

ENTOMOLOGY.

Injurious Insects.

BY JAMES FLETCHER, DOMINION ENTOMOLOGIST,
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CLOTHES MOTHS.

Only too well-known to the housekeeper are the injuries to sleigh robes, furs, carpets and woollen garments by Clothes Moths, for there are very few who have not been sometimes victimised.

Clothes Moths, like all other insects, pass through four well-marked stages of existence. The moths begin to appear in April, and some specimens may be found in the moth state throughout the summer. Soon after the insects appear in the perfect state, they pair, and the females begin to lay their eggs. The food of the caterpillars which hatch from these eggs is entirely of an animal nature, as wool, hair, fur and feathers of all kinds. The whole of the injury done by these insects is while they are in the caterpillar state. When full grown, these latter are a little more than a quarter of an inch in length, with a yellowish head. Although small, their power to do harm is very great. The chrysalis stage lasts only a short time. The caterpillars from eggs laid early in spring become full-grown by autumn, but do not change to chrysalides until the following spring. The young caterpillars from eggs laid late in the spring, or during the summer, have not time to reach full growth before winter sets in. These pass the winter in a torpid state without eating, and finish their growth the following spring, so that caterpillars only half grown may sometimes be found in spring upon undisturbed garments or carpets. By far the larger proportion, however, emerge as moths about the end of April, or in the beginning of May.

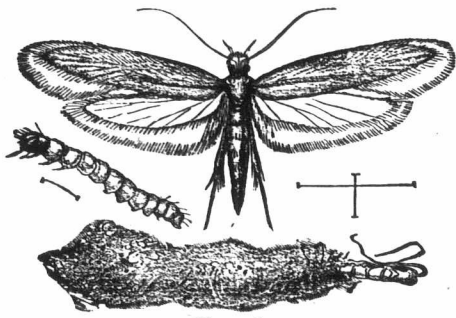


FIG. 1.

There are two kinds of Clothes Moths, the small caterpillars of which commonly attack clothes, furs, etc., in Canada, and neither of which is a native pest; both have been imported from Europe. The first of these (Fig. 1) is the commoner. It is a small creamy white moth, without spots, and when at rest the wings are held in a sloping position over the back. The caterpillar spins a white, silken path over or through the article attacked. The second kind is shown, much magnified, at Fig. 2. It is a dark gray moth, with a few darker spots on the wings; these latter lie flat over the back when the insect is at rest. The caterpillar from the very first lives inside a small muff-shaped case, which it constructs about with it all the time, and which it constructs of fragments of the material it has been attacking.

REMEDIES.

It is important that the nature of these insects should be understood by all who wish to protect their property from their depredations. In the first place a commonly believed mistake may now be corrected. Clothes Moths, the caterpillars of which eat clothes, carpets, etc., do not fly into houses from out of doors, but breed inside the house, and the

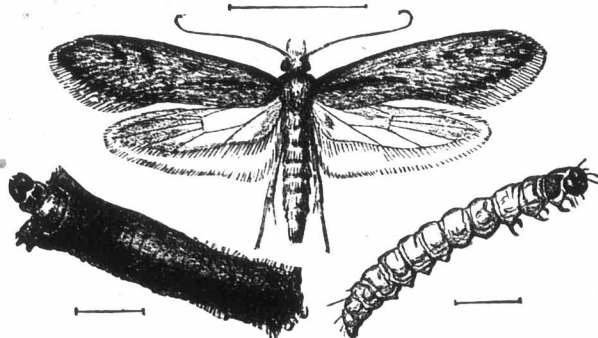


FIG. 2.

moths which fly into houses during summer evenings are perfectly harmless in this respect.

In the case of sleigh-robes, furs, etc., there is nothing better, as a remedy, than giving them a thorough beating and brushing, and then packing them away in spring in a tight box, chest or barrel before the moths appear. Woollen winter clothes and smaller articles may be folded neatly and wrapped in strong paper. Of course, if the edges are pasted together it is so much the better.

When carpets are found to be infested, the furniture should all be removed from the room, and the carpets well swept. The edges may then be sprinkled freely with benzine or gasoline. Both these liquids are dangerous, on account of their extreme inflammability. Great care must therefore be taken not to take a light into the room until some hours afterwards, or until the room has been thoroughly aired. In the case of upholstered furniture or carriage linings, these may be sprinkled freely with gasoline, which will destroy the insects in all stages and will not injure the cloth: the odour soon disappears

when the articles are left in the open air. Prof. Riley, the U. S. Entomologist, recommends for carriage linings sponging them with a very dilute solution of corrosive sublimate in alcohol made only just strong enough not to leave a white mark on a black feather. The extremely poisonous nature of this substance, however, demands that the greatest care should be exercised in its use.

