

**ABSTRACTS of the 4th Annual Meeting of the  
Midwest Bioarcheology & Forensic Anthropology Association  
Loyola University, Chicago, Illinois  
October 4, 1997**

**Abstracts are given in alphabetical order by senior author; all papers are podium presentations unless noted otherwise.**

**(1) BAUMANN, Kristin, Carrie WEILER, John SCHULTZ, Stephen NAWROCKI, Matthew WILLIAMSON, Christopher SCHMIDT, Jason SANDERS, & Lilith JUDD. "Excavation and Analysis of the Rhoads Historic Cemetery, Marion County, Indiana."**

In the fall of 1996, excavations began at a mid-to late-19th century Euroamerican cemetery in Indianapolis. Prior archeological reconnaissance had uncovered headstone fragments where no cemetery had been known to exist. A total of 46 burials were removed during the next few months, the majority of which were young children with good skeletal preservation. Interesting burial hardware includes a number of glass viewing plates, a copper cremation urn, and two infant-sized cast iron coffins, which contained what we believe are twins. Our preliminary data on demographics, pathological conditions, and taphonomic factors will be presented. An interesting finding is that the death profile of this assemblage is very heavily skewed towards infants.

**(2) DAVIS, Matthew. "Skeletal Changes Associated with Subsistence Strategies: An Examination of Intra-Population Sexual Dimorphism in the Albany Mound Skeletal Sample."**

This study focuses on size and shape differences in the femur related to differential activity pattern. Cross-sectional femoral geometry of the Albany Mounds sample was analyzed to determine levels of sexual dimorphism. In addition, the population's femoral cross sections were compared to other horticulturalist populations. The early adoption of plant domestication in Illinois might not have required a significant change in physical activities for the Albany population. Differences in cross-sectional geometry within the Albany sample and across populations will be related to subtle differences in activity pattern and the sexual division of labor.

**(3) DEL PINO, David. "Forensic Anthropology and Human Rights Violations: Disappeared, Genocide, and War Crimes." (poster presentation)**

Forensic Anthropology is a basic tool in the investigation of human rights violations. Here I compare the methodology used in the United Nations' investigation of crimes against humanity such as the genocide in Rwanda and the war crimes in the Former Yugoslavia, and the methodology used for the Disappeared cases in Latin America. In war crimes and genocide, the forensic investigation is oriented to the recollection of data to the trial; this is, number of individuals, sex, age and cause of death of the victims. Instead, for the Disappeared, the forensic investigation is focused on the identification of victims. Methodological problems associated with these two different approaches will be discussed.

**(4) DEL PINO, David, Elias PADILLA, & Alfred SIERRA. "Anthropology and Human Remains Violations. A Case of Identification of Disappeared Persons in Chile." (poster presentation)**

Human Rights organizations estimate for Latin America 90,000 Disappeared (people arrested and missing). In Chile, during the military government, more than 2500 persons were arrested and missing. Eighteen years later, 1200 cases of Disappeared persons were officially recognized by the new democratic Chilean government. Now the remains of no more than 60 persons have been identified and the relatives of hundreds of disappeared are still looking for their loved ones. Here will be shown a case of the forensic identification of three victims whose bodies were fragmented by a blast and mummified inside a copper mine.

**(5) FORGEY, Kathleen. "Preliminary Analysis of the Nazca 'Trophy Skulls' Recovered During the Captain Marshall Field Expeditions of 1925 and 1926."**

This study examines eighteen Nazca "trophy heads" housed at the Field Museum of Natural History. They were recovered by Alfred L. Kroeber during his 1925 and 1926 excavations in and near Rio Grande de Nasca Valley in Peru. They represent trophy-making activities limited to Peru's south coast during the Early Horizon and Early Intermediate Period. Extensive processing of these human crania was performed, including frontal bone perforation and foramen magnum widening. Although the sample is small, this collection is substantial when we consider that only 120 such specimens exist in collections worldwide. This examination was conducted under the direction of Dr. Sloan Williams.

**(6) GOTHERSTROM, Anders, Jan STOR, & Niklas STENB. "Y-chromosomal STR Markers and Stone Age Material."**

Kinship is the strongest foundation for relations and society forming in most cultures. This is also true for prehistoric societies, but it is only during the last decade we have been able to develop direct methods to reveal prehistoric kinship. mtDNA has been used to study maternal kinship for more than ten years and paternal kinship based on STR markers located on the Y chromosome have been used for about a year. We have used methods based on Y-chromosomal DNA to study biological relations within a Neolithic group belonging to the pitted ware culture complex. The osteological material comes from Jettble, a site located on land in the Baltic Sea. Faunal and isotopic studies indicate that this population depended heavily on the Baltic Sea for its protein intake, i.e., they were seal hunters. Our questions concern the biological structure of this population, i.e., was this a one family group or did it consist of several families?

