Immunology—Principles and Practices* offers a concise review of the current knowledge of veterinary immunology which is useful for the lay person and clinician alike. Even though its emphasis is on companion animals, the pertinent topics are presented in an understandable format with useful diagrams and images. The price of this book makes it an affordable general immunology reference to have on your shelf.

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