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A NEW SPECIES OF *PERLESTA* (PLECOPTERA: PERLIDAE) FROM NEW YORK

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ABSTRACT

A new species, *Perlesta mihucorum* described from New York, USA, is distinguished from other regional species in the male by the characteristics of the paraprocts and aedeagus and in the female by the shape of the subgenital plate and egg.

Keywords: Plecoptera: Perlidae, *Perlesta,* new species, Nearctic, New York

INTRODUCTION

Stark (1989) provided the initial revision of the Nearctic members of the genus *Perlesta*, treating 12 species. Currently, 27 species are recognized (Stark 1989, 2004; Kondratieff et al. 2006, 2008; Grubbs and DeWalt 2008; and Grubbs and DeWalt 2011), and surprisingly Gutiérrez-Fonseca and Springer (2011) reported the genus from Costa Rica. Collecting in New York by the authors revealed an additional new species, which is described below. The descriptive terminology for the adults follows Stark (1989, 2004). The Holotype is deposited at the National Museum of Natural History, Smithsonian Institution, Washington, D.C. Paratypes are deposited in the following museums and individual collections: Bill P. Stark, Clinton, Mississippi (BPSC); C.P. Gillette Museum of Arthropod Diversity, Colorado State University (CSUC); and the New York State Museum (NYSM).

RESULTS AND DISCUSSION

***Perlesta mihucorum* sp. n.**
(Figs. 1-14).

Material examined. Holotype ♂, NEW YORK, Columbia Co., Claverack Creek, Rte. 66, near Hudson, 42.2594N, 73.7534W, 27 June 2011, L. Myers. Paratypes: NEW YORK: Columbia Co., Claverack Creek, Rte. 66, near Hudson, 42.2594N, 73.7534W, 24 June 2007, L. Myers & B. Kondratieff, 1♂, 1♀; Taghkanic Creek, Stone Mill Rd., off Rte. 23B, 42.1917N, 73.7555'W, 18 June 2008, L. Myers, 1♂, 1♀; same data as Holotype, 8♂, 17♀; Greene Co., Hannacroix Creek, Rte. 9W, South Ravena, 42.4401N, 73.8137W, 19 June 2008, L. W. Myers, 15♂, 11♀; same data but 27 June 2011, L. and J. Myers, 16♂, 7♀; Hamilton Co., Sacandaga River, Rte. 30, near Hope, 43.2866N, 74.2347W, 25 June 2007, L. Myers & B. Kondratieff, 1♂; Herkimer Co., South Branch Moose River, Rte. 28, near county line, 43.6113N, 75.1032W, 28 June 2007, L. Myers & B. Kondratieff, 1♂, 1♀.

Male. Forewing length 10-11 mm. General body color light yellow brown. Head yellow except for brown quadrangular area over ocelli and brown triangular area forward of median ocellus, prothorax brown with pale band along median suture (Figs. 1-2). Wings amber with yellow intercostal area, more apparent in life, veins brown (Fig. 1). Femora and tibia brown dorsally (Fig. 1). Tergum 10 mesal sclerite light brown, not divided, sensilla basiconica sparse (Fig. 3).

Fig. 1. *Perlesta mihucorum*, photograph of live adult male.

Paraproct moderately long, with well-developed subapical tooth inconspicuous in lateral view (Figs. 4), in caudal view long, rounded apically (Fig. 5). Penis tube + sac long, caecum small wider than long, lateral sclerite weakly developed (Fig. 6), dorsal patch broad basally, with a thin thread of 2-3 rows of spinulae extending the length of the sac (Fig. 7).

