

# LIVE STOCK

## Parasites in Hogs.

The term parasite is applied to a living organism. A parasite may be long either to the plant or to the animal kingdom. It may live on either an animal or a plant, from which it derives its nourishment for a part or the whole of its life cycle. The plant or animal on which the parasite lives is called its host. Parasites are, as stated, either of an animal or vegetable form. Some live outside of the body and some live inside of the body, and are accordingly termed external and internal parasites. Some parasites live their whole life on the host, but the great majority spend only a part of their life there. Almost all of the lower forms of animal parasites must pass through different forms during their life cycle. This stage of change or incubation is called metamorphosis. There are usually three separate periods, first that when the egg is hatched, second when it reaches the larval state, or better known in insects as the caterpillar stage, often called grub or maggot; from this form it usually changes into a third, namely the pupa or chrysalis stage, and from this to the adult state. For a good illustration the reader is referred to the butterfly. This insect is familiar to all, and like this insect the parasites pass through a metamorphosis state. However, some pass through a number of different stages in different animal hosts, while still others pass through only one transformation and some do not pass through any.

A number of authors state that swine are a great deal more susceptible to animal parasites than other farm animals. This the writer hardly believes to be a fact, for he believes that when a more thorough investigation has been made other animals, especially the sheep, dog and cat, will be found to harbor many more parasites than swine. However, it is bad enough as it is, for hogs are infested by a large number of intestinal parasites. Fortunately, however, they do not seem to be so disastrous to swine as they are, for instance, to sheep, for it is a fact that the greatest loss occurring in sheep is due to parasites, the sheep industry in some of the eastern states having been practically abandoned by reason of the severe loss from parasitic diseases. The intestines of swine harbor the greatest number as well as the most harmful parasites.

We will first take up the little round-worm (*Ascaris suilla* Duj.) found in swine. This worm is commonly called the roundworm and is one of the worms most frequently found. Although occurring in great abundance it does not seem to do a great deal of damage. It is a large, long, round worm that tapers towards both ends. It is found in the small intestines, but may also be seen in the large intestines and in the stomach. It loosely attaches itself to the intestinal wall by its mouth. The males are from six to seven inches long and the females from eight to ten inches. They are of a dark yellowish-white or of a reddish-brown color. It is not uncommon to find these worms even in the common bile duct or some may enter the gall bladder. The writer has also found them in the lobes of the liver, that is, when they were found in great abundance in the small intestines. These are the common worms found in the young pig and they completely obstruct the intestine. They are usually found in the young, unthrifty pig. They produce a general unthriftiness among young pigs weighing from forty to 120 pounds, and the trouble is often mistaken for cholera and swine plague. On account of the presence of this worm we find a popular notion that these parasites have something in common with hog cholera and swine plague. This is a very erroneous idea. The vitality of the host is reduced by harboring these parasites, and it is on this account that these symptoms are found. It can be stated safely that over 50 per cent of the hogs slaughtered in the Mississippi valley are infested with this worm and often to a large extent. Professor Kaupp states that he has "seen these worms so numerous that the intestines for as much as two feet would be considerably distended with them," and the writer has frequently seen cases where the entire lumen of the intestine was filled with them. But it is probable that the worms collected in these masses after the animal had been killed. Certainly such a condition could not have existed for any length of time prior to death without having produced elogging and inflammation of the intestine, whereas the intestine seemed to be in a healthy condition.

There seems to be no doubt that the large number of parasites present must reduce the vitality of the host by

absorbing a great quantity of the food consumed and otherwise preventing good, healthy assimilation of food in the pig. Aside from this they must cause great irritation and thereby disturb the digestion and deprave the appetite so that the pig will not make the gains that it should on the amount of food consumed. Further it must constantly place the pig in such a position that it will be more liable to contract contagious diseases should the animal be placed in position for infection, such as coming in contact with diseased herds, etc. It is safe to say, from the number of hogs infested with worm, and from the debilitating effects it produces and the large per cent of hogs constantly fighting for existence and warding off diseases, that this worm is directly and indirectly responsible for the heavy loss that occurs annually in the hog growing districts of the United States.

Source of infection. The eggs are passed with the excreta and dropped on the ground, and either the eggs or the embryos hatched from them are eaten with food by other hogs and these hogs are then infested. It is, however, necessary for the ground to be moist and warm for the hatching of the eggs, and yet it has been found that they have great resisting power and that they can withstand heat and extreme dryness. On account of the ground becoming infested with these eggs it is extremely dangerous for hogs to root or to have the habit of eating large quantities of earth, because they are more liable to become infested. It is also a fact, as can be readily seen from the above statements, that where a herd is free from worms one individual hog that is infested can contaminate the premises so that it will be but a short time before the entire herd will become infested with these terrible parasites, and it is in this way that the parasites have spread over such large territories and that such a large per cent of hogs is found to be infested. When purchasing hogs it is therefore important not only to quarantine them and examine them for hog cholera, but also to ascertain whether they are infested with any of these parasites. The further fact that a large number of hogs are constantly feeding on earthen floors or on very dirty feeding troughs, or in lots where the water is stagnant, makes it a very easy matter for the average hog to become infested with these parasites, for the feeding troughs and drinking troughs constantly become contaminated with these eggs and the hogs are continually taking up fresh infection with each feed. It seems that the things to be taken into consideration are the disinfection of the pens and the adoption of better hygienic measures.

