



The cradle of modern mammalian groups

Kenneth D. Rose and J. David Archibald (eds.) 2005. *The Rise of Placental Mammals. Origin and Relationships of Major Extant Clades*. xi + 260 pp. The Johns Hopkins University Press, Baltimore and London. Hardcover with book jacket. ISBN 080188022-X. Price 95 US dollars.

From vast grasslands and deserts to lush forests, from ocean depths to the highlands and mountain ranges up to 6,100 m above sea level; they are everywhere, inhabiting extremely diverse habitats and able to

survive almost everywhere on Earth—placentals, the modern mammals. The clade, to which we humans also belong, today consists of about 4,400 extant species grouped into 1,050 genera.

The pre-eminence of placental mammals in terrestrial environments began with the dawn of the Cenozoic era but their roots are embedded in the Cretaceous and the history of Eutheria, the ancestor group for placentals, seems even more enthralling as it still holds many secrets.

This book, “The Rise of Placental Mammals. Origin and Relationships of Major Extant Clades”, presents an excellent summary and overview of the phylogenetic history of placentals and related eutherian groups. It also pays homage to the late George Gaylord Simpson, commemorating his life and work on the occasion of the centenary of his birth.

As the editors inform us in the introductory chapter, “Womb with a view: the rise of placentals”, the underlying idea of the book was to create a summary of current knowledge on placental mammals and their origins, augmented since the publication of “Mammal Phylogeny” by Szalay et al. (1993). The project emerged during the annual meeting of the Society of Vertebrate Paleontology in 2001, was developed during the subsequent symposium in 2002, and finalized in 2003 when the presented papers became chapters (15 in total) authored or co-authored by 32 of the world’s leading authorities in the field of paleomammalogy.

The air of this collective effort is still clear in the book, especially in the first four chapters which are mainly of a general and introductory character. In the first chapter, the editors, Ken Rose and David Archibald, review the development and changes in the classification of Placentalia, defining the group “as the taxon including all extant placentals and their most recent common ancestor” and as “a subgroup of Eutheria, the clade of therian mammals closely related to placentals than marsupials”. They also give a short overview of the chapters on a particular group or groups of placentals.

The second chapter summarizes the contributions of G.G. Simpson to paleomammalogy. This chapter, authored by Simp-

son’s biographer Leo F. Laporte, is a comprehensive, clearly written summary of the views held by Simpson, one of the greatest zoologists and paleontologists in history, on mammal classification, evolution, and biogeography. The third and fourth chapters present the panorama of placental mammal phylogeny from morphological (Chapter 3) and molecular (Chapter 4) points of view. The following eleven chapters (5–15) describe the characteristics of modern placental groups, starting with insectivoran-grade placentals (including Lipotyphla *sensu* Asher and afrotherian clades of Chrysochloridae and Tenrecidae), through Macroscelidea and Tubulidentata treated in one chapter, Paenungulata, Xenarthra and Pholidota described together, Euarchonta, Glires, Chiroptera, Carnivora, Perissodactyla, Artiodactyla, and finally, Cetacea. The book contains an extended index and includes 77 black-and-white drawings, schemes, and cladograms, and many synthetic tables.

The chapters dealing with specific taxonomic groups are well organized. However, the organization of each chapter is not uniform but reflects particularities of the evolutionary history and research directions of each group. They provide clear and comprehensive sources of information, each concluding with a short summary and list of references and thus forming an independent unit. Aspects of the current research directions for each group are well covered and the various authors do not avoid obscurities or controversies in their fields. One of these is the problem of polyphyly in the insectivores which share some morphological characters (such as a “mobile proboscis”) but are split on the grounds of molecular evidence. The dilemma of the higher-level interrelationships of Glires is thoroughly covered, one of the most contentious and researched subjects in mammalian phylogeny.

The book is intended to be a generally morphological-oriented overview; however, it does not neglect the most important achievements of molecular phylogenetics. Hence, it represents an interesting and important publication for all researchers working in the field of mammal paleontology as well as zoologists dealing with the systematics and evolution of extant placentals. The clear arrangement and comprehensive character of the book, as well as its broad background, make it a must not only for experienced workers but also for students of zoology and paleontology at postgraduate level. I recommend the book to all those interested in the evolutionary history of placentals.