NOTES ON THE LARVA OF PANTOGRAPHA LIMATA, GROTE.

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On the 27th of September, 1882, while riding through Mt. Hope Cemetery, near Bangor, the leaves on several trees of Basswood *(Tilia Americana)* were observed to be rolled in a peculiar manner, and to contain a green larva with a black head, which I supposed at the time to be that of some Tortricid; but it quite puzzled me, as it was larger than the larva of any Tortricid in this region with which I was familiar. Miss Murtfeldt, who was riding with me at the time, said that she had seen the leaves of Basswood attacked and rolled in precisely the same manner in Minneapolis, but failed to secure any of the larvæ.

A large number of the rolled leaves were obtained and brought home from Mt. Hope, but the larger part of the larvæ had been destroyed by parasites or had escaped from their domiciles. Miss Murtfeldt took home with her a part of those remaining, but they failed to emerge. Of those which I retained, three pupated, one Oct. 10th, and the others a little later. They were kept in a warm room, so that without doubt the results are not the same as would have taken place out of doors. The one which went into the pupa state Oct. 10th, emerged Nov. 3rd, and proved to be *Pantographa limata* Gr. A few days later another emerged, but was crippled. The third failed to emerge either then or the following summer.

I have little doubt that if left to themselves they would have changed to pupæ among the leaves on the ground, and remained in this state during the winter, emerging the next season; for no thoughtful insect would emerge in such cold weather as we usually have here in November, but the facts must be learned hereafter.

The larva cuts the leaf across from near the middle of the side, past the midrib nearly an inch, in the larger leaves. This cut, which is about an eighth of an inch wide, first starts directly across the leaf, then curves gradually towards the apex, then back to the former direction, so that the entire cut is nearly in the form of the letter S, somewhat straightened out. The part beyond the cut is rolled over so as to form a cone with the apex towards the base of the leaf, and when enclosing a larva, both ends are turned in, so as to close the openings. In drawing the parts of the leaf together, the larva spins the thread from side to side—from the side of the cone to the surface of the leaf beyond, about forty times in a place before moving to another. The second set of threads, which is from a fourth to

a half an inch from the last, frequently draws the parts of the leaf together so much that the threads of other bundles hang in a loop. The larva deposits its excrement within the cone, towards the larger end.

The full grown larva is 25 mm. long, when at rest, and 30 when in motion; fusiform and somewhat stout in proportion to the length.

The body is pea green, about the color of the under side of the leaves of Basswood. The usual warts are present, of a dull brownish color and emitting pale hairs. The head, thoracic shield and legs are pitchy black, while the mouth parts are a little lighter, and there is a small black spot on each side of the first segment back of the head, just in front of the spiracle. The anal plate is dull brownish.

When preparing to change to the pupa state, the larva draws a portion of a leaf around it, lining it with silk, thus forming a delicate cocoon.

Three species only are at present known in the Pyralid genus *Pantographa*. The first two, *scripturalis*, of Brazil, and *anastomosalis*, of Java, were described by Guenee under the genus *Pionea*, the second one with doubt, and there was even doubt as to the locality. When Lederer made his revision of the *Pyralidæ* of the world, he established the genus *Pantographa* for these two species. Later, Mr. Grote described the species *limata* from North America, and I must confess that it is wonderfully near the Brazilian *scripturalis*, and may eventually prove to be the same species.

While the imago of *Pantographa limata* Gr. is a typical Pyralid, the larva is so very much like Tortricid larvæ, both in structure and habits, that I unhesitatingly referred it to the *Tortricidæ* till it emerged, and I could discover what it really was.

WEEVIL VERSUS CURCULIO.

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Curculio is an ancient Roman word, not at all used to denote a plum insect. It is slightly difficult to pronounce, and it certainly fails to inform the popular mind as clearly as the suggestive old Anglo-Saxon word, "weevil."

Weevil, in its original and right use, designates only insects of the snout-beetle kinds, like the plum weevil, bean and pea weevils, corn or