



## Physical Anthropology Section – 2007

### H77 The Boy in the Chimney: A Case Study in Human Decomposition

*Elizabeth A. Miller, PhD\*, Cal State Los Angeles and Los Angeles County Coroner, Department of Anthropology, 5151 State University Drive, Los Angeles, CA 90032*

After attending this presentation, attendees will have a better understanding of human decomposition patterns in an unusual environment.

This presentation will impact the forensic community and/or humanity by providing a better understanding of the decomposition process in a residential chimney which is a somewhat unusual environment.

Human remains were recovered by the Los Angeles County Department of Coroner (LACDOC) in March 2005 from a standard residential chimney in Los Angeles, California. The property was an abandoned juvenile "halfway house" facility, vacant for a minimum of

five years (actual extent of vacancy is unknown). Due to transient activity on the property a guard is posted at the facility on a 24 hour basis.

On the date prior to recovery of the remains the child of one of the guards reported to her father that, upon her inspection from the roof, she saw a human skull within the chimney. The guard did not immediately believe the child, but upon her insistence inspected the chimney himself the next day. He saw within the pipe of the chimney what he believed to be human remains and called 911.

The external aspect of the chimney consists of an outer stone and cement structure approximately 5 feet long, 3 feet wide and extending 2 feet above the flat roof surface. The top of the stone surface is covered in concrete. The chimney pipe is clay, extending approximately 6 inches from the concrete surface, and is an oval approximately 18 inches long and 10 inches wide.

Within the building structure, the hearth is also stone and concrete, with a metal liner. The hearth measures approximately 4 feet across and 3 feet in height. The depth of the hearth box is unknown. The flue above the hearth box is also metal, and was closed at the time of discovery.

Anthropological examination of the remains showed almost complete skeletonization with some slight remaining mummified soft tissue within the clothing. Both pants and shirt remained, covering the bones. The remains retained an organic, waxy odor and organic bone "grease" was visible. The bones not covered by clothing exhibited a light coating of soot, which was easily brushed away. The clothing was also covered with soot and ash. The bone showed no evidence of charring or burning.

The decedent was determined to be male, approximately 13-17 years of age, and of African or African-American ancestry. Close examination of the skeleton revealed no evidence for either cause or manner of death. Based on the experience of the anthropologist of the normal rate of decomposition in the dry, urban environment of Los Angeles, postmortem interval was estimated at greater than one year but probably less than five years.

The Identifications section of LACDOC, along with the Los Angeles Police Department, searched through the missing person reports in an attempt to identify the decedent. Additionally, because the decedent had a distinctive combination of facial features, a two-dimensional facial reconstruction was done by a forensic artist. Local television stations featured the reconstruction and a possible identification was made, leading to a positive identification of the decedent through DNA analysis.

The decedent was identified as a 14-year-old African American male, found wearing the clothes in which he was reported missing in 1977. The extended postmortem interval shocked all LACDOC personnel involved with the case, and initiated a study of the preservation conditions in the chimney environment. The precise decomposition environment was impossible to duplicate experimentally. The halfway house was occupied over most of the almost 30 year period of slow decomposition and it is unknown how often the flue was left open vs. closed (changing the airflow patterns in the chimney), how many fires were burned during the decomposition period, the precise temperatures, amount of rainfall, or humidity within the chimney, to name only a few of the variables under consideration. However, using the average annual temperatures, rainfall and humidity, and incorporating the annual ranges of these variables, estimating few fires in the chimney (given the fact the facility was a juvenile halfway house rather than a private residence, and the fact the facility is in Southern California), considering the flue closed unless a fire was burning, and considering the time of year the decedent disappeared (December), a model of the decomposition process was constructed. The final consensus on the slow decomposition was that this chimney presented a unique set of environmental characteristics for decomposition, including low humidity, moderate temperatures, easy air flow, a porous "ground" surface (the clay chimney pipe), few insects (in December, when the boy disappeared), and enough fires to create a drying effect but insufficient dry air for complete mummification, leading to the extended decomposition period seen in this case.



## Physical Anthropology Section – 2007

---

Decomposition, Skeletal Remains, Chimney