

EVOLUTIONARY HISTORY OF THE "ROBUST" AUSTRALOPITHECINES



EDITED BY
FREDERICK E. GRINE

Evolutionary History Of The Robust Australopithecines

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Evolutionary History Of The Robust Australopithecines:

Evolutionary History of the Robust Australopithecines Frederick E. Grine, 2017-09-29 In paleoanthropology the group of hominids known as the robust australopithecines has emerged as one of the most interesting. Through them we have the opportunity to examine the origin, natural history and ultimate extinction of not just a single species but of an entire branch in the hominid fossil record. It is generally agreed that the human lineage can be traced back to this group of comparatively small-brained, large-toothed creatures. This volume focuses on the evolutionary history of these early hominids with state-of-the-art contributions by leading international authorities in the field. Although a case can be made for a robust lineage, the functional and taxonomic implications of the morphological features are subject to vigorous disagreement. An area of lively debate is the possible causal relationship between the presence of early Homo and the origin, evolution and virtual extinction of robust australopithecines. This volume summarizes what has been learned about the evolutionary history of the robust australopithecines in the 50 years since Robert Broom first encountered the visage of a new kind of ape man from Kromdraai. New discoveries from Kromdraai to Lomekwi have served to keep us aware that the paleontological record for hominid evolution is hardly exhausted. Because of such finds, no single volume can hope to stand as a summary on the robust australopithecines for very long, but this classic volume comes close to achieving this goal. The book sheds new light upon some old questions and also acts to provide new questions. The answers to those questions bring us closer to a fuller understanding and appreciation of the origins, evolution and ultimate demise of the robust australopithecines. Since the robust australopithecines most likely stand as our closest relatives, a better understanding of their origin, history and demise serves to provide heightened appreciation of the course of human evolution itself. This definitive volume addresses the questions and problems surrounding this important lineage.

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Frederick E. Grine, 2017-09-29 In paleoanthropology the group of hominids known as the robust australopithecines has emerged as one of the most interesting. Through them we have the opportunity to examine the origin, natural history and ultimate extinction of not just a single species but of an entire branch in the hominid fossil record. It is generally agreed that the human lineage can be traced back to this group of comparatively small-brained, large-toothed creatures. This volume focuses on the evolutionary history of these early hominids with state-of-the-art contributions by leading international authorities in the field. Although a case can be made for a robust lineage, the functional and taxonomic implications of the morphological features are subject to vigorous disagreement. An area of lively debate is the possible causal relationship between the presence of early Homo and the origin, evolution and virtual extinction of robust australopithecines. This volume summarizes what has been learned about the evolutionary history of the robust australopithecines in the 50 years since Robert Broom first encountered the visage of a new kind of ape man from Kromdraai. New discoveries from Kromdraai to Lomekwi have served to keep us aware that the paleontological record for hominid evolution is hardly exhausted. Because of

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Paleoclimate and Evolution, with Emphasis on Human Origins Elisabeth S. Vrba, George H. Denton, Timothy C. Partridge, Lloyd H. Burckle, 1995-01-01 Addressing the relationship between climatic and biotic evolution this work focuses on how climatic change during the last 15 million years especially the last three million has affected human evolution and other evolutionary events

Lowly Origin Jonathan Kingdon, 2021-01-12 Our ability to walk on two legs is not only a characteristic human trait but one of the things that made us human in the first place Once our ancestors could walk on two legs they began to do many of the things that apes cannot do cross wide open spaces manipulate complex tools communicate with new signal systems and light fires Titled after the last two words of Darwin's *Descent of Man* and written by a leading scholar of human evolution *Lowly Origin* is the first book to explain the sources and consequences of bipedalism to a broad audience Along the way it accounts for recent fossil discoveries that show us a still incomplete but much bushier family tree than most of us learned about in school Jonathan Kingdon uses the very latest findings from ecology biogeography and paleontology to build a new and up to date account of how four legged apes became two legged hominins He describes what it took to get up onto two legs as well as the protracted consequences of that step some of which led straight to modern humans and others to very different bipeds This allows him to make sense of recently unearthed evidence suggesting that no fewer than twenty species of humans and hominins have lived and become extinct Following the evolution of two legged creatures from our earliest lowly forebears to the present Kingdon concludes with future options for the last surviving biped A major new narrative of human evolution *Lowly Origin* is the best available account of what it meant and what it means to walk on two feet

