ING THE DEAD RAISING THE D

After the terrorist attack on Nairobi's Westgate Mall last fall, the grisly job of identifying corpses fell to RCMP Sgt. Diane Cockle, one of Canada's premier forensic archaeologists and a world expert in our worst actions

BY ROBERTA STALEY ////// PHOTOGRAPHS BY CARLO RICCI

"I can't tell you how many homicides I've gone to where the reason for killing some one is because he drank the last beer. It shocks me how much hate there is"

SEPTEMBER 28. RCMP Sgt. Diane Cockle and a dozen officers picked their way along the dark corridors of the Westgate Mall in Nairobi, Kenya. She expected to find weapons and dozens, possibly hundreds, of bodies—victims of the 80-hour attack by the al-Qaeda-linked Somali extremist group al-Shabab. But there was nothing: no bodies, no weapons. Just the tang of AK-47 gunfire in the air and the crunch of thousands of empty shell casings underfoot. Cockle had flown from Vancouver to add her forensic skills to a team of Americans, Israelis, Brits, Germans, and Kenyans investigating the attack. Cockle—embedded with the London Metropolitan Police's counterterrorism Specialist Operations SO15 branch—was there to assist with recovery and identification of the dead through fingerprinting, dental examination, and DNA collection. The march through the eerie mall, partially collapsed, dripping from a massive fire recently extinguished, confirmed one thing: police, civilians, and Red Cross workers had managed to extricate the 200 injured and approximately 150 dead. The next task would be grim: identifying the victims in the morgues.

As one of the RCMP's top forensic investigators, Cockle has on several occasions been invited to participate in international crimes involving terrorist groups. Her rarefied skills took shape as Saskatchewan's head archaeologist. Over six years, the RCMP called on her expertise to distinguish whether bones bleached under the hot Prairie sun were human or animal. It planted a seed. By joining the RCMP, she could apply all her education and experience to crime fighting. During the initial interview with the Mounties, Cockle, by then 29, told recruiters her plan: "I'm going to be a forensic crime scene investigator." It took her less than five years.

Early on, she recalls donning leaky hip waders and grabbing a pitchfork to search for body parts in a septic tank. Cockle grimaces slightly, "I can't tell you how many homicides I've gone to where the reason for killing someone off is because he drank the last beer." She learned to take the physical ravages of violent death in stride. Nairobi was different: she was shaken by what awaited her in the morgues. "The people were stacked on top of each other in fridges: babies, children, moms and dads—none of them in body bags. The wounds were unbelievable, and the stench and the conditions were horrifying." For two weeks, she toiled among the unidentified, taking photographs and trying to fingerprint scorched and severed hands. She worked with body parts—burned, crushed, or ripped apart by ballistics—and took tissue samples to send to the Nairobi DNA lab. In all, she says, she thinks she worked on a dozen victims.

Normally bubbly, Cockle is subdued on her return to Vancouver in October. The plane ride home gives her time to ponder whether she can continue. On the phone a few days later, her voice catches: "Sometimes it shocks me how much hate there is. To go and kill children and strangers—it's shocking."

Nairobi wasn't Cockle's first trip to Africa. She had been to Rwanda three times to exhume and examine victims of the 1994 genocide. She was Canada's forensic investigator in Niger following the al-Qaeda kidnapping of Canadian diplomats Robert Fowler and Louis Guay in 2008 and also helped identify hundreds of victims in Thailand of the 2004 Indian Ocean tsunami. Locally, she was part of the enormous team compiling evidence against serial killer Robert Pickton, who disposed of victims' remains on his Port Coquitlam pig farm. Forensic anthropologists were using conveyer belts to sift through 338,000 cubic metres of farm dirt in search of human bone. To expedite the excruciatingly slow and laborious operation, Cockle devised a forensic light system, utilizing equipment at Simon Fraser University's department of archaeology, that would fluoresce bone particles. Barbara J. Winter, who runs SFU's Museum of Archaeology and Ethnology, was so impressed she suggested the young officer enroll in a PhD program. The idea was appealing: a doctoral degree would boost Cockle's credibility as a court witness. For eight years she balanced studies of human decomposition with work. "I have a sign in my kitchen: 'You can sleep when you're dead,'" says Cockle, the third female Mountie to achieve a PhD while with the service.

For her studies, she gained access to the force's Violent Crime Linkage System database, which detects national homicide patterns to help catch serial killers. She spent thousands of hours sitting in review rooms in Ottawa and Vancouver, and selected 258 murder cases from the files. She devised a system with 46 criteria to classify human decomposition, including blood loss, alcohol and drug consumption, the coup de grâce itself (strangulation, beating, gunshot, knifing), and whether the deceased was clothed.

Cockle's work is so advanced, says thesis adviser Lynne Bell, that her PhD contains enough information for multiple academic articles. At 46, Cockle has become Canada's foremost expert on human decomposition. She can go to a crime scene and gather the evidence to explain the how and when death occurred. It is the why that remains inexplicable.

SGT. COCKLE—bloodstains!" She answers her phone at RCMP headquarters on Heather Street with a warm, cheery brogue. (She emigrated from Kilmarnock, Scotland, with her family as a teen.) Often it is her husband, Staff Sgt. David Thompson, a senior

LOVE ON THE BATTLEFIELD Diane Cockle met her husband, Staff Sgt. David Thompson, on the Pickton farm exhumation

Photo Credit

Photo Credit

Are those hatchet marks on a skull or the gnawing of hungry scavengers?

