Pheromones And Animal Behaviour

Understanding of animal social and sexual evolution has seen a renaissance in recent years with discoveries of frequent infidelity in apparently monogamous species, the importance of sperm competition, active female mate choice, and eusocial behavior in animals outside the traditional social insect groups. Each of these findings has raised new questions, and suggested new answers, about the evolution of behavioral interactions among animals. This volume synthesizes recent research on the sexual and social biology of the Crustacea, one of the dominant invertebrate groups on earth. Its staggering diversity includes ecologically important inhabitants of nearly every environment from deep-sea trenches, through headwater streams, to desert soils. The wide range of crustacean phenotypes and environments is accompanied by a comparable diversity of behavioral and social systems, including the elaborate courtship and wildly exaggerated morphologies of fiddler crabs, the mysterious queuing behavior of migrating spiny lobsters, and even eusociality in coral-reef shrimps. This diversity makes crustaceans particularly valuable for exploring the comparative evolution of sexual and social systems. Despite exciting recent advances, however, general recognition of the value of Crustacea as models has lagged behind that of the better studied insects and vertebrates. This book synthesizes the state of the field in crustacean behavior and sociobiology and places it in a conceptually based, comparative framework that will be valuable to active researchers and students in animal behavior, ecology, and evolutionary biology. It brings together a group of internationally recognized and rising experts in fields related to crustacean behavioral ecology, ranging from physiology and functional morphology, through mating and social behavior, to ecology and phylogeny. Each chapter makes connections to other, non-crustacean taxa, and the volume closes with a summary section that synthesizes the contributions, discusses anthropogenic impacts, highlights unanswered questions, and provides a vision for profitable future research.

This textbook is an introduction to the Science of Animal Behaviour Presently this subject is introduced in most of the Indian Universities in B.Sc. IIIrd year and Post-graduate classes.

This textbook covers all syllabus of B.Sc. classes of All Indian Universities and has been prepared according to U.G.C. model curriculum. Animal Behaviour deals with various types of behaviours of animals and also that of human beings.

A unique and critical analysis of the wealth of research conducted on the biology, biochemistry and chemical ecology of the rapidly growing field of insect cuticular hydrocarbons. Authored by leading experts in their respective fields, the twenty chapters show the complexity that has been discovered in the nature and role of hydrocarbons in entomology. Covers, in great depth, aspects of chemistry (structures, qualitative and quantitative analysis), biochemistry (biosynthesis, molecular biology, genetics, evolution), physiology, taxonomy, and ecology. Clearly presents to the reader the array of data, ideas, insights and historical disagreements that have been accumulated during the past half century. An emphasis is placed on the role of insect hydrocarbons in chemical communication, especially among the social insects. Includes the first review on the chemical synthesis of insect hydrocarbons. The material presented is a major resource for current researchers and a source of ideas for new researchers.

Animal Behaviour (PB)

An Introduction to Animal Science

Pheromone Biochemistry

Bovine Science

Chemical Communication

Animals in Translation

Common among moths is a mate-finding system in which females emit a pheromone that induces males to fly upwind along the pheromone plume. Since the chemical pheromone of the domesticated silk moth was identified in 1959, a steady increase in the number of moth species whose pheromone attractants have been identified now results in a rich base for review and synthesis. Pheromone Communication in Moths summarizes moth pheromone biology, covering the chemical structures used by the various lineages, signal production and perception, the genetic control of moth pheromone traits, interactions of pheromones with host-plant volatiles, pheromone dispersal and orientation, male pheromones and courtship, and the evolutionary forces that have likely shaped pheromone signals and their role in sexual selection. Also included are chapters on practical applications in the control and monitoring of pest species as well as case studies that address pheromone systems in a number of species and groups of closely allied species. Pheromone Communication in Moths is an invaluable resource for entomologists, chemical ecologists, pest-management scientists, and professionals who study pheromone communication and pest management.

