

leftover pieces. Cadaver remainders were buried not out of respect but for lack of other options. The burials were hastily done, always at night and usually out behind the building.

To avoid the problematic odors that tend to accompany a shallow burial, anatomists came up with some creative solutions to the flesh disposal problem. A persistent rumor had them in cahoots with the keepers of London's wild animal menageries. Others were said to keep vultures on hand for the task, though if Berlioz is to be believed, the sparrows of the day were well up to the task. Richardson came across a reference to anatomists cooking down human bones and fat into "a substance like Spermaceti," which they used to make candles and soap. Whether these were used in the anatomists' homes or given away as gifts was not noted, but between these and the gastric-juice-etched nameplates, it's safe to say you really didn't want your name on an anatomist's Christmas gift list.

And so it went. For nearly a century, the shortage of legally dissectable bodies pitted the anatomist against the private citizen. By and large, it was the poor who had most to lose. For over time, entrepreneurs came up with an arsenal of antiresurrectionist products and services, affordable only by the upper class. Iron cages called mortsafes could be set in concrete above the grave or underground, around the coffin. Churches in Scotland built graveyard "dead houses," locked buildings where a body could be left to decompose until its structures and organs had disintegrated to the point where they were of no use to anatomists. You could buy patented spring-closure coffins, coffins outfitted with cast-iron corpse straps, double and even triple coffins. Appropriately, the anatomists were among the undertakers' best customers. Richardson relates that Sir Astley Cooper not only went for the triple coffin option but had the whole absurd Chinese-box affair housed in a hulking stone sarcophagus.

It was an Edinburgh anatomist named Robert Knox who

instigated anatomy's fatal PR blunder: the implicit sanctioning of murder for medicine. In 1828, one of Knox's assistants answered the door to find a pair of strangers in the courtyard with a cadaver at their feet. This was business as usual for anatomists of the day, and so Knox invited the men in. Perhaps he made them a cup of tea, who knows. Knox was, like Astley, a man of high social bearing. Although the men, William Burke and William Hare, were strangers, he cheerfully bought the body and accepted their story that the cadaver's relatives had made the body available for sale—though this was, given the public's abhorrence of dissection, an unlikely scenario.

The body, it turns out, had been a lodger at a boardinghouse run by Hare and his wife, in an Edinburgh slum called Tanner's Close. The man died in one of Hare's beds, and, being dead, was unable to come up with the money he owed for the nights he'd stayed. Hare wasn't one to forgive a debt, so he came up with what he thought to be a fair solution: He and Burke would haul the body to one of those anatomists they'd heard about over at Surgeons' Square. There they would sell it, kindly giving the lodger the opportunity, in death, to pay off what he'd neglected to in life.

When Burke and Hare found out how much money could be made selling corpses, they set about creating some of their own. Several weeks later, a down-and-out alcoholic took ill with fever while staying at Hare's flophouse. Figuring the man to be well on his way to cadaverdom anyway, the men decided to speed things along. Hare pressed a pillow to the man's face while Burke laid his considerable body weight on top of him. Knox asked no questions and encouraged the men to come back soon. And they did, some fifteen times. The pair were either too ignorant to realize that the same money could be made digging up graves of the already dead or too lazy to undertake it.

A series of modern-day Burke-and-Hare-type killings took

place barely ten years ago, in Barranquilla, Colombia. The case centered on a garbage scavenger named Oscar Rafael Hernandez, who in March 1992 survived an attempt to murder him and sell his corpse to the local medical school as an anatomy lab specimen.* Like most of Colombia, Barranquilla lacked an organized recycling program, and hundreds of the city's destitute forge a living picking through garbage dumps for recyclables to sell. So scorned are these people that they—along with other social outcasts such as prostitutes and street urchins—are referred to as “disposables” and have often been murdered by right-wing “social cleansing” squads. As the story goes, guards from Universidad Libre had asked Hernandez if he wanted to come to the campus to collect some garbage, and then bludgeoned him over the head when he arrived. A *Los Angeles Times* account of the case has Hernandez awakening in a vat of formaldehyde alongside thirty corpses, a colorful if questionable detail omitted from other descriptions of the case. Either way, Hernandez came to and escaped to tell his tale.

Activist Juan Pablo Ordoñez investigated the case and claims that Hernandez was one of at least fourteen Barranquilla indigents murdered for medicine—even though an organized willed body program existed. According to Ordoñez's report, the national police had been unloading bodies gleaned from their own, in-house “social cleansing” activities and collecting \$150 per corpse from the university coffers. The school's security staff got wind of the setup and decided to get in on the action. At the time the investigation began, some fifty preserved bodies and body parts of questionable origin were found in the

* With the help of an interpreter, I got the number of an Oscar Rafael Hernandez living in Barranquilla. A woman answered the phone and said that Oscar was not in, whereupon my interpreter gamely asked her if Oscar was a garbage picker, and if he had been almost murdered by thugs who wanted to sell him to a medical school for dissection. A barrage of agitated Spanish ensued, which my interpreter summed up: “It's the wrong Oscar Rafael Hernandez.”

anatomy amphitheater. To date, no one from the university or the police has been arrested.

