Preface

The group B coxsackieviruses have a long and colorful history, dating to the early
days of virology as we now know it. In the late 1940s, ultracentrifugation and
electron microscopy were new, high-tech tools and suckling mice were supplant-
ing monkeys as the virus isolation vessel of choice. Viruses were, often as not, still
referred to as “filterable agents.” The rampage of paralytic poliomyelitis epidem-
ics in the previous 20 or so years had spurred national investment in infectious
disease research, resulting in an unprecedented period of virus discovery, eclipsed
only a few years later once cell culture became the preferred method to isolate and
identify mammalian viruses. The coxsackieviruses were isolated from feces of
patients with paralytic poliomyelitis and nonparalytic poliomyelitis (aseptic
meningitis), causing disease in suckling mice, but not in adult mice or monkeys.
They were considered to be related to the polioviruses on the basis of their
physical properties, such as virion size, acid and ether resistance, and temperature
stability in 50% glycerol, and were classified into groups A and B by the nature of
the disease induced in mice: flaccid paralysis by group A viruses and spastic
paralysis by those of group B.

Our knowledge of the group B coxsackieviruses has progressed dramatically
in the past 60 years. Some of the most recent advances include the identification
of the coxsackievirus–adenovirus receptor, the dissection of genetic elements
linked to virulence/attenuation, examination of the impact of recombination in
virus evolution and diversity, and analysis of the role of viral proteins in regulat-
ing host-cell macromolecule synthesis and trafficking. The first edition of this
work, published in 1997, described the molecular biology of coxsackie B viruses,
as well as clinical, epidemiological, and immunological aspects of group B cox-
sackievirus disease. Much has been accomplished in the past 10 years, including
determination of the crystal structure of a virus–receptor complex, significant
advances in understanding the molecular details of virus–host interaction within
the cell, and deeper insights into the systemic effects of virus infection and the
host response. This second edition summarizes the current state of knowledge in
group B coxsackievirus genomics and replication, receptor structure and func-
tion, host-cell interactions, the host immune response and immunopathology,
viral virulence and pathogenesis, and the role of this important group of viruses in acute and chronic disease in humans.

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