Evolutionary Neuroscience Jon H Kaas, 2020-05-30 *Evolutionary Neuroscience* Second Edition is a collection of chapters on brain evolution that combines selected topics from the recent comprehensive reference *Evolution of Nervous Systems* Elsevier Academic Press 2017 9780128040423 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 history concepts and theory 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 Specific topics include brain character reconstruction principles of brain scaling basic features of vertebrate brains the evolution of the major sensory systems 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 Provides the most comprehensive authoritative and up to date single volume collection on brain evolution Presents a full color treatment with many illustrations Written by leading scholars and experts Features chapters on brain character reconstruction principles of brain scaling basic features of vertebrate brains the evolution of the major sensory systems and other parts of brains Discusses what we can learn from fossils the origin of neocortex and the evolution of specializations of human brains **Spinal Evolution** Ella Been, Asier Gómez-Olivencia, Patricia Ann Kramer, 2019-08-07

The vertebral spine is a key element of the human anatomy Its main role is to protect the spinal cord and the main blood vessels The axial skeleton with its muscles and joints provides stability for the attachment of the head tail and limbs and at the same time enables the mobility required for breathing and for locomotion Despite its great importance the vertebral spine is often over looked by researchers because a vertebrae are fragile in nature which makes their fossilization a rare event b they are metameric seriated and repeated elements that make their anatomical determination and thus their subsequent study difficult and c the plethora of bones and joints involved in every movement or function of the axial skeleton makes the reconstruction of posture breathing mechanics and locomotion extremely difficult It is well established that the spine has changed dramatically during human evolution Spinal curvatures spinal load transmission and thoracic shape of bipedal humans are derived among hominoids Yet there are many debates as to how and when these changes occurred and to their phylogenetic functional and pathological implications In recent years renewed interest arose in the axial skeleton New and exciting finds mostly from Europe and Africa as well as new methods for reconstructing the spine have been introduced to the research community New methodologies such as Finite Element Analysis trabecular bone analysis Geometric Morphometric analysis and gait analysis have been applied to the spines of primates and humans These provide a new and refreshing look into the evolution of the spine Advanced biomechanical research regarding posture range of motion stability and attenuation of the human spine has interesting evolutionary implications Until now no book that summarizes the updated research and knowledge regarding spinal evolution in hominoids has been available The present book explores both these new methodologies and new data including recent fossil morphological biomechanical and theoretical advances regarding vertebral column evolution In order to cover all of that data we divide the book into four parts 1 the spine of hominoids 2 the vertebral spine of extinct hominins 3 ontogeny biomechanics and pathology of the human spine and 4 new methodologies of spinal research These parts complement each other and provide a wide and comprehensive examination of spinal evolution **Human Evolution** Camilo J. Cela-Conde, Francisco J. Ayala, 2007-09-27 Human Evolution provides a comprehensive overview of hominid evolution synthesising data and approaches from fields as diverse as physical anthropology evolutionary biology molecular biology

genetics archaeology psychology and philosophy The book starts with chapters on evolution population genetics systematics and the methods for constructing evolutionary trees These are followed by a comprehensive review of the fossil history of human evolution since our divergence from the apes Subsequent chapters cover more recent data both fossil and molecular relating to the evolution of modern humans A final section describes the evolution of culture language art and morality The authors are leading experts in two complementary fields of scholarship physical anthropology and molecular evolution Throughout the book they successfully integrate their expertise in evolutionary theory phylogenetics genomics cultural evolution language aesthetics and morality to produce a cutting edge textbook copiously illustrated and with an extensive and up to date bibliography It will be suitable for both senior undergraduate and graduate level students taking courses on human evolution within departments of biology anthropology psychology and philosophy The book will also appeal to a more general audience seeking a readable up to date and inclusive treatment of human origins and evolution Kromdraai Jose Braga,2017-03-30 This book is dedicated to the palaeontological site of Kromdraai one of the most well known sites of the Cradle of Humankind the famous UNESCO World Heritage site located in the Gauteng province South Africa From 1938 to 1943 Robert Broom described important hominin fossil discoveries from Kromdraai as belonging to a single individual and designated the type specimen as one of our distant relatives called *Paranthropus robustus*

