

Preface

The idea of creating a book about the bacteriophages was conceived by the late Heinz Fraenkel-Conrat in his role as an editor of a series called *The Viruses*. The first edition of *The Bacteriophages* was published by Plenum Press in 1988 as two volumes. Its manager, Kirk Jensen, arranged for Oxford University Press to sponsor this second edition, and the new project was managed by Peter Prescott. Much has happened in the phage world since 1988. Horizontal gene transfer, which was just beginning to find acceptance then, has become an established issue today. Observation of the packaging of single DNA molecules and measurement of the force of the packaging motor is a recent happening. Phages with linear plasmid prophages were unknown in 1988. At that time, no one would have thought that a filamentous phage genome would integrate into a host genome. We have included articles on these subjects in this edition.

We aim to provide a current guide to each of the major phage families and to provide a general description of the kinds of phages that are associated with the major classes of eubacteria and archaea. In addition, we wish to highlight interesting current topics that are relevant to many of the phage families. I have been asked on several occasions to advise colleagues on the control of phage infections in bacterial cultures and fermentation facilities. To answer this need, Gregg Bogosian of Monsanto Corporation has provided a description of how phage control is achieved where its economic impact is high. Phages have been used

widely to display antigens, and Björn Lindqvist has summarized the state of this field. Due to renewed interest in phage therapy, Carl Merril, Dean Scholl, and Sankar Adhya have contributed an article on the status and prospects of this art.

The latter stages of producing this volume were greatly aided by Steve Abedon (see phage.org, the google.com "phage ecology" *I'm feeling lucky* site). Steve came to *The Bacteriophages* first as an author (chapter 5, Phage Ecology) and then as developer of the companion web site (thebacteriophages.org). In the course of the latter he became intimately involved in the formatting and refinement of the figures (all of which may be found, some with color, at thebacteriophages.org). This activity led to editing of the figure legends, and then to editing of all 48 chapters. Closer to the beginning, Hans Ackermann suggested the order of presentation of articles.

This volume is dedicated to phage workers who have passed on recently: Gisela Mosig, who elucidated the diversity of DNA replication mechanisms used by coliphage T4; Edouard Kellenberger, whose expertise in electron microscopy led to the discovery of λ phage proheads, as well as to the superior electron microscope facilities at the European Molecular Biology Organization Laboratory; and Wolfram Zillig, who traveled the globe by airplane, foot, and cross-country skis to collect Archaea and show that they could release virus particles.

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