

PROCEEDINGS
OF THE
CALIFORNIA ACADEMY OF SCIENCES
FOURTH SERIES

VOL. XII, No. 13, pp. 289-314, 37 text-figures. JULY 10, 1923

XIII
EXPEDITION OF THE CALIFORNIA ACADEMY
OF SCIENCES TO THE GULF OF
CALIFORNIA IN 1921¹

THE BOMBYLIIDÆ (BEE FLIES)

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The Diptera collection made by Mr. E. P. Van Duzee in 1921 in the region of the Gulf of California is the most extensive yet taken in that part of the country. The expedition sent out by the California Academy of Sciences collected on all of the principal islands in the Gulf and made several stations on the mainland and on the peninsula. The collecting was done during the summer and the Diptera taken consist of typical summer forms, the Bombyliidæ and Asilidæ being quite abundant. This paper will deal with the species of Bombyliidæ collected, 73 species in all, 28 of which are described as new. The writer has in view a revision of this family of the Diptera and the descriptions given here are rather brief in some cases. Coquillett published a Revision of the genus *Villa* (Anthrax) in the Trans. Am. Ent. Soc., XIX, 168-187 (1892); the table of species in his paper is referred to in the discussion of some of the species of *Villa*.

¹A map showing all the islands, etc., visited by this Expedition will be found in Vol. XII, No. 6, of these Proceedings, copies of which can be supplied at nominal cost.

July 10, 1923

1. *Exoprosopa iota* Osten Sacken

A large series taken from the following localities: Angeles Bay, June 26 and 27; Espiritu Santo Island, May 31 and June 9, 17 specimens; San Francisquito Bay, May 10 and June 23; Coronados Island, May 18; Cerralbo Island, June 8; Willard's Point Bay, Tiburon Island, July 3; Guadalupe Point, Concepcion Bay, June 18; Mulegé, May 14; Las Animas Bay, May 8; Guaymas, April 7, 10, 11, and 15.

2. *Exoprosopa eremita* Osten Sacken

Agua Verde, May 25; San José Island, June 10; Tiburon Island, July 3; Puerto Refugio, Angel de la Guardia Island, June 29.

3. *Exoprosopa hyalipennis* Cole, new species

Male: Length, 10-14 mm. Face, cheeks and lower frons reddish; tomentum of face and frons yellow; pile of upper frons black; vertex and occiput black, the tomentum of occiput white. Style of antenna about one-third as long as third joint (see fig. 13). Thorax black; mesonotum yellow pilose and tomentose; scutellum largely brownish red, the base black, pile and tomentum yellowish. Knob of halteres white, the stem yellow. Pile of upper pleura yellowish white, tomentum white; pile of coxæ white. Abdomen largely red in ground-color, with a median wedge of black reaching almost to end of sixth tergite; base of third tergite (second visible)* white tomentose; posterior margins of 3, 4, 5 and 6 and median part of 4 black tomentose; yellow tomentum on base of 4 and 6; most of fifth tergite white, the seventh and eighth silvery white tomentose. Venter silvery white tomentose and white pilose. Femora and tibiæ reddish, tarsi blackened; anterior tibiæ smooth, the claws minute; tomentum of legs largely yellowish. Wings hyaline; base of wing, costal and subcostal cells yellowish; a faint cloud at base of cell Cu-1 and on r-m cross-vein.

Female: Much like the male. Tibiæ darker in the type specimen; dorsum of abdomen darker; most of sixth tergite yellowish brown tomentose, as are the seventh and eighth tergites.

Type: Male, No. 1201, and *allotype*, female, No. 1202, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 27 (type) and May 7, 1921, at Angeles Bay, Lower California.

Paratypes: Two males and two females, type locality, June 25-27.

*The writer considers that there is one segment lost between the abdomen and thorax; the first apparent segment is in this paper called the second, the second visible the third, etc.

This species has the general appearance of *E. doris* but the wings are not banded as in that species.

4. *Exoprosopa atripes* Cole, new species

Female: Length 11 mm. Closely allied to the preceding species. Differs in structure of antennæ, the style being about two-thirds as long as third joint (see fig. 11, p. 293); antennæ wholly black. Face brown, not projecting; pile of face and frons black, the tomentum brassy yellow. Tomentum of occiput yellowish white. Thorax dull black; scutellum reddish brown; tomentum of mesonotum a peculiar shade of brown; pile of collar and sides of mesonotum yellow. Pile of pleura and coxæ yellow. Halteres yellow. Abdomen largely black, reddish on sides near base (this specimen somewhat rubbed). Sides of second and third segments yellow pilose; a basal yellowish white band of tomentum on third tergite, the rest black; fourth segment like third, the fifth largely yellow tomentose, the sixth and seventh mixed black and yellow, the eighth white tomentose, black at tip; black pile on sides from third segment to tip. Legs black; tomentum of femora black in front, yellow posteriorly; front tibiæ without bristles, the front claws minute. Wings gray hyaline, costal, subcostal cell and base yellowish; cell R-5 open; cross-vein connecting R-2+3 and R-4 as usual.

Type: Female, No. 1203, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 16, 1921, at Salinas Bay, Carmen Island, Gulf of California.

5. *Exoprosopa tiburonensis* Cole, new species

Male: Length 18 mm. Face, cheeks and most of frons reddish in ground color; tomentum of face and frons dense, yellow; pile of upper half of frons black; vertex and occiput black, the latter yellow tomentose above, white below. First two joints of antennæ red, style about one-third length of third joint (see fig. 10, p. 293). Mesonotum and scutellum black, with a dense covering of reddish and yellowish brown tomentum, whitish at base of scutellum; bristles black. Pile of collar and anterior mesonotum yellow. Pile of upper pleura yellowish white, on lower pleura and coxæ white. Halteres yellow.

Abdomen reddish in ground color, pile at base yellow; third tergite with a broad basal white tomentose band, a narrow median cross band of black tomentum and a posterior yellowish brown band; fourth tergite largely yellowish brown tomentose, white on the sides, with two black marks near base; fifth tergite white tomentose with a yellowish posterior area; sixth tergite largely yellowish, with black pile posteriorly; seventh and eighth tergites silvery white. Venter silvery white tomentose and white pilose. Femora and bases of front tibiæ reddish; tomentum of femora black in front, yellow behind; front tibiæ without bristles, the front claws minute. Wings hyaline; cell R-5 closed and petiolate; costal, subcostal cell and base of wing yellowish; small gray clouds on r-m cross-vein and base of cell Cu-1.

Type: Male, No. 1204, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, July 3, 1921, at **Willard's Point Bay, Tiburon Island, Gulf of California.**

This species belongs to the same general group with the two preceding forms.

6. *Villa fenestratoides* Coquillett

A male and female, taken at San Pedro Bay, Sonora, July 7, 1921, answer Coquillett's description quite well. They are very near the following species described as new, but differ in the marking of the wing. The two sexes are distinguished only by an examination of the genitalia. The abdomen and thorax differ slightly from *meridionalis*. The brown of the wings is distinctly outlined and the central portion of the brown area in the female is more yellow than in male; the brown fills cell 1st A.

