

Current Topics in Microbiology and Immunology

Ben Adler *Editor*

# *Leptospira* and Leptospirosis

 Springer

# Leptospira And Leptospirosis Current Topics In Microbiology And Immunology

**Richard M. Hopper**



## **Leptospira And Leptospirosis Current Topics In Microbiology And Immunology:**

Leptospira and Leptospirosis Ben Adler, 2014-11-11 This volume covers all aspects of infection by pathogenic *Leptospira* species the causative agents of the world's most widespread zoonosis Topics include aspects of human and animal leptospirosis as well as detailed analyses of our current knowledge of leptospiral structure and physiology epidemiology pathogenesis genomics immunity and vaccines Updates are presented on leptospiral systematics identification and diagnostics as well as practical information on culture of *Leptospira* Contact information is also provided for *Leptospira* reference centers All chapters were written by experts in the field providing an invaluable reference source for scientists veterinarians clinicians and all others with an interest in leptospirosis *Leptospirosis - Symptoms, Causes and Treatment*, 2025-06-11 Leptospirosis is a globally distributed zoonotic disease caused by bacteria of the genus *Leptospira* Despite affecting many people annually all over the world leptospirosis remains frequently underdiagnosed and neglected With a broad range of clinical presentations leptospirosis is a true diagnostic challenge with far reaching public health implications This book dives into several dimensions of leptospirosis offering a presentation of medical veterinary environmental and socioeconomic aspects of the disease Different chapters explore acute and chronic manifestations of the disease the epidemiology among human and animal populations and the role of environmental factors Topics of the book also include the reservoirs of the disease the effects of climate change and urbanization gaps in diagnostics and demand for surveillance systems The book's authors highlight the need for the One Health approach to tackle all the challenges this disease poses The book is intended for a broad audience from professionals and researchers to students and anyone else who would like to know more about this disease **Neglected Zoonoses and Antimicrobial Resistance** Indranil Samanta, Samiran Bandyopadhyay, Olivier Sparagano, 2024-11-16 Neglected Zoonoses and Antimicrobial Resistance Impact on One Health and Sustainable Development Goals provides a thorough examination of how neglected zoonoses and antimicrobial resistance together hinder the achievement of sustainable development goals declared by the United Nations in the pursuit of a disease free world Neglected zoonotic diseases as defined by the World Health Organization are diseases likely to impact the livelihoods of livestock keepers and those living in periurban communities in developing countries This book examines how such zoonoses affect the health of vulnerable farming populations and reduce the production capacity of their livestock Written by internationally recognized experts in the field of livestock and poultry zoonoses this book provides the reader with a comprehensive description of modern sustainable development goals and defines neglected zoonotic diseases and their impacts on human physical mental social and economic health Subsequent chapters systematically describe the epidemiology hosts and transmission disease process economic significance and prevention and treatment protocols of key neglected zoonotic diseases including echinococcosis leishmaniasis zoonotic tuberculosis anthrax brucellosis leptospirosis borreliosis rickettsioses and rabies The book concludes with an assessment of the obstacles to achieving Sustainable Development Goals

and possible mitigation strategies for veterinary researchers and policymakers alike Compiles novel and updated research on pathogens disease processes clinical symptoms diagnostic techniques vaccines and treatment protocols Covers key neglected zoonotic diseases including echinococcosis leishmaniasis zoonotic tuberculosis anthrax brucellosis leptospirosis borreliosis rickettsioses and rabies Examines the relationship between neglected zoonoses and antimicrobial resistance Discusses how ineffective research and treatment of neglected zoonoses hinders the achievement of Sustainable Development Goals

