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Hormonally Active Agents in the Environment Oxford University Press, USA

"In a book both beautifully illustrated and deeply informative, Jonathan Losos, a leader in evolutionary ecology, celebrates and analyzes the diversity of the natural world that the fascinating anoline lizards epitomize. Readers who are drawn to nature by its beauty or its intellectual challenges—or both—will find his book rewarding."—Douglas J. Futuyma, State University of New York, Stony Brook "This book is destined to become a classic. It is scholarly, informative, stimulating, and highly readable, and will inspire a generation of students."—Peter R. Grant, author of How and Why Species Multiply: The Radiation of Darwin's Finches "Anoline lizards experienced a spectacular adaptive radiation in the dynamic landscape of the Caribbean islands. The radiation has extended over a long period of time and has featured separate radiations on the larger islands. Losos, the leading active student of these lizards, presents an integrated and synthetic overview, summarizing the enormous and multidimensional research literature. This engaging book makes a wonderful example of an adaptive radiation accessible to all, and the lavish illustrations, especially the photographs, make the anoles come alive in one's mind."—David Wake, University of California, Berkeley "This magnificent book is a celebration and synthesis of one of the most eventful adaptive radiations known. With disarming prose and personal narrative Jonathan Losos shows

how an obsession, beginning at age ten, became a methodology and a research plan that, together with studies by colleagues and predecessors, culminated in many of the principles we now regard as true about the origins and maintenance of biodiversity. This work combines rigorous analysis and glorious natural history in a unique volume that stands with books by the Grants on Darwin's finches among the most informed and engaging accounts ever written on the evolution of a group of organisms in nature."—Dolph Schluter, author of The Ecology of Adaptive Radiation

Uncovering Student Ideas in Science: 25 formative assessment probes Oxford University Press on Demand

Research Design and Methods: A Process Approach guides students through the research process, from conceiving of and developing a research idea, to designing and conducting a study, to analyzing and reporting data. The authors present students with information on the numerous decisions they must make when designing and conducting research and indicate how their early decisions affect how data are collected, analyzed, and interpreted later in the research process. A focus on the importance of ethical conduct, both in the treatment of research subjects and in the reporting of research

results, directs the text.

Animal Signals Springer Science & Business Media

The authors also provide a comparative survey of the properties of genomes (genome size, gene families, synteny, and polymorphism) for prokaryotes as well as the main eukaryotic models.

On the Origin of Species Illustrated Benjamin-Cummings Publishing Company

The transformative wave of Darwinian insight continues to expand throughout the human sciences. While still centered on evolution-focused fields such as evolutionary psychology, ethology, and human behavioral ecology, this insight has also influenced cognitive science, neuroscience, feminist discourse, sociocultural anthropology, media studies, and clinical psychology. This handbook's goal is to amplify the wave by bringing together world-leading experts to provide a comprehensive and up-to-date overview of evolution-oriented and influenced fields. While evolutionary psychology remains at the core of the collection, it also covers the history, current standing, debates, and future directions of the panoply of fields entering the Darwinian fold. As such, The Cambridge Handbook of Evolutionary Perspectives on Human Behavior is a valuable reference not just for evolutionary psychologists but also for scholars and students from many fields who wish to see how the evolutionary perspective is relevant to their own work.

A Biologist's Guide to Mathematical Modeling in Ecology and Evolution Springer Science & Business Media

Some investigators have hypothesized that estrogens and

other hormonally active agents found in the environment might be involved in breast cancer increases and sperm count declines in humans as well as deformities and reproductive problems seen in wildlife. This book looks in detail at the science behind the ominous prospect of "estrogen mimics" threatening health and well-being, from the level of ecosystems and populations to individual people and animals. The committee identifies research needs and offers specific recommendations to decisionmakers. This authoritative volume: Critically evaluates the literature on hormonally active agents in the environment and identifies known and suspected toxicologic mechanisms and effects of fish, wildlife, and humans. Examines whether and how exposure to hormonally active agents occurs--in diet, in pharmaceuticals, from industrial releases into the environment--and why the debate centers on estrogens. Identifies significant uncertainties, limitations of knowledge, and weaknesses in the scientific literature. The book presents a wealth of information and investigates a wide range of examples across the spectrum of life that might be related to these agents.