Pheromone Biochemistry covers chapters on Lepidoptera, ticks, flies, beetles, and even vertebrate olfactory biochemistry. The book discusses pheromone production and its regulation in female insects; as well as reception, perception, and degradation of pheromones by male insects. The text then describes the pheromone biosynthesis and its regulation and the reception and catabolism of pheromones. Researchers in the areas of chemistry, biochemistry, entomology, neurobiology, molecular biology, enzymology, morphology, behavior, and ecology will find the

book useful.
Organisms release pheromones into their environments to allow them to communicate with other members of their species. Pheromones are of increasing interest in both basic and applied aspects of fish biology. Fish Pheromones and Related Cues provides a timely synthesis of this growing body of pheromone research exploring everything from how these chemical signals are processed to the potential application of pheromone research on fish culture and conservation. Fish Pheromones and Related Cues opens with a useful overview of fish pheromone research. Chapters then examine the biological importance of pheromones in inter- and intraspecies communication, and the role these chemical cues play in a variety biological functions from reproduction to predation. The final chapters provide valuable insight into how pheromones are being applied in real-world efforts to culture fish species and to conserve our wild-borne populations from pollutants and invasive species. With far-reaching economic and ecological implications, Fish Pheromones and Related Cues will be an essential volume for anyone working in the fields of fish biology, aquatic conservation, ecology, and aquaculture.
Pheromones and Reproduction in Mammals reviews current research findings on the role of pheromones in mammalian reproduction. Drawing on both quantitative laboratory studies and selected observational field studies, the book explores how animals actively deploy scent to facilitate sexual interactions and the functions of those scent signals during these interactions. Organized into two sections encompassing nine chapters, this volume begins with an overview of chemical signals and how they influence reproductive behavior in a variety of mammalian species. It then discusses the nature of chemical signals and olfactory perception; the role of chemical communication in mother-young interactions and in the reproduction of primates; how pheromones regulate puberty and the ovarian cycle; and pregnancy blocking by pheromones. The reader is also introduced to hormonal responses to primer pheromones; sensory physiology of pheromone communication; and the role of pheromones in the reproduction of domestic animals such as cattle, swine, sheep, and goats. Biologists and students of biology will find this book extremely informative.
Assessment and Management Roles
The Role of Genes in Human Behavior
Animal Behaviour (Ethology)
Biology, Biochemistry, and Chemical Ecology
Communication by Smell and Taste
A Very Short Introduction
The crustaceans are ecologically and economically important organisms. They constitute one of the dominant invertebrate groups on earth, particularly within the aquatic realm. Crustaceans include some of the preferred scientific model organism, profitable aquaculture specimen, but also invasive nuisance species threatening native animal communities throughout the world. Chemoreception is the most important sensory modality of crustaceans, acquiring important information about their environment and picking up the chemical signals that mediate communication with conspecifics. Significant advances have been made in our understanding of crustacean chemical communication during the past decade. This includes knowledge about the identity, production, transfer, reception and behavioral function of chemical signals in selected crustacean groups. While it is well known that chemical communication is an integral part of the behavioral ecology of most living organisms, the intricate ways in which organisms allocate chemicals in communication remains enigmatic. How does the environment influence the evolution of chemical communication? What are the environmental cues that induce production or release of chemicals? How do individuals economize production and utilization of chemicals? What is the importance of molecule specificity or mix of a molecule cocktail in chemical communication? What is the role of chemical cues in multimodal communication? How does the ontogenetic stage, the sex or the physiological status of an individual affect its reaction to chemical cues? Many of these questions still represent important challenges to biologists.
A wounded minnow attempts to rejoin its school and the other minnows scatter in panic; a single beetle finds a pine tree to its liking and soon thousands of beetles swarm that tree and others in the vicinity; a male Syrian golden hamster is drawn along an invisible trail to a burrow where a female hamster awaits him, ready for mating. These animals are responding to received communications, but, as in countless other occurrences in nature, the language is not auditory or visual--it is chemical. Unlike humans, who gather information largely through sight and sound, most living creatures rely heavily on chemical compounds from other organisms for their basic knowledge of the world. Among the various types of these compounds are the chemical signals exchanged between members of the same species that govern social interactions crucial to survival. These signals are called pheromones (from the Greek "pherein"--to carry--and "hormon"--exciting) and they are used to send warnings, establish territorial boundaries, provoke aggression, control sexual behavior, and locate food. In this volume, organic chemist William C. Agosta explores the chemistry of pheromones and the mechanisms by which they orchestrate animal behavior. Professor Agosta details the intricate process of identifying pheromones and determining the active components within these sometimes highly complex mixtures. He also demonstrates the value of this growing body of knowledge to our understanding of evolution, ecology, human behavior, and agricultural production. The result is a fascinating look at a research area that brings together investigators, information, technologies, and procedures from the fields of biology, chemistry, and behavioral science. Chemical Communication spans the entire spectrum of life, from simple organisms, such as water molds and brown algae, to insects, birds, fish, reptiles, mammals, and in a provocative final chapter, human beings. Along the way, Dr. Agosta provides dozens of captivating examples of pheromones in action: certain male red-sided garter snakes, which increase their chances of mating successfully by "impersonating" a female, thus distracting rivals; or the bolas spiders, which capture male moths by hitting them with an adhesive ball on a string after emitting a female moth pheromone that lures the males within range. The book also includes important evidence that pheromones alter physiology as well as behavior. For example, young female mice reach maturity at an accelerated pace after constant exposure to adult male mice.
Pheromones and Animal BehaviorChemical Signals and SignaturesCambridge University Press
"Divided into six sections - communication and language, memory and recall, social cognition, social learning and teaching, numerical and quantative abilities, and innovation and