For his part, William Burke was eventually brought to justice. A crowd of more than 25,000 watched him hang. Hare was granted immunity, much to the disgust of the gallows crowd, who chanted “Burke Hare!”—meaning “Smother Hare,” “burke” having made its way into the popular vernacular as a synonym for “smother.” Hare probably did as much smothering as Burke, but “She's been hared!” lacks the pleasing Machiavelian fricatives of “She's been burked!” and the technicality is easily forgiven.

In a lovely sliver of poetic justice, Burke's corpse was, in keeping with the law of the day, dissected. As the lecture had been about the human brain, it seems unlikely that the body cavity would have been opened and notably rearranged, but perhaps this was thrown in after the fact, as a crowd pleaser. The following day the lab was opened to the public, and some thirty thousand vindicated gawkers filed past. The post-dissection cadaver was, by order of the judge, shipped to the Royal College of Surgeons of Edinburgh to have its bones made into a skeleton, which resides there to this day, along with one of several wallets made from Burke's skin.*

Though Knox was never charged for his role in the murders, public sentiment held him accountable. The freshness of the bodies, the fact that one had its head and feet cut off and others had blood oozing from the nose or ears—all of this should have raised the bristly Knox eyebrows. The anatomist clearly didn't care. Knox further sullied his reputation by preserving

*Sheena Jones, the secretary at the college who told me about the wallet—which she called a “pocket book,” nearly leading me to write that ladies' handbags had been made from Burke's hide—said it had been donated by one George Chiene, now deceased. Mrs. Jones did not know who had made or originally owned the wallet or whether Mr. Chiene had ever kept his money in it, but she observed that it looked like any other brown leather wallet and that “you would not know it is made from human skin.”

one of Burke and Hare's more comely corpses, the prostitute Mary Paterson, in a clear glass vat of alcohol in his lab.

When an inquiry by a lay committee into Knox's role generated no formal action against the doctor, a mob gathered the following day with an effigy of Knox. (The thing must not have looked a great deal like the man, for they felt the need to label it: "Knox, the associate of the infamous Hare," explained a large sign on its back.) The stuffed Knox was paraded through the streets to the house of the real Knox, where it was hung by its neck from a tree and then cut down and—fittingly—torn to pieces.

It was around this time that Parliament conceded that the anatomy problem had gotten a tad out of hand and convened a committee to brainstorm solutions. While the debate mainly focused on alternate sources of bodies—most notably, unclaimed corpses from hospitals, prisons, and workhouses—some physicians raised an interesting item of debate: Is human dissection really necessary? Can't anatomy be learned from models, drawings, preserved prosections?

There have been times and places, in history, when the answer to the question "Is human dissection necessary?" was unequivocally yes. Here are some examples of what can happen when you try to figure out how a human body works without actually opening one up. In ancient China, Confucian doctrine considered dissection a defilement of the human body and forbade its practice. This posed a problem for the Father of Chinese Medicine, Huang Ti, who, around 2600 B.C., set out to write an authoritative medical and anatomical text (*Nei Ch'ing*, or *Canon of Medicine*): As is evident from this passage—quoted in *Early History of Human Anatomy*—there are places where Huang is, through no fault of his own, rather clearly winging it:

The heart is a king, who rules over all organs of the body; the lungs are his executive, who carry out his orders; the liver is

his commandant, who keeps up the discipline; the gall bladder, his attorney general . . . and the spleen, his steward who supervises the five tastes. There are three burning spaces—the thorax, the abdomen and the pelvis—which are together responsible for the sewage system of the body.

To Huang Ti's credit, though, he managed, without ever disassembling a corpse, to figure out that "the blood of the body is under the control of the heart" and that "the blood current flows in a continuous circle and never stops." In other words, the man figured out what William Harvey figured out, four thousand years before Harvey and without laying open any family members.

Imperial Rome gives us another nice example of what happens to medicine when the government frowns on human dissection. Galen, one of history's most revered anatomists, whose texts went unchallenged for centuries, never once dissected a human cadaver. In his post as surgeon to the gladiators, he had a frequent, if piecemeal, window on the human interior in the form of gaping sword wounds and lion claw lacerations. He also dissected a good sum of animals, preferably apes, which he believed to be anatomically identical to humans, especially, he maintained, if the ape had a round face. The great Renaissance anatomist Vesalius later pointed out that there are two hundred anatomical differences between apes and humans in skeletal structure alone. (Whatever Galen's shortcomings as a comparative anatomist, the man is to be respected for his ingenuity, for procuring apes in ancient Rome can't have been easy.) He got a lot right, it's just that he also got a fair amount wrong. His drawings showed five-lobed livers and hearts with three ventricles.

The ancient Greeks were similarly adrift when it came to human anatomy. Like Galen, Hippocrates never dissected a human cadaver—he called dissection "unpleasant if not cruel."