Lizards in an Evolutionary Tree Benjamin Cummings

Evolutionary science is not only one of the greatest breakthroughs of modern science, but also one of the most controversial. Perhaps more than any other scientific area, evolutionary science has caused us all to question

what we are, where we came from, and how we relate to the rest of the universe. Encyclopedia of Evolution contains more than 200 entries that span modern evolutionary science and the history of its development. This comprehensive volume clarifies many common misconceptions about evolution. For example, many people have grown up being told that the fossil record does not demonstrate an evolutionary pattern, and that there are many missing links. In fact, most of these missing links have been found, and their modern representatives are often still alive today. The biographical entries represent evolutionary scientists within the United States who have had and continue to have a major impact on the broad outline of evolutionary science. The biographies chosen reflect the viewpoints of scientists working within the United States. Five essays that explore interesting questions resulting from studies in evolutionary science are included as well. The appendix consists of a summary of Charles Darwin's Origin of Species, which is widely considered to be the foundational work of evolutionary science and one of the most important books in human history. The five essays include: How much do genes control human behavior?What are the ghosts of evolution?Can an evolutionary scientist be religious?Why do humans die?Are humans alone in the universe

Cooperation in Primates and Humans W. W. Norton & Company

On the Origin of Species (or, more completely, On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races

in the Struggle for Life), [3] published on 24 November 1859, is a work of scientific literature by Charles Darwin which is considered to be the foundation of evolutionary biology.[4] Darwin's book introduced the scientific theory that populations evolve over the course of generations through a process of natural selection. It presented a body of evidence that the diversity of life arose by common descent through a branching pattern of evolution. Darwin included evidence that he had gathered on the Beagle expedition in the 1830s and his subsequent findings from research, correspondence, and experimentation

The Cambridge Handbook of Animal Cognition

John Wiley & Sons

Why are animal signals reliable? This is the central problem for evolutionary biologists interested in signals. Of course, not all signals are reliable; but most are, otherwise receivers of signals would ignore them. A number of theoretical answers have been proposed and empirical studies made, but there still remains a considerable amount of confusion. The authors, one a theoretician the other a fieldworker, introduce a sense of order to this chaos. A significant cause of confusion has been the tendency for different researchers to use either the same term with different meanings, or different terms with the same meaning. The authors attempt to clarify these differences. A second cause of confusion has arisen because many biologists continue to assume that there is only one correct explanation for signal reliability. The authors argue

that the reliability of signals is maintained in several ways, relevant in different circumstances, and that biologists must learn to distinguish between them. In this book they explain the different theories, give examples of signalling systems to which one or another theory applies, and point to the many areas where further work, both theoretical and empirical, is required.

Ecology IUCN Using probes as diagnostic tools that identify and analyze students' preconceptions, teachers can easily move students from where they are in their current thinking to where they need to be to achieve scientific understanding.

The Biology of the Sticklebacks Macmillan Higher Education

Is Man the product of a God...or is "God" the product of human evolution? From the dawn of our species, every human culture-no matter how isolated-has believed in some form of a spiritual realm. According to author Matthew Alper, this is no mere coincidence but rather due to the fact that humans, as a species, are genetically predisposed to believe in the universal concepts of a god, a soul and an afterlife. This instinct to believe is the result of an evolutionary adaptation-a coping mechanism-that emerged in our species to help us survive our unique and otherwise debilitating awareness of death. Spiritual seekers and atheists alike will be compelled and transformed by Matthew Alper's classic study of science and religion. The 'God' Part of the Brain has gained critical acclaim from

some of the world's leading scientists, secular humanists, and theologians, and is as a must read for anyone who has pondered the question of God's existence, as well as the meaning of our own. Praise for The "God" Part of the Brain "This cult classic in many ways parallels Rene Descartes' search for reliable and certain knowledge. ..Drawing on such disciplines as philosophy, psychology, and biology, Alper argues that belief in a spiritual realm is an evolutionary coping method that developed to help humankind deal with the fear of death...Highly recommended."—Library Journal "I very much enjoyed the account of your spiritual journey and believe it would make excellent reading for every college student - the resultant residence-hall debates would be the best part of their education. It often occurs to me that if, against all odds, there is a judgmental God and heaven, it will come to pass that when the pearly gates open, those who had the valor to think for themselves will be escorted to the head of the line, garlanded, and given their own personal audience." — Edward O. Wilson, two-time Pulitzer Prize-Winner "This is an essential book for those in search of a scientific understanding of man's spiritual nature. Matthew Alper navigates the reader through a labyrinth of intriguing questions and then offers undoubtedly clear answers that lead to a better understanding of our objective reality." — Elena Rusyn, MD, PhD; Gray Laboratory;

Harvard Medical School "What a wonderful book you have written. It was not only brilliant and provocative but also revolutionary in its approach to spirituality as an inherited trait."—Arnold Sadwin, MD, former chief of Neuropsychiatry at the University of Pennsylvania "A lively manifesto...For the discipline's specific application to the matter at hand, I've seen nothing that matches the fury of The 'God' Part of the Brain, which perhaps explains why it's earned something of a cult following." — Salon.com "All 6 billion plus inhabitants of Earth should be in possession of this book. Alper's tome should be placed in the sacred writings' section of libraries, bookstores, and dwellings throughout the world. Matthew Alper is the new G alileo...Immensely important...Define s in a clear and concise manner what each of us already knew but were afraid to admit and exclaim."— John Scoggins, PhD "Vibrant ... vivacious. An entertaining and provocative introduction to speculations concerning the neural basis of spirituality."— Free Inquiry Magazine

