Presidential Address — Fall 1995

John R. Lukacs

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The newsletter is our association's medium for exchange of ideas, data, news, and research developments in the growing field of dental anthropology. The newsletter is beginning its tenth year of service to its members, and as a way of familiarizing myself with its growth and development I recently completed a retrospective review of its contents. The results are presented in this volume as an author and subject index (1986-1995), which I compiled over the summer with the assistance of Jeremy French (University of Oregon, anthropology major). I trust the index will provide valuable assistance to dedicated readers needing quick access to articles, news and reviews that have appeared over the years. A few casual observations regarding the topical and geographical content of the newsletter and suggestions for the future are the subject of this address.

I believe that our newsletter is attractive and appealing to a wide readership first and foremost because it provides up-to-date news of our colleagues' current events. Research and travel news is supplemented by valuable information regarding recent and forthcoming professional meetings. A rewarding component of the newsletter, yet one that could benefit from further development, is the review section — which covers reviews of books, software, and research equipment related to our interest in research on human and primate dentition. Editorial board members, past and present, have been largely responsible for news from professional meetings of interest to dental anthropologists, and for book and product reviews.

Research articles, which were rather sparse during the newsletter's formative years, have become an indispensable and essential ingredient of its current success. These brief research communications reflect the diverse cross-section of the association's membership and span a broad array of scholarly topics. They have typically included such topics as methods in dental research on skeletal series and living populations, dental appliances and practices, and more traditional analyses of dental pathology, morphology, and odontometry. Research communications are somewhat unevenly distributed geographically, with a majority of articles focusing on prehistoric and living people of the Americas. The dental anthropology of European populations has received better coverage than African and Asian peoples. Developing a more even geographic distribution of research articles through soliciting contributions from active students and scholars in under-represented areas is a future goal of the editorial board.

The review section of our newsletter consists of product reviews (software and equipment) in addition to reviews of recent books in dental anthropology and related fields. An increase in both book and product reviews, especially those that cover new technologies relevant to research in dental anthropology, are most welcome. Another valuable feature of the newsletter, that is of consistently high quality, is the 'recent publications' section. Association members have repeatedly expressed their appreciation for the citations to recent research that appear in this section of the newsletter.

Additional facets of the newsletter include the annual member list and obituaries of notable dental anthropologists. The annual member list facilitates contact between members with similar research interests, while obituaries serve the dual purpose of documenting the passing of former leaders in the field and providing a lasting testimony to their achievements. Of special note is the issue (Dental Anthropology Newsletter 8:2) devoted exclusively to the memory of Dr. Albert A. Dahlberg.

The success and broad appeal of the newsletter is due to the diversity and high quality of its contents, and
these in turn originate with board members and the association membership. Therefore, I would like to conclude by encouraging professional researchers and graduate students in dental anthropology and allied fields to strive to develop the practice of periodically sending the editor (A.M. Haeussler) brief news updates regarding your current or recently completed research projects, conferences attended, and newly published literature. Reviews or notices of new equipment, new books, and new software relevant to research in dental anthropology, and parallel fields such as paleontology and dentistry will be much appreciated. The editorial board will work to solicit review articles on the development of dental anthropology in regions of the world and in specific subject areas that are not yet well represented in the newsletter. Achieving these new aspirations and goals for the newsletter will require service and dedication from the board and the membership, but if the growth of the past is any indication, the next ten years of the newsletter should witness even greater levels of accomplishment and prosperity. Suggestions for articles, news, and reviews can be sent to A.M. Haeussler (editor) or me (JRLukacs@Oregon.oregon.edu).

'Mesiodens' in India: A Brief Review of Hyperdontia with New Frequency Data for Castes and Tribes of South Asia

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BRIEF REVIEW OF HYPERDONTIA

Any increase in the number of teeth from the normal primary or permanent complement is known as hyperdontia (Burzynski and Escobar, 1983). The presence of extra or supernumerary teeth is also known as polyodontia or polygenesis, though the term hyperdontia is more widely used (Hillson, 1986). Supernumerary teeth may display anatomical characteristics of the tooth class with which it is associated (supplemental teeth), or more frequently, they are of aberrant shape, commonly assuming a simple conical form (Cawson, 1970). The etiology of hyperdontia has been attributed to: 1) an atavistic tendency toward the early primate or mammalian dental complement (Dahlberg, 1945); 2) hyperactivity of the dental lamina, producing additional tooth germs (Scott and Symons, 1989); or 3) dichotomy or division of tooth germs, resulting in more than one tooth (Braham and Morris, 1980). While hyperdontia is relatively rare and occurs in all tooth classes, the maxillary anterior region and molar segments of the dentition are most commonly affected (Tay et al., 1984). Only 10% of all supernumerary teeth occur in the mandible (Brand and Isselhard, 1990). Numeric anomalies (hypodontia and hyperdontia) of the dentition are more typically found in the permanent than in the primary dentition (Brand and Isselhard, 1990; Scott and Symons, 1989). Genetic syndromes with dental numeric defects more frequently display hypodontia (36 syndromes) than hyperdontia (6 syndromes) (Shapiro and Farrington, 1983). Hyperdontia occurs in approximately 0.5% of children, and is reported to be more prevalent in males than in females (Grahnen and Granath, 1961). The prevalence of hyperdontia varies significantly by ethnic group and by age structure of the study group. Supernumerary teeth have a frequency of 0.1% among school children in Jerusalem (Rosenzweig and Garbaski, 1965), while Japanese children exhibit a frequency of 3.8% (Niswander and Sujaku, 1963). One report found a prevalence of 0.9% in adults, while another documented 2.0% prevalence in a sample of children between one and nine years of age (Millhon and Stafne, 1941; Stafne, 1932).