problem solving the Handbook allows readers to focus specifically on what they are interested in. Concise overviews in each section provide the history and basic concepts in each area, and are helpful for both newcomers to the field or specialists seeking to gain background in different areas. Each overview is followed by three to six entries for readers who are interested in learning more about a particular subject"--

The Language Of Pheromones

Cow Talk

Chemical Signals and Signatures

What Animals Reveal About Our Senses

A Pheromone is a Substance Secreted by an Animal that Influences the Behavior of Other Animals of the Same Species : Recent Studies Indicate that Such Chemical Communication is Surprisingly Common

Evolutionary Ecology of Social and Sexual Systems

This volume contains the proceedings of the conference of the same name held in July 2006 at the University of Chester in the United Kingdom. It includes all the latest research on chemical communication relevant to vertebrates, particularly focusing on new research since the last meeting in 2003. Topics covered include the chemical ecology, biochemistry, behavior, olfactory receptors, and the neurobiology of both the main olfactory and vomeronasal systems of vertebrates.

Research on chemical communication in animals is in a very active and exciting phase; more species are studied, data are accumulating, concepts are changing, and practical application seems feasible. While most of the work on chemical ecology and chemical sig nals deals with insects, vertebrate communication provides a formidable challenge and progress has been slow. Joint efforts and frequent direct contacts of ecologists, behaviorists, psychologists, physiologists, histologists and chemists are required. Such an interdisciplinary exchange of information took place on the occasion of the Symposium on Chemical Signals in Vertebrates and Aquatic Animals in Syracuse, New York, from May 31 to June 2, 1979. More than one hundred investigators from seven countries participated, and the papers presented comprise this volume. Since the first Symposium on Vertebrate Chemical Signals at Saratoga Springs in 1976, considerable progress has been made with field studies, the physiology of the vomeronasal organ, and its role in reproductive behavior. The behavioral functions and chemi cal nature of priming pheromones are better understood. Efforts to isolate and identify mammalian pheromones are gaining ground, and the bioassays are becoming more sophisticated. In addition to formal presentations, one evening of the Symposi um was devoted to round-table discussions of particular topics. The selected themes indicate the "growing points" of chemical communi cation research: priming pheromones, vomeronasal organ, bioassay, and practical applications.

Since the beginning of civilization, humans and animals have developed very strong associations to their mutual benefits. Livestock, particularly bovines, are important contributors to total food production in the world. The social expectations in Science and Technology are increasing because of rapid advances. Prevention and control of infectious diseases in bovines have been among the top-most public health objective in the last decade. In the present book, experts from different continents present important aspects of bovine science such as louse infestations of ruminants, cytogenetics of bovines, factors of competitiveness for bovines, feed manipulation, enhancement of conjugated linoleic acid and its bioavailability, emergence of antimicrobial resistance, and also meat quality. The aim of this book to provide an understanding of the present scenario, advances and challenges in bovine science.

Explains how animals use chemical communication, emphasising the evolutionary context and covering fields from ecology to neuroscience and chemistry.

Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research

Reproductive Behavior

(ethology)

Fish Pheromones and Related Cues

Animal Vocal Communication

Are We Hardwired?

