Cattle Lice

BY O. G. BABCOCK AND E. C. CUSHING

THERE ARE four kinds of lice that make the lives of cattle miserable and in severe attacks reduce gains and put the animals off condition. Here these pests are described, together with the best methods for getting rid of them.

Several species of lice prey upon calves and mature cattle throughout the United States. They also attack buffaloes and cattaloes (a hybrid between the buffalo and domestic cattle). The damage they do to animals varies greatly according to the degree of infestation.

In general the number of lice infesting cattle increases slowly during the fall months, then much more rapidly during the winter and spring. Often the animals become literally covered with lice and louse eggs before the louse population begins to decline with the advent of hot weather. This may be true for any one or all of the species present. White or light-colored cattle may be so heavily infested as to appear black.

It has been claimed that certain breeds of cattle are more subject to lousiness than others and that Jerseys are the least likely to be infested. Observations indicate, however, that no particular breed is more immune to the attacks of these pests than others.

Heavily infested cattle may in rare cases succumb, but usually the loss takes the form of a reduction of flesh in full-grown animals and slow growth in calves. The mature animals on feed do not make proper gains in weight; they do not eat well, and their vitality is greatly lowered. Their generally unthrifty condition is indicated by a depressed attitude and a mangy appearance of the coat and skin brought about partly by constant rubbing, which results in loss of hair in patches, chronic sores, and bleeding wounds. During the winter such animals suffer severely. Lousy animals make a poor showing at fairs and stock shows.

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Four species of lice are known to infest cattle in the United States. Only one, the red louse, *Bovicola bovis* (see fig. 1), is a biting louse; the others suck blood. The biting louse obtains its food by chewing hairs and particles of skin. It is small and reddish in color when mature, the abdomen having reddish bands running crosswise. These lice, especially in the late spring and often during the summer, will sometimes literally cover an animal, and when feed is short on the range calves have been known to die from the effects of such infestations. Young calves infested with the lice are often severely stunted in growth.

Two of the three species of bloodsucking lice that attack cattle are commonly referred to as blue lice. One, *Lingonathus vituli* (fig. 2), is very common and is distributed throughout the United States. The other, called *Solenopsis capillatus*, is probably more widely distributed than is usually supposed. This louse is a little shorter than the other blue louse but very closely resembles it in general appearance.

These blue, or long-nosed, lice develop in patches on different parts of the body and can be very easily seen, especially on the noses of white-faced animals.

Another louse, resembling and related to the hog louse but smaller, is known as the short-nosed, or bull-nosed, ox louse (*Haematopinus eurysternus*). The young lice of this species closely resemble the blue lice in general appearance and are often mistaken for them. The young lice usually attach themselves in dense masses or patches on the animal. If not too much disturbed, they remain attached for the purpose of sucking blood until they are sexually mature, when they crawl about over the animal and reattach themselves to any suitable host that may come in contact with it. This is the usual way in which infestation spreads among cattle. The red and blue lice spread in the same manner, except that they remain attached only for short periods while feeding.

According to Lamson, the eggs of the red louse hatch in 5 to 7

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days, and the development of the louse to sexual maturity requires 15 to 18 days, whereas the eggs of the common blue louse, *Linognathus vituli*, incubate in 8 to 14 days, and the young louse reaches sexual maturity 11 to 18 days later.

In Texas it has been found that a high percentage of the eggs of the short-nosed ox louse normally hatch in 16½ days, though a considerable number require more than 17 days and a few have been found to take as many as 33 days. Imes reports the egg-hatching period as varying from 11 to 18 days, a range that is not surprising, since louse eggs are often exposed to very hot or very cold weather in different parts of the country. After hatching, this louse reaches sexual maturity in 13 to 23 days. The mature female may deposit 30 to 35 eggs during her lifetime.

**CONTROL MEASURES**

The remedies suggested for eradicating cattle lice are many and varied, but most of them have very little if any practical merit. No remedy now known can be considered perfect in all respects.

Dipping is the best method of applying insecticides to cattle for the control of lice. For this purpose it is best to provide a well-constructed concrete vat set in the ground (fig. 3), with suitable chutes and pens for handling the cattle as they are dipped. Such vats are designed primarily for use with large herds or where many small producers can use the same vat. A long vat with straight sides has proved most satisfactory. The most desirable type is approximately 26 to 30 feet long, 30 to 36 inches wide, and 70 to 80 inches from the water or dip line to the bottom of the vat. This type of vat is also used for dipping cattle to control mange and ticks. For delousing a few animals, insecticides in solution may be applied with a bucket pump or other standard sprayer, or dry insecticides may be applied with a shaker can and worked into the hair by hand, as described later. Every animal dipped will carry out from a quart to a gallon of dip, depending on its size and the length and condition of its hair.