'Mesiodens' is one of the variety of specialized terms that have been employed to refer to supernumerary teeth by position in the dental arcade. Supernumerary teeth that occur between the maxillary central incisor teeth are known by the term 'mesiodens' (Bolk, 1917; Burzynski and Escobar, 1983). 'Mesiodens' are often palatally displaced and routinely appear in the mid-sagittal or para sagittal plane. Consequently, Brand and Isselhard's (1990:284) definition of 'mesiodens' as "supernumerary teeth arising in the midline of the maxilla." is perhaps a more appropriate one. Abnormal development or orientation of 'mesiodens' may result in perforation of the nasal chamber or the tooth assuming a position adjacent to it. Such teeth are often referred to as nasal teeth (Alt, 1990; Chopra and Joshi, 1969; Morley and Tompson, 1983). The oldest documented case of 'mesiodens' is an antiquity of 13,000 years (Sutton, 1985). Genetically 'mesiodens' has been interpreted to show an autosomal dominant mode of inheritance with reduced penetrance (Sedano and Gorlin, 1969), but autosomal recessive and additive polygenic mechanisms have also been suggested (Alt, 1990). 'Paramolar' is the term assigned to supernumerary teeth and tubercles that occur in association with the molar region. Both types of
supernumerary teeth show significant inter-population variation, suggesting a genetic influence on these traits. For example, paramolars are reported to be infrequent among Africans, Europeans, and their descendants in America, while in a group of native Americans from the southwest (Pima) paramolars are much more common (Dahlberg, 1950).

Case reports of nasal teeth (Rao, 1953; Sinha et al., 1986) and clinical descriptions of 'mesiodens' are available for people of India in the medical and dental literature, and anthropological studies of supernumerary teeth have been conducted in several Indian populations: Bengalis of eastern India (Pal, 1964: 2.0%, n=347), the Vysyas of Andhra Pradesh (Reddy and Vijayakumar, 1978: 0.25%, n=400), Muslims of Andhra Pradesh (Reddy et al., 1981: 2.35%, n=850), and the people of Gulbarga, Karnataka (Reddy, 1982: 0.52%; n=3656). However, a specific analysis of the prevalence of 'mesiodens' among Indian ethnic groups with distinct bio-cultural characteristics has not been previously conducted. A systematic analysis of the dental morphology of nine ethnic groups from the Indian subcontinent recently produced new data on the prevalence of 'mesiodens' in this heavily populated but poorly studied part of the world. Dental study models were made in three geographic regions of the subcontinent (northwest, central, and southeast) and in three social groups (high and low caste Hindu, and non-caste tribal) in each region. Bio-data, anthropometric measurements and dental study models were acquired for male and female representatives of each group (approximately 100 of each sex), yielding a total study sample of nearly 1800 individuals (see Lukacs and Hemphill, 1993 for field methods). The name, status, and region of the study groups are provided in Table 1. At the University of Oregon Bio-Anthropology Lab, under consistent oblique lighting, each study model was examined for numeric anomalies of the dentition. As this study is based upon plaster dental study models, only erupted 'mesiodens' were counted. Radiographic assessment of unerupted 'mesiodens' was not feasible in field locations in India. The frequency data reported below should therefore be regarded as underestimating the true incidence of 'mesiodens'.

**NEW FREQUENCY DATA FOR CASTES AND TRIBES OF SOUTH ASIA**

The prevalence of 'mesiodens' in these samples is presented by sex, social group, and region in Table 2. The overall prevalence in the complete sample is 0.52% (9/1743), however a clear trend is discernable in regional samples such that 'mesiodens' frequency gradually decreases from the northwest (0.81%), through the central region (0.58%) to the southeast (0.18%). This pattern is largely attributable to the consistent decline in 'mesiodens' prevalence among the low caste groups, Garasia, Mahar, Madiga, from northwest to southeast. No significant sex difference is evident in 'mesiodens' prevalence when data for the sexes are pooled across all regions and social groups (male 0.51%; female 0.52%). The prevalence of 'mesiodens' in caste and tribal groups of similar socio-religious status, but from different geographical regions, is presented in Table 3. In this comparison the composite low caste group displays the highest prevalence of 'mesiodens,' while the high caste group exhibits the lowest frequency, and tribals display intermediate values. The anatomical form of these 'mesiodens' is simply conical in 7 cases (77.7%). One complex conical (tri-lobed) and one incisiform 'mesiodens' were also observed. The mean mesiodistal (MD=5.2, sd=0.5, n=7) and buccolingual (BL=5.4, sd=0.7, n=5) crown dimensions of measurable conical 'mesiodens' attests to their cylindrical appearance. The atypical tri-lobed 'mesiodens' is oval in shape and substantially larger (MD=8.2, BL=6.7) than the more common

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**TABLE 1. Social and geographic distribution of sample.**

<table>
<thead>
<tr>
<th>Region</th>
<th>High Caste</th>
<th>Low Caste</th>
<th>Tribal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>Rajput</td>
<td>Garasia</td>
<td>Bhil</td>
</tr>
<tr>
<td>Central</td>
<td>Maratha</td>
<td>Mahar</td>
<td>Gond</td>
</tr>
<tr>
<td>Southeast</td>
<td>Reddy</td>
<td>Madiga</td>
<td>Chenchu</td>
</tr>
</tbody>
</table>

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**TABLE 2. Mesiodens frequency in South Asian samples (+/n; %).**

