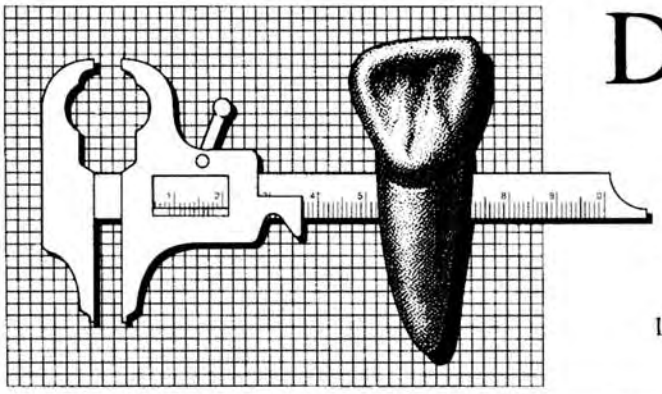

Dental Anthropology Newsletter

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Presidential Address

STEPHEN MOLNAR

The elections held at the annual meeting of the Dental Anthropology Association in Las Vegas, April 3, 1992, resulted in the selection of several new officers, this president among them. Joel Irish of Arizona State has assumed the office of secretary-treasurer, replacing Diane Hawkey. Linda Winkler of the University of Pittsburgh at Titusville succeeded Charles Hildebolt on the executive board. During the summer the *Dental Anthropology Newsletter* added a new but enthusiastic member to the editorial board: Daris Swindler.

My first obligation in the office of president was to find out more about this relatively young organization. I began with a review of the membership list, which has grown from the 246 which Daris Swindler reported in the last issue of *Dental Anthropology Newsletter (6(3):1)* to 295 at this time. In looking over the names, addresses, and special interests of the members, I must agree with out past president that we are an eclectic organization.

The membership includes individuals whose interests span a broad range of diverse topics, such as forensics, paleontology, odontometrics, radiographic imaging, genetics, and development. Many members are dentists and teachers, in addition to the number of anthropologists. The roster also lists a large number of foreign members, with numerous representatives from Europe, Australia, and Africa, but few from Asia and South America. I know that there is considerable interest in dental anthropology in these regions, and we should all contact our colleagues to inform them of our growing organization.

Several years ago, while gathering support for a symposium I wished to organize, a senior colleague objected to the title, Dental Anthropology. His reasoning, appropriate for the time, was that we should not subdivide anatomy and anthropology into "regional specialties". But now with the expansion of the field, its diversity, and the increased interest of related professions in dental and orofacial facial evolution and variation, the time has come for our organization to increase its efforts to bring together those interested in dental anthropological research. My thanks to the founders and to the past presidents and officers of the Dental Anthropology Association for setting the groundwork.

The *Dental Anthropology Newsletter* provides a forum for disseminating information and exchanging ideas. The annual business meeting also helps in this important function, bringing us together for an exchange of ideas and opinions about the Dental Anthropology Association. Our joint sponsorship (with the American Association of Physical Anthropologists) of symposia enhances the awareness of dental anthropology by our anthropological and other professional colleagues.

According to preliminary proposals, the Dental Anthropology Association is co-sponsoring at least three symposia at the annual meeting of the American Association of Physical Anthropologists in Toronto. Linda Winkler is working on arrangements for the Dental Anthropology Association business meeting, tentatively set for late Friday afternoon, April 16, 1993.

I want to conclude with a pledge that we will work to continue the momentum of growth started by our predecessors. If you have any suggestions about future directions for the Dental Anthropology Association, please write. In the meantime you can help by (1) renewing your membership, (2) contributing to the DAA Foreign Sponsorship Fund (see article by Joel Irish on page 12), (3) encouraging your friends to join, and (4) sending news and short articles to the newsletter.

Dental Anthropology in China

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The discovery of the first skull of Beijing Man (*Homo erectus*) at Zhoukoudian in 1929 not only promoted research in paleoanthropology, but also initiated the beginning of dental anthropology in China. The establishment of dental anthropological research in China should be credited to Franz Weidenreich. In the 1930-1940's Weidenreich analyzed the Beijing Man skulls and produced detailed descriptions of Beijing Man dentition (Weidenreich 1937, 1943). He paid much attention to crown and root morphological features and recognized new traits, such as the deflecting wrinkle. Weidenreich found that incisor shoveling existed in both Beijing Man and in modern northern Chinese. On the basis of observation of both dental and cranial traits, Weidenreich saw a morphological continuity between Beijing Man and modern northern Chinese. Both Chinese (Wu et al., 1978; Wu, 1989) and foreign scholars (Wolpoff et al., 1984) later developed this idea into the regional continuity theory. Therefore, Weidenreich was among the first scholars to demonstrate the value of dental morphology for long-term evolutionary reconstruction and population variation.

Following the discovery of the Zhoukoudian site, many other paleoanthropological sites were excavated. Most contained human teeth which represent all the human evolutionary stages from *Homo erectus* to recent *Homo sapiens* (Zhang, 1986), including Neolithic and later humans (Zhang, 1989). Through study of these materials Chinese scholars have determined that incisor shoveling existed in all paleoanthropological and Neolithic Chinese specimens. Congenital absence of M3 was found in *Homo erectus* (Lantian Man), early *Homo sapiens* (Liujiang Man), and modern Chinese, and supports the regional continuity theory. The research into Neolithic dentition is very broad, and includes study of dental morphology, disease, and cultural treatment.

In recent years, dental anthropology in China has received much attention. Some research institutions, such as the Institute of Vertebrate Paleontology and Paleoanthropology (IVPP), Academica Sinica; the Institute of Archaeology, Chinese Academy of Social Sciences; and some medical and dental schools, such as the School of Stomatology, Beijing Medical University, have begun a wide range of research in dental anthropology.