Water and Biomolecules W. W. Norton & Company

Behavior Analysis and Learning, Fifth Edition is an essential textbook covering the basic principles in the field of behavior analysis and learned behaviors, as pioneered by B. F. Skinner. The textbook provides an advanced introduction to operant conditioning from a very consistent Skinnerian perspective. It covers a range of

principles from basic respondent and operant conditioning through applied behavior analysis into cultural design. Elaborating on Darwinian components and biological connections with behavior, the book treats the topic from a consistent worldview of selectionism. The functional relations between the organism and the environment are described, and their application in accounting for old behavior and generating new behavior is illustrated. Expanding on concepts of past editions, the fifth edition provides updated coverage of recent literature and the latest findings. There is increased inclusion of biological and neuroscience material, as well as more data correlating behavior with neurological and genetic factors. The chapter on verbal behavior is expanded to include new research on stimulus equivalence and naming; there is also a more detailed and updated analysis of learning by imitation and its possible links to mirror neurons. In the chapter on applied behavior analysis (ABA), new emphasis is given to contingency management of addiction, applications to education, ABA and autism, and prevention and treatment of health-related problems. The material presented in this book provides the reader with the best available foundation in behavior science and is a valuable resource for advanced undergraduate and graduate students in psychology or

other behavior-based disciplines. In addition, a website of supplemental resources for instructors and students makes this new edition even more accessible and student-friendly (www.psypress.com/u/pierce).

The Role of Play in Human Development

Cambridge University Press

Recent decades have witnessed strong declines in fish stocks aroundthe globe, amid growing concerns about the impact of fisheries onmarine and freshwater biodiversity. Fisheries biologists andmanagers are therefore increasingly asking about aspects ofecology, behaviour, evolution and biodiversity that weretraditionally studied by people working in very separate fields.This has highlighted the need to work more closely together, inorder to help ensure future success both in management andconservation. The Handbook of Fish Biology and Fisheries has beenwritten by an international team of scientists and practitioners,to provide an overview of the biology of freshwater and marine fishspecies together with the science that supports fisherie smanagement and conservation. This volume, subtitled Fish Biology, reviews a broadvariety of topics from evolutionary relationships and globalbiogeograp hy to physiology,

recruitment, life histories, genetics,foraging behaviour, reproductive behaviour and community ecology.The second volume, subtitled Fisheries, uses much of thisinformation in a wide-ranging review of fisheries biology,including methods of capture, marketing, economics, stockassessment, forecasting, ecosystem impacts and conservation. Together, these books present the state of the art in ourunderstanding of fish biology and fisheries and will serve asvaluable references for undergraduates and graduates looking for acomprehensive source on a wide variety of topics in fisheriesscience. They will also be useful to researchers who needup-to-date reviews of topics that impinge on their fields, anddecision makers who need to appreciate the scientific backgroundfor management and conservation of aquatic ecosystems. To order volume I, go to the box in the top right hand corner.Alternatively to order volume II, go to:http://www.blackwellpublishing.com/book.asp?ref=063206482X or toorder the 2 volume set, go to :http://www.blackwellpublishing.com/book.asp?ref=0632064838. Provides a unique overview of the study of fish biology andecology, and the assessment and

management of fish populations andecosystems. The first volume concentrates on aspects of fish biology andecology, both at the individual and population levels, whilst thesecond volume addresses the assessment and management of fishpopulations and ecosystems. Written by an international team of expert scientists andpractitioners. An invaluable reference tool for both students, researchers andpractitioners working in the fields of fish biology andfisheries.

The "God" Part of the Brain Biology of the Three-Spined Stickleback Highlighting the growing importance of the sticklebacks as a model species in emerging fields such as molecular genetics, genomics, and environmental toxicology, Biology of the Three-Spined Stickleback examines data from researchers who use studies of the stickleback to address a wide range of biological issues. This state-of-the-art volume

Loose-leaf Version for Biology How Life Works NSTA Press

This review focusses on invasive species affecting forestry, provincial grazing land, aquatic & wetland environments, and natural ecosystems in Alberta. Based largely on examination of the literature, major invasive species are listed under the following categories: terrestrial plants; terrestrial vertebrates; terrestrial invertebrates;

aquatic organisms, including fish, plants, insects, mollusks, & protozoan parasites of fish; and plant & wildlife diseases. For each species, information is included on its status, geographic distribution, habitat, and economic & ecological impact. The review also discusses pathways & sources of new introductions and potential threats of new introductions in each species category. The final chapter presents an overall evaluation of invasive species & their impacts, pathways, and future risks. It also notes knowledge gaps.

