The Epizooology of an Outbreak of Anthrax in Iowa

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On July the twenty-first, 1923, a shipment of cows and calves from Bone Steel, South Dakota arrived in Battle Creek, Iowa. Two cows were dead in one car and were removed by the rendering plant employee, the rest of the herd were taken to The United Farms, two days later three head died and were skinned. The manager refused to allow the carcasses to be fed to the hogs.

On the twenty-eighth another shipment arrived at Battle Creek. Six head were dead, three more head died in the stockyards. They were turned over to the rendering plant. The rest of the herd, cows and their calves and some bulls, were taken to the same farms. There were about eight hundred and seventeen head,—cows, calves and bulls all told. They continued to die, and the carcasses were only partially burned.

On August the third a steer on an adjoining farm showed colicy pains and died suddenly. Doctor W. H. Emphy of Battle Creek was called. He pronounced the condition anthrax and sent specimens to the Laboratories of the Purity Serum Company, Sioux City. Doctor Lumb confirmed the diagnosis. Doctor P. Malcolm, State Veterinarian at Des Moines was notified and went to the scene accompanied by Doctor S. H. McNutt of the Department of Investigation, Veterinary Division, Ames, Iowa. Doctor McNutt confirmed the diagnosis and the animals were placed in quarantine.

On August the 7th, the writer was deputized to take complete charge of the situation. On arriving at the farms it was found that twenty-nine head of bulls and cows had died and several more were nearing the end. The animals were on the bottom lands of Soldier River and the heavy rains which were falling daily covered the pastures with water and at times the river overflowed. The next day the disease appeared on an adjoining farm and on a farm three miles away in a different valley. Culture media stains and a microscope were phoned for and rushed to the outbreak in order to make quick diagnosis. Due to the heavy infection the animals in the large herd were given four times the
immunizing dose of immune serum, and the losses stopped immediately. Two weeks later the spore vaccine and immune serum were used.

On the second farm where five cows died and were properly and immediately disposed of, no more cases occurred. On the third farm serum alone was used and the losses ceased. On the fourth farm a second case occurred after an interval of sixteen days. The simultaneous method of inoculation was used with perfect results. It was extremely interesting to observe the almost immediate responses of an animal to immune serum. Cows in a stupid, staggering, dazed condition, carrying temperatures around 107°, respirations 120-140, when injected intravenously made rapid recoveries. Of equal interest and contrary to literature, only one suckling calf out of 425 head died of anthrax and this calf was almost six months of age. The calves were given no immune serum.

The most surprising of all was the enormous number of bacilli to be found in a loopful of blood taken from the ear five to six hours before death. The rapidity of growth at room temperature upon Huntoons hormone agar when inoculations are made direct from the blood stream of the live animal is almost unbelievable. After observing day after day the fondness of the crow to feed around the place of death of a carcass, it was found they were feeding on the fly larvae and the writer is thoroughly convinced they are a factor in the dissemination of the disease.

Considering the time elapsing before a diagnosis was made, the nature of the ground, the heavy rains, the poor manner in which the carcasses were first handled, and the number of animals involved, it was fortunate to lose only sixty head of cattle and hold the disease on four farms.

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