IVPP, as the center of research of paleontology and paleoanthropology in China, houses nearly all the fossil human remains in China. The Institute of Archaeology, Chinese Academy of Social Sciences, mainly engages in the excavation and research of Neolithic or later Chinese cultural and human remains. This institute has a large collection of human skeletons dating from Neolithic to recent times. Most of the collection belongs to the time period from the Han to Tang dynasties (206 B.C. to 907 A.D.).

Medical and dental schools mainly engage in research on craniofacial growth and development through study of dental casts of modern Chinese. The Institute of Forensic Sciences of the Ministry of Public Security in Beijing has several investigators doing research and identification in forensic odontology.

Although Chinese workers have made some progress in the field, dental anthropology has numerous problems that need to be solved. First, it is true that the history of dental anthropology in China began in the 1930's and many studies have been done on the numerous Chinese fossil remains. However, the depth and breadth of investigations are not enough. For example, in paleoanthropological research, cranial features are the focus of much attention, whereas only a few dental traits are considered. Many of the traits described by Weidenreich were not used in later studies, so much information on fossil teeth is incomplete.

Second, for the purpose of academic exchanges and comparison with foreign colleagues, commonly accepted criteria and terminology should be used in all phases of dental anthropology research. In recent years some medical and dental school researchers, dealing with dental metrics and observation of morphology and disease, have employed different criteria, thereby limiting the usefulness of their results. Fortunately, the scoring system for key dental morphological traits of Arizona State University has been introduced into China. At present, this system in use by the IVPP, the Institute of Archaeology of the Chinese Academy of Science, and the School of Stomatology, Beijing Medical University.

Third, during the past twenty years, some dental anthropology studies on East Asian populations have been performed and some theories have been put forward. However, because of a lack of data on Chinese dentition for different time periods, some of the theories are not fully accepted or are still being debated. For example, in the 1960's Hanihara proposed the Mongoloid Dental Complex as the suite of dental characteristics of East Asian populationn, including Chinese (Hanihara, 1969). Turner further divided the Mongoloid Dental Complex into Sinodonty for Northeast Asia and Sundadonty for Southeast Asia. Turner (1987, 1990) believes that Sinodonty is characterized by intensification and specialization of some dental traits, which were derived from the simplified and generalized Sundadonty in Southeast Asia. Mainly on the basis of cranial traits and some dental traits, most Chinese anthropologists hold to the theory of regional continuity persisting from *Homo erectus* of Beijing Man until modern Chinese with some geographic variation.

I think the main reason for the differences of the two sides (Southeast Asian origin versus regional continuity) lies in the fact that neither position has enough information on Chinese teeth from the late Pleistocene to Holocene times. For example, in recent years analyses of the teeth from the site from An-Yang have been used to demonstrate

East Asian human evolution as the representative of north Chinese. However, the scarcity of chronological consideration of the dental remains from the late Pleistocene to Holocene decreases the strength of these theories. So, further research on Chinese specimens is necessary and will provide a reliable answer to these topics.

Therefore, the IVPP has understood the importance of dental anthropology and communication with foreign colleagues. For this reason, the present author, being a young researcher in IVPP, was sent to Arizona State University to learn dental anthropology from Dr. Christy G. Turner II. The institute is expecting to deal with dental anthropological research in the field of human evolution and the origin of modern humans. When I return to China, I hope to assemble a bibliography on Chinese dental studies. I will share it with members of the Dental Anthropology Association through our newsletter.

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Labial Tooth Wear and Culture

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ABSTRACT Surface alterations observed on the anterior teeth of prehistoric humans suggest that incisors are involved in many uses related to ingestion, manipulation, and dental care activities. These culture-related uses can be distinguished in dental remains from throughout the major periods of human evolution.

The anterior teeth are used by primates to nip leaves, berries and grubs, to gouge and peel, or as a wedge to pulp fruits. In *Papio*, the high incidence of labial surface striations and ribbon incisal wear results from tooth manipulation of small objects.

In the oldest hominid remains from Laetoli, Tanzania, and Afar, Ethiopia, dated about 3 to 4 million BP, we have not observed labial scratches or gashes. Instead incisal ribbon wear suggestive of seed grasping is exhibited (Puech and Albertini, 1984).

In early *Homo* remains from Olduvai, Tanzania, Lake Turkana, Kenya, and Omo, Ethiopia, dated 1.7-2.4 million BP, we did not observe intensive labial scratches or the ribbon incisal wear. These remains are characterized by parallel, labio-lingually oriented microscopic striations. This wear can occur when the teeth are used to open pods of small legumes or shoots that contain abrasive plant inclusions (phytoliths) (Puech, 1983). When such siliceous material is present, the stripping or scraping action required to open the pod can be very damaging to the teeth. Similarly, fibrous material pulled across the upper premolars of *Homo habilis* has produced proximal transverse grooves, causally related to therapeutic purposes (Puech and Cianfarani, 1988).

In *Homo erectus* and *Homo sapiens neandertalensis* dentitions, diagonal scratches on the labial surface of the incisors are interpreted as evidence of "stuff and cut" (Brace 1975; Puech, 1981). Meat is thought to have been held by the front teeth and one hand, while it was cut by a stone knife held in the other hand. This resulted in scratches or gashes on the teeth. These marks are oriented in such a unique direction, that we attribute them to the use of the right hand to hold the knife 90-95% of the time (Puech et al, 1989). Such characteristic scratches and gashes are virtually absent in modern humans who apparently possess better hand dexterity. In *Homo sapiens neandertalensis*, the frequent practice of removing meat from a bone by grabbing and forcefully pulling it through clenched anterior teeth, resulted in partial loss of incisal contact.

