

Dead On Arrival Articles

Getting Rid of the Body

Criminals don't like to leave behind evidence, although they usually do. In a murder, the primary bit of evidence is obviously the body. Sometimes a murderer attempts to completely destroy the body of a victim, reasoning that no body means no conviction. Not true -- convictions have been obtained even when no body is found. Regardless, destroying a body is no easy task. Fire seems to be the favorite tool of murderers looking to cover their tracks, but its almost never successful. Short of a crematorium, creating a fire that burns hot enough and long enough to destroy a human corpse is nearly impossible.

Another favorite is quicklime, which murderers often have seen used in the movies. Knowing the chemistry behind it might make them think twice about this one. Quicklime is calcium oxide. When it contacts water, as it often does in burial sites, it reacts with the water to make calcium hydroxide, also known as slaked lime. This corrosive material may damage the surface of the corpse, but the heat produced from its activity kills many of the putrefying bacteria and dehydrates the body, thereby preventing decay and promoting mummification. Thus, the use of quicklime actually may help **preserve** the body.

Acids also are commonly used by ill-informed criminals hoping to dissolve the body, which is not only difficult but extremely hazardous. Acids that are powerful enough to dissolve a body exist, but they require a great deal of time to complete the task. They will also eat the tube the body is in and destroy the plumbing. They release fumes that will peel the wallpaper from the wall and chew up the perpetrator's skin, eyes, and lungs, thus wreaking havoc and leaving behind evidence of a different kind.

1. Why is fire not a successful way to destroy a body?
2. Using context clues, what does preserving the body mean?
3. What is Quicklime and how does it help CSI officers instead of criminals?
4. Hypothesize what would happen to a bathroom if a criminal tried to destroy a body in the tub using strong acid.

Chumming around: The Shark Arm Murder

In April 1935, two fishermen caught a large tiger shark off the coast of Sydney, Australia. They donated the creature to a local aquarium. The shark refused to eat for several days, then regurgitated the well-preserved, muscular arm of a Caucasian human. The shark was sacrificed so that autopsy could be performed, but no other human remains were found.

The arm, which bore a tattoo of two boxers squaring off, appeared to have been severed from its owner by a knife rather than by the shark's teeth. Furthermore, the knife wounds appeared to have occurred postmortem. Through meticulous work, forensic investigators obtained fingerprints. The investigation indicated that the victim might be James Smith, an ex-boxer with a criminal past. His wife identified the tattoo, and the fingerprints confirmed the identity of Smith's arm.

Smith's wife said that when she last saw her husband, he and Patrick Brady, a known forger and drug trafficker, were off to a seaside cottage for two weeks of fishing. Investigators searched the cottage, and its owner reported that a trunk, mattress, three mats, and some rope were missing. Police theorized that Smith was killed, hacked into pieces on the mats, and stuffed into the trunk, which then was dumped into the ocean. His arm apparently had slipped loose in the water and was swallowed by the unfortunate shark.

Under questioning, Brady implicated Reginald Holmes, who unfortunately was shot and killed on the day before an inquest into Smith's death was set to begin. Brady's attorneys obtained an **injunction** from the Supreme Court, halting the **inquest** on the grounds that an arm was not sufficient evidence to bring murder charges. Police charged Brady with murder anyway, but the jury likely was influenced by the high court's ruling and ended up acquitting him. This case became known as The Shark Arm Murder.

6. What was the means of death for James Smith?

7. What do you think the mechanism for James Smith's death could have been?

8. What was the manner of James Smith's death?

9. Explain how the shark helped solve the case.

10. Using context clues, what does the word injunction mean?

11. Using context clues, what does the word inquest mean?

Recognizing Paul Revere's Teeth

Paul Revere is a well-known figure in American history primarily for his dramatic horseback ride that alerted the colonists of the approach of British forces. Less known, however, is that he had been schooled in the art of dentistry and in 1775 made a set of dentures for his friend Dr. Joseph Warren.

Dr. Warren fell in the Battle of Bunker Hill in June of that year and was buried in a mass grave for those killed in action. When Warren's family wanted his body disinterred for a private burial, the first task was, of course, to distinguish Dr. Warren's corpse from the others. A positive identification came from Paul Revere, who recognized the dentures he had made for his friend.

12. Using context clues, what do you think disinterred means?

13. Why was Paul Revere qualified to identify the dentures?

The Truth is in the Canapes

Abraham Becker and his wife Jennie had a rocky marriage at best. On April 6, 1922, they attended a party at a friend's home in New York City. Jennie ate canapes, almonds, grapes, and figs. The couple left the party, and Jennie never again was seen alive. Becker claimed that she'd run off with another man. The police investigation led to Reuben Norkin, a business associate of Becker's. Under pressure, Norkin admitted that he had helped Becker bury his wife's body. He told police that Becker had killed Jennie with a wrench and buried her body in a shallow grave, sprinkling it with lime in hopes of hastening its destruction. Norkin led police to the shallow grave.

