

## A New Species of Mayfly from Tennessee

By LEWIS BERNER, Department of Biology, University of Florida

While operating insect light traps on the campus of Tusculum College, Dr. Mike Wright collected males of a species of mayfly which he sent to me for identification. These specimens proved to be the new species described below. Subsequent collecting by Dr. Wright at another locality yielded additional males and a few females. Nymphs collected from a creek at Tusculum College were also sent for identification. Since at least two species were included in the nymphal series, it is not possible to assign a nymph to the adults with certainty; therefore, the description of the immature form is not presented in this paper.

### *Isonychia tusculanensis* n. sp.

Adult males of *Isonychia tusculanensis* may be distinguished from those of other species by the brown coloration of the distal third of the mesothoracic wings. This new species appears to be most closely related to *Isonychia matilda* Traver from which it can be separated by the very strong coloration of the apical portion of its fore wings and its larger size. Traver states in her description of *I. matilda*,<sup>1</sup> "The apical third of the fore

<sup>1</sup> TRAYER, J. R. 1934. New North American species of mayflies (Ephemera). Jour. Elisha Mitchell Sci. Soc. 50 (1 and 2) : 248.

wing faintly tinged with brown, most noticeably on the outer margin." In *I. tusculanensis*, the coloration is very uniform and deep with a particularly heavy concentration in the stigmatic area (fig. 1).

*Male imago*: Body length 14.5 mm.; length of mesothoracic wings 13.4 mm.; length of caudal filaments 32 mm.

**HEAD**: Deep reddish-brown dorsally; rings at base of ocelli almost black. Large blackish-brown spot between antennal base and compound eye, and another ventral to antennal base. Basal segments and proximal half of flagellum of antenna reddish-brown; outer half of flagellum pale. Compound eyes almost contiguous dorsally; gray in color.

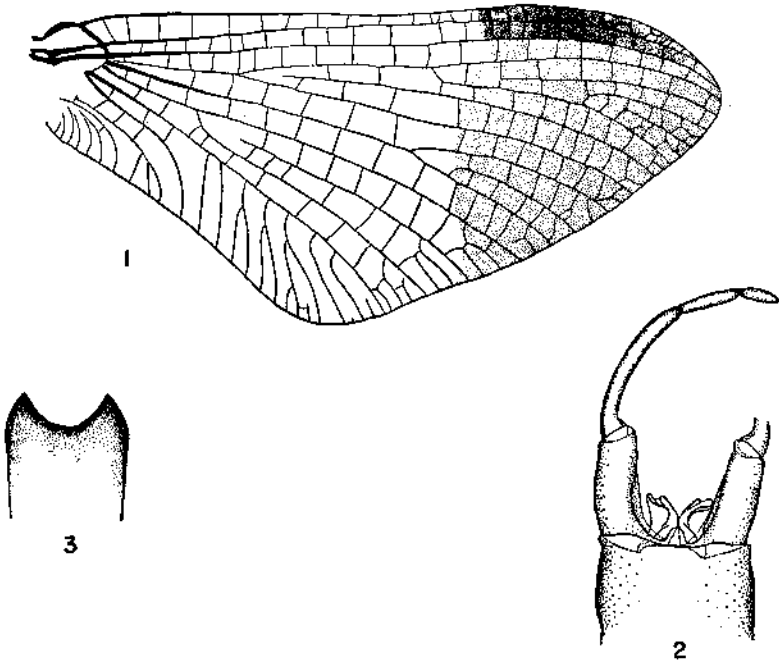
**THORAX**: Blackish-brown in color. No distinctive markings. Mesothoracic wings hyaline; distal third brown, clearly demarcated from colorless basal two-thirds; stigmatic area somewhat darker brown. Venation light brown; stigmatic cross veins numerous, tending to anastomose (fig. 1). Metathoracic wings hyaline, colorless. Legs: Fore femur and tibia very dark black-brown; tarsal segments considerably lighter in color; tarsus slightly longer than tibia. Middle and hind legs yellowish-white; tarsal segments tinged with brown distally, with brown becoming more extensive on fifth tarsal segment; claws brown.

**ABDOMEN**: Mostly deep red-brown dorsally and ventrally. Segments 2-6 with a narrow translucent band girdling each segment anteriorly producing an annulate appearance. Dorsally, each segment with a narrow black band at posterior border. Segment 1 blackish-brown dorsally and ventrally. Tergites 7-9 slightly paler in mid-dorsal region and sternites 7 and 8 slightly paler than more anterior sternites. Sternite 9 rather pale due to chalky area in median portion of segment. Genitalia blackish-brown; forceps base deeply excavated apically with a tubercle at the base of the excavation; penes of the *albomanicata* type (fig. 2). Caudal filaments blackish-brown, paler apically; segments lighter in color at the joints.

*Female imago*: Body length 15.7 mm.; length of mesothoracic wings 16 mm.; length of caudal filaments 27 mm.

**HEAD**: Pale brown except for median stripe of reddish-brown. Postero-lateral angles of occiput black-brown; a pair of blackish-

brown, submedian spots just anterior to occipital margin. Vertex with a narrow line of black-brown at lateral margins; band continues forward in front of compound eye expanding to form a wide bar between antennal base and compound eye. Antennae as in male.



*ISONYCHIA TUSCULANENSIS* n. sp.

Fig. 1. Fore wing of male.

Fig. 2. Male genitalia.

Fig. 3. Subanal plate of female.

**THORAX:** Pro- and mesonotum brown, except postscutellum which is fuscous. Metanotum fuscous. Thoracic sternites fuscous. Wings, hyaline, clear without coloration except stigmatic area; latter tinged with brown. Venation similar to that of male. Legs: Femur of fore leg brown in basal fourth, shading into black-brown in outer three-fourths; tibia black-brown; tarsus as in male. Middle and hind legs as in male.

**ABDOMEN:** Markings and color similar to those of male. Subanal plate deeply excavated (Fig. 3). Caudal filaments as in male.

*Holotype:* Male imago preserved in alcohol. Greene Co., TENNESSEE, Camp Creek. June 4, 1947. Collected by M. Wright. In collection of Museum of Zoology, University of Michigan. *Allotype:* Female imago preserved in alcohol. Same locality as holotype. June 10, 1947. In collection of Museum of Zoology, University of Michigan. *Paratypes:* 16 males, 6 females (many specimens imperfect). 8 males, 3 females in collection of Museum of Zoology, University of Michigan, other in author's collection. Greene Co., Tenn., Camp Creek. (2 males, 3 females, May 28, 1946; 3 males, June 4, 1947; 7 males, 2 females, June 10, 1947); Greene Co., Tenn. Tusculum College (1 male, April 23, 1946; 1 male, June 24, 1946; 1 male, July 15, 1946).