BIOLOGY

The ECOLOGY and EVOLUTION of INDUCIBLE DEFENSES

Edited by RALPH TOLLRIAN and C. DREW HARVELL

Inducible defenses—those often dramatic phenotypic shifts in prey activated by biological agents ranging from predators to pathogens—are widespread in the natural world. Yet research on the inducible defenses used by vertebrates, invertebrates, and plants in terrestrial, marine, and freshwater habitats has largely developed along independent lines. Ralph Tollrian and Drew Harvell seek to change that here. By bringing together leading researchers from all fields to review common themes and explore emerging ideas, this book represents the most current and comprehensive survey of knowledge about the ecology and evolution of inducible defenses.

Contributors examine organisms as different as unicellular algae and higher vertebrates, and consider defenses ranging from immune systems to protective changes in morphology, behavior, chemistry, and life history. The authors of the review chapters, case studies, and theoretical studies pinpoint unifying factors favoring the evolution of inducible defenses. Throughout, the volume emphasizes a multidisciplinary approach, integrating applied and theoretical ecology, evolution, genetics, and chemistry. In addition, Harvell and Tollrian provide an introduction and a conclusion that review the current state of knowledge in the field and identify areas for future research.

The contributors, in addition to the editors, are May Berenbaum, Arthur Zangerl, Johannes Järemo, Juha Tuomi, Patric Nilsson, Anurag Agrawal, Richard Karban, Marcel Dicke, Ellen Van Donk, Miquel Lürling, Winfried Lampert, Simon Frost, John Gilbert, Hans-Werner Kuhlmann, Jürgen Kusch, Klaus Heckmann, Luc De Meester, Piotr Dawidowicz, Erik van Gool, Carsten Loose, Stanley Dodson, Christer Brönmark, Lars Pettersson, Anders Nilsson, Bradley Anholt, Earl Werner, Curtis Lively, Frederick Adler, Daniel Grünbaum, and Wilfried Gabriel.

"A state-of-the-art survey of the empirical and theoretical knowledge about inducible defenses. The book will have general appeal to evolutionary biologists and ecologists."
—Marc Mangel, *University of California, Santa Cruz*

"This work brings together for the first time in one volume a synthetic treatment of an important biological characteristic found in a wide variety of organisms. The editors have done an excellent job of drawing together a collection of authors representing a wide range of disciplines." —Mark D. Rausher, *Duke University*

"The book does an excellent job of summarizing what is known about induced defenses. It will clearly be of interest to workers in the areas of predator-prey and plant-herbivore interactions."
—Robert T. Paine, *University of Washington*

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