

Most people know of aphids as garden pests, infesting the soft green tissues of plants in vast numbers and killing them by sucking out the sap. Indeed, among the 4000 or so known species of aphids about 250 are pests, and in temperate regions several are economically important agricultural pests that damage crops directly during feeding or act as vectors for plant pathogens. But aphids are also important model organisms in evolutionary biology and ecology because they combine a number of unique features such as complex life cycles involving the development of morphological distinct phenotypes (polyphenism), sexual and asexual reproduction strategies and changes of host plants. Aphids can also be regarded as holobionts because they are colonized by obligate and facultative microbes which enable them to feed exclusively on phloem sap and influence their resistance against pathogens, parasitoids or environmental stress. This book combines fundamental information about aphids with chapters addressing state-of-the-art research in topics such as aphid-related phylogeny, genome biology, epigenetics and chemical ecology. The chapters have been compiled by experts in the field to provide a valuable and accessible source of information for researchers and for students in biology, ecology and agriculture.



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6000 Broken Sound Parkway, NW
Suite 300, Boca Raton, FL 33487
711 Third Avenue
New York, NY 10017
2 Park Square, Milton Park
Abingdon, Oxon OX14 4RN, UK

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9 781482 236767