Cavalry and was killed in action when he and ten men in a scouting detachment were ambushed during the Nez Percés War. His body was recovered and today lies in Fort Walla Walla Cemetery in Washington state.

The episodes of inferior horse husbandry and outbreaks of glanders—coupled with criminality in the Quartermaster Corps’s procurement of remounts—continued to cause astonishing noncombat deaths of horses. General McClellan, familiar with the superior horse care and veterinary services of the British and French armies, recommended that “a veterinary school should be attached to the establishment, for the instruction of officers and veterinarians.” The U.S. surgeon general did not act on the request. Army General Orders of 1879 mandated that veterinary surgeons in the cavalry be graduates of “an established and reputable veterinary school” and imposed the first standards for veterinary education in the United States. The French were at the forefront again; they had established a postgraduate school for military veterinarians, the École d’application du service vétérinaire, at their army cavalry school in Saumur.

7. THE CANADIAN MIDWEST: DIVERGENCE OF LOWER AND UPPER CANADA

The Grand Trunk Railway, Canada’s first major railroad, was completed from its headquarters in Montreal west to Sarnia in 1856. Tracks ran through Toronto, Guelph, and Upper Canada’s agricultural lands, completing a connection to Port Huron in Michigan and a rail line connection to Chicago. Four years later the Grand Trunk extended south to the cold-water port in Portland, Maine. Funded by London banks and promoted by new Canadian immigration programs, the railroad was a major economic stimulus to agriculture and livestock production. It also had an indirect but astonishing impact on veterinary medicine in North America.

Aware of the economic importance of animal diseases, the Upper Canada Board of Agriculture voted to establish a training school for veterinary surgeons and hired a local veterinarian, Scottish immigrant Andrew Smith, to teach a course in veterinary science. In 1861, Smith gave his first lectures to a small group in Toronto. The next years, more lectures, and in 1866 the first graduates of a formal course were awarded a diploma after being examined by veterinary surgeons appointed by the Board of Agriculture.
The new veterinary school was funded only in part by the provincial government. Operated as a private enterprise by Smith, it was known until 1869 as the Upper Canada Veterinary School — Upper in the St. Lawrence River, as opposed to Lower Canada of French Quebec. It offered the V.S. degree (for Veterinary Science). Smith, using his own money, constructed the first Canadian veterinary college building in Toronto in 1870.

Renamed the Ontario Veterinary College, it was from its origins in agriculture and the nature of Andrew Smith a practical school to deal with diseases of horses and livestock. It was the first successful school for veterinarians that survived in North America — started in the fledgling capital of Upper Canada by a Scotsman from Professor Dick’s school in Edinburgh. In running the school, Smith was aided by a fellow Edinburgh graduate, Duncan McEachran. The two published a textbook for farmers, The Canadian Horse and His Diseases. During the last quarter of the nineteenth century, the Ontario Veterinary College instructed more students and graduated more veterinarians than all other veterinary colleges in North America combined. Many of its students were from the United States, to which they returned to practice — and some to start veterinary schools.

After working three years at the Upper Canada Veterinary School in Toronto as professor of materia medica, McEachran, dissatisfied with what he believed to be faulty standards for admission and inadequate requirements for graduation, left for Montreal. The limiting factor for entrance had been only that the student must be able to read and write; even that could be waived for one year if the student was doing well.

In Montreal, McEachran established the Montreal Veterinary College in 1866 — starting with higher standards for admission and a more rigorous scientific curriculum. To teach botany, chemistry, and physiology, Principal McEachran invited professors from McGill University to include veterinary students in the classes. Physician William Osler accepted the offer to teach parasitology and physiology, admitting veterinary students to his lectures at the medical school. Osler, newly returned from a European tour of study, had just been appointed lecturer at Montreal Medical School. One year later he was advanced to professor and appointed chief of pathology at Montreal General Hospital.

Osler’s interest in parasitology had developed when he was a student at Toronto Medical School, where his professor of medicine, James Bovell, was
an enthusiastic naturalist. Bovell developed Osler’s early love of comparative medicine—and his first contact with veterinary medicine, advising him to study internal parasites in the dissecting room of the Ontario Veterinary College. When Bovell left Canada, Osler moved to Montreal and continued his medical studies at the more prestigious McGill University, graduating in 1872.