When, from various causes, winter clothes and furs have not been packed away before the moths appear in spring, they should be well brushed and beaten out of doors, and packed away in such a way that they can be got at easily. They must be opened again about a month later, and examined to see if there are any traces of the insects. An easy way to make a tight box for packing away clothes for the summer is to take any common box and paper it inside and out with newspapers; when filled, fasten the lid on and paste paper over the cracks.

Camphor, pepper, cedar chips, naphthaline and other substances sold for the purpose, do not kill the insects when they have once attacked material, but have a certain deterrent effect in keeping away the moths when they are flying about in search of a suitable place to lay their eggs.

POULTRY.

Poultry on the Farm.

BY IDA E. TILSON, WEST SALEM, WIS.

During twelve years of poultry culture I have twice bought a stock, three times hatched May or June broods, seven times got out my chicks in March and early April. I confess I prefer the last, but, considering my own exposure and the extra expense and time bestowed on early broods, with the fact that judicious feeding and forcing can make so much of chicks at any season, I doubt whether I shall again raise many as early, certainly not this backward spring, though two biddies are set, due the first week of April, just to keep my hand in practice. The breaths and bodies of a whole flock warm their house considerably, hence that is a more comfortable place in which to put early setters than a separate apartment would be. Late broods hatch anywhere. Biddy's social qualities have been developed along with her size and productivity. She is no longer an absolute "child of nature," and, I find, hankers less for quietness and retirement than some poulterers are still supposing. I introduce no strange, confusing boxes nor quarters, but let this civilized bird set just where she laid. Since nature must be recognized, I compromise between that and society by recommending setters such darkness and solitude as temporary nest-doors will secure. My usual nest-filling is sawdust, which shapes readily, cleans easily, and retains warmth finely. I have added hay or sod foundations, but my cluckers detected these new elements, and either fled affrighted, or, with desperate courage, scratched things to pieces in investigation. Sawdust alone gives good hatches, and I could not return to packing hay nests—worse for "humpiness" than a refractory "Saratoga" trunk. After the setting fever has a good grip on biddy, her nest-box gets clean contents, which, when thoroughly warmed again, receive one-half teaspoon of sulphur and from nine to thirteen eggs, according to coldness of season and size of sitter. I mark her eggs as our grandmothers did, with a pencil, not all over, closing pores, but sufficiently for distinguishing them if necessary. All being made ready, biddy is not dumped on her nest like a senseless thing, but left to step inside; she likes to feel she has done something herself. But I always select tame birds, willing to be handled and that think just as I do, so we can agree and not perplex each other. The only bacteria that biddy fears are visible without a microscope, and about the size of lice. Do not risk—better still, do not own, an infested clucker. I can always find enough which seem perfectly free, but "favor is deceitful and beauty is vain," so I dust them all the same, with Persian insect powder or chamomile when set, when done, and a few times between, looking for red mites on top of head, and for large, grey specimens around throat and rear. Cold, greasy ointments I am afraid of, and have never needed. The above powder, known also as pyrethrum, is absolutely harmless for everything but parasites. What a shame to let a hen be eaten alive while doing her duty. It reminds one of those unpleasant cannibal islands. For early mothers choose plump, hearty, but not unwieldy hens. Setting is not a light employment for leisure hours, but a steady job, and requires stamina and endurance. Biddy can hardly be dynamo, heater, engineer, night watchman and mother all at once without generous and solid supplies, corn being chief, to which I often add bread crumbs, cheese rinds, egg-shells, and a very little lean, cooked meat, especially if a setter's appetite flags, or she seems "shivery" on coming to the air. Puddings and relaxing foods are entirely tabooed. Every morning in warm weather, twice a day in cold weather, I take off my setters and carry them into a little eating room. When satisfied with food, they are released and make their own way back, after such exercise and pleasure excursions as they see fit. My stated times and regularity of taking them off soon induce such methodical habits in these cluckers that, after a few days, they never come out otherwise, and I can dispense with all watching, or be absent from home for hours, because a well-trained setter virtually becomes like Tennyson's brook—
"Men may come and men may go,
But she goes on forever."

