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THE HOG LOUSE.

(Hæmatopinus suis.)

C. P. GILLETTE.

Comstock: Introduction to Entomology, p. 132 (figured and remedies given).
Murray: Economic Entomology, p. 386 (figured and habits given).
Osborn: Bull. 2, la, Ag. Coll., p. 71 (description, habits and remedies).

During last August I learned that the pigs on the College Farm were being troubled with lice. I had for some time been anxious to try the kerosene emulsion remedy against these disgusting pests as used so successfully for the destruction of cattle lice last winter and reported upon in Bulletin 5 of this station.

Mixtures of kerosene and lard, and lard and sulphur, as ordinarily recommended against parasites upon domestic animals were first tried that I might know from experience how much of a task it would be to use these substances in the usual way. As I had anticipated, it was found to be a tedious operation if many animals were to be treated and especially if they were wild. In fact I came to the conclusion that any remedy like the preceding where oils or washes are to be applied with a cloth, brush or curry comb, can hardly be practical except in cases where the lice are very abundant or where there are but a few very valuable tame animals that do not object to being handled. At least, this method of treatment would be very unsatisfactory in most cases.

A PRACTICAL REMEDY.

With the help of a man thirteen pigs were crowded into one end of a pen where there was only comfortable standing room for them. While the man worked a Nixon "Little Gem" force pump I directed the spray upon the pigs, special pains being taken to thoroughly wet the fore-quarters and the inside of the ears where the lice were most abundant. The time required to make the application was eleven minutes and the amount of emulsion used was two gallons. The four gallons of emulsion remaining were applied the day following to twenty-seven pigs. Two farm hands did the work this time.
and they found the quantity sufficient to make a thorough treatment.

The pigs to which the emulsion was applied would weigh from 125 pounds to 250 pounds each.

Six pints of kerosene were used in the six gallons of emulsion which made it twelve and one-half per cent kerosene. Allow eighteen cents a gallon for the oil and one cent for the soap used and it would make the emulsion required to treat these forty pigs cost thirteen cents. The whole time required for the treatment including the preparation of the emulsion did not exceed one hour for two men.

The lice became inactive at once upon being wet by the emulsion and those found dead upon the hogs the next morning were sufficient evidence of the effectiveness of the application in killing all that are wet by it.

The eggs. With a pair of shears a hand-full of hair containing many eggs or "nits" was cut from the neck of one of these pigs the day following the treatment. The eggs have been kept in a moderately warm place ever since but no young lice have hatched from them, which convinces me that the application killed the eggs also.

When pigs are treated they should be removed for a time to other quarters if possible and the old straw should all be taken from their former nests and burned. The walls and floor of the pen and all places frequented by the pigs should also receive a thorough treatment with the emulsion which with a good force pump can be driven into all cracks and crevices that might furnish hiding places for the lice.

The objection to any treatment for the destruction of lice is that it will have to be repeated to be perfectly effectual. With the most careful application a few lice or eggs will escape either upon untreated parts of the animal or about the pen or nest. The above remedy, which seems to be second to none in effectiveness, is so cheaply and easily applied that one can afford to make several applications if needed.

In order to make the application some kind of a force pump is necessary as well as a few feet of rubber tubing. Such pumps can be obtained at slight expense and if a spraying nozzle is not at hand, the thumb held over the end of the tubing will be found a very good substitute, one which the writer very often uses in preference to any nozzle.
Description of Louse. A half grown louse much magnified is shown at Fig. 26, A. At (a) is shown a portion of the leg of a mature louse. It differs from that of the half grown specimen by showing plainly a second joint in the claw. A full grown louse is three sixteenths of an inch long or about the length of the little black line at the left of the picture. The color is a dirty bluish gray. The sharp claws seen in the illustration are not used to hurt the pig but are for the purpose of clasping the hairs tightly from which it is not easy to remove them. The food is taken through a sharp rostrum or beak which is thrust into the skin of the host. The beak is not shown in the illustration as it is always retracted when not in use.

Eggs: Fig. 26, B, represents three eggs. From one to a half dozen eggs may be found in this way fastened to a single hair. They are three sixty-fourths of an inch in length and the lower or inner end is always attached by means of a tough gluey substance that usually entirely encloses the hair. The upper or outer end of the egg is the one from which the louse makes its exit. This end has a somewhat darker colored cap which is pushed off by the young louse before coming forth. The egg is white in color and is covered with small regularly arranged pits or punctures giving the surface a honey-comb appearance.

At $b$ three eggs are represented natural size.
These lice are often spoken of as occurring only upon poor animals but those that I have seen have been as numerous upon the fattest and best pigs as any. It would be more correct to say that pigs upon which lice have long been abundant are always poor which would make the presence of the lice the cause of the poor condition of the animal and not the poor condition of the animal the cause of the lice.

Cause of Lice. Uncleanliness is often spoken of as the cause of vermin upon man and beasts. Filthiness may furnish the conditions under which these insects increase more rapidly but nothing in the world can produce a louse but the egg of a louse, and nothing in the world can produce the egg of a louse, but a louse, hence, the only possible cause of lice is lice. It is not because of uncleanliness that a child gets lousy, but it is because of uncleanliness and unpardonable shiftlessness that he is permitted to remain lousy and to scatter the infection among his associates, and exactly the same rule applies in the case of domestic animals. So if one has stock of any sort free from vermin, it is of prime importance that it be not allowed to associate with animals that are not also known to be free from such infection. Before a strange animal is allowed to enter a herd, it should always receive careful inspection and, if found to have lice, it should be kept by itself and treated until entirely freed from them.

If it is not thought best to use kerosene emulsion, a strong tobacco decoction, a strong soap suds, or an oiling with kerosene and lard mixed in the proportion of one part of kerosene to three or four parts of lard would probably prove effectual and would not be harmful to the animal.

For information concerning pumps and the preparation of kerosene emulsion see Bulletin 5 of this station.