

DON'T VACCINATE

YOUR HOGS



Hog Cholera and Other Hog Sickness and
the Failure of the Serum
Treatment

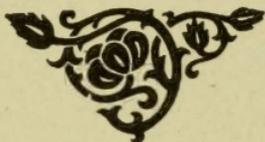
BY

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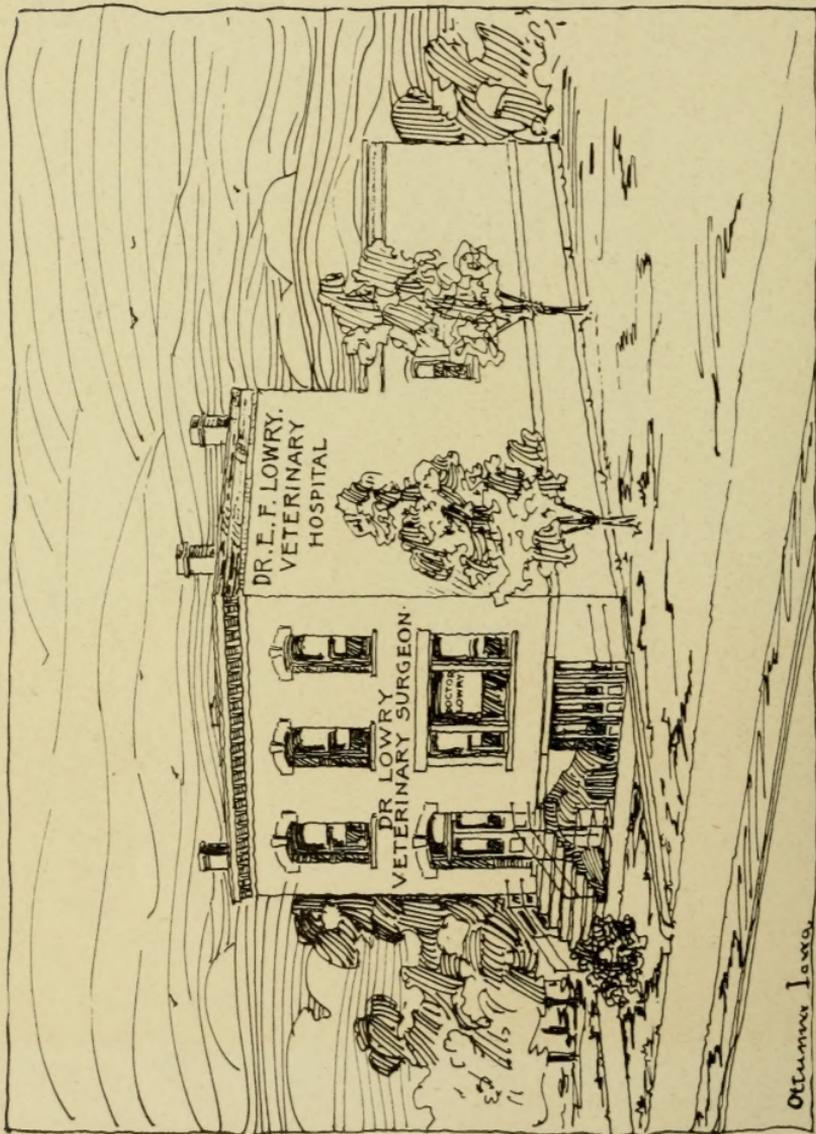
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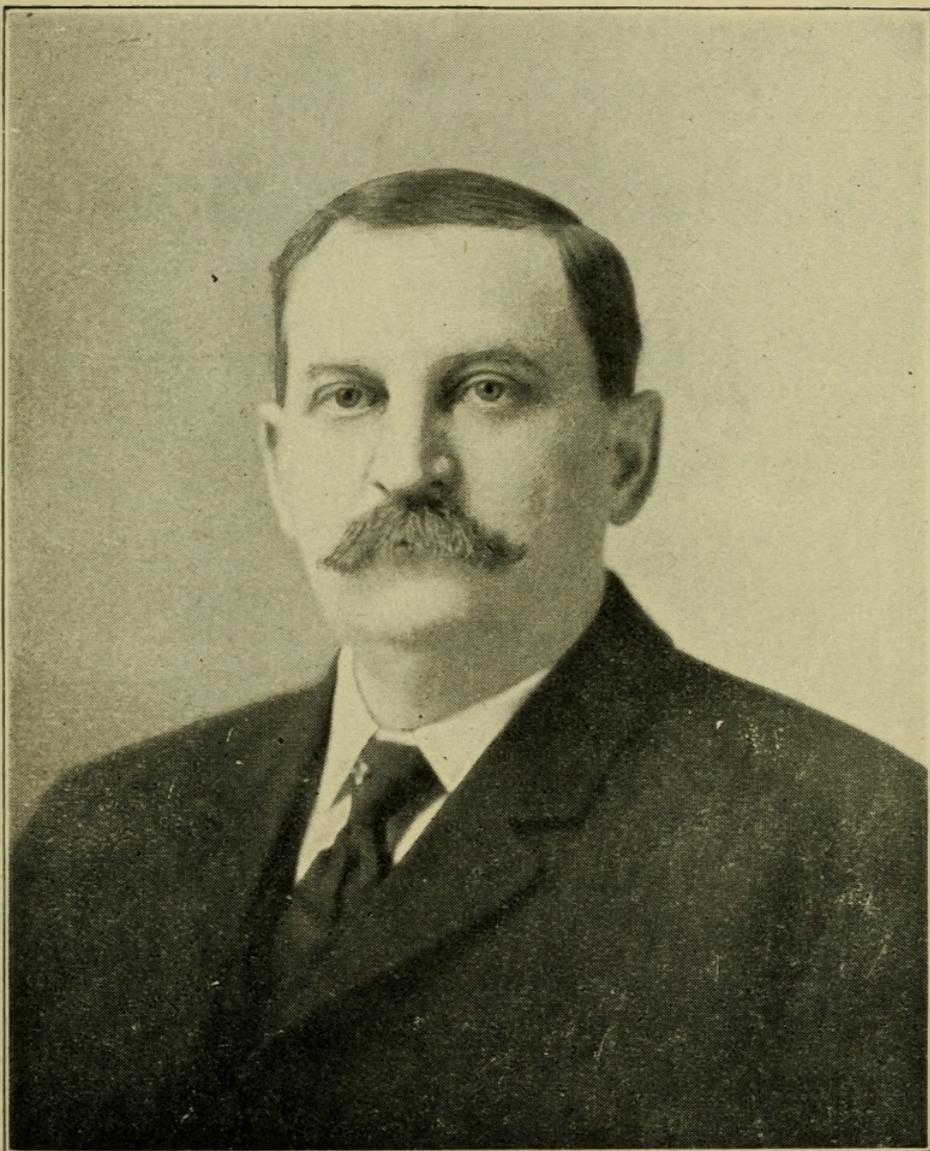
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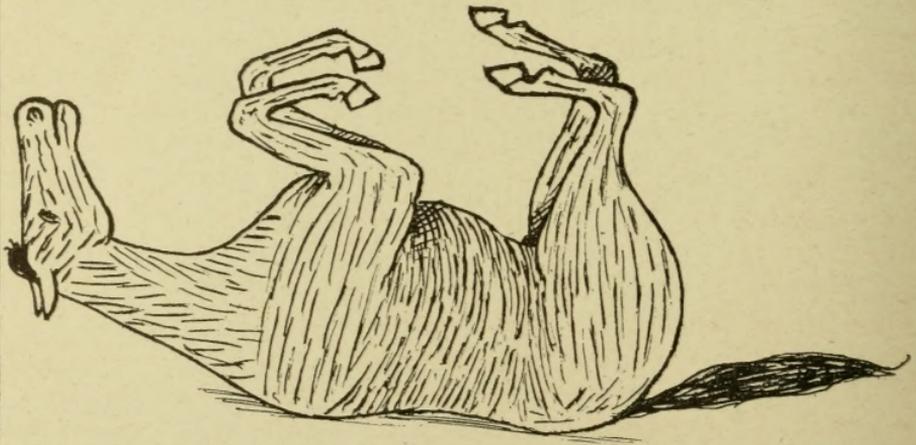


