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Nota di contenuto	Part I. Genes, Molecules and Tooth Initiation -- 1. Homeobox genes in initiation and shape of teeth during development in mammalian embryos / Paul T. Sharpe -- 2. Return of lost structure in the developmental control of tooth shape / Jukka Jernvall and Irma Thesleff -- 3. Molecules implicated in odontoblast terminal differentiation and dentinogenesis / J.V. Ruch and H. Lesot -- 4. Enamel biomineralization : the assembly and disassembly of the protein extracellular organic matrix / Alan G. Fincham [and others] -- Part II. Tooth Tissues: Development and Evolution -- 5. Evolutionary origins of dentine in the fossil record of early vertebrates : diversity, development and function /

Moya Smith and Ivan Sansom -- 6. Pulpo-dentinal interactions in development and repair of dentine / Tony Smith -- 7. Prismless enamel in amniotes : terminology, function and evolution / P. Martin Sander -- 8. Two different strategies in enamel differentiation : marsupial versus eutheria / Wighart V. Koenigswald -- 9. Incremental markings in enamel and dentine : what they can tell is about the way teeth grow / M.C. Dean -- Part III. Evolution of Tooth Shape and the Dentition -- 10. Evolutionary origins of teeth and jaws : developmental models and phylogenetic patterns / Moya Smith and Mike Coates -- 11. Development and evolution of dentition patterns and their genetic basis / Zhiyong Zhao, Kenneth N. Weiss and David W. Stock -- 12. Evolution of tooth attachment in lower vertebrates to tetrapods / Peter Gangler -- 13. Tooth replacement patterns in non-mammalian vertebrates / Barry Berkovitz -- 14. The evolution of tooth shape and tooth function in primates / P.M. Butler -- 15. 'Schultz's Rule' and the evolution of tooth emergence and replacement patterns in primates and ungulates / B. Holly Smith -- Part IV. Macrostructure and Function -- 16. Developmental plasticity in the dentition of a heterodont polyphyodont fish species / Ann Huysseune -- 17. Enamel microporosity and its functional implications / Peter Shellis and George Dibdin -- 18. Pathways to functional differentiation in mammalian enamel / John M. Rensberger -- 19. Trends in the evolution of molar crown types in ungulate mammals : evidence from the northern hemisphere / J. Jernvall, J.P. Hunter and M. Fortelius -- 20. Function of postcanine tooth crown shape in mammals / Peter W. Lucas and Charles R. Peters -- 21. Primate dental functional morphology revisited / Mark F. Teaford.

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## Sommario/riassunto

In this field there has been an explosion of information generated by scientific research. One of the beneficiaries of this has been the study of morphology, where new techniques and analyses have led to insights into a wide range of topics. Advances in genetics, histology, microstructure, biomechanics and morphometrics have allowed researchers to view teeth from alternative perspectives. However, there has been little communication between researchers in the different fields of dental research. This book brings together overviews on a wide range of dental topics linking genes, molecules and developmental mechanisms within an evolutionary framework. Written by the leading experts in the field, this book will stimulate co-operative research in fields as diverse as paleontology, molecular biology, developmental biology and functional morphology.

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