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The Editor presents the state of the JDR through 2006.

DISCOVERY! 8
John Ruby and Morris Goldner
The authors explore the paradoxical relationship between the human host and the indigenous oral microflora through symbiosis, amphibiosis, and microbial enrichment culture.

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Remodeling the Dentofacial Skeleton: The Biological Basis of Orthodontics and Dentofacial Orthopedics 12
The author discusses the significance of numerous well-documented animal studies and the extent to which they can be utilized clinically in the correction of skeletal malocclusion.

Hereditary Gingival Fibromatosis: Characteristics and Novel Putative Pathogenic Mechanisms 25
This review outlines the current knowledge about the histological, cellular, and genetic characteristics of hereditary gingival fibromatosis.

RESEARCH REPORTS BIOLOGICAL

Anti-P. gingivalis Response Correlates with Atherosclerosis 35
P.J. Ford, E. Gemmell, P. Timms, A. Chan, FM. Preston, and G.J. Seymour
Increasing the pathogen burden of P. gingivalis enhances atherosclerosis.

Enamel Matrix Derivative Stimulates Human Gingival Fibroblast Proliferation via ERK 41
E. Zeldich, R. Koren, C. Nemcovsky, and M. Weinreb
The authors characterize the mitogenic effect of Emdogain on primary human gingival fibroblasts, its cooperation with serum growth factors, and the key mediatory role of the extracellular regulated kinase cascade.

Effects of Occlusal Stimuli on Alveolar/Jaw Bone Formation 47
Y. Shimmed, C.J. Chung, Y. Awash-Hayashi, T. Muramoto, and K. Soma
The authors describe the positive influence of occlusal function on alveolar and jaw bone formation during the growth period.
Relationship between Porotic Changes in Alveolar Bone and Spinal Osteoporosis

This is the first study to report alveolar bone changes due to estrogen deficiency in ovariectomized monkeys.

Randomized Effectiveness Study of Four Therapeutic Strategies for TMJ Closed Lock

This report describes the first adequately powered randomized study assessing the effectiveness of four treatment strategies for persons with TMJ closed lock.

Influence of Human Jaw Movement on Cerebral Blood Flow
Y. Hasegawa, T. Ono, K. Hori, and T. Nokubi

These are the first findings on jaw-movement-induced changes in cerebral blood flow.

A Novel Missense Mutation (p.P52R) in Amelogenin Gene Causing X-linked Amelogenesis Imperfecta

The authors have identified a novel nucleotide alteration of the AMELX encoding for amelogenin protein in a Japanese family with X-linked amelogenesis imperfecta.

BIOMATERIALS & BIOENGINEERING

Smart Bracket for Multi-dimensional Force and Moment Measurement
B.G. Lapatki, J. Barthlomeyczik, P. Ruther, I.E. Jonas, and O. Paul

The authors describe a methodological approach generally suitable for monitoring the relatively low forces and moments exerted on individual teeth with fixed orthodontic appliances.

Effective Bone Engineering with Periosteum-derived Cells

Combined treatment with basic fibroblast growth factor and bone morphogenetic protein-2 can make periosteum a highly useful source of bone regeneration.

Delivery Mode and Efficacy of BMP-2 in Association with Implants
Y. Liu, R.O. Huse, K. de Groot, D. Buser, and E.B. Hunziker

Simple manipulations in the mode of drug delivery by biomimetic calcium-phosphate coatings can effect vast improvements in the osteoinductive efficacy of the system, with important implications for the development of marketable, functionalized prostheses at compromised implantation sites.

Chlorhexidine Preserves Dentin Bond in vitro

Chlorhexidine may be useful for the preservation of dentin bond strength.