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Sommario/riassunto	<p>Symbiosis is an intimate relationship between different living entities and is widespread in virtually all organisms. It was critical for the origin and diversification of Eukaryotes and represents a major driving force in evolution. Indeed, symbiosis may support a wide range of biological processes, including those underlying the physiology, development, reproduction, health, behavior, ecology and evolution of the organisms involved in the relationship. Although often confused with mutualism, when both organisms benefit from the association, symbiosis actually encompasses several and variable relationships. Among them is parasitism, when one organism benefits but the other is harmed, and commensalism, when one organism benefits and the other remains unaffected. Even if many symbiotic lifestyles do exist in nature, in many cases the intimacy between the partners is so deep that the “symbiont” (sensu strictu) resides into the tissues and/or cells of the other partner. Since the partners frequently belong to different kingdoms, e.g. bacteria, fungi, protists and viruses living in association with animal and plant hosts, their shared “language” should be a basic and ancient form of communication able to effectively blur the boundaries between extremely different living entities. In recent years studies on the role of epigenetics in shaping host-symbiont interactions have been flourishing. Epigenetic changes include, but are not limited to, DNA methylation, remodelling of chromatin structure through histone chemical modifications and RNA interference. In this E-book we present</p>

a series of papers exploring the fascinating developmental and evolutionary relationship between symbionts and hosts, by focusing on the mediating epigenetic processes that enable the communication to be effective and robust at both the individual, the ecological and the evolutionary time scales. In particular, the papers consider the role of epigenetic factors and mechanisms in the interactions among different species, comprising the holobiont and host-parasite relationships. On the whole, since epigenetics is fast-acting and reversible, enabling dynamic developmental communication between hosts and symbionts at several different time scale, we argue that it could account for the enormous plasticity that characterizes the interactions between all the organisms living symbiotically on our planet.