The Cambridge Handbook of Evolutionary Perspectives on Human Behavior John Wiley & Sons

Cooperative behaviour has been one of the enigmas of evolutionary theory. This book examines the many facets of cooperative behaviour in primates and humans. It bridges the gap between parallel research in primatology and studies of humans, and highlights both common principles and aspects of human uniqueness, with respect to cooperative behaviour.

Animal Social Networks Benja min-Cummings Publishing Company

"An audacious and concrete pro posal…Half-Earth completes the 86-year-old Wilson's valedictory trilogy on the human animal and our place on the planet." —Jedediah Purdy, New Republic In his most urgent book to date, Pulitzer Prize–winning author and world-renowned biologist Edward O. Wilson states that in order to

stave off the mass extinction of species, including our own, we must move swiftly to preserve the biodiversity of our planet. In this "visionary blueprint for saving the planet" (Stephen Greenblatt), Half-Earth argues that the situation facing us is too large to be solved piecemeal and proposes a solution commensurate with the magnitude of the problem: dedicate fully half the surface of the Earth to nature. Identifying actual regions of the planet that can still be reclaimed—such as the California redwood forest, the Amazon River basin, and grasslands of the Serengeti, among others—Wilson puts aside the prevailing pessimism of our times and "speaks with a humane eloquence which calls to us all" (Oliver Sacks).

Costs and Threats of Invasive Species to Alberta's Natural Resources

Princeton University Press

Molecular Ecology provides a comprehensive introduction to the many diverse aspects of this subject. The book unites theory with examples from a wide range of taxa in a logical and progressive manner, and its accessible writing style makes subjects such as population genetics and phylogenetics highly comprehensible to its readers.

The first part of the book introduces the essential underpinnings of molecular ecology, starting with a review of genetics and a discussion of the molecular markers that are most frequently used in ecological research. This leads into an overview of population genetics in ecology. The second half of the book then moves on to specific applications of molecular ecology, covering phylogeography, behavioural ecology and conservation genetics. The final chapter looks at molecular ecology in a wider context by using a number of case studies that are relevant to various economic and social concerns, including wildlife forensics, agriculture, and overfishing * comprehensive overview of the different aspects of molecular ecology * attention to both theoretical and applied concerns * accessible writing style and logical structure * numerous up-to-date examples and references This will be an invaluable reference for those studying molecular ecology, population genetics, evolutionary biology, conservation genetics and behavioural ecology, as well as researchers working in these fields.

Handbook of Fish Biology and Fisheries Alberta Public Affairs

Bureau

Pellegrini argues that play is an excellent example of the influence of biology and culture on one other, especially during childhood. The innovative possibilities associated with different forms of juvenile play behaviour can influence both individuals' skill acquisition and possibly also the development of the species.

An Introduction to Ecological Genomics Oxford University Press

Honeybees make decisions collectively--and democratically. Every year, faced with the life-or-death problem of choosing and traveling to a new home, honeybees stake everything on a process that includes collective fact-finding, vigorous debate, and consensus building. In fact, as world-renowned animal behaviorist Thomas Seeley reveals, these incredible insects have much to teach us when it comes to collective wisdom and effective decision making. A remarkable and richly illustrated account of scientific discovery, Honeybee Democracy brings together, for the first time, decades of Seeley's pioneering research to tell the amazing story of house hunting and democratic debate among the honeybees. In the late spring and early summer, as a bee colony becomes overcrowded, a third of the hive stays behind and rears a new queen, while a swarm of thousands departs with the old queen to produce a daughter colony. Seeley describes how these bees

evaluate potential nest sites, advertise their discoveries to one another, engage in open deliberation, choose a final site, and navigate together--as a swirling cloud of bees--to their new home. Seeley investigates how evolution has honed the decision-making methods of honeybees over millions of years, and he considers similarities between the ways that bee swarms and primate brains process information. He concludes that what works well for bees can also work well for people: any decision-making group should consist of individuals with shared interests and mutual respect, a leader's influence should be minimized, debate should be relied upon, diverse solutions should be sought, and the majority should be counted on for a dependable resolution. An impressive exploration of animal behavior, Honeybee Democracy shows that decision-making groups, whether honeybee or human, can be smarter than even the smartest individuals in them.

Half-Earth: Our Planet's Fight for Life OUP Oxford This handbook lays out the science behind how animals think, remember, create, calculate, and remember. It provides concise overviews on major areas of study such as animal communication and language, memory and recall, social cognition, social learning and teaching, numerical and quantitative abilities, as well as innovation and problem solving. The chapters also explore more

nuanced topics in greater detail, showing how the research was conducted and how it can be used for further study. The authors range from academics working in renowned university departments to those from research institutions and practitioners in zoos. The volume encompasses a wide variety of species, ensuring the breadth of the field is explored.