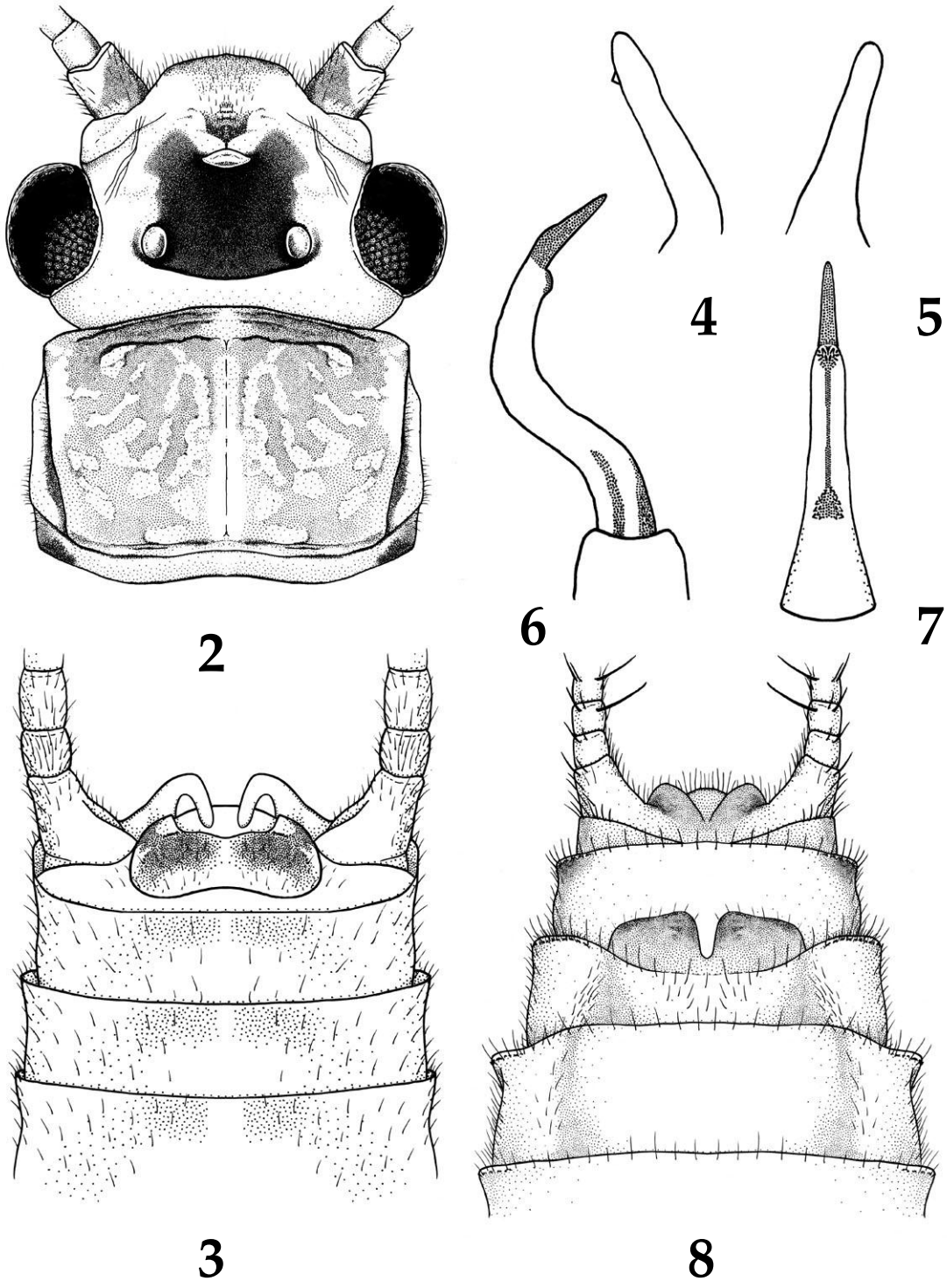
Female. Forewing length 12-14 mm. General body color lighter than male, wings not as tinted with amber. Subgenital plate, short, with large semi-quadrate shaped lobes separated by deep wide V-shaped notch (Fig. 8).

Egg. Oval. Collar stalked, wide, with distinctive lip (Figs. 9-12). Chorionic surface smooth to slightly pitted (Figs. 9, 13-14).

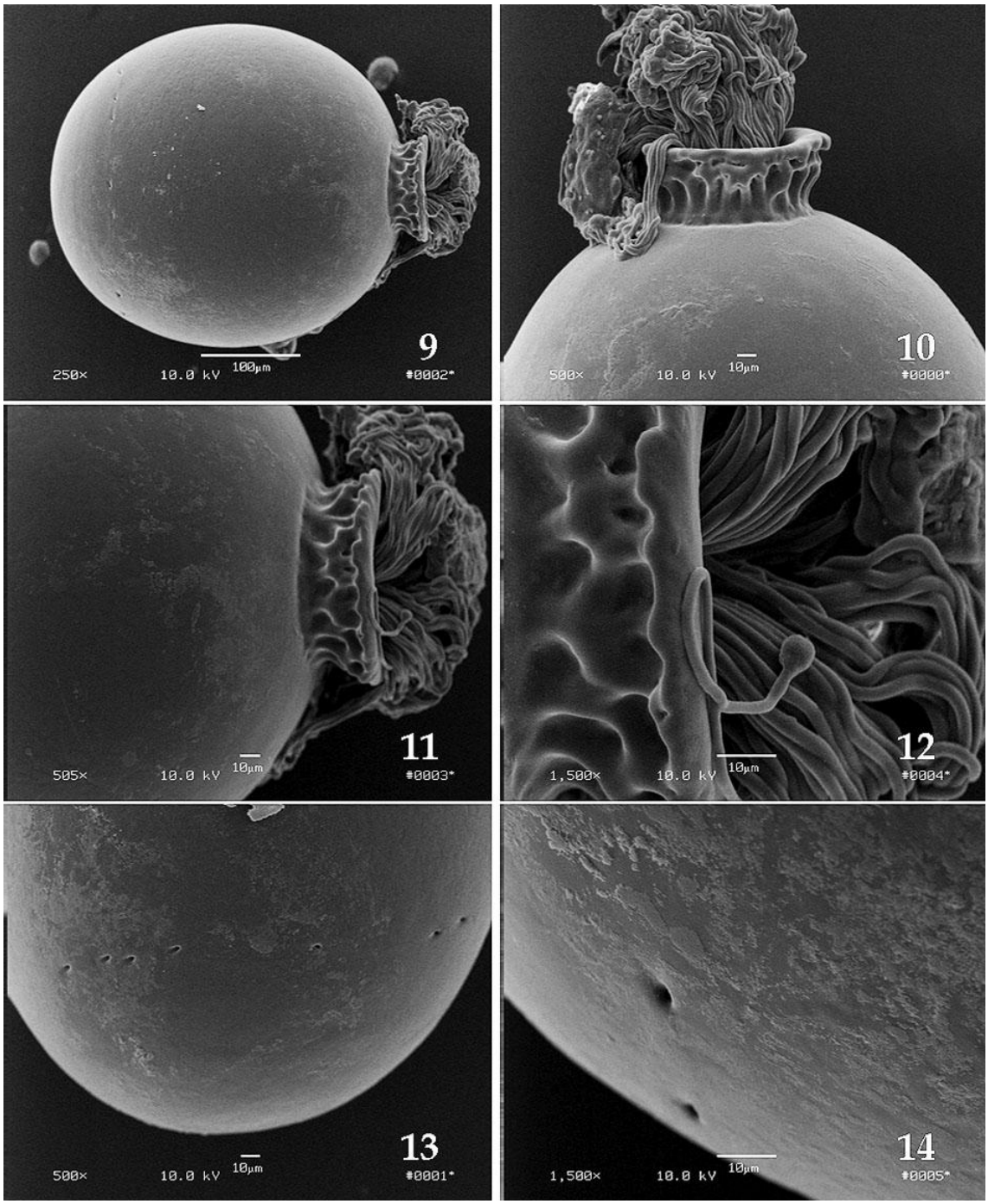
Larva. Unknown.