<table>
<thead>
<tr>
<th>Region</th>
<th>Group</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rajput</td>
<td>0/59; 0.00</td>
<td>1/149; 0.67</td>
<td>1/208; 0.48</td>
</tr>
<tr>
<td></td>
<td>Garasia</td>
<td>2/96; 2.08</td>
<td>1/105; 0.95</td>
<td>3/201; 1.49</td>
</tr>
<tr>
<td></td>
<td>Bhil</td>
<td>0/105; 0.00</td>
<td>1/103; 0.97</td>
<td>1/208; 0.48</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>2/260; 0.77</td>
<td>3/357; 0.84</td>
<td>5/617; 0.81</td>
</tr>
<tr>
<td>Central</td>
<td>Maratha</td>
<td>0/99; 0.00</td>
<td>0/101; 0.00</td>
<td>0/200; 0.00</td>
</tr>
<tr>
<td></td>
<td>Mahar</td>
<td>1/96; 1.04</td>
<td>1/99; 1.01</td>
<td>2/195; 1.03</td>
</tr>
<tr>
<td></td>
<td>Gond</td>
<td>0/74; 0.00</td>
<td>1/99; 1.01</td>
<td>1/173; 0.58</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>1/269; 0.37</td>
<td>2/299; 0.67</td>
<td>3/568; 0.53</td>
</tr>
<tr>
<td>Southeast</td>
<td>Reddy</td>
<td>0/82; 0.00</td>
<td>0/100; 0.00</td>
<td>0/182; 0.00</td>
</tr>
<tr>
<td></td>
<td>Madiga</td>
<td>1/82; 1.22</td>
<td>0/97; 0.00</td>
<td>1/197; 0.56</td>
</tr>
<tr>
<td></td>
<td>Chenchu</td>
<td>0/86; 0.00</td>
<td>0/111; 0.00</td>
<td>0/197; 0.00</td>
</tr>
<tr>
<td></td>
<td>Combined</td>
<td>1/250; 0.40</td>
<td>0/308; 0.00</td>
<td>1/558; 0.18</td>
</tr>
<tr>
<td>All Samples</td>
<td>4/779; 0.51</td>
<td>5/964; 0.52</td>
<td>9/1743; 0.52</td>
<td></td>
</tr>
</tbody>
</table>
and smaller cone-shaped form. In all but two cases the 'mesiodens' resulted in displacement or rotation of one or both central incisors.

The prevalence of 'mesiodens' for the entire sample of Indian castes and tribes (0.52%) falls well within the range of values reported for this trait in Europeans (0.15% to 1.4%; Pindborg, 1970; Primosch, 1981; Sedano and Gorlin, 1969). A recent study of 'mesiodens' among the tribal Paiwan of Formosa revealed an overall prevalence of 1.28% (5/390), but while females lacked the trait the male prevalence was 3.3% (5/152) (Takei et al., 1989). The sex difference in 'mesiodens' prevalence observed among the Paiwan of Formosa is similar to samples from Japan and India (Perry and Iyer, 1961), though male Japanese are reported to exhibit lower prevalence for the trait. In four of the five Formosan cases 'mesiodens' displayed a conical form, one case appeared incisiform. A radiographic study of premaxillary supernumerary teeth among medieval Norwegians (1100-1600 AD) excavated from the graveyard at St. Olaf's church, Trondheim, yielded a prevalence of 1.4% (2/140), consistent with values reported for other medieval and modern Nordic populations (Stermer-Beyer-Olsen, 1989).

In preparing this article a Medline search on 'mesiodens' was conducted yielding a total of 110 articles published between 1966 and the present (1966-74, 37; 1975-79, 9; 1980-84, 19; 1985-89, 23; 1990-present, 22). Most of these sources consist of individual case reports documenting the influence of 'mesiodens' on occlusal variation and their bearing on tooth migration and eruption theories (Sutton, 1985). Others consider associated dental anomalies (cysts, impaction, nasal eruption, etc.) (Mehrotra, 1966). Fewer studies are anthropological in nature (Castillo-Kaler, 1986; Gadbois, 1969; Kaler, 1988).

Reports that document the prevalence of 'mesiodens' are often based upon clinical samples that are ethnically heterogeneous, yet the inter-group variation reported here for castes and tribes of India suggest that this procedure is inappropriate. Although sex dimorphism in 'mesiodens' prevalence was not found in this Indian study, sex differences can be substantial and require that prevalence rates be reported separately for males and females. Another potential bias is that clinical samples consist of people seeking dental health care, and may not represent a random sample of the general population. For these reasons, dental anthropologists are encouraged to collect and report data for numeric anomalies of the dentition among ethnic groups whose biological and cultural identity is known in some detail. The value of prevalence data for human biological variations is greatly diminished when presented in the absence of a firmly established bio-cultural context.

ACKNOWLEDGMENTS: Funds for fieldwork were provided by the Smithsonian Institution (Foreign Currency Program). Laboratory analysis of dental casts was supported by the Alexander von Humboldt Foundation and University of Oregon, Summer Faculty Research Awards.

Fieldwork was conducted in collaboration with Deccan College, Pune (Dr. S. R. Walimbe), Sri Venkateshvara University, Tirupati (Dr. V. R. Reddy) and Government Dental College and Hospital, Ahmedabad (Dr. M. R. Joshi).

LITERATURE CITED

'MESIODENS' IN INDIA


Dentomaxillofacial Radiol. 18(4):177-179.


DENTISTRY IN ANCIENT EGYPT: JUNKERS' TEETH

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ABSTRACT The earliest known example of dental ligation was excavated from the Egyptian site of Cheops by Junker. Made of gold, the wire unites two molar teeth. For comparative purposes, we present two other molar teeth with the same occlusal wear surface. The teeth came from an Egyptian mummy recently autopsied.

INTRODUCTION

Dentistry may be defined as the art or practice of treating dental injuries and disorders by manual operation or instrumental appliances. Direct archaeological evidence of the occurrence of dentistry in ancient Egypt tends to excite rivalry between advocates of effective methods of dental treatment and those who believe that the exhibited evidence are the result of wishful thinking. Such partisanship is largely prejudiced, since both are present. While arguments against human intervention in the case of bone holes which accompany abscess formation are convincing (Leek, 1967), at least one case, known as "Junkers' teeth," is to be accepted (Fig. 1).

HISTORY

The three Giza pyramids of Mycerinus, Chephren and Cheops dominate the view at the edge of modern Cairo. These great ancient funerary monuments stand as an awesome reminder of the power of the pharaohs. A city of tombs arose around each pyramid. Each was used by members of the royal family or by a family promoted by the pharaoh.

