

PROCEEDINGS  
OF THE  
BIOLOGICAL SOCIETY OF WASHINGTON

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## DIAGNOSES OF NEW SPECIES OF MOSQUITOES.

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The following new species of mosquitoes have been found in our study of the material collected for the Carnegie monograph of the mosquitoes of North and Middle America, and preliminary diagnoses are here given of them. In all cases where more than one locality is mentioned the type locality is given first.

## GENUS PSOROPHORA ROBINEAU-DESVOIDY.

**Psorophora virescens** sp. nov.

Close to *P. howardii* Coquillett, but the abdomen above metallic green shining instead of blue. The species is also somewhat smaller.

35 specimens, Almoloya, Acapulco, Tehuantepec, Salina Cruz, Mexico; Puntarenas, Costa Rica (F. Knab); Manzanillo, Mexico (A. Dugès); Monterey, Mexico (J. Goldberger).

*Type*.—Cat. No. 9966, U. S. Nat. Mus.

**Psorophora saeva** sp. nov.

Black with blue reflection, the legs with dense, short, outstanding scales; tips of posterior femora white. Whitish scales on sides of head and a line at least on thorax, but this is denuded. Wings smoky blackish.

3 specimens, Trinidad, B. W. I. (F. W. Ulrich); Trinidad, June (A. Busck).

*Type*.—Cat. No. 9964, U. S. Nat. Mus.

**Psorophora iracunda** sp. nov.

Black with metallic blue luster, the legs with abundant outstanding scales, long and squamose. Posterior femora slightly grayish at tip. Wings smoky clouded.

5 specimens, Puntarenas, Costa Rica (F. Knab).

*Type*.—Cat. No. 9965, U. S. Nat. Mus.

## GENUS CULISETA FELT.

**Culiseta maccrackenae** sp. nov.

Proboscis black; thorax with two brown stripes, the vestiture yellowish over black. Wings with brown stains in the membrane where the scales

form small black patches at cell, on cross-veins and at bases of forked cells; abdomen black with narrow whitish basal segmental bands, whitish scaled ventrally. Legs black, the femora pale at base and with a white ring before tip; tibiae with a line of white scales on each side; hind tarsal joints banded with white at base nearly to middle.

1 ♂, 4 ♀, Stanford University, California, March, June 23, 1903 (Miss MacCracken); Eureka, Cal., June 8 (H. S. Barber); San Francisco, Cal., July 4, 1906 (Miss Ludlow).

*Type*.—Cat. No. 9961, U. S. Nat. Mus.

***Culiseta dugesi* sp. nov.**

Proboscis black with a few white scales; thorax with two brown stripes, the vestiture yellowish over black. Wings with brown stains in the membrane where the scales form small black patches on cell, on cross-vein and at bases of forked cells; abdomen black with narrow white basal segmental bands, whitish scaled ventrally. Legs black, sprinkled with whitish scales, the femora pale at base with a white ring before the tip; tibiae with a line of white scales on each side; hind tarsal joints banded with white at base for less than one-fourth their length.

5 ♀, Guanajuato, Mexico, January 20, 1905 (A. Dugès); Mexico City, Mex., October 26, 1900 (S. Arara).

*Type*.—Cat. No. 9962, U. S. Nat. Mus.

GENUS *JANTHINOSOMA* LYNCH-ARRIBALZAGA.

***Janthinosoma vanhalli* sp. nov.**

Hind legs with outstanding scales; thorax golden yellow scaled above; no blue spot on the last two abdominal segments below; else as in *J. sayi* Dyar & Knab.

7 specimens, Paramaribo, Surinam (Dr. Van Hall, through U. S. Dept. Agriculture).

*Type*.—Cat. No. 9967, U. S. Nat. Mus.

***Janthinosoma champerico* sp. nov.**

Hind legs with raised scales; last two joints of hind tarsi white; abdomen all yellow scaled below; else as in *J. tutzi* Theobald.

