

The species is related to *Eristalis arvorum* (Fabr.) but differs in face being narrow, the lower parts of mesepipleuron blackish; scutellum blackish-yellow; coloration of the legs, presence of denticles on the bases of femora and the pattern of the abdominal markings.

#### LITERATURE CITED

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### A New Species of *Ephemerella* (*Serratella*) from California<sup>1</sup> (Ephemeroptera : Ephemerellidae)

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The North American species of the subgenus *Serratella* was revised in 1963 (Allen and Edmunds) and included four species from western North America. A recent collection of mayflies from Sequoia National Forest in California included an additional undescribed species of this subgenus.

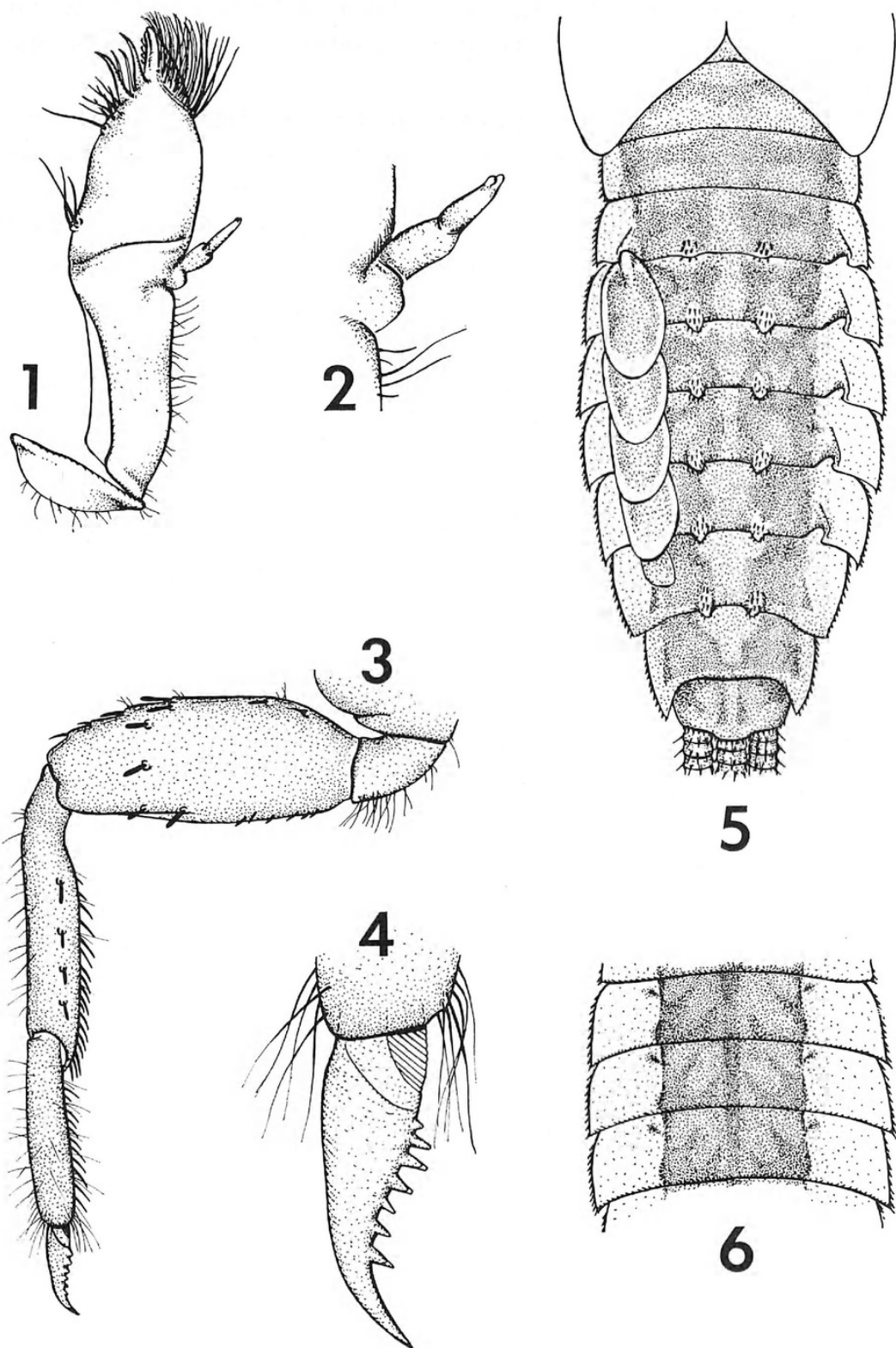
#### *Ephemerella sequoia* Allen and Collins, new species

