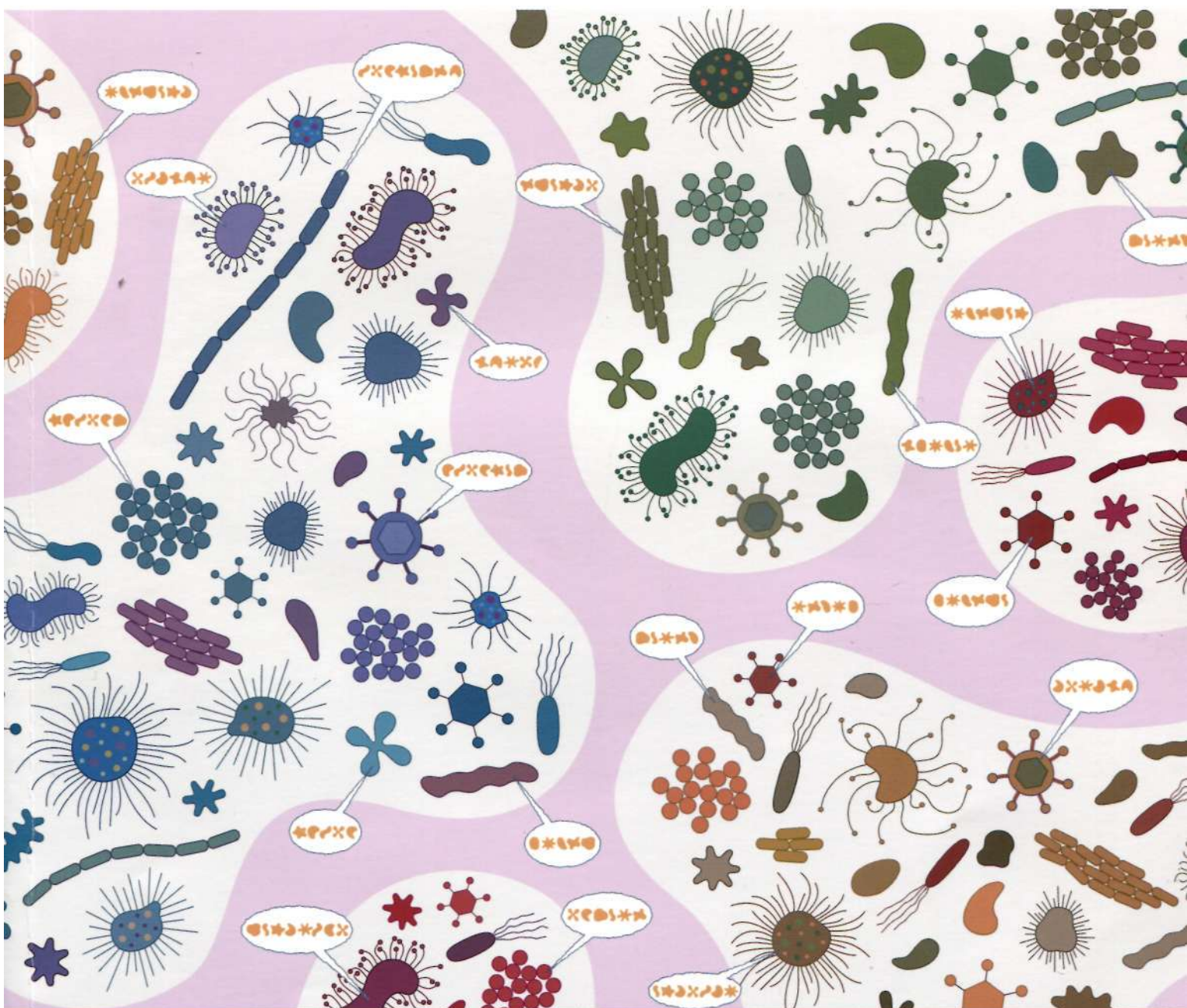


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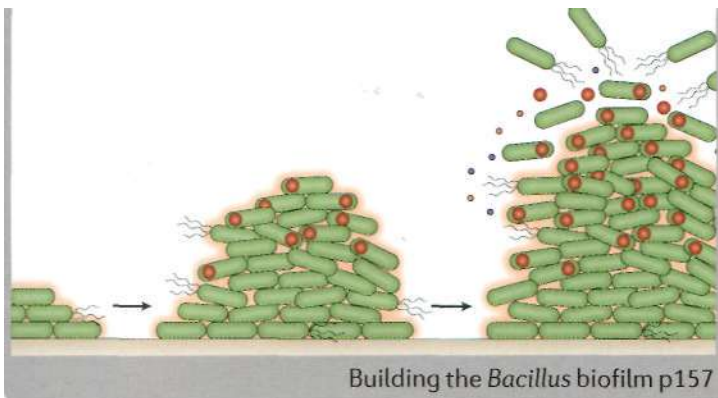


LOOK WHO'S TALKING

Spilling the beans on the
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Popping the cork