DR. E. F. LOWRY, VETERINARIAN
OTTUMWA, IOWA

VICE-PRESIDENT OF THE HAWKEYE PROGRESSIVE VETERINARY
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DR. E. F. LOWRY, V. S.

**OTTUMWA
I O W A**

There is no question of more importance, or one that is agitating the minds of the farmers in the great corn belt and hog raising sections of our country today more than, "How are we going to combat hog cholera, or what shall we do to save our hogs from the terrible devastating scourge of hog sickness that is sweeping over our country today?" Within the last two years this terrible disease has prevailed to such an extent that in some counties in Iowa thousands of our hogs of all ages and sizes have died. In some of the hog raising states of the middle west not enough hogs have been left to stock up with for future breeding, and farmers are at a loss to know what to do. Some have stocked up and tried to start again, only to again loose all their hogs. Statistical reports taken from the Agricultural Department and Bureau of Animal Industry, shows that the loss of hogs by sickness in the United States the last two years is estimated to be over twenty million dollars, various methods have been employed to try to stamp out this disease without any degree of success worth relying upon. Scientists, veterinarians, and the swine breeders have tried in vain to solve the problem of how to stamp out the disease. Opinion as to the cause of the disease has been divided as is also the best methods of treatment to stamp it out.

I myself have been greatly interested in this matter from a professional standpoint, having been in the practice of veterinary medicine in Iowa for the last twenty-eight years and located as I have been right in the heart of the great hog raising country, and in a section of

country where the losses from hog sickness have been greater than many other sections. I have been much interested in watching the results of the effort being put forth from different sources to control or stamp out the disease. For several years I have kept a close watch upon all systems of treatment used, also upon all experiments or tests, to try to determine the cause of the disease, as well as remedies prescribed to stamp it out. I am sorry to say that at last the one system of treatment settled upon as well as the diagnosis of the cause of the disease seems to me to all be a miserable failure, and after watching in silence, but with hope that the effort being put forth by different departments of states, as well as the Bureau of Animal Industry at Washington, might result in eventually solving the problem, and now after almost being compelled against my will to come to the conclusion that not only the diagnosis of the cause of the disease is wrong, but the treatment as prescribed for the eradication of the disease is wrong also.

I have at last made up my mind to give to the world my opinion as to the cause of the disease, as well as the best method to stamp it out. First I want to take up the subject of hog cholera as I have studied it by observation since 1862, and I believe I am right when I say, *no real hog cholera exists in the United States or has existed since 1877*. Although the disease now killing so many hogs is called hog cholera, I believe I am able to show that the disease killing hogs today is not the disease that killed so many thousand hogs from 1862 to 1877. I am nearly 60 years old. Was born and raised on a big stock farm in Indiana. My father was one of the big hog raisers of our section of the country. The neighbors adjoining farms with us as well as others all around us were good hog raisers. In 1862 our country had an outbreak of cholera, and thousands of hogs died all around us. My father never lost any nor did he ever

to my knowledge as long as he lived, ever have an epidemic of sickness of any kind among his hogs. Later on I will tell you why. Now this outbreak of cholera commenced in July 1862 and lasted until cold weather, and no serious outbreak was noticed again until 1873. This came and went pretty much as the outbreak in 1862. Disappearing with the cold weather; appearing again in 1877. This being a mild winter and no severe cold weather coming that winter until after the fore part of January, hogs continued to die until up in January of that year. Now I have seen thousands of sick and dead hogs since those years, have seen them in all stages of sickness, have seen them die all seasons of the year all through cold winter weather as well as hot weather, and I must confess to you frankly that I have never seen any hogs sick or dying like the hogs of those years. I saw in 1862, 1873, 1877 big fat hogs weighing 250 to 350 pounds sicken and die in from two to four hours; have seen as many as fifteen to twenty sicken and die in one herd in one day, and men who read this, who lived in Ohio, Indiana, and eastern Illinois in those days will back me up in this statement. How did those hogs sicken and die? A big fat hog would appear well, would probably be eating and all at once would begin to vomit (throw up), then suddenly purging or violent discharge of a watery nature pass from the bowels. Soon this would turn to bloody discharges and in a few hours the hog would be dead. Do hogs die with what is called cholera that way in these days? If so I have not seen them. In 1895 hogs began to die in Illinois, Wisconsin, Minnesota, Iowa, Kansas and Nebraska, this disease kept on through the fall and winter of 1895, 1896 and 1897, 1898, then for a time seemed to abate to almost a complete abandonment then at different periods since would break out again, and for the last two years there

seems to have been no let up either summer or winter in 1896.

