

Injurious Insects—No. 7.

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THE HORN FLY (*Hematobia serrata*.)

This new enemy of the farmer has recently appeared in many parts of the provinces of Ontario and Quebec, and many false reports of the injuries which it is alleged to have inflicted upon cattle have appeared in the newspapers. I write the following article to give farmers, who appear to be in much anxiety on the subject, a short life-history of the insect, and to inform them of some simple but effective remedies which may be used to protect their stock from annoyance and themselves from the consequent loss.

It may be well at the start to say that, in spite of all the exaggerated statements which have appeared to the contrary, not a single instance of any animal having been actually killed by this pest is on record. The account of its life-history which is given below will show that the maggots never feed upon flesh, and, therefore, all statements that they bore into the horns, brains or flesh of cattle are untrue. Notwithstanding this, however, the presence of this fly among our herds is a most serious matter. For, although it is a small insect, its bite seems to be very irritating to cattle, and animals when worried by it quickly fall off in flesh and yield of milk—in some instances, it is said, from one-third to one-half the usual quantity.

The Horn Fly is a native of southern Europe, and was introduced into the United States probably with imported European cattle about 1886. It has gradually spread until it has now reached Canada. The fly is a small, dark gray species, resembling the ordinary cattle fly or the common house fly, but is only about one-third of their size.

This insect increases very rapidly in numbers when it gets established in a locality, and the flies instinctively settle on those portions of the body which are least easily reached by the head or tail of the animal, as the back, the flanks, beneath the belly, and on the horns, where they sometimes congregate in such numbers as to form a complete black ring extending from the base for two or three inches towards the tips. The last peculiar habit has given rise to the popular name—the Horn Fly—but they do no harm to the horn, as some think, but simply resort there to rest. Unlike the ordinary cattle fly, the horn fly does not as a rule attack horses or other animals.

When biting cattle the flies work their way beneath the hair and insert their short, dagger-shaped trunks through the skin and gorge themselves with the blood of their victims. These bites produce much irritation, and the animals frequently rub themselves against trees or other objects until sores of considerable size are produced. The eggs are never laid in these sores, but are always laid upon the fresh droppings of the cattle, where the maggots hatch. They feed only upon the liquid substance of dung while in a moist condition. These flies, like all insects, pass through four stages:—The egg (fig. 1 a), which is laid on the surface of dung; the maggot or larva (fig. 1 b), which lives inside it, and when full grown descends a short distance into the ground and changes to the puparium state (fig. 1 c); from this in a few days, in warm weather, the perfect fly emerges (fig. 1 d).

The figures used to illustrate this article have been kindly lent for that purpose by the United States Entomologist, Dr. C. V. Riley.

From the egg to the perfect insect takes only two or three weeks, and there are several broods in a season. The last brood passes the winter beneath the soil in the puparium state, and the flies emerge the following spring.

It is not probable that the flies will give much more trouble this season, as they generally disappear with the advent of cold weather; but it is most advisable that farmers should become acquainted as soon as possible with the true life-history, and the best means of preventing their attacks. Next spring, upon their first appearance, all should combine in a concerted

effort to reduce the numbers, by treating the dung so as to prevent the fly from breeding.

REMEDIES.

These are of two kinds:—(1) Preventive, or such as keep the flies from biting stock, and (2) Active, or those which aim at destroying the insect in its various stages. For the first the application of some substance not injurious to the animals but obnoxious to the flies is necessary. It has been found that almost any cheap oil will answer this purpose, and train-oil, fish-

oil, tallow and axle-grease have been extensively used. The addition of a little Carbolic Acid or Oil of Tar not only keeps the flies away, but has a healing effect where sores have been formed by the animals rubbing. These substances may be added in the proportion of one ounce (about a tablespoonful) to half a gallon of oil, and the mixture must be well mixed or shaken together before application. A small quantity should be rubbed over a beast with a sponge or cloth where the flies gather most thickly.

Kerosene Emulsion, sprayed over the animals by means of a force pump and spraying nozzle,

has also been used with great success. This valuable insecticide is very easily made. It is simply a mixture of two parts of coal oil with one of soap suds. Take two ounces of soap, cut it up in small pieces, and boil in a quart of rain water till all the soap is dissolved; then turn this into two quarts of coal oil, and churn it constantly and forcibly with a garden syringe or a force pump for five minutes, when the mixture will be of a smooth creamy nature. There will then be three quarts of stock Emulsion. Before using mix this with nine times its quantity (twenty-seven quarts) of water. This will certainly be most easily and thoroughly applied by means of a force pump and spray nozzle, but may also be used with a sponge or cloth, and will keep the flies off for from three to seven days.