**(7) GREENE, Tammy, & Christopher SCHMIDT. "Analysis of Cremated Human Skeletal Remains from the Early Archaic Jerger Site, Daviess County, Indiana."**

Twenty years ago cremated human skeletal remains dating to the Early Archaic were recovered from several pits at the Jerger Site, located in the southwest corner of Indiana. The remains represent at least five people ranging in age from infant to adult. The individuals were commingled and there is no apparent segregation of adults and subadults by pit. Burned and unburned animal remains are also present in the assemblage. The pattern of burning suggests that the cremation was thorough, leading to the calcinization of a majority of the bone. It is also probable that the individuals were cremated while the bone was still green. While these results are preliminary they do suggest that important cultural

and biological data can be derived from cremated remains. This project is supported by a grant from the Indiana Academy of Science (125-96).

**(8) GRIFFIN, Mark, & Rikka KNOLL. "Spondyloarthropathy in a Prehistoric Burial from Southern Indiana." (poster presentation)**

A pattern of erosive joint changes consistent with a diagnosis of spondyloarthropathy (erosive arthritis) were noted on the postcranial skeleton of a male burial from the Kocher site in southern Indiana. Although present at virtually all of the joints, the most noticeable alterations involved erosive pitting around the joint capsule insertion of the shoulders and knees, pitting on the distal metacarpals and metatarsals, and pitting on the vertebra. A diagnosis of spondyloarthropathy was favored over one of rheumatoid arthritis due to the presence of para-erosional new bone formation and deep resorbed, remodeled pits within the capsule areas.

**(9) GRIFFIN, Mark, Tara KUNZE, & Erin WATKIN. "Marriage Patterns in a Sixteenth-Century Coosa Village: Evidence From Dental Morphology."**

This study uses dental discrete traits to assess heterogeneity and infer marriage patterns for a population sample from the King Site in northwest Georgia. In order to assess relative heterogeneity, the skeletal sample was divided into three subsamples: male, female, and children under the age of fifteen. Frequencies of traits were then compared between subsamples to ascertain the relative degree of heterogeneity of each. Mean measures of divergence were also calculated between each subsample, in order to assess the heterogeneity of the entire sample. The cultural affiliation of the King site has been identified as Creek. Because the Creek were traditionally exogamous and matrilineal, the male subsample should exhibit the greatest heterogeneity. Results of statistical analyses suggest a rather homogeneous population sample overall with no statistically significant differences between trait frequency distributions of males and females. This outcome does not give strong support for the presence of exogamous marriage at this site.

**(10) GUTHRIE, Glenice. "Patterns in Fractures in Middle and Late Woodland Females."**

Analysis of fracture patterns can provide insight into the hazards of prehistoric life. This study uses a regional approach to examine the changing patterns of fractures among females in the Middle and Late Woodland periods of the Lower Illinois Valley. Examination of skeletal remains shows that Middle Woodland females experienced both fewer numbers and types of fractures compared with Late Woodland females. A bioarchaeological approach suggests that changing patterns of warfare and subsistence may have played a role in the Late Woodland female fracture patterns.

**(11) HARPER, H.K., J.T. Watson, & Peer MOORE-JANSEN. "Skeletal Analysis of Metastatic Carcinoma in a Fifty-one Year Old Black Male." (poster presentation)**

It is well known that cancer may metastasize into bone during the natural course of development of the disease. The effect of the metastasizing process can be seen in case C058, a fifty-one year old black male skeleton, from the Wichita State University Biological Anthropology Skeletal Collection. The present study traces the results of a case of clinically diagnosed with adenocarcinoma of the lungs, its movement to the bone, and the effect of tumors on the bone. The case presented exhibits several advanced patches of this activity encompassing a dynamic area, concurrent with the nature of the metastasizing cancer reflecting an example of the effects of metastasized cancer on skeletal material.

