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Ashes to Ashes, Dust to Dust

by Tina Osornio

(English 1102)

Every year, enough bodies are buried in America to fill a land mass of two square miles (Iserson 303). With global warming becoming a central issue today, the need to increase biodiversity by way of land conservation is pertinent. When embalming fluids were introduced to body preservation techniques in the United States during the Civil War, it was likely that no one anticipated the problem ahead. If the dead must be allowed to rest in peace, and the dead lay well preserved six feet under, then where will the newly deceased rest as time elapses and cemeteries become overpopulated? Every time a traditional funeral takes place, a corpse is filled with chemicals called embalming fluids, often placed in a metal casket, then covered by layers of cement. Add a headstone to the burial site, and the land is permanently marked untouchable (out of respect for the dead). Some may suggest cremation as a solution. Although cremation decreases the amount of space needed for body disposal, it still damages the environment with harmful emissions. Fortunately, there are eco-friendly alternatives to the traditional embalment and burial such as green burials, improved cremations, and cutting edge options for body disposal. By choosing an alternative means of body disposal, the ecological footprint produced by traditional funeral rituals would be significantly reduced.

If these eco-friendly body disposal techniques seem like new ideas, think again. The ancient Tibetan Buddhists used a striking practice for body disposal known as "sky burial" which was very environmentally friendly. In the occurrence of a sky burial, a dead body is left unpreserved for three days, then placed outside and dismembered by a monk. Following the dismemberment, more than one hundred waiting vultures are directed to devour the remains (Des Chenes 85). Such a ritual may seem grisly to modern societies in which death is a taboo subject. It is likely that the sky burial ritual will never be embraced by other cultures. Nonetheless, it is interesting to note that the ritual is still practiced today by Tibetan Buddhists.

Other groups, like the Jewish and Amish, have historically been "green" in their burial preparations (Milano 24). During these funerals, the bodies are not preserved but buried in a plain casket. This was the way things were done by early Americans.

Although embalming has been around since ancient times, e.g., Egyptian mummification, it was not until the Civil War that practices gave way to modern techniques and formulas for fluids. It was at this time that Thomas H. Holmes, an expelled New York University medical student, began embalming the fallen soldiers of the war for a \$100 fee per body (Iserson 239). The use of embalming fluids kept dead soldiers from decomposing before returning home to their families.

The fluids Holmes used during Civil War times, not unlike the ones used today, are a cocktail of chemicals. Early solutions used in America were a mix of arsenic and alcohol. However, by the early 1900s, risks of handling the fatally poisonous arsenic proved to be dangerous. Such mixtures were removed from morticians' supply shelves. Consequently, formaldehyde, a chemical already being used in other embalming solutions, soon became an embalmer's keystone chemical, which is still used today (Iserson 240).

Although formaldehyde is not as dangerous as arsenic, it carries out unnatural processes. Embalming fluids replace a corpse's blood after it is drained from the arterial artery. This makes the corpse presentable for funeral services, allowing it to appear life-like. According to the American Board of Funeral Service Education, "[embalming is] a process of chemically treating the dead

human body to reduce the presence and growth of microorganisms, to retard organic decomposition..." (Iserson 226). Kenneth V. Iserson, M.D., MBA, Professor of Emergency Medicine and Director of the Arizona Bioethics Program at the University of Arizona College of Medicine, further explains the effects of embalming fluids in his book titled *Death to Dust: What Happens to Dead Bodies?*:

Chemists describe the process as coagulating the body's proteins (like dropping raw egg white into a hot frying pan), temporarily hardening and preserving them from destruction by the body's enzymes or bacteria. Bacteria, also composed of proteins, suffer the same fate. The unpleasant smell of embalming chemicals also dissuades insects and animals from molesting the body. (226)

Ultimately, embalming fluids go against nature in the course of decomposition. It enables a corpse to remain well preserved in the ground for a lengthy amount of time. The slow decomposition of dead bodies and the upholding of burial spaces can be detrimental to the environment's biodiversity over time.

Although it would seem, embalming fluid is not the sole factor behind traditional burials harming the environment. One must also take into account Earth's natural resources that are consumed in order to bury a body. Every year, 90,000 tons of steel and 30 million tons of hardwood are used in casket manufacturing. Not to mention the 1.6 million tons of concrete used seal burial vaults. "We can rebuild the Golden Gate Bridge with that amount of metal," said Joe Sehee, executive director of the Green Burial Council. "The amount of concrete is enough to build a two-lane highway from New York to Detroit" (Streit).

Considering the negative aspects that traditional burials have against the environment, many contemplate cremation. This body disposal technique has also been practiced since ancient times. One particular group, the Hindus, serve as an example of those who practice cremation. Immediately after the death of a loved one, Hindu family members personally wash and aesthetically prepare the corpse. Afterwards, all but the deceased's head is wrapped in a shroud and carried to the burning grounds. There, mourners view the cremation ceremony. Once the process is completed, the ashes are collected and scattered in a body of water (Des Chenes 12).

