

DESCRIPTION OF THE MALE OF WILLISTONINA
BILINEATA (WILLISTON) TOGETHER
WITH A NEW FORM (DIPTERA-
ASILIDÆ)

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The genus *Willistonina* was erected by Back for *Habropogon bilineatus* Williston described from northern California (O. T. Baron). Both the genus and species apparently were described from a single female specimen and, so far as I know, no other specimens have been reported taken. It seems worth while, therefore, to record additional captures and to describe the male and a new form on hand.

WILLISTONINA BILINEATA (Williston)

Habropogon bilineatus Williston, Trans. Amer. Ent. Soc., vol. 11, p. 11 (Plate I, fig. 8), 1884.

Willistonina bilineatus, Back, Trans. Amer. Ent. Soc., vol. 35, pp. 337-339 (Plate IV, fig. 5, and Plate VII, fig. 3), 1909.

Male. Length 13.5 mm. Head black in ground color, lower cheeks, palpi, and proboscis shining; face and front densely gray pollinose with a slight yellowish tinge; occiput yellowish pollinose. Mystax dense white, confined to the oral margin; short bristly hairs on the front and ocellar tubercle black, the latter with a longer pair directed anteriorly; occipito-orbital bristles yellowish, short and numerous; sparse beard and very sparse hairs of the palpi and proboscis white. First and second antennal joints short, subequal in length, with short black hairs; first and lower half of the second shining reddish, the remainder of the second black; third black, thinly gray pollinose, about twice the width of the second joint, narrowed anteriorly at the base and apex; style very small, cylindrical, slightly longer than wide and with a short blunt bristle at the apex.

Mesonotum black in ground color with a broad central stripe of this color widened anteriorly and very narrowly bisected by a golden pollinose line; dorsocentral stripes and the transverse suture dull golden pollinose; humeri and lateral margins gray pollinose; intermediate area, divided by the transverse suture, dull brownish. Hairs short, sparse, black; bristles mostly black, two short yellowish humerals, one posthumeral brownish, two presuturals, one brownish and the other black, two to three supra-alars, two post-alars, and six dorsocentrals beginning at the transverse suture and extending posteriorly. Scutellum black, densely gray pollinose; three pairs of marginal bristles, one brownish, the remainder black.

Pleuræ reddish in ground color, densely gray pollinose; fine hairs on the propleuræ white, bristles of the collar yellowish; mesopleuræ nearly bare, with a few very short hairs above and below; hypopleuræ with a patch of short yellowish bristles.

Abdomen black and red in ground color, most segments with the basal one-half or two-thirds black and the apical one-half or one-third reddish. On the sides of the segments there is a shining wedge-shaped spot which does not reach the anterior or posterior margins excepting on the last two segments, widest anteriorly. Posterior margins densely silvery pollinose, appearing yellowish at some angles, the pollen extending forward on the sides (inside of the wedge-shaped spots) to the anterior margins, and on most segments widening and reaching the lateral margins anteriorly. Remainder of the segments golden-brown pollinose, but looking at the abdomen posteriorly it appears opaque black excepting the posterior yellowish margins. A large clump of yellowish hairs on the sides of the first segment and a few similar hairs on the sides of the second segment; remainder of the hairs very short, appressed, yellowish on the sides and posterior margins, black otherwise. Venter mostly reddish brown, shining, silvery pollinose except for a narrow median longitudinal line and two posterior lateral spots on most segments; hairs short, yellowish. Hypopygium short but slightly projecting, mostly contained in the seventh and eighth segments which are widened ventrally; shining reddish and yellow haired excepting that the base of the hypandrium is black with black hairs. Surstyli about as broad as long with two short, blackish, finger-like projections at the upper apical angle. Hypandrium transverse, slightly emarginate at the middle posteriorly. Epandrium composed of two short rounded lobes connected with a transverse thin plate.

Coxæ mostly reddish in ground color, densely gray pollinose; the fore and middle pairs with dense, long, white hairs anteriorly, the hind ones with a few short, stout hairs anteriorly and a row of stout hairs on the outer posterior edge. Remainder of the legs shining, very thinly gray pollinose; femora black with a complete reddish stripe ventrally which is expanded basally on the posterior side of the fore and middle pairs; tibiæ black with the dorsal surface of the fore and middle pairs reddish on the basal two-thirds, hind pair narrowly reddish basally; tarsi and claws black; pulvilli and empodia brownish. Femora, tibiæ, and the basal two tarsal joints with numerous very short, recumbent, yellowish hairs, becoming black and stouter on the outer three tarsal joints: bristles yellowish, somewhat darker on the outer tarsal joints.

Halteres brownish. Alulæ yellowish, with a nearly white margin and fringe. Wings uniformly light brownish; veins brown; anterior crossvein slightly beyond middle of discal cell; fourth posterior cell narrowly and the anal cell very narrowly open.