Most animal communication has evolved and now takes place in the context of a communication network, i.e. several signallers and receivers within communication range of each other. This idea follows naturally from the observation that many signals travel further than the average spacing between animals. This is self evidently true for long-range signals, but at a high density the same is true for short-range signals (e.g. begging calls of nestling birds). This book provides a current summary of research on communication networks and appraises future prospects. It combines information from studies of several taxonomic groups (insects to people via fiddler crabs, fish, frogs, birds and mammals) and several signalling modalities (visual, acoustic and chemical signals). It also specifically addresses the many areas of interface between communication networks and other disciplines (from the evolution of human charitable behaviour to the psychophysics of signal perception, via social behaviour, physiology and mathematical models).

How do animals communicate using sounds? How did animal vocal communication arise and evolve? Exploring a new way to conceptualize animal communication, this new edition moves beyond an earlier emphasis on the role of senders in managing receiver behaviour, to examine how receivers' responses influence signalling. It demonstrates the importance of the perceiver role in driving the evolution of communication, for instance in mimicry, and thus shifts the emphasis from a linguistic to a form/function approach to communication. Covering a wide range of animals from frogs to humans, this new edition includes new sections on human prosodic elements in speech, the vocal origins of smiles and laughter and deliberately irritating sounds and is ideal for researchers and students of animal behaviour and in fields such as sensory biology, neuroscience and evolutionary biology.

Introduction to chemical communication and pheromones.

Covering every aspect of animal behaviour from adaptation to warning, this accessible A-Z also includes terms from the related fields of ecology, physiology and psychology. Clear and informative entries on topics such as communication, learning, and navigation are backed up by examples and illustrations where appropriate. The new edition adds 80 new entries, expands coverage of behavioural ecology, cognitive ethology, and evolutionary theory, and brings the text up to date with new theories and research. An essential source of reference for students of biology, psychology, and zoology, and fascinating reading for all those interested in animal behaviour.

Chemical Signals

Scientific Farm Animal Production

Understanding Dairy Cow Behaviour to Improve Their Welfare on Asian Farms

Neurobiology of Chemical Communication

Evolution, Behavior, and Application

Chemical Signals in Vertebrates 11

Stress and Pheromonatherapy in Small Animal ClinicalBehaviour is about how stress impacts on animal behaviour andwelfare and what we can do about it, especially by using chemicalsignals more effectively. This re accessible text starts fromfirst principles and is useful to both academics and practitionersalike. It offers a framework for understanding howpheromonatherapy can be used to encourage desirable behaviour indogs an also a fresh approach to understanding the natureof clinical animal behaviour problems. The authors have pioneered the use of pheromone therapy withinthe field of clinical animal behaviour. As the culmination ofman research and experience, they offer soundevidence-based advice on how and when pheromones can be used mosteffectively. The first part of the book deals with some fundamental concepts,focusing on the key conc communication andperception. It then provides a framework for the evaluationof problem behaviour to allow consideration of the possible role ornot of pheromonatherapy. Part 2 covers the application ofthese concepts range of specific situations, concentrating onconditions in which there has been most research to support theefficacy of pheromonatherapy. Suitable for veterinarians in small animal practice, students ofclinical animal behaviour, veterinary nurses and technicians, aswell as specialists and researchers in animal behaviourtherapy.

Animal behaviour is a central topic of zoology, and with the development of ideas concerning the role of genes as well as environment the subject has been transformed. Tristram Wyatt gives a modern view, including the power of gene knock-outs, computing and image analysis to enable detailed experiments and observations of behaviour.

Expanding on the National Research Councilâ€™s Guide for the Care and Use of Laboratory Animals, this book deals specifically with mammals in neuroscience and behavioral research laboratories. It offers flexible for the care of these animals, and guidance on adapting these guidelines to various situations without hindering the research process. Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Res offers a more in-depth treatment of concerns specific to these disciplines than any previous guide on animal care and use. It treats on such important subjects as: The important role that the researcher and veterinarian developing animal protocols. Methods for assessing and ensuring an animalâ€™s well-being. General animal-care elements as they apply to neuroscience and behavioral research, and common animal welfare challe research can pose. The use of professional judgment and careful interpretation of regulations and guidelines to develop performance standards ensuring animal well-being and high-quality research. Guidelines for the Use of Mammals in Neuroscience and Behavioral Research treats the development and evaluation of animal-use protocols as a decision-making process, not just a decision. To this end, it presents the most current, i information about the best practices for animal care and use, as they pertain to the intricacies of neuroscience and behavioral research.