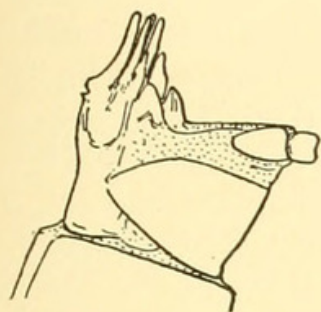
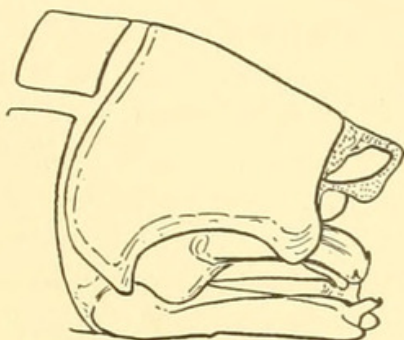
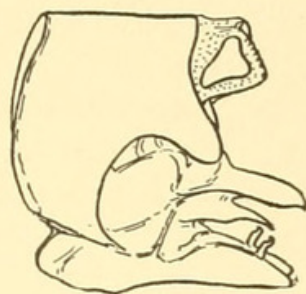
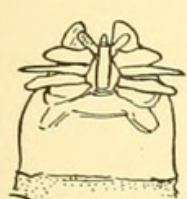
7. *Villa meridionalis* Cole, new species

Female: Length 11 mm. This species would nearly answer the description of *fenestratoides* Coquillett except that the basal half of the wings is hyaline. Face rounded, retreating, the tomentum white, pile white and yellow, reddish ground color near oral margin. Frons with yellow tomentum and black pile. Third antennal joint tapering from base (see fig. 17); the two basal joints red. Tomentum of occiput yellow at vertex, elsewhere white. Proboscis scarcely projecting. Mesonotum grayish black, brownish yellow tomentose and yellow pilose; white pile above wing bases. Scutellum largely red, black at base, with yellow tomentum and white pile. Knob of halteres yellow.

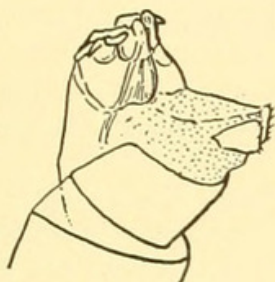
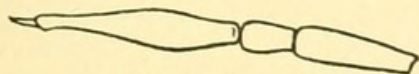
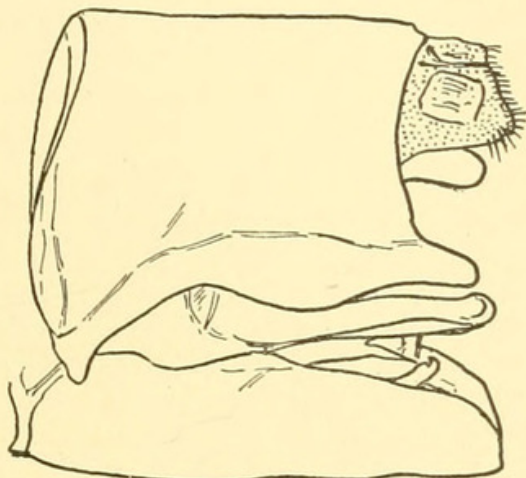
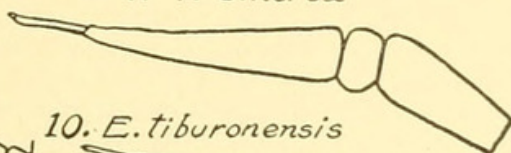
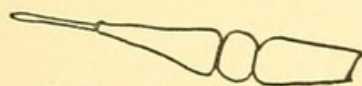
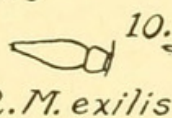
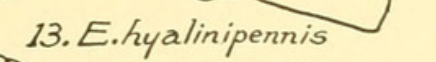
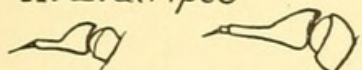
Abdomen black, with white pile at base; most of third tergite (second visible) black tomentose, yellowish white at base; fourth and fifth tergites mostly white tomentose, with posterior black borders which are wider in the middle; sixth and seventh tergites black tomentose, a few white scales on posterior margins; eighth tergite white tomentose; black pile on sides of abdomen from third segment to apex. Venter largely white tomentose, blackish on sixth and seventh sternites. Legs black, the front tibiae without bristles and the front claws minute. Wings hyaline, the costal and subcostal cells yellow.

Type: Female, No. 1205, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 6, 1921, on **Cerralbo Island, Gulf of California.**

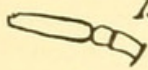
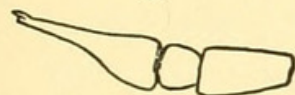
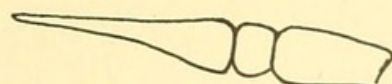
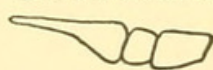
Paratypes, one female taken with the type.

1. *G. digitaria*2. *L. hyalinipennis*3. *V. arenicola*

4.

G. niveoides5. *G. niveoides*6. *B. flavipilosa*7. *V. cinerea*8. *G. alba*9. *G. insularis*10. *E. tiburonensis*11. *E. atripes*12. *M. exilis*13. *E. hyalinipennis*14. *A. marginatus*

15.

16. *R. albopilosa*17. *V. meridionalis*18. *V. sini*19. *V. cinerea*20. *V. nitida*

In the following group of species the males have the basal half of the wings brown or blackish, but the females have the wings almost entirely hyaline. The preceding new species would be placed in the same category and therefore associated

with *V. fenestratoides* were it not for the fact that a female of that species has the basal half of the wings largely brown. More material is needed to make sure of this point. The species just described would run to *gemella* in Coquillett's table of species, published in 1892. Coquillett did not take into account the sexual differences in the wings and it is a fact that in most species the wings are the same in the two sexes, but where the wings are different there is apt to be a confusion of species.

8. *Villa arenicola* Cole, new species

Length, 4.5-6 mm. A black species with black legs and bands of black and white tomentum on the abdomen.

Male: Head black; face rounded, with dense white tomentum; tomentum of frons yellowish white, the pile black. Antennæ black, the third joint large (see fig. 29). Thorax and scutellum semishining grayish black; pile of collar and sides of mesonotum yellowish white; tomentum of mesonotum white, some with a yellowish tinge. Bristles of thorax and scutellum black; tomentum of scutellum white. Sparse pile and tomentum of pleura pure white. Halteres yellow, the knobs whitish.

Abdomen black; tomentum on posterior half of third tergite and all on sixth black, the rest of tomentum on dorsum of abdomen white, yellowish in the middle. Venter with black tomentum on the fifth and sixth sternites, the others white. Legs black; front tibiae without bristles, the front claws minute. Wings largely hyaline, basal part brown; costa with small blackish scales almost to tip of R-1; epaulets with some white scales; basal half of anal cell brown, also cell R-1, cell 2M, base of 1st M-2 and costal cell. The genitalia are shown in figure 3.

Female: Very nearly like the male. Frons slightly wider, face with more black pile. Light colored tomentum of middle part of mesonotum, scutellum and dorsum of abdomen more yellowish. Wings largely hyaline; faint cloud on small cross-vein and apex of cell R-1; costal, subcostal cell and extreme base of wing yellowish brown.