One specimen, Champerico, Guatemala (F. Knab).

*Type*.—Cat. No. 9968, U. S. Nat. Mus.

***Janthinosoma coffini* sp. nov.**

Hind legs without raised scales; tarsi without pale basal bands; penultimate joint of hind tarsi white, the last dark; thorax all yellow scaled above; tips of mid and hind femora dusky. Agrees with the description of *J. varipes* Coquillett, but a careful examination of the types of that species shows there to be dark scales on the center of the thorax and that it is a synonym of *J. discrucians* Walker, as identified by Coquillett.

8 specimens, Nassau, Bahamas, B. W. I., June 22, 1903 (T. H. Coffin).

*Type*.—Cat. No. 9969, U. S. Nat. Mus.

**Janthinosoma schwarzi** sp. nov.

As in *J. coffini* Dyar & Knab, but the tips of the hind femora are pure white.

One specimen, Cayamas, Cuba, May 7 (E. A. Schwarz).

*Type*.—Cat. No. 9970, U. S. Nat. Mus.

**Janthinosoma texanum** sp. nov.

Hind legs without raised scales; tarsal joints with pale basal bands; first hind tarsal joint with a narrow white ring; thorax golden brown; white ring of the first hind tarsal joint one-third or more as broad as the joint. Else as in *J. jamaicensis* Theobald.

7 specimens, Brownsville, Texas, May 21, 1904 (H. S. Barber).

*Type*.—Cat. No. 9971, U. S. Nat. Mus.

**Janthinosoma floridense** sp. nov.

As in *J. texanum* Dyar & Knab, but the thorax violet blue. The pale abdominal bands are powdery, interrupted dorsally and confused; the general color, including the wings, is dark, and the third vein has scale tufts throughout its length, instead of at base only.

105 specimens, Tampa, Kissimmee, Sanford, Arcadia, Bartow, Pokatee, Alligator Creek, Florida (Dyar & Caudell).

*Type*.—Cat. No. 9972, U. S. Nat. Mus.

**Janthinosoma toltecum** sp. nov.

As is *J. floridense* Dyar & Knab, but the pale abdominal bands are extensive, broken only on the last segments; the scales on the scutellum have a silvery luster.

89 specimens, Tehuantepec, Salina Cruz, Rincon Antonio, Santa Lucrecia, Almoloya, Mexico (F. Knab); Vera Cruz, Mexico (G. E. Beyer); Dallas, Texas, September 14 (W. E. Hinds).

*Type*.—Cat. No. 9973, U. S. Nat. Mus.

**Janthinosoma columbiae** sp. nov.

As in *J. toltecum* Dyar & Knab, but the abdomen more strongly pale scaled, the third vein with the broad scales in a basal dot only, the scutellum without silvery luster.

59 specimens, Grassymead, Va. (H. G. Dyar); Del Ray and St. Elmo, Va. (F. C. Pratt); Woodstock, Va. (J. Kotinsky); Delair, N. J. (W. P. Seal); Cold Spring Harbor, N. Y. (F. E. Lutz); Greensboro, N. C. (F. C. Pratt); Tutnila, Jackson, Belzoni, Clarksdale, Corbin, Yazoo City, Miss. (H. S. Barber); Agricultural College, Miss. (G. W. Herrick); Baton Rouge, La. (J. A. Morgan).

*Type*.—Cat. No. 9974, U. S. Nat. Mus.

**Janthinosoma insularius** sp. nov.

Hind legs without raised scales; tarsi with pale bands; first hind tarsal joint without a white ring; wings with whitish and dark scales intermixed;

legs pale, the yellowish scales predominating. Else as in *J. pygmaeus* Theobald.

8 specimens, Santo Domingo, W. I. (A. Busck).

*Type*.—Cat. No. 9975, U. S. Nat. Mus.

GENUS ANOPHELES MEIGEN.

