

**Coccotrypes dactyliperda** reared from the following palm seeds :

*Phoenix dactylifera*: Kapiolani Park, September 22, 1927; Outrigger Club, September 24, 1927; Waialua, November 22, 1927; Pleasanton Hotel, November 28, 1927; Kamehameha Schools, December 8, 1927.

*Livistona chinensis*: Punahou Campus, November 28, 1927; Manoa Valley near Wodlawn, November 13, 1927.

*Livistona rotundifolia*: Honolulu, February 20, 1924 (H. L. Lyon).

*Oreodoxa regia*: Pleasanton Hotel, November 28, 1927.

*Washingtonia filifera*: Manoa Valley at the Pan-Pacific Scientific Research Institute, December 17, 1927.

*Pritchardia pacifica*: Kapiolani Park, December 18, 1927.

**Coccotrypes pygmaeus** (?) reared from the following palm seeds:

*Phoenix dactylifera*: Pearl City, about 1915.

*Livistona chinensis*: Experiment Station, H. S. P. A., June 8, 1927 (Rosa); Punahou Campus, December 18, 1927.

*Sabal palmetto*: Punahou Campus, December 9, 1927.

*Sabal blackburniana*: University of Hawaii, December 6, 1927.

*Cocothrinax argentea*: University of Hawaii, December 6, 1927.

*Pritchardia thurstoni*: University of Hawaii, December 6, 1927.

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### Some New Species of Lepidopterous Leaf-Miners in Hawaii

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(Presented at the Meeting of December 1, 1927)

The few leaf-miners included in this paper have been discovered in the last few years by the writer in his studies of the insect faunas of the native trees in the Hawaiian forests. In sending a considerable number of new species in various families to Mr. Meyrick for describing, these few leaf-miners were retained, as the writer having access to the types of close related species described by him a few years ago, considered that he could handle these later discovered ones to advantage.

## TINEIDAE

***Philodoria lysimachiella* n. sp.**

Head mouse gray, frons whitish; antennae mouse gray, whitish below on basal third, very long, about  $1\frac{1}{2}$  the length of wing; palpi white, slightly grayish externally on the apical half of middle joint, terminal joint infuscated in front. Thorax mouse gray, patagia ochraceous-orange. Forewings ochraceous-orange; a median white streak from base to near middle of wing lying slightly in front of the fold, bent dorsally in the outer fourth; a similar streak of the same length on the dorsal margin; from middle of costa a white band extends outwardly oblique to the dorsum at outer  $\frac{2}{3}$ , dorsal half widened; at  $\frac{3}{4}$  of costa a white spot extends dorsally nearly one-third across the wing; at beginning of costal cilia a white band extends across the wing very slightly inwardly oblique, in one specimen interrupted about  $\frac{1}{4}$  from costa; a small white spot at tornus enclosed in a large black spot occupying all of the apex of wing beyond the last-mentioned white band except a patch of the ochraceous-orange ground color near costa and a few iridescent scales at extreme apex; all of the white bands and spots have a slight bluish iridescence and are margined by a few black scales. Cilia mouse gray, with a white spot at beginning of costal cilia, remainder of cilia with black scales at base. Hindwings mouse gray, slightly infuscated towards apex, cilia mouse gray. Abdomen mouse gray, whitish beneath. Legs mostly mouse gray, whitish beneath. Wing expanse, 8-9 mm.

Holotype in the collection of the Hawaiian Entomological Society; paratypes in author's collection, Bishop Museum and the U. S. National Museum.

Described from 9 specimens reared from leaf-mines in *Lysimachia rotundifolia*, collected January 16, 1927, on the windward slope of Puu Hapapa, about 2000 feet elevation, half a mile south from Kolekole Pass, Waianae Mts., Oahu (Swezey). Leaf-mines were once collected from *Lysimachia* on the top of the ridge back of Kalihi Valley, but no moths were reared from them.

***Philodoria molokaiensis* n. sp.**

Very similar to *P. lysimachiella* except that the thorax has a longitudinal streak of ochraceous-orange on each side of disk, and the patagia are mouse gray instead of ochraceous-orange as in *lysimachiella*; the forewing differs in having an additional bluish-white streak which traverses the basal fourth of costa, then extends outwardly oblique across the wing; the median longitudinal is shorter and lies on the fold, whereas it is larger in *lysimachiella* and lies in front of the fold; the dorsal marginal streak is also shorter. Wing expanse, 9 mm.

Holotype and paratype in collection of Bishop Museum.

Described from 2 specimens reared from leaf-mines collected from *Lysimachia Hillebrandi* var., at Kawela, 3700 ft., Molokai, Dec. 23, 1925 (Swezey).

Leaf-mines have been collected on two occasions on *Lysimachia Hillebrandi* on the high plateau of Kauai, but no moths were reared from them. Probably when reared at some future time this will be another closely related species.

**Parectopa touchardiella** n. sp.

Head light buff, frons whitish; antennae light buff, infuscated on apical half, a little longer than forewing; palpi white, median joint slightly infuscated externally at apex, terminal joint infuscated in front. Thorax, abdomen and legs olive brown, pale beneath. Forewings olive brown, an outwardly oblique white bar at  $\frac{3}{4}$  of costa, a few bluish scales at its terminus which is a little more than half way across wing; three small white costal spots between this bar and the apex; apical portion of wing beyond the white bar with a few yellowish scales, and a few bluish scales at extreme apex; dorsum with three large triangular white spots extending obliquely outward, from near base, at about middle and near tornus, respectively, the middle one longer and narrower reaching to middle of wing. Cilia olive brown, with three white spots in costal cilia alternating with black spots, terminal cilia with black band at base. Hindwings and cilia nearly uniform olive brown. Wing expanse, 6 mm.