One of Osler’s lifelong friends was a veterinary officer in the Royal Artillery, Griffith Evans (who discovered *Trypanosoma evansi*, the cause of equine surra, while his unit was stationed in Montreal). Osler had just returned from European studies in Britain and Germany. He had absorbed Rudolf Virchow’s thoughts on comparative medicine and political drive to license veterinarians for public health purposes. After periods at the University of Pennsylvania, Johns Hopkins University, and Oxford University, Osler would be the most famous physician in North America, a reputation achieved through his revolutionary teaching—incorporating clinical patients into the medical curriculum and using autopsy material to teach pathology.

Osler introduced the microscope and clinical chemistry to the hospital and, from his own funds, purchased a dozen Hartnack microscopes from abroad. He began teaching parasitology at the Montreal Veterinary College in 1876, bringing his famous bedside teaching to the stables. An advertisement in a national journal for the introductory lecture at the Montreal Veterinary College for the 1882–1883 season lists Prof. William Osler, M.D., M.R.C.V.S.—Osler was not a licensed veterinarian; perhaps this was a deliberate error of McEachran.

Through careful postmortem work, Osler established the cause of a chronic respiratory condition in foxhounds at the Montreal Kennel Club as parasitic bronchitis. Continuing his legacy from Virchow, Osler investigated the origins of human echinococcosis—sending his veterinary student Albert Clement to the Montreal abattoir (he examined 1,037 hogs and found 76 animals affected). Osler recognized the intelligence of Clement and put him to work assisting on several projects. Studying an outbreak of hog cholera near Quebec, Osler provided the first good description of gross and microscopic pathology of that disease and recognized that bacteria were not involved: “Bacteria and micrococci were occasionally met with, but not in situations or numbers to be of great pathologic importance.” Louis Pasteur, Theobald Smith, D. E. Salmon, and others were ascribing hog cholera to a bacterium; they should have been listening to Osler. Bacteria as a cause of hog cholera was a notion not dispelled until the virus was identified in Iowa in 1903.
Osler was acclaimed father of Canadian comparative pathology, having used animal specimens for medical students and human tissues for his veterinary students. Osler successfully proposed the incorporation of the Montreal Veterinary College into McGill University as the Faculty of Comparative Medicine and Veterinary Science. Leaving Montreal for the University of Pennsylvania, he served on the board of veterinary journals and contributed translations of German articles for the *American Veterinary Review*. He had been elected president of the Montreal Veterinary Association and contributed heavily to the veterinary literature of the day, publishing papers on verminous bronchitis of dogs, trichinosis, and cysticercosis in the meat supply of Montreal; he distinguished anthrax from human typhoid fever when European experts were confusing the two.

**ALBERT W. CLEMENT** was a Massachusetts native educated at Harvard and Montreal Veterinary College. Recognizing his intellect, Osler awarded Clement with a residency in his medical school department of pathology. After three years under Osler, Clement spent two years in Europe. He spent periods at the Royal Veterinary College in London, the National Veterinary School in Alfort, France, and the pathological institute under Rudolf Virchow at the University of Berlin and with the veterinary pathologist Wilhelm Schütz at the Berlin Veterinary College (working sometimes at the Berlin central slaughterhouse). His great admiration for Berlin was in contrast with the absence of teaching in pathology in both London and Alfort. Clement’s first paper as sole author (and the first on pathology by a veterinarian in North America) was a study of kidney lesions of equine azoturia, now a model for rhabdomyolysis and capture myopathy of wild cervids.