Traditional Hindu cremation ceremonies allow the use of modern crematories, which also happens to be the way Americans execute cremation (Des Chenes 13). With today's U.S. cremation rate nearly double what it was in 1985, there grows a concern (Iserson 308). Pollution from crematory stacks is adding to the green house effect. Fossil fuels are burned during cremation. Additionally, mercury from dental fillings is released into the air ("FAQs & Fiction"). Such emissions will increase as the cremation rate continues to rise.

Along with the cremation rate rising, so will the death rate. As Baby Boomers reach their twilight years, the annual death rate will increase largely. In the U.S., this rate is projected to reach 13.67 deaths per 1,000 people in 2050, up from a rate of 8.82 in 2000. An estimated 4.1 million Americans will die in 2050 (Iserson 4). Considering that the topic of death is a taboo in American society, some may wonder if the Boomers have started considering what problems their sum deaths will cause.

In fact, issues of body disposal are on the minds of Boomers. Mark Harris, former environmental columnist with the Los Angeles Times Syndicate, author of "Grave Matters: A Journey Through the Modern Funeral Industry to a Natural Way of Burial," and a Boomer himself, believes that the group is the driving force behind the up rise of the "green burial" movement. "I think green burial speaks to the old-fashioned values of thrift, simplicity and love for family," said Harris, "things that resonate with the vast majority of Americans." (qtd. in Whipps)

The green burial movement makes known various options of eco-friendly body disposal

practices. The movement promotes eco-friendly alternatives to traditional burials and offers the facts on newer crematoriums. Keeping up with the movement, U.S. crematories meet all environmental guidelines mandated by the U.S. Environmental Protection Agency (Des Chenes 47). As for ground burials, green burials are being introduced to the public and its popularity is on the rise. Currently, there are fifteen "green cemeteries" in the U.S. ("FAQs & Fiction"). Green cemeteries allow natural body decomposition, resulting in saved biodiversity.

Though green cemeteries only allow green burials, such lands are not required *for* a green burial. Unless disposition is delayed, no U.S. state law requires a corpse to be embalmed and can be buried in any cemetery (Carlson 173). Like the Jewish and Amish funeral rituals, embalming fluids are absent in green burials.

There are other notable differences between a traditional burial and a green burial. During preparation of a green burial, the dead body is thoroughly washed, kept in a refrigerated room, and may have cosmetic applied. Although such steps are also done in preparation of a traditional burial, keep in mind that there are no embalming fluids used to preserve the body. Therefore, the funeral service must take place much sooner following the death. Usually, the service occurs the following day (Des Chenes 36). The body is buried in a biodegradable casket. Such caskets are known to be made of cardboard, pine, or bamboo. Sometimes, the body is not buried in a container at all. Rather, it is wrapped in a simple cotton shroud ("FAQs & Fiction"). Green burials cut down on the use of Earth's natural resources and allow quick decomposition.

Cremation devices have also seen improvements due to the green burial movement. New mechanisms, like exhaust stack monitors, detect when excessive smoke starts to accumulate in the device. The equipment automatically corrects the problem by adjusting fuel and air flow. Such devices reduce emissions of cremation, allowing them to settle into dust with the remains (Des Chenes 50). With safer cremation practices, body disposal by cremation proves to be eco-friendly and significantly reduces land space needed for burials.

Other, cutting edge options for disposal are also available to the public. The process of cremation is used in the first alternative described, which ultimately produces a coral reef composed of a loved one's remains. During the creation, cremated remains are placed in a mold designed to imitate the shape of an actual coral reef. The imitation reef is later cast into sea by loved ones during a dedication ceremony on a chartered vessel (*Create*). Once in shallow waters, the coral reef becomes home for organisms like algae, which feed larger organisms in the sea. This form of body disposal promotes biodiversity in an ocean environment.

Another advanced form of body disposal is called plastination. Invented by Gunther von Hagens in the late 70s, plastination is often seen as a radical practice. The process mainly involves placing a body in resin to remove moisture and fat, and exchanging these properties with polymers ("Plastination"). The body is then often dissected, torn apart, or sliced in order to reveal the anatomy of a human body. Although many may imagine this to be similar to a scene in a horror movie, the finished products serve as educational tools while on display in museums across the world. As odd as it may seem for people to choose plastination as a form of body disposal, it may become more of a popular option when land space for burials vanishes.

It has been speculated that if traditional burial rituals continue in American, there will be no more reserved land for new cemeteries by 2038 (Stevens). That's over a decade *before* the U.S. death rate is projected to reach an all time high! Americans will then be forced to choose alternatives to a traditional burial. Though its popularity is still growing, there is still a large majority of people who either do not understand or know what a green burial is. Those who are aware of eco-friendly body disposal techniques should inform others of the possibilities in funeral planning. In addition, donating to an organization like the Green Burial Council will enable such an institution to inform the public on a large scale, stressing the importance of better body disposal practices and the need for biodiversity. Donations would also aid in the creation of more green cemeteries across the United

States. Life does not last forever. Land is not unlimited. It's never too early to consider a final resting place.

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