

HUBBARD

JOURNAL  
OF THE  
ACADEMY OF NATURAL SCIENCES  
OF  
PHILADELPHIA.

*Descriptions of New North American Neuropterous  
Insects, and Observations on some already de-  
scribed.* By (the late) THOMAS SAY.

Read July 12th, 1836.

*ÆSHNA, Fabr.*

† Eyes in contact above.

1. *Æ. multicolorata*. Reddish-brown; thorax with green lines and spots; abdomen with green bands and lateral vitta.

Inhabits Indiana.

♀ Body reddish-brown; eyes connate, dull greenish above, with a semiocellate blackish mark, and on the posterior margin pale bluish, including a black line; inferior portion tinged with gray, and with several moveable internal spots; frontal vesicle dull whitish, above reddish-brown, dull yellowish in the middle, with a quadrate blackish spot;

But it varies much in color. The vittæ of the abdomen are more or less dilated, sometimes hardly visible; the head and thorax are, in some individuals pearlaceous-blue, and the ultimate abdominal segment varies from dull yellowish, with blackish lines, to a bright pearl-blue, sometimes dull-yellowish with a pearlaceous-blue lateral spot on each.

It is very common.

The female has two small angulated processes beneath the tail, which do not extend beyond the tip of the abdomen, the nails at their extremities are curved downwards; the hooks at the tip of the abdomen of the male are not obvious.

The description is from recent specimens. The fine blue color disappears in the cabinet specimen.

### BÆTIS, *Leach.*

1. *B. interpunctata.* Whitish; head greenish; segments of the tergum black on the posterior edges.

Inhabits Indiana.

Body yellowish-white, tinged with green; head rather prominent, yellow-green; vertex with a lateral black point; eyes with a longitudinal black line; stemmata distant, each with a black orbit; anterior one less than half the size of the others; seta of the antennæ black; front with a black angular line under the antennæ; neck distinct, separating the head from the trunk, with a black line each side; thorax somewhat brownish; wings on the anterior margin greenish, with black cross nervures, and a distinct, black, abbreviated, longitudinal

line on the middle, between the third and fourth nervures; feet greenish; anterior and intermediate pairs of thighs biannulate with blackish, posterior pair tipped with dusky; tergum with the posterior edge of the incisures black; setæ immaculate.

Length nearly three-tenths of an inch.

The small black spot on the middle of the costal margin is very obvious. The abdomen at tip is more or less obviously ferruginous.

2. *B. arida*. Brownish; posterior pairs of feet and setæ white.

Inhabits Indiana.

Body reddish-brown, with dusky incisures; head rather prominent, whitish, varied with ferruginous; vertex with a small black spot each side on the orbit; eyes rufous, with a whitish vitta; stemmata prominent, approximate; anterior one nearly as large as the others; wings immaculate, inferior pair more than one-third the length of the other; anterior tibiæ whitish, obscure at base and tip; posterior pairs of feet and setæ greenish-white; tergum with the posterior margins of the segments

Length two-fifths of an inch.

It occurs about the middle of June.

3. *B. verticis*. Yellowish-white; head and double thoracic vitta ferruginous.

Inhabits Indiana

Body yellowish-white; head sessile; vertex ferruginous; thorax with two ferruginous vittæ, confluent before, and becoming obsolete behind; wings with the nervures, except those of the margin,

black; inferior wings not extending beyond the fourth abdominal segments; setæ hardly longer than the body, the incisures black; feet white; anterior thighs ferruginous at tip; anterior tibiæ at tip, and their tarsal incisures, fuscous.

Length over one-fourth of an inch, of the setæ over three-tenths.

Caught on the window in August.

4. *B. obesa*. Body short; wings blackish, with a hyaline spot, and numerous smaller ones.

Inhabits Indiana.

Body very short and robust, blackish livid; wings dark brown or blackish, with numerous small, transverse, hyaline spots, or abbreviated lines, and a large hyaline, very oblique, semifacia about the middle on the anal half; inferior pair, excepting on the apical margin with numerous transverse, abbreviated, hyaline lines; abdomen with a dull, rufous, livid margin to the segments; setæ very short, hairy, with black incisures; feet pale yellowish; incisures of the tarsi black.

Length over three-tenths of an inch.

This species is not common.

The wings are longer than the body, and the setæ not longer than the abdomen.

#### EPHEMERA.

*E. hilaris*. Minute, white; stethidium pale fulvous; abdomen with three lateral points.

Inhabits Indiana.

Body white; eyes black, double; stethidium pale

fulvous; pleura and pectus with a few abbreviated dusky lines; wings two, ample, costal margin slightly dusky; abdomen depressed, with three brownish punctures on each side towards the tip; seta elongated.

Length one-tenth of an inch.

The smallest species I have seen. I caught several of them about the candle, on the evening of September 4th. They vary in having the brownish lines of the pleura and pectus obsolete, or altogether wanting.

#### FORMICALEO, *Geoff.*

1. *F. obsoletus*. Antennæ white in the middle; abdomen with white bands.

Inhabits U. S.

Head dull whitish, with a broad, dark, honey-yellow band between the eyes; antennæ fuscous, middle fourth whitish; thorax dull whitish; wings hyaline; anterior pair with a few obsolete, small, brownish spots or transverse abbreviated lines, two of which on the posterior margin are oblique, and a somewhat larger one on the costal margin near the tip; posterior pair with fewer spots, about three or four subcostal distant ones, and a large one on the terminal fourth, and a less obvious apical one; abdomen blackish, with a whitish band on each segment; beneath with a broad blackish vitta each side over the feet from the head to the abdomen; feet fuscous, posterior pair with a white annulus towards the tip, and at base and their tibia whitish.

JOURNAL

OF

THE ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

---

VOLUME VIII. PART I.

---

PHILADELPHIA:

MERRIHEW AND THOMPSON, PRINTERS,  
No. 7 Carter's Alley.

.....

1839.