Insect Evolutionary Ecology

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Evolutionary Ecology

All Tomorrows: the future of humanity?Insect Phylogeny: Understanding evolutionary relationships *Tiger Beetles The Evolution, Ecology, and Diversity of the Cicindelids Cornell Series in Arthropod B* Evolutionary Ecology An introduction to Insect Orders The Insane Biology of: Ant Colonies ~~Why Are There No Mosquitoes at Disney World?~~ A Computer Predicted The World Will End In 2040 - Will It Happen? The Terrifying Truth About Bananas ~~What is the Evidence for Evolution?~~ Planet Ant - Life Inside The Colony - BBC Animals of Chernobyl: Meet the Mutants *Termites - The Inner Sanctum - The Secrets of Nature* ~~What's Inside An Anthill?~~ *What is Political Ecology?* Various Monster Insects and Bugs step into Big Takilong's Box in a row

Insect SocialityECSS: Dr. Bob Holt - \"Niche conservatism, evolution, and applied ecology\" Module 2: Evolutionary Ecology - BS Bio 2B *All About Insects for Children: Bees, Butterflies, Ladybugs, Ants and Flies for Kids - FreeSchool* Evolutionary ecology of floral polymorphism *Read Aloud of The Buggliest Bug Evolutionary Ecology 10 Best Ecology Textbooks 2019* Insect Evolutionary Ecology
With a focus on mutualisms between ants and aphids, coccids, membracids and lycaenids, this volume provides a detailed account of the many different facets of mutualisms. Mutualistic interactions not ...

Ants and their Insect Partners
The program crosses numerous biological fields, including population biology; behavior and ecology; biodiversity and evolutionary ecology ... traits and interactions with other species, including ...

Congrats to Our Star-Studded UC Davis Entomology Faculty
the population ecology of insects that use ephemeral resources in patchy habitats; the evolution of coprophagy from saprophagy in beetles; the breeding biology of dung beetles; and the biogeography ...

Dung Beetle Ecology
Writer: Brian Wallheimer; 765-532-0233; bwallhei@purdue.edu The study of ancient DNA is revolutionizing our understanding of paleo-ecology and the evolutionary history of species. Insects are ...

Pack rat nests offer first look at ancient insect DNA
Food Security, Agricultural Model, Biodiversity Loss, Climate Change, Ecological Intensification, Insects, Ecosystem Functioning, Human Population Increase Share and Cite: Jankielsohn, A. (2021) ...

Finding Food Security through Changing the Agricultural Model to Sustain Insect Biodiversity ()
Michigan State University ecologists led an international research partnership of professional and volunteer scientists to reveal new insights into what's driving the already-dwindling population of ...

Why is the eastern monarch butterfly disappearing?
The findings of their study were published recently in the high-impact journal Trends in Ecology and Evolution. "It's crucial that we continuously improve our ability to predict and mitigate the ...

Humans can learn from animals and insects about impact of climate change
This past Thursday evening, not having done my usual run because of the heat, I waited until later when things had cooled down a bit. It was still quite humid and even faintly misty and not wanting to ...

A Nighttime Walk Without Bugs or Bats
The Berlin-based Bulgarian artist welcomed us warmly in her small studio in Kreuzberg and took us through a journey of her artistic career, filled with insects, “ feelables ” and strange smells.

Petja Ivanova
Contrary to popular belief, songbirds can taste sugar, according to research published recently in the journal Science. Researchers offered a choice between sugar water and plain water to ...

Songbirds love to taste sweets, and other recent research
Charles Michener ’ s fascination with bees and other insects started early ... the Watkins Distinguished Professor Emeritus of ecology and evolutionary biology and curator emeritus at the ...

Charles Michener, ‘ patriarch ’ of bee research, dies at 97
University of California at Davis researcher Kathy Darragh and colleagues set out to research how the Heliconius melponene creates the pheromone and examine the ways in which insects and plants ...

Butterfly Species Sprays Mate With Anti-Aphrodisiac to Ward Off Competition
In the seed beetle (Callosobruchus maculatus), the male has a spiny genital structure that enhances its reproductive success. Photograph: ...

