Viral Pathogenesis

by Neal Nathanson (Editor-in-Chief)

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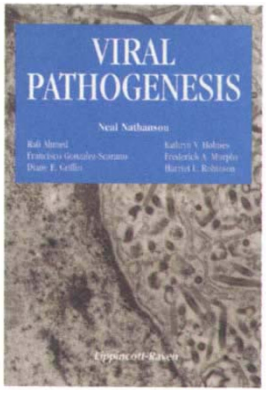
This large tome contains 37 chapters, largely written by eminent investigators, on how viruses cause disease. It is written for graduate and medical students, and for specialists and investigators in virology and infectious disease. Organized in four main sections, the 400 pages in Part I are on Principles of Viral Pathogenesis and constitute nearly half the book. There follow sections on Experimental Pathogenesis with an atlas and three methods chapters, Classical Models, such as Polio, Lymphocytic Choriomengitis, Retro- and Reoviruses, and Systems Pathogenesis such as Respiratory, Enteric and Nervous System diseases. The subject index provides a useful homing device, though where a virus or disease is discussed in more than one chapter, only its main entry tends to be indexed.



A text-book of this size with large numbers of contributing authors is bound to vary from chapter to chapter in depth and coverage. Yet the editors and authors are to be congratulated on achieving a uniform high quality of clarity and accuracy. The chapters with their headings and subheadings are well laid-out, the tables and many figures are clear. Almost without exception the diagrams are in black and white; indeed so are most of the photomicrographs, but where color is essential as in some histopathological and *in situ* pictures, it is of good quality.

The single, major setback to this book is that it is so badly out of date. The majority of chapters cite references up to 1994, some have a sprinkling from 1995, and I found just two from 1996, though no doubt there are some more. In these days of electronic editing, this is simply not good enough. Lippincott-Raven must learn to live with on-line revisions and to cudgel contributors to update their texts up to the point of production. Of course, a solid text-book should not be simply stuffed with the very latest ephemera, but this one has too much detail from the 1993–94 era.

The least dated chapters are those dealing with principles and systems, and those where relatively few advances have been made. The fast moving fields naturally suffer from 1994 state-of-the-art published in 1997. Thus the 1993 discovery of new hantavirus and associated pulmonary syndrome in the US South-West (Sin Nombre virus) is discussed in the chapter on hemorrhagic diseases (but not respiratory diseases). Human herpes virus 8, or Kaposi's sarcoma associated virus, first reported in December 1994, does not exist in this book; indeed, Kaposi's sarcoma is discussed only in relation to HIV, and in reference to some now refuted oncogenes. It was, from the epidemiological standpoint, clear long before HHV-8 was discovered that an unknown virus must lie behind its pathogenesis. Similarly, there is no discussion of putative, unknown, viral infections in chronic neurodegenerative diseases like multiple sclerosis, perhaps because of so many previous false alarms in this field. HIV curiously features in the chapter on acute infections of the CNS, not the one on persistent infections. Despite fascinating new knowledge about pox and herpes viruses that carry decoys of cytokines and proteins that interfere with apoptotic signaling, the surface of this area is barely scratched.

Personally, I would have liked to see more discussion and, yes, speculation on viral pathogenesis in Darwinian terms. There is now a wealth of models to explain why some virus infections are pathogenic, and others, often closely related, are not. For instance, pathogenesis may relate to the dynamics of transmission, as in acute measles infection, or it may be an evolutionary null, sporadic oddity, as in measles-induced sub-sclerosing panencephalitis. A chapter on theory would not go amiss and without it the chasm between experimentalist and mathematical biologist remains unbridged.

I warmly commend this book to those interested in viral disease, for its very solid background and breadth of scope, and as a reference source up to 1994. My recommendation to the editors is to get cracking on the next edition with a shorter incubation period between words entered and pages printed. Greater synthesis between theory and description would be welcome. More cross-referencing between chapters would aid that synthesis. For example, I looked in vain for the important story of murine mammary tumour virus superantigens in the chapters on avian and murine retroviruses and on retroviral oncogenesis. Eventually I found it via the index under virus-induced immune suppression — its relevance to viral transmission and tropism not so much as mentioned. The editors could genuinely edit the chapters, inducing judicious recombination, deletion and chimerism to achieve a smoother, more intellectual read-through. Since a high proportion of contributors are almost within ear shot of the Liberty Bell, such coherence should be readily achieved.

Molecular Biology of Cancer

by F. Macdonald and C.H.J. Ford

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If one wishes to paint a big picture with broad strokes, yet on a small canvas, what is from a distance an acceptable appearance may fade on close inspection. Thus whereas *Molecular Biology of Cancer* provides the reader with a suitable broad based summary of some important advances, this is mixed in with a dizzying array of tangled details and missing pieces.

The overall organization of the book makes sense. Due to the limited size and scope of this reference work, the authors have divided the book into 13 short chapters and two appendices. The overview in the first chapter, "General Principles", adequately outlines some of the important concepts in cancer garnered over the past decades. However, even here, major areas of intense research — signal transduction, metalloproteinases, angiogenesis, carcinogenesis and methylation for example — are not even mentioned, some attracting only very brief consideration in later chapters.