While practicing my profession at Mason City in northern Iowa, I made up my mind to try if possible and find out what the real nature of the disease was that was killing so many hogs all over the country, and if possible get a remedy. I called to my assistance, C. M. C. Stewart, a druggist of Mason City (and a good well learned druggist he was too) also Dr. C. E. Haines, a graduated pharmacist from the Iowa University and we proceeded at once to get busy, we went into herds of sick hogs in several counties of southern Minnesota and northern Iowa. We studied the disease in all its stages. We held post mortem examinations upon hundreds of hogs, some of which had just died; others we killed. In all stages of sickness, we made chemical analysis of the blood and urine. We made microscopic examination of the bacilla and worms found in hundreds of the dead animals. We made microscopic examination of the excretions thrown off by the sick hogs in all stages of sickness. We examined carefully the conditions of all internal organs, after killing hogs in all stages of sickness; also a great many that had just died, we studied conditions under which thousands of hogs lived and were fed. Sanitary conditions, water, feed lots, change of feed, in fact everything possible to assist us to get at the nature and cause of the disease (or diseases), and we soon found the causes and diseases many.

We tried many different mixtures of medicines, and gave them in different ways to sick and well hogs in our effort to get a remedy. Altogether during 1896-7 we put in over 5 months of close hard work and study of this trouble. At times we would be greatly encouraged with the success we would have in some herds, and again would seem to make an entire failure in another herd

with the same course of treatment, *just as the failures are made today in trying to check the disease by the serum treatment.* Now what was the trouble? Just the same thing that caused us to fail, is causing the serum treatment to fail now. What is it? Why I will tell you where the trouble lies. We had not visited many herds in our course of research until we made the startling discovery that several different causes and diseases were killing hogs in the same herd, and we soon found out that we were up against a big proposition. The same conditions exist today and the same things that we found were killing hogs then are killing them now. I have visited several herds of sick hogs the last two years; quite a number just recently. I have held post mortem on a great many lately and I have found the same conditions present that existed then. And to go into a herd of sick hogs today and attempt to stop or even prevent sickness in that herd by inoculating that lot of hogs with the so called hog cholera serum alone, would be about as senseless an undertaking, as it would be for a physician to start out and attempt to cure, and prevent all the bacterial diseases the human family is heir to by the use of diptheria antitoxin alone.

About the time we gave up in despair and rested from our labors along this line, the government at Washington got busy. Men were sent out by the Bureau of Animal Industry under the instructions of Dr. D. E. Salmon who was chief of that department at that time, and a very competent able man he was too, these men were sent into Illinois, Iowa, Missouri, and I believe Kansas, and were assisted in their work by veterinarians from the state agricultural colleges and staff of the different state veterinarians. I awaited with much interest the reports of this commission. After spending several months studying the hog sickness in these different states, these men returned to Washington and if a full

and complete report was ever made public I never saw it, but in a year or so afterwards, 1899 I believe, the Bureau of Animal Industry issued a bulletin, called "Farmers Bulletin No. 24" treating upon hog cholera and swine plague. This is the first time the public had ever heard of a disease in the United States called swine plague. On the introductory page of this Bulletin No. 24, after speaking of hog cholera, it then says the research of the Bureau of Animal Industry conducted in the most thorough and systematic manner and with the aid of all the appliances of modern science, have shown that there is another disease called swine plague, which appears to be almost as common and fatal as hog cholera. These two diseases resemble each other very closely in their symptoms, and it requires an examination of the internal organs after the animals death, and in many cases a microscopical study to clearly distinguish between them.

Here I wish to call your attention to one of the reasons why the serum treatment has failed of its purpose when injected into hogs; not only in preventing or checking the disease, but has been the cause of starting sickness in many herds of hogs which has caused heavy loss to those who have tried it. This I will prove before I am through. Now in 1909 or after the claim was made that a serum had been discovered that could be injected into the hog hypodermically, that would prevent hog cholera, another bulletin was issued by the Bureau of Animal Industry at Washington, called "Hog Cholera Bulletin No. 379." By M. Dorset, M. D., chief of the biochemic division Bureau of Animal Industry.

On page 20 of this bulletin, we find these words: "The method of producing hog cholera serum is as follows: a vigorous, immune hog—that is one which has recovered from an attack of cholera, or one which has been exposed to the disease without contracting it,—is treated with a large quantity of blood from a hog sick

of cholera. After a week or two (I guess any old time will do), blood is drawn from the immune hog by cutting off the tail. After standing for awhile the blood clot is removed and the serum or fluid portion of the blood is mixed with a weak solution of carbolic acid (that is carbolic acid mixed with water that has been boiled) and filled into sterilized bottles. We now have in this fluid, portion of the immunes' blood, the serum which will protect hogs from hog cholera."

Now then Dr. Salmon says in Bulletin No. 24 that swine plague and hog cholera resemble each other so closely in their symptoms that it requires an examination of the internal organs after the animals death, and in many cases a microscopic study to clearly distinguish between the two. Now what I want to know is this, when one goes into the pen, and selects the sick hog and cut off the tail, and takes his blood and injects it into a hog supposed to be immune, then takes that blood serum and injects it into a hog to prevent it from having hog cholera, how does he know whether he is injecting a serum that will prevent hog cholera or give the hog the swine plague that he injects it into. Now then Dr. Salmon tells us in 1899 that swine plague is a disease that has its origin in the lungs. Dr. Dorset tells us the same thing 10 years later, they both tell us also that hog cholera is a disease of the stomach and bowels. Swine plague bacilla must be breathed into the lungs to produce the disease and kills the hog by producing acute pneumonia of inflammation of the tissue of the lungs. While hog cholera can be produced by the hog eating the germ or by the germ getting into the body through a wound or an abrasion of the skin. Now while the infection is produced in different ways, yet the results and symptoms of the disease are almost identical, and the best authority we have on the matter tell us there is but one way to tell one from the other, and that is post mor-

tem and microscopic study after death, yet they take the blood from sick hogs in a herd without knowing exactly whether he has swine plague or cholera and make a serum and use it on other hogs, and the result is that thousands that were apparently well before vaccinated, soon became sick and died after they were vaccinated. Now what of the cause of the two diseases? The men who have made the bacteriological search for the cause of these two diseases, tell us they have found the germ for swine plague and have made cultures of the germs, yet have they made any effort to produce an antitoxin to stamp out this disease which they say is as common and fatal as hog cholera? No they have not. But what of hog cholera on page 6, of Bulletin 379. Dr. Dorset says, the germ or microbe which causes hog cholera is present in the blood of sick hogs and also in the excretions and urine of the animal thus affected. It has been shown that the disease can be produced almost without fail, by inoculating well hogs, with the blood or urine from sick hogs.