*Bovine Reproduction* Richard M. Hopper, 2021-07-21 Ein umfassendes Nachschlagewerk mit praktischen und geblichen Informationen zu allen Aspekten der Rindertheriogenologie Die neu bearbeitete zweite Ausgabe von *Bovine Reproduction* bietet einen ausf hrlichen berblick ber alle wichtigen Themen rund um die Rinderreproduktion Das Werk wurde von f hrenden Experten auf dem Gebiet verfasst und ist ein unverzichtbares Referenzwerk f r alle Tier rzte die sich mit der Fruchtbarkeit von Rindern besch ftigen *Bovine Reproduction* ist in mehrere Abschnitte unterteilt ber den Bullen die Kuh das neugeborene Kalb und Techniken der assistierten Reproduktion Die neue Ausgabe enth lt Kapitel ber neue Genmanipulationstechniken den Umgang mit problematischen Spendern L hmung und viele weitere Themen Veraltete und berfl ssige Angaben aus der ersten Ausgabe wurden entfernt und durch Informationen ber neue Krankheiten Technologien Verfahren Techniken und Behandlungsm glichkeiten von Fertilit tsproblemen ersetzt Auf der neuen begleitenden Website stehen Bilder und Tabellen aus dem Buch im PowerPoint Format zur Verf gung Neben den ber 675 vollfarbigen Abbildungen bietet das Werk insbesondere Eine ausf hrliche Diskussion der Anatomie und Physiologie des Bullen auch in Bezug auf die endokrine und exokrine Funktion der Rinderhoden und die Thermoregulation der Hoden Eine Betrachtung des Zucht und Gesundheitsmanagements bei Bullen mit einer Bewertung der Zuchttauglichkeit und einem Abschnitt ber Ultraschalluntersuchungen des Fortpflanzungstrakts Eine Analyse der Anatomie Physiologie sowie des Zucht und Gesundheitsmanagements bei K hen auch in Bezug auf f tale Programmierung das Mikrobiom des Fortpflanzungstrakts und mit einem Abschnitt ber Geburtshilfe und Reproduktionschirurgie Einen berblick ber die Intensivpflege des neugeborenen Kalbes und die wirksame Untersuchung und Gabe von Kolostrum Eine Einf hrung in assistierte moderne Reproduktionstechnologien Das praktische umfassende Nachschlagewerk ist ein unverzichtbarer Ratgeber f r Rinderz chter Theriogenologen Tierzuchtwissenschaftler Studierende der Veterin rmedizin und angehende rzte mit einer Spezialisierung auf Rinder

*Spirochetes and Immune Evasion: Infection, Persistence and Clearance* Maria Gomes-Solecki, Monica E. Embers, Melissa Jo Caimano, 2020-06-04 The interface between spirochetes and the immune response is of significant importance to their pathogenesis and persistence Evasion from the immune system leads to infections that present as Leptospirosis Syphilis Lyme Disease and Relapsing Fever and may lead to putative persistence and latency Understanding the mechanisms involved in immune evasion will shed light not only on the host/pathogen factors involved in the process but also on how resistance to infection leads to protection Broad examples include spirochetal interaction with the immune

system spirochetal molecules involved in immune evasion and in immune activation innate immune responses in the skin and other compartments factors involved in spirochetal adhesion to the extracellular matrix interaction of spirochetes with antigen presenting cells in vitro ex vivo or in vivo spirochetal lipoproteins and immunity Specific examples include innate immunity to pathogenic spirochetes *T pallidum* *B burgdorferi* and *Leptospira* spp invasion and pathogenesis by *L interrogans* subversion and suppression of B cell responses by *B burgdorferi* role of antibody in clearance versus persistence of relapsing fever *Borrelia* evasion of the complement system by *B burgdorferi* immune suppression by *Ixodes* tick saliva for effective transmission adhesins and enzymes involved in dissemination of *T pallidum* spirochetal variable surface proteins in immune evasion intravital imaging of pathogenic spirochetes *Borrelia* and *Leptospira* in host tissues spirochete host surface interactions Additional specific examples for *B burgdorferi* include novel approaches to control infection within the vector and or in mammal tick innate immune defenses and interaction of *Ixodes scapularis* salivary immunomodulatory molecules with human immune cells tick innate immune defenses from the perspective of the tick midgut mouse models of infection and genetic basis for pathogenicity diverse roles of outer surface protein C Additional specific examples for Leptospirosis include animal models of acute sub lethal and persistent infection neutrophils and innate immune response Toll like receptor mediated B cell responses markers of endothelial cell activation for disease severity in human leptospirosis corticosteroid treatment of advanced human leptospirosis and urinary biomarkers of chronic Leptospirosis

