

The most complete treatment available of virus ecology across kingdoms of host species

Viruses are the most abundant organisms on the planet, occurring in every conceivable ecosystem. A growing part of the scientific community has come to view viruses as highly evolved biological entities with an organismal biology that is complex and interwoven with the biology of their hosting species. *Studies in Viral Ecology, Volume 1* explains the ecology of viruses by examining their interactive dynamics with their microbe and plant hosts, including the types of transmission cycles that viruses have evolved encompassing principal and alternate hosts, vehicles, and vectoring species. Examining virology from an organismal biology approach, it focuses on the concept that viral infections represent areas of overlap in the ecologies of the involved species.

Compiled by field expert Christon Hurst and featuring internationally recognized contributors, this volume begins with background information designed to bring readers to a common base of comprehension, defining viral ecology and the basic biology of viruses. Then, viruses with microbial and plant hosting species are discussed, including:

- Bacteriophage and viral ecology as seen through the lens of nucleic acid sequence data
- Viruses of cyanobacteria
- Viruses of eukaryotic algae
- Viruses of seaweeds
- The ecology and evolution of fungal viruses
- Prion ecology
- Ecology of plant viruses, with special reference to geminiviruses
- Viroids and viroid diseases of plants

This volume also helps readers understand how information gained from molecular techniques is used to comprehend these various aspects of virology. Additionally, this set of books contains information on the ecology of viroids and prions, which are molecularly related to and share common ecological aspects with the viruses.

Studies in Viral Ecology, Volume 1 is essential for advanced undergraduate and graduate-level students studying viral ecology and environmental genomics. It also serves as an authoritative reference for professionals in the fields of virology, microbial ecology, infectious diseases, and disease transmission relative to humans, animals, and plants; this includes virologists, microbiologists, physicians, veterinarians, and agriculturalists.

Cover Design: Christon J. Hurst

 **WILEY-BLACKWELL**

www.wiley.com/wiley-blackwell

ISBN 978-0-470-62396-1

9 0000



9 780470 623961