Type: Male, No. 1206, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, May 16, 1921, at **San Nicolas Bay, Lower California**. *Allotype:* Female, No. 1207, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, June 6, 1921, at Cerralbo Island, Gulf of California.

Paratypes, 9 males and 12 females from the following places: Coronados Island, May 18; Cerralbo Island, June 6; San José Island, June 1 and 10; Tepoca Bay, Sonora, April 25; Espiritu Santo Island, June 1; Tiburon Island, April 23.

9. *Villa ariditata* Cole, new species

Length 7-9 mm. A species with many iridescent scales on the body; basal half of wings blackish in male, largely hyaline in female.

Male: Closely allied to *arenicola*, but many of the scales on the body are brightly colored. Antennæ like those of preceding species (see fig. 30). Tomentum of frons and face brassy yellow. Tomentum of middle of mesonotum with a purple or brownish tinge; scutellum with tomentum whitish and with purple tinge. The large white scales on pleura have a greenish reflection, on coxæ purplish black. Light colored scales on tergites more yellow than in *arenicola*, the black scales with purple reflections. Eighth tergite white tomentose with brassy green reflections. The brown of wings more extensive than in *arenicola* (see fig. 21); costa with scales as in *arenicola*.

Female: Head, thorax and abdomen about as in male, the tomentum even brighter colored. The wings are largely hyaline as in *arenicola*, the brown spots more distinct.

Type: Male, No. 1208, and *allotype*, female, No. 1209, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 25, 1921, at Angeles Bay, Lower California.

Paratypes, 2 males and four females; Angeles Bay, June 26 and 27; Pond Island Bay, June 30 and July 1; San Pedro Bay, Sonora, July 7.

10. *Villa vastititas* Cole, new species

Male: Length 6 mm. Very nearly like the preceding species, but the vestiture duller colored. Tomentum of frons and face dull yellow, the scales narrow; pile black. Tomentum of occiput white. Antennæ shown in figure 31. Thorax and scutellum with black bristles; pile of thorax yellow, the tomentum brownish with a purple tinge, but the scales hair-like and not iridescent. Pile of pleura and hind coxæ white, of the four front coxæ black.

White pile at base of abdomen; anterior corners of third tergite yellow tomentose and most of the fourth and fifth; most of third and posterior margins of fourth and fifth tergites black tomentose; sixth and seventh tergites largely black tomentose, but with some yellow; eighth tergite white tomentose. Male genitalia larger than *ariditata* (not dissected out). Wings much as in *ariditata* but the brown reaches farther distad, more than half of cell 1st M covered; costa as in the preceding two species.

Type: Male, No. 1210, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 6, 1921, on Cerralbo Island, Gulf of California.

Only the unique male was taken. The female will undoubtedly have nearly hyaline wings as is the case with others in the group.

11. *Villa sonorensis* Cole, new species

Male: Length 4.5 mm. Closely allied to the preceding two species, frons proportionately broader; lower half of frons dense white tomentose, upper half with few yellowish scales and black pile. Upper occiput with yellow tomentum, lower part white. Third antennal joint proportionately shorter than in the preceding three species (see fig. 32). Ground color of thorax more shining black than in the preceding three species. Anterior third of mesonotum white tomentose and white pilose; rest of mesonotum largely rubbed, probably metallic yellowish as on scutellum. Knob of halteres pure white, the stem yellowish. Pleura white tomentose and pilose; coxæ with black pile.

Abdomen (more or less rubbed) with white pile at base; third and base of fourth tergite white tomentose; most of fourth and all of fifth and sixth tergites black tomentose; seventh tergite yellow tomentose, the eighth white. Genitalia evidently characteristic, but not dissected out. Legs and wings about as in *ariditata*.

Type: Male, No. 1211, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, April 7, 1921, at **Guaymas, Mexico**. The type an unique.

12. *Villa albicollaris* Cole, new species

Male: Length 4 mm. Resembles the above group of four species, especially *sonorensis*, the head and appendages being about the same as in that species (see fig. 33). Anterior third of mesonotum white tomentose and pilose, the rest apparently yellowish (somewhat rubbed). Pleura, coxæ and halteres as in the preceding species.

Abdomen about as in *sonorensis*, but tergite VII black tomentose, VIII yellow and white. The male genitalia apparently different from *sonorensis*, the wings proportionately narrower than in that species and entirely hyaline except for the yellow subcostal cell and faint yellow at base of wing.

Type: Male, No. 1212, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, May 29, 1921, at **San José Island, Gulf of California**.

13. *Villa* sp.

A small specimen taken at Tepoca Bay, Sonora, is very near *albicollaris*, but specifically distinct. The third antennal joint has a slender styliform portion. The abdomen has the

third, fourth, fifth, seventh and eighth tergites largely or wholly white tomentose.

14. *Villa crocina* Coquillett

Two males and three females were taken at Angeles Bay, April 25, 26 and June 26; one female taken at Pond Island Bay, June 30. In this brightly colored species the males have the basal part of the wings brown, the females have almost entirely hyaline wings.

15. *Villa perplexa* Coquillett

A series from Coronados Island, May 18, and one specimen taken at Agua Grande, Carmen Island, June 15, are probably this species. Two smaller specimens taken at Angeles Bay, May 7, are very near this species.

16. *Villa albicincta* Cole, new species

Male: Length 6-9.5 mm. Head and appendages black. Face and frons with brassy yellow tomentum, some with a purple tinge, the pile black. Third antennal joint gradually tapering to tip (see fig. 36). Tomentum of occiput, brassy above. Proboscis scarcely projecting. Thorax and scutellum shining black, with brassy yellow pile, much of it with a purple color in certain lights; bristles black. Pile on anterior mesonotum and upper pleura yellow, on lower pleura and coxæ black. Knob of halteres white, the stem yellowish.

Abdomen black, basal corners with white pile; anterior corners of third, part of seventh and eighth and a conspicuous band on base of fourth tergite white tomentose, the rest of abdomen with black tomentum (gives impression of a black abdomen with a median white band). Legs black, black tomentose; anterior tibiæ without bristles, the anterior claws minute. Wings brown on the proximal half, the extreme base and costal cell yellowish; the brown goes beyond the middle of cell 1st M-2 and Cu-1; most of cell 1st A and 2nd A brown.

Type: Male, No. 1213, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, April 10, 1921, at **Guaymas, Mexico**.

Paratypes, 2 males from Guaymas, April 8 and 15; 1 male from San José Island, May 29, 1921.

This species would run to couplet 72 in Coquillett's table published in 1892. It is closer to *arenicola* and *ariditata*, described above, than to *lepidota*, where it would run in the Biologia table of species.

17. *Villa quadripunctata* Cole, new species

Male: Length 4.5 mm. This species has somewhat the appearance of *arenicola*, described above, and the group related to it. Head black, face and frons with sparse, dull yellow tomentum and rather coarse, black pile. Antennæ black, third joint with a long styliform portion (see fig. 34). Face rounded, proboscis not projecting; occiput white tomentose. Thorax and scutellum gray black, with black bristles; pile of anterior mesonotum yellowish white; tomentum of mesonotum fine, yellowish, with a purple tinge. Pile and tomentum on pleura white, on the coxæ black. Knob of halteres white, the stem yellowish brown.