*Medical Microbiology*  
*E-Book* Michael R. Barer, Will L Irving, Andrew Swann, Nelun Perera, 2018-01-13 Medical microbiology concerns the nature distribution and activities of microbes and their impact on health and wellbeing In spite of the introduction of many antimicrobial agents and immunisations we continue to face major challenges in combatting infection not least the gathering crisis in antimicrobial resistance Now in a fully revised and updated 19th edition Medical Microbiology provides comprehensive coverage of infection from the microbial perspective combining a clear introduction to key principles with a focus explicitly geared to modern clinical practice It provides ideal coverage for medical and biomedical students with Key Points boxes throughout to highlight the essentials and sufficient detail to also inform specialists in training Building on the success of previous editions updates in Medical Microbiology 19e include New and expanded coverage of hot topics and emerging areas important to clinical practice including Genomics The Human Microbiome Direct acting antiviral agents for the treatment of HCV infection Molecular methods in diagnostic microbiology Antibiotic Stewardship A new and improved downloadable eBook from studentconsult for anytime access to the complete contents plus BONUS interactive learning materials Clinical cases to introduce how patients with infections present and help relate key principles to practice MCQs for each chapter to check understanding and aid exam preparation

*Ecology of Wildlife Diseases in the Neotropics* Gerardo Acosta-Jamett, Andrea Chaves, 2024-03-06 This contributed volume focuses on the Neotropical region and explores the environmental ecological and socio economic components that facilitate the emergence of zoonotic diseases This book

highlights the primary ecological environmental social and economic variables associated with the risk of maintenance transmission and dissemination of emerging re emerging and neglected infectious diseases in which Neotropical vertebrates are involved It compiles up to date knowledge and research for the neotropical region as well as discusses the current needs of knowledge improvement The chapters include various examples of the cycles of infectious diseases all with world wide relevance where neotropical wild vertebrates are affected or involved

**Veterinary Microbiology** D. Scott McVey, Melissa Kennedy, M. M. Chengappa, Rebecca Wilkes, 2022-06-24 Veterinary Microbiology Comprehensive reference work on the bacterial fungal and viral pathogens that cause animal diseases Veterinary Microbiology Fourth Edition presents comprehensive information based on the most recent research diagnostic and clinical publications for bacterial fungal and viral animal diseases The information provided is intended to be most relevant for veterinary students and practitioners The text is supported throughout by high quality and full color images to aid learning A companion website offers chapter content supplemental information and figures from the book in PowerPoint format Sample topics discussed within the book include Pathogenic bacteriology includes major classifications and genera of bacteria associated with veterinary infectious disease Pathogenic mycology dermatophytes agents of subcutaneous mycoses and agents of systemic mycoses Pathogenic virology includes RNA and DNA viruses as well as prions associated with veterinary infectious disease