"For more than 50 years, researchers ... have identified pheromones as the triggers for a wide range of mammalian behaviors and endocrine responses. In this book, [author] rejects this idea and states bluntly that, in insects, mammals do not have pheromones. ... [book title] directly challenges ideas about the role chemicals play in mammalian behavior and reproductive processes."--Book jacket.

Pheromones

Insect Hydrocarbons

Animal Communication by Pheromones

Pheromones and Animal Behaviour

Vertebrates and Aquatic Invertebrates

A Textbook of Animal Behaviour

Evidence-based, yet entirely practical, this important new text builds upon the basics of neuroscience to describe the links between olfaction and animal behaviour, and the effects of odours in animal welfare. Animals use smells in a multitude of ways: to orientate themselves, to create social bonds, to recognise food, to initiate reproduction, and to avoid predators and imminent threats such as fire. Starting from the scientific basis of olfaction and odour perception, the book covers pheromones and behavioural tests, before describing the role of olfaction in feeding behaviour, reproduction, disease detection, and animal housing. This is a captivating introduction to the world of smells, suitable for advanced students, researchers, and teachers of applied ethology, animal welfare and veterinary science.

Sexual compatibility between male and female partners is in dispensable to normal and successful fertilization in mammals. Thus, the genes from males and females whose sexual behavior is characterized by awkwardness, ineptness, and miscues are elimi nated from the gene pool of the species. In human societies, this compatibility is not always evident; and the behavior that precedes and accompanies copulation and fertilization is exceed ingly complex and affected by many variables. As in most other species of animals, the entire repertoire of reproductive behavior of man is not well understood by man. When viewed, discussed, or reported, the topic is too often and most unfortunately regarded as an amalgam of emotion, mysticism, and biology. In the past, such emotion-charged approaches to the biologi cal fact of reproduction did much to obfuscate the subject; and as a result, much of the array of hormonal, neural, psychological, and social variables that control and insure the successful repro duction of the human species remains even now in Victorian ignor ance. But with the recent rash of books and scientific treatises on the subject, some progress has been made in elucidating human reproduction and associated sexual behavior. However, so entrench ed are some of our social taboos that the danger still lurks of equating social acceptance of the words with an understandin- all too lacking--of the process to which they refer.

'Spellbinding . . . More than any other book, [Sentient] has made me think differently about the world this year.' – Financial Times Best Books of the Year 'Lyrical and lucid . . . Higgins makes

popular science accessible.' – Observer The peacock mantis shrimp can throw a punch that can fracture aquarium walls. The great grey owl can hear many decibels lower than the human ear. The star-nosed mole's miraculous nose allows it to catch worms in as little as 120 milliseconds. In Sentient, Jackie Higgins assembles a menagerie of zoological creatures – from land, air, sea and all four corners of the globe – to understand what it means to be human. In it, we also meet the four-eyed spookfish and its dark vision, the vampire bat and its remarkable powers of touch, as well as the common octopus, the Goliath catfish and the duck-billed platypus. Each zoological marvel illustrates the surprising sensory powers that lie within us and enables us to engage with the world in ways we never knew possible.

Books such as Richard Dawkins's The Selfish Gene have aroused fierce controversy by arguing for the powerful influence of genes on human behavior. But are we entirely at the mercy of our chromosomes? In Are We Hardwired?, scientists William R. Clark and Michael Grunstein say the answer is both yes--and no. The power and fascination of Are We Hardwired? lie in their explanation of that deceptively simple answer. Using eye-opening examples of genetically identical twins who, though raised in different families, have had remarkably parallel lives, the authors show that indeed roughly half of human behavior can be accounted for by DNA. But the picture is quite complicated. Clark and Grunstein take us on a tour of modern genetics and behavioral science, revealing that few elements of behavior depend upon a single gene; complexes of genes, often across chromosomes, drive most of our heredity-based actions. To illustrate this point, they examine the genetic basis, and quirks, of individual behavioral traits--including aggression, sexuality, mental function, eating disorders, alcoholism, and drug abuse. They show that genes and environment are not opposing forces; heredity shapes how we interpret our surroundings, which in turn changes the very structure of our brain. Clearly we are not simply puppets of either influence. Perhaps most interesting, the book suggests that the source of our ability to choose, to act unexpectedly, may lie in the chaos principle: the most minute differences during activation of a single neuron may lead to utterly unpredictable actions. This masterful account of the nature-nurture controversy--at once provocative and informative--answers some of our oldest questions in unexpected new ways