A steady heat for several successive hours is re-

quired to start the feeble embryo into real life, so a sitter's first absence and check to this continuous heat is critical, and should be brief. Sometimes on her uncovered eggs I lay my woollen mittens, warm from my hands.

"Anything well begun,
Is already half done."

Later, in all reasonable weather, biddy should take thorough airings for her own health, and because eggs too closely covered seem fairly cooked, and hatch no better than when there are too many, with always some chilled eggs around the edges of nest.

Of 203 chicks cooped by me one year, 202 reached maturity; another season 198 did out of 205, and other nearly as good results might be mentioned. I never see cooked eggs recommended for little chicks without wishing to say "Raw, or boiled at least twenty minutes." What is commonly called a "hard-boiled" egg—hard, indeed, for any digestion—has its albumen turned to leather. Keep on boiling, and that leather itself will slowly disintegrate and become more digestible. This covers the whole ground of dispute between those who say, "Feed little chicks entirely on eggs," and those who reply, "Never, unless you wish them to die." This annual "egg controversy" opened in a March poultry journal by one writer directing hard-boiled egg fed first thing; and another replying, it must not be done right away. According to my experience they might save such discussion, because chicks till three or four days old, at least my chicks, do not like cooked egg. My early staple is bread and milk, not sloppy, which is safe beyond criticism. Oatmeal, just moistened, and "Dutch cheese" come next; wheat as soon as can be swallowed; boiled eggs perhaps once a day, chopped shells and all, mixed with bread crumbs and potatoes; occasionally a regular baked custard, or a raw egg beaten, thickened with crumbs. Gravel and bonemeal mixed are constant companions, meal puddings are gradually worked in, and chopped onions or a little lean, cooked meat, shredded fine, are treats. A properly raised chick both eats to live and lives to eat.

Poultry Notes.

BY JOHN BEVERIDGE.

From actual experiment it is stated that the droppings from four large Brahma chickens for one night weighed in one case exactly one pound, and in another more than three-quarters, an average of nearly four ounces to each bird. By drying this was reduced to not quite one and one-half ounces. Other breeds make less, but allowing only one ounce per bird daily of dry manure, fifty fowls will make in their roosting house alone ten hundred pounds yearly of as good manure as can be purchased. Hence, fifty head of poultry will make more than enough manure for an acre of land, seven hundred pounds of guano being considered a good application for an acre, and poultry manure being even richer than guano in ammonia and fertilizing salts. No other stock will give an equal return in this way for the food consumed, and these figures should be carefully pondered by those who take little heed of this kind of manure.

Vegetables of any kind, and especially onions, are relished by fowls of all ages. Onions chopped fine and placed in the soft food act as a stimulant and tonic. The tops are particularly good.

APIARY.

The Apiary.

BY ALLEN PRINGLE, SELBY, ONT.

SETTING OUT.

Throughout Ontario, with the exception of parts of the Niagara Peninsula, and throughout Canada generally, this is the month (April) for removing bees from their winter repositories and placing them on their summer stands. In the peninsula, which is somewhat specially favored in climate compared with the rest of Canada this side the Rocky Mountains, some of the best bee-keepers winter their bees outside on the summer stands. They are, of course, protected by packing. Under such circumstances the bees get an occasional flight during the winter and early spring, but those in cellars and other repositories cannot get a cleansing flight till they are put out either temporarily or to stay. Up to date (April 5th) there has been little or no weather suitable for the flight of bees wintered inside. For the first flight, when the bees are stiff and laden from long confinement, the weather should be warm and calm, or many will be lost. Unless they are badly diseased and restless, it is better to leave them in till a suitable day arrives. And should they be quiet and free from signs of the bee diarrhoea, it is better to leave them in winter quarters till the weather is settled warm, and the natural pollen appears. In Eastern Ontario this occurs on the average between the 10th and 20th of April.

After the bees are put out in the spring, as soon as they have finished their first flight, they ought to be examined, cleaned up, those deficient in stores supplied therewith, and the hives, if not chaff or double-walled, packed around and on top with chaff, straw, dry sawdust, or something to conserve the heat. If not so packed, and the weather turns cold and unfavorable, they ought to be carried back to the cellar till it settles fine. It pays to take care of the bees in the spring the same as it pays to care properly for the other live stock about the farm, and no farmer worthy of the name thinks of neglecting his stock in the spring, or at any other time. The bees are as worthy, if not more, of attention as the rest.