**Anopheles vestitipennis** sp. nov.

Tarsi banded with white, the hind tarsi black and white, both tarsi and femora speckled; wing veins black scaled with many little yellow patches.

23 specimens, Trece Aguas, Alta Vera Paz, Guatemala, April 7 to 14, 1906 (Schwarz and Barber); Polochic River, Guat., May 1, 1906 (Schwarz and Barber); Panzos, Guat., June, 1904 (O. F. Cook), March 23, 1906 (Schwarz and Barber); Nautla, Mexico (A. Dugès); Palizada, Mex. (A. Dugès); Cayamas, Cuba, May 22, "in the house" (E. A. Schwarz).

*Type*.—Cat. No. 9976, U. S. Nat. Mus.

**Anopheles strigimacula** sp. nov.

Tarsi banded with white, the hind tarsi black and white, both tarsi and femora speckled; wing veins white with black dots and spots; third vein with a small black dot at base or beyond; wing scales narrow; tarsi black and white, not yellow; no distinct costo-apical black spot on wing; last vein with three black dashes.

One specimen, Cordoba, Mexico (F. Knab).

*Type*.—Cat. No. 9977, U. S. Nat. Mus.

**Anopheles apicimacula** sp. nov.

As in *A. strigimacula* D. & K., but with a distinct black costo-apical spot on wing.

26 specimens, Livingston, Guatemala, May 11, 1906 (H. S. Barber); Cordoba, Mexico (F. Knab); Colon, Panama (A. I. Kendall); Trinidad, B. W. I. (F. W. Ulrich).

*Type*.—Cat. No. 9978, U. S. Nat. Mus.

**Anopheles punctimacula** sp. nov.

As in *A. strigimacula* D. & K., but the last vein with a row of black dots.

One specimen, Colon, Panama, February 2, 1904 (W. M. Black).

*Type*.—Cat. No. 9979, U. S. Nat. Mus.

GENUS SABETHES ROBINEAU-DESVOIDY.

**Sabethes bipartipes** sp. nov.

Proboscis black; palpi and head metallic blue; thorax olive green with two broad, deep blue discal stripes, the prothoracic lobes blue; pleurae and coxae silvery; abdomen dark metallic blue above, greenish towards the base, venter golden with silvery basal segmental bands; first segment entirely silvery underneath. Legs, the middle pair with the second and outer third of first tarsal joints with a long flattened fringe, black, the apical half of the fringe of the second segment creamy white, the leg deep metallic blue. Front and hind legs simple, blue.

Two specimens, Santo Domingo, West Indies (F. E. Campbell; A. Busck).

*Type*.—Cat. No. 9980, U. S. Nat. Mus.

The same, or a similar species has been described by Theobald as the male of his *Sabethes nitidus* (Mon. Culic., ii, 347, 1901); but the type of *nitidus* is clearly the female there described, is referable to the section *Sabethoides*, in which the tarsi are not plumed, thus leaving the present species nameless.

GENUS *LESTICOCAMPA* DYAR & KNAB.

The species on which this genus was founded appears now to be undescribed. It was identified by Coquillett, and accepted by us, as *Joblotia lunata* Theobald. But Theobald states positively that *lunata* has the clypeus hairy, thus being properly referable to *Joblotia*, which is not the case with the form before us. Therefore, unless Theobald has made an error of observation, our species is distinct. *Lesticocampa* is allied to *Runchomyia*, rather than *Joblotia*, but differs in the absence of the conical frontal process of that genus. The eyes are contiguous vertically, the prothoracic lobes well separated. The type species is:

***Lesticocampa rapax* sp. nov.**

♂; head clothed with dull violet scales behind, with a row of black erect forked scales; thorax with dull brown scales with faint purple reflection; pleurae and coxae silvery; abdomen dull steel blue, violaceous in certain light the first segment with brighter blue scales, 8th with bright violet scales, golden at the sides; venter golden; last segment bright violet blue with numerous bristles below. Legs entirely violet blue. Palpi longer than the antennae, upcurved.