Male beetles ’ genitalia harmful and beneficial to females
No longer science fiction, farm robots are already here--and they have created two possible extremes for the future of agriculture and its impacts on the environment, argues agricultural economist ...

Farm robots are the future; let's start preparing now, researcher argues
Instead, Ferriere and colleagues constructed mathematical models incorporating geochemistry and microbial ecology ... A new study in the journal Human Evolution has traced the family tree of ...

You may have missed···
The large insects getting caught in your hair ... "It's really quite unique," said John Cooley, an assistant professor of ecology and evolutionary biology at the University of Connecticut in Hartford.

Insects provide excellent model systems for understanding evolutionary ecology. They are abundant, small, and relatively easy to rear, and these traits facilitate both field and laboratory experiments. This book has been developed from the Royal Entomological Society's 22nd international symposium, held in Reading in 2003. Topics include speciation and adaptation; life history, phenotype plasticity and genetics; sexual selection and reproductive biology; insect-plant interactions; insect-natural enemy interactions; and social insects.

In a work that will interest researchers in ecology, genetics, botany, entomology, and parasitology, Warren Abrahamson and Arthur Weis present the results of more than twenty-five years of studying plant-insect interactions. Their study centers on the ecology and evolution of interactions among a host plant, the parasitic insect that attacks it, and the suite of insects and birds that are the natural enemies of the parasite. Because this system provides a model that can be subjected to experimental manipulations, it has allowed the authors to address specific theories and concepts that have guided biological research for more than two decades and to engage general problems in evolutionary biology. The specific subjects of research are the host plant goldenrod (Solidago), the parasitic insect Eurosta solidaginis (Diptera: Tephritidae) that induces a gall on the plant stem, and a number of natural enemies of the gallfly. By presenting their detailed empirical studies of the Solidago-Eurosta natural enemy system, the authors demonstrate the complexities of specialized enemy-victim interactions and, thereby, the complex interactive relationships among species more broadly. By utilizing a diverse array of field, laboratory, behavioral, genetic, chemical, and statistical techniques, Abrahamson and Weis present the most thorough study to date of a single system of interacting species. Their interest in the evolutionary ecology of plant-insect interactions leads them to insights on the evolution of species interactions in general. This major work will interest anyone involved in studying the ways in which interdependent species interact.

Dr. Timothy Schowalter has succeeded in creating a unique, updated treatment of insect ecology. This revised and expanded text looks at how insects adapt to environmental conditions while maintaining the ability to substantially alter their environment. It covers a range of topics- from individual insects that respond to local changes in the environment and affect resource distribution, to entire insect communities that have the capacity to modify ecosystem conditions. Insect Ecology, Second Edition, synthesizes the latest research in the field and has been produced in full color throughout. It is ideal for students in both entomology and ecology-focused programs. NEW TO THIS EDITION: * New topics such as elemental defense by plants, chaotic models, molecular methods to measure disperson, food web relationships, and more * Expanded sections on plant defenses, insect learning, evolutionary tradeoffs, conservation biology and more * Includes more than 350 new references * More than 40 new full-color figures

Insect Immunity, Volume 52 provides readers with the latest interdisciplinary reviews on the topic. It is an essential reference source for invertebrate physiologists, neurobiologists, entomologists, zoologists and insect chemists, providing invaluable chapters on Insect Antimicrobial Defenses: A Brief History, Recent Findings, Biases, and a Way Forward in Evolutionary Studies, Phagocytosis in Insect Immunity, The Melanization Response in Insect Immunity, Microbiota, Gut Physiology, and Insect Immunity, Intestinal Stem Cells: A Decade of Intensive Research in Drosophila and the Road Ahead, and Insect Symbiosis and Immunity: The Bean Bug-Burkholderia Interaction as a Case Study, along with other related topics. Presents a comprehensive overview of recent insect immunity science Written by leaders in their respective areas of research Ideal resource for invertebrate physiologists, neurobiologists, entomologists, zoologists and insect chemists