Textbook of Veterinary Internal Medicine - eBook Stephen J. Ettinger, Edward C. Feldman, Etienne Cote, 2016-12-19 Your days spent fruitlessly scouring textbooks and websites for credible vet information are over Now you can get the whole story the accurate story all in one place Introducing The Textbook of Veterinary Internal Medicine Expert Consult 8th Edition Still the only comprehensive resource for veterinary internal medical problems this faculty and student favorite offers unparalleled coverage of pathophysiology diagnosis and disease treatments for dogs and cats In addition to new chapters and discussions on the industry s most topical issues this gold standard in vet medicine comes with hundreds of original videos algorithms and learning tools to really bring all the information to life There s no better source to help you unlock the secrets of veterinary medicine than Ettinger s Fully searchable online text offers quick access to the most trusted information in the field Complete library of over 500 original clinical videos you can believe in Instead of fruitless YouTube searches each video expertly breaks down veterinary procedures and important signs of diseases and disorders that are difficult or impossible to understand from written descriptions alone In depth coverage of timely issues includes expert explanations on topics such as the genome clinical genomics euthanasia innocent heart murmurs hyperbaric medicine home prepared and raw diets obesity botulism artificial pacing of the heart and cancer vaccines Thousands of references accessible from the printed book with the click of a QR code 256 all new client information sheets can be downloaded customized and printed as client handouts 214 new and updated clinical algorithms aid in disease identification and decision making Exclusive access to Expert Consult Online website offers the complete library of original video clips heart sounds the full collection of client information sheets

and hyperlinking of references to their source abstracts in PubMed NEW In depth coverage of the latest information and trends in small animal internal medicine Completely new section on minimally invasive interventional procedures includes techniques for treating respiratory cardiovascular gastrointestinal urologic nephrologic and neoplastic disorders 17 new chapters address the major clinicopathologic abnormalities that occur in canine and feline laboratory testing Completely new section on management of mutually antagonistic comorbidities spotlights concurrent cardiac and renal disease concurrent infection in patients requiring immunosuppression and concurrent diabetes mellitus and corticosteroid dependent disease Expert explanations on topics such as evidence based medicine distinguishing behavioral disorders from medical neurologic disorders blood transfusion techniques hyperadrenocorticism Cushing s disease chronic kidney disease respiratory and inhalant therapy and many more

Fundamentals of Veterinary Microbiology Andrew N. Rycroft, 2023-11-02 A compact and accessible guidebook exploring current understanding of common bacterial and fungal pathogens of animals Fundamentals of Veterinary Microbiology brings together knowledge and understanding of the bacterial pathogens of animals from disease signs and diagnostic methods to the molecular basis of the host pathogen interaction A small but focused book it enables the reader to access important information during diagnosis and treatment in a clinically relevant way Suitable as a companion for study on the subject and for professional use the author focuses on the more clinically common diseases at the general and first referral level Divided into three sections the first covers the basics of bacterial microbiology such as structure growth and genetics The second examines the commonly encountered bacterial pathogens with emphasis on current understanding of the cellular and molecular basis of infection and immunity The third section explores the current state of knowledge of those fungi involved in infection of animals Specific topics covered in Fundamentals of Veterinary Microbiology include Nutrition sterilization and disinfection of bacteria bacterial genes and gene transfer pathogenicity and host response and vaccination Antimicrobials action dynamics and resistance typing and identification of pathogens fungi as agents of disease Salmonella and E coli in animal disease and public health Pathogens transmitted by vectors such as Borrelia those of endogenous origin such as Clostridium and Pasteurella and those able to spread widely such as Leptospira Mycobacterium and Chlamydia Fungal pathogens causing superficial subcutaneous and systemic mycoses Fundamentals of Veterinary Microbiology is an essential resource for veterinary students veterinary nurses and veterinary practitioners worldwide allowing them to quickly establish a foundation of knowledge of bacterial pathogens based on clear understanding gained from studies over recent decades

