Preface

This is the first book broadly dedicated to the ecology, phylogeny, and management of bark beetles (Coleoptera: Curculionidae: Scolytinae) on a global scale. The ecological and economic impact of bark beetles on trees is a global issue that often surpasses all other disturbances including fire and storms. Bark beetles are of economic importance in forests, orchards, and urban areas as well as agricultural crops, and wood commodities. Despite these powerful impacts, most of the approximately 6,000 described species colonize stressed or dead tree tissues only. Most bark beetles feed on the phloem or fungi in the inner bark, but a minority specializes on other plant tissues such as cones and seeds.

The association of bark beetles with microbes has led to a variety of symbioses, and these relationships have led to the great success and diversification of bark beetles. Such symbioses may account for the majority of the world's most recent invasive tree and crop pests. Climate change and human-facilitated movement of bark beetles has also contributed to the explosive increase and range expansion of bark beetles, as is the case with the red turpentine beetle in China, the mountain pine beetle in Canada, and the coffee berry borer in tropical regions. Recent genomic data on bark beetles and associated microbes have increased our knowledge of the evolution and ecology of these complex communities.

The present volume includes chapters on ecology, morphology, taxonomy, phylogenetics, evolution, population dynamics, tree defense, symbioses, natural enemies, climate change, management strategies, and the economy and politics of bark beetles. In addition, individual chapters are dedicated to bark beetles in the genera *Dendroctonus*, *Ips*, *Tomicus*, *Hypothenemus*, and *Scolytus*. The editors have brought together an international team of authors, in an effort to combine the vast amount of literature and a diversity of viewpoints into one volume. We thank all the authors for their excellent contributions. We hope that this book's information and illustrations are valuable to entomologists, ecologists, foresters, land managers, and students interested in bark beetles.

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