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Comparative Dental Morphology

Selected papers of the 14th International Symposium on Dental Morphology, August 27–30, 2008, Greifswald, Germany

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61 figures, 10 in color, and 20 tables, 2009
This book is dedicated to the memory of three outstanding dental anthropologists:
Daris R. Swindler, Stanley M. Garn, and Coenraad F.A. Moorrees
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Preface

Teeth and their supporting elements evolved as principal structures of mastication. Composed of distinct hard tissues and pulp, teeth are connected with the bony socket in which they are set by the periodontal ligament. Although all morphological features of the teeth and their surrounding structures are genetically determined to some extent, they are adapted to the environment in the course of ontogeny and phylogeny. Thus, teeth are exceptional sources for addressing important questions in numerous disciplines such as dental sciences, evolutionary biology, paleoanthropology, paleontology, archaeology, prehistoric anthropology, comparative anatomy, genetics, embryology, and forensic medicine. The last few decades have witnessed new and growing interest in dental morphology. This development in dental research was driven not only by the recent advances in data acquisition using highly sophisticated methods such as molecular analyses or new nondestructive imaging technologies, but also in the mode of data interpretation. Unfortunately, however, new insights into dental biology are usually presented at expert meetings or at several overlapping sessions of annual scientific conferences. Thus, it is more and more difficult to keep on track with new developments in this field.

To overcome these shortcomings, a group of enthusiastic scientists gathered in 1965 in Fredensborg, Denmark, to offer a forum for interdisciplinary communication and discussion in the field of dental morphology. This meeting was the beginning of a series of International Symposia on Dental Morphology that take place every 3 years. The Dental Morphology Symposia have always been most exciting meetings because of their special atmosphere and interdisciplinary character. Each symposium resulted in the publication of a volume with original papers. These papers, while presenting many details on several aspects of dental morphology, were intended to provide a broad picture on current aspects of research in dental morphology. Due to the interdisciplinary character, these volumes were not simply proceedings of scientific meetings. Although the information given in these volumes could not be complete, they provided the necessary background for further studies. Indeed, these volumes are still widely recognised and have a great impact on the further development of dental research.

The current volume contains a selection of papers that were presented at the 14th International Symposium on Dental Morphology held in Greifswald, Germany, August 27–30, 2008. Like the
former volumes, the aim of this most recent addition to the series is to present progress in major topics of current research in dental morphology. In doing this, it is our hope that this volume will attract similar attention as the volumes of the former meetings. Presented in the current volume in the Karger series *Frontiers in Oral Biology*, the research presented at the 14th International Symposium on Dental Morphology has found the forum it deserves.

The 30 selected and fully refereed papers are arranged into six sections, including dental evolution, dental morphology, dental tissues, and dental growth and development. Due to recent advances in dental medicine, a section on clinical aspects of dental morphology is also included in this volume. A special feature of the present volume is the integration of new information about the role of teeth as tools in reconstructing the nature and behaviour of past populations in a section on teeth and reconstruction of the past.

To achieve a high standard in each section, outstanding scientists in their field were invited to act as co-editors. We are therefore most grateful to B. Holly Smith (Ann Arbor, Mich., USA), Mark F. Teaford (Baltimore, Md., USA), Inger Kjær (Copenhagen, Denmark), Alan Brook (Liverpool, UK), and John R. Lukacs (Eugene, Oreg., USA) for allocating the most suitable papers and for supervising the review process. We thank especially M. Christopher Dean (London, UK), for taking over the duties as a co-editor for the chapters on dental tissues from Moya M. Smith (London, UK). Due to health reasons, Moya M. Smith was not able to continue this work. Each section contains an in-depth introduction to the particular field of dental research. Thus, readers are encouraged to review these introductions in order to get the most out of the topics of this volume.

The preparation of the 14th International Symposium on Dental Morphology that let to this book was greatly supported by the Deutsche Forschungsgemeinschaft (DFG), the Deutsche Gesellschaft für Zahn-, Mund- und Kieferheilkunde, and the Medical Faculty of the Ernst Moritz Arndt University, Greifswald. We would like to thank Prof. Karlhans Endlich, head of the Department of Anatomy and Cell Biology of Greifswald University, and all members of his department. Without their direct and indirect help this symposium would not have been possible. In addition, we are most grateful to a number of individuals for their help and support including Dr. Frauke Fassbinder (Greifswald) and Priv.-Doz. Dr. Thomas Terberger (Greifswald). Finally, for their tremendous work during the meeting, we owe our special thank to the following medical and dental students of Greifswald University: Norman Apt, Torsten Bierdümpe1, Hansgeorg Irmer, Sebastian Klug, Sandra Ortmann, Doreen Plaumann, Beate Roderer, Christoph Röth, Felix Rudolph, Jessica Wickert and Eva-Maria Wittkowski.

Finally, we thank all the authors of this volume, not only for their speedy and efficient work, but especially for keeping their papers within the necessary space limitations. Last, but obviously not the least, it is our pleasure to acknowledge S. Karger publishers, Basel, Switzerland, for inviting this volume into their series *Frontiers in Oral Biology*, and the Karger team for their flexible and highly professional cooperation.

*Thomas Koppe, Greifswald, Germany*

*Georg Meyer, Greifswald, Germany*

*Kurt W. Alt, Mainz, Germany*
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