

B. M. M.

from our present knowledge the Agromyzid alone would have probably sufficed to check lantana from further distribution. But before the introduction of any of the lantana destroyers this could not have been foreseen and, necessity to check lantana being urgent, several other safe species were introduced. These importations did not include *Orthezia*. But evidently ranchmen were in straightened circumstances, and seized upon *Orthezia*, whosoever was responsible for its introduction, as a godsend. Moreover they now claim that nothing has done so much toward killing lantana as did *Orthezia*, and large stretches of dead lantana testify to the correctness of their claims. Considered from the business view point *Orthezia* has done much material good by killing off large areas of lantana. Yet it is no denying that it is a disgusting scourge once it invades a garden. While it kills little perhaps, its presence induces growth of the sooty mold and turns black everything it overruns. The situation summarized is as follows: *Orthezia* is an undoubted blessing to the ranchmen whose best pastures are overrun by lantana; it is a disagreeable pest to the horticulturist, and, as lantana is the best soil builder we have, the owner of large tracts of arid rocky land is not thankful for its presence there.

In commenting upon these notes Dr. Perkins said that while the scale has thus far done more good than harm it is his belief that ultimately it may become injurious and will require control. Mr. Giffard stated that he is convinced the scale, and especially the copious amount of honey-dew it produces, interferes with the efficient work of the Tingid. In addition he said the agricultural and horticultural interests of the Territory required that the scale bug be placed in control.

MAY 7th, 1908.

The fortieth regular meeting was held in the usual place, Mr. Swezey in the chair.

EXHIBITION OF SPECIMENS.

Mr. Swezey exhibited large series of specimens illustrating his papers which follow.

On the Stridulating Organ of a Spingid from Larat.

BY F. MUIR.

When in Larat my attention was attracted to this Spingid by the loud noise it made both on the wing and at rest. I only

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succeeded in catching one, a male, and found that the noise was produced by a rapid lateral movement of the last segment of the body, where a highly specialized organ existed. The claspers, when closed, are shaped like the stem of a decked boat. On the dorsal surface (the deck) are two groups of highly specialized scales, flat, rough or hard forming a file. Along the posterior edge of the preceding segment the scales are also highly specialized, being stiff and shaped like the teeth of a comb. By a lateral movement of the segment that bears the claspers the files are rubbed against the "teeth" of the "comb" and produces a loud noise that can be distinctly heard ten yards away.

The Younger Stages of *Nesodryas freycinetiae* Kirkaldy.

BY OTTO H. SWEZEY.

This is a delicate pale green little leaf-hopper living on the "ieie" vine (*Freycinetia arnotti*). The eggs are inserted in the younger leaves at the crown of the growing vine, parallel with the fibers of the leaves, one or two together. The young nymphs are very flat, adapted to crawling between the leaves in the crown of the plant. They also may be found exposed on the surfaces of the outer parts of the leaves, where they might not be recognized as young leaf-hoppers at first sight, on account of their flatness; and their coloration as described below allows them to be mistaken for a bit of dirt or debris.

The first stage is about 1.25mm. long and about 0.75mm. wide; flattish; head bluntly triangularly produced in front of eyes; pale green; sides and front of head, sides of thorax, two apical segments of abdomen (except median dorsal triangle in penultimate segment), femora, basal portion of tibiae and tips of tarsi, dark fuscous; eyes red; tibial spurs of hind legs have but one tooth, it and the spines at apex of tibiae and tarsal segments, black-tipped.

The second stage is about 1.5mm. long; coloration similar to previous stage except that the green portion is not so pale, and has a yellowish tinge. The tibial spurs have two teeth.

The third stage is about 3.25mm. long; coloration similar to second stage, except that the legs are less fuscous, and the ventral side has a bluish tinge. The tibial spurs now have three teeth.

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The fourth stage is about 3mm. long. The whole insect is now nearly all green, yellowish on thorax, and bluish below; a few pale brownish markings on thorax, wing-pads and dorsum of abdomen; two fuscous spots on prothorax, one on costa of tegminal-pad, near apex, one near inner angle of hind wing-pad, one at lateral margin of apical segment of abdomen; a fuscous spot on lateral margin at apex of second and third abdominal segments; tips of tarsi fuscous; tibial spurs of hind legs have four teeth.

The fifth stage is very little larger than the fourth; coloration the same; the sensoria on the second segment of antennae are now fuscous.

It is worthy of note that the tibial spurs of the hind legs are simple in the first stage, i. e. have but one tooth and that is at the apex; and that a tooth is added for each stage to the fourth; but the fifth stage has four, the same number as the fourth. In the adult there are five teeth on the tibial spur, sometimes but four, and sometimes there are six.

Life History Notes on Two Variable Tortricids.

BY OTTO H. SWEZEY.

Cryptophlebia illepada (Butler).

The larvae of this moth may often be found very abundantly in the pods of the Glue-bush (*Acacia farnesiana*), where they feed upon the seeds and also on the pulp of the pod. They feed in Koa pods and probably also in the pods of several other Leguminous plants; and have been reported from Litchi nuts.

The eggs are roundish-oval, about 0.3mm., flat, convex above and finely reticulated. They are whitish, dull purplish, or pinkish in color and somewhat iridescent. They are laid on the surface of the pods, singly, or often several together and slightly overlapping.

The full-grown larva is about 15mm. long, plump, dull whitish with a rosy tinge; head strongly bilobed, light brown, eyes in a black dot, another black dot at postero-ventral angle of head; cervical shield slightly tinged with brown; tubercles broadly roundish or oval, somewhat infuscated over their whole surface, those of row "i" notched on the anterior margin

on segments 6-12; spiracles black, pale-centered; tubercles "ii" wider apart dorsally than "i," "iii" just above spiracle; "iv+v" below spiracle, farther from it than "iii" is. When ready to pupate the larva eats a hole out through the pod; then spins quite a dense cocoon of whitish silk having one end near the hole in the pod, so that the moth may readily make its exit when ready to mature.

The pupa is 6-10mm. long, by about 3mm. wide; medium brown; dorsal surface of abdominal segments, beginning with second, supplied with two transverse rows of very numerous tiny, short, conical spines, those of the anterior row are the larger; those of succeeding segments increase somewhat in size going posteriorly; cremaster obsolete; wing, and antennae-cases extending to apex of 3d abdominal segment, a free tip extending a little farther; articulations between segments 3-7 movable. The pupal period is 10-12 days.

Emarmonia sp.

In July, 1907, I found a few larvae of this moth eating the growing seeds of *Canavalia galeata*, a native species of bean with a woody twining vine and very large pods containing 2 to 4 black beans about $\frac{3}{4}$ inch long. The vine had been planted by a fence in Honolulu and had gotten considerable of a growth, and a few pods had already formed. As the vine continued to grow and produce pods these larvae increased in abundance so that finally nearly every pod was attacked by them. They did not confine their attacks to the pods, however; besides feeding in the fleshy walls of the green pod and eating the growing beans within, they also bored the peduncles of the flower clusters, the petioles of the leaves, and the branches of the vine itself; practically attacking all parts of the plant.

Quite a series of this moth was bred from the vine during January and February, 1908. There is some little variation in coloration as shown by the specimens exhibited. I find that I have a specimen of this moth collected up Makiki Valley in May, 1908, which is the only one I had previously seen.

The eggs are laid on the surface of the bean pod, singly or one or two together in slight unevennesses of the surface. They are irregularly oval, about half a mm. long; flattened below, slightly convex above and finely reticulate; whitish in color,