Fig. 1. The "Junkers' teeth," 1929.
Systematic excavation of the Western Cemetery of Cheops' pyramid was begun in 1902. One of the expeditions was fielded by the University of Leipzig, and later transferred to the Akademie der Wissenschaften of Vienna and the Roemer-Pelizaeus Museum, Hildesheim, Germany, represented by Professor Hermann Junker. Junker recovered many human remains, which included two lower molar teeth from Tomb 984 dated at approximately 2500 BC.

These teeth were originally reported by Junker in 1914. He noted (p. 31) that this strange discovery evidenced a will to conserve as much as possible of the corpse intact. The two teeth were artistically held together with a thin gold wire, in such a manner as to hold a mobile tooth to a strong close one. Perhaps this man had this artifice installed in life. These teeth had been found in the mortuary chamber of the "Nile mud head reproduction."

**DESCRIPTION**

In 1975, F. Sallou published his report after reuniting the six bits of the 0.4 mm gold wire. He established the presence of an innate gap between the two teeth that corresponded with the fact that the two teeth were not in direct contact when the wire was modeled. The roots of the teeth had been broken postmortem. In putting the tightening knot against the proximal face of the molar, in a neutral space, the operator acted as a clinical surgeon.

What was the desired action of such an artifact? The lid has, it seems, been reopened recently by Becker (1994) on a controversy about whether the ancient Egyptians performed operative dentistry. A misunderstanding of the observations made by Quenuville in 1977 has been used in an attempt to "demonstrate" the non-existence of the dental appliance from the Old Kingdom. Contrary to the statement by Becker, Quenuville (1977) has affirmed that "in my own opinion, a real possibility exists of an in-vivo utilization...of the Junker teeth ligation..."

Enlarging the description so that all can understand the special case of "Junkers' teeth" now seems necessary. Along this line, the analysis requires comparative data. We have Egyptian skeletal material suitable for comparison. In 1985 in Lyons, France, a team of medical experts, led by the Egyptologist J.-C. Goyon, undertook a minute examination of an anonymous mummy. I had the opportunity to observe the teeth, to make scanning electron microscopic examinations of dental wear, and to do comparisons to previous studies on similar material (Puech, 1987; Puech et al., 1983). The main objective of the project was to assess the mummy in exacting detail, with a view to analyzing every action of the embalmers, both in terms of the physical preparation of the body and in the wrapping of the prepared corpse. The body of the man was well preserved. He was probably around forty years old at death, of slender build, and had badly worn teeth. The molar teeth had an occlusal wear grade very similar to "Junkers' teeth" (Figs. 2 and 3).

In a first antemortem sequence, the mummy had lost the upper and lower first molars and mesioversions of the second and third molars, followed by an opening of the space between those teeth. Heavy usage of one of the two remaining teeth had led to heavy wear and periodontal problems. In a second antemortem sequence, loss of one of the antagonist teeth of the most altered tooth decreased the occlusal stress and made possible a prolonged presence.

**DISCUSSION AND CONCLUSION**

Judging from the comparable condition of occlusal wear in the two cases, we may conclude that owner of the "Junkers' teeth" likely had missing and displaced teeth. Unfortunately, in the absence of details concerning the dentition of the Junker specimen, we have to present a mixture of analysis and narrative logic. However,
JUNKER’S TEETH

Junker's hypothesis about a gold wire to hold a mobile tooth, maybe during life, is strengthened by the condition of the Lyons' mummy. According to this hypothesis, the ligature was an attempt to provide a better condition for a mobile tooth that had lost the possibility of an occlusal load during mastication. The major objection to this hypothesis of dental treatments is its poor efficiency, but one might quote the phrase from John Hunter, the founder of modern surgical pathology in the mid-1780's: “but why think, why not try the experiment?” (Palmer, 1835).

LITERATURE CITED


NEWS SECTION

DENTAL ANTHROPOLOGY ON GUAM

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University of Guam, Den's Circle, UOG Station, Micronesia, Guam 96923

I am working on a sample of ancient remains from Rota (Chamorros) which includes many infant and child jaws and dentitions. I am also doing some forensic consulting, and have been working with a local orthodontist, John Van Der Pyl, on betel-stained teeth. “Style” of betel-chewing is uneven across ethnic groups on Guam, and Van Der Pyl has insight into such matters. In addition, I am studying pregnancy outcome data collected this past summer in Palau. The women were nutritionally and anthropometrically assessed the previous summer by Dr. Rebecca Podocik (nutritional scientist, University of Guam) and myself.

My work on cranial superstructures continues. I am presenting a paper on the interpretive aspects of three occipital superstructures (tubercle development on the occipital torus, retromastoid process, and posterior supramastoid tubercle) in indigenous Mariana Islanders (Chamorros or Chamoru), Tongans, and other Pacific Islanders at the symposium, “Humans in the Australasian Region,” at the 9th Annual Meeting of the Australian Society of Human Biology, December 4-6, 1995, in Melbourne, Australia. The paper is titled, “Geographically Restricted Patternings of Cranial Superstructures among Pacific Islanders,” and is co-authored with Vincent J. Sava (University of Hawaii-Maonao), Douglas B. Hanson (Forsyth Institute for Advanced Research, Boston), and Bruce E. Anderson (Army Central Identification Laboratory, Hickam AFB, Hawaii).

GOOD NEWS FROM THE UNIVERSITY OF ADELAIDE

GRANT TOWNSEND, LINDSAY RICHARDS, AND TASMAN BROWN
Department of Dentistry, University of Adelaide, Adelaide, 5000 South Australia

DENTAL RESEARCH PRIZE: Paula Dempsey, one of our PhD students, was recently awarded the prestigious IADR Travel Award at the 73rd General Session of the International Association for Dental Research in Singapore. Paula won the award for her presentation titled Genetic and Environmental Contributions to Variation in Permanent Tooth Crown Size. A paper presenting some of Paula’s findings has just appeared in the Journal of Dental Research.

