

A NEW COMBINATION FOR TWO NORTH AMERICAN SMALL MINNOW MAYFLIES (EPHMEOPTERA: BAETIDAE)¹

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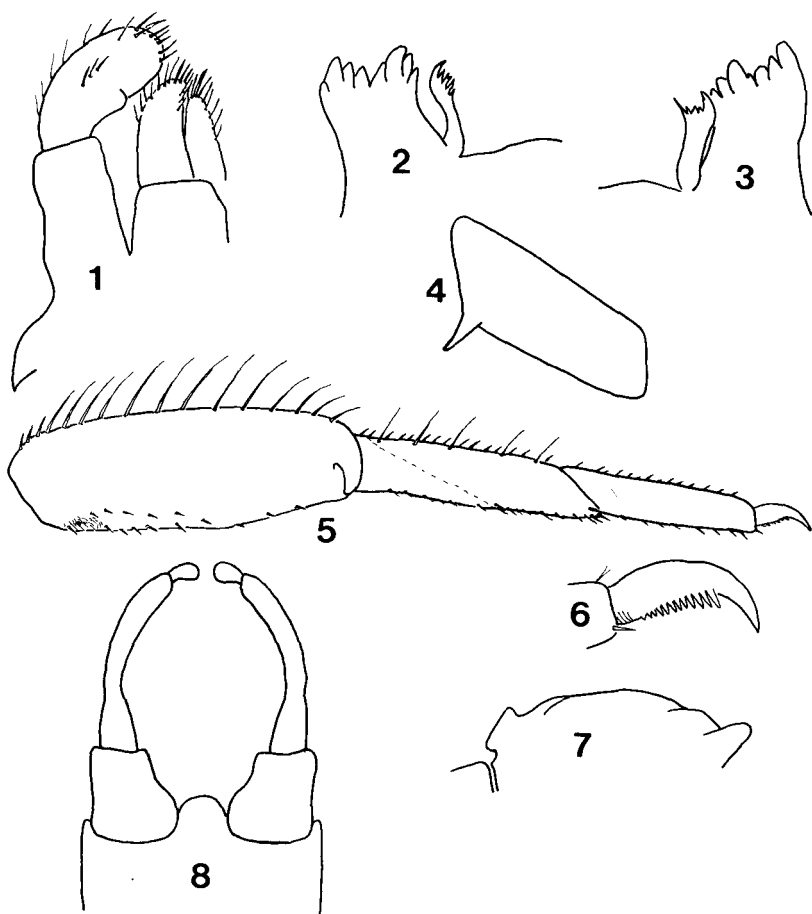
ABSTRACT: *Acentrella alachua*, n. comb., and *A. parvula*, n. comb., are transferred from the genus *Plauditus*.

The small minnow mayfly genus *Plauditus* Lugo-Ortiz & McCafferty (1998) was recently established for a small group of North American species originally described in *Pseudocloeon* Klapálek or *Cloeon* Leach. Lugo-Ortiz and McCafferty (1998) transferred 12 such North American species into *Plauditus*. However, a recent survey of these species revealed that two species would be more appropriately transferred to *Acentrella* Bengtsson. Species emendations are as follows: *Acentrella alachua* (Berner), **n. comb.**, *Acentrella parvula* (McDunnough), **n. comb.**