This volume captures the state-of-the-art in the study of insect-plant interactions, and marks the transformation of the field into evolutionary biology. The contributors present integrative reviews of uniformly high quality that will inform and inspire generations of academic and applied biologists. Their presentation together provides an invaluable synthesis of perspectives that is rare in any discipline.--Brian D. Farrell, Professor of Organismic and Evolutionary Biology, Harvard University Tilmon has assembled a truly wonderful and rich volume, with contributions from the lion's share of fine minds in evolution and ecology of herbivorous insects. The topics comprise a fascinating and deep coverage of what has been discovered in the prolific recent decades of research with insects on plants. Fascinating chapters provide deep analyses of some of the most interesting research on these interactions. From insect plant chemistry, behavior, and host shifting to phylogenetics, co-evolution, life-history evolution, and invasive plant-insect interaction, one is hard pressed to name a substantial topic not included. This volume will launch a hundred graduate seminars and find itself on the shelf of everyone who is anyone working in this rich landscape of disciplines.--Donald R. Strong, Professor of Evolution and Ecology, University of California, Davis Seldom have so many excellent authors been brought together to write so many good chapters on so many important topics in organismic evolutionary biology. Tom Wood, always unassuming and inspired by living nature, would have been amazed and pleased by this tribute.--Mary Jane West-Eberhard, Smithsonian Tropical Research Institute

This book is published on the occasion of the Royal Entomological Society's Symposium on Insect infection and immunity in Sheffield, July 15-17 2009.

Under continual attack from both microbial pathogens and multicellular parasites, insects must cope with immune challenges every day of their lives. However, this has not prevented them from becoming the most successful group of animals on the planet. Insects possess highly-developed innate immune systems which have been fine-tuned by an arms race with pathogens spanning hundreds of millions of years of evolutionary history. Recent discoveries are revealing both an unexpected degree of specificity and an indication of immunological memory - the functional hallmark of vertebrate immunity. The study of insect immune systems has accelerated rapidly in recent years and is now becoming an important interdisciplinary field. Furthermore, insects are a phenomenally rich and diverse source of antimicrobial chemicals. Some of these are already being seriously considered as potential therapeutic agents to control microbes such as MRSA. Despite a burgeoning interest in the field, this is the first book to provide a coherent synthesis and is clearly structured around two broadly themed sections: mechanisms of immunity and evolutionary ecology. This novel text adopts an interdisciplinary and concept-driven approach, integrating insights from immunology, molecular biology, ecology, evolutionary biology, parasitology, and epidemiology. It features contributions from an international team of leading experts. Insect Infection and Immunity is suitable for both graduate students and researchers interested in insect immunity from either an evolutionary, genetical, physiological or molecular perspective. Due to its interdisciplinary and concept-driven approach, it will also appeal to a broader audience of immunologists, parasitologists and evolutionary biologists requiring a concise overview.

Parasitoids lay their eggs on or in the bodies of other species of insect, and the parasitoid larvae develop by feeding on the host, causing its eventual death. Known for a long time to applied biologists for their importance in regulating the population densities of economic pests, parasitoids have recently proven to be valuable tools in testing many aspects of evolutionary theory. This book synthesizes the work of both schools of parasitoid biology and asks how a consideration of evolutionary biology can help us understand the behavior, ecology, and diversity of the approximately one to two million species of parasitoid found on earth. After a general introduction to parasitoid natural history and taxonomy, the first part of the book treats the different components of the reproductive strategy of parasitoids: searching for a host, host selection, clutch size, and the sex ratio. Subsequent chapters discuss pathogens and non-Mendelian genetic elements that affect sexual reproduction; evolutionary aspects of the physiological interactions between parasitoid and host; mating strategies; life history theory and community ecology. A special effort is made to discuss the theoretical background to the subject, but without the use of mathematics.

Insects display a staggering diversity of behaviors. Studying these systems provides insights into a wide range of ecological, evolutionary, and behavioral questions including the genetics of behavior, phenotypic plasticity, chemical communication, and the evolution of life-history traits. This accessible text offers a new approach that provides the reader with the necessary theoretical and conceptual foundations, at different hierarchical levels, to understand insect behavior. The book is divided into three main sections: mechanisms, ecological and evolutionary consequences, and applied issues. The final section places the preceding chapters within a framework of current threats to human survival - climate change, disease, and food security - before providing suggestions and insights as to how we can utilize an understanding of insect behavior to control and/or ameliorate them. Each chapter provides a concise, authoritative review of the conceptual, theoretical, and methodological foundations of each topic.