

NEW MOTH-FLIES (PSYCHODIDÆ) BRED FROM BROMELIACEÆ AND OTHER PLANTS.

By FREDERICK KNAB,

Custodian of Diptera, United States National Museum.

While on an entomological investigation in southern Mexico the writer gave some attention to the inhabitants of the epiphytic Bromeliaceæ, which are so characteristic a feature of our American tropics. Dipterous larvæ were present in the water at the leaf bases of the plants in considerable numbers and variety, and among them those of Psychodidæ. These psychodid larvæ were dark in color and had a rather long breathing tube, by which they suspended themselves from the surface film in the manner of culicid larvæ. Their movements were slow, and when disturbed they sank to the bottom. The pupæ are free swimming, like those of Culicidæ, but not very active. The larvæ proved difficult to rear, but several were brought through to imago. Correspondence with Dr. J. H. Pazos, of Cuba, and Mr. A. H. Jennings, then in Panama, brought about the rearing of additional species by these gentlemen. The species all proved to be unknown, as was to be expected, and are described herewith. No doubt other species peculiar to the water of Bromeliaceæ exist, and still others in similar habitats; in fact, one from a plant of another family is included in the following.

In the descriptions I have used the generic name *Psychoda* in the broadest sense, fully realizing that the species are not typical. It would have been easy to create new genera for them, but I prefer to await a more complete elucidation of the group. I can only indorse the remarks of Mr. Brunetti on this subject.¹ In the terminology of the wing venation I have adopted that of this author as logical and the most convenient. The scale vestiture of the body and wings, in the forms here described, is long and hairlike, and by most authors would be termed hairs.

PSYCHODA AMPLIPENNA, new species.

Male.—Dark, densely clothed with long black vestiture; antennæ pale; wings marked with white. Antennæ long, nearly as long as the body, pale, the nodes globose, brownish luteous, with dense whorls

¹ Fauna of British India, Diptera Nematocera, 1912, p. 198.

of short coarse silky white hairs. Palpi rather long, about half as long as the antennæ, clothed with outstanding black scales. Occiput, thorax, and abdomen densely clothed with long, erect, hairlike black scales with white apices, giving the insect a moldy appearance. Wings grayish hyaline, ovate-lanceolate, less than twice as long as broad, the tip at third vein bluntly rounded; upper branch of second vein forked well toward base of wing; vestiture black, very heavy on the costa, the fringe at apex, from uppermost branch of second to fourth vein, pale fuscous; an ill-defined broad crescentic fascia, formed of white scales, extending nearly across disk just beyond middle of wing, the black vestiture before and beyond it slightly heavier; some erect white scales along the veins on basal half of wing; apices of marginal, submarginal, posterior, and anal cells each with a broad white spot formed by the shorter and sparser scaling at these points and not by white scales; fringe ample, unicolorous. Halteres with white stem and dark knob. Legs black scaled, the tips of last tarsal joints yellowish white.

Length.—Body about 1.5 mm.; wing 2 mm.

Locality.—San Antonio de los Baños, Cuba (J. H. Pazos); three specimens bred from larvæ in water at leaf bases of epiphytic bromeliads.

Type.—Cat. No. 15933, U.S.N.M.

PSYCHODA FUMATA, new species.

Male.—Thoracic integument pale yellowish, the body and legs more or less darkened; vestiture of thorax dirty whitish, that of body wings, and legs dark with silky luster. Antennæ long, blackish, the shaft very slender, the nodes large, well separated, bearing dense but short whorls of coarse whitish hairs. Palpi long, about half as long as the antennæ, clothed with grayish scales. Mesonotum clothed with dull whitish hair like scales, erect and very long and forming irregular tufts along lateral margins, behind and along median line; posteriorly some of the long scales show infuscation toward their apices. Abdomen clothed with dusky scales. Wings grayish hyaline, broadly lanceolate, about twice as long as broad, coming to a point at third vein; auxiliary vein well developed, reaching to apical third of wing; upper branch of second vein forked beyond middle of wing; seventh vein well developed; vestiture dull brown and black, unspotted; costa densely clothed with long hairlike black scales; scales of veins dusky brown, uniformly distributed; fringe ample, dusky with fuscous luster, at apex becoming black like the costa. Halteres pale, with black knobs. Legs blackish, unmarked, the scales with gray luster.