♀; similar to the male, palpi short, as long as four joints of the antennae.

1 ♂, Trinidad, B. W. I. (F. W. Urich), bred from larvae described as *Lesticocampa lunata* Theob. (Dyar & Knab, Journ. N. Y. ent. soc., xiv, 226, 1906); 3 ♀, Sao Paulo, Brazil (A. Lutz); Patulue, Guatemala (D. G. Eisen).

*Type*.—Cat. No. 9981, U. S. Nat. Mus.

***Lesticocampa vonplesseni* sp. nov.**

♀; head with dull indigo blue scales behind; palpi as long as six joints of the antennae, black; thorax elongate, with sooty scales; abdomen dull blue above, golden below; legs black with blue reflection.

4 specimens, upper Pastazza River, Ecuador (Baron von Plessen, through Dr. M. Graham).

*Type*.—Cat. No. 9982, U. S. Nat. Mus.

***Lesticocampa leucopus* sp. nov.**

Palpi of ♀ as long as six joints of the antennae; hind tarsi white at tip. 5 specimens, Bluefields, Nicaragua (W. F. Thornton); Bocas del Toro, Panama (P. Osterhout).

*Type*.—Cat. No. 10,003, U. S. Nat. Mus.

***Lesticocampa ulopus* sp. nov.**

Palpi of ♀ as long as six joints of the antennae; mid and hind tarsi white at tip.

One specimen, Bluefields, Nicaragua (W. F. Thornton).

*Type*.—Cat. No. 10,004, U. S. Nat. Mus.

GENUS WYEOMYIA THEOBALD.

**Wyeomyia vanduzeei** sp. nov.

Head brown with a silvery patch at vertex and one on each side of the occiput; proboscis black; prothoracic lobes silvery; thorax brown with two white spots in front; pleurae silvery; abdomen blackish with bluish luster, white below; legs dark, pale beneath, middle pair with tip of third, fourth, fifth joints pale above; from side view the tarsal joints of hind legs show white at base.

12 specimens, Estero, Florida (J. B. VanDuzee), bred from larvae in leaves of Bromelias.

*Type*.—Cat. No. 9988, U. S. Nat. Mus.

**Wyeomyia bromeliarum** sp. nov.

We propose this term for the larvae described by us as *W. asullepta* Theob. (Journ. N. Y. ent. soc., xiv, 228, pl. xv, fig. 69, 1906). The single bred adult has, most unfortunately, been nearly entirely destroyed since it was identified by Mr. Coquillett, and we are unable to check the identification. There is no reason, however, to suppose it the same as the continental form, *asullepta*.

*Type*.—Cat. No. 9989, U. S. Nat. Mus.

**Wyeomyia bahama** sp. nov.

Proboscis black, bronzy beneath, rather short, much thickened at the tip; head black, a white spot at vertex, silvery at the sides; prothoracic lobes silvery; thorax bronzy brown; pleurae and coxae silvery; abdomen black above, silvery white below. Femora and tibiae blackish, pale beneath; second to fifth joints of tarsi of hind feet whitish at base from side view.

16 specimens, Tarpon Bay, Bahama Islands (T. H. Coffin).

*Type*.—Cat. No. 9990, U. S. Nat. Mus.

**Wyeomyia violescens** sp. nov.

Head black, a silvery spot on vertex; proboscis black; prothoracic lobes pearly violet; thorax bronzy brown, scales towards the margin more metallic; pleurae and coxae silvery; abdomen black with bluish reflection, silvery beneath; legs blackish, femora and tibiae pale beneath, middle pair with part of third, fourth and fifth tarsal joints pale above; hind pair with the tarsi laterally white at the bases of the joints.

8 specimens, Cayamas, Cuba, May and June (E. A. Schwarz).

*Type*.—Cat. No. 9991, U. S. Nat. Mus.

