

A Review of *Ephemerella* (*Dannella*)
and the Description of a New Species

(Ephemeroptera: Ephemerellidae)¹

Richard K. Allen

California State University, Los Angeles 90032

Allen and Edmunds (1962), in a revision of *Ephemerella* (*Dannella*), characterized the adult and nymphal stages of the taxon based on the known species, *E. simplex* McDunnough, 1925, and *E. lita* Burks, 1937. The nymphs were characterized as follows: (1) semioperculate gills on segments 4-7, with rudimentary gill on segment one; (2) without denticles on tarsal claws; and (3) without paired dorsal abdominal tubercles. In 1965, they published a key to the adults and nymphs of the North American subgenera of *Ephemerella*, including *Dannella*, and the nymphs were keyed to subgenus on the basis of the absence of denticles on the tarsal claws.

Recently, nymphs of an undescribed species of *Dannella* were collected in Lake Huron which do not fit the published characterization of this developmental stage. *Ephemerella bartoni* n. sp. has operculate gills on segment 4 and a rudimentary gill on segment one, but possesses denticles on the tarsal claws and paired dorsal abdominal tubercles. In the key to the subgenera, Allen & Edmunds (1965), the nymph of *E. bartoni* will not key beyond couplet 8 (p. 245) as the tarsal claws possess denticles.

The nymphal stage of *Dannella* is recharacterized as follows: (1) operculate or semioperculate gills on segments 4-7 and rudimentary gills on segment 1; (2) abdominal segments 8-9 subequal in length; (3) maxillary palpi reduced or absent; (4) abdominal terga with or without paired dorsal tubercles; (5) tarsal claws with or without denticles; and (6) head, body, and appendages with long conspicuous setae.

The following key will serve to distinguish all North American *Ephemerella* subgenera with lamellate gills on segments 4-7.

Key to the Subgenera of *Ephemerella*

- 1. Abdominal gills imbricated (fig. 1) *Attenella*
- Abdominal gills operculate (fig. 3) or semioperculate as in
 fig. 8 2

¹ The research upon which this paper is based was supported by National Science Foundation Grant No. BMS 75-17661.