Third tergite of abdomen with the anterior corners white tomentose, the rest black; tomentum on fourth and fifth white, with black posterior margins, on the sixth and seventh black, on the eighth white. Genitalia black, with black pile. Basal half of venter white tomentose, the rest black. Legs black, black tomentose; front tibiæ without bristles, the front claws minute. Wings brown on more than basal half, the outline of the color distinct; cell 1st A brown except tip and cell 2nd A gray brown; the brown reaches some distance beyond small cross-vein; r-m cross-vein and origin of R 2+3 bordered hyaline, also base of cell 2M-2 and Cu-1; a whitish spot in upper distal corner of cell 2M.

Type: Male, No. 1214, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, July 7, 1921, at **San Pedro Bay, Sonora.**

18. *Villa flavicincta* Cole, new species

Female: Length 6 mm. A black species, with wings largely hyaline. Head black, including antennæ; face conical (see fig. 23); pile of frons and face black, tomentum of face sparse, yellow and fine as is tomentum of occiput. Third joint of antennæ short-conical (see fig. 24). Thorax black, mesonotum with yellow pile anteriorly and on sides, the central portion with black tomentum and sparse black pile. Scutellum black, with yellow tomentum. Bristles of thorax mixed black and yellow, those on scutellum black. Pile on pleura yellow, on coxæ black. Knob of halteres brownish yellow, the stem brown.

Abdomen black, the first visible segment yellow pilose on sides, the other abdominal tergites yellow tomentose at base, black on the posterior half or more; black pile on the sides from the fourth segment to the tip and around the ovipositor. Venter black, black tomentose, and with black pile except a few yellow near the base. Legs black, black tomentose; front tibiæ without bristles and front claws minute. Most of wing gray hyaline, including anal angle and distal half of cell 1st M-2; costal cell, subcostal, cell R and 2M gray brown, the color reaching into base of cells Cu-1 and M-2 and slightly beyond small cross-vein.

Type: Male, No. 1215, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, April 11, 1921, at **Guaymas, Mexico.**

The species is clearly different from any described in the *Biologia Cent. Amer.*; it is nearest to *vana* Coquillett among the species from north of Mexico.

19. *Villa hircina* Coquillett

Two females, one from Gonzales Bay, April 29 (a rubbed specimen), the other from Lagoon Cove, Angel de la Guardia Island, May 2, 1921.

20. *Villa cinerea* Cole, new species

Length 13-14 mm. A dull colored species, with yellow and white pile and largely hyaline wings.

Male: Face and cheeks reddish brown, the rest of head black; face projecting, conical; face and frons with yellowish white tomentum and short black pile. First two antennal joints red, black pilose, the third joint black, long conical (see fig. 19). Proboscis scarcely projecting beyond oral margin. Tomentum of occiput largely white, yellowish above. Anterior part of thorax with erect yellow pile, the rest of pile of mesonotum and pleura largely white and reclinate. Median part of mesonotum with tomentum-like pile, some of which is brownish in color. Scutellum black, with white tomentum and pile. Bristles of thorax and scutellum yellow. Halteres brown, the knob white.

Abdomen largely black in ground color, posterior margin of segments reddish brown, the dorsum with a dense covering of tomentum which is mostly white, that on middle and on posterior margins of tergites three to six being brown; pile largely white, yellow on posterior margin of three to six. Genitalia brown, with erect yellow pile, its structure shown in fig. 7. Legs black, some dark reddish color on femora and tibiae, the tomentum yellow and white; front tibiae with bristles, the claws large. Wings mostly gray hyaline, basal half faintly infuscated; costal cell yellowish brown; a brown spot in bases of cells Cu-1 and M-3, on the r-m cross-vein and at base of vein R-2+3.

Female: Very nearly the same as the male. Ovipositor with a ray-like circlet of yellow spines, with erect black pile.

Type: Male, No. 1216, and *allotype*, No. 1217, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, May 7 (type) and May 10, 1921, at **Angeles Bay, Lower California.**

Paratypes, several specimens taken with the types at Angeles Bay and specimens from Las Animas, May 8 and San Francisco Bay, May 10. In Coquillett's table this species would run to the couplet with *perplexa* and *edititia*.

21. *Villa mercedis* Coquillett

One female, taken at Tiburon Island, April 23. It fits the description very well except that the mesonotum is largely yellowish tomentose and the venter in large part black in ground color.

22. *Villa vana* Coquillett

Freshwater Bay, Tiburon Island, April 23; Tepoca Bay, April 25; Angeles Bay, May 7. Five specimens in all.

23. *Villa squamigera* Coquillett

One specimen from each of the following localities: Lagoon Cove, Angel de la Guardia Island, May 2; San Francisquito Bay, May 10; Monserrate Island, June 15; Guaymas April 8.

24. *Villa lepidota* Osten Sacken

A series of 35 specimens, mostly from the first three localities given. Tortuga Island, May 11; Ceralbo Island, June 6; San Pedro Nolasco Island, April 17; San Francisquito Bay, May 10; Angeles Bay, May 7, June 26; Coronados Island, May 18; Espiritu Santo Island, June 9.

25. *Villa syrtis* Coquillett

Guaymas, April 8; Angeles Bay, May 7; San Francisquito Bay, May 10.

26. *Villa mira* Coquillett

Angeles Bay, June 26; Escondido Bay, June 14; San José Island, May 28; Coyote Cove, Concepcion Bay, June 18.

