

Insect Virology

Edited by: **Sassan Asgari and Karyn N. Johnson**

School of Biological Sciences, The University of Queensland, St Lucia QLD 4072, Australia

Published: September 2010. **Pages:** xii + 436

Hardback: ISBN 978-1-904455-71-4 £180, \$360

Published by: Caister Academic Press www.caister.com



Viruses that are pathogenic to beneficial insects and other arthropods cause millions of dollars of damage to industries such as sericulture, apiculture and aquaculture every year (eg infecting honeybees and silk worms). On the other hand, viruses that are pathogenic to insect pests can be exploited as attractive biological control agents. Another fascinating feature of these viruses is that some, eg baculoviruses, have been commercially exploited for use as gene expression and delivery vectors in both insect and mammalian cells. All of these factors have led to an explosion in the amount of research into insect viruses in recent years generating impressive quantities of information on the molecular and cellular biology of these viruses. This timely book reviews the exciting new developments in the field of insect virology.

Written by internationally renowned insect virologists, chapters review the current molecular biology of all the major groups of insect pathogenic viruses and suggest future directions for research. The book is divided into three parts: 1) DNA viruses 2) RNA viruses and 3) current hot-topics in insect virology. Virus groups covered include: Ascoviruses, Baculoviruses, Densoviruses, Entomopoxviruses, Hytrosaviruses, Iridoviruses, Nudiviruses, Polydnviruses, Dicistroviruses, Iflaviruses, Nodaviruses, Tetraviruses and Cypoviruses. The special topics chapters review exciting recent developments in insect virology including RNAi, insect antiviral responses, structural comparison of insect RNA viruses, and viral ecology. The book is essential reading for every insect virologist in both the academic and private sectors. It is also strongly recommended for other virologists, particularly those interested in virus evolution, virus structure, viral vectors, biological control of insects and insect immunity.

Chapter 1. Ascoviruses. *Dennis K. Bideshi, Yves Bigot, Brian A. Federici and Tatsinda Spears*

Chapter 2. Baculoviruses: Biology, Replication and Exploitation. *Robert D. Possee, Caroline M. Griffiths, Richard B. Hitchman, Adam Chambers, Fernanda Murguia-Meca, John Danquah, Ananya Jeshtadi and Linda A. King*

Chapter 3. Densoviruses: A Highly Diverse Group of Arthropod Parvoviruses. *Max Bergoin and Peter Tijssen*

Chapter 4. Entomopoxviruses. *Srini Perera, Zhen Li, Lillian Pavlik and Basil Arif*

Chapter 5. Hytrosaviruses: Structure and Genomic Properties. *Adly M. M. Abd-Alla, Drion G. Boucias and Max Bergoin*

Chapter 6. Iridoviruses. *Trevor Williams and Vernon K. Ward*

Chapter 7. Nudiviruses: Their Biology and Genetics. *Johannes A. Jehle*

Chapter 8. Polydnviruses. *Michael R. Strand*

Chapter 9. Dicistroviruses. *Bryony C. Bonning and Karyn N. Johnson*

Chapter 10. Genomics and Biology of Iflaviruses. *Monique M. van Oers*

Chapter 11. Insect Nodaviruses. *P. Arno Venter, Juan Jovel and Anette Schneemann*

Chapter 12. Tetraviruses. *Rosemary Ann Dorrington and James Roswell Short*

Chapter 13. Cypoviruses. *Hajime Mori and Peter Metcalf*

Chapter 14. Structural Comparison of Insect RNA Viruses. *Manidipa Banerjee, Jeffrey A Speir and John E Johnson*

Chapter 15. Role of MicroRNAs as Regulators of Host-virus Interactions. *Sassan Asgari and Christopher S. Sullivan*

Chapter 16. The Antiviral Role of RNA Interference. *Michelle L. Flenniken, Mark Kunitomi, Michel Tassetto and Raul Andino*

Chapter 17. Anti-viral Responses in Insects: Apoptosis and Humoral Responses. *Rollie J. Clem, Holly J.R. Popham and Kent S. Shelby*

Chapter 18. The Ecology of Baculoviruses. *Jenny S. Cory*

Order from:

Caister Academic Press, c/o Book Systems Plus <http://www.caister.com/order>

☞ **MALDI-TOF Mass Spectrometry in Microbiology**

Edited by: Markus Kostrzewa and Sören Schubert (Published: 2016)

☞ ***Aspergillus* and *Penicillium* in the Post-genomic Era**

Edited by: Ronald P. de Vries, Isabelle Benoit Gelber and Mikael Rørdam Andersen (Published: 2016)

☞ **The Bacteriocins: Current Knowledge and Future Prospects**

Edited by: Robert L. Dorit, Sandra M. Roy and Margaret A. Riley (Published: 2016)

☞ **Omics in Plant Disease Resistance**

Edited by: Vijai Bhadauria (Published: 2016)

☞ **Acidophiles: Life in Extremely Acidic Environments**

Edited by: Raquel Quatrini and D. Barrie Johnson (Published: 2016)

☞ **Climate Change and Microbial Ecology: Current Research and Future Trends**

Edited by: Jürgen Marxsen (Published: 2016)

☞ **Biofilms in Bioremediation: Current Research and Emerging Technologies**

Edited by: Gavin Lear (Published: 2016)

☞ **Microalgae: Current Research and Applications**

Edited by: Maria-Nefeli Tsaloglou (Published: 2016)

☞ **Gas Plasma Sterilization in Microbiology: Theory, Applications, Pitfalls and New Perspectives**

Edited by: Hideharu Shintani and Akikazu Sakudo (Published: 2016)

☞ **Virus Evolution: Current Research and Future Directions**

Edited by: Scott C. Weaver, Mark Denison, Marilyn Roossinck and Marco Vignuzzi (Published: 2016)

☞ **Arboviruses: Molecular Biology, Evolution and Control**

Edited by: Nikos Vasilakis and Duane J. Gubler (Published: 2016)

☞ ***Shigella*: Molecular and Cellular Biology**

Edited by: William D. Picking and Wendy L. Picking (Published: 2016)

☞ **Aquatic Biofilms: Ecology, Water Quality and Wastewater Treatment**

Edited by: Anna M. Romání, Helena Guasch and M. Dolors Balaguer (Published: 2016)

☞ **Alphaviruses: Current Biology**

Edited by: Suresh Mahalingam, Lara Herrero and Belinda Herring (Published: 2016)

☞ **Thermophilic Microorganisms**

Edited by: Fu-Li Li (Published: 2015)

☞ **Flow Cytometry in Microbiology: Technology and Applications**

Edited by: Martin G. Wilkinson (Published: 2015)

"an impressive group of experts" ([ProtoView](#))

☞ **Probiotics and Prebiotics: Current Research and Future Trends**

Edited by: Koen Venema and Ana Paula do Carmo (Published: 2015)

☞ **Epigenetics: Current Research and Emerging Trends**

Edited by: Brian P. Chadwick (Published: 2015)

"this is one text you don't want to miss" ([Epigenie](#)); "up-to-date information" ([ChemMedChem](#))

☞ ***Corynebacterium glutamicum*: From Systems Biology to Biotechnological Applications**

Edited by: Andreas Burkovski (Published: 2015)

"Without question a valuable book" ([BIOSpektrum](#))

☞ **Advanced Vaccine Research Methods for the Decade of Vaccines**

Edited by: Fabio Bagnoli and Rino Rappuoli (Published: 2015)