Loss of incisal contact is rare in *Homo sapiens*, but in Chalcolithic and early Bronze Age dentitions severe labial flat wear is observed on many upper central incisors. It results from a combination of chemical erosion and physical wear. This specific wear pattern affects most of the labial crown height, leaving a well-delimited gingival

enamel margin. This mutilation sometimes ends mesially in a sharpened transversal surface. It may be the result of some form of extensive tooth cosmetic preparation, since it has a temporal limitation in Eurasia.

In Bronze Age populations, we also observe many deep, vertical striations on the labial surfaces along with chipping on the incisal edges of upper *and* lower incisor teeth. Striations covering the entire surface up to the cervix indicate that the incisors were dug into objects or intentionally brushed. In addition, grooves from many potential sources are present on occlusal, proximal, and frontal tooth surfaces, but are absent from concave areas. Within these grooves are long, closely spaced microstriations that are virtually identical in size. The microstriations resulted from scratching by abrasive substances.

Tooth abrasion gives evidence of hand activity and of its type. Thus, from tooth wear we can infer prehistoric coordinated manipulation involving object transference from hand to mouth, object-substrate manipulation involving one object relative to the teeth, and complex object manipulation involving intentional change of object state.

Although early man has been shown to have considerable hand ability, *Homo erectus* and *Homo sapiens neandertalensis* apparently lacked the complex hand use evidenced by *Homo sapiens* dexterity in the early Bronze Age. During their 2.5 million years of existence, Paleolithic humans made tools and colonized the world. However, according to tooth microwear, human dexterity evolved only within the last 40,000 years. Early man was essentially a bipedal, handy hominid lacking the central cognitive characteristics of modern "sapiens" dexterity.

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The Oldest Example of Dental Filing North of the Valley of Mexico

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A recent examination of hunter-gatherer skeletal remains from the Chihuahuan desert region (Steele and Powell, 1990) has revealed a new example of dental mutilation not previously reported in the literature. This specimen, with known stratigraphic and temporal provenience, appears to be the oldest substantiated example of dental mutilation north of the Valley of México. Although cultural modification of teeth is well-documented for Preclassic, Classic, and Postclassic cultures of México and central America (Romero, 1958, 1970), there are relatively few examples of dental mutilation north of central México, and none older than approximately 1000 BP (Milner and Larsen, 1991).

MATERIAL AND METHODS

The example of dental mutilation reported here was recovered from the site of Cueva de la Zona de Derrumbes (NL92), located in the Río Santa Rosa valley in southeast Nuevo León, México. Excavated in 1963 as part of the University of Texas' Northeast México Archaeological Project, the site contained a virtually continuous sequence of cultural material for the past 4700 years (McClurkan, 1966, 1980). During excavation, a well preserved burial (Burial 1) was recovered near the back wall of the shelter in deposits radiocarbon dated to between 1670 ± 110 BP (Tx-206) and 2160 ± 100 BP (Tx-208). The average corrected age of these deposits was 1747 ± 113 BP.

Burial 1 was a flexed inhumation (McClurkan, 1966) of a young adult female approximately 18 to 35 years of age. Dental remains consist of the right maxillary central incisor and canine; the left maxillary lateral incisor, premolars and molars; and the complete mandibular dentition.

Measurements of the mutilation features were done using Helios needle-point dial calipers and recorded to the nearest 0.10 mm. The features were also examined using a binocular microscope (70x magnification) and a scanning electron microscope (LEOL T330J). For SEM study teeth were impressed in a polyvinyl siloxane compound and cast with epoxy resin. The casts then were coated with 200 Å gold palladium.

SPECIMEN DESCRIPTION

Dental mutilation was observed on the maxillary right central and left lateral incisors, which are shown in Figure 1. The right central incisor contains three notches oriented labio-lingually across the incisal margin of the

tooth. This type of dental alteration falls under Romero's (1958) classification A3. The notches are located approximately 1 mm apart, beginning at 1.3 mm from the mesial margin of the tooth. Maximum mesiodistal notch width is 0.90 to 1.00 mm. Notch depth (measured from the existing enamel on the labial aspect of the incisal margin) ranges from 0.80 to 0.50 mm (distal notch). Notch depth is greatest on the labial aspect and decreases toward the lingual end of each feature. All three notches extend into the dentin.

The left lateral incisor contains two notches, which conform to Romero's type A2 classification. Notch width dimensions (0.50 to 1.00 mm) are slightly less than those on the central incisor. Again, the deepest part of each feature is toward the labial aspect of the incisal margin. Like the central incisor, notches invade the dentin.

SEM analysis of the notches on the upper right central incisor revealed a number of fine striations (50 μm in diameter) on the enamel at the labial and lingual margins of each notch. The mesial and distal margins are smoothed and rounded, and many of the fine striations also display rounded margins. In addition to dentin exposed within notches, dentin also is present on the incisal margin of unmodified portions of the teeth, a reflection of normal dental attrition.

Taken together, these data suggest that mutilation occurred at some time prior to the death of this individual, perhaps as early as adolescence. Modification was probably accomplished through filing with a fine-grained abrasive material, starting at the labial aspect of the incisal margin.

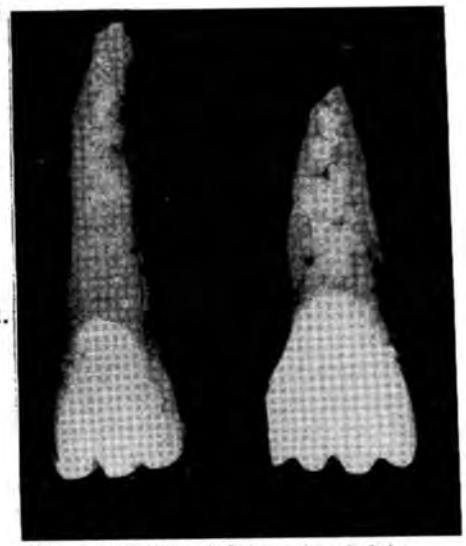

Fig. 1. Maxillary left lateral and right central incisors from Cueva de la Zona de Derrumbes, Nuevo León, México. Mutilation conforms to Romero's (1958) types A2 and A3. Scale: 1 inch = 1 cm.