27. *Villa sabulosa* Coquillett

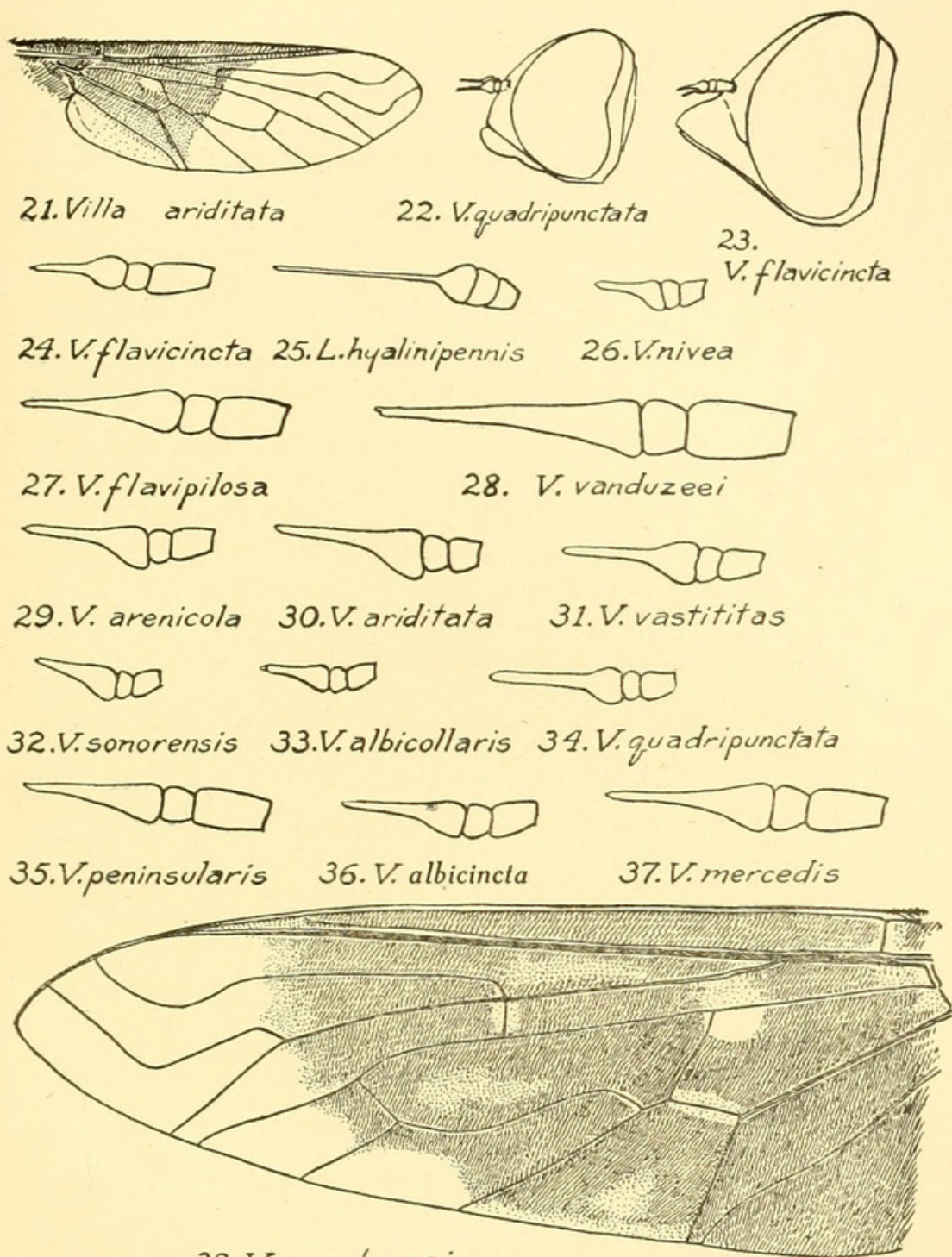
Loreto, May 20; Mulegé, May 14; Guaymas, April 11.

28. *Villa arenosa* Coquillett

Guaymas, April 8, 10; Agua Verde, May 26.

29. *Villa astarte* Wiedemann

This species belongs to Osten Sacken's subgenus *Chrysanthrax*. The single specimen taken is from Angeles Bay, May 6. This specimen has the third joint gone from both an-



tennae. It answers the description of *astarte* given by Williston in the *Biologia*. The mesonotum is shining black, not velvety as in *V. fulvohirta*, and the wings are yellowish brown at base.

30. *Villa* sp.

A female specimen taken at Tepoca Bay, April 25, cannot be placed with certainty. In Coquillett's table of species it would run to *scitula* Coquillett, but there is no yellow tomentum on the face and the thorax is yellowish brown tomentose, not coppery as in *scitula*.

31. *Villa lateralis* Say

Tepoca Bay, April 25, nine specimens; Angeles Bay, May 7; Freshwater Bay, Tiburon Island, April 23; Las Animas Bay, May 8.

32. *Villa molitor* Loew

Several specimens, mostly from Isla Raza, April 21; Es-piritu Santo, June 1; Coyote Cove, Concepcion Bay, June 18; Tepoca Bay, April 25; San Francisquito Bay, May 30. Several specimens from Tepoca Bay, April 21 and 25, are slightly different and may prove to be a variety.

33. *Villa nivea* Cole, new species

Length 4.25-5 mm. A small black species, with no black pile on the abdomen and entirely hyaline wings.

Male: The specimen is somewhat rubbed. Head black, oral margin brown; face rounded, with white tomentum and pile; frons white tomentose and pilose, a few black pile on the vertex. Occiput white tomentose. Proboscis not projecting. Antennæ short, black (see fig. 26). Thorax and scutellum black, with white pile and bristles; tomentum on anterior part of mesonotum white, on the median part yellowish. Pleura and coxæ white tomentose and pilose. Halteres yellow.

Abdomen somewhat greased so that most of the dorsum appears to be black tomentose, that on the base white. All pile of abdomen white. Pile of venter white, some of the tomentum black. Legs largely black, the tomentum and pile white; bases of tibiæ yellow; front tibiæ without bristles, the front claws minute. Wings hyaline.

Female: Differs from the male in having tomentum of frons dark yellowish except on the lower corners. Thorax and scutellum as in the male. Abdomen black, all of pile and most of tomentum white; a spot of black tomentum in middle of third tergite, with some yellow around it; a much wider band on fourth tergite; most all of fifth black; sixth and seventh tergites with some yellowish tomentum. The fifth, sixth and seventh tergites with very long white bristles, heavier than the ordinary pile; blackish tomentum in middle of tergites three to eight.

Type: Male, No. 1218, and *allotype*, female, No. 1219, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, May 16, 1921, at **San Nicolas Bay, Gulf of California**.

This species seems to be distinct from any described from the United States; in Osten Sacken's table of *Hyalanthrax* in the *Biologia* all of the species have black tufts of pile along the sides of the abdomen.

34. *Villa sini* Cole, new species

Length 8-10 mm. A blackish species, white and black tomentose with hyaline wings.

Male: Head black, the face and frons dense white tomentose, with some short white pile; some black pile on vertex. Occiput white tomentose. Proboscis not projecting beyond oral margin. Antennæ (see fig. 18) black, with black pile. Mesonotum dull black, tomentum on anterior half white; tomentum on posterior portion and on scutellum yellowish, gray or brownish. Bristles of thorax mixed yellow and black, of scutellum black. Pile and tomentum of pleura whitish. Knob of halteres white, the stem pale brown.

Abdomen dull black; third tergite with black tomentum at base, that on fourth and fifth largely black or brownish black, the rest of tomentum of abdomen white. Pile at base of abdomen white, on the fourth, fifth and sixth black, on the eighth white. Base of venter white tomentose, beyond the third segment black. Genitalia reddish brown, with yellow pile. Legs black, with black tomentum; front tibiæ without bristles, the front claws small. Wings hyaline, the costal and subcostal cells and base of wing yellowish.

Female: Very nearly like the male. Frons distinctly broader and largely golden yellow tomentose, varying to dull yellow as on the upper occiput. Mesonotum except anterior portion, and the scutellum golden brown tomentose. Middle of third tergite, base of fourth and fifth, all of sixth and seventh golden brown tomentose, the rest of abdominal tomentum white.

Type: Male, No. 1220, and *allotype*, female, No. 1221, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 30 (type) and July 3, 1921, at **Pond Island Bay, Angel de la Guardia Island, Gulf of California**.

Paratypes, one male from Pond Island Bay; nine females from Tiburon Island, July 3; one female, San Francisquito Bay, June 23; three females, Angeles Bay, May 7.

35. *Villa flavipilosa* Cole, new species

Length 9.5-11.5 mm. A yellow pilose and tomentose species with hyaline wings.

