

Department of Agriculture and Colonisation.

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A CATTLE FLAGEL IN CANADA.—The following article from Professor Fletcher, the eminent Entomologist of the Experimental Farm at Ottawa, calls for immediate and continued action from our farmers, in order to avoid great loss among their cattle.

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Director Journal of Agriculture.

THE HORN FLY (*Haematobia serrata*)

Much anxiety is felt by farmers concerning a small black fly, about one third the size of the common house-fly, which has lately appeared upon cattle in the field, and has annoyed them very much by its irritating bites. When resting they frequently gather in large number around the base of the horns so as to form a more or less complete ring and from this fact the name "Horn fly" is derived. This is the new cattle pest which has been attracting so much attention in the United-States during the last three years. It was imported from Europe, probably upon imported stock, about 1886 and first appeared abundantly in Pennsylvania. From that locality it has gradually spread in all directions until it has now reached Canada. Sensational and exaggerated accounts of injuries done by the fly have gained credence amongst farmers and have caused much anxiety. It is frequently alleged that the eggs are laid upon the horns and that the maggots on hatching bore into the horns and thence into the brain, or that they are laid in holes eaten through the hide and that the maggots burrow into the flesh of the animal. It is further frequently stated that many head of stock have been killed outright. It will be reassuring to farmers to know that none of these statements are true. The complete life-history of this insect has been worked out most thoroughly and it is known that the early stages are not passed on the cattle, but in their freshly dropped dung in the fields. This fly, like other insects, has four well-defined periods in his life, 1. THE EGG, which is very small and dark brown in colour is laid by the female fly on the surface of freshly ejected cattle droppings. THE MAGGOT, which hatches from the egg in less than 24 hours after it is laid, and at once burrows down into the soft manure and feeds upon the liquid portions. It grows rapidly and in 5 or 6 days is fully grown when it is whitish in colour and $\frac{2}{3}$ of an inch in length. It now burrows a short distance into the ground and changes to the next stage, 3. THE PUPARIUM, which is a short brown oval object $\frac{1}{4}$ inch in length, inside which the fly forms, and 5 or 6 days afterwards, 4. THE PERFECT INSECT appears in the shape of a small blackish fly with red eyes and a pointed tongue which sticks out in front, beneath the head. This last is the instrument of torture with which it harrasses cattle. There are several broods in a season, and the last brood passes the winter in the third or puparium stage. The first brood appears in May and they increase rapidly in number and torment the cattle right through the season. Although they have never been known actually to kill animals, they worry them so much with their bites that they soon fall off in flesh and in the quantity and quality of the milk they give until these have been reduced in many cases one third or one half. This is a serious loss to farmers and one which they can avoid if they will use some of the following remedies :

REMEDIES.

These are of two kinds, 1. Preventive, by which the flies are prevented from biting the animals and 2. Active, by

which the insects are destroyed in their different stages : Of the preventive class the best are applications of some substance obnoxious to the flies which when placed on the cattle will prevent the flies from biting them.

For this purpose almost any greasy substance will answer Train oil, fish oils, axle-grease, tallow, Kerosene Emulsion, etc, rubbed on the parts most liable to attack will keep the flies off for three or four days and after three or four applications for a much longer time. If a little Carbolic Acid or Oil of tar be added to the above, it will not only add to the efficacy of the applications but will have a very healing effect upon any sores which may have been formed by the animals rubbing against trees or other object to allay the irritation of the bites.

Two ounces of Carbolic Acid or Oil of Tar will be sufficient in one gallon of oil.

Kerosene Emulsion, made by churning forcibly together for five minutes, by means of a force pump on syringe, two parts of coal oil with one of soap-suds and then reduce with 9 times its quantity of water will be found an excellent and easily applied remedy. The easiest way will undoubtedly be to spray it over cattle with a force pump and spraying nozzle.

Of active remedies the most effective will be those which aim at the destruction of the eggs and maggots in the manure, this may be done in two ways either by throwing lime plaster, or wood ashes on the droppings in the field or by having them spread out every day or two, so that they dry up in hot weather or are washed away into the ground when it rains.

The eggs are deposited upon the droppings immediately they fall and the maggots live only upon the liquid portions of the fresh manure. If therefore the droppings be spread out or covered with some dry material so that they are dried up before the maggots are full grown these latter must perish.

Wood ashes would probably be the best powder to use not only from their caustic nature ; but from their great value as a fertilizer. (Lime and ashes applied on fresh manure are liable to drive out its most costly element NITROGEN. Plaster, on the contrary saves it all. Therefore, the latter should be preferred. ED. A. BARNARD).

I think however that the cheapest and most effective remedy will be found to be the spreading of the manure. This could be done by a boy and twice a week would be sufficient. (1)

(Signed) JAMES FLETCHER.

THE PRIZE FARMS OF R. A. S. E.

CLASS I.—FIRST PRIZE.

OCCUPIER, MR. JOHN PALMER, HAMPTON-ON-HILL.

This farm is 380 acres in extent, about one half arable and the other half grass. Although varying somewhat, the general character is a heavy loam on clay subsoil, better for wheat and bean culture than for other corn crops, and it will be found that these crops enter largely into the rotation. Roots are only grown about every seventh year, the course of cropping being usually—1, wheat; 2, beans; 3, wheat; 4, roots; 5, barley or oats; 6, seeds, which remain two years. Sometimes, indeed, the grass layer remains longer, and such being the case it seems rather surprising a different admixture should not be adopted, no timothy or cocksfoot entering into

(1) In all well-managed grass-farms in England, the "clots" are knocked about every week to prevent the grass growing in patches.
A R J. F.