



nature publishing group

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► **COVER:** 'Insiders' by George Marshall, inspired by this Focus issue.



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The first observation of symbiosis was the recognition that lichen is actually two independent organisms that live together — a fungus and a blue-green alga. The word symbiosis, originally defined as “where two species live on or in one another”, was coined by Albert Bernhard Frank in 1877. Later, Anton de Bary outlined three criteria for symbiosis: two entities must live together, they must be intimate (in physical contact) and they must be dissimilar (different species). Symbiotic interactions range from parasitism to commensalism and mutualism. Although sometimes considered an unusual way of life, microbial symbioses are increasingly recognized as widespread, with important roles in health, disease, ecology and environmental processes.

This month, to mark the progress that is currently being made in this field, *Nature Reviews Microbiology* presents a Focus issue on Symbiosis. This collection of specially commissioned articles is designed to inform readers of the latest advances in this exciting field, and is prefaced by a Foreword written by David Relman (page 721). Selected articles include a Review describing how endosymbiotic *Wolbachia* manipulate reproduction of their insect hosts, by John Werren, Laura Baldo and Michael Clark (page 741), and a Review describing ecologically important chemosynthetic symbioses, by Nicole Dubilier, Claudia Bergin and Christian Lott (page 725). Armed with a new set of computational tools and gene sequences gathered from 180 different studies of microbial communities from diverse habitats, Ruth Ley, Jeffrey Gordon and colleagues identify selective forces that probably shaped the highly distinctive features of microorganisms in the gut in an Analysis article (page 776). The publication of this special issue coincides with the second [ASM conference on Beneficial Microbes](#), which showcases symbiosis research.

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