Male: Most of head black, the face and lower frons reddish; face very conical, with bright yellow tomentum; frons yellow tomentose, sparse above and with black pile on upper half. Occiput largely yellow tomentose, some white on sides. First two antennal joints red, the third black, long conical at base (see fig. 27). Proboscis not projecting. Thorax and scutellum black, very fine yellow tomentose (not scales) and yellow pilose. Pleura and coxæ yellow pilose, paler below base of wings. Halteres yellow.

Sides of abdomen and the venter reddish in ground color, the median portion of dorsum black; dorsum with dense even covering of yellow, hair-like tomentum, the base, sides and tip with short bushy yellow pile. Posterior margins of third, fourth and fifth tergites with some black tomentum in middle. Coxæ, femora and tibiæ reddish; the tomentum of legs yellow; front tibiæ bristly, the claws of front tarsi almost as large as on others. Wings hyaline, the costal and subcostal cells and base of wing yellowish.

Female: In general appearance the same as the male; the frons slightly broader.

Type: Male, No. 1222, and *allotype*, female, No. 1223; Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 16 (type) and May 26, 1921, on San José Island, Gulf of California, and Agua Verde, Lower California.

This species would run to *mercedis* in Coquillett's table of species. It differs from that species in the larger front claws and the different color of the vestiture. It differs from the species in the *Biologia* in the subgenus *Hyalanthrax* in lacking black pile on the sides of the abdomen.

36. *Villa peninsularis* Cole, new species

Male: Length 10.5-11.5 mm. Face reddish yellow in ground color, pile and tomentum yellowish white; tomentum of frons yellowish white, the pile black. First two antennal joints red, the third black, long conical (see fig. 35). Tomentum of occiput yellowish. Thorax and scutellum grayish black; pile of anterior mesonotum yellowish, as is the hair-like tomentum; bristles yellow, some black on margin of scutellum. Pile and tomentum of pleura white, on the coxæ partly yellow. Halteres yellow.

Abdomen largely reddish in ground color, a median triangle on dorsum, broad at base and ending in a narrow point on the sixth tergite; tomentum largely yellowish white, narrowly brown on posterior margin of three, four and five, wholly brown on the sixth. Some black pile on sides of fourth, fifth and sixth segments, the rest white. Genitalia reddish, with yellow pile. Legs black, the tomentum largely black, yellowish on the hind side; front tibiæ without bristles, the front claws minute. Wings hyaline, subcostal cell, base of wing and r-m cross-vein with yellow color. Epaulets yellow-tomentose.

Female: Nearly the same as male. Tomentum of mesonotum, scutellum and wing base darker, golden yellow. More black pile on apical part of abdomen.

Type: Male, No. 1224, and *allotype*, female, No. 1225, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 25, 1921, at **Angeles Bay, Lower California.**

37. *Villa nitida* Cole, new species

Female: Length 5-6 mm. A black species, largely shining in ground color. Head black, face slightly rounded, not conical; face and frons sparse yellow tomentose and black pilose. Occiput whitish tomentose. Antennæ black, the styliform portion of third joint not marked off distinctly (see fig. 20). Proboscis scarcely projecting beyond oral margin. Thorax and scutellum shining black; mesonotum with yellowish white tomentum; pile of collar yellowish white; bristles of thorax and scutellum black. Pleura, pectus and coxæ black pilose. Halteres yellow, the knob pale brownish. A tuft of reddish gold pile before the halteres.

Abdomen largely shining black, anterior corners dull reddish; conspicuous tufts of golden red pile on sides of first two segments; some black pile on sides of third segment and from there on to tip of abdomen. Tomentum of abdomen largely black, with a yellowish tinge on base of third tergite; basal half of fourth tergite white tomentose except in middle; last two segments brassy tomentose above. Venter black, with black tomentum and pile. Legs black, black-tomentose; front tibiæ without bristles, the front claws minute. Wings hyaline, base and subcostal cell hyaline.

Type: Female, No. 1226, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, April 25, 1921, at **Tepoca Bay, Sonora.**

Paratypes, fifteen females taken at Tepoca Bay with types; two females from Angeles Bay, May 7. This species would run to *gemella* or *lateralis* in Coquillett's table of species. It is not nearly related to any of the species described in the Biologia.

38. *Villa effrena* Coquillett

Three specimens taken. Espiritu Santo, May 31; Ceralbo Island, June 8; Tiburon Island, south end, July 5.

39. *Villa miscella* Coquillett

Three specimens from Espiritu Santo, June 1; one specimen from San Evaristo Ranch, Lower California, June 10.

40. *Villa vanduzeei* Cole, new species

Male: Length 20 mm. Length of wing 18.5 mm. Most of the head black, face and lower half of frons red; tomentum and pile of face reddish yellow; tomentum of frons reddish yellow, the pile black. First two antennal joints red, the third black and gradually tapering from base (see fig. 28). Face rounded, the proboscis scarcely projecting. Occiput with golden tomentum. Thorax black, with reddish yellow pile anteriorly and on the margins, the tomentum of the same color and hair-like (not in scales); most of the disk of mesonotum short black pilose. Scutellum except base dark red, with black pile and bristles and yellow tomentum. Pleura and coxæ golden red pilose.

Ground color of abdomen red except a median portion which is black; the black portion widens on posterior margins of third, fourth and fifth tergites. Tomentum of abdomen largely reddish as on thorax, black on the black portion, across the posterior margins of the fifth and seventh tergites and all of sixth. Legs almost wholly black, the middle femora reddish below; tomentum of femora black behind, reddish yellow in front; front tibiae without bristles, the front claws small. Wings largely blackish brown, the base and costal cell yellowish; apex and posterior margin of wing to end of anal cell hyaline; middle of cell 1st M-2 and 1st A gray hyaline; a hyaline spot in upper distal corner of cell 2M; r-m cross-vein and base of cell Cu-1 bordered yellowish.

Female: Nearly the same as male but the frons is slightly wider. The genitalia alone will distinguish with certainty.

Type: Male, No. 1227, and *allotype*, female, No. 1228, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, July 7, 1921, at San Pedro Bay, Sonora.

Paratypes, one male, taken with the types. This species resembles *V. miscella* Coquillett, but a number of characters separate it from that species. It is one of the largest and finest species known to North America. The writer takes great pleasure in naming this species for Mr. E. P. Van Duzee, who made such a fine collection of Bombyliidæ in the Gulf region.

41. *Lepidanthrax angulus* Osten Sacken

Two female specimens were taken, one in Palm Cañon, Angel de la Guardia Island, May 3, the other (badly rubbed) on Tortuga Island, May 11. The first specimen has only a trace of a spot in the wing at the end of vein R2+3 and none at the end of R-1.

42. *Lepidanthrax proboscidea* Loew

A total of nine specimens taken. San Francisquito Bay, May 10; San Esteban Island, April 19; San Pedro Nolasco Island, April 17.

43. *Lepidanthrax hyalinipennis* Cole, new species

Length 3.75 to 10 mm.