DISCUSSION AND CONCLUSION

Examples of dental filing similar to that observed in the two incisors from Burial 1 have been reported for Mississippian sites near Cahokia, Illinois (Holder and Stewart, 1958; Milner and Larsen, 1991; Perino, 1959, 1967, 1971a, 1971b; Stewart, 1941; Stewart and Titterington, 1944, 1946) and in Tennessee (Milner and Larsen, 1991), Hohokam sites in Arizona (Campbell, 1944; Milner and Larsen, 1991), and hunter-gather localities in Texas (Willey and Ubelaker, 1976). Many of the specimens from Mississippian contexts exhibit a combination of incisal margin notches and alteration of the labial surface, similar to Romero's type F5. Dental mutilation specimens from Illinois, Tennessee, and Arizona post-date 1000 years BP. Instances of dental mutilation from Gun Site Shelter and Taylor Ranch, Texas have been classified as type A1 and attributed to the Archaic period by Willey and Ubelaker (1976). However, these specimens are from "questionable archaeological contexts" (Milner and Larsen, 1991: 360).

Based on the data cited here and those presented in Milner and Larsen (1991), previously reported examples of dental mutilation north of the Valley of México are no older than 1000 BP. Thus, the specimen from Cueva de la Zona de Derrumbes (NL92), dated to 1747$\pm$113 BP, is the oldest verified example of dental mutilation north of the Valley of México, thereby extending the geographic and temporal range of preclassic dental modification.

Although Romero's (1958, 1970) model of a northward diffusion of dental mutilation is questionable when applied to Mississippian cultures of eastern North America (Milner and Larsen, 1991: 362), hunting and gathering populations in the area of Cueva de la Zona de Derrumbes may have been influenced by complex societies to the south. As early as 1700 BP, Mesoamerican cultures were well established in the Zacatecas and Durango regions of north-central México (Kelley, 1966, 1971). Interaction between populations in Zacatecas and Nuevo León is indicated by the presence of *Chalchihuites* pottery (600 - 1700 BP) at hunter-gatherer sites in the Laguna Mayran region of Nuevo León (Hartfield, 1980). Furthermore, during the period around 1700 BP, expeditionary groups from Teotihuacán were mining turquoise at the site of Concepción del Oro, 180 km due west of Cueva de la Zona de Derrumbes (Weigand et al., 1977). The observation of dental mutilation in a female hunter-gatherer from Nuevo León, combined with strong evidence for a Mesoamerican presence in the same region, provides evidence for the interaction of complex societies in central México with neighboring hunter-gatherer groups to the north (Powell and Powell, 1992).

ACKNOWLEDGEMENTS

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Software Review

MACPRIMATE.FORENSIC. By Claud A. Bramblett. Santa Barbara: Intellimation Library for the MacIntosh. 1990. For Apple MacIntosh, requiring 512K, suggested system 6.0.5. Price: $39.95 per copy, Site License available for $49.00.

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Dr. Claud Bramblett has recently developed computer software for the Apple MacIntosh which can assist physical anthropologists, archaeologists, and others in analyzing skeletal remains. This software incorporates numerous formulae, regression equations, and discriminant function analyses which calculate race, gender, and stature estimations from various combinations of 132 skeletal measurements (including 13 of the dentition). Software analyses are separated into three independent subroutines labeled respectively biological affinity, gender, and stature. Data can be entered for analysis from either a disk or directly. Numeric results are given and interpreted for each analytical run. For instance, the skeleton being analyzed is assigned a male or female gender in the gender subroutine. Results of all analyses in all subroutines include source references for the equations or analytical techniques being used.

The biological affinity subroutine uses discriminant function analysis and interorbital and frontal indices to discriminate between American Blacks/American Whites or American Whites/Native Americans on the basis of fourteen cranial measurements. Discriminant function analysis is likewise used with three measures of the pelvis to discriminate between American Blacks/American Whites.

The gender subroutine estimates gender from measurements of the skull, teeth, sacrum, sternum, scapula, arm, pelvis, leg, or ankle and foot using discriminant function analyses and other statistics. Computations are done independently for each of the above areas and information is provided about the particular biological group (e.g.

American Whites, American Blacks, Japanese) to which the statistical results apply. In some cases, such as the sternum, explanations of gender differences are also given along with the results of the analyses.

The stature subroutine uses a variety of formulae incorporating various long bone and metacarpal measurements to estimate stature. Information on skeletal age is requested from the user since the stature predictions are adjusted for individuals over thirty years of age. In addition, computational formulae are specific for sex and biological affinity (Black, Mexican, Mongoloid, White) so the user is asked to specify this information prior to computational analysis. However, stature predictions are not possible for both sexes for all biological affinities using this program.

Overall, I have been very pleased with *MACPRIMATE.FORENSIC* and will continue to use it. The package is easily adapted to classroom use and students have found the software itself to be user-friendly, efficient, and enjoyable. In addition to serving as a check for computational error of in-class calculations of stature, and other measurements, the software provides quantitative analyses which are sometimes beyond those expected of students.

However, I do have some reservations regarding the use of *MACPRIMATE.FORENSIC*. The software was developed to accompany *The Anatomy and Biology of the Human Skeleton* (Steele and Bramblett, 1988). Although the software is accompanied by documentation for loading and running it along with a list of the measurements analyzed, the user is referred to *The Anatomy and Biology of the Human Skeleton* for definitions of these measurements and instructions for making them. Therefore, this package is not usable without purchasing the Steele and Bramblett textbook. Moreover, the measurements are scattered throughout this book and locating all of them can become somewhat cumbersome.

