

EMENDATIONS TO THE *CALLIBAETIS* (EPHEMEROPTERA: BAETIDAE) OF SOUTH AMERICA^{1,2}

W. P. McCafferty³

ABSTRACT: *Callibaetis opacus*, comb. n. is shown to be the senior synonym of *C. zonalis*. *Callibaetis trifasciatus* is verified to be a junior synonym of *C. fasciatus*, but is not a junior synonym of *C. sellacki*, although specimens of *C. sellacki* have been misidentified as *C. trifasciatus*. *Callibaetis nigrivenosus* is an emendation of *C. nigrivenosa*, which was incorrectly formed. No emendation of the name *C. pollens* is apparently necessary.

The generic makeup of Neotropical Baetidae is just beginning to be known (e.g., Lugo-Ortiz and McCafferty 1995, 1996), and species of most genera remain relatively poorly known. The genus *Callibaetis* Eaton, however, is one of the better known speciose genera at this time due to the recent work of Gillies (1990), wherein he presented a partial species revision based on examination of many of the type specimens and other materials of enigmatic South American species described by the Spanish Jesuit Longinos Navás. Gillies (1990) treated 11 of the 14 South American species of *Callibaetis* that are considered valid at this time, and regarded one other, *C. abundans* (Navás), as a *nomen dubium*. This work was based on alate stages because all types examined were adults, and the larvae of South American *Callibaetis* remain very poorly known. Some additional emendations and observations regarding *Callibaetis* of South America are necessary with respect to species nomenclature and synonymies.

EMENDATIONS AND OBSERVATIONS

Gillies (1990) recognized *C. zonalis* Navás, 1915 (known from Argentina, Brazil, and Paraguay) as a valid species and correctly associated several synonyms with it, including *Baetis opacus* Navás, 1915. Both of the latter names were described in the same paper by Navás (1915), but *B. opacus* has page priority (page 12) over *C. zonalis* (page 13). Neither of these names, nor the many other synonyms associated with this species, are well established. *Callibaetis opacus*, n. comb. becomes the valid name, as the senior synonym [= *Baetis virellus* Navás, *Callibaetis amoenus* Navás, *C. apertus* Navás, *C. depressus* Navás, *C. sobrius* Navás, *C. vitreus* Navás (1915), *C. vitreus* Navás (1919), *C. zonalis*]. The rather remarkable synonymic homonyms represented by *C. vitreus*

¹ Received April 8, 1996. Accepted April 22, 1996.

² Purdue ARP Journal No. 15007.

³ Department of Entomology, Purdue University, West Lafayette, IN 47907.

Navás, both 1915 and 1919, were discussed by Hubbard and Edmunds (1977).

Gillies (1990) considered *C. trifasciatus* Esben-Petersen, 1912 to be a new junior subjective synonym of both *C. fasciatus* (Pictet 1843) (known from Argentina, Brazil and Chile) and *C. sellacki* (Weyenbergh 1883) (known from Argentina and Chile). I agree that Esben-Petersen's (1912) description and type concept of *C. trifasciatus* is clearly referable to *C. fasciatus*, but the name *C. trifasciatus* is not synonymous with *C. sellacki*. Some specimens referred to, or identified as, *C. trifasciatus* in the past by such workers as C. Bruch and L. Navás are indeed misidentifications of *C. sellacki* (Gillies 1990). However, these should be considered only misidentifications under the synonymy of *C. sellacki*, and the names *C. trifasciatus* and *C. sellacki* are not technically synonymous. Any future possible designation of a lectotype or neotype of *C. trifasciatus* should certainly coincide with Esben-Petersen's published concept of that name.

The name *C. nigrivenosa* Banks, 1918, which is referable to an Ecuadorian species of *Callibaetis*, was incorrectly formed by Banks (1918) and should be emended to *C. nigrivenosus*. The Latin word "venosus" is adjectival (transl. veiny), and therefore must agree in gender with the masculine genus group name.

Finally, there evidently has been some confusion as to the valid specific epithet of the Brazilian species *C. pollens* Needham and Murphy, 1924. The original name published by Needham and Murphy (1924) is spelled "pollens", however, it appears as "pallens" in Hubbard's (1982) list of South American mayflies. Hubbard's spelling cannot be regarded as a demonstrably intentional emendation because the original spelling was not cited. In an offprint of the Needham and Murphy (1924) paper that was owned by J. Traver but which I now have in my possession, an "a" is penciled over the "o" in "pollens" in her handwriting wherever that name appears in that paper. I have not, however, been able to locate any published attempt to emend that name officially. The name was not mentioned in Traver's (1944) review of Brazilian mayflies. Needham and Murphy (1924) did not give the etymology of their name, and admittedly the word "pallens" [if derived from the Latin "pallidus" (transl. pale)] does appear to be a more logical name than "pollens". Nonetheless, "pollens" does not require emendation because it can be regarded as a non-Latin name, based on the English word, and therefore indeclinable and not contravening rules of Latin name formation.

LITERATURE CITED

- Banks, N. 1918. New neuropteroid insects. Bull. Mus. Comp. Zool. 62: 1-22.
Esben-Petersen, T. 1912. New and little-known species of Ephemera from Argentine. Deut. Entomol. Zeit. 1912: 551-556.
Gillies, M. T. 1990. A revision of the Argentine species of *Callibaetis* Eaton (Baetidae; Ephemeroptera). Rev. Entomol. Soc. Argent. 48: 15-39.

- Hubbard, M. D.** 1982. Catálogo abreviado de Ephemeroptera da América do Sul. Pap. Avulsos Zool. (S. Paulo) 34: 257-282.
- Hubbard, M. D. and G. F. Edmunds, Jr.** 1977. A homonymic synonym in *Callibaetis* (Ephemeroptera: Baetidae). J. New York Entomol. Soc. 85: 55.
- Lugo-Ortiz, C. R. and W. P. McCafferty.** 1995. Three distinctive new genera of Baetidae (Insecta, Ephemeroptera) from South America. Ann. Limnol. 31: 233-243.
- Lugo-Ortiz, C. R. and W. P. McCafferty.** 1996. *Aturbina georgei* gen. et sp. n.: a small minnow mayfly (Ephemeroptera: Baetidae) without turbinate eyes. Aquat. Insects, in press.
- Navás, L.** 1915. Neurópteros sudamericanos, segunda serie. Broteria 13: 5-13.
- Needham, J. G. and H. E. Murphy.** 1924. Neotropical mayflies. Bull. Lloyd Libr. 24: 3-79.
- Pictet, F.J.** 1843. Histoire naturelle générale et particulière des insectes névroptères. Famille des Éphéméridines. Kessmann et Cherbuliez, Geneva.
- Traver, J.** 1944. Notes on Brazilian mayflies. Boll. Mus. Nac. (Rio de Janeiro) 22: 2-53.
- Weyenbergh, H.** 1883. Bijdrage tot de kennis der Suid-Amerikaansche Ephemeriden. Tijdschr. Entomol. 26: 159-174.