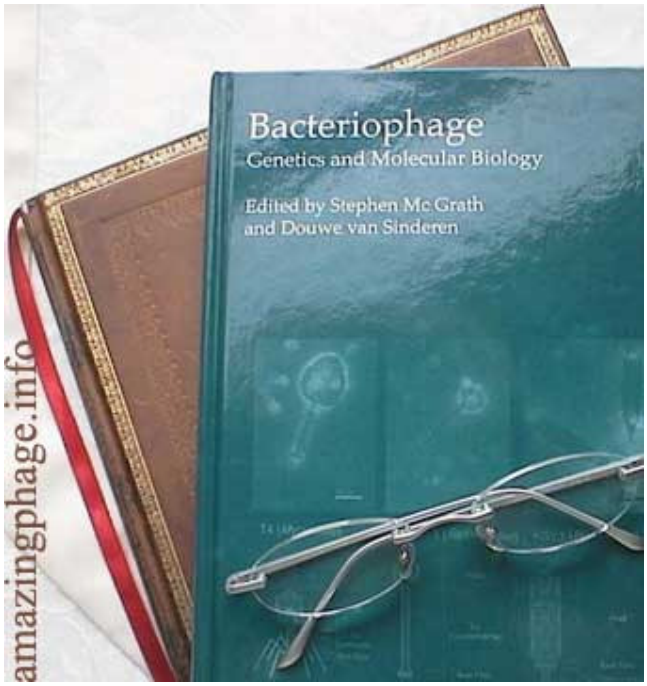

Bacteriophage Genetics and Molecular Biology
Edited by Stephen Mc Grath and Douwe van Sinderen
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£150

This beautifully produced, hardback book is also manageable in size and clearly a significant investment for any forward-thinking university or hospital library. It would be a source of inspiration and scientific excitement for students and researchers in a variety of fields, including medicine and industry.

There are 36 contributors spanning 11 countries across Europe and North America. The editors start off by providing postal and email addresses for all the co-authors; this will help to encourage respectful networking and sharing of knowledge during the current rapid developments in phage science. Refreshingly, they have decided not to state academic status or qualifications, thus indicating a spirit of egalitarian collaboration and initiative, meanwhile suggesting that times do change, and we are all learning.

The 12 chapters are mostly co-authored by colleagues working locally. The 352 pages include nearly 70 pages of published references, 30 figures and 6 tables, 9 pages of index and 1 colour plate to illustrate some biological chemistry.

The first chapter is an immediate overview, barely touching on the old history of phage science. It simply summarizes the here and now – the way that phage science has played a crucial role in some of the most significant discoveries in biological sciences, especially with DNA genetics and our understanding of viruses, resulting in a Nobel Prize in 1969.

Since then, phages have been widely put to use as model organisms and very handy

research tools in the transformation of biological research. We have phages to thank for answering some complex biological questions. Genes and DNA are now in common parlance, and a new genomic era was established thirty years ago, with much work still to do.

We are guided through the multifaceted nature of bacteriophage research, discovering a precious hoard of tiny gems.

For the 21st century there is very detailed information on the biology, ecology and diverse nature of phages. The authors explain that we now know that phages have a dramatic impact on the ecology of our planet, referring us to key authorities and leaders in the field of phage science and microbiology.

I can particularly commend the chapters on 'Bacteriophages in Medicine' and 'Phage Therapy – The Western Perspective', since these authors (from Poland and Switzerland, respectively) enlighten us to some unexpected and welcome new avenues for further research and development. For example, besides their clear role as one of the tools we could add to our essential arsenal defending us from antibiotic-resistant bacteria, we are informed of the surprising potential of phages in treating viral infections, and some novel findings in improving and maintaining the immune system.

These chapters would also do a powerful job in allaying some concerns of 'Doubting Thomases', as well as providing mostly very readable and even lively accounts of scientific adventure happening right now.

The basic message that runs like a glittering thread through this theme is that the bacteriophages used in medicine are safe. We are advised precisely where to look for the evidence. 'From a clinical standpoint, phages appear to be innocuous.'

With scientific discoveries being made all the time, perhaps future editions will include breaking news of phages in combination with enzymes, or bio-composite technologies, or multiple concurrent strategies to tackle biofilms and the outcome of the current Phase 2 and Phase 1 clinical trials taking place in London UK, Texas USA and Germany. There are practical opportunities for clinical research in veterinary science and dentistry, as well as human medical and environmental applications. There is also potential for phages to be applied through the lymphatic system to treat serious infections rather than intravenously, filamentous phages for the treatment of Alzheimer's and aerosol phages that could be put to use on traumatic wounds on modern battlefields.

Regarding clinical trials, the authors call for cooperation with industry, unless public funds can now be allocated for this purpose.

Swiss contributor Brüssow describes phage therapy as 'a unique medicine, which challenges current pharmacokinetic concepts'. Whereas the safety aspect is clearly documented, the point is made that, as yet, definitive proof of the efficacy of these phage approaches is only provided in a few cases. He advises us that there is some documentation in Russian that could provide detailed evidence from extensive double-blinded prophylaxis and treatment trials.

Meanwhile we are reminded of the strides forward that have been made in New York with Vince Vischetti's Rockefeller group working on lysins. They have made a great contribution to the world by providing a 'biological disinfectant' against a top bioterrorism agent, anthrax.

We are indebted to these scientists for pooling their valuable work into one volume so that students, academics and other interested parties around the world can read and decide for themselves whether phage biology is worth serious investment of time and money. No doubt you will find other highlights worth mentioning. Even the cover of this book is an intriguing work of art.

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Grace Filby
Churchill Fellow
www.amazingphage.info