I have another reservation which has nothing to do with the program itself, but rather with the statistical computations used. The statistics vary in reliability, so it is important that users are aware of the accuracy of the analytical tool being used. In my own classroom use, several skulls of known gender and biological affinity were misclassified using this program. Therefore, it is important to understand the assumptions, reliability, and particular measurements specified for each statistic before using the various subroutines.

Assessing reliability and determining the measurements needed for each analysis require a bit of digging since the documentation does not include a compiled list of references for the analytical techniques or which measurements are used in each analysis of each subroutine. Therefore, the user has to seek out this information within the software itself. Each subroutine requests the specific measurements which it requires for analysis. And as indicated above, sources for all computational statistics are provided with the respective results. The software user must either seek out the published source or consult the Steele and Bramblett book for discussion of statistical reliability. For this reason, a list of statistical sources used in this software program is provided below.

The software program can either be accessed from individual disks (available for $39.95) or can be installed on a network (a site license is available for $49.00). On my computer, the disk could only be accessed from an external drive. In order to load the program into our network, modification of network parameters were required.

In summary, I found this software package to be an efficient and enjoyable personal and teaching tool. However, buying the Steele and Bramblett book is necessary in order to use it. In addition, becoming familiar with the various statistics which it incorporates is important in assessing its reliability.

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Third International Congress on Human Paleontology, Jerusalem, Israel, August 23-28, 1992

A.M. HAEUSSLER

Some form of the phrase "teeth are the most abundantly preserved human materials in the archaeological record" has been written at one time or another by nearly every dental anthropologist. Those who attended the 3RD International Congress on Human Paleontology left Jerusalem with no doubt of the veracity of this cliche.

The Dental Anthropology Association was well represented at the congress. Patricia Smith served as organizing secretary and chairman of the planning committee. Phillip Tobias and Patricia Smith are members of the executive committee of the International Association for the Study of Human Paleontology, which sponsored the congress. Loring Brace chaired one of the symposia, and 17 of the delivered papers were written by ten members of the DAA (C.L. Brace, D.W. Frayer, A.K. Gosh, F.E. Grine, A.M. Haeussler, and R. Orban, C. de la Rúa, A-M. Tillier, P. Smith, and B. Vandermeersch).

Presentations of descriptions of new fossil teeth included dryopithecine teeth from Catalonia, Spain (F.T. Ribot and J. Gibert); an incisor from Cueva Negra, Spain (M.J. Walker); a skeleton from America (E. Peyre); hominid remains from Sangiran (H. Widianto, D. Grimaud-Herve, F. Semah, A.M. Semah, T. Djubiantono, and M.A. de Lumley) and Monte Circeo (G. Manzi, P. Passarello, and A. Bietti); pathologies in ancient South Americans (E. Aspillago); and a review of some C.I.S. fossils (V.M. Kharitonov). Discussions of dental anthropological aspects of previously known and some unknown skeletal remains with teeth focused on materials from the Mid and Upper Paleolithic in Spain (M.D. Garralda), Upper Paleolithic to Neolithic in Italy (S.M Borgognini Tarli, A. Canci, and E. Repetto), Paleolithic in the Caucasus (A.M. Haeussler), Ishango in Zaire (F. Twiesselmann and R. Orban), Zhoukoudian (Y. Zhang), Kebung Brubus from Java (D.E. Tyler), and the dental arcade of Pleistocene and modern southern Africans (J.F. Thackeray and J.A. Kieser).

Several papers dealt with theoretical issues. Examples are a behavioral model for canine reduction in early hominids (J. Kelly), factors involved in Neanderthal dentition such was taurodontism, enamel thickness, cusp patterns (P. Smith), strain gradients throughout various regions of the primate face (W. Hylander), tooth wear on the Banyoles mandible (C. Lalueza Fox, A. Perez-Perez, and D. Turbon), grooves in Neanderthal teeth (S. Villa and G. Giacobini), enamel thickness in modern and fossil teeth (U. Zilberman), and tooth formation in Plio-Pleistocene hominids (F. Ramirez-Rossi).

The symposium also contained several round tables devoted to major theoretical issues in paleontology. These were "The Ancestors of Humankind" chaired by B. Wood, "*Homo Erectus* and Ante-Neanderthal" chaired by H. de Lumley, "Neanderthals and the Origin of Modern Humans" chaired by B. Vandermeersch, and "Population Variation from the Upper Paleolithic to the Neolithic" chaired by S.B. Tarli.

After five days of papers, the consensus overheard in the hallways seemed to: (1) favor the "Out of Africa" hypothesis, (2) be divided over the position of *Homo erectus*, and (3) favor the rapid replacement of Neanderthals by modern humans. However, many individuals with whom I spoke felt that these questions are a long way from a solution. For example, in regard to the "Out of Africa" hypothesis, none of the round table papers addressed the subject of paleoecological or fossil evidence for an Asian origin of the ancestors of *Homo*. Individual symposium papers pointed out the inability of mtDNA studies to establish Africa as the source of modern humans (R.B. Eckhardt) and the invalidity of *Homo erectus* as a valid taxon (M.H. Wolpoff). Examples of lack of consensus on the Neanderthal problem were papers that addressed the frequency of Neanderthal morphological traits in Upper Paleolithic "anatomically modern" individuals (D.W. Frayer), the usage of geographically and temporally specific terminology and the predicament of nomenclature (I. Hershkovitz), implications of the underestimation of Neanderthal age at death (L.C. Aiello), problems of dating (B. Vandermeersch), and the suggestion that Neanderthals were a race and not a separate species (M.H. Wolpoff).

After the last paper on August 28, congress participants gathered to hear closing remarks by H. de Lumley and P. Smith. The planning committee also announced that the next symposium of the International Association for the Study of Human Paleontology will take place in five years in South Africa.

