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Titolo	Concepts in Cell Biology - History and Evolution / / edited by Vaidurya Pratap Sahi, František Baluška
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Descrizione fisica	1 online resource (295 pages)
Collana	Plant Cell Monographs, , 1861-1370 ; ; 23
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Soggetti	Cell biology Plant anatomy Plant development Microscopy Biology—History Cell Biology Plant Anatomy/Development Biological Microscopy History of Biology
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Plant Cell Biology: When, How and Why? -- 180 Years of the Cell: from Matthias Jakob Schleiden to the Cell Biology of the 21st Century -- Symbiotic Origin of Eukaryotic Nucleus – From Cell Body to Neo-Energide -- A Brief History of Eukaryotic Cell Cycle Research -- A Short History of Plant Microtubule Research -- Plant Actin Cytoskeleton: New Functions from Old Scaffold -- Cell Wall Expansion: A Case Study of Biomechanical Process -- Apoplastic Barriers - Structure and Function from the Historical Perspectives -- Evolving Views on Plastid Pleomorphy -- Communication within Plant Cells -- Plasmodesmata: A History of Conceptual Surprises -- Origins of Cellular Biosphere.
Sommario/riassunto	This book discusses central concepts and theories in cell biology from the ancient past to the 21st century, based on the premise that understanding the works of scientists like Hooke, Hofmeister, Caspary, Strasburger, Sachs, Schleiden, Schwann, Mendel, Nemec,

McClintock, etc. in the context of the latest advances in plant cell biology will help provide valuable new insights. Plants have been an object of study since the roots of the Greek, Chinese and Indian cultures. Since the term “cell” was first coined by Robert Hooke, 350 years ago in Micrographia, the study of plant cell biology has moved ahead at a tremendous pace. The field of cell biology owes its genesis to physics, which through microscopy has been a vital source for piquing scientists’ interest in the biology of the cell. Today, with the technical advances we have made in the field of optics, it is even possible to observe life on a nanoscale. From Hooke’s observations of cells and his inadvertent discovery of the cell wall, we have since moved forward to engineering plants with modified cell walls. Studies on the chloroplast have also gone from Julius von Sachs’ experiments with chloroplast, to using chloroplast engineering to deliver higher crop yields. Similarly, advances in fluorescent microscopy have made it far easier to observe organelles like chloroplast (once studied by Sachs) or actin (observed by Bohumil Nemec). If physics in the form of cell biology has been responsible for one half of this historical development, biochemistry has surely been the other.