Holotype and paratype in the collection of the Hawaiian Entomological Society.

Described from 2 specimens reared from leaf-mines collected from *Touchardia latifolia*, at 1800 ft. elevation, in Black Gorge, on the north side of Iao Valley, Maui, Jan. 15, 1926 (Swezey).

Very closely related to *P. neraudicola* (Sw.) and *P. urerana* (Sw.), reared from leaf-mines of *Neraudia melastomaeifolia* and *Urera sandwicensis*, respectively. The wing pattern is much the same in all. In *urerana* the ground color is buff and it is a larger insect. In *neraudicola* the ground color is about the same as *touchardiella*, but the white dorsal spots are larger; the size of the two is about the same.

**Parectopa pittosporella** n. sp.

Head and thorax whitish (somewhat abraded above in the single specimen); antennae light ochreous brown, whitish at base, about  $1\frac{1}{4}$  of wing; palpi whitish, a little brownish externally. Forewings light ochreous brown, a white bar from  $\frac{4}{5}$  of costa outwardly oblique half across wing, three white costal spots beyond this; a white dorsal streak on basal half of wing a little widened at  $\frac{1}{5}$ , distad portion widened to fold, then with an oblique pointed extension continuing  $\frac{2}{3}$  across wing; another white streak on dorsum beginning at about  $\frac{3}{5}$  and continuing nearly to apex, an extension obliquely towards the end of white costal bar but not reaching it, a few brownish scales at tornus; a few bluish scales at apex; cilia grey. Hindwings and cilia greyish fuscous. Legs greyish fuscous, somewhat banded with whitish. Abdomen greyish fuscous. Wing expanse 8.5 mm.

Holotype male in the collection of the Hawaiian Entomological Society.

Described from a single male specimen reared from a cocoon found on leaf of *Pittosporum* about 3000 feet elevation on Mt. Kaala, Waianae range, Oahu, March 1, 1925 (Swezey). No mined leaves were found, hence it could be possible that *Pittosporum* was not the real host plant. The nearly continuous white streak on dorsum distinguishes this species from all other known species of *Parectopa* in Hawaii.

Since Mr. Meyrick maintains that the species of *Gracilaria* described by Walsingham in the *Fauna Hawaiiensis*, really belong to the genus *Parectopa*,\* it may be useful to list them here as well as the species described under *Gracilaria* by myself.

***Parectopa marginestrigata* (Walsm.).**

*Gracilaria marginestrigata* Walsm., *Fauna Hawaiiensis*, I, Part V, p. 721, Pl. XXV, Fig. 26, 1907.

Host plants: *Sida cordifolia*, *Sida rhombifolia*, *Sida fallax*, *Sida Meyeniana*, *Abutilon incanum*, *Abutilon molle*, *Xanthium strumarium* var. *echinatum*.

***Parectopa epibathra* (Walsm.).**

*Gracilaria epibathra* Walsm., *Fauna Hawaiiensis*, I, Part V, p. 722, Pl. XXV, Fig. 27, 1907.

Host plant: *Dubautia laxa*, *Hesperomannia arborescens* and an undetermined Composite shrub at Kumuwela, Kauai. (The species that I have recorded as *epibathra* may be in error, as none of the specimens reared exactly agree with the figure of *epibathra* in the *Fauna Hawaiiensis*. These records may yet prove to be of an undescribed species.)

***Parectopa mabaella* (Swezey).**

*Gracilaria mabaella* Swezey, *Proceedings of the Hawaiian Entomological Society*, II, 3, p. 89, Pl. 3, Fig. 6, 1910.

Host plants: *Maba sandwicensis* and *M. Hillebrandii*.

***Parectopa hauicola* (Swezey).**

*Gracilaria hauicola* Swezey, *Proc. Haw. Ent. Soc.*, II, 3, p. 100, Pl. 3, Fig. 5, 1910.

Host plant: *Paritium tiliaceum* (native name: hau).

\* See page 104, ante.

**Parectopa dubautiella** (Swezey).

*Gracilaria dubautiella* Swezey, Proc. Haw. Ent. Soc., II 5, P. 278, 1913.

Host plant: *Dubautia plantaginea*.

**Parectopa hibiscella** (Swezey).

*Gracilaria hibiscella* Swezey, Proc. Haw. Ent. Soc., II, 5, p. 279, 1913.

Host plants: *Hibiscus Arnottianus*, *Hibiscus rosa-sinensis* and varieties.

**Parectopa ureraella** (Swezey).

*Gracilaria ureraella* Swezey, Proc. Haw. Ent. Soc., III, 2, p. 94, 1915.

Host plant: *Urera sandwicensis*.

**Parectopa urerana** (Swezey).

*Gracilaria urerana* Swezey, Proc. Haw. Ent. Soc., III, 2, p. 95, 1915.

Host plant: *Urera sandwicensis*.

**Parectopa neraudicola** (Swezey).

*Gracilaria neraudicola* Swezey, Proc. Haw. Ent. Soc., IV, 2, p. 385, 1920.

Host plant: *Neraudia melastomaefolia*, *Pipturus albidus*.