Ninth International Congress on Dental Morphology, Florence, Italy, September 3-6, 1992

A.M. HAEUSSLER

The Ninth International Congress on Dental Morphology met from September 3 to 6 in the Sala Convegni, Cassa Di Risparmio Di Firenze, located within the shadow of the great S. Maria del Fiore Cathedral. Under the secretary-ship of Jacopo Moggi-Cecchi of the Institute of Anthropology, University of Florence, symposium membership consisted of 101 individuals from 16 countries. Twenty-one of the registered participants are members of the Dental Anthropology Association: L. Alvesalo, R.L. Anemone, C.L. Brace, A.A. Dahlberg, M.C. Dean, A.M. Haeussler, R.J. Henneberg, G. Kocsis, M. Lampl, H.M. Liversidge, R. Macchiarelli, A. Mann, A. Marcsik, J.T. Mayhall, J. Moggi-Cecchi, N. Navsa, P.F. Peuch, C. Reid, P.V. Tobias, G. Townsend, and J.F. Van Reenen.

Following the opening lecture by W.P. Luckett, sessions on ontogeny, evolution, form and function, and population studies were chaired by Loring Brace, Albert Dahlberg, Ken Joysey, and Phillip Tobias. Papers on anthropological aspects of ontogeny dealt with studies on basic tooth structures, such as cytodifferentiation of odontoblasts and amelioblasts (J.V. Ruch and J.L. Vonesch) and dentine morphology (R. Mongiorgi, C. Prati, C.A.

Flamigni. E. Toschi, and P. Ferrieri). Four papers considered relationships between the dentition and other human biological systems. The first reported a positive correlation between six cusps on the deciduous second and permanent first molars and the occurrence of a supernumerary nipple (T. Heikkinen). The other three papers considered aspects of sex chromosomes and human growth (L. Alvesalo), molar morphology (J.T. Mayhall and L. Alvesalo) and intercuspal differences of maxillary molars (G. Townsend and L. Alvesalo).

Ken Joysey gave the lead-off paper for the sessions on dental evolution. Additional talks on the anthropological aspects of dental evolution focused on Carabelli's trait in South African hominids (C. Reid and J.F. Van Reenen, and J.F. Van Reenen and C. Reid), antiquity of third premolar root number polymorphisms (P.V. Tobias), phylogenetic significance of *Oreopithecus* (E.E. Sarmiento), and variation in crown and root formation times (H.M. Liversidge). Four papers dealt with the evolutionary significance of microstructures of tooth crowns and roots: enamel ultrastructure in *Oreopithecus* (M. Bujatti-Narbeshuber); dental development in chimpanzees, modern humans, and Plio-Pleistocene hominids (R.L. Anemone); crown formation time in Plio-Pleistocene hominids (F. Ramirez Rossi); perikymata, striae of retzius, and dental enamel thickness variation in Neanderthals, prehistoric, and contemporary peoples (A. Mann, M. Lampl, and J. Monge); and peri-radicular bands on roots (M.C. Dean).

Phillip V. Tobias (left) and Albert A. Dahlberg (right) at the Ninth International Symposium on Dental Morphology.

Three presentations considered anthropological aspects of dental form and function. These addressed dentition in development of occlusion and mal-occlusion (T. Baccetti, M. Vichi, and I. Tollaro), enamel prism orientation (R.J. Radlanski, W. Seidl, and G. Steding), and symphyseal fusion in primates (M.J. Ravosa, W.L. Hylander, and K.R. Johnson). Population studies comprised two sessions. The first was moderated by Al Dahlberg and the second by Loring Brace, who also discussed his lifelong work on dental reduction. Two papers dealt with dental analysis of prehistoric populations: Central Italian Italic and Roman populations (R. Macchiarelli, L. Salvadei, and L. Bondioli) and Russian Upper Paleolithic Kostenki Culture burials (A.M. Haeussler). Six papers focused on variation of single traits: shoveling (T.L. Crummett), Etruscan lateral incisor (J. Pinto-Cisternas, J. Moggi-Cecchi, and E. Pacciani), birooted mandibular premolars (G. Kocsis and A. Marcsik), tuberculum intermedium in southern Africa (N. Navsa), upper first molar in India (J.G. Kannappan), and arch form in South India (J.G. Kannappan). One paper (R. Henneberg) analyzed periodontal disease in an ancient Greek population in Italy.

Posters on dental anthropological topics illustrated taurodontism and enamel hypoplasia (G. Horváth, E. Molnár, and A. Marcsik), dental ageing estimates (A.G. Drusini), computer-assisted analysis of morphometric analysis (E. Miglino, M. Ferrino, and M. Masali), infra-red video observation of tooth wear on fossil casts (P. Potente and J. Moggi-Cecchi), and Etruscan juvenile dental anomalies (S. Oláh, J. Moggi-Cecchi, A. Kocsis, E. Pacciani, and S. Cencetti). The many papers that did not address topics of dental anthropology (the study of adaptation, evolution, and variation of teeth of human and other primates) are omitted in this review.

In the closing session, the participants in the symposium accepted the invitation of Ralf Radlanski to host the next symposium three years hence in Berlin. Meanwhile, the papers presented at the symposium will be published in a book edited by Jacopo Moggi-Cecchi and W. Patrick Luckett.

Percy M. Butler, Kenneth A. Joysey, C. Loring Brace, and Renata J. Henneberg prior to the dental morphology symposium dinner.

DAA Members Participate in Summer Excavations

Joyce Sirianni and Suart Scott of SUNY Buffalo, together with Dirk Ballenford of the University of Guam, directed a team which surveyed the Micronesian island of Peleliu. The purpose was to locate the remains of Japanese soldiers in caves which American forces blasted shut after the Japanese holdouts refused to surrender in 1944. After the two month battle fewer than 300 of the 13,500-man Japanese garrison on the island in late 1944 survived. The team will work with Japanese and Micronesian officials on the project, which is aimed at gaining information on the Japanese and the battles themselves through forensic analysis of the cave sites. Plans call for the remains to be turned over to the Bereaved Families Association of Japan, which represents the Japanese government and families.