Described from a male, Hanson's Resort, Jefferson County, Oregon, July 29, 1929 (E. C. Van Dyke); Calif. Acad. Sci.

A female (length 15 mm.) of the same data as the male in the Calif. Acad. Sci., and the following specimens have been seen: *Washington*, Virden, IX-5 '32 and IX-4 '33 (C. H. Martin), Easton, VIII-23-1933 (Wm. W. Baker); Signal Peak, Ranger Station, VII-21 '34 (Wm. W. Baker); and Rainier National Forest, Sawmill Flat Camp, VIII-10 and 14 '34 (Wilcox).

Willistonina bilineata nigrofemorata Wilcox, new subspecies

This form differs from the above by having the femora and antennæ entirely black, usually all of the mesonotal bristles and part of the occipito-orbital bristles black, and the hairs of the genitalia mostly black.

Holotype No. 3931, male (length 11 mm.), Idlewild, California, VI-29 '28 (E. C. Van Dyke), in the California Academy of Sciences.

Allotype No. 3932, female (length 13 mm.), same data as holotype.

Paratypes: One female, same data as types; eight specimens, both sexes, Antelope Mt., Grant County, Oregon, 5,000 feet, VII-8 '32, and Hart Mt., Lake County, Oregon, 7,000 feet, VII-30 and 31 and VIII-2 '32 (D. K. Frewing), in the writer's collection; Merritt, British Columbia, VIII-3 '31 (J. Nottingham), two specimens in the University of Kansas collection; Victor, Montana, VII-8 '18, one specimen in the Montana State College collection; and Hamilton, Montana, VI-18 '33, reared from larva collected in garden, V-20 (C. B. Phillip), one specimen in the writer's collection.

The long, dense, white hairs on the fore and middle coxæ of the males are represented by shorter and more scattered hairs in the females.

Pupa. The pupal case accompanied the specimen from Hamilton, Mont., mentioned above, so it is briefly described as follows:

Length 10 mm. Slightly curved; head, abdomen, and legs excepting the right fore coxa yellowish-brown, more or less transparent; thorax and wings opaque shining yellowish-white. Legs and wings

compactly extended below on the venter, the wings overlapping the hind legs; wings and fore legs reaching posterior margin of the first abdominal segment, middle and hind legs reaching slightly beyond the anterior margin of the third segment. Thorax and head split longitudinally and the head transversely in front of the eyes. Eyes occupying the entire posterior portion of the head, and on either side at the lower edge is quite a large rounded tubercle. Dorsum of head (before eyes) with a pair of large thorns directed anteriorly, rather widely separated and on separate tubercles, and on each side with a set of three slightly smaller thorns arising from a single base or tubercle. Thorax without spines or bristles excepting a very minute, rounded tubercle above the base of the mesothoracic legs; prothoracic spiracle roundly oval, poorly defined, with a smaller, somewhat raised, brown reniform central area. Abdomen on each segment excepting the last with a dorsal transverse row of very short, quite stout, posteriorly directed spines as follows: First segment, 12 spines in a row, the row on the anterior margin, the middle pair of spines and the next to last one on either side smaller; second, third, and fourth segments with rows slightly beyond the middle posteriorly, the second and third with 16 spines each and the fourth with 14, the 3 or 4 central spines and the outer 1 or 2 on either side smaller, one spine in each of the second and third rows forked at the tip; fifth and sixth segments with the rows on the posterior margins, the fifth with 14 spines and the sixth with 12; seventh and eighth segments each with 6 spines, the rows located at the posterior two-thirds of the segments; and the ninth with two pairs of spines, the spines above much larger than the lower ones. Abdominal spiracles very small, round, located at the dorso-anterior angles; two postspiracular bristles on the first segment, and three each on segments 2 to 7. Venter of abdomen without spines or bristles.

In Malloch's Key*, this genus would be thrown out in the first couplet, as it differs from *Leptogaster* by having the two large forwardly directed thorns on the head, and from the other genera included (*Promachus*, *Ceraturgus*, *Dasyllis*, *Erax*, *Proctacanthus*, and *Asilus*) by the spines on the abdomen not alternating large and small. The absence of spines or bristles on the venter of the abdomen apparently also differentiates it from the genera mentioned above.

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*Malloch, J. R. 1917. "A Preliminary Classification of Diptera, Exclusive of Pupipara, Based upon Larval and Pupal Characters, with Key to Imagines in Certain Families. Part I." Bull. Ill. Lab. Nat. Hist., v. 12 art. 3, p. 375-377.



Wilcox, Joseph. 1935. "Description of the male of *Willistonina bilineata* (Williston) together with a new form (Diptera, Asilidae)." *The Pan-Pacific entomologist* 11, 31-34.

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