H19 Rolling Bones: A Field "System" for the Recovery and Transportation of Fragile Skeletal Evidence

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After attending this presentation, attendees will be better able to preserve, recover, document, and transport fragile skeletal remains and other evidence encountered in field situations.

This presentation will impact the forensic community by demonstrating how an inexpensive, easily available material (aluminum foil) can be used as the basis for a "system" to protect the integrity of fragile evidence.

Skeletal remains are encountered. Usually, local and other law enforcement recover them and bring them to the nearest coroner or medical examiner – maybe even to the nearest forensic anthropologist. How often do they arrive jumbled in a body bag, paper bag or a box, where the bones rattle around, break themselves up and in general destroy the direct evidence that bones provide? How to preserve the integrity of fragile, even fragmentary, skeletal remains? How to document the relationship of bones and fragments to each other and to other material evidence in or on the ground? How to safely recover fragmented and fragile material evidence other than bone?

In 1976, the Sauls excavated their first ancient Maya skeletons (Cuello site in northern Belize).[1] They encountered poor bone preservation due to the destructive actions of plant root penetration, burrowing critters, and alternating rainy and dry seasons. Skeletal remains were fragile, fragmentary and incomplete.

During the late 1970s and early 1980s, they received and analyzed shipments of additional burials from Cuello that were excavated by the project in their absence. The chemical impregnation techniques in use at the time were not easily reversed, damaged the bone, and potentially interfered with molecular analysis. The traditional wrapping of remains with toilet tissue, often while wet with preservative, made things even worse. Traditional field diagrams were based on the assumption (often wrong) that the excavators had identified each fragmentary, bone or bone fragment and its orientation in situ.

This research was motivated to develop a different approach when next in the field at Cuello. The technique was further refined during several excavation seasons at various sites in the Maya area, and subsequently applied it to forensic work. This procedure involves the use of aluminum foil for both retained alignment of fragmentary bones during removal from the grave, and packaging of the bone for transport. During removal the foil becomes the package, maintaining the relationships of bone fragments and protecting them from further breakage. A technique of "rolling out" and lifting fragile, fragmented bone (or other evidence) using foil was also developed, further maintaining integrity and preserving information.

A number and orientation end-mark can be written on individual foil packages with a felt-tip marker, corresponding to the number and end-mark recorded on the "rough working" burial plan. When the packages are appropriately labeled and field mapped in situ, the orientation of each bone (and therefore the body) in the grave can be more easily determined in the laboratory. In essence, the bones can be "put back the way they were in the ground", revealing finer nuances of body position and other relationships. This "rough working burial plan is the one that goes with the bones to aid in analysis". "A more carefully drawn official" burial plan is also produced for reports.

This very simple and inexpensive system for preservation, recovery, documentation, and transport of skeletal (especially fragmentary skeletal) remains has been field tested in both archaeologic and forensic situations for more than 30 years. Useful with postcranial bones, skulls also lifted and packaged in foil retain their teeth, cranial fragments are held in position, and fragile facial bones are protected.

This training and this technique have paid off. Remains recovered by individuals who have taken our course are coming to us in much better condition. Skulls wrapped in foil have all the teeth they were found with and facial bones are not broken en route. Other bones are not breaking each other up inside paper or plastic bags. Important relationships are maintained within the packages. More information (evidence) can be obtained.

Those who have taken the OPOTA course are often assisted by other investigators in recoveries, and now some of these other individuals have begun to carry foil with them in their kits.

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Reference:

[1] Saul, JM, Saul, FP, Thompson, LM. *Recovery and Documentation of Skeletal Remains: A Brief Field Guide,* Programme for Belize Archaeological Project Field Guide Series 1, Occasional Papers, Number 7, Mesoamerican Archaeological Research Laboratory, The University of Texas at Austin, Austin; 2007.

Skeletal Recovery, Skeletal Preservation, Skeletal Transport

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