

The Scientist

Volume 22 | Issue 9 | Page 24

By Brendan Borrell

Maggot sleuthing

Two years ago, entomologist Richard Merritt from Michigan State University pulled an all-nighter in a Toronto hotel room to prepare for seven hours of testimony about a court case so controversial it precipitated the abolition of Canada's death penalty. As part of his testimony, Merritt had to review the size, age, and species of a handful of maggots photographed and described from a crime scene 47 years earlier; his conclusions could redeem the reputation of a man who has contested the guilty verdict ever since. "I've testified in about 25 trials," says Merritt, "and this was the most intense."

Last year, Merritt's testimony helped overturn the guilty verdict for Stephen Truscott, convicted in September 1959, at age 14, of murdering his 12-year old classmate, Lynne Harper, and sentenced to hang.



Richard Merritt

Photo by G.L. Kohuth / Michigan State University

Truscott was a popular boy in Clinton, Ontario, and, by all counts, Harper was fond of him: She was last seen hanging onto his bicycle as they pedaled along a country road in the early evening of June 9, 1959. Two days later, searchers found her corpse in the brush. She had been raped and strangled with her own blouse.

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Many felt authorities botched the murder investigation, and after a public outcry, Truscott's death sentence was commuted to life imprisonment. Authorities released Truscott after 10 years for good behavior. He changed his name, married, raised a family, and has maintained his innocence. In 2000, the Toronto-based Association in Defense of the Wrongfully Convicted agreed to take Truscott's case back into the courtroom, and they brought with them half a century's worth of advances in forensic science.

The new trial hinged on estimating Harper's time of death: Did she die on June 9 when Truscott could have done it, or was she killed the following day, when Truscott had a solid alibi? Early investigators believed that the position of digested food in her gut indicated that she must have died on the 9th, but that method has long since been discredited. At the time, a fastidious government entomologist named Elgin Brown also reared insect larvae collected from Harper's body and identified the adults, but that information was not included in time-of-death estimates.

When the case re-opened, Truscott's lawyers contacted Merritt, a fly specialist, to review the original forensic evidence, along with specimens collected from three pig corpses placed at the crime scene in 2006 by another expert, Sherah VanLaerhoven of the University of Windsor.

Merritt, the 63-year old former president of the American Board of Forensic Entomology, discovered his first maggots as a San Jose State University undergraduate in the 1960s. He worked a night shift as an ambulance driver, where he got exposure to hangings, stabbings, and horrific car accidents. One night, a San Jose resident reported a putrid smell in a downtown neighborhood, and Merritt responded to the call. He held his nose and stepped into the decrepit home, where he discovered an elderly woman, alive but comatose, her lower leg covered with thousands of maggots consuming the flesh - a condition known as myiasis. The woman died in the hospital a day later, but Merritt's scientific curiosity brought him back to the house after his shift, where he collected flies. With the help of a professor, the description of the case became his first publication in the journal *California Vector Views* (16:24-26,1969).

Decades of study later, Merritt reviewed the insect data collected for Truscott's case. Based on the high summer temperatures and larval growth rates, the half-millimeter blowfly maggots collected by Brown for the original trial were simply too small to have been laid on the 9th. "We plugged in the time of death and came to the conclusion that [Truscott] couldn't have done it," says Merritt. On August 28, 2007, after a six-year battle, the Ontario Court

of Appeal acquitted Truscott on all charges based, in large part, on the new forensic evidence.

In late May, Merritt sent a short email wishing the acquitted man well. Truscott wrote back thanking him for his help. "It brought closure to me," says Merritt, "because of what he'd gone through living with this stigma for 48 years."