The germ which is in the blood or urine of the sick hog is so small or else is of such structure that it cannot be seen with the strongest microscopes now available, this germ has never been cultivated in laboratories like other germs, and we know of it only by the effect which it produces. The germ therefore is classed as an invisible germ or micro-organism. (Dr. Dorset on page 6, Bulletin 379) *now I want Dr. Dorset or some one else* who is an advocate of the serum treatment, to tell me, if no one has ever seen the germ that produces hog cholera or has ever made a culture of these germs in a laboratory, how they know it is a germ that produces the disease, and if they do not know of its existence, the nature of its breeding, and reproduction, the length of time for its incubation and all other things about it, how have they obtained an antitoxin or serum for its destruction?

And yet without knowing these things of so much importance in obtaining an antitoxin, they tell us and for 7 years have been trying to show us that they have found the antitoxin for this disease, that will destroy the germ that has never been found or seen by the best scientists we have in our Bureau of Animal Industry, or anywhere else. Have they proven their theory to be a correct one to you, if so, I will frankly acknowledge they have not proven it to me, a theory may seem all right until it is put to a test then if it fails to bring about the desired results, there is something wrong with the theory, and that is just what has happened with the serum treatment for the last 7 years. There is no question as to the existence of the germ of swine plague, yet no effort has been made to produce a serum that will stop the ravages of this disease, can you tell me why. I am sure I do not know? Now the manner in which they produce this serum or antitoxin is contrary to every scientific principal of producing antitoxins for all other germ diseases, they tell us to take the blood of the sick hog, inject it into another hog, then take the blood of that hog, mix it with some boiled water with a little carbolic acid in it, and inject it into well hogs and it will keep them from getting sick. Yes and they have made a lot of fellows believe it to their sorrow.

Now is this the way our scientists have proceeded to obtain antitoxin to combat germ diseases in the human? Let us see. Diptheria antitoxin is obtained by inoculating big strong healthy horses with the bacilla from persons affected with diptheria, then the blood of these horses is taken through a system of chemical preparation and the diptheria antitoxin is obtained. Now why not inoculate a well person with bacilla from the person sick with diptheria, then the blood back from the person thus inoculated and use it in people to cure diptheria. Experience has proven that if this course was

pursued, that instead of destroying the disease in the person thus treated, it would produce the disease in that person.

What a small pox vaccine, do they inoculate a well person with a small pox germ in order to get a vaccine to overcome small pox? No, if they did it would produce the disease in every one thus inoculated. How do they get it then? By inoculating the cow with the small pox germ, and producing in the cow what is known as cow pox and at certain stages of the disease taking the scabs from the pustules or sores and drying them, then they are used to prevent small pox in the human, so it is with the manner of producing antitoxins for all human germ diseases.

What of tuberculosis, both in the human and animal? The germ has been found, thousands of cultures have been made of the tuberculosis germ, yet no antitoxin has yet been obtained. Why not inoculate strong healthy persons with the tubercle of the consumptive, take one who has spent days, weeks or months with, and caring for persons affected with tuberculosis and have not taken the disease, and is supposed to be immune from it, then take the blood of the person thus inoculated and use it on healthy persons to prevent or cure them of tuberculosis, what would the result be? Every person thus treated would perhaps have tuberculosis, yet they pursue this course in order to get an antitoxin or serum to prevent hog cholera.

Since beginning to write a history of this disease I have discovered some more records of rather ancient date. This was a clipping from a farm journal that I came in possession of in 1897, when I was making an effort to get at the cause and treatment of this disease, This article speaks of an outbreak of cholera among hogs in the year 1833 in the state of Ohio, and is the first record that we have of such a disease ever existing in the

United States, and it was given the name of hog cholera, because it was supposed that the origin of the disease came from hogs brought into the United States from Europe, and because of that fact and the similarity of this disease in hogs then, to that of cholera in the human, it was given the name of cholera. Now what was this similarity, why an attack of cholera in the human was noticed by a sudden attack of vomiting and purging, followed by violent discharges of blood from the bowels. People thus attacked only lived a short time, from 1 to 6 hours.

Now I have shown you that hogs attacked with cholera in 1862 and up to 1877 were taken suddenly sick and died just like people in the early times. Died of cholera, and it was a known fact, that the cause of an outbreak of cholera in the United States, was the infection from people who brought the disease into our country from some European country. Now we have not had an epidemic of cholera in people in the United States since 1873, although up to within a few years, occasionally a case would be discovered on board of some ship coming to our country from some foreign country. But the cases were put in quarentine at the port of entry and the disease kept out. But how did they learn to combat and keep out Asiatic cholera as it is called from our country. Why, by discovering the germ and making cultures of it in our laboratories, and this is so true, that almost any physician of today can tell you all about how to make culture of the cholera germ in any laboratory. But what of the hog cholera germ? I have shown you that the highest authority that we have in this country, tell us no one has ever seen the hog cholera germ, even with the most powerful microscope that we have. No one has ever been able to make cultures of it in our best equipped laboratories, yet it is a germ disease and that we have discovered an antitoxin serum that will destroy it. Now

again, Dr. Melvin who was chief of the Bureau of Animal Industry at Washington, when he had Dr. Dorset write this Bulletin 379, said on the introductory page, this Bulletin is intended to take the place of Bulletin 24 of 1899 on hog cholera and swine plague, it having become desirable to replace that bulletin with one embodying more knowledge gained from the laboratory and field experiments which have in the meantime been carried on by the biochemic division of this department. Now further Dr. Melvin says, the highly important discoveries concerning the cause and prevention of hog cholera have been more fully set forth from time to time in the publications from this bureau, and it is now well known that our laboratory experiments have proved conclusively that the so called (note the so called) hog cholera bacillus *was not the cause of the disease*, but that the disease was attributed to an invisible micro-organism. He says now having disposed of this point, it became our aim to devise some means of preventing the spread of the scourge, and so Dr. Dorset, Dr. Niles and Mr. McBride of the biochemic division of the Bureau of Animal Industry was assigned to this task, they have never published to the world how they found it out, but after awhile, presto change, and the hog raisers of the United States were told that we have discovered an antitoxin for this awful fatal hog disease, and so for the last 7 years they have been telling us the thing so strong that a lot of our hog raisers have believed it, and a lot of them to their sorrow, and a lot of them have said, yes I done it once, but I will never do it again.