Mechanisms of phage genome
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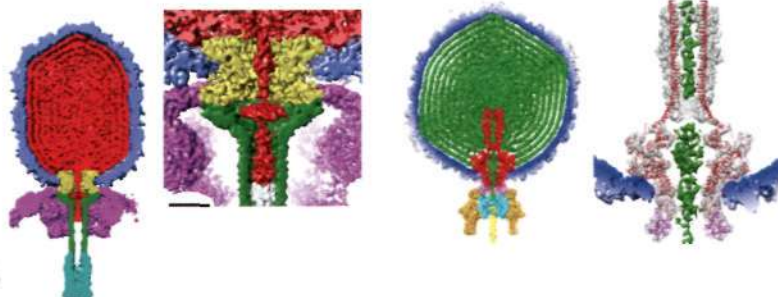
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- 157** **Sticking together: building a biofilm the *Bacillus subtilis* way**
Hera Vlamakis, Yunrong Chai, Pascale Beauregard, Richard Losick and Roberto Kolter
Bacillus subtilis has emerged as an important model organism for the study of biofilms. In this Review, Kolter, Losick and colleagues discuss the regulation of *B. subtilis* biofilm assembly and highlight two emerging areas in the field: biofilm formation on natural substrates and biofilm disassembly.

- 169** **RNA viruses and the host microRNA machinery**
Benjamin R. tenOever
Small RNAs (sRNAs) are used by plants, nematodes and arthropods in cellular defence against viruses, but in chordates, sRNAs were replaced with a protein-based system to inhibit viral replication. Here, Benjamin tenOever describes how the lack of interplay between cellular sRNAs and RNA viruses permits the engineering of vectors that can deliver their own sRNAs or are controlled by the sRNAs present in the host.

- 181** **Beyond insecticides: new thinking on an ancient problem**
Elizabeth A. McGraw and Scott L. O'Neill
In addition to developing vaccines and drugs that target vector-borne diseases, historically the use of insecticides has been the main approach for targeting the vector itself. However, as McGraw and O'Neill describe in this Review, there has been substantial recent progress in developing alternative genetic and biological vector-control strategies.

- 194** **Popping the cork: mechanisms of phage genome ejection**
Ian J. Molineux and Debabrata Panja
Despite 60 years of investigation, our understanding of the mechanisms by which phages eject their genomes into target bacterial cells remains incomplete. Here, Molineux and Panja describe the structure of DNA inside the phage head and discuss the current models for DNA ejection both *in vitro* and *in vivo*.



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Daniel M. Cornforth and Kevin R. Foster

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James A. DeCaprio and Robert L. Garcea

SERIES ON VECTOR-BORNE DISEASES

A series of articles highlighting the distinct features of a range of vector-borne pathogens and the diseases they cause, as well as how the host responds to these infections. The articles can be found online at: <http://www.nature.com/nrmicro/series/vectorbornediseases/index.html>

Links to further information

The full text of articles includes author biographies, links to glossary terms and links to websites and databases with relevant information.

At a glance provides a bullet-pointed summary of the main topics covered in each article.

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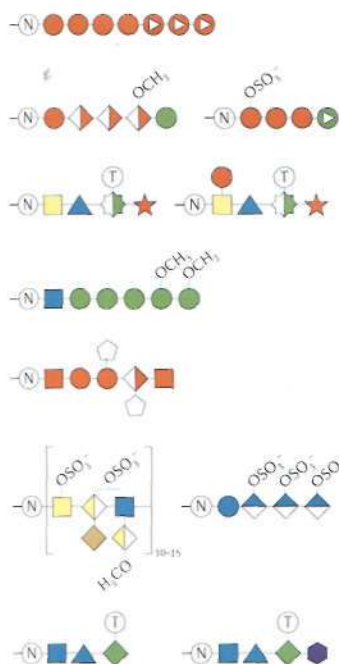
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LOOK WHO'S TALKING
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151 Extreme sweetness: protein glycosylation in archaea

Jerry Eichler

N-glycosylation was first reported in archaea almost 40 years ago. However, as Jerry Eichler describes in this Progress article, it is only recently, with the ready availability of archaeal genome sequences and new and improved molecular tools, that we have begun to make major advances in our understanding of this crucial post-translational modification.

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205 Shallow breathing: microbial life at low O₂

Rachel L. Morris and Thomas M. Schmidt

In this Analysis article, Morris and Schmidt report the results of surveys searching for high-affinity terminal oxidase genes in sequenced bacterial genomes and shotgun metagenomes. They find that bacteria with the potential to respire under microoxic conditions are phylogenetically diverse and intriguingly widespread in nature, and go on to highlight the importance of microaerobic metabolism in host-associated bacteria.

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FEATURED
ARTICLE

Martin Blaser, Peer Bork, Claire Fraser, Rob Knight and Jun Wang

Here, Blaser, Bork, Fraser, Knight and Wang highlight the most exciting findings in the field of microbiome research and discuss what will be necessary to obtain a better understanding of the role of the microbiota in human health and disease, and to develop microbiota-based therapies.

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