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Nota di contenuto	Part I. Theoretical Background -- Reflections on Model Organisms in Evolutionary Developmental Biology -- Hourglass or Twisted Ribbon? -- Ambulacrarians and the Ancestry of Deuterostome Nervous Systems -- Part II. New and Emerging Model Systems in Evo-Devo Research -- Oikopleura Dioica: An Emergent Chordate Model to Study the Impact of Gene Loss on the Evolution of the Mechanisms of Development -- Neuropeptides, Peptide Hormones, and Their Receptors of a Tunicate, Ciona Intestinalis -- Emergence of Embryo Shape during Cleavage Divisions -- Sex Determination, Sexual Development, and Sex Change

in Slipper Snails -- The Cricket Gryllus Bimaculatus: Techniques for Quantitative and Functional Genetic Analyses of Cricket Biology -- The Rove Beetle Creophilus Maxillosus as a Model System to Study Asymmetric Division, Oocyte Specification, and the Germ-Somatic Cell Signaling -- Cell Biology of the Tardigrades – Current Knowledge and Perspectives -- Development of Xenoturbellida -- Cellular and Molecular Mechanisms of Hydra Regeneration -- Paramecium Biology -- Part III. Evo-Devo in Comparative Context -- Insights into Germline Development and Differentiation in Molluscs and Reptiles: The Use of Molecular Markers in the Study of Non-Model Animals -- Molecular Markers in the Study of Non-model Vertebrates: Their Significant Contributions to the Current Knowledge of Tetrapod Glial Cells and Fish Olfactory Neurons -- Embryogenesis of Marsupial Frogs (Hemiphractidae), and the Changes that Accompany Terrestrial Development in Frogs -- Evolution and Regulation of Limb Regeneration in Arthropods -- Viviparity in Two Closely Related Epizoic Dermapterans Relies on Disparate Modifications of Reproductive Systems and Embryogenesis -- Morphology of Ovaries and Oogenesis in Chelicerates -- Reproduction, Gonad Structure and Oogenesis in Tardigrades -- Architecture and Life History of Female Germ-Line Cysts in Clitellate Annelids.

Sommario/riassunto

Evolutionary developmental biology or evo-devo is a field of biological research that compares the underlying mechanisms of developmental processes in different organisms to infer the ancestral condition of these processes and elucidate how they have evolved. It addresses questions about the developmental bases of evolutionary changes and evolution of developmental processes. The book’s content is divided into three parts, the first of which discusses the theoretical background of evo-devo. The second part highlights new and emerging model organisms in the evo-devo field, while the third and last part explores the evo-devo approach in a broad comparative context. To the best of our knowledge, no other book combines these three evo-devo aspects: theoretical considerations, a comprehensive list of emerging model species, and comparative analyses of developmental processes. Given its scope, the book will offer readers a new perspective on the natural diversity of processes at work in cells and during the development of various animal groups, and expand the horizons of seasoned and young researchers alike.