Now what have they accomplished, if anything at all? It has been to show to any reasonable, sensible thinking man that not only are they up in the air as to what the disease is, but they are all also up in the air with their preventative. Why do I say this? Because of the fact that statistic reports have shown positively that more

hogs have died by hog sickness in the United States in 1912-1913 than ever died in the same period of time before, and further than that more hogs have been vaccinated with the so called hog cholera serum in these 2 years than ever before.

Now in the face of these facts we must admit it is a failure, yes but some fellow will tell you that Bill Smith vaccinated his hogs and a lot of other fellows vaccinated theirs and didn't loose any of them, that don't prove anything. I can show where hundreds of men haven't vaccinated their hogs and haven't lost any of them either, and at the same time their neighbors with only a wire fence between them lost all theirs. I can also show you where men who had no sickness in their herds at all, vaccinated their hogs and soon they commenced to die and some lost all, some nearly all of them. How do I account for this. Why the man who lost after vaccinating probably had a serum injected into his hogs that the blood which the serum was made from was taken from a hog which had swine plague, as I have shown you, this mistake can easily be made. Yes, but how about the fellow who had them vaccinated and never lost any of them. Why the blood that this serum was made from might have been taken from a hog sick with the belly ache caused by worms, and therefore it did no harm. I have seen hundreds of hem sick from worms and dying from 4 weeks old pigs to old full grown hogs. Let us get down to statements by some of our Iowa authorities on the subject, in the report of the Iowa state veterinarian. We find that Dr. D. E. Baughman of Ft. Dodge one of the assistant state veterinarians was assigned the duty of making the report on hog cholera and the result of the serum treatment in this state.

After other preliminaries on the subject Dr. Baughman says, in order to properly understand the method of using hog cholera serum it would be well to first un-

derstand the method of making it, in order to make potent serum that has the power to protect hogs against cholera, it is necessary to have cholera pigs to draw the blood from, for he says it is impossible to make a potent and reliable serum where pigs are used to furnish virulent blood. With unknown form of virulency of disease, as is done with some of the serum firms who depend entirely upon the supply of their diseased pigs from the markets of packing plants, oh! ho, then they are just getting a lot of this serum from blood of hogs from packing plants.

Well there are about 50 concerns in the United States who are manufacturing this serum and putting it on the market, so they have to look to some place where there is plenty of hog blood in order to get the material to make it. I wonder after they get this blood where they find all of their immune hogs to mix with, it seems to me the way they are dieing off with hog sickness and the way they are killing them off by injecting disease into them it won't be long until there will be none to either get blood from or inject it back into. Dr. Baughman also says one of the most important things to find out when vaccinating a diseased herd, is to be sure that the disease that exists in the herd is really cholera. This he says can only be done by holding post mortem, but sometimes post mortem may not reveal the cholera lesions. Now in this case you must guard yourself in giving your prognosis, in other words, go on and vaccinate the hogs but don't tell them whether it will keep them from getting sick or that they may all die after you vaccinated them.

Now in summing it all up Dr. Baughman winds up with a lot of don't, one of them is, don't underestimate the weight of the hogs when vaccinating them, you are not liable to give too much serum, (no danger if you give a bucket full I suppose he means by that.) But you may give too small a dose, now wouldn't that jar you,

it must be a queer decoction that you can't give too much of it. In the use of antitoxins for diseases of the human, all antitoxins are standardized before they are sent out and positive instructions are given not to give only just so much for a dose.

Again one of Dr. Baughmans don't says, Don't give your patrons too much encouragement when you are vaccinating their hogs. I suppose he means by that, if you give them too much encouragement and they all die after you vaccinate them they may be disappointed. Now I can show that hogs have died by thousands after they were vaccinated, many of them not even showing any sickness of any kind before being vaccinated.

Now in all of their scientific teaching by bulletin from the Animal Industry, from different state departments and other sources high up in this work, they have never said much to us about the worms that infest the hog, or the danger of disease arising from those worms in the hog. Now during the time I was trying so hard for several long months to solve this problem, at almost every post mortem I was confronted with the fact, that these hogs that were dieing, almost in every instance were found to be full of worms of some kind, and we found that in many herds of hogs several different disease were killing hogs in one herd. We found worms in the lungs and hogs dying of pneumonia. We also found hogs dying of pleuro pneumonia. We found several cases of typhoid fever in several herds, this has been reported to be true of several instances within the last year in our state, where disease of typhoid fever was positively known to exist in several herds that were dieing in our state. We found pigs 4 weeks old with their intestines bursting open with worms. We found the same condition to exist in hogs older and larger, in all we found that the hog was infested with eleven different kinds of worms. Now I will tell you the different kinds

of worms that we have found in the hog: first the lung worm, this worm is from 1 to 1 1-2 inches long when full grown, they are very small and thread like; this worm is taken into the lung by the hog breathing the germs from the dust of the filthy pens and feed lots; it is found in no other part of the hog but the lungs and air passages, and is very fatal in its effects. The pin worm is a small thread like worm from 1-2 inch to 1 inch in length and are found in the stomach, colon and rectum of the hog, but not much in the small intestines. The thornhead worm is of a blueish white color, and are from three to fifteen inches in length and have a small pointed head and nose on which are several circles of small hooks. They live in the small intestines and live by fastening themselves to the mucous membrane lining the intestines and bore into the intestines and suck from the primary circulation the food taken from the chyle. They sometimes bore clear through the intestine and migrate to other parts of the body, when they take a notion to do, thus one of these worms will kill a large, full grown hog. The giant kidney worm, these worms will grow from 2 to 3 feet in length, the male is much smaller than the female, usually about half the size of the female, sometimes you see a hog bröke down in the hind parts and apparently paralyzed in the hind parts, the giant kidney worm is the cause of this trouble. The long thread worm is found most generally in the colon or large intestine, they live frequently buried in the lining of the intestine and often kill the hogs by causing inflammation and rotting of the tissue of the intestine. The lumbricoid, or large worm so common in hogs is of a yellowish brown color, the male is the smaller of these worms and is from 6 to 8 inches in length, while the female when full grown is from 12 to 15 inches long, thus worms are found throughout the entire digestive system, anywhere from the stomach to the rectum, and never accumulate in

the hog until he is crowded on foul feed and becomes constipated. They accumulate very rapidly and are often found in the hog by thousands, in fact to such an extent as to bore clean through the intestines and often cause rupture of the intestines.