AWARD OF PhD: John Kaidonis was awarded his PhD degree at a recent commemoration ceremony in Bonython Hall at the University of Adelaide. John’s thesis was titled An Experimental Study of the Wear Characteristics of Human Enamel during Tooth Grinding. The objective of John’s research was to study enamel attrition using an electromechanical machine that was specifically designed and constructed to grind opposing tooth surfaces while controlling for load, speed, duration of contact, direction of movement, number of cycles, and quantity and quality of lubricant. The wear rate of enamel was quantified under various conditions and replicas of experimental wear facets were examined using electron microscopy to assess surface features qualitatively.
The wear rate of human enamel was found to be bi-phasic for any given load. The primary wear phase was relatively rapid but, after reaching a threshold, a secondary wear phase progressed at a reduced rate. The study has not only quantified the behavior of human enamel under dry and liquid lubricative conditions but has also provided qualitative assessments of facet appearance to support the quantitative findings. John also showed that the wear characteristics of enamel are independent of the speed at which opposing teeth are rubbed and their direction of movement, but dependent on load and the quality of lubricant.

Although John’s model could only simulate the dynamic biological processes occurring in the human oral cavity, he gained new information about how dental enamel behaves within a tribo-chemical environment. Journal articles on John’s research are now being prepared for publication.

STUDY OF TEETH AND FACES OF AUSTRALIAN TWINS: Our research group celebrated a couple of weeks ago when we saw our 500th pair of twins as part of an ongoing study of genetic influences on dentofacial growth and development. We have been recently concentrating our efforts on collecting records of younger twins with deciduous dentitions and have been collaborating with Professor Louise Brearly Messer in Melbourne to obtain dental models and standardized facial photographs.

NEWS FROM FLORIDA ATLANTIC UNIVERSITY

M.Y. IŞCAN
Florida Atlantic University, Boca Raton, FL 33431-0991, U.S.A.

This summer M. Y. Işcan presented two two-day forensic anthropology courses, one at the Anatomy Department of the University of Pretoria, and the other at the Forensic Medicine Department of the University of Capetown, South Africa. He also delivered a lecture at the University of the Witwatersrand.

A group of anthropologists (Jeff Ainsworth Harrison, Maciej and Renata Henneberg, Susan Loth, and Işcan) also roamed around the places of the Taung child, Makapansgat people, Mr. Ples! (formerly Mrs. Ples), and Kromdraai. They were also given a private view of the Taung and many of the new Sterkfontein fossils by P.V. Tobias at the University of the Witwatersrand.

Işcan is also busy with the organization of the International Association for Craniofacial Identification meeting (November 8-11, 1995) being held for the first time in the United States in Boca Raton. He is also organizing the next meeting of his continuing conference series “Identification of Human Remains” also being held in Boca Raton, Jan 3-6, 1996.

Dental Anthropology Association members, Metin Ozbek and Yilmaz Erdal of Hacettepe University, Ankara, Turkey, finished another successful excavation season of the ancient city of Iznik. They excavated nearby well burials. Işcan’s graduate student Mary “Sam” Allen also participated in this excavation.

A special issue of the American Journal of Human Biology (1995:7(4)) has been dedicated to E.E. Hunt, a founding member of DAA. The contributors are: M. Flint and L.S. Lieberman - Preface (Symposium Organizers); G. Lasker and B.Kaplan; Jane Underwood; M. Crawford et al.; C. Hoff and R. Peterson; Işcan et al., and S.R. Loth.

NEWS FROM CHIETI, ITALY: Societa’ Italiana di Paleopatologia

LUIGI CAPASSO
Laboratories of Anthropology, Via Armanese, 162-1-66100 Chieti, Italy

The Societa’ Italiana di Paleopatologia (S.I.P.) was established on March 30, 1995, in Chieti. Luigi Capasso is president; Gino Fornaciari, vice-president; and Renato Mariani-Costantini, secretary. The aim of the S.I.P. is to increase the interest of students about paleopathology, to develop new research, to open new laboratories, and to help young Italian students. The S.I.P. will publish an official bulletin (Bollettino della Societa’ Italiana di Paleopatologia), with the aim of collecting scientific papers on paleopathology written in the Italian language. The bulletin will be circulated free to members. Annual dues are 50,000 Italian lira.

Each year the S.I.P. will organize an annual meeting on a particular topic. This year the meeting was held from October 15 to 17 in Chieti, Italy. The topic was Epidemic and Microbes in the History of Man. The subject dealt with the relationship between paleoanthropology and the history of medicine, with particular regard to microbiology. This year (1995) is the centennial of the death of Louis Pasteur (1895). The program consisted of invited papers and presentations on the theme of the meeting.

The address of the society is: Societa’ Italiana di Paleopatologia, Università degli Studi de Chieti “G.D’Annunzio”, Faculty of Medicine and Surgery, Institute of General Pathology, Via dei Vestini, 1-1-66100. Chieti, Italy. Fax +39-871-355322.
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We are going on with our project about the peopling of central southern Italy. At this moment we are focusing our attention on the Italian Iron Age (first millennium BC), but we will also expand our research to more ancient populations (Bronze age and Eneolithic) in order to have a clearer view of the relationships among populations and ethnic groups in this part of our peninsula. As before, we have focused our attention on dental metric, non-metric traits, and enamel hypoplasia (as you know it will be my Ph.D. dissertation thesis). When we have time, we also consider other oral pathologies. Of course, apart from teeth, we carry out the paleodemographical research of all the populations analyzed.

10TH INTERNATIONAL SYMPOSIUM ON DENTAL MORPHOLOGY: A REPORT
A.M. HAEUSSLER AND JOHN T. MAYHALL
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The 10th International Symposium on Dental Morphology was held from September 6 to 10 in Berlin, Germany. Ralf J. Radlanski of the Freie Universitat Berlin, the host institute, presided as congress president. Sessions dealt with ontogeny, dental genetics, dental morphology, technological advances, dental evolution, dental archaeology, and the functional correlation between teeth and jaws. Although symposia topics traditionally include dental morphology of all organisms that have teeth, be they conodonts, elephants, or humans, this report focuses on presentations historically and topically related to dental anthropology. However, one of the very valuable aspects of this and past symposia was the opportunity to meet and to listen to researchers in areas that may not always be thought to be valuable to dental anthropology.