**Wyeomyia minor** sp. nov.

Head blackish, a silvery spot on vertex; proboscis black; prothoracic lobes silvery white; thorax light bronzy brown; pleurae and coxae silvery;

abdomen black, pale beneath; legs dark, femora and tibiae pale below, middle pair without whitish on tarsi above; hind pair with the tarsi from side view silvery at the bases of the joints.

7 specimens, Baracoa, Cuba, September, 1901 (A. Busck).

*Type*.—Cat. No. 9992, U. S. Nat. Mus.

#### **Wyeomyia guatemala** sp. nov.

Prothoracic lobes silvery white; head black on the occiput, a very narrow white margin to the eyes, distinct at vertex and sides, nearly obsolete at the middle. Body and legs colored as in the other species of this group.

Two specimens, Trece Aguas, Alta Vera Paz, Guatemala, April (Schwarz and Barber).

*Type*.—Cat. No. 9994, U. S. Nat. Mus.

#### **Wyeomyia fratercula** sp. nov.

Prothoracic lobes silvery white; head black behind, a square, diagonally placed, white spot on the vertex, the sides below also white; front tibiae above bronzy with only a slight blue reflection.

One specimen, Martinique, W. I., July (A. Busck).

*Type*.—Cat. No. 9995, U. S. Nat. Mus.

#### **Wyeomyia sororcula** sp. nov.

Prothoracic lobes silvery white; head black behind, a square, diagonally placed, white spot on the vertex, the sides below also white, less broadly and squarely so than in *W. fratercula*; front tibiae dark metallic-blue above.

53 specimens, San Francisco Mts., Santo Domingo, W. I., August and September (A. Busck).

*Type*.—Cat. No. 9996, U. S. Nat. Mus.

The larva of this species has been described under the name *Wyeomyia grayii* Theob. (Journ. N. Y. ent. soc., xiv, 228, 1906), as identified by Mr. Coquillett. *W. grayii* was described from Santa Lucia, and is most probably specifically distinct from any of the forms before us. We can not be clear on this point, for Theobald's description of *grayii* makes no mention of the color of the prothoracic lobes, so we do not even know if *grayii* belongs to the present group. However, each island seems to have its own species in this group of *Wyeomyia*, and the rule will probably hold good in this case.

#### **Wyeomyia pseudopecten** sp. nov.

Prothoracic lobes entirely dark; occiput blackish with a lighter brown central stripe; eyes broadly margined with white.

8 specimens, Trinidad, B. W. I. (A. Busck, F. W. Ulrich).

*Type*.—Cat. No. 9997, U. S. Nat. Mus.

The larvae of this form were described as *W. ulocoma* Theob. (Journ. N. Y. ent. soc., xiv, 229, pl. xvi, fig. 73, 1906), following Mr. Coquillett's determination, with which we can not agree after seeing the specimens. *W. ulocoma* was described from Guiana and is, no doubt, a distinct species.

**Wyeomyia melanocephala** sp. nov.

Prothoracic lobes entirely dark bluish; head dark behind, without white margin to the eyes; hind feet with the last two tarsal joints white.

One specimen, Trinidad, B. W. I. (A. Busck).

*Type*.—Cat. No. 9998, U. S. Nat. Mus.

**Wyeomyia glaucocephala** sp. nov.

Prothoracic lobes entirely dark; occiput green and blue, the eyes with a white margin which narrows centrally.

7 specimens, Santo Domingo, W. I. (A. Busck).

*Type*.—Cat. No. 9999, U. S. Nat. Mus.

The larva of this species was included with the larva of *W. ulocoma* in our description, cited above. They are doubtless similar; but perfect material will probably enable them to be separated.

**Wyeomyia adelpha** sp. nov.

Prothoracic lobes entirely dark; head dark behind, the eyes with an even white margin; middle legs with white marks on the tarsi.

11 specimens, Esparta, Costa Rica (F. Knab).

*Type*.—Cat. No. 10,000, U. S. Nat. Mus.