The Diesing worm is a small worm from 1-2 inch to 1 inch in length, the body of the worm is of a dark brown color, and the surface is marked with transverse creases. The mouth is the shape of the mouth of a sucker fish, being circular in shape and contains about a half dozen teeth by which it fastens itself to the lining of the intestines and live by sucking its food from the circulation therein. The red rud worm, or stomach worm, this worm is from 1-2 to 1 inch in length, the female of this worm is smaller than the male, which is different from most all the other species of worms, the male in others is most generally the smallest. It is larger in the middle and tapers to a point at each end, the head is small and smooth. This worm is only found in the stomach of the hog, hence the name stomach worm. The white rud worm is of a slender thread like shape and only about 1-2 inch in length and is of a very peculiar form, the head is of a very peculiar shape and has about six layers of tender skin around it, resembling something like wrinkles or layers, the tail of the female is long and slender and runs out to a sharp point, this worm is found in both small and large intestines.

The tape worm, this worm is found in the hog, the dog, sheep, and the human. It is a flat jointed worm, in width from 1-4 to 1-2 inch, it is joined together in short joints or sections, sometimes attaining a length of 80 to 130 feet, both in the animal and the human.

The cause of this disease in the human is attributed to the eating of raw pork, as the hog is the animal found to be affected with the tape worm more than any other animal, the dog comes next and the cause of it appearing

so often in the dog is the fact that dog is fed raw pork so much and is allowed to eat from raw bones of pork. *Trichina* (*Trichina spiralis*) is the name given to all small spiral shaped worm that inhabits the flesh of the hog, and if a person should eat of pork not well cooked, affected with *Trichina*, it would produce in the human a disease very fatal in its attack, known as Trichinosis. They are found however, in the intestines of the hog, the female being the larger and longer of the two, and measures about 1-2 inch long when full grown, the male is much smaller, perhaps about 1-2 inch in size. These small parasites as soon as they are hatched out, bore through to the heavy solid muscle of the hog and live out their life in the flesh, for this reason all hog meat should be well cooked before it is eaten.

Now then do you wonder at the hog being so much addicted to disease and attacks of fatal sickness. No, this is not to be wondered at, when we must take into consideration that the hog is the scavenger of the earth, and is the only animal that will exist off the droppings of other animals, the manner in which he is kept, lives, eats, sleeps, breathes over, and in his own filter, as well as the filth of other animals, makes him by nature susceptible to all manner of disease. The next nearest to the hog in its manner of living by eating of every thing that is impure is the chicken, and the chicken comes next in the production of internal parasites.

Now I will give you my opinion as to the nature of this hog sickness that is killing so many hogs. The lung worm, working in the lungs are killing as many hogs as anything else, then comes the next fatal sickness, now called hog cholera. What is this, it is other classes of worms I have told you of? Simply intestinal septic infection of the bowels, caused by the toxic poison thrown off by the breeding, living, developing and living out their full period of life within the body and internal or-

gans, of these worms in the hog post mortem after death of a hog said to have died of cholera shows a diseased condition of almost all internal organs. They tell us of red spots along the mucous membrane lining the intestines. Those same red spots on the liver and other internal organs, some places these spots slightly ulcerated. Now I have seen this condition in hundreds of dead hogs, where they had died of lung worms and intestinal worms at the same time, if the hog dies of pneumonia from the lung worm alone these spots may not show in the intestines and on the liver. They tell us of the symptoms of cholera after death, is the different colors, of the skin of the outside of the hog which will show red, blue, purple etc. Now if the hog lives very long after getting sick, (and these days many of them do not die suddenly,) the fever that is always present in all of these attacks, let the cause be lung worm or toxic poison or what it may, this condition of the skin after death is the result of the fever reaching such a high stage before the animal dies, and the weakened condition of the heart fails to carry the congested blood back from the capillaries, or small veins of the skin just prior to death, and this outside appearance of the skin after death don't indicate only one sure thing and that is that the animal did sure have a run of fever that reached a high temperature just prior to death.

Now I have given you my opinion of the cause and nature of all this fatal sickness, and I believe I am right. Time will surely tell if I am right or wrong. I think the last 7 years has proven that the existence of hog cholera is not what is killing so many hogs, and that the way to prevent and stamp it out is by the serum treatment, is fearfully wrong and has proved to be a miserable failure. Now what of the cure or preventative, as to cure

when the lung worms get into the hogs and produce the disease there, most of them die.

When the hog is full of intestinal, stomach and other worms, that is sapping the life out of him, assisted by a high fever which this diseased condition and toxic poison has produced, most of them die, some after days and even weeks. By the resistance of a strong vigorous constitution and proper care, some will stem the tide and live through. But as to the application of remedies after the disease has made its onslaught upon the herd they have all proved to be of little avail. What then? Why we must resort to preventative measures, one ounce of preventatives in this case is worth more than a wagon load of cure. How can we prevent it? By strict, sanitary measures, clean feed, lots of clean water, clean feed troughs, clean, dry places to sleep, and not allow to many to sleep in one place. Don't allow them to sleep on manure piles or under barns or stables. This is the greatest source of breeding diseases in hogs in the world. Keep them free from lice at all sizes and ages, don't allow them to eat on the same spot long at a time, this causes them to eat and breath germs produced from their own excretions and filth, and how can you expect them to keep healthy in this way? Change the feeding spot often, have them sleep on solid board or cement floors. Keep them clean too, and spray the floors and sides of the building with warm water and any of the sheep dips or carbolic acid compounds, a spray pump don't cost very much, and at all sizes, ages and seasons of the year feed a good tonic powder, one that contains a laxative to keep the bowels gently open (as constipation lays the foundation for more diseases, both in the animal and the human, than any other one cause.)

Always feed a powder that contains a diuretic to keep the kidneys gently active, so that the urine is expelled from the body before the body can absorb the

poison from the urine, and above all feed a powder that contains plenty of worm destroyer, and commence to give this as soon as the little pigs are large enough to get up to a little trough and drink swill or slop. This swill should be made of chop, such as bran with some ground oats, or rich midlings, and for pigs is always best to have sweet skimmed or whole milk mixed in it. Powder can be given easily in this, as it can be evenly mixed as to right quantity for number at one time and they will always eat readily.

By this method of starting with the pig, you start him off right and keep him healthy and if you keep this method up, when the proper time comes you will turn him into good, pure, healthy, profitable pork. I have advised hundreds of my patrons and friends to care for their hogs in this way and have never known it to fail one of them in my life. As I told you early in my book, that my father was one of the biggest and most successful hog raisers in all our country in Indiana and lived to be 73 years old and never had an epidemic of sickness among his hogs to my knowledge in his life and I heard him say this late in life often, now that was the way he took care of his hogs and this was the reason they were always healthy, and others who did not pay attention to these things, were losing hogs all around him, while his were thrifty, healthy and grew into the pork barrel rapidly.

