



Vertebrate Olfactory System

Jon H Kaas



Vertebrate Olfactory System:

The Vertebrate Olfactory System Norbert Halász, 1990 **Comparative Vertebrate Neuroanatomy** Ann B. Butler, William Hodos, 2005-08-19 **Comparative Vertebrate Neuroanatomy Evolution and Adaptation** Second Edition Ann B Butler and William Hodos The Second Edition of this landmark text presents a broad survey of comparative vertebrate neuroanatomy at the introductory level representing a unique contribution to the field of evolutionary neurobiology It has been extensively revised and updated with substantially improved figures and diagrams that are used generously throughout the text Through analysis of the variation in brain structure and function between major groups of vertebrates readers can gain insight into the evolutionary history of the nervous system The text is divided into three sections Introduction to evolution and variation including a survey of cell structure embryological development and anatomical organization of the central nervous system phylogeny and diversity of brain structures and an overview of various theories of brain evolution Systematic comprehensive survey of comparative neuroanatomy across all major groups of vertebrates Overview of vertebrate brain evolution which integrates the complete text highlights diversity and common themes broadens perspective by a comparison with brain structure and evolution of invertebrate brains and considers recent data and theories of the evolutionary origin of the brain in the earliest vertebrates including a recently proposed model of the origin of the brain in the earliest vertebrates that has received strong support from newly discovered fossil evidence Ample material drawn from the latest research has been integrated into the text and highlighted in special feature boxes including recent views on homology cranial nerve organization and evolution the relatively large and elaborate brains of birds in correlation with their complex cognitive abilities and the current debate on forebrain evolution across reptiles birds and mammals **Comparative Vertebrate Neuroanatomy** is geared to upper level undergraduate and graduate students in neuroanatomy but anyone interested in the anatomy of the nervous system and how it corresponds to the way that animals function in the world will find this text fascinating *The Vertebrate Olfactory System. Chemical Neuroanatomy, Function and Development* HALÁSZ NORBERT (Dokt. + Tézis.), 1990 **The Ecology of Vertebrate Olfaction** D. M. Stoddart, 2012-12-06 Scientists not infrequently succumb to the frustration they feel when they have to garner often quite fundamental information about an undeveloped field from scattered publications covering many disciplines by writing their own review of the field in question This is an invaluable exercise particularly for those in the business of stimulating students to grapple with unfamiliar ideas and concepts since it makes the introduction to that literature much less painful To some extent I too have succumbed to this frustration by writing this book but I have also much more importantly tried to develop out of this literature an olfactory perspective of the whole organism in its environment in its feeding relations reproductive biology ecological isolation social organization ability to give warning and defend itself and ability to navigate when displaced from home One event more than any other acted as a catalyst to encourage me to start this task One evening in the arid Australian bush as I was returning to

camp the stirring of the air bathed me in a host of smells I had been unaware of in the stifling heat of the day I found their effect on me quite extraordinary for they refreshed and revitalized me more than I would ever have imagined possible I had a rare glimpse of what it must be like to be macrosomatic to rely on one's nose for one's sensory input

Evolutionary Neuroscience Jon H Kaas, 2009-07-28 Evolutionary Neuroscience is a collection of articles in brain evolution selected from the recent comprehensive reference Evolution of Nervous Systems Elsevier Academic Press 2007 The selected chapters cover a broad range of topics from historical theory to the most recent deductions from comparative studies of brains The articles are organized in sections focused on theories and brain scaling the evolution of brains from early vertebrates to present day fishes amphibians reptiles and birds the evolution of mammalian brains and the evolution of primate brains including human brains Each chapter is written by a leader or leaders in the field and has been reviewed by other experts Specific topics include brain character reconstruction principles of brain scaling basic features of vertebrate brains the evolution of the major sensory systems and other parts of brains what we can learn from fossils the origin of neocortex and the evolution of specializations of human brains The collection of articles will be interesting to anyone who is curious about how brains evolved from the simpler nervous systems of the first vertebrates into the many different complex forms now found in present day vertebrates This book would be of use to students at the graduate or undergraduate levels as well as professional neuroscientists cognitive scientists and psychologists Together the chapters provide a comprehensive list of further reading and references for those who want to inquire further The most comprehensive authoritative and up to date single volume collection on brain evolution Full color throughout with many illustrations Written by leading scholars and experts

