fairgrounds in Burlington were activated. The last of the guardsmen arrived by train from northwest Iowa on Thursday evening. There was no active resistance as the cattle were tested by twelve veterinarians.22

Most farmers understood the long-term benefits of having tuberculosis-free herds. But with the overzealous push by the organizers, it was understandable that farmers with productive purebred herds were those most angry about the test program. Loss of high-producing cows would take their profit, and in some cases their business, as the indemnity paid would not cover the price of an expensive purebred animal.23

At the other extreme there were poor-quality herds where a scammer welcomed the test. During the waiting period, after tuberculin had been injected under the skinfold, these scalawags would severely pinch the test site with pliers, causing acute inflammation that would be read the next day as positive. They would be paid indemnity for the worthless cow that greatly exceeded its price on the market. So it goes with any federal program ever devised.


Contradicting most predictions in the 1930s, veterinary colleges were having steadily increasing enrollments — up at both rural Iowa State College and urban Penn. The economic downturn had restricted incomes of rural veterinarians, but it had also reduced the “opportunity cost” of college. During good times, the cost of lost earnings by going to college is high; in the 1930s it was low — high school graduates, facing scarce jobs and poor wages, were increasingly leaning toward college. Veterinary medicine was changing focus, and that, too, was a pull into the profession.

At the 1933 annual meeting of the American Veterinary Medical Association in Chicago, Iowa State College dean C. H. Stange, with no small prescience, argued that educational change was required to meet “difficulties in getting some members of our profession, who were educated primarily in diseases of the horse, to interest themselves in diseases of cattle and swine. . . . The lack of interest in food hygiene in many sections is undoubtedly due very largely to the fact that the veterinarians as students received little or no instruction in this subject . . .” From Kansas State College, Dean Dykstra writes to Stange, congratulating him
on Iowa State’s progress and reminding him that of the eleven veterinary colleges in the U.S., five had deans that were Iowa State graduates.

Many editorialists, previously adamant that service to agriculture was the only legitimate objective of veterinary medicine, began to restate their opinions. The scientific education that veterinary students received in anatomy, physiology, pathology, and microbiology, as well as in public health and food safety, was increasing their value to the Army and to several governmental agencies, both state and federal. Employment opportunities for veterinary graduates were growing in meat inspection, disease control, and public health.

The great working strength of American society had prevailed in the 1930s. In tough economic times, Americans have less patience for the false and intrusive religious scolds that thrived in the bubbles of the Harding and Coolidge presidencies. Culture wars were a luxury the country could not afford. Once in office, Franklin Delano Roosevelt jump-started the repeal of Prohibition by asking Congress to legalize beer and wine just days after his March 1933 inauguration and declaration of a bank holiday. The precedent for science, education, and global responsibility was back, and there would be a forty-year exodus for the creationist ayatollahs to again begin their comeback in the 1970s.

Programs of the Roosevelt New Deal got people employed. The new Works Progress Administration, funded for nearly $5 billion (at 6.7 percent of the GDP), authorized building bridges, roads, dams, and school buildings. On the Iowa State campus there were new dormitories and laboratories, and Grant Wood began painting his murals on the walls of the library. The Civilian Conservation Corps was especially important in rural America. Because Iowa had already responded to the depression, a long-range, shovel-ready plan was in place when the CCC program was announced. So impressed was President Roosevelt that he told CCC director Fechner to “give Iowa all it wants.”

The massive nationwide closure of poorly run medical schools driven by the Flexner Report had fostered programs that were equally poor in their faculty and training. In Iowa, because of concern that the osteopathic and chiropractic schools lacked science in their programs, the 46th General Assembly passed the Iowa Basic Science Law in 1935. Signed by Governor Herring, the law created a unique medical board, the Iowa Board of Examiners in the Basic Sciences, which was to provide an “examination in the basic sciences” and “issue a certificate of proficiency in the basic sciences, which certificate shall be a pre-requisite to eligibility for examination for license to practice medicine and surgery, osteopathy,
osteopathic medicine and surgery and chiropractic or any other system or methods of healing.”

