Pioneer Science and the Great Plagues

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Turned out, dogs were not an ideal model for human influenza. The experimental disease was variable and, although pneumonia was complicated by secondary bacterial infection just as in human influenza, canine distemper was capriciously lethal: it destroyed the lymphoid system of the dog and consequently the dog’s capacity to produce immunity. Dogs that survived acute disease progressed to a variety of lethal, tissue-damaging processes, including destruction of intestinal linings, bloody diarrhea, and encephalitis. And using dogs seemed to be inhumane (and also would attract noisy antivivisection protests).

In 1924, Laidlaw and Dunkin began to use ferrets, highly susceptible to canine distemper, as an experimental animal. Nasal fluids from a dog sick with canine distemper, which they filtered to remove bacteria, when dropped into the nose of ferrets regularly produced disease. Within forty-eight hours, ferrets were dying of respiratory infection and pneumonia. This discovery of canine distemper virus by Laidlaw and Dunkin was the beginning of a long and distinguished decade that included a distemper vaccine that saved the lives of millions of puppies. Their research also gave rise to the discovery of human influenza virus at Mill Hill in the 1930s and, in the 1950s, to the discovery of interferons, a family of signaling proteins produced by virus-infected cells that induce nearby cells to activate their antiviral defenses and speed to recovery.

22. 1929: PRELUDE TO BAD TIMES

The stock market crash and bank failures of November 1929 put the entire country in a downward spiral and into the Great Depression. Urban folks were in the tank and seemed worse off since rural areas had adapted to hard times. But now there was widespread unemployment and financial collapse—not only in America but globally. For farmers there were bank failures, farm foreclosures, and loss of income. In Edenville, Iowa, both the Farmers Savings Bank and the Rhodes Savings Bank went under. For veterinary students, studies seemed to be more serious and frivolity less appropriate.

As the Christmas season of 1929 began, prospects for a merry holiday seemed grim. For those receiving the gift of a pet bird, there was an added unwelcome gift. In Baltimore, the pet shop on North Eutaw Street had parrots for sale. On
December 15, Simon Martin, a chamber of commerce worker in Annapolis, Maryland, bought a parrot for his wife, Lillian. He asked his daughter and her husband to keep the bird for ten days so that Lillian might be surprised on Christmas Eve. By then the parrot was not eating, had lost weight, and seemed to be breathing with difficulty; it had puffy inflamed eyes and droppings that were watery and greenish. The next day the parrot was dead. By the new year, the Martin families were severely ill with similar signs—cough, headache, and fever that rapidly progressed to pneumonia. On January 6, 1930, they were examined by a physician, who sent a report to the Baltimore City Health Department. Knowing of an outbreak in California of a disease among bird fanciers called parrot fever, the Health Department sent a telegram to the U.S. Public Health Service in Washington, D.C., which forwarded the message to George McCoy, director of the U.S. Hygienic Laboratory, the nation’s first medical microbiological facility.16

New cases of parrot fever soon appeared. Four employees of a Baltimore pet shop fell sick. Then, Daniel Hatfield, chief of communicable diseases in the Baltimore City Health Department, sickened and died on January 23; his
assistant, “Shorty” Anderson, died on February 8. Those deaths got political attention. In Baltimore the mayor alerted the governor. New cases popped up in Providence and Chicago. In Toledo, Ohio, a woman whose husband had returned from Cuba with two parrots died. The Washington Post reported that “parrot disease baffled the experts.” It had killed influential citizens and press coverage was immediate and intense.

About the same time, veterinarian Karl Friedrich Meyer, the director of the George Williams Hooper Foundation for Medical Research in California, reported in December 1929 that shell parakeets (lovebirds) from a San Francisco pet shop had caused pneumonia in humans. Meyer’s investigations on what he called psittacosis were instrumental in discovering the nature of the microorganism and how it spread in birds and other animals. Chlamydia psittaci became the prototype of a new class of animal and human pathogenic bacteria.

At the U.S. Hygienic Laboratory in Washington, D.C., medical pathologist Charles Armstrong had been placed in charge of the parrot fever investigation. Armstrong tracked down thirty-six parrots sold by the Baltimore pet store before Christmas and traced the disease to humans in several states. The causal bacterium was detected by injecting mice with samples of blood and nasal discharges from patients and examining their tissues for proof of disease. Armstrong sought the full host range of the organism by exposing parrots as well as guinea pigs, monkeys, and pigeons to infectious material.

