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| Altri autori (Persone) | MinelliAlessandro<br>BoxshallGeoffrey Allan<br>FuscoGiuseppe <1965-> |
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| Nota di contenuto | Introduction to Diversity and Ubiquity of Arthropods -- The Arthropoda: A Phylogenetic Framework -- Evolutionary Genomics of Arthropods -- Arthropod Embryonic Development -- Arthropod Post-embryonic Development -- Arthropod Developmental Endocrinology -- Arthropod Regeneration -- The Arthropod Cuticle -- Arthropod Body Segments and Tagmata -- The Arthropod Head -- Arthropod Appendages -- Insect Wings: The Evolutionary Development of Nature's First Flyers -- The Arthropod Nervous System -- The Arthropod Circulatory System -- The Arthropod Fossil Record -- Arthropods: Water-to-Land Transitions -- Arthropod Endosymbiosis and Evolution -- The Evolvability of Arthropod Structure. |
| Sommario/riassunto | The Arthropoda is by far the largest living phylum, comprising over 1.2 million living species, and its unique evolutionary success is the primary focus for this up-to-date and comprehensive overview of the biology of the group. This astonishing species richness is matched by a spectacular diversity in body forms and adaptations. To counter the largely unavoidable trend towards increased specialization within a particular group, this volume adopts a comparative viewpoint across the entire phylum, encompassing both extant and fossil forms. The |

phylum-wide perspective allows us to appreciate the wave of recent advances in knowledge of arthropod biology and evolution and to identify emerging themes and priorities for future research. As ever in the history of science, this wave of advances is driven by the rapid development of new methods and techniques. New methods of extracting and studying fossils have vastly improved understanding of Palaeozoic arthropods. New non-invasive, non-destructive techniques, such as micro-computed tomography, have revolutionised anatomical analysis and imaging. Arthropod comparative genomics is still in its infancy but high-throughput sequencing together with next-generation sequencing has facilitated spectacular growth in volumes of sequence data, which in turn has driven advances in bioinformatics. These novel methods have generated a wealth of data which has been critically reviewed by the chapter authors, to provide a new perspective on arthropod biology and evolution. The concise factual summaries and the questions articulated in this book will be of interest to evolutionary biologists, palaeontologists, developmental geneticists and invertebrate zoologists. It will be of special interest to advanced graduate and post-graduate students and have the potential to stimulate younger researchers to address questions in arthropod biology from the vantage point of a phylum-wide comparative perspective.