Joel D. Irish and several other archaeologists conducted an archaeological survey to locate historic and prehistoric sites on Prince of Wales Island, and in the vicinity of the towns of Wrangell and Petersburg, Alaska. These areas are in the Tongass National Forest of southeastern Alaska. Two new prehistoric sites, a shell midden and a woodstake fish weir, were discovered.

Joseph Powell, Leah Carson Powell, Helen Danzeiser Dockall, and *D. Gentry Steele* participated in a Texas A&M University excavation of historic African-American graves near the Albert J. Phillips Cemetery. The burials had been exposed during the widening of State Highway 3 in Galveston County, Texas. The Texas A&M crews located 54 burial features, although documents indicated that all graves within the right-of-way had been moved in 1927. Members of the crew plan to present reports on their results to the Texas Archaeological Association and to the Annual Meeting of the Society for American Archaeologists.

Awards

Joyce Sirianni, has been awarded the State University of New York Chancellor's Award for excellence in teaching. *Christy G. Turner II* has been named a Regents' Professor at Arizona State University. The award honors faculty members with exceptional achievements that have brought them national and international recognition in their fields. The award is the highest recognition that the Arizona State university system gives. *Bernardo Arriaza* has a one year post-doctoral fellowship, which began in June 1992, at the Smithsonian Institution. Arriaza's research focuses on the study of inflammatory arthritis in prehistoric Americans. His advisor is Donald Ortner. *A.M. Haeussler* received a scholarship from Phi Kappa Phi, Arizona State University Chapter.

Transition

Kazuro Hanihara has been appointed emeritus professor at the International Research Center for Japanese Studies, Kyoto.

Joyce Sirianni presents the RENIT award to Daris Swindler at the 1992 Annual Meeting of the American Association of Physical Anthropologists in Las Vegas.

Correspondence from Zürich

DARIS SWINDLER

We arrived in Zurich on April seventh, immediately following the AAPA meetings in Las Vegas, for the summer semester at the Universität of Zürich. This is a distinct change in environment! I am teaching a course in Comparative Primate Anatomy in the Anthropologisches Institut. It is an excellent place to study comparative primate anatomy since the Institut has so many "wet" specimens of primates ranging from prosimians to great apes. The students are excellent, and they keep this retired odontologist on his toes to keep ahead of them.

I do have time, however, to pursue my dental studies. I am presently collecting data on the early stages of dental development of gorillas, chimpanzees, and orangutans via X-rays and Alizarin stained tooth buds.

During our stay, Linda Winkler of the University of Pittsburgh at Titusville visited the institute to collect data for her ongoing studies of hominid dental development. Chris Dean is due to arrive at the end of July. This is a busy place!

There is a wealth of anatomical and dental material (A.H. Schultz Collection) here. Students should keep this institute in mind when planning research projects. The director is Dr. Robert D. Martin, Anthropologisches Institut and Museum, Universität Zürich-Irchel, Winterhurerstrasse 190, CH-8057, Zürich, Switzerland.

Notes from a Visit to the Laboratory of Patricia Smith, Jerusalem, Israel

A.M. HAEUSSLER

On August 30, after close of the 3RD International Congress on Human Paleontology, I spent a morning visiting Patricia Smith, Director of the Laboratory of Physical Anthropology, Department of Anatomy, Hadassah-Hebrew University Medical Center, Jerusalem, Israel. According to Smith, her major interests are the evolution of the face, jaws, and teeth. Through examination of changes in size and structure, she looks for answers to the questions: What were the people doing with their teeth?

Current projects in Smith's laboratory focus on DNA studies of unerupted teeth, computer assisted analysis of development of cusps of germs and later stages of teeth, and studies of animal bone mass during the Bronze Age era of animal domestication as animal consumption by humans shifted from only meat to include milk. Smith's laboratory is well equipped to handle these projects. The study on tooth germ cusps is done using an Automatic Image Analyzer made by the Galei company. Simply put, a camera lens captures the image of a tooth which is then transferred to a video screen. The operator then manipulates the screen to obtain the desired image. Subsequently, the data are interfaced into a computer which analyzes the information.

Smith also has the equipment and answers to all of the questions I asked about calipers last year during my reviews of equipment and searches for a system whereby measurements could be directly fed into a computer (*Dental Anthropology Newsletter: 6(1):10, 6(2):15*). According to Smith, you need: 1) calipers, 2) an interface R-50 with a foot peddle, 3) an AC adapter/battery charger, and 4) a RS232 port. These materials are available from Trimos.sylvac Metrology Limited, Trisyl House 20 Northfield, Putney Bridge Road, Wandsworth London, SW181PE, London, Great Britain. Use of this equipment permits data to be entered directly into a computer in a format that can be imported into a SAS data file. Smith has a program for data entry, which she will make available. Anyone interested need only contact Smith via mail at the address at the beginning of the article, BITNET: SMITH@HUJIDS, or FAX 972 2 784 010.

Report from Krasnoyarsk, Russia

A.M. HAEUSSLER

Prior to the paleontology and dental morphology meetings, I attended The International Symposium on the Paleoecology and Settling of Ancient Man in North Asia and America, held in Krasnoyarsk on the Yenisei River in Siberia. As the title implies, the symposium was a meeting of individuals working on problems related to the peopling of the Asiatic part of the former USSR and America. The conference was organized by N.I. Drozdov, director of the Laboratory of Archaeology and Paleogeography of Middle Siberia, Institute of Archaeology and Ethnography, Siberian Branch of the Russian Academy of Sciences. Additional sponsors were the Russian Ministry of Education; Krasnoyarsk State Teachers Institute; the Commission on Quaternary Studies of the Russian Academy of Sciences; and the International INQUA Commission on Pleistocene Geoarchaeology, the Subcommission on Paleolithic Geology, and the Working Group Beringia.