George McCoy, the U.S. Hygienic Laboratory director, seeing the highly infectious nature of the disease and the hazards involved in laboratory work, tells Armstrong to be more careful in handling diseased animals. Armstrong’s response was that disinfecting premises, cages, and equipment would take time away from their studies. It was a mistake. Armstrong developed parrot fever, and in March, when the prognosis seemed lethal, McCoy took over the parrot fever work — successfully treating Armstrong with convalescent antiserum from a recovered human patient. Nine more Hygienic Laboratory employees sickened the next week and McCoy ordered the building evacuated, the test animals killed and incinerated, and the building fumigated. On May 26, 1930, the U.S. Congress passed the Ransdell Act, which provided $750,000 for destruction of the abandoned U.S. Hygienic Laboratory building and for construction of two new replacement buildings; Congress also approved a change in the laboratory’s name to the National Institute of Health.
In 1929, veterinary diagnostic laboratories were dangerous places. Ill-equipped to handle dangerous pathogens, their staff was at risk from rabies, tetanus, and other plagues. The laboratory at Iowa State College was still operating in the cramped quarters of a basement in the Veterinary Quadrangle. C. D. Rice, the veterinarian in charge, developed a small linear skin wound on the back of his neck. Rice had worn a rubber apron with a contaminated cloth band around his neck that passed over the area. The wound slowly progressed with nasty inflammation and redeveloping scabs. The site had been infected with *Brucella abortus*, the cause of brucellosis. There was no treatment and no cure. The disease rapidly progressed as bacteria spread into the bloodstream and throughout his body. Rice died after suffering for six weeks. His obituary in the campus magazine *The Alumnus* noted that after hovering between life and death for three weeks he...
died in the college hospital on November 18, 1929: His “infection went through its cycles, his temperature rising from normal to above 107 and falling at regular intervals. Each recurrent onset of the disease left him so much weaker.” Dean Stange gave the laudation at his funeral.

**The Enrollment Crises of the 1920s** had subsided. They had been severe at The Ohio State University, where the faculty committed to a promotional program to attract students. Tuition and fees were reduced, county agents were encouraged to promote veterinary school, and radio station WEAO (now WOSU) was used to promote college programs. It worked. In 1929, David S. White retired as dean after thirty-four years and was replaced by Oscar V. Brumley, veterinary pathologist, secretary of the college, and coach of the veterinary student soccer team that won the intercollegiate tournament. Brumley departmentalized and led the college to astonishing success for sixteen years.

As the fall term ended in 1929, academic deans were concerned about the declining morals of students and what seemed to be a declining interest of young people in veterinary medicine. After U.S. president Warren Harding died, the scandals of his presidency came into the light, including the oil rights Teapot Dome scandal, corruption in the Justice Department, a Veterans Bureau scandal, and Harding’s affairs with his mistresses. It seemed a losing task to promote virtue among the students.

The nationwide social ambience of the 1920s provided fodder for backsliding. To faculties, it seemed to be an “anything goes” environment, and the scandals of the Harding presidency did little in the way of providing examples. Old social rules were out. Iowa State College students were now allowed to play cards and dance. Alcohol was still excluded from campus and Dog Town, and Professor Covault still periodically made the rounds of the downtown bars to send any veterinary students home with a reprimand and threat of expulsion.

In 1929, near the campus of The Ohio State University, a twenty-four-year-old medical student named Theora Hix was found brutally murdered, her body dropped in a rifle range. An autopsy determined that she had been struck twenty-nine times in the head with an instrument like a ball-peen hammer; curiously, there was a discrete cut in the neck that with some precision had severed the carotid artery. Information from neighbors was that a short, stocky, well-dressed professional-looking man wearing glasses had been frequently seen with Hix. First settling on a young horticulture faculty member who had left
residua of his fixation and attempts to date Hix, the police received information that veterinary school professor Snook was the authentic boyfriend.

James Howard Snook was a successful and high-profile professor and head of the Department of Medicine in the veterinary school. He had invented the Snook hook, a surgical instrument used worldwide to retrieve the uterus from the abdominal cavity in spaying dogs and cats. He was a founding member of the Alpha Psi veterinary fraternity and a member of the U.S. Olympic Pistol Team, which won the gold medal in the men’s thirty-meter team military pistol event at the Olympics in Antwerp, Belgium.

Snook had a three-year sexual affair and wanted to end it and eliminate the traces to spare his wife and family from scandal. He was arrested and tried for the murder. The jury was shocked by the activities and the language used to describe their sexual encounters. Words unknown to the jurors were devastating to the case. Hix had been a femme fatale of sorts who used cocaine and barbital as well as cannabis and cantharis (aka Spanish fly), and Snook had helped her to procure drugs from an Ohio State University pharmacy. Worse from Snook’s view was that when petulant she taunted him that his penis was smaller than that of her other lover.

The trial lasted thirty days, but the jury took only twenty-eight minutes to convict Snook. He was sentenced to death and executed in the electric chair at the Ohio Penitentiary on February 28, 1930. Snook was buried in Columbus. His tombstone omitted his last name; it read simply James Howard.

23. PUBLIC HEALTH AND DISTRUST OF GOVERNMENT: THE TUBERCULIN WAR

For rural veterinarians, the 1930s were sobering times. Clients were paying the bills with meat and produce, and often with sewing machines, typewriters, and other accoutrements purchased in better times. Income in rural practices declined with livestock prices, and mass production of the Model T Ford accelerated its takeover of the horse. More veterinarians were leaving practice to work in public health; college courses in meat and dairy products inspection had become an integral part of veterinary education. But still, less than half of the animals produced for meat in the U.S. were subjected to government inspection — most were being killed by the butcher in small towns and villages.