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PREFACE

Our understanding of the clinical aspects, epidemiology, and pathogenesis of *Campylobacter* infection has increased dramatically since publication of the second edition of *Campylobacter* in 2000. As the number of species within the family has expanded, so has our knowledge of this group of organisms in terms of their physiology, population biology, and diversity. The ability to understand genomic diversity in *Campylobacter* is due in great part to improvements in technology that have advanced comparative analyses. The sequencing of the first *C. jejuni* strain in 2000 was a milestone in *Campylobacter* genetics and brought to light aspects of biology that previously could not have been identified. Since then, additional complete *Campylobacter* genome sequences have been published and have provided new insights about the genomic diversity of these organisms, which now is covered extensively in this new edition.

*Campylobacter* infections and their complications, such as Guillain-Barré syndrome, cause significant morbidity in specific populations. There is growing recognition of *Campylobacter* among clinicians as well as by the lay public. Antimicrobial resistance also continues to increase and poses new issues regarding therapies. Of particular note are the impact that researchers in our field have had on government regulation of antimicrobial agent use in food animals and how effecting change will ultimately improve human health.

Our understanding of the pathogenesis of *Campylobacter* infections has advanced greatly, especially in the area of signal transduction pathways and cell biology of the organism. The emerging field of *Campylobacter* glycobiology, which was pioneered by the late Gerald Aspinall, has provided a structural basis for important polysaccharides and glycolipids from the organism and great insight into glycosylation systems, which also are present in other prokaryotes and eukaryotes. This work, combined with an increased understanding of the molecular biology of gene expression in *Campylobacter*, is helping to form a more complete picture about the organism and its interaction with the host and environment.

Ultimately, research will help improve human health through understanding the immunology of campylobacter infection and the pertinent host defenses. These will lead to the development of strategies to reduce infection, through either effective vaccines or improved food safety. The ecology of food safety also has seen a dramatic increase in research, with emphasis on understanding the extent of campylobacter in the food supply, transmission of antibiotic resistant campylobacters from food animals to humans, and control of campylobacter at the food source.

The above advances have helped to form the nucleus for the 3rd edition of *Campylobacter*. We are grateful to the scientific groups from around the world that have contributed to the preparation of these outstanding chapters. These represent the generous sharing of our growing knowledge of these important zoonotic pathogens of humans. Finally, we especially thank Greg Payne at ASM Press for his help and guidance throughout the process of developing this volume.

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