**(12) HOUDEK, Diane. "The Boy in the Cast-Iron Coffin."**

During the summer of 1995, excavations were conducted of a 19th-century cemetery located in Grafton, Illinois. Two hundred and fifty graves were excavated with 166 individuals recovered. Of particular note was the recovery of a small cast-iron (or Fisk) coffin from grave 246. These coffins were particularly popular in the mid-late 19th century. In September of 1995, the coffin was opened by representatives of the Center for American Archaeology, the Washington University Medical School, the Jersey County Medical Examiner's Office and Dr. Raj Nanduri. The coffin contained the remains of a five-six year-old Caucasoid male child. While the outward preservation appeared to be quite good -- the skin on the face and hands was particularly well preserved -- the body cavity and lower extremities had decayed significantly. Nonetheless, an autopsy was performed and tissue samples taken from what appeared to be the liver and the intestinal area for microbial analysis. Clothing, newspapers, and roses were also recovered from the coffin in very good condition, and provided an interesting glimpse into the burial practices for children in the mid-late 19th century. This paper will explore the historical, skeletal and pathological findings from "the boy in the cast-iron coffin."

**(13) JOHNSTON, Cheryl, John SCHWEIKART, & Lisa MILLS. "Case Studies in the Recovery and Interpretation of Human Remains from Scenes of Intentionally Set Fires."**

Recovery and interpretation of human remains from burned contexts created by intentionally set fires present the forensic anthropologist with a suite of unique challenges. Variation in the nature of the scene, the fire, and actions of the perpetrator, the circumstances of death and deposition, the goals of the investigation, and the physical nature of the decedent contribute to the complexity of such cases. Two investigations from south-central Ohio illustrate these variables and initiate discussion of two additional ones: the prosecutorial value of the evidence and the effect on the community.

**(14) LACKEY, Wendy. "The Application of Histological Thin-Sectioning for the Determination of Human and Non-Human Skeletal Remains: A Forensic Case Study."**

Human skeletal remains are commonly distinguished from non-human remains on the basis of gross morphology. In cases of fragmentary remains, however, macroscopic identification may be virtually impossible due to the lack of visible landmarks. Histological thin-sectioning provides an alternative method for the determination of human and non-human bone. In this study, femur and rib thin-sections were taken from several species, including human, using a slow speed rotary saw and mounted following standard histological procedures. Microscopic examination and photography of the thin-sections at 40x and 100x illustrates that variation in the composition and organization of bone histomorphology between species allows for consistent differentiation of human and non-human skeletal remains and for the identification of several other broad taxa.

**(15) LAGIA, Anna, & Elias KONTANIS. "The Skeletal Manifestations of Acromegaly Based on a Modern Case from the Wiener Laboratory Human Skeletal Collection."**

The skeleton of an 85 year old adult male, born in 1879 and died in 1964, presents extensive osseous manifestations that are characteristic of hypersecretion of the growth hormone in a mature skeleton, i.e. of acromegaly. This pituitary disorder has affected all axial and appendicular skeletal elements that are present and offers the opportunity to assess characteristic alterations of acromegaly in skeletal elements other than the acral parts. Macroscopic and radiographic examination reveals

skeletal alterations due to stimulation of (a) endochondral ossification, (b) periosteal bone formation, (c) subligamentous bone formation, and (d) bone resorption. The extent and distribution of the lesions allow their differentiation from conditions of similar presentation and the identification of acromegaly in the archaeological and forensic record.

**(16) MCBRIDE, David. "Evidence of Multiple Anomalies and Trauma in a Skull from Cahokia, Illinois."**

During inventory of skeletal collections conducted at the Illinois State Museum for compliance with the Native American Graves Protection and Repatriation Act, a unique conglomeration of skeletal abnormalities and trauma was noted in the adult skull of a possible female, aged at least forty years at the time of death. A well-healed mandibular fracture contributed to the extensive premortem tooth loss and induced compensatory wear of the temporomandibular joint. The most notable anomalies are a heterotropic maxillary incisor and a large paramastoid process. Discussion will focus on the description and etiology of paramastoid processes, following a brief presentation of the specimen's archaeological context and gross morphology.

**(17) MCCARTHY, John, & Nicole KIRBY. "Seen But Not Heard: Human Remains Recovered at the Bridgehead Site, Minneapolis, Minnesota." (poster presentation)**

A series of privy pit features was excavated during archaeological data recovery excavations prior to the construction of the new Federal Reserve Bank of Minneapolis in 1994. These features were associated with commercial and residential functions of the project area in the late 19th-/early 20th-century period. Human remains, including several bones from a six-month old fetus and a child's broken incisor, were recovered from a feature associated with a saloon. The proposed poster will describe these remains and the context of their recovery and outline their historic and cultural context. In addition, the meaning of the presence of these remains in this archaeological context will be considered.

