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Symposium

Evolutionary patterns in pathogenic and symbiotic relationships

Marco Thines

Pathogenic and symbiotic interactions have strongly influenced the evolution of the interactors. In the case of pathogens and parasites, cospeciation, host clade limited colonisation, as well as multiple host jumps between unrelated hosts have been revealed. Symbiotic interactions, for example in lichens, plant-animal symbioses, and endophytes, have enabled both partners of the symbiosis to colonise new environments and have led to speciation and radiation of the hosts, the symbionts or both. The differences between pathogenic and symbiotic lifestyles are often subtle, and transition from pathogenic or free-ranging lifestyle to symbiosis and sometimes its reversal has occurred multiple times in the evolution of symbiotic and pathogenic organisms. Phylogenetic investigations of closely interacting species uncover significant similarities throughout diverse phylogenetic lineages, revealing common evolutionary patterns throughout all domains of life.