

# A Disease Treatment Discovery

ARTHUR M. ORUM, DVM<sup>†</sup>

Before 1940 we had no drugs that would specifically kill the bacteria of any disease, and the home remedies did very little good in treating most diseases. By 1940 the first sulfa drug that became available was sulfanilamide, and in my senior year in The College of Veterinary Medicine at Iowa State University I used it in treating infectious diseases in horses. It was used successfully especially in large animals such as horses and cattle. By 1946 I became interested in working out a treatment for swine dysentery that was such a costly disease for swine farmers. About 1936 my father, Clay Orum, had swine dysentery infect his feeder pigs weighing less than a hundred pounds, and like most cases he lost over one-third of the herd, and some of those that did live did not gain weight very well after the outbreak. As a veterinary practitioner I faced the dilemma of not being able to help many farmers that lost such high numbers of hogs from this disease.

Dr. W. B. Holmes owned and operated the Holmes Serum Company, a veterinary supply distributing company in Springfield, Illinois. In July, 1946, he called on me and told me about a new sulfamethazine injectable product he had received that was a fifty percent solution of Sulmet in 500cc bottles. Sulmet is the trade name for one company's sulfamethazine. I did not order any but a day or two later I was called out to a farm near Fountain Green, Illinois. This hog farmer had two hundred 160-175 pound hogs that were infected with the "bloody scours," and several had died. I called Dr. Holmes from Fountain Green and asked him to send me enough of this Sulmet to treat this herd. He said he would deliver the Sulmet to me that night. I asked the farmer to check with a dozen neighbors of his to provide the help of catching these large hogs, placing them in a V trough head down, stomach toward me, so that I could inject the medication into the pig's body cavity. This

was the fastest way of getting the drug into the bloodstream within a half hour. True to his word, Dr. Holmes delivered the shipment of Sulmet that night and the next morning at daybreak I started injecting these terribly sick hogs with the injectable sulfa. We worked almost all day, and the poor farmers were exhausted, but by the next morning even the very sickest hogs looked well!

I developed the idea that medication through the drinking water would be best. It would be less stressful on the hogs as well as the humans. I asked Dr. Holmes to see if he could get me a soluble sulfathiazole powder that I could put in the drinking water of the portable water fountains. He called me back and said he could and that the powder was in fifty pound drums. With a little experimenting I found that the best method was dissolving a pound of the sodium sulfathiazole in a gallon jug of water and using a pint of this solution to each thirty gallons of drinking water. In reading an article in our AVMA Research Journal, I found that physicians were experimenting with sodium arsinilate in humans that held some promise in stimulating the faster healing of the epithelium lining of the intestinal tract of humans. I decided to try it in swine since they, of all animals, are most like humans in body tissues. It took some time and study to work out the dosage in the drinking water of hogs, but when I did use the two drugs in combination the results were like a miracle. I used  $\frac{1}{4}$  pound of arsanilic acid in a one gallon jug of water, and this was used at the rate of one pint per gallon of drinking water. The cost was reasonable and the results were quick. It never changed in the thirty-five years I used them, \$8.50 per gallon for the pink and \$8 per gallon for the yellow. I used food coloring in the gallon jugs of solutions to differentiate the two: pink for the sulfathiazole sodium and yellow for the sodium arsinilate. I found the sodium sulfathiazole use could be stopped after the first week, and the sodium arsinilate should be used for two weeks. Most small farmers used 60-gallon water fountains and swine would

<sup>†</sup>Dr. Arthur M. Orum is 1941 graduate of Iowa State University College of Veterinary Medicine and a former editor of the ISU Veterinarian.

drink one gallon or less per pig per day, depending on their size. Dr. Holmes spread the word. I told all the veterinarians in my area. I preached the treatment at our veterinary associations and in publications. It was used in thousands of herds during that time. The number of swine saved would be many times that, and the dollars saved would be astronomical. It was the greatest single achievement of the dollars I saved for my clients in the treatment of specific swine disease during my practice years. I believe strongly in veterinarians sharing their discovery and knowledge with fellow veterinarians. It was

shared with hundreds, if not thousands of fellow veterinarians, and it is still used to this day. Other veterinarians found that it worked in respiratory disease, and it is commonly used in swine confinement businesses where respiratory problems are more common than enteric diseases. All important discoveries are not made in well-equipped laboratories although many are and they should be given credit for their great contributions to the livestock industry. But many discoveries are made by the individual veterinary practitioners and this is just one example. ♦

### Continued from page 25

“dog sitting” presentation. Upon necropsy, gross lesions included longitudinal fractures of lumbar vertebrae, massive hemorrhage into the spinal canals, and in one case, total transection of the spinal cord at L5-L6.<sup>4</sup> There were no specific microscopic lesions seen.

In our case, we observed similarities and several differences between the cases referenced. However, there is one common theme which can be inferred. There are few definitive ways of diagnosing lightning stroke in swine regardless of the housing system. That is why it is critical to obtain an accurate and complete history, and to do a thor-

ough physical exam and/or necropsy. More importantly, it is necessary to be a keen observer. Investigation of the animals' environment including feeding, watering, and flooring systems as well as malfunctioning wiring is paramount in arriving at a final diagnosis. ♦

**Acknowledgements:** I would like to thank Dr. Bernie Curran of the Scott County Animal Hospital for his mentorship and Dr. Brad Thacker for his editorial assistance with this report.

### **References**

1. Best, R, Lightning stroke in swine, *Canadian Veterinary Journal* 8:23-24, 1967.
2. Bildfell R, Carnat B, Lister D, Posterior paralysis and electrocution of swine caused by accidental electric shock, *Journal of Veterinary Diagnostic Investigation* 3:364-367, 1994.
3. Steffen D, Schoneweis D, Nelssen J, Hind limb paralysis from electrical shock in three gilt, *JAVMA* 200:812-813, 1992.
4. Sanford S, Josephson K, Vertebral fracture and posterior paralysis in feeder pigs caused by lightning strike, *Swine Health and Production* 1(2):36, 1993.

Guaranteed Lowest Price!

Surgical Instruments Direct  
from Manufacturer at

**30-50% OFF**  
**LIST PRICE!**

Three Instrument Grades:

- German Surgical Grade  
(Lifetime Warranty)
- Middleline® (Great Alternative)
- Economy  
(Affordably Priced)

Class Discounts  
Available!

**SPECTRUM**

Call 8:30-5 EST 1-800-444-5644

