

SCIENTIFIC NAME: *Ecclisomyia bilera*
COMMON NAME: Kings Creek ecclisomyian caddisfly
CLASS, FAMILY: Insecta, Limnephilidae

ORIGINAL DESCRIPTION: Denning, D.G. 1951. Records and descriptions of Nearctic caddisflies. Part III. Journal of the Kansas Entomological Society 24(4):161, fig. 5A-C (lateral view of male genitalia, dorsal view of tenth tergite, lateral view of female genitalia).

TYPE MATERIAL: *Holotype:* Adult male - California: Lassen Co.; Lassen Volcanic National Park, Kings Creek Meadows, 7400', 23 Jul 1950, C.P. Alexander. Deposited in California Academy of Sciences, type #16169. *Allotype:* Adult female - same data as holotype. *Paratypes:* 18 males and 3 females - same data as holotype; 2 males, - same data except collected 17 Aug 1950. Four of the male paratypes are deposited in the collections of the University of Massachusetts and the Illinois Natural History Survey. The allotype and remaining paratypes are presumed deposited at the California Academy of Sciences with the holotype.

RANKING/STATUS: G1G2S1S2 (NatureServe-CNDDDB).

GENERAL DESCRIPTION: Male.-Length 9-11 mm. Wings brownish, forewings mottled with scattered, light yellowish spots. Head, thorax, and femora dark brownish-gray; tibia, tarsus, and spurs yellowish. Antenna similar to wings in color. Tenth tergite strongly directed ventrad, distal margin with a wide triangular incision (illustrated in original description, which also describes details of the male genitalia). Larva.- Not formally described, but compared to larva of *E. conspersa* in Wiggins (1996). The larva of that species bears a light-colored stripe down the middle of the back of the head and first two thoracic segments, which *E. bilera* lacks. Gills are single.

DIAGNOSTIC CHARACTERS: Larvae in the genus have large metanotal *sa1* and *sa2* sclerites (*sa*=setal area), and the first abdominal segment bears many setae, several of which often arise from a single sclerite.

OTHER ILLUSTRATIONS:

Wiggins, 1996. Fig. 20.14 illustrates the larva and case of *E. conspersa*, showing diagnostic generic characters (enlarged medial metanotal sclerites) for the larva and the typical case constructed by larvae of this genus.

Merritt and Cummins (1996). Fig. 18.145 shows generic characters of the metanotum of larva of an unidentified *Ecclisomyia* species; fig. 18.160 illustrates an *Ecclisomyia* larval case.

DISTRIBUTION: Known from Lassen Volcanic National Park, Lassen County, and springs in Lincoln Creek basin in Sierra County. Also known a few other sites in neighboring counties (Wiggins, unpublished, according to NatureServe).

HABITAT: Larvae live in small, cold springs sources, and are often found among rocks and gravel.

LIFE HISTORY/BEHAVIOR: Adults emerge May to August, the earlier emergence dates occurring at lower elevations. Larvae construct a straight, slender case from coarse rocks; their cases are often ornamented with long pieces of plant material, as illustrated in Wiggins (1996). The larvae of *E. conspersa* feed mostly on diatoms, while those of *E. maculosa* primarily consume fine particles of organic matter. Both species also incorporate small amounts of vascular plants into their diet. The feeding habits of *E. bilera* have not been reported in the literature, but are probably similar. Erman (1998) observed near-flightless mating behavior for this species.

SELECTED REFERENCES:

- Erman, N.A. 1998. Invertebrate richness and Trichoptera phenology in Sierra Nevada (California, USA) cold springs: sources of variation. Pp. 95-108. *In: Studies in crenobiology: The biology of springs and springbrooks* (Botosaneanu, L., ed.). Backhuys Publishers, Leiden, The Netherlands.
- Erman, N.A. and C.D. Nagano. 1992. A review of the California caddisflies (Trichoptera) listed as candidate species on the 1989 federal "Endangered and threatened wildlife and plants; Animal notice of review." *California Fish and Game* 78(2):45-56.
- Merritt, R.W. and K.W. Cummins. 1996. *An Introduction to the Aquatic Insects of North America*. Kendall/Hunt Publishing Co., Dubuque. 862 pp.
- Nature Serve Explorer. <http://www.natureserve.org/explorer>. Accessed 08 Aug 2005.
- Wiggins, G.B. 1996. *Larvae of the North American caddisfly genera*. 2nd Edition. University of Toronto Press, Toronto. 457 pp.

Written by Sandra Shanks, California Department of Fish and Game, Natural Diversity Database