

Experimental approaches can provide indisputable evidence of evolution by directly observing the process at work. Experimental evolution deliberately duplicates evolutionary processes—forcing life histories to evolve, producing adaptations to stressful environmental conditions, and generating lineage splitting to create incipient species. This unique volume summarizes studies in experimental evolution, outlining current techniques and applications, and presenting the field's full range of research—from selection in the laboratory to the manipulation of populations in the wild. It provides work on such key biological problems as the evolution of Darwinian fitness, sexual reproduction, life history, athletic performance, and learning.

"Although experimental evolution has been a major element in the biological toolkit for decades, many still think of evolutionary biology as a descriptive science. This timely, authoritative review of the broad sweep and deep insights of experimental evolution should permanently change that impression by firmly establishing an approach that has now grounded many evolutionary hypotheses in sound experimental logic. The authors, who include many who built the field, have written eloquently; the editors, themselves major practitioners of the method, have chosen wisely; this book, their product, now defines the field." **Steve Stearns, Yale University**

"Experiments provide a powerful complement to observational and comparative studies. For this reason, evolutionary biology is increasingly an experimental science, not only in the laboratory, but also in the field. This textbook provides an excellent introduction to the manner in which evolutionary experiments are conducted and the types of questions and organisms to which they are applied." **Jonathan B. Losos, Harvard University**

"Controlled field and lab experiments are among the newest pillars of evolution. Assembled by two of the most articulate and effective practitioners, this volume provides a stimulating and often inspiring introduction to experimental evolution; it is ideal for a graduate seminar and is certain to fuel rewarding discussion and innovative research."

Rick Grosberg, University of California, Davis

Theodore Garland, Jr. is Professor of Biology at the University of California, Riverside.

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