



## AN AMENDED REDESCRIPTION OF THE MALE OF *PERLESTA ETNIERI* (PLECOPTERA: PERLIDAE) PLUS NEW *PERLESTA* STATE RECORDS

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### ABSTRACT

An amended, partial redescription of the male of *Perlesta etnieri* Kondratieff and Kirchner (Plecoptera: Perlidae) is given, namely regarding the fully-extruded aedeagus that had not been previously reported or illustrated. The aedeagus bears a very small caecum, calling into the question the relatedness of this species to others in the *P. frisoni* Banks "group" that clearly lack a caecum. New state records for *P. decipiens* (Walsh) (Tennessee), *P. lagoi* Stark (Alabama), and *P. shawnee* Grubbs (Kentucky) are reported.

**Keywords:** *Perlesta etnieri*, Perlidae, Tennessee, Alabama, Kentucky

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### INTRODUCTION

*Perlesta etnieri* Kondratieff & Kirchner 2002 is a large, dark-bodied member of this genus known only from a few localities in middle Tennessee (Kondratieff & Kirchner 2002). They placed this species in the *P. frisoni* Banks 1948 "group" because the male aedeagus apparently lacked a caecum, a characteristic shared only among *P. frisoni*, *P. nelsoni* Stark 1989, *P. shawnee* Grubbs 2005, and *P. teaysia* Kirchner & Kondratieff 1997 (Stark 2004). In his review of the eastern Nearctic Perlidae, however, Stark (2004, Fig. 7.362) noted for *P. etnieri* that the "...caecum reportedly absent but a small unextruded caecum apparently present...". The author recently collected a small series of *P. etnieri* from middle Tennessee, including gravid females that easily confirmed the identity of this species, and fully-extruded the aedeagi of two males. An amended, partial redescription of the male was deemed necessary and follows below.

### RESULTS AND DISCUSSION

#### *Perlesta etnieri* Kondratieff & Kirchner (Fig. 1)

*Perlesta etnieri* Kondratieff & Kirchner 2002:51.  
Holotype ♂ (National Museum of Natural History, Smithsonian Institution), Harpeth River, Millview, Williamson Co., Tennessee  
*Perlesta etnieri*: Stark, 2004:92.

**Material examined.** U.S.A., Tennessee, Grundy Co., Elk River, Rte. 50, 13 km N Monteagle, 35.3578, -85.8363, 28 May 2012, S.A. Grubbs, 2♂, 3♀ (WKU).

**Male.** Same as Kondratieff & Kirchner (2002) and Stark (2004) except aedeagus very long and small in diameter, bearing a very small, rounded caecum; lateral sclerite very broad basally and tapering to a faintly visible line (Fig. 1).



Fig. 1. *Perlesta etnieri*. Male aedeagus, lateral view.

**Comments.** The aedeagus for this species is unique among the 30 Nearctic *Perlesta* species in that it is (a) very long and exceptionally small in diameter, and (b) the caecum is very small. The caecum of *P. etnieri* is markedly smaller even when compared to other species (e.g., *P. nitida* Banks 1948 and *P. lagoi* Stark 1989) that seemingly bear a small caecum. *Perlesta etnieri* has two additional distinctive characteristics: a near fully-punctate egg lacking a collar (Kondratieff & Kirchner 2002, Fig. 6; Stark 2004, Fig. 7.402) and an X-shaped ocellar patch clearly visible on both the adult male and female (Kondratieff & Kirchner 2002, Fig. 1; Stark 2004, Fig. 7.313). This species cannot be mistaken with any of the other four *Perlesta* congeners (*P. adena*, *P. decipiens* (Walsh 1862), *P. lagoi*

Stark 1989, and *P. teaysia*) known from the middle Tennessee region.

The combination of the four unique morphological characteristics, however, also makes it very difficult to ascertain relatedness to other *Perlesta* species. Although the presence of the caecum is evidence that this species does not belong in the *P. frisoni* "group", robust phylogenetic analyses using modern molecular techniques (e.g. mitochondrial cytochrome *c* oxidase I gene sequencing) are needed to better understand species relationships within the genus as a whole.

#### New state records

*Perlesta decipiens* is widely distributed across the eastern and central Nearctic regions, extending west to the foothills of the southern Rocky Mountains (DeWalt et al. 2012). New Tennessee state records are reported from two riverine systems.

**Material examined.** U.S.A., Tennessee, Marion Co., Sequatchie River, 2 km NE Whitwell, 35.2039, -85.4928, 29 May 2003, S.A. Grubbs, 2♂, 3♀ (WKU); Marshall Co., Duck River, U.S. 431, 19 km E Columbia, 35.6087, -86.8224, 19–26 May 2004, S.A. Grubbs, 3♂, 2♀ (WKU).

*Perlesta lagoi* is a widespread central and eastern Nearctic species known from Iowa south to Mississippi and east to West Virginia (DeWalt et al. 2012). New Alabama records are reported from the Cumberland Plateau region in the northeastern corner of the state.

**Material examined.** U.S.A., Alabama, Jackson Co., Estill Fork, Paint Rock River, CR 9, Estillfork, 34.9104, -86.1682, 28 May 2012, S.A. Grubbs, 2♂, 7♀ (WKU); Larkin Fork, Paint Rock River, Rte. 65, 5 km NW Estillfork, 34.9276, -86.2187, 28 May 2012, S.A. Grubbs, ♂ (WKU).

*Perlesta shawnee* was initially described from Illinois and Indiana (Grubbs 2005), with subsequent new state records reported from Alabama, North Carolina, and Virginia (Grubbs & DeWalt 2008). This species was recently collected from western Kentucky, representing a new state record.

**Material examined.** U.S.A., Kentucky, Trigg Co., tributary to Elbow Creek, Forest Road 165, Land Between The Lakes National Recreation Area, 36.7688, -88.0351, 16 May 2012, S.A. Grubbs, ♂ (WKU).

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