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Nota di contenuto	Frontmatter -- Contents -- Preface -- Acknowledgments -- Recommended Reading -- Frequently Used Symbols -- Chapter One. An Introduction to Some Basic Concepts -- Chapter Two. Environmental Biophysics -- Chapter Three. Plant Water Relations -- Chapter Four. The Mechanical Behavior of Materials -- Chapter Five. The Effects of Geometry, Shape, and Size -- Chapter Six. Fluid Mechanics -- Chapter Seven. Plant Electrophysiology -- Chapter Eight. A Synthesis: The Properties of Selected Plant Materials, Cells, and Tissues -- Chapter Nine. Experimental Tools -- Chapter Ten. Theoretical Tools -- Glossary -- Author Index -- Subject Index
Sommario/riassunto	From Galileo, who used the hollow stalks of grass to demonstrate the idea that peripherally located construction materials provide most of the resistance to bending forces, to Leonardo da Vinci, whose illustrations of the parachute are alleged to be based on his study of the dandelion's pappus and the maple tree's samara, many of our greatest physicists, mathematicians, and engineers have learned much from studying plants. A symbiotic relationship between botany and the fields of physics, mathematics, engineering, and chemistry continues today, as is revealed in Plant Physics. The result of a long-term collaboration between plant evolutionary biologist Karl J. Niklas and

physicist Hanns-Christof Spatz, Plant Physics presents a detailed account of the principles of classical physics, evolutionary theory, and plant biology in order to explain the complex interrelationships among plant form, function, environment, and evolutionary history. Covering a wide range of topics-from the development and evolution of the basic plant body and the ecology of aquatic unicellular plants to mathematical treatments of light attenuation through tree canopies and the movement of water through plants' roots, stems, and leaves-Plant Physics is destined to inspire students and professionals alike to traverse disciplinary membranes.