Etymology. We honor Drs. Janet R. Mihuc, Paul Smith's College, Paul Smiths, New York and Timothy B. Mihuc, Lake Champlain Research Institute, SUNY Plattsburgh, Plattsburgh, New York, respectively for their contributions to the knowledge of the natural history of the state of New York.

Diagnosis. In Stark (2004) males of *P. mihucorum* will key to couplet 13 if the paraprocts are considered "moderately" long using Stark (2004) terminology, but the paraprocts are not thin in lateral view (Fig. 4) and the paraproct tips are also not acute in caudal aspect (Fig. 5) (as in *P. placida* (Hagen, 1861), see Stark 2004, fig. 7.266). Following the second choice of couplet 13, an impasse is reached since the paraprocts are "not short to medium", but the paraproct tips are rounded in caudal view. Couplet 16 could be reached from couplet 15 because the dorsal patch of the aedeagal sac is "long and narrow" and the "aedeagal caecum….about as long as wide" most similar to *P. lagoi* Stark, 1989. The dorsal patch of the aedeagal sac of *P. mihucorum* consists of only 2-3 rows of setulae (Fig. 7), whereas in *P. lagoi* the patch is wider with at least >5 irregular rows of setulae (see Stark 1989, fig. 96). Additionally, the paraprocts of *P. mihucorum* possess a well-developed tooth that is subapical (Fig. 4) and not small and anteapical as in *P. lagoi* (see Stark 1989, fig. 96). The female of *P. mihucorum* would key to couplet 14, either *P. shubuta* Stark, 1989 or *P. decipiens* (Walsh, 1862). The wide deep V-shaped notch of the subgenital plate (Fig. 8) can usually distinguish *P. mihucorum* from *P. decipiens*. The subgenital plate of *P. shubuta* has a shallow V-shaped notch; similar to *P. mihucorum*, but the egg of *P. shubuta* has a short almost sessile collar (Stark 1989). The egg of *P. mihucorum* is similar to *P. decipiens* (see Stark 2004,



Figs. 2-8. *Perlesta mihucorum*. 2. Adult head and pronotum. 3. Male terminalia, dorsal. 4. Paraproct, lateral. 5. Paraproct, caudal. 6. Penis, lateral. 7. Penis, dorsal. 8. Female subgenital plate, ventral.



Figs. 9-14. *Perlesta mihucorum,* scanning electron photomicrographs. 9. Entire egg. 10. Collar pole. 11. Collar. 12. Details of collar and anchor fibers. 13. Micropylar pole. 14. Micropyles.

figs. 7.397-7.399), but apparently both species are allopatric, with the most eastern and northern confirmed record of *P. decipiens* having been reported from Virginia (Stark 1989, 2004).

Perlesta mihucorum appears most common in large 20-30m wide low elevation (40-55m) tributaries of the Hudson River in Greene and Columbia counties. These particular streams usually have heavy silt loads with a substrate composed of gravel and cobble. Fewer individuals were encountered in relatively pristine high gradient rivers in the foothills (250-450m) of the Adirondack Mountains in Herkimer and Hamilton counties. Stoneflies collected in association with this new species included *Leuctra sibleyi* Claassen, *L. tenuis* (Pictet), *Bolotoperla rossi* (Frison), *Alloperla atlantica* Baumann, *A. idei* (Ricker), *A. petasata* Surdick, *Haploperla brevis* (Banks), *Agnetina capitata* (Pictet), *Neoperla occipitalis* (Pictet), *Perlesta nelsoni* Stark and *Isoperla orata* Frison.

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