

A NEW SPECIES OF *CALLIBAETIS* FROM KANSAS (Ephemeroptera: Baetidae)¹

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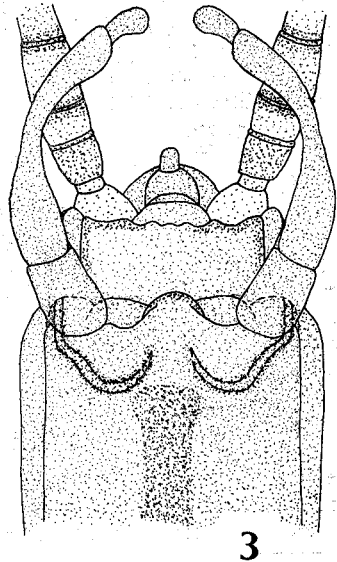
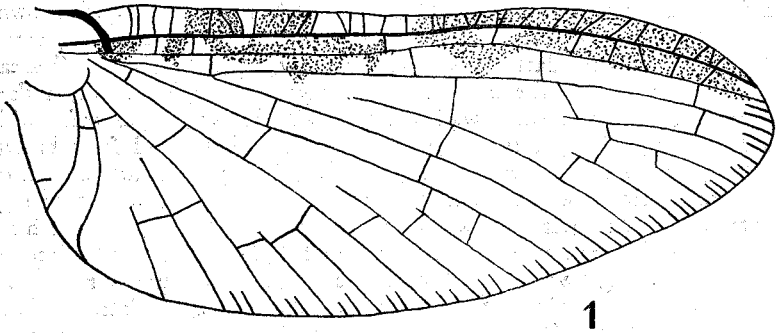
Callibaetis centralis new species

Male imago (in alcohol). Length: body 7-8 mm., wing 8-8.5 mm. Antennae: scape brown, proximal portion of pedicel brown, distal portion dark brown, flagellum light brown, apical one-third white. Eye: upper portion dark green, stalk medium buff, lower portion gray with a darker longitudinal band. Ocelli white. Head brown. Thorax: dorsum dark brown, pleural area of mesothorax and metathorax medium buff with many small brown spots, sutures dark brown. Venter brown with medium buff areas medially. Fore leg: white marked with brown; coxa light brown, darker proximally; trochanter white washed lightly with brown; femur white with anterior margin brown, six large brown spots laterally and faint brown markings on medial surface; tibia light brown, darker at tip, articulation of femur and tibia dark brown; first tarsal segment light brown, other segments white, tarsal joints brown, pretarsus light brown. Middle and hind legs: coxa white; trochanter dark brown; femur light brown with ten brown spots laterally; tibia white with both articulations brown; transverse brown band on proximal portion of tibia; tarsus white with brown joints, pretarsus light brown. Wings (figs. 1 and 2): longitudinal veins and border vein brown, fading out in cubital area. Cross veins in cell R_1 white, others brown, fading out in cubital area; many cross veins in fore wing. Marginal intercalaries in pairs. Stigmatic area white, remainder of wing membrane hyaline. Abdomen: tergites medium brown with many dark brown spots and with dark brown posterior margins. Dark brown spiracular spots on each segment. Genitalia (fig. 3): basal segment of forceps light brown, tip of fourth segment brown, remainder of forceps white; constriction at articulation of second and third segment. Tail: white with dark brown annulations at articulations.

Female imago (in alcohol). Length: 6.5-7.5 mm., wing 6.5-7.5 mm. Antennae: scape and pedicel medium buff at base, remainder reddish brown, flagellum white at base, remainder dark brown. Eye: green with one dark green longitudinal band. Ocelli: green with narrow black band around base. Head: medium buff with two longitudinal reddish brown bars between eyes. Thorax: pronotum and mesonotum medium buff, sutures brown; metanotum anteriorly medium buff, posteriorly brown. Pleural area medium buff, sutures brown, some sclerites washed with light brown. Sternum pale buff; sternum of prothorax completely covered by many small brown spots; sternum of mesothorax and metathorax with small brown spots only in medial area. Fore leg: coxa medium buff, washed with reddish brown; trochanter buff; femur buff washed lightly with brown, with many large brown spots laterally; tibia white, tip black, articulation with femur black;

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tarsus and pretarsus black. Middle and hind legs: coxa and trochanter medium buff with a few small brown spots; femur white with nine to twelve large brown spots, its anterior and posterior borders brown; tibia white, articulations brown; first tarsal segment white, other segments light brown, darker at articulations, pretarsus brown. Wing: longitudinal veins and border vein brown; cross veins white, fading to hyaline towards cubital area; cross veins in fore wing many; marginal intercalaries in pairs. Membrane of wing with alternating areas of white and brown in costal and discal areas; remainder of wing hyaline. Abdomen: white, dorsum with many small brown spots, large area of brown medially on each segment. A



Callibaetis centralis. Fig. 1. Fore wing of female paratype. Fig. 2. Hind wing of female paratype. Fig. 3. Ventral view of male holotype genitalia.

brown longitudinal line on each lateral edge of tergites, extending entire length of each segment. Venter with many small brown spots and paired brown longitudinal streaks medially; brown spiracular spots on each segment. Tail: white with black annulations at articulations.

Holotype: male imago, The University of Kansas Natural History Reservation, eight miles northeast of Lawrence, Douglas County, Kansas, October 21, 1958, collected by W. L. Peters. Allotype: female imago; same data as that for holotype. Paratypes: two males, thirty-four females; same data as that for holotype. All specimens preserved in alcohol. Holotype, allotype and all paratypes are deposited in the Snow Entomological Museum, The University of Kansas, Lawrence, Kansas.

Callibaetis centralis is closely allied to *C. pictus*; however, both seem to be distinct species. The general coloration of the female of *C. centralis* is medium buff, duller and somewhat darker than that of the yellowish female of *C. pictus*. Close comparison shows that the female of *C. pictus* has a very light brown abdomen, while the female of *C. centralis* has a white abdomen. The abdomen of the male of *C. centralis* is much lighter than that of the male of *C. pictus*, and the annulations of the tail of the former are dark brown, while in *C. pictus* they are gray. The length of the male *C. centralis* is 7-8 mm., whereas it is only 5-6 mm. in *C. pictus*.

In the fore wing of *C. centralis* more cross veins occur in the subcostal area, and the longitudinal veins in the cubital area are not connected with cross veins as in *C. pictus*. In the hind wing the longitudinal and cross veins are also arranged differently.

It is not known if *C. pictus* and *C. pacificus* are synonymous, but *C. centralis* and *C. pacificus* seem to be distinct species.

The naiad and subimago are unknown. Subimagoes were collected, but all molted before being preserved. Subimaginal skins were saved.

Considerable variation was noted among the thirty-five available females. The eyes in some specimens are blue green. Coloration in the disc of the fore wing is absent in several specimens. In one specimen a large brown spot was found anteriorly on each side of each abdominal tergite, medially from the brown longitudinal line.

All specimens of *C. centralis* were collected from a small creek, one to five feet in width and one inch to eight inches deep. The water was slowly flowing in shallow areas and forming deep quiet pools. Bottom type: rock four to five inches in diameter to small gravel. Bottom covered with much algae. All specimens were collected from the underside of a bridge. Specimens were collected between 2:30 and 3:05 p.m., C.S.T.

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