I have talked with some of the most successful hog raisers in different sections and they have told me they never lose any hogs and that is the course they pursue, (Reader please pardon me for going back over my ground a little) since writing this far on this subject, I have come in possession of a bulletin issued by the Abbott Alkaloid company, who have extensive laboratories at Ravenswood, Chicago, Illinois. These people have one of the best equipped plants and laboratories for the

manufacture of antitoxines and other preparations in the world, and employ some of the best bacteriologist and chemists in the world, and their preparations are considered of the highest stand by physicians and scientists all over the world. In this last bulletin just issued by them, I read an article on bacterial diseases by one of their most scientific men. This is as follows: When bacteria were first discovered to be the primary cause of so many diseases, there was much speculating as to how these minute organisms produced their ill effects. At first these were said to be due to blocking the capillaries, but such action was disproved, it was then thought that the harmful effects of bacteria were due to their using up all the nutriment in the circulating blood, and thus starving the tissues. It was only after an immense amount of research that it was discovered that the pathogenicity of bacteria is due to the poisonous products of toxins which they produce, that the toxins responsible for most diseases and disease-symptoms are due to two distinct sources, one the specific infection and the other a concomitant infection was a discovery of even more recent date and one which is not yet fully appreciated by all practitioners.

Yet these two kinds of poisons are nearly always present in every infectious disease working hand in hand for the disability of the animal or the destruction of it. One class originates in the specific germs of the disease, the other in putrefactive or fermentative organism within the intestines. For instance the tetanus (lock jaw germs) kills by its living and feeding upon the nerves,) while the worms and parasites of the digestive organs kills by the toxic poisons they throw off as I have shown you, is the cause of hog sickness that is now called hog cholera (by some). Normally he says a great many bacteria inhabit the intestinal canal, and some of these may have an important function to perform in digestion.

During health, their development is held in check by the antiseptic action of the intestinal secretions, during disease their control is one of the most important considerations in treatment, and for this reason large numbers of intestinal antiseptics are used. Now what do we get from this? The idea is this: if we feed a good tonic and antiseptic powder to our hogs at all times, if any toxic poison is thrown into the bowels by worms or other causes it will do no harm, besides no worms or parasites will accumulate there to produce toxic poison. I find other men who have studied these hog diseases, are of the same opinion as myself. I quote from the Iowa Homestead, a scientific farm journal that is almost always good authority on farm and stock subjects, in an article of recent date that appeared in that journal it reads as follows: We do not desire to place ourselves on record as believing that hogs that are free from internal parasites, cannot take any of these deadly diseases, but on the other hand we have no hesitation in saying that nine-tenths of the trouble that occur in hogs is due, first to a weakness of the constitutional powers on account of the ravages of worms. Where this is the seat of trouble, no system of inoculation or vaccination will for a single day arrest the coming on of this profit destroying scourge, and the lesson to be learned from this is that more attention must be given to the problem of destroying worms while pigs are young if we ever hope to head off these heavy losses or popularize the efficacy of the serum treatment. Hogs are in the very necessity of the case kept under artificial conditions at the present time.

Generally speaking they are confined in small quarters and this is most favorable for the development of parasitic troubles, this being the case we believe that there is not a single set of conditions under which hogs are kept found in the grain belt that will justify swine breeders in their failure to administer worm remedies

regularly, beginning just as soon as the pigs are old enough to take feed from the trough, if a beginning is made then, and is kept up at intervals of ten days or two weeks, until the pigs are half grown, the probabilities are that there will be no more trouble from that source, and if worms are eliminated, we have no hesitation in saying that nine-tenths of the thumping will be stopped, the fever will be almost wholly checked, and the way will be paved, in an ideal fashion to stop and prevent disease.

Now Mr. Iowa Homestead, you have said the whole thing. You have certainly spoke right out in meetin, and I am glad to know that your great good farm journal is wise to the situation like myself, and are not afraid to tell the hog raiser so.

Now I have told you some of the things to do to keep your hogs healthy, and prevent disease. Now I will tell you some of the things not to. Don't allow your hogs to have to feed on the same spot long at a time, change the feeding spot often. Don't allow very many hogs to sleep together, if you do in cold weather they will pile up and the hogs underneath will get too hot, and when fed will get too cold before done eating, this may start pneumonia and other fever in the herd. Don't allow them to sleep on manure piles, or under stable floors, or barns, these places are the hot bed of all classes of dangerous germs. Don't feed tankage without other balancing ration, corn, midlings or bran should be mixed with tankage. Never feed hogs long on slop or swills alone, always add to this a ration once a day of corn or midlings or bran swill. If bran is added to the slops each day, it will do, if hogs seem dumpish or off feed, let up on the quantity and if on full slop feed, leave that off entirely until they get right again. Don't allow them to sleep in a damp place or where a draft can blow through the building on the hogs. It is best to have at least three

sides closed up, but high windows or openings for ventilation. Don't allow your hogs or pigs to get lice on them, hog lice are easily killed by any of the dip preparations, and they are cheap and easy to get.

Keep the floors where hogs sleep, clean and floors and inside of building should be sprayed once a week the year around, spray pumps and dips are cheap.

Don't breed gilts too young, and if very young don't breed to too large or old a boar. Don't keep sows too fat at time of breeding them, or to fat when due to farrow. Always give sows nearing time to farrow, plenty of exercise and laxative food, never allow your hogs to be compelled to eat corn out in the mud, give them clean dry places to eat their food. If hogs are fed on one spot long the cobs should be raked off of the spot once a week and burned, and sulphur and air slacked lime sprinkled all over the ground where they eat after raking over and burning the cobs. Sulphur is cheap and valuable in keeping diseases away.

Now why have I taken the stand I have on this matter. Simply because after my thorough study of this sickness in 1896-1897, as I have told you about, the things I learned in that campaign of research and what I have learned since, by watching the ravages of this sickness, and noting the results, both of the spread of the disease and effort to stamp it out, has proven to me that a cure for sick hogs by the serum treatment is based upon a wrong theory, and has not, nor ever will accomplish the desired result. But why has it become so popular? By the serum manufacturers continually boosting the serum treatment and a lot of veterinaries boosting for it to make money out of it, and the people have been educated up to it in that way. These boosters have had misleading articles published in papers deceiving the people all the time.