Only two physical anthropologists attended the meeting: Arkady Kim, director of the Department of Archaeology, Altai State University in Bernaul, and myself. My report to the symposium was a preliminary description of four previously excavated human teeth and a human mandible that E.V. Akimova and her co-workers were in the process of excavating from Upper Paleolithic level 12 of the site of Listvenka about 40 km from Krasnoyarsk. I examined the materials after Drozdov took Kim and myself to the site. Although Akimova showed us the partially excavated mandible, she permitted us to examine and photograph only the visible portions of teeth and bone. Premature removal of the mandible would have upset the delicate excavation procedure aimed at retrieving stratigraphic floral and faunal samples in addition to stone tools and bones. However, Kim and I were able to take the four loose teeth, which had been excavated from level 13, back to Krasnoyarsk for closer examination and photography.

The four teeth are beautifully preserved and heavily mineralized. The teeth (a mandibular deciduous right central incisor, left canine, and right second molar; and a mandibular permanent right first molar) belonged to a small child, probably between two and three years of age. Morphologically, the teeth are neither strongly Asiatic nor European. By this I mean that the molars lack deflecting wrinkle and distal trigonid crest. However, the incisor has a trace of shoveling and the permanent molar occlusal surface contains a not-yet-defined structure, similar to one I observed in Ust'Ida Neolithic burials from the Angara River near Lake Baykal. After the mandible is completely excavated, Kim and I will collaborate on a paper which we plan to present in Novosibirsk next summer.

The discovery of human remains at Listvenka is especially critical to those of us studying the peopling of Siberia and the New World. Until now only two Upper Paleolithic sites with human remains have been found in Siberia. The first, Afontova Gora, near Krasnoyarsk, contained a nasal bone, which Debets (1948:43), described as Mongoloid because of its flatness. The second, Mal'ta, near Lake Baykal, yielded bones and teeth of one child and teeth of another, which Christy Turner (1990) thinks belonged to member of a Cro Magnon population.

At the symposium, I also met Yun-jo Lee, director of the Institute of Prehistory, Chungbok National University in Cheongju, Korea, who informed me about the provenance of a South Korean child's skull reported to be 40,000 years old. I was aware of the material because G.I. Medvedev, director of the Department of Archaeology and Ethnography, Irkutsk State University, had given cast of the skull to me when I worked in his laboratory in February and March, 1991. My interest comes from my observation that the maxillary deciduous incisors contain a slight trace of shoveling and the deciduous second and permanent first molars have a grade 4 Carabelli's cusp. Lee told me that the skull represents part of a skeleton known as the "Hundshu child", excavated from Hundshu cave (Turubong Cave Complex) in South Korea. The skull has been described recently (Park and Lee, 1992) and Lee's institute plans to publish Park's description of the dentition in English.

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*****IMPORTANT NOTICE *****

MEMBERSHIP DUES

This is a reminder to all DAA members. The 1993 Dental Anthropology Association dues must be submitted **by January 1, 1993**. If you have a '(***)' or '(1992)' following your name on this issue's mailing address, then you need to remit $5.00 (Student) or $10.00 (Regular) in **U.S. currency** for continued membership.

In the past, we have mailed the DAN newsletter to inactive (non-paying) members. However, due to higher publication costs and the ever-increasing number of DAA sponsored foreign members, we will discontinue this practice beginning in 1993.

Regarding foreign members -- I would like to encourage all members to remit extra cash to help in sponsorship. This past year we received a record number of requests for sponsorship from dental researchers in eastern Europe, Africa, India, and elsewhere where currency restrictions/limitations exist. The high cost of overseas postage, in addition to extra DAN production costs, makes DAA sponsorship increasingly more expensive. Therefore, your generosity is greatly needed. Thanks go to the many current members who have sponsored one or more foreign members in the past, and to the Department of Anthropology at Arizona State University for providing bulk mailing to members in the United States.

If you have any questions or comments regarding membership,
please contact me by mail or at:
(602) 965-0158, or via our additional BITNET address: DENTANTH@ASUACAD

Joel D. Irish
DAA Secretary-Treasurer

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Guidelines for *Dental Anthropology Newsletter* Contributors

In order to standardize the *Dental Anthropology Newsletter* text style and publication dates, and to comply with wishes of the Dental Anthropology Association membership discussed at the 1989, 1990, and 1991 business meetings, the newsletter will use the following guidelines for Volume 7 to be published in 1992-1993.

1. Style Guidelines: Text style will be that used by *American Journal of Physical Anthropology*, as much as is practical for a newsletter.
   A. Short articles do not need a title page, key words, or an abstract.
   B. Citation, bibliography, and metric abbreviation styles will follow those used by *American Journal of Physical Anthropology*. Journal titles should be abbreviated following those in *Index Medicus*. The regular feature, *Recent Publications*, will contain unabbreviated citations.
   C. The newsletter can publish line illustrations and black and white photographs. Photograph size should not exceed 3½ by 5 inches.
2. Manuscript: Contributors are asked (but not required) to send their manuscripts in hard copy and on diskette. IBM format is preferred, but others are accepted. Just label the type of format, the word processing program, and the name of the file. The newsletter uses IBM format and *Word Perfect* 5.1.
3. Publication dates and deadlines: Volume 7 of the *Dental Anthropology Newsletter* will be published in October, January, and May. Manuscripts received by the first of these months will be considered for that issue. Manuscripts received after the first will be saved for a future issue.
4. The newsletter is not copyrighted at the present time. Please give citations to authors and the newsletter when you use information published in the newsletter.

Some Recent Publications

Compiled by A.M. Haeussler

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