**Wyeomyia galoa** sp. nov.

Prothoracic lobes entirely dark; head dark behind, the eyes with an even white margin; feet all dark.

3 specimens, Trece Aguas, Alta Vera Paz, Guatemala (Schwarz and Barber).

*Type*.—Cat. No. 10,001, U. S. Nat. Mus.

**Wyeomyia chalconecephala** sp. nov.

Prothoracic lobes entirely dark; head bronzy behind, the eyes with a white margin that is narrowed centrally.

7 specimens, Trece Aguas, Alta Vera Paz, Guatemala (Schwarz and Barber), and others, presumably the same, but badly denuded of scales, from Aguna, Guatemala (D. G. Eisen) and Bocas del Toro, Panama (P. Osterhout).

*Type*.—Cat. No. 10,002, U. S. Nat. Mus.

**Wyeomyia celaenocephala** sp. nov.

Prothoracic lobes all dark brown or blue; eyes without a white border; no vertical white patch; hind feet all dark, without white spots.

One specimen, Trece Aguas, Alta Vera Paz, Guatemala (Schwarz & Barber).

*Type*.—Cat. No. 10,006, U. S. Nat. Mus.

**Wyeomyia espartana** sp. nov.

Prothoracic lobes dark centrally, the tips distinctly white. Similar to *W. ochrura* Dyar & Knab, but the lobes are darker and more contrastingly colored, black centrally with a distinct white tip.

One specimen, Esparta, Costa Rica (F. Knab).

*Type*.—Cat. No. 10,005, U. S. Nat. Mus.

**Wyeomyia ochrura** Dyar & Knab.

This species, which we described from larvae from Santo Domingo, Dominica and Trinidad, proves to be unusually widely spread. We have the adults also from Salvador, Guatemala, Mexico and Jamaica, and both larvae and adults from southern Florida, the latter collected in the leaves of bromeliaceous plants by Mr. J. B. Van Duzee. Unlike most of the *Wyeomyia*, it seems not to run to local forms, the Florida larvae even being the same as the Trinidad ones. The adult is readily recognized by the small white tip of scales on the prothoracic lobes, which are violaceous brown centrally.

## GENUS PHONIOMYIA THEOBALD.

This genus differs from *Wyeomyia* by the eyes being contiguous at the vertex and in the greater length of the proboscis, which is not swollen at tip. It will probably rank as a good genus, although not as sharply defined on larval characters as the other genera of Sabethinae which we have recognized. There is a distinct larval type represented by our figures 74 and 77 (Journ. N. Y. ent. soc., xiv, plate xvi, 1906). The adult of figure 74 we would now call *Phoniomyia trinidadensis* Theob., as the Brazilian form, *longirostris* Theob., presents differential characters, as shown by a specimen which we owe to the kindness of Dr. Lutz. The *P. trinidadensis* adults, bred from our larvae, are typical *Phoniomyia*. The other species, fig. 77, has a similar larva, but the single bred adult is a typical *Wyeomyia*, with a short proboscis, swollen at tip. We are at present unable to decide whether there is a lack of parallelism between these genera in adults and larvae, or whether some error has occurred in the association of our *Wyeomyia autocratica* larvae and the single bred adult.

**Phoniomyia homotina** sp. nov.

Tarsi without any white; abdomen and legs blackish with a dark blue sub-metallic reflection. A large species like *P. magna* Theobald, but differing therefrom in the color of the body and legs.

5 specimens, Port Limon, Costa Rica (F. Knab); Trece Aguas, Alta Vera Paz, Guatemala, March and April (Schwarz and Barber).

*Type*.—Cat. No. 9993, U. S. Nat. Mus.

**Phoniomyia trinidadensis** Theobald.

The male, previously undescribed, differs from the female in having the penultimate joint of the middle tarsi with a distinct white ring. The specimen was bred in Trinidad by Mr. F. W. Urich.