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► **COVER:** 'The Good Viruses' by Philip Patenall, inspired by the Review on p99.



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Viruses have traditionally been viewed as pathogens, as they cause extensive disease and suffering for humans and domesticated plants and animals. However, as discussed by Marilyn Roossinck on page 99, many viruses are clearly beneficial to their hosts. Some viruses are essential for the survival of their hosts, others give their hosts a competitive advantage, and some have been associated with their hosts for so long that the line between host and virus has become blurred. How these beneficial interactions evolve is still a mystery in many cases, but the mechanisms of these interactions are beginning to be understood.

Other microorganisms — whether pathogenic or not — benefit from the ability to enter a reversible state of low metabolic activity, or dormancy, when faced with unfavourable environmental conditions. Dormant microorganisms therefore constitute a reservoir, or 'seed bank', of individuals that can potentially be resuscitated in the future, after environmental change. On page 119, Jay Lennon and Stuart Jones highlight known mechanisms for entering and exiting dormancy, and discuss the implications of microbial seed banks for evolutionary dynamics, population persistence, maintenance of biodiversity and the stability of ecosystem processes.

Finally, we would all benefit from more frequent and effective international collaborations to address shared health problems, as infectious diseases spread faster than ever before with increasing globalization. In their article on page 137 (which can be downloaded for free from our website during the next 3 months), Halla Thorsteinsdóttir and colleagues discuss possible ways to promote international partnerships in order to address these issues.

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