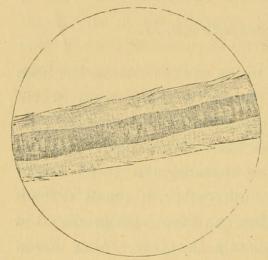


FIG. I.--Clothes Moth, Tinea pellionella, L.

A most remarkable specimen, due to the work of insects, has been sent to the Editor by Miss Lucy C. Eaton, of Truro, Nova Scotia. This consists of a piece of cotton ticking, which had been used for a pillow case, and the inside of which has been so completely covered with fragments of feathers as to have the appearance of gray velvet or plush. Without examining it under the microscope, it seems difficult to believe that the beautifully even surface can have been produced in the way described, but this is undoubtedly the case. Miss Eaton writes that the pillow was made in the fall of 1889, and not opened till two years afterwards. It was filled with turkey feathers, which are very soft and downy at the base. Miss Eaton noticed that when this pillow was placed on beds, although no one made any remarks, she more often than not found it on the floor in the morning. After a time, suspecting nothing, she put it on her own bed, when the mystery was solved, for she says "I could not sleep for the noise like something crawling slowly back and forth." She turned it over and over, but it was no use, she was at last obliged to serve it as it had been served on so many previous occasions, and once more it was thrown to the floor. Some months after, upon opening the pillow, the whole inner surface was found to be entirely covered with a coating of velvety pile, and the feathers, some specimens of which were forwarded, were entirely stripped of down, which was cut into morsels almost as fine as dust. From the extent of

the damage Miss Eaton expected to find an insect of the size of a grasshopper; but found instead only the empty cocoons of the caterpillars of the small Clothes Moth (*Tinea pellionella*, Linn.) shown admirably in the excellent cut (Fig.  $\tau$ ) which has been kindly lent by Dr. C. V. Riley, the U. S. Entomologist. The felting of the ticking was due to the barbed nature of the morsels of feather. The plumules of feathers and the down of many animals when highly magnified are found to be invested with minute barbs, all pointing the same way. The feathers were cut up by the caterpillars of the moths feeding upon them, and the minute barbed portions of the feathers by the movement and shaking of the pillow were brought in contact with the pillow case.



These morsels, if short enough, had sufficient rigidity to work their way into the cotton cloth, and were at once fastened there by their own barbs. The value of these barbs in the making of felt is explained in a most interesting manner in Mr. Horace T. Martin's excellent work "Castorologia," where he describes the manufacture of telt from "beaver wool,"

Beaver fur. Magnified 250 diameters. for the shapes of hats, and shows the From Martin's CASTOROLOGIA, p. 132. nature of the barbs or "staple" of this wool by the magnified illustration (Fig. 2), which he has been kind enough to lend us. In this illustration, a hair of beaver wool is shown magnified 250 diameters.

The Clothes Moth *Tinea pellionella*, as well as the other two species of Clothes Moths found in this country, *Tinea tapetzella* with black and white wings, and *Tineola biselliella*, with pale, silvery, fawncoloured wings, is an immigrant from the old world.

 Tinea pellionella, Linn., in the perfect state, is a small, gray moth, with three or four black spots on the wings. These lie flat over the back. The caterpillar lives in a short, muff-shaped case, which it carries about with it. (Fig. 1).

- 2. *Tinea tapetzella*, Linn. The moth has the base of the wings black and the tips white or gray. The caterpillar lives always in a tube which it spins through and over the article it is destroying, working into it particles of the cloth or other material attacked.
- 3. *Tineola biselliella*, Hum. The moth is silvery fawn-coloured with the wings sloping when at rest, The caterpillars pins only a sligh tube or path of silk on its food or is frequently found uncovered When full grown it spins a close cocoon something like the case of No. 1, but rounder at the ends and less regular.

These all pass the winter as caterpillars without feeding and change to chrysalides and a little later to moths in the spring.

No article, however short, upon these troublesome insects would be complete without some suggestions as to the best means of preventing their injuries. The whole damage is done by the caterpillars and none by the perfect moths.

The habits are as follows: The moths which lay the eggs from which the caterpillars hatch, appear in spring and through the summer. These fly to any object composed of suitable food for their young to feed upon, and lay eggs which hatch into minute caterpillars; these feed till winter and then remain torpid through the winter changing to moths the following spring. When possible all articles of clothing liable to attack should be well shaken, brushed and put away in tightly closed paper parcels before the moths appear in spring. The caterpillars only feed on animal substances, therefore articles wrapped in paper, cotton or linen are safe. Clothes which are not packed away before the moths show themselves should be hung in a conspicuous place where they will not be forgotten so that they may be frequently shaken or brushed.

Carpets, furniture, or furs which have become infested may be sprinkled or saturated with benzine or gasoline which will destroy all insect life. Care must, of course, be taken not to have a light near when these inflammable substances are being used.

Putting camphor, naphthaline, pepper and cedar amongst clothes, have the effect of keeping the moths from laying their eggs upon them to a large extent, but they are not sure remedies.—J.F.



Fletcher, James. 1892. "Clothes Moths." *The Ottawa naturalist* 6(8), 125–127.

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