Let the Bones Talk’ is the Watchword for Scientist-Sleuths

When the FBI moved in across the street 60 years ago, Smithsonian anthropologists began a tradition of helping to solve crimes

By Elizabeth Royte

It is late on a Thursday afternoon before Douglas Owsley can turn his attention to the cardboard box on his office floor. He shoves it toward a table and casually lifts the lid. He reaches into wrinkled white sheets and a blanket and pulls out a waxy brown skull.

Bone by bone, Owsley transfers the skeleton to his examination table. “Heavy brow, large mastoid processes, well-defined nuchal [nape of the neck] area,” he murmurs, turning the skull this way and that. “Narrow nasal width, pronounced nasal spine. Definitely white, definitely male.” But it doesn’t take a physical anthropologist to deduce this much information. A medical examiner had supplied the man’s identity. What the local pathologist wants Owsley to determine is whether this man, who had disappeared from a nursing home, had suffered any kind of trauma. The bones had been found in a wooded area near the home. It appeared that the gentleman had simply wandered off. Or had he?

Douglas Owsley works as a forensic anthropologist at the Smithsonian’s National Museum of Natural History. Strong, compact and encircled by a tooled Western belt, he’s the kind of person who doesn’t hesitate to get down onto his bare office floor, if that’s where the next box of bones lies. His scholarly work involves prehistoric and pioneer bones in the Great Plains and more recent bones in the East. But he also does forensic work. Police departments and medical examiners across the country routinely enlist Owsley’s services. They come upon bones and want to know: Who is it? What happened? A forensic pathologist—in the mode of television’s Quincy—asks similar questions, but Owsley’s work picks up where Quincy’s leaves off.

Most of his cases originate in rural areas, because bodies that come to rest in cities are usually found before soft tissues rot away. Dogs discover a fair number of bodies. So do hunters, in the woods after the leaves have dropped, and drivers, in any season, who stop to relieve themselves in wooded sites along roadways.

Owsley works in a cluttered suite of offices on the third floor of the museum. Scientific journals line his shelves, photographs of his buddies exhuming graves hang on the walls. Outside his door, the corridors are institutionally lighted and lined with drawer after wooden drawer, stacked 14 feet high. Here the skeletons of 30,000 people are carefully arranged and catalogued. The bones—of people ranging in age from prenatal to 90, who died between 10,000 years ago and one—hail from as far as Ecuador and Iraq, and as near as Bethesda, Maryland.

A forensic investigation usually begins with the opening of a package. Sometimes Owsley can resolve a case without even sitting down.

Police officer: is this bone human? Owsley: No, it’s pig.

Officer: Thank you, goodbye.

More often, the inquiry will take weeks or months to play out. Owsley recently finished the case of a Baltimore police officer who denied any involvement in the slaying of his girlfriend. But investigators vacuumed up tiny bone chips—about the size of pencil points—from the back floor of his pickup. Owsley examined the chips under a stereozoom microscope and determined they belonged to somebody whose skull became fragmented perimortem—at or around the time of death. He found traces of soot, lead and blood on the fragments, features consistent, as they say, with those of a bullet fired at close range. “But it’s the tiny traces of blood on the bone chips that helped nail him,” Owsley says. “It shows up as red rust stains under the microscope.” The officer was eventually sentenced to life plus 20 years.

Meanwhile, Nursing Home Man lies on the table, his hand bones in one pile, his foot bones in another. Owsley sorts
a case identification of Korean War dead, but the bowler, shoe-smoking, middle-aged man who had been dismembered after death proved to be invaluable to us. He was the victim of a murder committed by a young man who had been dismembered immediately after death.

Scientific anthropologists also make use of forensic medicine, and J. Robert Layton, an anthropologist at the University of Wisconsin, has written extensively on the subject. He believes that the bones in a case involving a murder are often found in a different state of decomposition than the bone in a case involving a suicide. Layton has developed a technique for identifying the bone in a case involving a murder by matching the bone to the victim's bone from a different state of decomposition.

Douglas Owsley, who studied under Layton, has developed a technique for identifying the bone in a case involving a murder by matching the bone to the victim's bone from a different state of decomposition.

Douglas Owsley grew up in a small Wyoming town, the son of a fish and game warden. He entered the University of Wyoming as a zoology major, planning to study in a different field. That changed when he met W. E. H. Rivers, a prehistorian, who encouraged him to study prehistory.

Douglas Owsley and Wade enjoy their law enforcement cases, but both favor a more historical approach to the study of human remains. They believe that the study of human remains can yield valuable information about the past.

Sixty years ago, the use of anthropological techniques to solve crimes was virtually unheard of. The law enforcement community didn't recognize that skeletal remains could be used to identify a victim. The use of forensic anthropology has increased over the years, and today, forensic anthropologists are recognized as valuable contributors to the investigation of crimes.

Douglas Owsley has spent his career studying human remains, and his work has helped to advance the field of forensic anthropology. He has been a key figure in the development of forensic anthropology as a science, and his work has been instrumental in the identification of victims of terrorism, mass graves, and the Korean War.

Dr. Owsley is currently a Professor of Anthropology at the University of Florida, where he continues to conduct research on the identification of human remains.

The use of forensic anthropology in criminal investigations is still in its infancy, but it has already proved to be a valuable tool in the identification of victims of crime. As technology continues to improve, the field of forensic anthropology is likely to continue to expand and become even more valuable in the identification of human remains.
PROMOTING ACCURACY IN MYSTERIES

Sometimes, fiction overshadows facts in the museum's anatomy department.

One of the authors of this book, Dr. Alex Vessey, was invited to participate in a scientific study at a local morgue. The study was designed to determine the effects of different preservation techniques on human remains. Vessey was excited to be involved in such a unique and important project.

The morgue was located in a small, run-down building on the outskirts of the city. The facilities were basic, but the staff was professional and dedicated.

The study involved the preservation of human remains using various techniques, such as dry-ice preservation, freezing, and chemical preservation. Vessey and his team worked closely with the pathologists to ensure that the samples were handled with care and that the preservation process was as accurate as possible.

Throughout the study, Vessey and his team were able to observe the effects of the different preservation techniques on the remains. They found that dry-ice preservation was the most effective, as it preserved the remains in a nearly identical state to that of a fresh body.

The study was a success, and Vessey and his team were pleased with the results. They were able to provide valuable information to the medical community that could be used to improve the preservation of human remains in the future.

Vessey was grateful for the opportunity to be involved in such a unique and important project. He looked forward to continuing his work in the field of human remains and preservation.

Elizabeth Rives, New York City.

She writes about the natural world for Outside, the New York Times Magazine, Harper's, and other periodicals.