P. Butler (Surrey, England) led off the Session on Ontogeny with a discussion of the morphological and functional similarities and differences in deciduous molars and permanent premolars. On a general level, J.W. Osborn (University of Alberta) presented a computer-based simulation of cusp formation. According to Osborn, mechanical forces that exist in tooth germs may explain the deformation of the dental epithelium into cusps during dental morphogenesis.

Results of a study by P. Smith, B. Peretz, and R. Forte-Koren (Hebrew University), indicate differential growth rates in mandibular deciduous second and permanent first molar tooth germs and their effects on crown morphology. The second deciduous molar is more conservative than the permanent first molar, with the former retaining the Dryopithecine Y-pattern in individuals with hypoconulid reduction. U. Zilberman and N. Abramovitz (Hebrew University) and E. Mass (Tel Aviv University) discussed the developmental mechanism by which patients with familial dysautonomy (a hereditary degenerative disorder affecting only Ashkenazi Jews) differ from the rest of the population in the size of the maxillary permanent first molar and deciduous second molar and the displacement of the disto-buccal cusp of the maxillary first molar.

Individuals from the Freie Universitat Berlin, authored numerous papers and posters on dental microstructure. Presentations dealt with flattening of human tooth primordia (S. Balhausen and R.J. Radlanski), initial deposition of dentine and enamel on the vault of the inner enamel epithelium (A. Rudolph and R.J. Radlanski), prism arrangement in the early layers of human fetal enamel (R.J. Radlanski), the appearance of cemental anulations in light and transmission electron microscopy (H. Renz and R.J. Radlanski), the variability of microlrelief patterns I and II of the enamel structure on deciduous teeth (E.A. Holgrave and T. Hennes), and enamel hardness (J. Brennecke and R.J. Radlanski). Additional presentations on the microstructure of human tooth enamel included a report on the optical properties of human dental enamel by U.L. Kirchner and W. Bisch (Institute de Salud Holistica Bucal (ISIS), Belo Horizonte, Brazil) and discussions of milling and cutting teeth, laser scanning microscopy, and computer hard- and software for image archiving by representatives from the Leica Company, symposium sponsor.

The Session on Dental Genetics covered pathologies, such as the effects of smoking on black children born to heavy smoking mothers (T. Heikkinnen and L. Alvesalo, University of Oulu, Finland; and R.H. Osborn, University of Wisconsin), the interdependence of the growth of human tooth crown enamel and dentine in persons with various sex chromosome complements (L. Alvesalo), and dental occlusion and arch shape in
46,XY females (M. Grön and L. Alvesalo). The session also included a presentation on size relationships and interactions between tooth crown diameters in twins and family members (W. Harzer, Technischen Universität Dresden).

Dental anthropological topics comprised numerous presentations. J. T. Mayhall (University of Toronto) and G. Townsend (University of Adelaide) presented a comparison of Australian aboriginal maxillary deciduous second molar and permanent molar dimensions. Their data show that the basal area and volume of the hypocone decreases from dm² to M³, while the paracone increases proportionally and the other cusps remain proportionally the same. In a population study, A. El-Nofey (National Research Center, Cairo) described Egyptian, Nubian, Mongoloid, and Caucasoid variations in tooth size and maturation. D. Moskona, I. Hershkovitz, and E. Kobylanski (Tel Aviv University) reported on asymmetry of dental morphological traits in living Bedouins. L. Gripp, H. Nagerl, D. Kubein-Meisenburg, B. Kremer, and J. Krüger (Georg-August-Universität, Göttingen) reported that a single feature, occlusal factor “a” (the radius of curvature of maxillary incisors), is inherited.

N. Navsa, C. Reid, and J.F. Van Reenen (University of the Witwatersrand) gave the results of their investigations of individual dental morphological features. Navsa’s study of ranks and angles of deflection of the deflecting wrinkle showed that the size of the metaconid, the dimensions of the molar tooth, and the location of molar furrows may influence the angle of deflection. Van Reenen and Reid reported that the protocone and paracone reach their maximum size in the second molars. Reid and Van Reenen presented their observations that the metaconule (defined as a cuspule on the ridge between the protocone and metacone) appears especially in cases where the oblique crest is poorly developed.

In studies of prehistoric populations, A.H. Brook and C.C. John (London Hospital Medical College) reported that the frequencies of hypodontia, microdontia, and supernumerary teeth in Romano-British burials at Poundbury were consistent with those of the modern British population. K.W. Alt (Heinrich Heine University, Düsseldorf), S. Fichler, and W. Vach (Albert Ludwigs University, Freiburg) discussed the value of dental traits in establishing kinship relationships in multiple burials and in cemeteries. A.M. Haeussler (Arizona State University) reported that the dental morphology of Mesolithic burials from Olenoostrovski Mogil’nik, Russia, indicates a dental relationship with contemporary Russians. V. Alexandersen (University of Copenhagen) discussed his research on Saami, suggesting early isolation followed by gene flow dating to the Iron Age as the reasons for regional variations in Saamic morphological trait frequencies.

G. Grupe (Institut für Antropologie und Humangenetik, Munich) traced the migration of Bell Beaker Culture people in southern Bavaria through analysis of strontium isotope ratios of dental enamel and bone. E. Molnár and G. Horváth (Attila Jozsef University) presented the etiologies and frequencies of developmental anomalies (taurodontism, palato-gingival groove, enamel hypoplasia, and enamel pearl) in 8th century Hungarian cemeteries. Although the authors did not attend the meeting, the congress volume contains a report by D.R. Swindler (University of Washington), A.G. Drusini (Università di Padova), and C.C. Ferrando (University of Chile) suggesting that molar dental morphological trait frequencies of precontact Easter Islanders are consistent a with a Polynesian (Asian) origin.