Tunicates in Evolutionary Developmental Biology Paolo Sordino, Lucia Manni, Chiara Anselmi, Rosa Maria Sepe, 2025-02-27 The evolution of morphological novelties i.e. anatomical structures unique to a taxonomic group is generally associated with changes in developmental mechanisms Tunicates the closest relatives of vertebrates have historically had a great conceptual impact on our understanding of the rules that guide a developmental program A broad range of studies have addressed how developmental genes or molecular networks contributed to the evolutionary transition from invertebrates to vertebrates and to the morphological radiation of tunicates In addition tunicate species display several traits of evolutionary interest e.g. solitary or colonial habitus conservative anatomy high genetic polymorphism cryptic speciation different developmental pathways sexual and asexual development whole body regeneration to name a few Therefore they offer unique experimental models for exploring levels of evolutionary divergence in developmental programs behind alternate body plans and for obtaining insight regarding the embryological and evolutionary mechanisms that generate animal diversity The increasing amount of available tunicate genomes and expression data now make feasible efforts to distinguish between homologous convergent or superficially similar gene networks Recent evidence indicating that in tunicates there is great variability in the molecular genetics underlying specific characters of interest or developmental programs makes it

fundamentally important to reveal which genes or gene modules determine functional and morphological homology Moreover the availability of sophisticated techniques of live imaging coupled with FACS sorting cell transplantation and transgenic cell labelling make tunicates excellent models for the study of stem cells and their evolutionary traits

Chemosensory Transduction Frank Zufall, Steven D. Munger, 2016-02-18 Written by leaders in the field of chemosensation Chemosensory Transduction provides a comprehensive resource for understanding the molecular mechanisms that allow animals to detect their chemical world The text focuses on mammals but also includes several chapters on chemosensory transduction mechanisms in lower vertebrates and insects This book examines transduction mechanisms in the olfactory taste and somatosensory chemesthetic systems as well as in a variety of internal sensors that are responsible for homeostatic regulation of the body Chapters cover such topics as social odors in mammals vertebrate and invertebrate olfactory receptors peptide signaling in taste and gut nutrient sensing Includes a foreword by preeminent olfactory scientist Stuart Firestein Chair of Columbia University's Department of Biological Sciences in New York NY Chemosensory Transduction describes state of the art approaches and key findings related to the study of the chemical senses Thus it serves as the go to reference for this subject for practicing scientists and students with backgrounds in sensory biology and or neurobiology The volume will also be valuable for industry researchers engaged in the design or testing of flavors fragrances foods and or pharmaceuticals Provides a comprehensive overview for all chemosensory transduction mechanisms Valuable for academics focused on sensory biology neurobiology and chemosensory transduction as well as industry researchers in new flavor fragrance and food testing Edited by leading experts in the field of olfactory transduction Focuses on mammals but lower vertebrates and invertebrate model systems are also included

Biomedical Index to PHS-supported Research: pt. A. Subject access A-H, 1992

Purinergic Signaling in Health and Disease Eric Boué-Grabot, David Blum, Stefania Ceruti, 2020-03-13

Ontogeny of Olfaction Raimund Apfelbach, Winrich Breipohl, 2012-12-06 The impacts of specifically experienced external and internal environments upon phylogenetically established pathways of ontogenetic development seem to be responsible for the intra species variation of organisms Therefore normal function as well as disorders of sensory systems can often be better understood by considering the principles of ontogenetic maturation and the time schedule of environmental influences during that period Sensory organs and systems have long been considered to be hereditarily determined for their analysis of the environment However it is becoming more and more clear that their specificity depends also upon the sequence and nature of environmental impacts impacts during highly sensitive periods of postnatal life being most effective The present book using an interdisciplinary approach has brought together various descriptions of developmental processes for one of the phylogenetically oldest sensory analytical circuits the olfactory system Although investigations of a wide range of vertebrates are included from marsupials to man the main attention was given to rodents the most frequently used experimental animal in this fields of research Authors have been asked for reviews and original

considerations on the rationales of developmental principles in the olfactory system and wherever appropriate to highlight its uniqueness or similarities with other parts of the nervous system Authors were also asked to consider future needs of research in their fields to describe their own approaches in this context and to outline general horizons of neurodevelopmental research *Physiological Studies of Olfaction in Vertebrates* Raymond Robert Walsh,1953

Evolution of Nervous Systems Jon H. Kaas,2007 **The System of Branchial Sense Organs and Their Associated Ganglia in Ichthyopsida** John Beard,1885 *A Text-book of Vertebrate Embryology* Ruth Laura Phillips,1925 A Laboratory manual for comparative vertebrate anatomy Libbie Henrietta Hyman,1922 *Outline Lectures in Comparative Anatomy and Vertebrate Zoology* Edwin Chapin Starks,1926 **An Introduction to the Theory of Perception** Sir John Herbert Parsons,1927 **Development of Sensory Systems in Mammals** James R. Coleman,1990-08-14 Reviews the state of knowledge on the mechanisms of development of mammalian sensory systems and presents new findings on genetically controlled and environmentally contingent patterns of sensory system development Also reveals major principles deduced from studies of the developing visual auditory somatosensory and chemical sensory systems that are generalizable to other regions of the developing nervous system and provides insights on the comparative development of sensory system structure and function among mammals including humans **The Origin of Vertebrates** Walter Holbrook Gaskell,1908 *Vertebrate Embryology* Arthur Milnes Marshall,1898

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