When confronted Becker said the corpse was not that of his wife, claiming that his wife was larger than the corpse found in the grave and that the clothes were not the ones she had been wearing when she was last seen. During an autopsy, medical examiner Dr. Karl Kennard found that the victim's stomach was well preserved, and within it he found almonds, grapes, figs, and meat-spread canapes. Becker countered that any woman could have eaten those foods, but when the meat spread was tested, the ME discovered that it was identical to the kind served at the party, which had been made from an old family recipe. Both men were convicted of first-degree murder.

14. What was Mrs. Becker's Cause of Death?

15. What was Mrs. Becker's Manner of Death?

16. What was Mrs. Becker's Mechanism of death?

17. How did Norkin's testimony help solve the case?

18. Was his testimony circumstantial evidence or direct evidence? Explain your answer.

Identifying the "Angel of Death"

Josef Mengele, the "Angel of Death" conducted an array of unspeakable human experiments and atrocities on prisoners of Hitler's Third Reich. He alone oversaw the deaths of perhaps as many as 400,000 people.

Through the 1960's, 1970's, and 1980's, Mengele was the world's most hunted war criminal. In 1985, rumors of his impending capture reached a fevered pitch, and many wondered whether the "Angel of Death" finally would be brought to trial and forced to answer for his crimes. Unfortunately, he wasn't. A German couple living in Brazil showed authorities a grave near the village of Embu and told them that the body beneath the soil was Josef Mengele.

Scientists from the United States, Germany, and Austria took part in the examination of the skeletal remains. They determined that the bones were that of a Caucasian male whose size and age matched that of Mengele. Unfortunately, Mengele's Nazi SS file was sketchy at best and, in particular, his hand-drawn 1938 dental chart was **inexact**. The chart revealed that Mengele had 12 fillings but didn't pinpoint their location and made no mention of his gap-toothed smile.

German forensic anthropologist Richard Helmer, who had been working with photographic superimposition, took a photograph of the skull from the grave and marked more than 30 identifying points before superimposing a known photo of Mengele over the skull photo. Helmer determined that the match was perfect and was convinced that the bones were those of Mengele. He was right. In 1992, DNA materials obtained from the bones and compared with samples taken from Mengele's relatives proved to be a match. The "Angel of Death" had been found.

19. Do you think Josef Mengele was a serial killer? Why or why not?

20. Based on context clues, what does inexact mean?

21. Explain how Mengele was confirmed to be the body in Brazil.

Get a Grip: Cadaveric Spasm

Cadaveric spasm, which often is confused with rigor mortis, is the instantaneous onset of stiffness throughout the body. A corpse that's affected by cadaveric spasm is locked in the exact posture it was in at the moment of death. The corpse can be frozen sitting, reaching, or in virtually any position. Cadaveric spasm occurs under extremely violent physical and emotional circumstances. A victim may be fighting to get hold of a knife at the moment of death, for example, and cadaveric spasm will cause his or her hand to get a death grip on the weapon.

22. What is a Cadaveric Spasm (in your own words).

23. When do Cadaveric Spasms happen?

24. Come up with an example (it can be made up) of how a Cadaveric Spasm may help to solve a case.

Operation Iceman and Cyanide Sandwich

In September 1983, the corpse of a man was found in a wooded area of Rockland County, New York. Although the body was wrapped in plastic and appeared to have suffered a single gunshot wound to the head, things were not quite as simple as they seemed for medical examiner Dr. Frederick Zugibe. Dr. Zugibe performed an autopsy and was shocked to find that the body seemed to be decaying from the outside in, rather than the inside out, which is the normal pattern. Moreover, the internal organs contained ice crystals. The body obviously had been frozen in an attempt to disguise the true time of death.

By soaking the victim's hands in water and glycerin, Dr. Zugibe was able to rehydrate them enough to obtain finger prints and subsequently identify the body as that of 58 year-old Louis Masgay, a Pennsylvania store-owner who had been missing since July 1, 1981. Because Masgay was found wearing the clothes in which he was last seen, Dr. Zugibe concluded he probably had been killed on that day.

Police determined that on the day he disappeared, Masgay had an appointment with Richard Kuklinski. As the police began investigating Kuklinski, a disturbing pattern emerged. Many people who had dealings with Kuklinski had ended up dead or missing. Police set up a sting they called Operation Iceman to trap Kuklinski in an attempted murder. Dominick Polifrone, an agent with the Bureau of Alcohol, Tobacco, and Firearms, went undercover and convinced Kuklinski that he could supply him with 10 kilos of cocaine and asked him whether he had any ideas about how to get rid of a bothersome competitor.