Length.—Body about 2 mm.; wing 2.5 mm.

Locality.—Córdoba, Mexico, March, 1908 (F. Knab).

Type.—Cat. No. 15934, U.S.N.M.

Three specimens bred from larvæ in the water at the leafbases of epiphytic bromeliads. Larvæ were found in different plants on different occasions, but proved difficult to rear. The forking of the upper branch of the second vein beyond the middle of the wing, as it occurs in this species, has been supposed to be a characteristic peculiar to the subfamily Phlebotominæ; but the presence of a well-developed long seventh vein clearly places it in the Psychodinæ.

PSYCHODA TRICOLOR, new species.

Female.—Black, variegated with white and ochreous yellow. Antennæ long, slender, pale, the nodes elongate and rather small, with dense whorls of coarse silky white hairs. Palpi stout, rather long, less than half as long as the antennæ, densely clothed with shaggy black scales. Thorax brownish luteous; dorsum clothed in front with erect brownish white scales, posteriorly with black ones, the two intermingling toward the middle, a few white-tipped scales posteriorly. Abdomen densely clothed with long erect black scales, some yellow scales forming tufts on anal appendages. Wings pale grayish hyaline, broadly lanceolate, over twice as long as wide, coming to a rather sharp point at apex of third vein; upper branch of second vein forked before middle of wing; vestiture black with white marginal spots; fringe broadly golden before apex on both outer and inner margins, the extreme tip black; costal vestiture dense, black from base to uppermost branch of second vein and involving two small white patches; fringe on inner margin very long, black from base to fourth vein; longitudinal veins with the black scales denser at extreme apices, producing the effect of black spots, just before them some long white scales which project in such a way as to give the effect of white marginal spots on the cells. Legs with shaggy black scales; knees silvery white scaled; some of the tarsal joints with narrow white rings.

Length.—Body about 2.5 mm.; wing 2.7 mm.

Locality.—Coscajar River, Panama, February, 1909 (A. H. Jennings). Three specimens bred from larvæ in water at leaf bases of epiphytic bromeliads.

Type.—Cat. No. 15935, U.S.N.M.

A very similar species has been bred from larvæ in the liquid held by the flower bracts of *Calathea discolor*. On account of the similarity of appearance and of habits it is best described here.

PSYCHODA INCOMPLETA, new species.

Male.—Black, variegated with white, similarly marked to *P. tricolor*. Antennæ long, dark, the nodes globose, piceous, the stems slender, brownish; hairs of whorls long and rather dense, blackish. Occiput, thorax, and abdomen densely clothed with long erect sooty scales. Wings pale grayish hyaline, broadly lanceolate, over twice

as long as wide, coming to a rather sharp point at apex of third vein; upper branch of second vein forked before middle of wing; vestiture black, with white marginal spots; fringe black, with two white patches near apex of wing, one on outer margin between upper forks of second, the other on inner margin between forks of fourth vein; a series of marginal whitish spots between the veins, produced by white scales projecting from the veins, absent on the cells between second and fifth veins. Legs with shaggy black scales, without white knee-spots, but with white rings on some of the tarsal joints.

Length.—Body about 2 mm.; wing 2.5 mm.

Locality.—Tabernilla, Canal Zone, Panama, April, 1909 (A. H. Jennings). Three specimens.

Type.—Cat. No. 15936, U.S.N.M.

Bred from larvæ found in fluid held by the flower bracts of *Calathea discolor* Meyer. The liquid in these flower bracts is dark and thick, produced partly by a mucilaginous secretion of the plant itself.