W. Henke (Johannes Gutenberg Universität, Mainz) reported that his metric analysis of the Dmanisi mandible and teeth indicates classification of the specimen as early Homo, with affinities to Homo erectus. P.-F. Puech, H. Albertini, S. Puech, and J. Chevaux (Musee de l’Homme, Nimes) did
not attend the meeting. Their paper in the congress volume suggests that mesiodistal elongation, molar size sequence, and arch shape of published measurements of the Dmanisi mandible indicate definition of a new type of Homo erectus.

M. Dokládal (Masaryk University, Brno) summarized results of a long-term study of Czech and gypsy sub-adults that suggests changes in permanent tooth eruption sequences over the past ten years. H.M. Liversidge (University of London) discussed her continuing work on the eruption sequence of the Spitalfields burials, concluding that the late mean age and high range of age for several formation stages of deciduous teeth may be correlated with the presence of acute or chronic disease.

Focusing on the fossil record, M.C. Dean (University College, London) discussed his conclusions that the variation in the length of time necessary for enamel formation in Paranthropus robustus is within the range of that for modern humans, whereas the roots of permanent first molars and incisors increase faster than those of modern humans. Dean cautioned that the stages of crown and root formation show nothing about rates of growth of tooth tissue or general development of either Homo or Paranthropus. According to F.V. Ramirez Rossi (Musée de l’Homme), features of the striae distinguish East Africa Plio-Pleistocene hominid species, suggest a greater number of Plio-Pleistocene species than currently accepted, and indicate that UP501 from Malawi should be attributed to Homo. M. Bujatti-Narbeshuber (Vienna Natural History Museum) reported on the mechanics of primate enamel Prism Contour Optimization (PCO) and hominine radiation. In a study of living taxa, A.D. Beynon and D.J. Reid (University of Newcastle upon Tyne) reported variations in stria angles, cross-striation size, and stria spacings of enamel prisms in Homo, Pan, Pongo, and Gorilla.

Reporting on their recent work in South Africa, S. Minozzi (Università di Pisa), J. Moggi-Cecchi (Università di Firenze), and S.M. Borgognini (Università di Pisa) suggest that variations in microwear on anterior teeth indicate dietary differences between Australopithecus africanus and Paranthropus robustus. Moggi-Cecchi also discussed his ongoing work on the variability of dental development in Sterkfontein juveniles.

On topics of identifying specimens, H. Prossinger and M. Teschner-Nicola (Natural History Museum, Vienna) presented their mathematical method for reconstructing dimensions of missing human teeth. F.W. Rösing, G. Paul, and S. Schnutenhaus (Universität Ulm) discussed their work on sexing skeletons by tooth size.

On the question of asymmetry, J.C. Türp (University of Michigan), K.W. Alt (Heinrich Heine University), W. Vach, (Albert Ludwigs University) and K. Harbich (Heinrich Heine University) reported that asymmetries of mandibular condyles and rami are part of usual variation. However, they had not yet ascertained whether the asymmetries are “pathological” or “unphysiological.” On a related topic, S. Schneller and M. Teschner-Nicola (Museum of Natural History, Vienna) reported on bilateral differences they observed in mandibular growth sites.

On the mechanics of bite force, W.L. Hylander, K.R. Johnson, M.J. Ravosa, and C.F. Ross (Duke University) presented conclusions from their work that correlated symphysial and mandibular corpus morphology to the differential muscle recruitment.
forces between galagos and other anthropoids. J. Paphangkorakit and J.W. Osborn (University of Alberta), discussed their findings that intradental mechanoreceptors in human teeth respond to bite forces by reducing the activity of jaw closing muscles. I. Spears and R.H. Crompton (University of Liverpool) reported that their analysis of shear stress and tensile stress needed to break down a food particle suggest variations in the mechanisms of food breakdown among species and a functional relationship of hominoid occlusal morphology. P. Picq (Collège de France) presented hypotheses for the differential sex- and age-related utilization of anterior teeth, which he had observed in primates.

R. Verdier (Université Montpellier II) gave results of a study of frugivorous Propithecus verreauxi molars which suggest that the shearing function is influenced by the presence of styles. M. Gudinot (Université Montpellier II) spoke on the variation of maxillary molar cusp dimensions in Eocene primates.

Discussing masticatory mechanics on a general dentistry level, D. Kubein-Meesenburg, H. Nägerl, R. Schwestka-Polly (Georg-August University, Göttingen), and J. Fanghanel (Ernst-Moritz Universität Greifswald) gave two presentations. The first report concluded that healthy individuals differ from those with TMJ disorders by free mandibular movements whose centroids are circles; the second presented an evaluation of free mandibular movements in patients. A third presentation by R. Schwestka-Polly, D. Kubein-Meesenburg, and H. Nägerl explained their success at surgically treating patients they diagnosed with mandibular retrognathism and class II occlusion. T. Baccetti and T. Tollaro (Università de Firenze) suggest that their clinical data support a genetic origin for infraocclusion of primary molars and missing second premolars. A clinical orthodontic presentation by J.G. Kannappan (Tamilnadu Government Dental College and Hospital, Madras) and J.K. Thiruchelvam (Eastman Dental Hospital, London) reported that orthodontists advocate reduction in the number of teeth, even to less than 28, in order to achieve appropriation of the dental structures proportional to the amount of bone base in the mouth in order to obtain occlusal harmony and equilibrium.

At the final general meeting, symposium participants voted to accept the invitation of DAA member Lassi Alvesalo to convene the 11th International Symposium on Dental Morphology in 1998 in Oulu, Finland. In addition to Alvesalo, the Dental Anthropology Association was well represented; 24 of the 121 authors listed in the congress volume are members. For Dental Anthropology Association members who did not attend the symposium, the congress volume, Proceedings of the 10th International Symposium on Dental Morphology (R.J. Radlanski and H. Renz, editors), can be obtained by sending a check for 120.00 Deutsche Marks to "M" Marketing Services, C&M Brüne GbR, Beifußweg 42 A, D-12357 Berlin, Germany. Additional information can be obtained by contacting Radlanski at the Abteil Orale Strukturbioiogie, Freie Universität Berlin. Aßmanshauser Str. 4-6, 14197 Berlin, Germany.