CRC Handbook of Marine Mammal Medicine Frances M.D. Gulland, Leslie A. Dierauf, Karyl L. Whitman, 2018-03-20 AAP Prose Award Finalist 2018 19 For three decades this book has been acknowledged as the most respected scientific reference specifically devoted to marine mammal medicine and health Written by approximately 100 contributors who are recognized globally as leaders in their respective fields the CRC Handbook of Marine Mammal Medicine Third Edition continues to serve as the essential guide for all practitioners involved with marine

mammals including veterinarians technicians biological researchers students managers keepers curators and trainers The 45 chapters provide essential information for the practitioner on pathology infectious diseases medical treatment anesthesia surgery husbandry health assessment species specific medicine medically pertinent anatomy and physiology and global health concerns such as strandings oil spills and entanglements of marine mammals Covers all aspects of marine mammal veterinary practice Written by internationally acknowledged experts Adds new chapters on Ophthalmology Dentistry Ethics Oil Spill Response Health Assessments Whale Entanglement Response Dive Response and Biotoxins Richly illustrated in color throughout the new edition including updated anatomical drawings and extensive photographs of ocular lesions Provides guidance to websites that regularly present updated information and images pertinent to current marine mammal medicine such as imaging and stranding network contacts Discusses ethics and animal welfare The book guides the reader through the veterinary care of cetaceans pinnipeds manatees sea otters and polar bears In addition to summaries of current knowledge chapters provide information on those digital resources and websites which present the latest information as it emerges in the field The CRC Handbook of Marine Mammal Medicine Third Edition gives a call to action for scientists to experiment with new endeavors to engage and inspire current and future generations to care for marine mammals and the marine environment and work together to find solutions As the most trusted reference for marine mammal conservation medicine and for marine mammal medical facilities around the world this book needs to be in your library **Current Topics in**

**Microbiology and Immunology** W. Arber, W. Braun, F. Cramer, R. Haas, W. Henle, P. H. Hofschneider, N. K. Jerne, P. Koldovsky, H. Koprowski, O. Maaløe, R. Rott, H.-G. Schweiger, M. Sela, L. Syru?ek, P. K. Vogt, E. Wecker, 2013-03-13

**Neglected Diseases in Monkeys** Sascha Knauf, Lisa Jones-Engel, 2020-12-14 This book offers a valuable resource reviewing the current state of knowledge concerning the pathology and epidemiology of infectious diseases in both captive and wild monkeys The One Health concept forms the framework of all chapters The multidisciplinary team of authors addresses neglected diseases caused by the three major pathogen groups bacteria viruses and parasites Moreover the volume discusses key virulence factors such as the evolution of antibiotic resistance and the ecological drivers of and human influence on pathogen transmission Demonstrating how researchers working on monkey diseases are increasingly thinking outside the box this volume is an essential reference guide to the field of One Health and will serve as an asset for stakeholders in conservation healthcare and research organizations that face the challenge of moving beyond classical human oriented approaches to health **Pathogenesis of Leptospira** Elsie A. Wunder Jr, Azad Eshghi, Nadia

Benaroudj, 2018-12-07 The present eBook consisting of a compilation of research and review articles focuses on the features and mechanisms adopted and explored by pathogenic leptospires to successfully establish infection in the host Additionally this eBook provides information to support future work focused on the development of new prevention approaches against this important yet neglected zoonotic disease **CDC Yellow Book 2018: Health Information for International Travel**



Centers for Disease Control and Prevention CDC,2017 An up to date definitive guide to staying safe and healthy anywhere in the world Completely updated for 2018 with expanded guidelines for Zika virus cholera vaccine and more **Current**