Here is one sent out from Washington a few days

ago, and these are sent out for just the purpose to fool the people. William B. Niles, an expert in the Bureau of Animal Industry, will go to Marshalltown, Iowa next Saturday to address a public meeting of farmers of that county and to give a demonstration of the use of hog serum in fighting cholera. Experts previously had been sent to Dallas county and had been successful in combating the disease in that county.

Now this Mr. Niles is one of the men who helped to discover this wonderful pig tail serum, and I expect he will tell the farmers some wonderful tales of the hogs he has saved, but not the devil of a word will he say of the thousands it has killed. Now as to this wonderful success these experts had in stamping out the disease in Dallas county, I will tell you about it.

Last June the Bureau of Animal Industry at Washington sent two men to Dallas county, and one man from the staff at Ames college was also sent, also one man from the state veterinary staff making four men in all, to, as they said, show that hog cholera could be eliminated if proper use of serum was made closely by sections. The coming of these men from Washington was heralded by big newspaper articles, as was also their arrival in Dallas county. Big articles were published in the Capitol and other newspapers of the wonderful things they intended to do to the hog disease in Dallas county. I watched all summer closely for some report of their wonderful success, if one was ever made I have never seen it. But I have seen numerous articles in the papers of how hogs were dying all summer and fall in Dallas county. So becoming impatient one day this fall when in Des Moines I called in at the state veterinarians office on business and while there I asked about the work in Dallas county, and was told the experiments (see experiments) were still being carried on out there yet, but no final report had yet been made. The next day an

article appeared in the Des Moines Register and Leader, Oct. 9, 1913, which said, there has not been enough cold weather yet to check hog cholera, says Dr. J. I. Gibson, state veterinarian yesterday, the losses from this disease in the last year will exceed more than 12 million dollars. If the experiments in Dallas county prove successful the state department hopes to curb the disease next year, the experiments have been under the direction of the National Government the state and the State Agricultural college, the field work has been done by government experts. *He says the experiments.*

They are still experimenting the same as they have for the last seven years, yet they tell us they have discovered the cause, and the remedy is the serum treatment, (Wouldn't it jar you.) Now you can draw your own conclusion as to the truth of this dispatch from Washington telling what Mr. Niles was going to do at Marshalltown and how successful these experts have previously been in combating that disease in Dallas county. These are some of the things that has helped sell hog cholera serum, and kept a lot of fellows busy using it, and all of them making big money out of it, except the man who shot it into his hogs.

Now here is one thing I have never been able to understand, and I wish if any one can they will enlighten me on the matter. Now two years ago Iowa was selected as the state to work in to prove the efficiency of the serum treatment, and Ames was chosen as the seat of activities, the serum plant was established there, and this plant has turned out more serum than any other plant in the United States. More serum has been used in Iowa, and more hogs treated by the serum treatment in Iowa than any other state, and yet more hogs have died in Iowa than any other state. And today late in the year hog sickness is reported to exist in more places in the state than any other state in the United States.

Some one please tell me if you can, why this is the case. Something is wrong somewhere, here is a report of a few failures I have to tell you about, this is only a few I have stacks of them.

A clipping from a paper about Cero Gordo county, Mason City, Iowa, Oct. 22, special. The loss of swine in this county by cholera will be at least one million dollars, according to estimates of veterinarians here who are treating animals in all parts of the county. There has been considerable delay in securing serum (I guess the crop of tails is running short at Ames, and they will soon have to grow more long tailed hogs to get the serum from), but as rapidly as it came it has been used, the last shipment of serum was received yesterday, consisting of 500 gallons and cost \$600.00, pretty good big shipment for one day in one place if they are getting it at this rate in all other places in the state where the disease is reported to exist. I wonder where Ames gets all the immune hogs to make the serum from.

One from a Davenport paper, Oct. 24. Owing to poor serum that was used in vaccinating a herd of hogs for Barney Gasseling in Hickory Grove township, but 10 out of a herd of 70 were saved. The herd was treated three weeks ago. Now here is a failure that is attributed to poor serum, was it taken from a hog affected with swine plague, typhoid fever, tuberculosis or what, I wish they would tell us what kind of disease it was that they shot into the dutchmans hogs? I should have thought they would have went back and found out and reported so the public would have known. You don't hear of them ever doing this do you? I am sure I don't.

Now I have been asked many times why I have taken this stand. It has been said to me you can make lots of money vaccinating hogs, yes I know that is true. But I will tell you why I haven't done it, as I told you before the knowledge I have gained by a close study of these

hog diseases, has impressed upon my mind the fact that a cure when herds are sick and dying is out of the question. A few may be cured if treated as I have told you by sanitary methods and tonic, worm powders, and I firmly believe if hog raisers will follow the course which I have lined out for them in this work, the disease can be stamped out, and hog raising again restored to a sure, safe, profitable industry, and I hope all who read this little work will join with me in trying to get the hog raisers to get wise to the situation and fully adopt another system of hog raising.

Another reason why I have taken this stand is this: I have been practicing my profession 34 years of the best part of my life, I have loved my profession and have always been proud of my calling in that line. I have made it a rule always to try to be honest and truthful with my patrons, and unless I knew a remedy did really have merit in it and would get the results they so badly needed, I would never advise my patron to use it, and I am so positively convinced now, and more of late than ever, that the diagnosis of the disease called hog cholera is wrong, and is not the germ disease they tell us it is, and I am just as thoroughly convinced also that the treatment as applied to try to cure and stamp out the disease is as much of a failure as is the diagnosis. Therefore my conscience will not allow me to practice or do a thing that I feel that way about professionally.

I do not claim to be a real saint, or do not know that I may ever be appointed king of angels in the other world, on account of my being so conscientiously honest in this world, but I do know if I do not practice a thing that I have no faith in or is not a real benefit to my patrons, I cannot lay down at night and sleep sound. Besides I have plenty of business all the time without going out and practicing a thing that seems so much of a failure to me. I feel much better when I am practicing a thing

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that will be a success and benefit to my patrons, and an honor and credit to my profession, and I do hope that the effort I have put forth in this little work will be the means of putting the swine breeders to thinking, and studying more about this subject in the future, and if my system to help them to attain success in curbing and preventing hog sickness, is not the best one in the world, perhaps this may be the means whereby you may be assisted in finding a better one.



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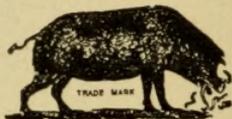
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