HAITI
The Canadian Disaster Victim Identification team, shortly after the 7.0 magnitude earthquake near Port-au-Prince in 2010

KENYA
A collapsed section over the Nakumatt supermarket. Almost all the children attending a cooking competition were killed when terrorists attacked Nairobi's Westgate mall in September 2013

THAILAND
The 2004 Indian Ocean tsunami accounted for approximately a quarter-million dead. The DVI team in Thailand prepares bodies for dental X-ray to identify the corpses

officer with Integrated Forensic Identification Services for the South Fraser, alerting her to the discovery of a body. (The two met on the Pickton investigation.) Cockle brings a comprehensive set of skills to a murder scene, along with an SUV full of equipment, such as Nikon cameras, lights, and blood detection instruments. Most murders are gory affairs, requiring bloodstain pattern analysis. This establishes the approximate location and position of the victim during the attack. Blood spatter tells her whether the assailant was injured and what kind of weapon was used. It also tracks the exit route of the perpetrator. Thompson says that Cockle detects patterns that other investigators simply don't see. In one case, "she was able to state that the blood left on a bedsheet was actually an impression of the murder weapon. Nobody else picked up on that."

Sometimes a crime scene calls for her to utilize her expertise in forensic taphonomy, a discipline that minutely reconstructs events from time of death to discovery of the corpse. Are those hatchet marks on a skull or the gnawing of hungry scavengers? Notably, she also invented the Forensic Probe, a tool for finding graves that was inspired by her undergraduate and master's degree work in archaeology at the University of Alberta. "I should have patented it," laments Cockle, lean and toned with blond braids and a winsome spray of freckles. The probe is a long metal stick with a bevelled end that detects density changes in the sedimentary layers of soil and rock. (Archaeologists use this method to find ancient habitation sites.) When a murder victim is buried in a clandestine grave, the natural stratigraphy—plants, topsoil, clay, and rocks—"can never be reconstituted." The probe detects these changes. Using this low-tech method, Cockle found a 17-year-old, three-metre-deep unmarked grave in rural Rwanda.

Human decomposition is complex, and influenced by not just the manner of death but the natural environment as well. British Columbia presents special challenges due to its combination of cool, damp weather, low humidity (in comparison to Ontario), and abundance of flora and fauna. Winter's chill, for example, kills bacteria in the gut, arresting decomposition. Without self-digestion, "we become a food source for the algae and fungi that are in the environment—they colonize us," she says. This allows a fungus like Trichophyton, which causes athlete's foot, to blossom on a corpse. The Penicillium fungus

Archival photos courtesy Diane Cockle

"I have a sign in my kitchen: 'You can sleep when you're dead' "

NIGER
As Canada's forensic investigator following the al-Qaeda kidnapping of two Canadian diplomats in 2008, Cockle examines fingerprint evidence in the Canadian embassy in Niamey

RWANDA
The 1994 genocide in Rwanda led to as many as 800,000 deaths. Victims discovered in a semi-subterranean memorial are examined, injuries logged

CANADA
Cockle examines a clandestine grave located outside Vancouver, removing the coffin for study of the body

can sprout grey-white bouquets on feet and hands. Corpses can also turn black, but is it from burning, bruising, or the ferrous sulphide that forms from iron in the blood? Knowing the difference helps establish the manner of death, she says.

Cockle is continuously expanding her know-how. Last summer, she went to the Yukon to study decomposition rates in cold, dry climates. Her subjects were the skinned carcasses of pigs (used extensively by forensic researchers due to the lack of hair, which makes decomposition changes visible) and roadkill bears—superior study subjects because once the skull is removed, they are relatively identical to humans.

The RCMP supports such study. It also doesn't put time or financial restrictions on murder probes, says Cockle. She has been eyeing the cuts facing colleagues in the United Kingdom, where privatization of the national Forensic Science Service has compromised standards and hampered police work. In the United States, squeezed municipal budgets have forced officers to let murder cases go cold. "It makes me happy to live in Canada."

Still, engaging daily with the worst of humanity takes its toll. She knows she's pushing the limits when revisited by a bizarre dream: "My teeth go all wobbly, and I'll be able to pull them out or they'll fall out. That's my big warning sign." Last year, the force instituted mandatory psychological testing for officers who run the risk of developing post-traumatic stress disorder. So far, Cockle's fine, thanks in part to her ability to compartmentalize horrors. Thompson is an empathetic sounding board. She'll go running near her home in Langley or pull out some historical fiction novel about the Black Death or the ancient Romans, or simply peruse *Scientific American*. Cockle also has the happy distraction of two young golden retrievers, Darwin and Phoenix, who stuck to her like Velcro when she returned from Nairobi, sensing her vulnerability and sadness. Though even that comfort has its dark side: "Canis familiaris does the most damage to bodies—remember that the next time Doggie licks you in the face," she says cheerfully.

For Cockle, the plane ride home from Kenya gave rise to reflection: "This is for a younger person. This is the last time." Deep inside, however, she knows that if asked, she'll respond to calls to help investigate future terrorist attacks—doing her part to restore justice and security. "But I need time to forget this one," she says. "I need to let the memories fade." **VM**