**Developments in Biotechnology and Bioengineering** Vanete Thomaz Soccol,Ashok Pandey,Rodrigo R. Resende,2016-09-17 Current Developments in Biotechnology and Bioengineering Human and Animal Health Applications provides extensive coverage of new developments state of the art technologies and potential future trends presenting data based scientific knowledge and information on medical biotechnological interventions for human and animal health Drawing on the key development areas in this field the book reviews biotechnological advances and applications in immunotechnology vaccines and vaccinology combinatorial libraries gene and cell therapy tissue engineering and parasite and infectious disease diagnostics This title outlines why biotechnological techniques in these areas are useful in a clinical context and considers their potential uses limitations and the ethical considerations surrounding their use Provides development in human and animal health due to biotechnology Includes immunotechnology and vaccinology Outlines diagnostic techniques based on tissue and metabolic engineering principles Considers potential uses of the various biotechnology based techniques and the ethical issues raised in their use **Avanços no diagnóstico, epidemiologia e controle da leptospirose em caprinos e ovinos no bioma Caatinga** Clebert Alves,2024-08-26 As características da Caatinga um bioma não exclusivamente brasileiro e com grande diversidade de espécies animais oferecem condições epidemiológicas que requerem atenção em circunstâncias diferentes das de outras regiões do Brasil e do mundo Por isso essas particularidades devem ser analisadas em conjunto com a epidemiologia da leptospirose Estudos na região semiárida mostraram que mesmo durante longos períodos de seca a doença tem notável frequência nos rebanhos da região Isso leva a destacar o papel das infecções adaptadas nas quais seu agente utiliza vias alternativas de transmissão direta e portanto sofre menos interferência das adversidades ambientais Neste contexto não há dúvidas de que para avançar sobre o tema leptospirose animal necessitaria a condução de trabalhos mais abrangentes envolvendo animais de produção e silvestres no sentido de elucidar aspectos epidemiológicos nessas populações Isto particularmente importante no semiárido brasileiro caracterizado por poucas chuvas e altas temperaturas associado a peculiaridades da vegetação existente O grupo de pesquisa em Doenças Transmissíveis da Universidade Federal de Campina Grande UFCG destacando-se ao longo dos anos nas pesquisas com leptospirose animal especialmente no que diz respeito pesquisa de vias alternativas de transmissão de leptospirose em condições semiáridas **Biology, Medicine, and Surgery of South American Wild Animals** Murray Fowler,Zalmir S. Cubas,2008-08-06 Biology Medicine and Surgery of South American Wild Animals examines the medicine and treatment of animals specific to South America It discusses topics dealing with diseases and biology topics In addition the animals studied are broken down into family and genus using both English and Spanish names The book is liberally illustrated and contains references for further reading as well as the contributions of regional experts on the animals covered *Spirochete Biology: The Post Genomic Era* Ben Adler,2018-08-21 Spirochetes

comprise a fascinating group of bacteria. Although diverse in terms of their habitat ecology and infectivity for vertebrate and non-vertebrate hosts, they are often considered together because of their similar cellular morphologies. This volume brings together an international group of experts to provide essential insights into spirochete biology with an emphasis on recent advances made possible by the availability of genome sequences. As such, it offers a valuable resource for microbiologists and other scientists with an interest in spirochete biology.

**The New Natural History of Madagascar** Steven M. Goodman, 2022-11-15. A marvelously illustrated reference to the natural wonders of one of the most spectacular places on earth. Separated from Africa's mainland for tens of millions of years, Madagascar has evolved a breathtaking wealth of biodiversity, becoming home to thousands of species found nowhere else on the planet. *The New Natural History of Madagascar* provides the most comprehensive up-to-date synthesis available of this island nation's priceless biological treasures. Now fully revised and expanded, this beautifully illustrated compendium features contributions by more than 600 globally renowned experts who cover the history of scientific exploration in Madagascar, as well as the island's geology and soils, climate, forest ecology, human ecology, marine and coastal ecosystems, plants, invertebrates, fishes, amphibians, reptiles, birds, and mammals. This invaluable two-volume reference also includes detailed discussions of conservation efforts in Madagascar that showcase several successful protected area programs that can serve as models for threatened ecosystems throughout the world. Provides the most comprehensive overview of Madagascar's rich natural history. Coedited by 18 different specialists. Features hundreds of new contributions by world-class experts. Includes hundreds of new illustrations. Covers a broad array of topics from geology and climate to animals, plants, and marine life. Sheds light on newly discovered species and draws on the latest science. An essential resource for anyone interested in Madagascar or tropical ecosystems in general, from biologists and conservationists to ecotourists and armchair naturalists.

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