It is advisable before dipping to see that all projecting nails, splinters, and broken boards around chutes and corrals are removed. Other precautions are not to dip any animal while it is overheated and, in cold weather, to do the dipping early enough in the day to allow the animals time to dry before evening. Special care must be taken to avoid heating the animal when arsenic dips are used.

If electric prod poles are to be used in handling the animals, two are generally better than one. Properly handled, these poles are a

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3 *Imes, Marion. CATTLE LICE AND HOW TO ERADICATE THEM. U. S. Dept. Agr. Farmers' Bul. 909, 24 pp., illus. 1925. (Revised, 1940.)*
great advantage, but they should be used only on animals in the chute; using the poles on animals in the crowding pens may cause them to mill around and become vicious, and some of them may jump the corral.

The following dip has so far proved very efficient and safe as well as practical: 325-mesh or finer wettable sulfur, 100 pounds; either cube or derris containing not less than 5 percent of rotenone, 10 pounds; water, 1,000 gallons. The water is put in the vat first, and the other ingredients are added to it just before the cattle are dipped. The derris or cube may be put into the water first, then the wettable sulfur; or the cube or derris may be mixed with some of the wettable sulfur in a separate tub, the mixture being added to the water in the vat and the remaining sulfur then put in.

Since the rotenone in derris or cube begins to break down after a few days' use, the dip is good for only 5 or 6 days, after which, if more dipping is to be done, a new charge of cube or derris should be put in, but no more sulfur. It is best, however, at the time of the second dipping to clean out the vat and refill it with an entirely fresh mixture.

To insure a satisfactory degree of control, every animal must have its head well ducked at least once during each dipping. The average cattle vat will hold 2,000 to 3,700 gallons of dip, but a capacity of 2,500 gallons seems to be about the most desirable for comparatively small herds.

Owing to the wide variation in the hatching period of louse eggs, it is difficult to arrange a system of dipping that will insure absolute eradication. It has been found, however, that the following dipping schedule is practical and will give a high degree of control:

First dipping—preferably early in the fall.
Second dipping—12 to 14 days later.
Third dipping—17 to 21 days after the first dipping.
Weather conditions will often prevent a third dipping of range cattle at the proper interval. Actual experience has shown that two dippings 17 to 21 days apart will generally give good control. It may not completely eradicate the lice, owing to the fact that on heavily infested animals it is difficult to get every louse wet with the insecticide; again, a few eggs may not hatch until after the second dipping. Louse eggs are not killed by the dip described, nor will arsenical dips kill them.

A number of other insecticidal solutions have been used successfully for cattle louse control, but the sulfur-cube dip is especially effective against the short-nosed ox louse, which is the species most resistant to insecticides.

Coal-tar-creosote dips are effective if used in soft water and at proper strengths.

Nicotine sulfate is also widely used for controlling cattle lice. It is diluted with water in accordance with directions on the container so that the solution contains 0.05 percent nicotine. This dip is very poisonous to livestock, and injury may result if it is made stronger than this.

Arsenical dips are widely employed against cattle lice, but neither they nor a dip of elemental sulfur alone will satisfactorily control the short-nosed ox louse. The efficacy of arsenical dips depends on their sodium arsenite content; they should contain 0.18 percent sodium arsenite. For further information on the use of arsenical dips see Farmers' Bulletin 909, Cattle Lice and How To Eradicate Them.

Oil dips are not generally recommended even though they are saponified, or mixed with soap.

If only a few animals are to be treated they may be sprayed or dusted with the sulfur and cube mixture. This method is especially desirable for 4-H Club calves or when no vat is available. While one person is working the pump, another can direct the spray and at the same time rub it into the skin. Very low or moderate pressure in the spray pump is better than high pressure, which will make the animal uneasy, nervous, and often unruly. In spraying, every part of the animal must be wet, including dew-claws, end of tail, belly, and inside of legs.

For the dry treatment—which must be used in cold weather, especially in winter in the Northern States, even if there are a considerable number of animals to be treated—a mixture consisting of 1 pound of either derris or cube containing 5 percent rotenone, plus 9 pounds of 325-mesh wettable or nonwettable sulfur or some of the inert siliceous carriers may be used. The dust-gun method of application has not proved very satisfactory, but hand treatment, although it requires more material and time to apply, is practical and safe. If this method is used, the mixture must be well rubbed into the skin all over the animal. Animals should be treated again in 12 to 14 days and a third time 17 to 21 days after the first treatment.