

other words, there was a high rate of selection of white flowers during the period when the flowers were pollinated at night, but there was no selection of colors when daylight pollinations were made by the Hymenoptera and Diptera that frequented the plants.

PHILIPPINE MOSQUITOES.

BY C. S. LUDLOW

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Myzomyia flavirostris sp. nov.

Female: Head dark, covered with dark brown and white forked scales, and white long slender scales on the vertex, extending forward as a long tuft; antennæ brown, verticils and pubescence white, basal joint brown but not so dark as the cephalic scales; palpi dark brown the ultimate joint white, except, a very narrow brown basal band extending as a tiny brown band on the apex of the penultimate, a broad white band on the base of the penultimate and the apex of the following joint, the remainder of the organ dark brown, except a very narrow white band, at the preceding joint, very heavily scaled at the base; proboscis light scaled on the apical half, often not noticeable from the dorsal aspect, and always more marked on the ventral side, the proximal half dark brown, very heavily scaled at the base; clypeus dark brown; eyes dark brown.

Thorax: prothoracic lobes dark, with brown chætæ; mesonotum has the median third of a light brown, sometimes almost yellowish, covered with the fine tomentum so often found on Anophelines, and sparsely with golden brown hair-like scales, a well marked dark median line broadening so as to cover the "bare space," and in some specimens suggestions of other laterad dark lines, a bunch of long white slightly curved scales extending over the nape; the lateral parts are a rich dark brown. Scutellum dark brown in the median portion lighter laterad; metanotum dark; pleuræ almost black.

The abdomen is very dark, almost black, with scattered brown to golden brown hairs.

Legs: the coxæ and trochanters are dark, covered with small dark scales and chætæ; femora of the fore legs light brown, tibiæ and tarsi darker brown, ungues simple; mid-femora light brown, the rest of the leg dark brown, but the terminal tarsal joint appearing fawn colored in some lights, ungues simple; hind femora light brown, tibiæ much darker, especially toward the apex, and some specimens showing a tiny white apical spot, all the tarsal joints brown, sometimes with a suggestion of apical light spots on the third and fourth joints.

Wings, clear, covered with brown and light yellow scales. The costa as a whole is dark with five small light spots, one at the apex of the first long vein; one, extending on the first long, about on a line with the base of the second posterior cell, the third, also extending on the first is well interior to a line through the base of the fork of the fifth long vein, and the last is a tiny spot between this and the root of the wing. The wing field has many small spots the third long vein is mostly light,

with a small dark spot at its apex and one near its base; there are light spots at the fourchette of each ford cell; the stem and lower fork of the fifth long vein are mostly light with a dark spot at its apex, and one at the base of the cell; the distal half of the upper fork of the fifth long vein is white with a very small dark spot at the very apex, the sixth vein is dark; the wing-fringe is dark except for light spot at the apices of all the long veins but the second and sixth. Halteres with light stem and dark knob.

Length: about 3mm.

Habitat: Camp Wilhelm, Tayabas, P. I.

Taken: November.

I am indebted to Dr. Malcolm Watson, Klang, F. M. S., for calling my attention to this species. The wing and palpal markings greatly resemble the dark form of *funesta*, and with the hand lens the light proboscis is not sufficiently marked to call attention to it, and I had laid it aside as being probably this form of a species so common on the Philippine Islands.

Popea palawanensis sp. nov.

Female: Head black, mostly covered with dark brown flat scales, a white border around the eyes, and a narrow median portion of curved scales, white at the vertex and brown at the nape; antennæ dark brown, verticels and pubescence brown, basal joint dark with a few slender hair-like brown scales on the median aspect; palpi about one fourth the length of the proboscis, dark brown; proboscis dark brown, eyes dark brown; clypeus brown.

Thorax dark; prothoracic lobes heavily covered with white flat scales and dark brown chætæ; mesonotum dark brown with silvery white slender curved scales very closely set to form a white spot covering the cephalic third, the caudad edge is irregular, and reminds one of the "solid W" described for *Lepidotomyia magna* Theo; the remainder of the mesonotum covered with slender curved, rich, dark brown scales, except an irregular white spot just cephalad of the wing joint, and white scales forming a line around and extending on the "bare space"; Scutellum dark, partly denuded, the mid-lobe having a few white flat scales in the median line, a few white rather broad curved scales laterad of the flat ones, and then brown curved scales. The lateral lobes are denuded, except for one white and a few brown curved scales. There have apparently been five marginal chætæ on the mid and three on the lateral lobes; pleura dark brown with five or six large bunches of silvery white flat scales; metanotum dark.

Abdomen covered with dark brown scales except for rather heavy basal lateral brilliant white spots. On the venter are also heavy basal brilliant white spots sometimes extending as basal white bands, and there are on several segments, bunches of *very* long brown scales, so much constricted on the basal part as to appear almost petioled.

Legs brown; coxæ and trochanters testaceous with a few white scales; the fore femora white on the ventral aspect nearly to the apex, fore tibia brown only on the dorsal aspect, the ventral and lateral aspects brilliantly yellowish white; all the tarsi

brown. On the femora of the mid legs the ventral white extends on the dorsal aspect to form a white spot near the apex, the very tip being brown; the tibiae are brown except a white spot near the apex, the very tip being brown; first tarsal is basally white banded and has a white band near the apex, the tip being brown; second tarsal is basally white banded, the other tarsal joints are brown. The hind femora are silvery white except for a narrow basal brown band, a broad brown band a little beyond the mid-length of the femora, and a narrow brown band at the apex; tibiae brown; first tarsal basally white banded, and a white band near the apex; the second tarsal basally white banded, and the remainder of the tarsi are brown. Fore and mid unguis equal and uniserrate, hind simple.

Wing clear, with brown, rather long and broad-ended scales, somewhat resembling *Taniorhynchus* scales. Cells short, petioles about as long as the cells. First submarginal longer and narrower than the second posterior, bases nearly on a line; base of the third long vein and mid cross-vein meet, and the posterior cross-vein is more than twice its length interior. Halteres with white stems and heavy dark brown knobs.

Length: about 4.5 mm.

Habitat: Puerto Princessa, Palawan Island, P. I.

Taken: May.

Described from one specimen. A few specimens evidently of this mosquito have been previously received, but always in such bad condition that no description was possible.

MYZOMYIA (ANOPHELES) LUDLOWII THEOBALD.

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For sometime there has been quite a good deal of discussion as to the breeding habits of this mosquito, different observers claiming that it bred in fresh water, in blackish or salt water, and that it bred in either.

Without wishing to question the observations of any of those who have studied this *Anopheline*, and merely because there has lately appeared the definite statement, the foundation for which I do not know, that "*ludlowii* is exclusively a saline breeder,"¹ it seems better to publish what I myself know on this point.

The specimens which I sent to Mr. Theobald, and on which the species was founded, were taken by Dr. Graves in the Province of

¹ The mosquitoes of North and Central America and the West Indies. L. O. Howard, H. G. Dyar and F. Knab. 1912.



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