Using the Mysteries of Autism to Decode Animal Behavior

Pheromones and Animal Behavior

A Dictionary of Animal Behaviour

Animal Behaviour

Field and Laboratory Exercises in Animal Behavior

Chemical Communication in Crustaceans

This well-accepted book, now stands in its second edition, is a time-honoured revision and extension of the previous edition. Beginning with an introduction to the study of animal behaviour, the book explains the various aspects of behavioural biology incorporating a wealth of information from molecular biology, neurobiology, and socio-biology with a new approach. It describes different kinds of innate and learned behaviours, animal communications, defensive behaviours such as camouflage and mimicry with suitable illustrations. The book incorporates the introductory concepts of biomimicry in an attractive manner. Further, it discusses biorhythms, migration in fish and birds, in addition to evolution and physiological basis of migration. The text also presents the important aspects of socio-biology and social behaviours, such as feeding, adaptation, prey defence, territoriality, aggression, altruism, sexuality, and parental care. Finally, it provides discussions on behavioural ecology in the context of conservation biology, and human behaviour. The book presents the basic principles of animal behaviour with the aid of carefully selected examples from both the recent and classic literature along with an emphasis on readability. In the present edition, topics like eusociality and behavioural theories have been incorporated. This edition also includes as many as 11 published articles by the author on different topics related to the subject matter in box format to further strengthen the text. The book is primarily intended for the students of B.Sc./M.Sc. (Zoology/Life Science) for their courses. It would be useful for the researchers in the field of animal behaviour, and conservation biologists. It would also attract readership studying Sociology and Anthropology. KEY FEATURES : Presents a well-balanced view of ethology. Discusses the current development in the field. Includes a glossary of important terms. Offers end-of-chapter questions to check the students' understanding of the concepts.

For freshman-level courses in Introductory Animal Science. This highly acclaimed, best-selling introduction to animal science explores the depth and breadth of both the livestock and poultry industries. It provides a sound overview of the biological principles of animal science (e.g. reproduction, genetics, nutrition, consumer products, etc.), and offers comprehensive coverage of the practical areas of breeding, feeding, and management of major farm animal species.

Comprehensive Overview of Advances in Olfaction The common belief is that human smell perception is much reduced compared with other mammals, so that whatever abilities are uncovered and investigated in animal research would have little significance for humans. However, new evidence from a variety of sources indicates this traditional view is likely overly simplistic. The Neurobiology of Olfaction provides a thorough analysis of the state-of-the-science in olfactory knowledge and research, reflecting the growing interest in the field. Authors from some of the most respected laboratories in the world explore various aspects of olfaction, including genetics, behavior, olfactory systems, odorant receptors, odor coding, and cortical activity. Until recently, almost all animal research in olfaction was carried out on orthonasal olfaction (inhalation). It is only in recent years, especially in human flavor research, that evidence has begun to be obtained regarding the importance of retronasal olfaction (exhalation). These studies are beginning to demonstrate that retronasal smell plays a large role to play in human behavior. Highlighting common principles among various species – including humans, insects, Xenopus laevis (African frog), and Caenorhabditis elegans (nematodes) – this highly interdisciplinary book contains chapters about the most recent discoveries in odor coding from the olfactory epithelium to cortical centers. It also covers neurogenesis in the olfactory epithelium and olfactory bulb. Each subject-specific chapter is written by a top researcher in the field and provides an extensive list of reviews and original articles for students and scientists interested in further readings.

With unique personal insight, experience, and hard science, Animals in Translations is the definitive, groundbreaking work on animal behavior and psychology. Temple Grandin's professional training as an animal scientist and her history as a person with autism have given her a perspective like that of no other expert in the field of animal science. Grandin and coauthor Catherine Johnson present their powerful theory that autistic people can often think the way animals think—putting autistic people in the perfect position to translate "animal talk." Exploring animal pain, fear, aggression, love, friendship, communication, learning, and even animal genius, Grandin is a faithful guide into their world. Animals in Translation reveals that animals are much smarter than anyone ever imagined, and Grandin, standing at the intersection of autism and animals, offers unparalleled observations and extraordinary ideas about both.