**(18) NAWROCKI, Stephen, Christopher SCHMIDT, & John SCHULTZ. "Case Studies in Forensic Archeology."**

Forensic anthropology has had to redefine itself in recent years to include the excavation and recovery of human remains at the scene. Forensic archeology utilizes the same basic procedures as developed in more traditional archeology but is complicated by its intersection with the medicolegal system and by the rather unique nature of the artifacts. We present here a series of forensic cases in which controlled excavation resulted in the retrieval of important information that most likely would have been missed had archeologists not been used. These cases include the recovery of a surface scatter of bones, the excavation of a clandestine grave, and a complex serial homicide scene that was extensively modified by postmortem environmental forces.

**(19) NELSON, Russel. "'Archaeology and Race in the American Indian' Reconsidered: A Craniofacial Perspective on North American Indian Population Relations."**

Over the course of his lifetime Georg Neumann assembled an almost unparalleled knowledge of population relations among the prehistoric inhabitants of the New World. From the time of Neumann's death until the advent of NAGPRA, no one has undertaken continental scale, systematic survey of group relations based on craniofacial variability. This presentation will briefly outline research

directed toward that end, utilizing metric data gathered from complete undeformed crania housed in North American, Asian, and European collections, compiled into a database at the University of Michigan Museum of Anthropology. These data are analyzed using cluster and discriminant function. Analysis of the Michigan data generally supports Neumann's conclusions, although the shift from typological to population based thinking in the last 40 years is noted.

**(20) OKEYE, Matthias, Jerri MEYERS, Karl REINHARD, & David KIPLE. "Three-Dimensional (3-D) Imaging in Forensic Post-Mortem Examinations: Elucidation and Identification of Patterns of Cranial and Facial Fractures in Victims of Homicide Utilizing 3-D Computerized Imaging Reconstruction Techniques."**

The analysis of cranial and facial fractures in skeletal remains of homicidal victims can prove challenging for forensic anthropologists and forensic pathologists in postmortem examination. In such cases, the use of 3-D computerized imaging to elucidate the fractures and patterns of injuries can provide strong medical evidence that is very useful during litigation and at trial. The authors describe 3-D reconstructions of the skull performed as part of forensic postmortem examination in a recent victim of homicide.

**(21) SANDERS, Jason, & Stephen NAWROCKI. "A Test of FORDISC 2.0."**

FORDISC 2.0 is a computer program which can be used to assess the sex, race, and stature of unknown individuals from standard cranial and postcranial measurements. It classifies specimens into discrete groups by using multiple discriminant analysis, drawing from a large dataset of identified forensic cases in the Forensic Data Bank at the University of Tennessee at Knoxville. Our study was conducted in order to determine the accuracy of the postcranial discriminant functions by testing them on 100 individuals from the Hamann-Todd Collection in Cleveland. Preliminary results indicate that sex and race can be accurately determined for 80% to 90% of the specimens, and stature, while systematically underestimated by the computer, is also reliably predicted.

**(22) WESCOTT, Daniel, & Peer MOORE-JANSEN. "An Example of a Well-Developed Paracondylar Process." (poster presentation)**

A wide range of skeletal anomalies can occur due to timing errors during the development of the occipitocervical region. One relatively rare anomaly of this region is the formation of a bony paracondylar process. An example of a well-developed, unilateral paracondylar process from a modern anatomical specimen is described and the pertinent embryology is discussed.

**(23) WOLFE STEADMAN, Dawnie, & Anne GRAUER. "Dunning II, The Sequel: Creative Archaeology at the Dunning Poorhouse Cemetery."**

Every archaeological project is unique. When human remains are involved the picture becomes even more complex. However, when the site is historical, located on both private and city property, has three house foundations on it, and produced over 15,000 human and animal bone fragments, the situation requires multi-disciplinary teamwork, patience, skill and most of all, creativity. The archaeological and osteological techniques used to recover and analyze 26 discrete burials and thousands of isolated bones from this turn of the century poorhouse cemetery are presented. Since this project is still in the analytical stage, we open a discussion concerning pertinent archaeological and historical problems that can be addressed given the nature of the data.

**(24) WILLIAMS, Sloan. "Ancient DNA and Archaeology."**

The field of ancient DNA began in the mid-1980s when the presence of DNA was demonstrated in Egyptian mummies and extinct quagga skins. Since then, the technique has been applied to all kinds of ancient tissues with varying degrees of success. The technique shows the great promise for helping resolve many questions currently difficult to address in the archaeological record. For example, when you see similarities in cultural patterning, is this due to the diffusion of ideas or the physical movement of people through migration or marriage exchange? Also, when people are buried in the same cemetery or tombs, are they family groups? Do members of the ruling class come from other areas, or are they drawn from the community? And is that status inherited? I will discuss how DNA can help us answer these kinds of questions drawing on my own research in southern Peru.

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