Processes in Human Evolution Francisco José Ayala,Camilo José Cela Conde,2017 The discoveries of the last decade have brought about a completely revised understanding of human evolution due to the recent advances in genetics palaeontology ecology archaeology geography and climate science Written by two leading authorities in the fields of physical anthropology and molecular evolution *Processes in Human Evolution* presents a reconsidered overview of hominid evolution synthesising data and approaches from a range of inter disciplinary fields The authors pay particular attention to population migrations since these are crucial in understanding the origin and dispersion of the different genera and species in each continent and to the emergence of the lithic cultures and their impact on the evolution of cognitive capacities *Processes in Human Evolution* is intended as a primary textbook for university courses on human evolution and may also be used as supplementary reading in advanced undergraduate and graduate courses It is also suitable for a more general audience seeking a readable but up to date and inclusive treatment of human origins and evolution *Apes and Human Evolution* Russell H. Tuttle,2014-02-17 Russell Tuttle synthesizes a vast literature in primate evolution and behavior to explain how apes and humans evolved in relation to one another and why humans became a bipedal tool making culture inventing species distinct from other hominoids He refutes the theory that we are sophisticated instinctively aggressive and destructive killer apes **Actes Du 2ème Congrès International de Paléontologie Humaine, Turin, 28 Septembre-3 Octobre 1987** Giacomo Giacobini,1989 Human Evolution Source Book Russell L. Ciochon,John G. Fleagle,2016-12-05 For Junior Senior and Graduate courses in Human Evolution taught in anthropology and biology departments This book is the most comprehensive

collection of cutting edge articles on human evolution Designed for use by students in anthropology paleontology and evolutionary biology this edited volume brings together the major ideas and publications on human evolution of the past three decades The book spans the entire scope of human evolution with particular emphasis on the fossil record including archaeological studies

Wiley-Blackwell Encyclopedia of Human Evolution Bernard Wood, 2011-03-31 This comprehensive A to Z encyclopedia provides extensive coverage of important scientific terms related to improving our understanding of how we evolved Specifically the 5 000 entries in this two volume set cover evidence and methods used to investigate the relationships among the living great apes evidence about what makes the behavior of modern humans distinctive and evidence about the evolutionary history of that distinctiveness as well as information about modern methods used to trace the recent evolutionary history of modern human populations This text provides a resource for everyone studying the emergence of Homo sapiens Visit the companion site www.woodhumanevolution.com to browse additional references and updates from this comprehensive encyclopedia

Encyclopedia of Human Evolution and Prehistory Eric Delson, Ian Tattersall, John Van Couvering, Alison S. Brooks, 2004-11-23 Praise for the first edition The most up to date and wide ranging encyclopedia work on human evolution available American Reference Books Annual For student researcher and teacher the most complete source of basic information on the subject Nature A comprehensive and authoritative source filling a unique niche essential to academic libraries important for large public libraries Booklist RBB

A Companion to Paleoanthropology David R. Begun, 2012-12-20 A Companion to Paleoanthropology presents a compendium of readings from leading scholars in the field that define our current knowledge of the major discoveries and developments in human origins and human evolution tracing the fossil record from primate and hominid origins to the dispersal of modern humans across the globe Represents an accessible state of the art summary of the entire field of paleoanthropology with an overview of hominid taxonomy Features articles on the key discoveries in ape and human evolution in cranial postcranial and brain evolution growth and development Surveys the breadth of the paleontological record from primate origins to modern humans Highlights the unique methods and techniques of paleoanthropology including dating and ecological methods and use of living primate data to reconstruct behavior in fossil apes and humans

The Skull of Australopithecus Afarensis William H. Kimbel, Yoel Rak, Donald C. Johanson, 2004 The book is the most in depth account of the fossil skull anatomy and evolutionary significance of the 3 6 3 0 million year old early human species Australopithecus afarensis Knowledge of this species is pivotal to understanding early human evolution because 1 the sample of fossil remains of A afarensis is among the most extensive for any early human species and the majority of remains are of taxonomically informative skulls and teeth 2 the wealth of material makes A afarensis an indispensable point of reference for the interpretation of other fossil discoveries 3 the species occupies a time period that is the focus of current research to determine when where and why the human lineage first diversified into separate contemporaneous lines of descent Upon publication of this book this species will be among the

