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Nota di contenuto	General Aspects -- Prioritizing Symbiosis to Sustain Biodiversity: Are Symbionts Keystone Species? -- Morphological Aspects of Symbiosis -- Symbioses and their Consequences for Community and Applied Ecology -- Origin & Evolution -- What's in a Tree? -- The Commonality of Cyanobacterial Endosymbioses Does Not Support the Endosymbiotic Theory for Origin of Eukaryotic Organelles -- Non Symbiotic Origin of Locomotory Organelles -- The Cyanelle (Muroplast) of Cyanophora Paradoxa: A Paradigm for Endosymbiotic Organelle Evolution -- The Syntrophy Hypothesis for the Origin of Eukaryotes -- Thermodynamic Ecology of Hydrogen-Based Syntrophy -- Nutritional Syntrophies and Consortia as Models for the Origin of Mitochondria -- Reversion of Endosymbiosis? -- Symbiosomes -- The Absence of Nitrogen-Fixing Organelles Due to Timing of the Nitrogen Crisis -- Nucleus Symbiosis Hypothesis Formation of Eukaryotic Cell Nuclei by the Symbiosis of Archaea in Bacteria -- Bacteria, Cyanobacteria & Algae -- Phototrophic Consortia: A Tight Cooperation Between Non-Related Eubacteria -- Structure and Phylogeny of Cyanophora Species -- The Microenvironment and Photosynthetic Performance of Prochloron SP. in Symbiosis with Didemnid Ascidians -- Fungi Symbiosis -- Survival Strategies in Arbuscular Mycorrhizal Symbionts -- Three Part Harmony — Ascophyllum and Its Symbionts -- Arbuscular Mycorrhizal Fungi and Their Endobacteria -- Lichens -- Origin and Evolution of Green Lichen

Algae -- Lichenization of the Trentepohliales -- Trebouxia: Reflections on a Perplexing and Controversial Lichen Photobiont -- Symbiosis in Plants -- Algae Living on Trees -- Cycad Coralloid Roots Housing Cyanobacteria -- Evolution of Epichloë/Neotyphodium Endophytes and Other Clavicipitalean Biotrophs -- The Effect of Endophytic Fungi on Host Plant Morphogenesis -- Association with Protozoa -- Anaerobic Ciliates and Their Metahaplozoan Endosymbionts -- Endosymbiosis of Beta-Proteobacteria in Trypanosomatid Protozoa -- Ectosymbiosis in Ciliated Protozoa -- Living Sands: Symbiosis between Foraminifera and Algae -- Protistan-Prokaryotic Symbioses in Deep-Sea Sulfidic Sediments -- Symbiosis in Insects and Higher Animals -- Sponge/Algal Symbioses: A Diversity of Associations -- The Taxonomy and Evolution of the Zooxanthellae-Coral Symbiosis -- Algal Symbiosis in Flatworms -- Trichomycetes: Fungi in Relationship with Insects and Other Arthropods -- Evolution of Ascomycota-Arthropoda Symbioses -- The Laboulbeniales — An Enigmatic Group of Arthropod-Associated Fungi -- Wolbachia-Induced Cytoplasmic Incompatibility -- How do Wolbachia Symbionts Increase the Proportion of Females in Their Hosts? -- Genome of Buchnera sp. Aps, an Intracellular Symbiotic Bacterium of the Pea Aphid Acyrthosiphon Pisum -- The Functions of Symbiotic Micro-Organisms in Insects -- Ants, Agriculture, and Antibiotics -- Termite Hindgut Symbionts -- Symbiosis in the Termite Gut -- Cultivation of Symbiotic Fungi by Termites of the Subfamily Macrotermitinae -- Cospeciation Between Hosts and Symbionts:.

Sommario/riassunto

Symbiosis is the fourth volume in the series Cellular Origin and Life in Extreme Habitats (COLE). Fifty experts, from over a dozen countries, review their current studies on different approaches to these phenomena. The chapters present various aspects of symbiosis from gene transfer, morphological features, and biodiversity to individual organisms sharing mutual cellular habitats. The origin of the eukaryotic phase is discussed with emphasis on cyanobacteria, H₂ syntrophy, N₂ fixation, and S-based symbiosis (as well as the origin of mitochondrion, chloroplast, and nucleus). All members of the three domains of life are presented for sharing symbiotic associations. This volume brings the concept of living together as 'One plus One (plus One) equals One.' The purpose of this book is to introduce the teacher, researcher, scholar, and student as well as the open-minded and science-oriented reader to the global importance of this association.