Male: Differs from *inauratus* in having the tomentum of occiput white, second joint of antennæ partly black and coxæ black instead of reddish. Bushy yellow pile at base of abdomen; third tergite white tomentose at base, brownish yellow across middle, black on the posterior margin; tergites four, five and six with dense, appressed silvery white scales; posterior margin of these segments yellow, the sides with black scales; last segment yellow tomentose. Segments four, five, six and seven red in ground color. Antenna shown in fig. 25, the genitalia in fig. 2. Tarsi all blackish and tips of tibiæ darkened. Halteres yellow. Wings hyaline, with no spots, the subcostal cell yellowish.

Female: Nearly the same as male. No silvery scales on abdomen. Fourth abdominal tergite with a white tomentose band at base, yellow posteriorly; fifth tergite largely black, golden yellow posteriorly; the remainder of abdomen pale yellow tomentose; sides of segment four to the tip of abdomen with black scales. Venter yellowish white tomentose, some black near tip.

Type: Male, No. 1229, and *allotype*, female, No. 1230, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, May 31, (type) and June 9, 1921, on **Espiritu Santo Island, Gulf of California.**

A long series taken from the following localities: Espiritu Santo Island, May 31, June 9; Monserrate Island, June 13; Angeles Bay, May 7, June 26, 27; Tiburon Island, April 23; Ceralbo Island, June 6; San Francisquito Bay, June 23; Concepcion Bay, June 18; San José Island, May 28.

A series of 13 males and 12 females from Tiburon Island seem to be a color variety; tergites four and five of abdomen often largely black and venter darker. More black scales on sides and apex of abdomen. There is some variation in length of proboscis, but in this series the length will average shorter than in the typical form.

44. *Spogostylum pluto* Wiedemann

Guaymas, April 11; Guadalupe Point, Concepcion Bay, June 18.

45. *Spogostylum œdipus* Fabricius

Escondido Bay, June 14; Danzante Island, May 24; San Francisquito Bay, June 23; Guaymas, April 11.

46. *Spogostylum simson* Fabricius

Cerralbo Island, June 8; La Paz, June 3; San José Island, May 29.

47. *Bombylius flavipilosa* Cole, new species

Female: Length 6 mm. Black, largely yellow pilose. The proboscis about as long as thorax. Antennæ black, first two joints with yellow pile, third joint widest near middle (see fig. 6). Face black, with golden yellow pile, some black intermixed; frons with recumbent yellow tomentum and mixed black and yellow pile. Pile of mesonotum, pleura, pectus, dorsum of abdomen and venter almost wholly yellow, a few long black hairs on posterior part of mesonotum and on posterior margins of abdominal segments. Legs yellow, a black spot in front of knees, the last two tarsal joints and apex of third blackish; tomentum of femora yellow. Wings grayish hyaline, indistinctly infuscated at base and in costal cell; stigma yellow; vein closing cell 1st M-2 distally very short.

Type: Female, No. 1231, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, May 10, 1921, at San Francisquito Bay, Lower California.

There is one female paratype, taken with the type. The species is near *cachinnans* but is smaller and has a shorter proboscis. In *B. io* Will. the antennæ are yellow at the base and longer than distance from vertex to oral margin, instead of the same length as in the above species. *B. clio* Will. is nearer, but the pile of the face is black. *B. alboopenicillatus* has long black pile on the face and the abdomen is largely black pilose. *B. dolorosus* has no yellow pile on the face or abdomen.

48. *Heterostylum robustum* Osten Sacken

La Paz, June 3, 4 and 5, where most of the specimens were taken; Loreto, May 20; San Francisquito Bay, June 23;

Agua Verde, May 26; San José Island, June 10; Pond Island Bay, Angel de la Guardia Island, June 30.

49. *Lordotus apicula* Coquillett

Guaymas, April 8; San Pedro Nolasco Island, April 17.

50. *Lordotus junceus* Coquillett

Tepoca Bay, April 25, where most of the specimens were taken; San Francisquito Bay, May 10. One male and one female are almost wholly white pilose. The first antennal joint is about one-half as long as third. There is some variation in the length of the proboscis and in the males it is longer than in the females.

51. *Aphæbantus mus* Osten Sacken

Guaymas, April 7, 13 and 15; Puerto Refugio, Angel de la Guardia Island, June 29.

52. *Aphæbantus tardus* Coquillett

Tepoca Bay, April 25.

53. *Aphæbantus cervinus* Loew

Tepoca Bay, April 25; San Francisquito Bay, May 10.

54. *Aphæbantus pavidus* Coquillett

Tepoca Bay, April 25.

55. *Aphæbantus vulpecula* Coquillett

Angeles Bay, May 7.

56. *Aphæbantus pellucidus* Coquillett

La Paz, June 3.

57. *Aphæbantus desertus* Coquillett

Tepoca Bay, April 25.

58. *Aphœbantus carbonarius* Osten Sacken

A female specimen taken at San Francisquito Bay, June 23, is placed here. The styliform portion of the third antennal joint is about twice as long as the basal portion.

59. *Aphœbantus argentifrons* Cole, new species

Male: Length 6 mm. Ground color of body black. Antennæ black, styliform portion of third joint about equal to basal portion (see fig. 15). Frontal orbits and upper occipital orbits silvery. Frons and face whitish gray pollinose and white pilose. Lower occiput white tomentose. Proboscis scarcely projecting beyond oral margin. Thorax and scutellum gray pollinose and white pilose; the sparse tomentum on disk of scutellum yellowish. Knob of halteres bright yellow.

Abdomen gray pollinose and sparse white pilose; tomentum sparse and largely white; a spot of black tomentum in middle of tergites three to seven. Hypopygium about as long as sixth and seventh segments combined, gray pollinose, with white tomentum and pile. Only hind pair of legs present; basal three-fourths of tibiæ and base of first tarsal joint yellowish, the rest of legs black; sparse pale hairs below on femora. Wings hyaline, the stigma yellow.

Type: Male, No. 1232, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 1, 1921, on **Espiritu Santo Island, Gulf of California.**

The type is an unique. The species runs to *vulpecula* in Coquillett's table of species (1894), but is evidently nearer *catulus*, differing from that species in the shape of the third antennal joint, in having the scutellum gray pollinose, etc.

60. *Aphœbantus marginatus* Cole, new species

Female: Length 4.5 mm. Black, largely shining or subshining. Pile of frons largely yellow, that on face and around antennæ white. Styli-form portion of third antennal joint scarcely longer than basal portion (see fig. 14). Most of frons subshining, gray pollinose on sides; face gray pollinose. Thorax subshining, yellow tomentose and white pilose; bristles yellow. Scutellum shining black, some yellow scales at base and long yellow bristles on margin. Halteres pale yellow.

Abdomen black, subshining; a large part of the tergites black tomentose, the posterior margins white and between these colors with sparse golden yellow scales. Venter white tomentose. Pile of abdomen white, very sparse. Most of tibiæ and base of first tarsal joint reddish, the rest of legs black; a few fine white bristles below on hind femora. Wings hyaline.

Type: Female, No. 1233, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, April 23, 1921, on **Tiburon Island, Gulf of California.**

The type is an unique, but it is a well marked species. It would run to *vulpecula* Coq. in Coquillett's table of species (1894), but the marking of the abdomen is quite different.

61. *Aphœbantus* sp.