Kuklinski took the bait, telling Agent Polifrone that cyanide was his weapon of choice, but that he didn't have ready access to any. Polifrone said he could supply it, so they arranged to meet the target (Kuklinski's "competitor") at a motel, where Kuklinski planned to add cyanide to sandwiches and get the target to eat one. Fearful that an accident might occur, Polifrone supplied a jar of quinine, telling Kuklinski it was cyanide. When Kuklinski doctored the sandwiches, he was arrested for attempted murder. He initially was convicted of killing two of the other missing men and later confessed to several others, including the murder of the unfortunate Louis Masgay.

25. Why was the pattern of decay in the body important to the case?

26. Explain why Dr. Z knew that Masgay had been killed weeks before he was discovered.

27. Do you think Kiklinski was a serial killer? Why or why not?

28. What was Masgay's Cause of Death?

29. What was Masgay's Manner of Death?

30. What was Masgay's Mechanism of death?

Planting the Dead

At a farm in Tennessee, bodies are planted in shallow graves, left lying on the ground with only a light blanket of brush, and tied upright to tree trunks. The site is not the playground of a serial killer, but a university facility that conducts macabre experiments designed to determine exactly what happens to bodies after death.

In the 1970's, William Bass III, a forensic anthropologist, established the University of Tennessee Forensic Anthropology Facility (also known as The Body Farm) in Knoxville to study the rate and pattern of decomposition under various environmental conditions. It's basically an outdoor laboratory for studying taphonomy (what happens to human bodies after death).

Bass began with a single body but since has studied hundreds. At any one time, the farm may have bodies decomposing in the open in either sun or shade, buried at various depths and in varying soil conditions, in water, in the trunks of cars, or hanging from scaffolding. With each one comes a better understanding of the decay process.

The FBI regularly uses the expertise of Bass and information obtained from research performed at The Body Farm, and directors at the farm teach taphonomy classes for the FBI.

Researchers at the farm plan to produce an atlas of body decomposition for law enforcement, help perfect ground-penetrating radar and other body-locating techniques, and understand the chemistry of decomposition better so that more accurate estimations of the time of death become the norm. And that's just for starters. The ultimate goal is to develop a series of such sites in various parts of the country to enable researchers to study decomposition under varying climatic conditions.

31. Would you be interested in studying forensics at The Body Farm? Why or why not?

32. Do you think the body farm is morally ok? Why or why not?

Matching bite marks to teeth

On August 7, 1867, after an all-night search, the body of missing 15-year-old Linda Peacock of Biggar, Scotland, was found in a cemetery. She had been beaten and then strangled with a rope. No evidence of rape was found, but a bruise on her arm turned out to be a bite mark that appeared to indicate one of the killer's teeth was unusually jagged.

Police interviewed virtually all of the 2,000 residents of Biggar and extended their interrogations to members of nearby communities. The investigation ultimately led police to a local low-security detention center for juvenile offenders. Twenty-nine residents at the center were asked to give dental impressions, which then were compared with the bite marks found on the victim. Visual inspections of the impressions eliminated all but five of the suspects. These young men were called in for further examination, which enabled police to narrow the suspect list to one person- Gordon Hay.

Hay suffered from *hypocalcination*, a rare disorder that causes pits and craters in the teeth. These pits and craters were matched with the pattern of the dental abrasions on the girl's corpse, and Gordon Hay was convicted of murder.

33. What was Peacock's Cause of Death?

33. What was Peacock's Manner of Death?

34. What was Peacock's Mechanism of death?

35. In your own words, what is hypocalcination?

36. How did it lead to the discovery of the murderer?

Lightning's Electrifying Potential

Lightning, which thus far has not been harnessed for homicidal purposes, causes accidental deaths with a direct current (DC) in voltages that range from 3 million to 200 million volts. Fortunately, when lightning strikes, the current is very brief, averaging between 1 and 100 milliseconds.

Injuries caused by lightning primarily are caused by the body's conversion of electrical energy into heat. The current can burn and char the skin, scorch the clothing, and fuse or melt metal objects in the victim's pockets, buttons on his shirt, belt buckles, and the fillings in his teeth.

All the tissues of the body are susceptible to injury from lightning. The heart, liver, kidneys, bone marrow, brain, spinal cord, and muscles can suffer permanent damage in people who survive.

One way to tell when someone's been struck by lightning are occurrences of something called *Lichtenberg figures*, which first were described by German physicist Georg Christoph Lichtenberg in 1777. He discovered a painless, red fernlike or arborescent pattern across the back, shoulder, buttocks, or legs of victims, which tends to fade within 12 to 48 hours. Lichtenberg figures rarely occur, and their cause is unclear, but when they're seen, they're *pathognomonic* (absolutely **indicative**) of lightning strikes.

37. What manner of death is lightning?

38. How can some people live through a lightning strike when the volts are so high?

39. Describe what a Lichtenberg figure is and how it was named.

40. What do you think indicative means?