

## BOOK REVIEW

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### Review of: *The Analysis of Burned Human Remains*

**REFERENCE:** Schmidt CW, Symes SA, editors. **The analysis of burned human remains.** Burlington, MA: Academic Press, 2008, 279 pp.

This edited volume on the recovery, analysis, and interpretation of burned human bones and teeth contains an important segment of the current knowledge in the fields of forensic anthropology and bioarchaeology. Such a volume has long been awaited, and the editors have hit the mark. The book is a valuable reference manual for a wide audience, including forensic anthropologists, fire-scene investigators, forensic pathologists, and bioarchaeologists.

The first half of the book focuses on the contributions that forensic anthropologists can make to fire-scene investigation and the analysis of burned bone, and it identifies and corrects misinterpretations and misconceptions about burned human remains. Chapter 1 introduces the reader to the basics of fire, with a focus on fires in rooms, and their effect on tissue and bone. "Patterned Thermal Destruction of Human Remains in a Forensic Setting" (Chapter 2) by Symes et al. is the volume's benchmark chapter presenting baseline data on thermal modification of bone. The authors begin by proposing a revision of the categories for burned bone research with an eye to the need for more systematic future work. The section on new innovations in forensic anthropology represents the most compelling discussion in the entire volume, as the authors argue that trauma analysis has moved from the realm of description to one of interpretation. The most valuable contribution of this chapter is the treatise on diagnostic process signatures used in the recognition of normal burn patterns in human bone. Chapter 3 sets forth guidelines for the field recovery of dental remains as well as laboratory procedures in the analysis of burned teeth. Chapter 4 outlines the goals and specific methodologies used in the analysis of modern human cremations. Chapter 13 presents a serial homicide case involving cremation and a comparative study to determine whether the remains were in a fleshed or dry state when burned.

Three chapters discuss experimental studies on burned human remains. Chapter 5 presents results that indicate cremated bone can be used to reconstruct paleodiets, showing that carbon isotope ratios do not change significantly when bone is burned. Chapter 7 reports that temperature, duration of burning, and the availability of oxygen

all have significant effects on bone color, and that bone color is a good predictor of the presence of collagen. Chapter 8 discusses baseline data on color changes in teeth, and experiments on burned dentin and enamel to demonstrate that temperature and time are important variables in color changes.

The second half of this volume is dedicated to the bioarchaeological analysis of cremations and interpretation of mortuary behavior at various sites across the world. Chapter 6 quantifies bone color at a Middle Woodland site using a spectrophotometer to examine spatial patterns and interpret site formation processes. In Chapter 9 methodological aspects of human cremation analysis are presented, and three European sites are compared to illustrate how cremation studies can contribute to understanding mortuary practices. Cremation in Roman Britain and the causes of variability in the degree of oxidation of burned bone is the focus of Chapter 10. Chapter 11 reports on bone color, location of charring, proportion of charred and uncharred bone, fragmentation, and pathologies from a hunter-gatherer cemetery in Siberia, Russia. In Chapter 12 research on a prehistoric Northwest Coast site in British Columbia sheds light on several questions, including whether the bodies were cremated in the flesh. Chapter 14 discusses the mortuary treatment of individuals at an Early Archaic site in Indiana. Finally, Chapter 15 argues for the need to "develop explicit theoretical approaches to the phenomenon of cremation" and uses a Late Iron Age case study from Sussex, England as an example.

While the photographs within the chapters are black and white, 32 of the images have been included as color plates at the back of the book. This is essential in showing how fire impacts bones and teeth, as color is such a key variable. As an aside, there are a number of skeletal photographs that do not include a scale, which is slightly alarming as using a scale should be standard protocol for photographic documentation in forensic anthropology.

*The Analysis of Burned Human Remains* is a practical and pragmatic volume that also has a strong research orientation. The strength of this volume is its methodological approach, outlining procedures for fire-scene investigation, recovery, identification, analysis, and interpretation of burned human remains. It is a valuable reference volume rich in new information essential for professionals who work with burned human remains.

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