

Preface

It has been 10 years since Plenum included a series of reviews on bacteriophages, in *Comprehensive Virology*. Chapters in that series contained physical-genetic maps but very little DNA sequence information. Now the complete DNA sequence is known for some phages, and the sequences for others will soon follow. During the past 10 years two phages have come into common use as reagents: λ phage for cloning single copies of genes, and M13 for cloning and DNA sequencing by the dideoxy termination method. Also during that period the use of alternative sigma factors by RNA polymerase has become established for SPO1 and T4. This seems to be a widely used mechanism in bacteria, since it has been implicated in sporulation, heat shock response, and regulation of nitrogen metabolism. The control of transcription by the binding of λ phage CII protein to the -35 region of the promoter is a recent finding, and it is not known how widespread this mechanism may be.

This rapid progress made me eager to solicit a new series of reviews. These contributions are of two types. Each of the first type deals with an issue that is exemplified by many kinds of phages; chapters of this type should be useful in teaching advanced courses. Chapters of the second type provide comprehensive pictures of individual phage families and should provide valuable information for use in planning experiments. During the next 10 years, at least, phages will still be attractive model systems for studies of the interactions among DNA, RNA, and proteins, since they are so easy to handle and since so much is already known about them.

These volumes are dedicated to Arthur Kornberg on the occasion of his 70th birthday. When I was a graduate student in his department, Arthur was always available, and his advice had enormous value. Recently, the success of my research on P4 phage DNA replication has depended upon generous gifts of purified proteins from Arthur's laboratory. In facing life's predictable crises, I invariably find the path to humility by asking myself "how did Arthur handle this?"

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