Returning to Montreal, Clement left shortly for his career as a scientist, following Osler to the Johns Hopkins Hospital laboratory. In Baltimore, Clement published an article with Johns Hopkins medical pathologist William H. Welch on hog cholera and, in 1900, with W. G. MacCallum, Welch’s successor at Hopkins, on tuberculosis in a lion. Serving as a consultant to the Bureau of Animal Industry on pleuropneumonia, Clement was known for his textbook *Veterinary Post-Mortem Examinations*, for important national changes as president of the American Veterinary Medical Association, and for establishing sanitary laws in Maryland. He died of cardiac failure the next year in the Johns Hopkins Hospital, where William Osler was still physician-in-chief.
THERE WAS NO FRENCH LANGUAGE veterinary school in Canada until May 29, 1866, when the Quebec Provincial Parliament approved an act to provide $300 to establish a French language veterinary school in Montreal; the act specified that it be under the auspices of the Chamber of Agriculture of Lower Canada and that Duncan McEachran be director. The new French section in the Montreal Veterinary College of English-language McGill University began the next year, using faculty from Victoria University to teach basic sciences in French; its first class of two graduated in 1869.27

In 1876, when wheat became a dominant product in western Canada, the Quebec government began to induce farmers to establish dairy operations, offering to provide francophones with access to veterinary courses. One of the beneficiaries was an extraordinary immigrant, Victor-Théodule Daubigny. Daubigny had emigrated from France in 1872—like H. J. Detmers, to escape the consequences of the Franco-Prussian War.28 He did not speak English and Canada did not recognize his training as a notary clerk in France. He began farming and, when the opportunity came, enrolled in the French section of the veterinary school at McGill University in January of 1877.

McEachran, noting his farm experience and communication skills, hired Daubigny after graduation to head the French section. Leaving that position in 1877, Daubigny opened a French-speaking veterinary school, École Vétérinaire Français de Montréal, which took its first students on September 30, 1886; courses in chemistry, histology, and physiology were taught by the French-language Université Laval science faculty.29

Paul Paquin, a native of St. Andrews, Quebec, graduated from the French section of Montreal Veterinary College in 1883. Leaving for Missouri to organize a sanitary department, he was in the next year delegated to the Institut Pasteur for experience in the laboratories of Cornil and Ranvoir. Returning to the University of Missouri in 1884, Paquin established the Laboratory of Bacteriology, Pathology and Hygiene, billed as the first in the West. The next year Paquin was made state veterinarian in Missouri and was awarded an MD degree at the university in Columbia. Throughout his career, he was a major force for public health in Missouri.

Daubigny’s son, François-Théodule Daubigny, emigrated to Canada in 1882, earned his veterinary diploma in 1889, and stayed on as faculty, assuming much of the teaching (the school was renamed École de Médecine Comparée et de Science Vétérinaire de Montréal). He succeeded his father as director in 1909.
and successfully guided the school into the new age, with peak enrollments of sixty-two in 1916–1917 and a move to a new building on the Université Laval campus in 1914.

In the post–World War I era, enrollments dropped—to sixteen in 1920—and the school’s mounting debt drove the Université Laval/University of Montreal to establish a committee for change. The result was that the school was moved to the Institut Agricole d’Oka in 1928—placing the school under Trappist monks—with the new name École de Médecine Vétérinaire de la Province de Québec. Daubigny resigned the same year. The school was taken over by the Quebec Department of Agriculture in 1947 and moved to its present location at the University of Montreal campus in Saint-Hyacinthe. Today, a large multi-specialist clinic, the private Centre Vétérinaire Daubigny, serves the companion animal population of Quebec City.

The different curricula, standards, and connections to livestock diseases of the two English-speaking Canadian veterinary schools allowed Toronto to survive and Montreal to fail. Toronto’s Smith recognized what McGill’s McEachran did not, that nineteenth-century veterinary education should follow the practical dictates of the livestock industry. Their lessons left a similar pattern in the United States: Harvard failed, and Iowa survived. And in Canada, the practical French-speaking School of Veterinary Medicine, founded by farm boy Daubigny, survived and prospered.

8. PIONEERS IN THE MIDWEST FRONTIER: PHYSICIANS IN VETERINARY PRACTICE

The earliest cultural fabric of the midwestern American territories was created by English-speaking eastern Americans moving west. The language of the first rural settlers, earthier and less cultured than in the East, came from a unique North Midland English dialect carried through Ohio, Indiana, and Illinois, absorbing dialects and changing as it moved west. Migrating New Englanders carried along New Jersey English, the biblical language of the Quakers, and the Low German (Plattdeutsch) from Pennsylvania and the Maryland Hessian Barracks. There was also some West Country English with its curious use of the verb be—not “We are . . .” but “We be movin’ west.”