Sentient
A Key to Sustainable Development
The Neurobiology of Olfaction
The Great Pheromone Myth
Pheromones and Reproduction in Mammals

Field and Laboratory Exercises in Animal Behavior is an interactive laboratory manual for students in animal behavior, ethology, and behavioral ecology. It is the first of its kind in this subject area that guides students through the diverse and fascinating fields of behavioral and ethological studies, employing a wide array of organisms as model systems for the study of behavior. Students participate in the development of hypothesis and turn the recording, analysis, and interpretation of data into an active and engaging process. A teacher-friendly companion website provides extensive teaching notes on the background to each lab project, tips and hints for successful project presentation, sources for studying organisms, ideas for variations in labs, and alternate study organisms. This text is recommended for undergraduate courses in Animal Behavior, Ethology, and Behavioral Ecology. Provides fully developed and tested laboraty exercises Offers both field and lab experiences- adaptable for fall, spring, or summer courses Laboratories emphasize student thought and involvement in experimental design Includes an online supplement to the manual for teachers

The aim of this manual is to improve the welfare of dairy cattle in tropical developing countries, and by doing so, optimise cow and herd performance. It gives the stockmen and farmers directly concerned with the cattle a better understanding of animal behaviour and the ways cattle communicate their comfort or distress. The book discusses normal cattle behaviour and shows how domestication and breeding can affect behaviour to achieve high levels of production of milk, live weight gain and fertility. Animal welfare is important for producers because it can affect the health, production and contentment of cows. Animal welfare practices which adversely affect cow and herd performance on tropical small holder dairy farms are identified. Advice is then given to change the animal's environment or modify a handler's technique to ensure cattle have the degree of comfort needed to achieve more profitable and sustainable systems of livestock farming. Cow Talk will be a beneficial resource for farmers who want to improve animal welfare, farm advisers who can assist farmers to improve their welfare practices, educators who develop training programs for farmers and dairy advisers, and other stakeholders in tropical dairy production such as local agribusiness, policy makers and research scientists.

Animal Communication by Pheromones describes how the behavior of animals is controlled and influenced by pheromone communication. This book describes the mechanism through which the social animals interact with each other and by which they are organized according to their relative statuses and functions. The text then describes the pheromonal communication system; the mechanisms of movement and orientation to pheromone sources; and recognition, aggregation, and dispersion pheromone behaviors. The sex pheromone behavior; the environmental and physiological control of sex pheromone behavior; and the aspects of pheromones as stimulators or inhibitors of aggression are considered. The book further tackles sex pheromones; reproductive isolation; and the evolution of pheromonal communication. Entomologists and animal scientists will find the book useful.

1. Introduction to the Study of Animal Behaviour 2. Concepts of Ethology 3. Methods of Studying Behaviour 4. Mammalian Nervous System and Behaviour 5. Pheromones 86-108 6. Hormones and Behaviour 7. Biological Clocks 8. Orientation 9. Bird Migration and Navigation 10. Fish Migration 11. Social Organization 12. Wildlife 10 India Glossary Supplementary Reading

Animal Communication Networks
Pheromone Communication in Moths
The Cambridge Handbook of Animal Cognition
Olfaction in Animal Behaviour and Welfare
TEXTBOOK OF ANIMAL BEHAVIOUR
Stress and Pheromonatherapy in Small Animal Clinical Behaviour

Intraspecific communication involves the activation of chemoreceptors and subsequent activation of different central areas that coordinate the responses of the entire organism—ranging from behavioral modification to modulation of hormones release. Animals emit intraspecific chemical signals, often referred to as pheromones, to advertise their presence to members of the same species and to regulate interactions aimed at establishing and regulating social and reproductive bonds. In the last two decades, scientists have developed a greater understanding of the neural processing of these chemical signals. Neurobiology of Chemical Communication explores the role of the chemical senses in mediating intraspecific communication. Providing an up-to-date outline of the most recent advances in the field, it presents data from laboratory and wild species, ranging from invertebrates to vertebrates, from insects to humans. The book examines the structure, anatomy, electrophysiology, and molecular biology of pheromones. It discusses how chemical signals work on different mammalian and non-mammalian species and includes chapters on insects, Drosophila, honey bees, amphibians, mice, tigers, and cattle. It also explores the controversial topic of human pheromones. An essential reference for students and researchers in the field of pheromones, this is also an ideal resource for those working on behavioral phenotyping of animal models and persons interested in the biology/ecology of wild and domestic species.
Crustaceans As Model Organisms