most thoroughly documented extinct ancestors of humankind The main focus of the book its organizing principle is the first complete skull of *A. afarensis* specimen number A.L. 444-2 at the Hadar site Ethiopia the home of the remarkably complete 3.18 million year old skeleton known as Lucy found at Hadar by third author D. Johanson in 1974 Lucy and other fossils from Hadar together with those from the site of Laetoli in Tanzania were controversially attributed to the then brand new species *A. afarensis* by Johanson T. White and Y. Coppens in 1978 However a complete skull which would have quickly resolved much of the early debate over the species proved elusive until second author Y. Rak's discovery of the 444 skull in 1992 The book details the comparative anatomy of the new skull and the cast of its brain analyzed by R. Holloway and M. Huan as well as of other skull and dental finds recovered during the latest ongoing field work at Hadar and analyzes the evolutionary significance of *A. afarensis* in the context of other critically important discoveries of earliest humans made in recent years In essence it summarizes the state of knowledge about one of the central subjects of current paleoanthropological investigation

Paleontology and Geology of Laetoli: Human Evolution in Context Terry Harrison, 2011-01-27 This volume 2 and its companion volume 1 present the results of new investigations into the geology paleontology and paleoecology of the early hominin site of Laetoli in northern Tanzania The site is one of the most important paleontological and paleoanthropological sites in Africa worldrenowned for the discovery of fossils of the early hominin *Australopithecus afarensis* as well as remarkable trails of its footprints The first volume provides new evidence on the geology geochronology ecology ecomorphology and taphonomy of the site The second volume describes newly discovered fossil hominins from Laetoli belonging to *Australopithecus afarensis* and *Paranthropus aethiopicus* and presents detailed information on the systematics and paleobiology of the diverse associated fauna Together these contributions provide one of the most comprehensive accounts of a fossil hominin site and they offer important new insights into the early stages of human evolution and its context

The Human Evolution Source Book Russell L. Ciochon, John G. Fleagle, 1993 M. CREATED **Handbook of Paleoanthropology** Winfried Henke, Ian Tattersall, 2007-05-10 This 3 volume handbook brings together contributions by the world's leading specialists that reflect the broad spectrum of modern palaeoanthropology thus presenting an indispensable resource for professionals and students alike Vol 1 reviews principles methods and approaches recounting recent advances and state of the art knowledge in phylogenetic analysis palaeoecology and evolutionary theory and philosophy Vol 2 examines primate origins evolution behaviour and adaptive variety emphasizing integration of fossil data with contemporary knowledge of the behaviour and ecology of living primates in natural environments Vol 3 deals with fossil and molecular evidence for the evolution of *Homo sapiens* and its fossil relatives

Environment, Development, and Evolution Brian Keith Hall, Roy Douglas Pearson, Gerd B. Müller, 2004 Leading researchers in evolutionary developmental biology seek linkages between and a synthesis of development physiology endocrinology ecology and evolution Evolutionary developmental biology also known as evo devo or EDB seeks to find links between development and evolution by opening the black box of development's role in

evolution and in the evolution of developmental mechanisms In particular this volume emphasizes the roles of the environment and of hormonal signaling in evo devo It brings together a group of leading researchers to analyze the dynamic interaction of environmental factors with developmental and physiological processes and to examine how environmental signals are translated into phenotypic change from the molecular and cellular level to organisms and groups of organisms Taken together these chapters demonstrate the crucial roles of those processes of genetic developmental physiological and hormonal change that underpin evolutionary change in development morphology physiology behavior and life history Part I investigates links between environmental signals and developmental processes that could be preserved over evolutionary time Several contributors evaluate the work of the late Ryuichi Matsuda especially his emphasis on the role of the external environment in genetic change and variability pan environmentalism Other contributors in part I analyze different aspects of environmental genetic evolutionary linkages including the importance of alternate ontogenies in evolution and the paradox of stability over long periods of evolutionary time Part II examines the plasticity that characterizes much of development with contributors discussing such topics as gene regulatory networks and heterochronicity Part III analyzes the role of hormones and metamorphosis in the evolution of such organisms with alternate life history stages as lampreys amphibians and insects

Evolutionary History Of The Robust Australopithecines Book Review: Unveiling the Power of Words

In a world driven by information and connectivity, the energy of words has been much more evident than ever. They have the ability to inspire, provoke, and ignite change. Such is the essence of the book **Evolutionary History Of The Robust Australopithecines**, a literary masterpiece that delves deep into the significance of words and their effect on our lives. Compiled by a renowned author, this captivating work takes readers on a transformative journey, unraveling the secrets and potential behind every word. In this review, we shall explore the book's key themes, examine its writing style, and analyze its overall impact on readers.

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