

Preface

Animal communication has fascinated biologists for centuries. This fascination has sustained many a scientific career as will be evident from the personal accounts by the contributors to this book. Chemical signaling is the most widespread form of communication in crustaceans. During the past two decades, there have been significant advances in our understanding of crustacean chemical ecology. Gathering this information in an edited volume was the next logical step.

This book covers a wide range of topics, including the identity, production, transmission, reception, and behavioral function of chemical signals in selected crustacean groups. The chapters are organized into five sections. The introductory section gives a brief overview of the main questions that are tackled in this volume and provides important definitions of signals, cues, and behavior. The next section on the transmission of chemical cues in the environment and on sensory biology is followed by a section on the behavioral contexts in which crustaceans use chemical communication, providing examples from the best studied taxa. Recent advances in the molecular identification of chemical signals are presented in the fourth section. The fifth and last section deals with the possible applications of pheromone research to aquaculture and pest management.

One of our goals as editors was to encourage contributors to identify similarities and differences in chemical communication by crustaceans and by other taxa and thereby address questions of general interest. We therefore invited experts on communication in insects, spiders, and fishes to contribute to this book. They readily and, at first perhaps, innocently accepted our invitation, unaware that we would ask them to integrate knowledge of crustaceans into their chapters. Thus, their tasks went beyond a synthesis of their own work and expertise and we feel that they all have done a marvelous job. We learned a lot from them and we now share some of their fascination for their favorite organisms and the excitement that comes from studying them. Within the same spirit, we hope that this book will attract readers who are interested in learning about crustaceans, but who study other taxa in their quest to understand the evolution and function of chemical communication.

There are several topics that we thought were ready for thorough review such as multimodal communication, deception, and pheromones in aquaculture and pest

management, but are still beyond the mainstream of crustacean research. Several of our colleagues had some experience in these areas, and they were thus “naturals” to be invited for these contributions. Though reluctant at first, they accepted the challenge and their enthusiasm grew as they wrote.

In order to make this volume accessible to a broad audience that spans scientific and applied fields, we asked the authors to include a personal statement briefly describing why they entered their respective research fields. Such statements are not generally accepted in scientific writing. But we are most grateful that many of our authors adopted a more informal style and expressed their enthusiasm for their particular study species or research questions. We hope that our authors’ enthusiasm is sufficiently infectious and that the scientific questions they raise in their contributions will stimulate future research. If only a few young scholars are infected by this excitement for crustacean chemical communication, this book has achieved its goal.

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