THIRTEENTH BIENNIAL CONFERENCE OF THE EUROPEAN ASSOCIATION OF SOUTH ASIAN ARCHAEOLOGISTS: REPORT

DIANE E. HAWKEY AND KENNETH A.R. KENNEDY

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DAA members, Brian E. Hemphill (Vanderbilt University), Kenneth A.R. Kennedy (Cornell University), and John R. Lukacs (University of Oregon), presented papers at the 13th Biennial Conference of the European Association of South Asian Archaeologists, held July 3-7, 1995, at Madingley Hall, Cambridge.

Hemphill's paper, titled, "Were the Bronze Age inhabitants of Bactria the 'Aryan Invaders' of the Rg Veda?" A multivariate synthetic examination of biological genetic markers," investigated the possible identity of pastoralists who migrated into the subcontinent after the decline of the Indus Civilization. Kennedy's presentation, co-authored with Joanne Zahorsky, reported on late Pleistocene and mid-Holocene deciduous teeth from Fa Hien Cave, Sri Lanka. The paper, "Trends in prehistoric technology and biological adaptations: new evidence from Pleistocene cave deposits at Fa Hien Cave, Sri Lanka," discussed the southwestern Sri Lanka site that has occupational levels as early as 34,000 years BP, with skeletal and dental remains of human infants, children, and adults dating to about 31,000 years BP. The paper by Lukacs, "The people of Lekhahia: A biocultural profile of Late Mesolithic foragers of North India," read by Hemphill, utilized dental and skeletal evidence in an analysis of this early population from the Gangetic Plains Region.

Other DAA members attending the conference included Diane E. Hawkey (Arizona State University), Rebeca Haydenblit (University of Cambridge), and Jaymie Brauer Hemphill (Vanderbilt University).

**PALEOANTHROPOLOGICAL ADVANCES IN EASTERN EUROPE: REPORT**

A.M. HAEUSSLER

The International Institute for Human Evolutionary Research (IIHER), Noel Boaz, president, sponsored a conference, Paleanthropological Advances in Eastern and Central Europe, from October 15 to 18, 1995, in Bend, Oregon. Organized by Antón Fistani, László Kordos, and Boaz, the meetings consisted of prepared papers and workshops reviewing past work and pinpointing topics for future research. Although not directly related to dental anthropology, most of the sessions on “past work” contained information about recent finds or new dates on known specimens of special interest to those studying fossil to prehistoric European populations.

For example, Fred Smith (Northern Illinois University) discussed the implications of the span of time (130,000 to 33,000-36,000 BP) that Neanderthals inhabited sites in Central Europe, such as Krapina and Vindija and Kúlna caves. A.M. Haueussler (Arizona State University) traced the earliest human remains on the Russian Plain from the Upper Paleolithic to the Mesolithic and modern peoples using dental morphological traits and material culture remains associated with burials. Dental Anthropology Association President, John R. Lukacs (University of Oregon), chaired the October 16 session on Paleanthropology and Archaeology. DAA member, Misty Penton (University of Oregon), assisted in conference organization.

Among the other presentations were a review of Neogene Faunal and Paleoenvironmental Background for the Evolution of European Pleistocene Mammal Communities (Raymond Bernor, Howard University), Paleanthropology, Pleistocene Environments, and Population Movements in Central and Eastern Europe (Noel Boaz, IIHER), Paleanthropology of Albania (Antón Fistani, IIHER Fellow); Upper Pleistocene Cave Deposits of Styria, Austria (Gerald Fuchs, Archäologische und Geodaten Service, Graz, Austria); The Fossil Man of Dmanisi and His Environment (Leo Gabunia, Georgian Academy of Sciences); Revised Biostratigraphy of the Early Man Site at Vértesszölnös, Hungary (László Kordos, IIHER fellow, Geological Institute of Hungary); Origins of Modern Europeans: A Century of Paleanthropological Research on the Croatian Fossil Sample (Jakov Radovčić, Croatian Natural History Museum); Paleanthropology in Greece (Paris Pavlakis, University of Ioannina); Current Advances in Human Evolutionary Research in the Czech and Slovak Republics (Becky Sigmon, University of Toronto); and Archaeozoology of Neanderthal Sites in Italy (Antonio Tagliazucchi, Museo Preistorico Etnografico “L. Pigorini”), and Francesca Alhaique (Università di Roma “La Sapienza”).

Proceedings of the conference will be published in book form. News of the publication will be printed the *Dental Anthropology Newsletter*. Interested persons may also contact Noel Boaz or Joseph Shephard at the International Institute for Human Evolutionary Research, Central Oregon University Center, 2600 N.W. College Way, Bend, Oregon 97709-5998. Telephone (503)383-7215, FAX (503)383-7535, Email (Internet) jshepherd@metolius.cocc.edu.

**TRANSITIONS**

Tracey Crummett is presently teaching at San Jose State University. Joel Irish is teaching at the University of New Mexico.

**RECENTLY PUBLISHED BOOKS FOR DENTAL ANTHROPOLOGISTS**

The proceedings of the 1992 and 1995 International Symposia on Dental Morphology have been published. Individuals who wish to order the 1992 volume, *Aspects of Dental Biology: Palaeontology, Anthropology and Evolution* edited by Jacopo Moggi-Cecchi (University of Florence) may write to the publisher: International Institute for the Study of Early Man, c/o Instituto de Antropologia, Università di Firenze, via del Proconsolo, 12, 50122 Florence, Italy (Email: UNIFIANT@MAILSERVER.IDG.FI.CNR.IT; Telephone +39 55 239 8065; Fax +39 55 283358) The personal and institutional price is $80.00 (120,000 Italian lira). The student price is $60.00 (90,000 Italian lira).

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Prepared by John R. Lukacs with the assistance of Jeromy French
Department of Anthropology, University of Oregon, Eugene, OR 97403-1218

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