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Nota di contenuto	Chapter 1: Conceptual Change and Evolutionary Developmental Biology; Alan C. Love -- PART I: ADAPTATION, ALLOMETRY, HETEROCHRONY AND HOMOPLASY -- Chapter 2: Adaptive Aspects of Development: A Thirty-year Perspective on the Relevance of Biomechanical and Allometric Analyses; Karl Niklas -- Chapter 3: Do Functional Requirements for Embryos and Larvae Have a Place in Evo-devo? Richard Strathmann -- Chapter 4: Is Heterochrony Still an Effective Paradigm for Contemporary Studies of Evo-devo? James Hanken -- Chapter 5: Homoplasy, a Moving Target; David Wake -- PART II: PHENOTYPIC PLASTICITY, DEVELOPMENTAL VARIATION AND EXPERIMENTAL BIOLOGY -- Chapter 6: The Concept of Phenotypic Plasticity and the Evolution of Phenotypic Plasticity in Life History Traits; Stephen Stearns -- Chapter 7: A Developmental-physiological

Perspective on the Development and Evolution of Phenotypic Plasticity; H. Fred Nijhout -- Chapter 8: Cellular Basis of Morphogenetic Change: A Retrospective from the Vantage Point of Developmental Signaling Pathways; John Gerhart -- Chapter 9: The Road to Facilitated Variation; Marc Kirschner -- PART III: MODELS, LARVAE, PHYLA AND PALEONTOLOGY -- Chapter 10: Phyla, Phylogeny, and Embryonic Body Plans; Gary Freeman -- Chapter 11: Evo-devo and the Evolution of Marine Larvae: From the Modern World to the Dawn of the Metazoa; Rudolf Raff -- Chapter 12: Dahlem 1981: Before and Beyond; Armand de Ricqlès -- Chapter 13: What Salamander Biologists Have Taught Us about Evo-devo; James Griesemer -- PART IV: CONSTRAINT AND EVOLVABILITY -- Chapter 14: From Developmental Constraint to Evolvability: How Concepts Figure in Explanation and Disciplinary Identity; Ingo Brigandt -- Chapter 15: Reinventing the Organism: Evolvability and Homology in Post-Dahlem Evolutionary Biology; Günter Wagner -- Chapter 16: Internal Factors in Evolution: The Morphogenetic Tree, Developmental Bias, and Some Thoughts on the Conceptual Structure of Evo-devo; Wallace Arthur -- Chapter 17: Entrenchment as a Theoretical Tool in Evolutionary Developmental Biology; William Wimsatt -- PART V: HIERARCHIES AND INTERDISCIPLINARITY -- Chapter 18: Hierarchies and Integration in Evolution and Development; Marvalee Wake -- Chapter 19: Development and Evolution: The Physics Connection; Stuart Newman -- Chapter 20: The Interaction of Research Systems in the Evo-devo Juncture; Elihu Gerson -- Chapter 21: Evo-devo as a Trading Zone; Rasmus Grønfeldt Winther -- Index.

Sommario/riassunto

This volume explores questions about conceptual change from both scientific and philosophical viewpoints by analyzing the recent history of evolutionary developmental biology. It features revised papers that originated from the workshop "Conceptual Change in Biological Science: Evolutionary Developmental Biology, 1981-2011" held at the Max Planck Institute for the History of Science in Berlin in July 2010. In these papers, philosophers and biologists compare and contrast key concepts in evolutionary developmental biology and their development since the original, seminal Dahlem conference on evolution and development held in Berlin in 1981. Many of the original scientific participants from the 1981 conference are also contributors to this new volume and, in conjunction with other expert biologists and philosophers specializing on these topics, provide an authoritative, comprehensive view on the subject. Taken together, the papers supply novel perspectives on how and why the conceptual landscape has shifted and stabilized in particular ways, yielding insights into the dynamic epistemic changes that have occurred over the past three decades. This volume will appeal to philosophers of biology studying conceptual change, evolutionary developmental biologists focused on comprehending the genesis of their field and evaluating its future directions, and historians of biology examining this period when the intersection of evolution and development rose again to prominen ce in biological science.