The following combination of characteristics indicate that *A. alachua* and *A. parvula* are more appropriately placed in *Acentrella* as opposed to *Plauditus*, *Heterocloeon* or any other *Baetis* complex genus: possession of minute hindwingpads (Fig. 4); tergal surfaces lacking scales and or scale bases; gills with smooth margins; the compact nature of the labium with narrow palpi which possess evenly rounded (Fig. 1) or slightly truncated apices; short, wide, apically cleft mandibular incisors without serrations on the inner margin of the right incisors (Figs. 2 & 3); relatively long dorsal femoral and often present tibial setae (Fig. 5), compared to *Plauditus* and *Heterocloeon* species; highly reduced posterior marginal abdominal tergal spines with sharply pointed and occasionally multidentate apices (similar to Fig. 14 Waltz and McCafferty 1987); distinctive genital forceps of the male adult (Fig. 8) and moderate to well developed anterior process of the mesoscutum (Fig. 7). I would note that the development of the anterior process of the mesoscutum demonstrates considerable specific variability within the three previously mentioned genera. The anterior process of the mesoscutum is one of a number of features, which indicates a close relationship among *Acentrella*, *Heterocloeon*, and *Plauditus* as well as additional genera. With respect to mandibular morphology, *Plauditus* species possess elongate and narrow mandibular incisor which are not discretely cleft apically and with the inner margins of the right incisors serrate. The mandibular incisors of *Acentrella* species on the other hand are shorter and more robust in appearance, often apically cleft, and usually lack serrations

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Figs. 1-8. *Acentrella parvula* 1. Labium (dorsal half). 2. Right mandibular incisors. 3. Left mandibular incisors. 4. left metathoracic notum. 5. Leg. 6. Tarsal claw. 7. Partial thorax (adult, lateral view). 8. Genitalia (ventral).

on the inner margins of the right incisors. Serrations along the inner margins of the right mandibular incisors are also found in species of *Heterocloeon*, *Baetis* species and other genera. Finally, the male genitalia of *A. alachua* and *A. parvula* possess a number of distinctive characteristics, one of which may prove to be a generic autapomorphy for *Acentrella* (e.g. enlarged, wide-based basal forcep segments with a broadly rounded, inner-medial emargination). Basal forcep segments of this form are not found in *Plauditus* or *Heterocloeon* species, but are typical of the following *Acentrella* species for example: *A. sibirica* (Kazlauskas), see Fig. 6 in Park et al. 1996; *A. sinaica* Bogoescu, see Fig. 42b in Müller-Liebenau 1970; *A. lapponica* Bengtsson, see Fig. 42a in Müller-Liebenau 1970; *A. insignificans* (McDunnough), see Plate 3, Fig. 7 in McDunnough 1926; and *A. turbida* (McDunnough). On the basis of numerous synapomorphic features found in *Liebebiella* Waltz & McCafferty (1987) and *Acentrella* it is possible the adult males of *Liebebiella* will also have similar genitalia.

On the basis of the highly reduced, strap-like hindwingpads, mandibular incisor morphology, highly reduced labrum, and long femoral and tibial setation of the larvae, and the genitalia of the adult male, *A. parvula* and *A. alachua* seem to be closely related to *A. turbida*. *Acentrella insignificans* is also very similar to *A. parvula*, *A. alachua* and *A. turbida*. However, *A. insignificans* larvae retain much larger hindwingpads and thus usually have small hindwings in the adults. It is also possible that the reduced tibial setation found in *A. parvula* and *A. alachua* is an adaptation for life in slower-flowing waters than is typical for some other *Acentrella* species.

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LITERATURE CITED

- Lugo-Ortiz, C. R., and W. P. McCafferty.** 1998. A new North American genus of Baetidae (Ephemeroptera) and key to *Baetis* complex genera. Entomol. News 109: 345-353.
- McDunnough, J.** 1926. New Canadian Ephemeridae with notes IV. Can. Entomol. 58: 296-303.
- Müller-Liebenau, I.** 1970 (1969). Revision der europäischen arten der gattung *Baetis* Leach, 1815 (Insecta, Ephemeroptera). Gewässer und Abwässer 48/49, 1-214.
- Park, S. Y., Y. J. Bae, and I. B. Yoon.** 1996. Revision of the Baetidae (Ephemeroptera) of Korea (1) historical review, *Acentrella* Bengtsson and *Baetiella* Uéno. Entomol. Res. Bull. (KEI), 22: 55-66.
- Waltz, R.D. and W.P. McCafferty.** 1987. Systematics of *Pseudocloeon*, *Acentrella*, *Baetiella*, and *Liebebiella*, new genus (Ephemeroptera: Baetidae). J. New York Entomol. Soc. 95: 553-568.