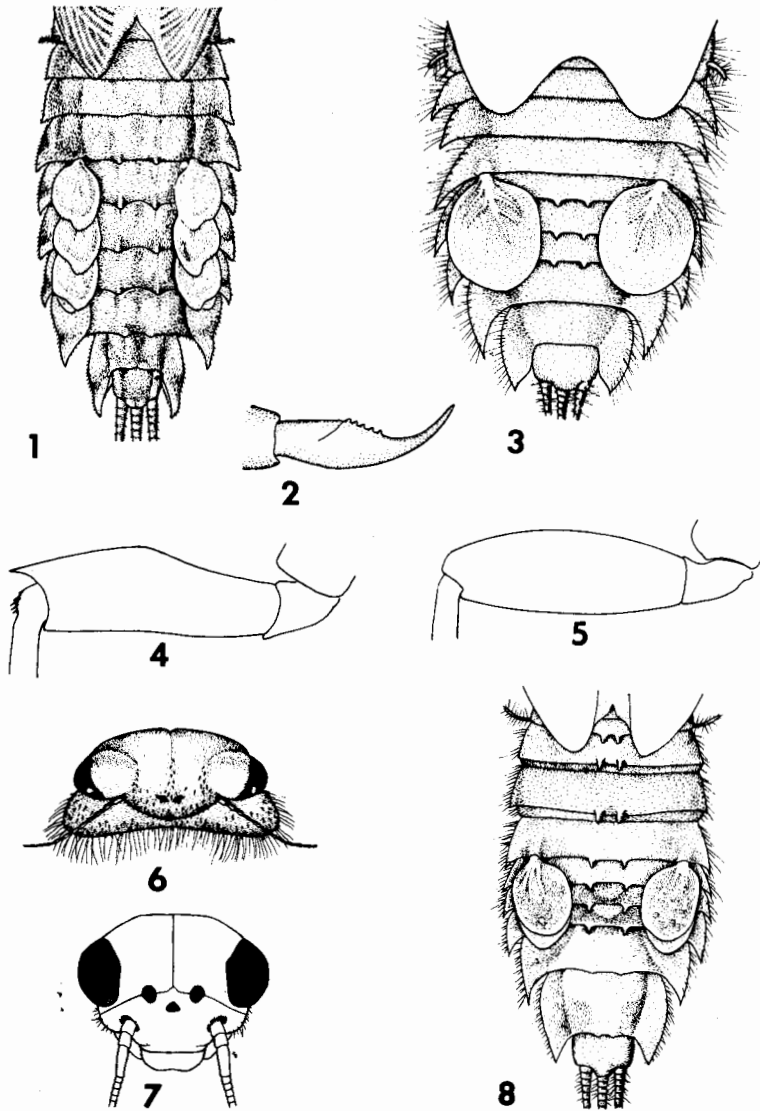


Fig. 1. *Ephemerella (Attenella) attenuata*, abdomen, dorsal view. Fig. 2-3. *Ephemerella (Dannella) bartoni*, nymphal parts: fig. 2, tarsal claw; fig. 3, abdomen, dorsal view. Fig. 4. *Ephemerella (Timpanoga) hecuba*, fore femur. Fig. 5. *Ephemerella* sp?, fore femur. Fig. 6. *Ephemerella (Timpanoga) hecuba*, head. Fig. 7. *Ephemerella* sp?, head. Fig. 8. *Ephemerella (Eurylophella) bicolor*, abdomen, dorsal view.

- 2(1). Apex femora terminating in sharp spine (fig. 4); head with broad frontal shelf (fig. 6); segment 1 without rudimentary gill.
 *Timpanoga*
 Apex femora broadly rounded, not terminating in sharp spine (fig. 5); head without frontal shelf (fig. 7); segment 1 with rudimentary gill as in figs. 1 and 3 3
- 3(2). Abdominal segment 9 distinctly longer than segment 8 (fig. 8); head, body and appendages with short inconspicuous setae *Eurylophella*
 Abdominal segments 8-9 subequal in length (fig. 3); head, body and appendages with long conspicuous setae *Dannella*

***Ephemerella* (*Dannella*) *bartoni*, new species**

Nymphs. Length: body 7.0-8.0 mm; caudal filaments 3.0-4.0 mm. General color yellow to light brown. Head yellow to light brown, vertex with brown markings; maxillae without palpi. Thoracic nota yellow to brown, without distinctive markings; legs pale, tarsal claws with 6-7 small marginal denticles (fig. 2). Abdominal terga yellow to light brown, often with paired sublateral brown maculae on terga 3-7; terga 5-7 with small paired dorsal abdominal tubercles (fig. 3); operculate gills brown; abdominal segments 2-9 with well-developed posterolateral projections (fig. 3). Caudal filaments pale with narrow brown annulations near base.

Types. Holotype, male nymph, Howdenville, Lake Huron, Ontario, Canada, 29-V-74, David R. Barton, in collection Canadian National Collection, Ottawa. Paratopotypes, 3 male and 5 female nymphs, 1 male and 1 female in collection David R. Barton, University of Waterloo, Waterloo, Ontario, and 1 male and 1 female in collection California State University, Los Angeles.

Ephemerella bartoni is the third species in the subgenus *Dannella* described from North America and appears to be most closely related to *E. lita* by the development of the posterolateral margins of segments 2 and 3. This species is named in honor of David R. Barton, collector of the type series.

Literature Cited

- Allen, R. K. and G. F. Edmunds, Jr. 1962. A revision of the genus *Ephemerella* (Ephemeroptera: Ephemerellidae). IV. The subgenus *Dannella*. J. Kans. Entomol. Soc., 35:33-38.
- Allen, R. K. and G. F. Edmunds, Jr. 1965. A revision of the Genus *Ephemerella* (Ephemeroptera: Ephemerellidae). VIII. The subgenus *Ephemerella* in North America. Misc. Pub. Entomol. Soc. Amer. 4:244-282.