The board was to be composed of six members from universities with colleges of medicine, dentistry, and veterinary medicine and was authorized to conduct a written examination on the subjects of anatomy, physiology, chemistry, pathology, bacteriology, and hygiene. The examination was to be given in Des Moines four times each year with a fee of $10. Iowa State professor E. A. Benbrook was a charter member and, when the board was ordered to keep a correct record of the proceedings and the questions submitted in the examination of the applicant, the task was assigned to Benbrook, who had been elected the board secretary. About the same time, an addition to the Code of Iowa made operations of the University of Iowa Hospitals and Clinics and the Iowa State College veterinary hospital exempt from the law that prevented regents institutions from operating competitive businesses.

Dean Charles Stange died on Sunday morning, April 26, 1936, keeling over from a coronary thrombosis while digging dandelions in his front yard. His funeral in the Iowa State College Memorial Union was attended by eleven hundred people; his eight pallbearers were the college professors Covault, Bergman, Foust, Fowler, Walsh, Murray, Benbrook, and Merchant. Stange had been dean since 1909, president of the AMVA, the man behind moving science into the curriculum, and a major force for advancement in veterinary education in North America.

Veterinary students petitioned to have the new veterinary clinic, then under construction, named the Charles Henry Stange Memorial Clinic. Stange’s last legacy came from campus sculptor Christian Petersen, who, at Stange’s request, designed a large bas-relief for the college with the theme “the protection of human health by guarding animal health through the development of vaccines.” The dean at the Art Institute of Chicago, when asked to review the design, noted that “there was too much pain represented” in the “stress and struggles of the animals”; Petersen humanized the profession by adding the Gentle Doctor statue to stand in front of the bas-relief.

Iowa State’s Edward Benbrook had become one of the premier veterinary pathologists in the nation. Internationally renowned for expertise, he would become a charter member and president of the American College of Veterinary Pathologists and receive the highest distinction for faculty at Iowa State, Covault Distinguished Professor, in 1966. His students Hilton Smith, Russell
Runnells, and Leon (Zlotnick) Saunders achieved international fame in Texas, Michigan, and Pennsylvania. Perhaps his greatest legacies were two graduate students who became pioneers in veterinary medicine: Margaret Sloss, a woman, and Frederick Douglass Patterson, an African American.

25. NEW DEAL: DISCOVERIES IN INFECTIOUS DISEASE

Comparative medicine appeared as an academic department in the largest and more progressive medical institutions in the 1930s. Their mission was to exploit animal models of human genetic diseases, cancer, and nutritional deficiencies. It was a golden opportunity to systematically investigate how those diseases developed, using experiments in animals that could not be done in humans. Departments dedicated to comparative pathology appeared at research institutions as diverse as the University of Michigan, the Armed Forces Institute of Pathology, and the Mayo Clinic.

As microbiology had become an integral part of medicine, zoonotic diseases—tuberculosis, tetanus, and other diseases transmitted from animals to humans—moved to a dominant position in scientific research. Brucellosis was a centuries-old killer that caused abortion in cattle, contaminated milk, and involved a spectrum of disease in humans that included acute “undulant fever,” neurobrucellosis, and chronic infections of the spine. It was taking a heavy toll on farmers and consumers alike. In 1936, the Bureau of Animal Industry did field trials in Illinois, Ohio, Maryland, and Wisconsin on a new vaccine for brucellosis that would prevent abortion in cattle. The results were so good that strain 19 vaccination of calves was officially adopted to control brucellosis in cattle.

The brucellosis success story had started with a sick cow in the BAI dairy herd in Maryland. Victor’s Lady Matilda, born in Pennsylvania, joined the BAI’s herd, where she established two records for milk production before becoming sterile. Serologic tests indicated she had brucellosis, and John Buck, a BAI bacteriologist, isolated the causal *Brucella abortus* from Lady Matilda in June of 1923. Having determined the bacterium to be virulent, he moved on, mislaying a single slant culture under some papers, where it stayed for two years.16

Later, when Buck’s research had not been going well (killed bacteria were not working as vaccines), he remembered Louis Pasteur’s vaccine for fowl