Symptoms. Unless the pig is infested with a large number of worms there are no marked symptoms. But whenever pigs are kept under unfavorable conditions, where the feed lot is dirty and wet and where the infested animals can infect the feeding troughs and the watering troughs, then there will be a marked retardation in growth and these pigs will be infested with a large number of parasites which materially assist in hindering the growth of the hog. An animal in this condition is usually termed "stunted," for, as stated, whenever worms are present in large numbers they cause a disturbance of the digestive tract and impair assimilation and finally produce chronic indigestion. It is well, whenever examining hogs for parasites, to ask the owner or attendant if any parasites have been seen to pass with the feces. This helps in the diagnosis. As stated, the pigs most frequently affected are those weighing from 40 to 120 pounds. In older hogs parasites are seldom present in sufficient numbers to do any harm. Symptoms of nervousness and of cholera may often be present.

Dr. Youngberg, of Lake Park, Minn., records in Vol. XVII, p. 478, of the Journal of Comparative Medicine and Veterinary Archives, an outbreak of this trouble in swine. He gives the symptoms as follows: "Hair standing upright; very much emaciated; some were coughing; others paralyzed and unable to walk." Two were destroyed and a necropsy revealed the fact that they were badly infested with this worm. Treatment was given, with the result that the worms were destroyed and the pigs recovered.

It is not impossible that some of the outbreaks that are supposed to be cholera are due to this worm instead of to the cholera bacillus.

Treatment. This should be largely preventive, for more can be accomplished by strict hygienic measures than by treatment. Sanitary conditions on the farm should be looked into

thoroughly. The hog lots should be well disinfected. If there is insufficient drainage of the water found in the hog lots, this should be looked after at once. Hog wallows should not be allowed unless disinfecting fluids are freely sprinkled in the water. Pools should also be disinfected. The feeding troughs should be washed with hot water, to which a disinfecting fluid, such as carbolic acid, lime water, or the like, has been added; or better yet, place the troughs over a small amount of burning straw so as to char them and subject all the crevices to the heat. The feed lot, stable, and pens should be thoroughly scraped and the litter burnt. When hogs are given medicinal treatment, it is well to give the pens plenty of bedding so that when the parasites and the eggs are dropped with the feces they will not, to any great extent, contaminate the floors but will adhere to the bedding and in this way can be burnt.

For treatment there is possibly nothing better than coal tar creosote, turpentine, or santonine. Other drugs may be mentioned, but the writer does not believe there is anything better than coal tar creosote given as follows: Coal tar creosote,.....1 ounce Water, .39 ounces (6 pints and 3 ounces)

One ounce of this is a dose for a full grown animal and is best administered with the morning feed. Or you may give them turpentine or gasoline, which should be administered in the swill, and the best on an empty stomach. The best way to feed this medicine is to omit the morning feed and give a tablespoonful in the feed for an average hog. Two or three applications usually suffice. If you wish to drench the animal instead of giving it in the feed, use a drenching tube. A drenching tube may be made by taking an ordinary tin funnel and rubber tube or hose, say three feet long and three-eighths to half an inch in diameter. Into this rubber tube insert the lower end of the funnel, and then drench the animal by placing the rubber tube between the animal's back teeth, allowing the hog to bite on it. It is also well to place a piece of metal at the end of the rubber tubing, so that the animal may bite on it continually without stopping the flow of liquid by pinching the rubber hose. It is of great importance not to close the patient's nostrils while drenching.

Turpentine may be given with either flour water or with milk, a teaspoonful to every 60 to 100 pound hog. Santo-

nine may also be given, but the writer does not recommend it, because a slight overdose of it is poisonous and may kill the hogs. The best results have been obtained from coal tar creosote. These medicines should be given on a partly or entirely empty stomach.

## The Trembling Poplars.

Have you seen the poplars quiver  
In the evening by the river,  
Where the torch of twilight glances,  
And the twilight wind is cool?  
Where the fireflies beside them  
Hail the high stars and deride them  
Till the high stars cast their lances  
Of reflection in the pool?

There the rushes lean and listen  
To the silver leaves that glisten  
As they toll their knell unceasing  
Up and down the lonely shore,  
And the waters grieve at gloaming  
When they hear the wild birds homing,  
For the poplars find releasing  
From their vigils nevermore.

Oh, and if the night be dreary,  
Still the poplars may not weary;  
Though the wind should sleep forever  
And the waves forget its loss—  
Though the stars be quenched tomorrow,  
Still the poplars in their sorrow  
May forget, oh, never, never,  
Him who bore the poplar cross.  
—The Reader.

## GETTING IN DEADLY WORK



"Poetical Pete says he has some new thoughts to give the public." "That's the only way the public would get 'em—it would never buy 'em."

Don't Forget a Big Package of



Next Time You Go to Town

See that it's on your list.  
See that your grocer has it.  
See that it's in your rig when you start home.  
Then you'll have what you wanted.  
You'll be saved an extra trip.  
You'll be saved the disappointment that comes with every paper bag of bulk crackers—soggy from exposure to moisture, broken and crumbled because it can't be helped.

You are entitled to your money's worth. Get it in a 25-cent package of Loose-Wiles Soda Crackers.

Made in a modern bakery by our exclusive method—from soft winter wheat flour that has all the good of the wheat.

Clean—crisp—cheap—convenient.

Fresh from first to last.

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