Of the second class or active remedies the most effectual are those which secure the destruction of the eggs and maggots. These exist only in the fresh, moist, dung of cattle. A shovelful of lime thrown on a cow-dung has been found to destroy all the contained maggots. Wood ashes would answer even better, and would be a valuable fertilizer for the pastures, where applied. Road dust or dry earth would answer the purpose of drying up the moisture of the manure, which is necessary for the maggots to live.

The surest way, perhaps, to deprive the maggots of the conditions necessary to their growth and development will be to have all the cattle droppings spread out with a shovel or the back of a rake once or twice a week, so that the material may dry up quickly in dry weather or be washed away into the soil during wet seasons.

A Few Don'ts for Fall and Winter.
Don't neglect to open the outlets of all your furrows in your fall wheat and your fall plowing.

Don't pasture your meadows while wet with your heavy stock, and eat them bare with your sheep, and then wonder how the mischief it is you do not have a better crop of hay.

Don't leave your stock out at night, when it is cold and wet, humped up against the fence, and then wonder how it is the cows give less milk.

Don't plow your heavy clay land in wide ridges, with shallow furrows, to have it smoother for that new binder next summer, and then wonder how it is your land stays wet so long in the spring, and bakes so hard, and how it is you don't have a better crop.

Better use the long plow; make narrower ridges and deeper furrows, and drive the binder a little slower. You haven't got to cut twelve acres a day with your binder, although Neighbor So-and-So says he can with his.

Don't go to all the credit sales there are for ten miles around, and then wonder how it is you have got behind with your fall work.

Don't buy scrub or stunted stock to winter over.

Don't forget that the fine stock you have seen at the fairs this fall won't pay to buy for breeding purposes if they have been pampered.

Don't forget to have some dry wood this winter. Remember, you said last winter you would never burn green wood any more.

Don't waste the manure from the fattening hogs. Don't forget to subscribe for the *ADVOCATE*, the farmers' journal.

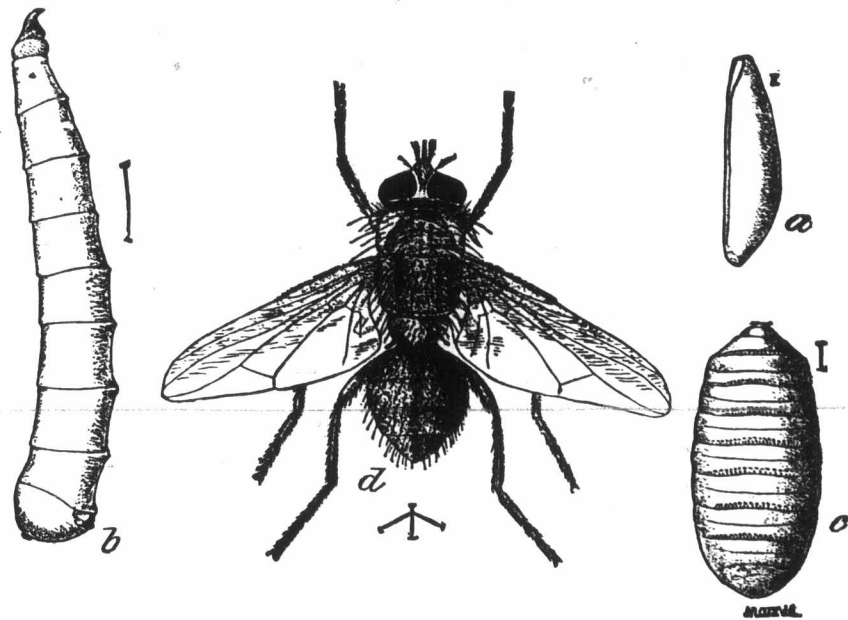


Fig. 1. The Horn-Fly—*a*, Egg; *b*, maggot; *c*, puparium; *d*, adult fly in biting position—all enlarged. (Figures kindly lent by the United States Entomologist.)

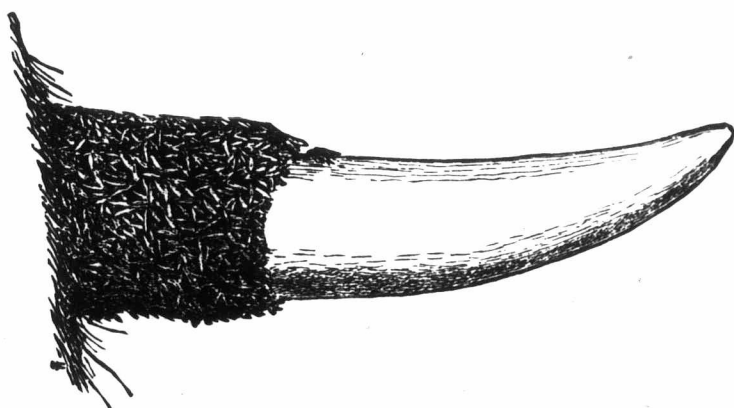


Fig. 2. Cow-horn showing hand of resting flies—reduced.