



## Book Review

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### **Emergence and Control of Zoonotic Viral Encephalitides**

**Edited by C. H. Calisher and D. E. Griffin**

Vienna, Austria: SPRINGER-Verlag

244 pp., \$189.00, hardcover. ISBN 3-211-20455-5

In recent years registered biosafety professionals (RBPs) had to adapt to a dramatic increase in research on exotic and especially dangerous biological agents. This increase was in response to fear of forthcoming terrorist attacks with biological weapons. Due to this threat, RBPs now have to implement biosafety guidelines in an increasing number of newly inaugurated high-containment facilities. They also have to turn into biosecurity experts because they are now expected to take part in safeguarding exotic agents from theft and misuse. In the near future, RBPs may, in their role as members of Institutional Biosafety Committees, be expected to classify ongoing or planned experiments according to their potential risk for the general public, and to make recommendations as to whether each experiment should be initiated or continued.

Media and scientific discussions about dangerous pathogens have mainly focused on bacterial agents causing anthrax and plague or viral agents belonging to the *Arenaviridae* (e.g., Lassa virus), *Filoviridae* (ebola- and marburgviruses), and *Poxviridae* (e.g., Variola virus). However, RBPs will also have to familiarize themselves with many more or less exotic viruses from other families. Many of these are listed as Select Agents (biological agents or toxins deemed as a threat to the public), Category A-C agents (pathogens that pose a risk to national security), or agents whose handling requires extraordinary bio-

safety precautions for the laboratory worker.

Among these dangerous pathogens, RBPs should familiarize themselves especially with the alpha-, henipa-, and flaviviruses. Notorious alphaviruses are the Biosafety Level (BSL)-3 agents Chikungunya virus and Semliki Forest virus, and the select and Category B agents Eastern, Venezuelan, and Western encephalitis virus. The henipaviruses encompass the select agents Hendra and Nipah virus, which require BSL4 working conditions and are listed as Category C agents. Important flaviviruses in regard to biosafety and biosecurity are, among others, the Central European and Russian spring-summer encephalitis viruses (Tick-borne encephalitis virus complex), which have been listed as select agents and Category C and BSL4 pathogens. All these viruses are known to be transmissible from animals to humans, where they cause encephalitides or other central nervous syndromes.

Since 1990, the publishing house SPRINGER has published supplements to its journal *Archives of Virology*. These supplements have developed into independent scientific texts. Such diverse areas as the history of virology, viral taxonomy, and specific viral families or syndromes are covered in the series. Each of these books presents a well-balanced mix of review and scientific articles, as well as personal observations and unpublished results by individual authors.

Supplement 18, edited by Prof. Charles H. Calisher from the Arthropod-borne and Infectious Disease Laboratory at Colorado State University and Prof. Diane E. Griffin from the Johns Hopkins Bloomberg School of Public Health, was published in 2004 and covers the "Emergence and Control of Zoonotic Viral Encephalitides." The book consists of

21 articles by world-renowned experts in the field of viral zoonoses. A wide range of subjects ranging from phylogenetic analyses of alphaviruses, the description of novel encephalitides caused by various bat viruses, vaccine development, and the creation of small-animal models for alphavirus pathogenesis are discussed. In addition to the many chapters on alpha-, henipa-, and flaviviruses, the book also contains single articles on other important encephalitis viruses. For example, the progress of worldwide poliovirus eradication is described, as well as advances in understanding the neuroinvasive strategy of Rabies virus. However, chapters dealing with other important zoonotic encephalitis viruses, such as Cercopithecine herpesvirus 1 (Herpes B) or the various California encephalitis viruses are missing.

The illustrations in the book are, unfortunately, almost entirely black and white and could have been more artistic, and the chapters are arranged in a somewhat arbitrary order. However, the book is a fascinating introduction to the rapidly expanding field of vector-borne zoonotic viruses that cause dev-

astating diseases globally, and which could prove to be disastrous in the hands of bioterrorists. It contains several outstanding chapters, which alone would make it worthwhile to acquire. For instance, an article by Weaver et al. on the genetic determinants of the emergence of Venezuelan equine encephalitis not only gives a superb overview of current knowledge on these viruses, their vectors and hosts, and outbreaks they have caused, but also contains previously unpublished observations on virulence factors and vector adaptation. Similarly, an excellent chapter by Gould et al. describes the evolution of encephalitic flaviviruses. Subsequent articles by Mackenzie et al. and Eaton et al. provide comprehensive and detailed introductions to the only recently discovered henipaviruses and their bat reservoirs.

In summary, Calisher and Griffin managed to create a compelling and important book that provides RBPs with essential background information on zoonotic encephalitic viruses.

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