MATURE NYMPH.—Length: body 6–7 mm; caudal filaments 6–7 mm. Head brown with a large pale macula on frons between compound eyes; without occipital tubercles, but top of head often with fine spicules; maxillary palpi two-segmented (figs. 1–2). Thorax brown; thoracic nota without tubercles, but often with fine spicules; legs unicolorous tan to white; foreleg as in fig. 3; tarsal claws with 6–7 denticles (fig. 4). Abdominal terga brown with pale lateral margins, and with pale median stripe on terga 1–10, stripe often indistinct on terga 1–2; terga 4–8 with short, blunt paired submedian tubercles, tergum 3 often with small tubercles (fig. 5); abdominal sterna brown, with pale lateral margins, dark brown sublateral longitudinal dashes, and dark brown median longitudinal stripe (fig. 6). Caudal filaments brown, often with irregular pale bands, and without setae.

TYPES.—*Holotype*: Nearly mature female nymph, SALMON CREEK AT HORSE MEADOW CAMPGROUND, SEQUOIA NATL. FOREST, TULARE CO., CALIFORNIA, 1-VIII-65, W. P. Vann, in collection California Academy of Sciences, San Francisco. *Paratopotypes*: 6 female nymphs, 1 nymph

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FIGS. 1-6. *Ephemerella sequoia*, female nymph, paratype: 1. maxilla; 2. maxillary palp; 3. right foreleg; 4. tarsal claw; 5. abdominal terga; 6. abdominal sterna 4-6.

each in collections of California Academy of Sciences, and University of Utah, Salt Lake City, remainder in collection of California State College at Los Angeles.

REMARKS.—*Ephemerella sequoia* is most closely related to *E. velmae* Allen and Edmunds. Both species are nearly identical in body size, and in the degree of development of the paired, dorsal abdominal tubercles. The nymphs of *E. sequoia* are readily distinguished from those of *E. velmae*, and all other western North American *Serratella*, by the following combination of characters: (1) they possess blunt, paired, dorsal abdominal tubercles on segments 4–8; (2) they bear relatively short tarsal claws with 6–7 denticles; (3) their abdominal terga and sterna have pale lateral margins, and (4) their body and caudal filament lengths are subequal.

In the key to the nymphs of the subgenus *Serratella* (Allen and Edmunds, 1963:587) *E. sequoia* would come to an impasse in couplet 2. The second half of the couplet reads "Paired submedian tubercles on abdominal terga 2–8 . . ." which then refers to couplet 4, and the ensuing couplets which separate *E. tibialis*, *E. velmae*, and *E. micheneri*. *Ephemerella sequoia* will key out before the above mentioned species if the first alternative of the second half of couplet 3 is rewritten, and couplet 3A is inserted between couplets 3 and 4 as follows:

- |    |   |
|----|---|
| 3  | (2). Paired, submedian tubercles on abdominal terga 4 to 7 only; legs unicolorous brown; maxillary palpi very small; tarsal claws with 9 or 10 denticles ..... <i>teresa</i>                                  |
|    | –Paired, submedian tubercles on abdominal terga 4–8, sometimes small on tergum 3, or terga 2–8, sometimes small on segments 2 and 8; maxillary palpi moderately long; legs and tarsal claws variable ..... 3A |
| 3A | (3). Paired submedian tubercles on abdominal terga 4–8, sometimes small on tergum 3; femora tan or white; abdominal terga with pale lateral margins ..... <i>sequoia</i>                                      |
|    | –Paired submedian tubercles on abdominal terga 2–8, sometimes small on segments 2 and 8; femora dark, or dark with pale markings; abdominal terga without pale lateral margins .... 4                         |

BIOLOGY.—The nymphs of *E. sequoia* were collected in a small, moderately flowing stream among rubble, small rocks, and sand. The summer daytime stream temperature varied from 54° F at 9:00 a.m. to 66° F at 4:30 p.m.

#### LITERATURE CITED

- ALLEN, R. K. AND G. F. EDMUNDS, JR. 1963. A revision of the genus *Ephemerella* (Ephemeroptera: Ephemerellidae). VI. The subgenus *Serratella* in North America. Ann. Entomol. Soc. Amer., 56: 583–600, 68 figs.



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