One specimen, a male, taken at Loreto, May 20, is undoubtedly undescribed, but the antennæ are broken. The abdomen has a longitudinal row of black tomentose spots which are bordered on the sides by brown tomentum; the narrow posterior margin of the tergites is white tomentose. There is a flat tuft of silvery pile over the hypopygium. The halteres are yellow and the wings hyaline.

62. *Aphœbantus* sp.

An unique female taken at San Francisquito Bay, May 10. The species is near *vulpecula*, but is probably undescribed.

63. *Metacosmus exilis* Coquillett

One female, taken at Escondido Bay, Lower California, June 14. The head is somewhat greased and the pruinose areas cannot be made out clearly. The antennæ are black and very short (see fig. 12), the first joint scarcely visible. The knob of the halteres and middle of the stem white.

64. *Geron nivea* Cresson

The specimens are placed here, but may prove to be a distinct species. The length is 4-6.5 mm. The frons is silvery white tomentose. The dorsum of the abdomen is velvety black, with sparse golden tomentum on the median portion, the sides and venter gray pollinose and silvery white tomentose. All of the abdominal pile is white. The genitalia are near those figured for *niveoides* new species. The front tibiæ are black. A male and female were taken at Guaymas, April 13 and 15; three males from San Esteban Island, April 19, Angeles Bay, June 25 and Pond Island Bay, June 30.

65. *Geron digitaria* Cresson

In the Proc. of the Acad. of Nat. Sciences of Philadelphia, Nov. 1919, pages 183-185, Cresson gives some notes on the species of the genus *Geron* and he is the first dipterist to use the form of the male genitalia in separating the species. In this genus the wing venation offers very few characters for differentiation of species. The color of the vestiture is of value in perfect specimens. There are two types of male genitalia, one of the type of *digitaria* (see fig. 1) and the other of the type of *niveoides* as shown in fig. 4. A series of nine males and nine females are determined as this species, from the following localities: Guaymas, April 10; Concepcion Bay, June 17; Angeles Bay, May 7 and June 26; Isla Raza, April 21; San Nicolas Bay, May 16; San Esteban, April 19; Tiburon Island, April 23 and July 3; Puerto Refugio, Angel de la Guardia Island, June 29; San Francisquito Bay, May 10; Monserrate Island, June 15; Agua Grande, Carmen Island, June 15; La Paz, June 3.

66. *Geron niveoides* Cole, new species

Male: Length 5-6 mm. Nearly like *nivea* Cresson. The proboscis is slightly longer. The mesonotum more dull black than velvety; no golden tomentum on mesonotum, scutellum and abdomen, in its place is white, hair-like tomentum on the mesonotum and scutellum and silvery lanuginose vesture on the abdomen, dense on the incisures. Pile of scutellum and abdomen longer and more abundant than in *nivea*. The genitalia are specifically distinct from *nivea* (see fig. 4 and 5). The stigmal region of the wing is yellow.

Type: Male, No. 1234, and *allotype*, No. 1235, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 10, 1921, on **San José Island, Gulf of California.**

Paratypes, 4 males and 9 females, as follows: San Francisco Island, May 30; San Francisquito Bay, June 23; Coronados Island, May 18; San José Island, May 29 and June 10; Gonzales Bay, April 29.

A male and female from Isla Raza, April 21, may belong here, although the male genitalia seem to differ slightly.

67. *Geron alba* Cole, new species

Male: Length 4-5 mm. Very nearly allied to *G. digitaria*. The pile of the whole body is white and a little longer and more abundant than in *digitaria*, the tomentum wholly white or silvery. Dorsum of abdomen not showing velvety, the gray of sides more extended. The finger-like projections on lower side of genitalia are much shorter and of a different shape than in *digitaria* (see fig. 8). The figure was made from a pinned specimen, that of *digitaria* from a specimen boiled in KOH and dissected.

Type: Male, No. 1236, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, May 18, 1921, on **Coronados Island, Gulf of California**.

Paratypes, 5 males, as follows: San Francisco Island, May 30; San José Island, May 29; Angeles Bay, June 27.

68. *Geron insularis* Cole, new species

Male: Length 4 mm. A species closely allied to *nivea* and *niveoides*, but the male genitalia are specifically different (see fig. 9). The abdomen is wholly silvery gray tomentose. The unique type has the four hind legs broken.

Type: Male, No. 1302, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, April 23, 1921, on **Tiburon Island, Gulf of California**.

69. *Rhabdopselaphus albopilosus* Cole, new species

Male: Length 3.75 mm. A black, gray pollinose species, white pilose. Antennæ black, the third joint almost twice as long as the first two combined and slightly tapering from the base (see fig. 16). Face with dense silvery white pile. Occiput gray pollinose and white pilose. Proboscis about three times the length of the head.

Thorax gray pollinose, with two median black vittæ and two broad lateral spots. Posterior margins of abdominal segments narrowly yellow; all the abdomen gray pollinose. Genitalia yellowish red. Knob of halteres white. Tips of femora and basal half of four hind tibiæ yellowish. Wing with vein closing cell 1st M-2 straight; r-m cross-vein distinctly before middle of cell 1st M-2.

Type: Male, No. 1237, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, June 23, 1921, at **San Francisquito Bay, Lower California**.

This species is related to *fasciola* Coq.

70. *Rhabdopselaphus pygmæus* Cole, new species

Male: Length 1.25 mm. A very small species related to *obscura* Cresson. Portion of eyes with large facets occupying three-fourths of eye. Frontal triangle and face silvery pollinose; a few short white pile on face; ocellar tubercle gray pollinose. First antennal joint smaller than second, the third twice as long as the first two combined. Proboscis twice the length of the head. Mesonotum, scutellum and pleura dense silvery gray pollinose, almost bare of vestiture, the sparse, short pile white. Halteres white.

Abdomen black in ground color, dense gray pollinose, the sparse pile short and white. Legs largely black; knees, bases of tibiæ and bases of metatarsi yellowish. Femora gray pollinose. Wings hyaline. The specimen has only one wing and this has no cross-vein connecting the branches of media (cell 1st A open distally).

Type: Male, No. 1238, Mus. Calif. Acad. of Sci., collected by E. P. Van Duzee, May 10, 1921, at **San Francisquito Bay, Lower California.**

An undescribed species in the writer's collection from San Diego, California, has the same type of wing.

71. *Toxophora maxima* Coquillett

Three females were taken. Angeles Bay, May 7 and June 27, 1921; Freshwater Bay, Tiburon Island, April 23. Coquillett must have made an error in giving the length as 16 mm.; these specimens answer the description well but would measure less than 10 mm. if they were straightened out. Coquillett does not mention the black tomentum on median portion of mesonotum, disk of scutellum, a large part of third segment and base of fourth (second and third visible segments) of abdomen.

72. *Toxophora virgata* Osten Sacken

Las Animas Bay, May 8; Angeles Bay, June 26; La Paz, June 4; Coyote Cove, Concepcion Bay, June 18; Guaymas, April 11.

73. *Toxophora pellucida* Coquillett

One specimen, Mulegé, May 14.



Cole, Frank R. 1923. "Expedition of the California Academy of Sciences to the Gulf of California in 1921. The Bombyliidae (bee flies)." *Proceedings of the California Academy of Sciences*, 4th series 12, 289–314.

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