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DESCRIPTION OF THE LARVA OF THE CAUCASIAN SPECIES *PROTONEMURA MICROSTYLA* MARTYNOV (PLECOPTERA, NEMOURIDAE)

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ABSTRACT

For the first time the larva of *Protonemura microstyla* Martynov is described from Caucasian material. It differs from the larva of *P. bifida* Martynov by very short blunt setae on pronotal margins and by a short pair of setae on the hind margin of abdominal tergites.

Keywords: *Protonemura*, larval description, Nemouridae, Caucasus

INTRODUCTION

The genus *Protonemura* is represented in the Caucasian fauna by 17 species (Zhiltzova 1964, 1981, 1988, Martynov 1928, Balinsky 1950, Joost 1977, Cherchesova & Zhiltzova 2003). These species descriptions were based primarily on the imago. The larva of only one species – *P. bifida* Martynov 1928, is known (Zhiltova et all 2010). The larva of another species, *P. microstyla* Martynov 1928, is described below.

P. microstyla is widely distributed over the Caucasus. In the collection of the Zoological Institute (St. Petersburg) there are specimens from Great Caucasus (north and south slopes), Minor Caucasus and Armenia. This species is known also from Turkey (Kazanci 2008). Altitudes of habitats range from 500-2300 m, and the flight period extends from May to August.

Larvae of the genus *Protonemura* are very uniform in appearance. Specific distinctions are observed mainly in mature larvae; through their exoskeleton details of females and the epiproct and paraprocts of males are seen. Among European and North African species, differences are recognized in pronotal marginal setation and in posterior marginal setal fringes of abdominal tergites. Additional differences occur in chaetotaxy of femora and tibiae, proportion and setation of gills, in terminal morphology and in the comparative lengths of cercal segments and their bristles (Raušer 1956; Lillehammer 1988, Vinçon & Murányi 2009, Murányi & Park 2011).

Identification of species requires treatment in KOH followed by examination on glass in glycerin for preparation of drawing under microscope.

RESULTS AND DISCUSSION

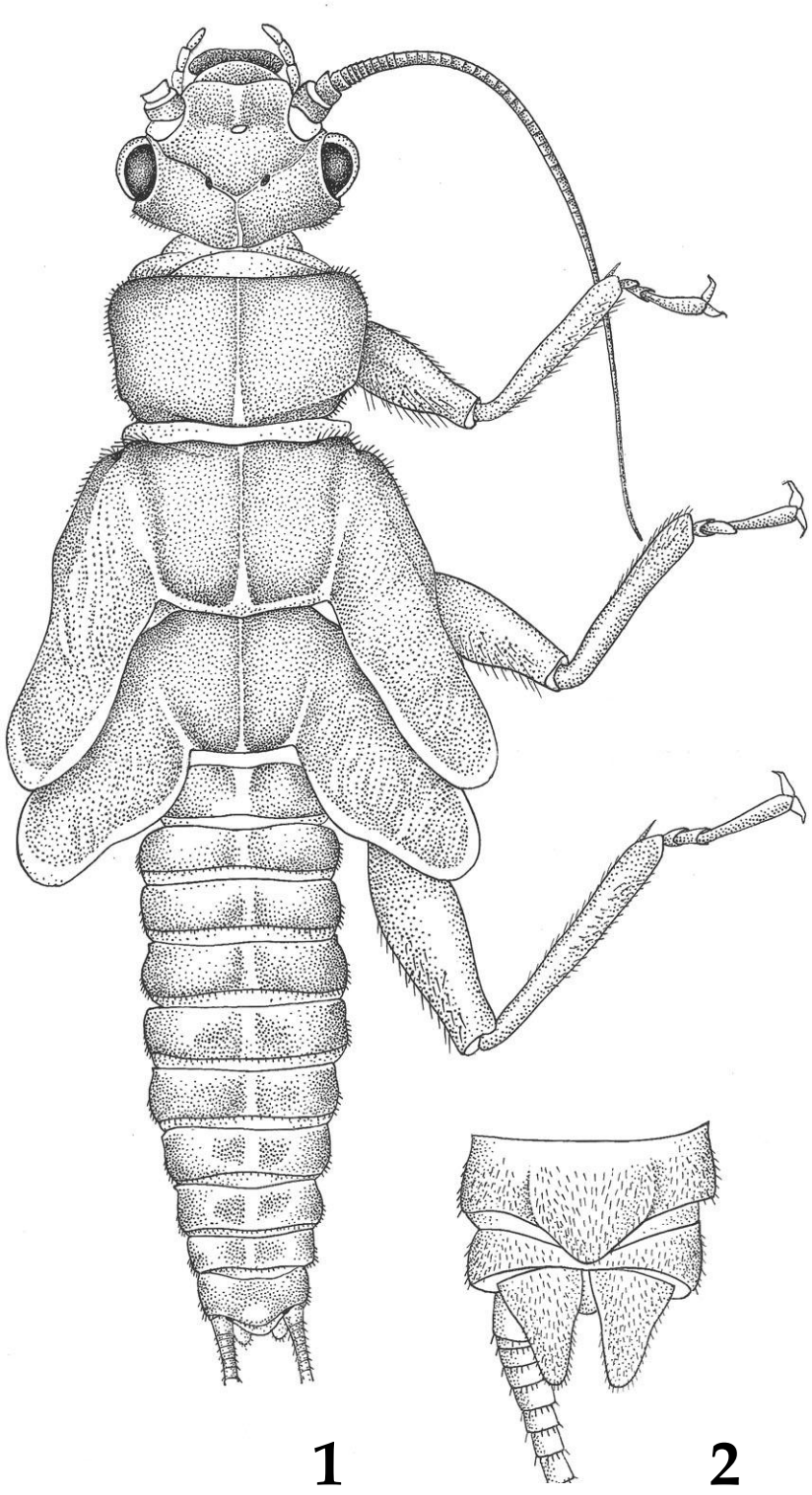
Protonemura microstyla Martynov

(Figs. 1-6)

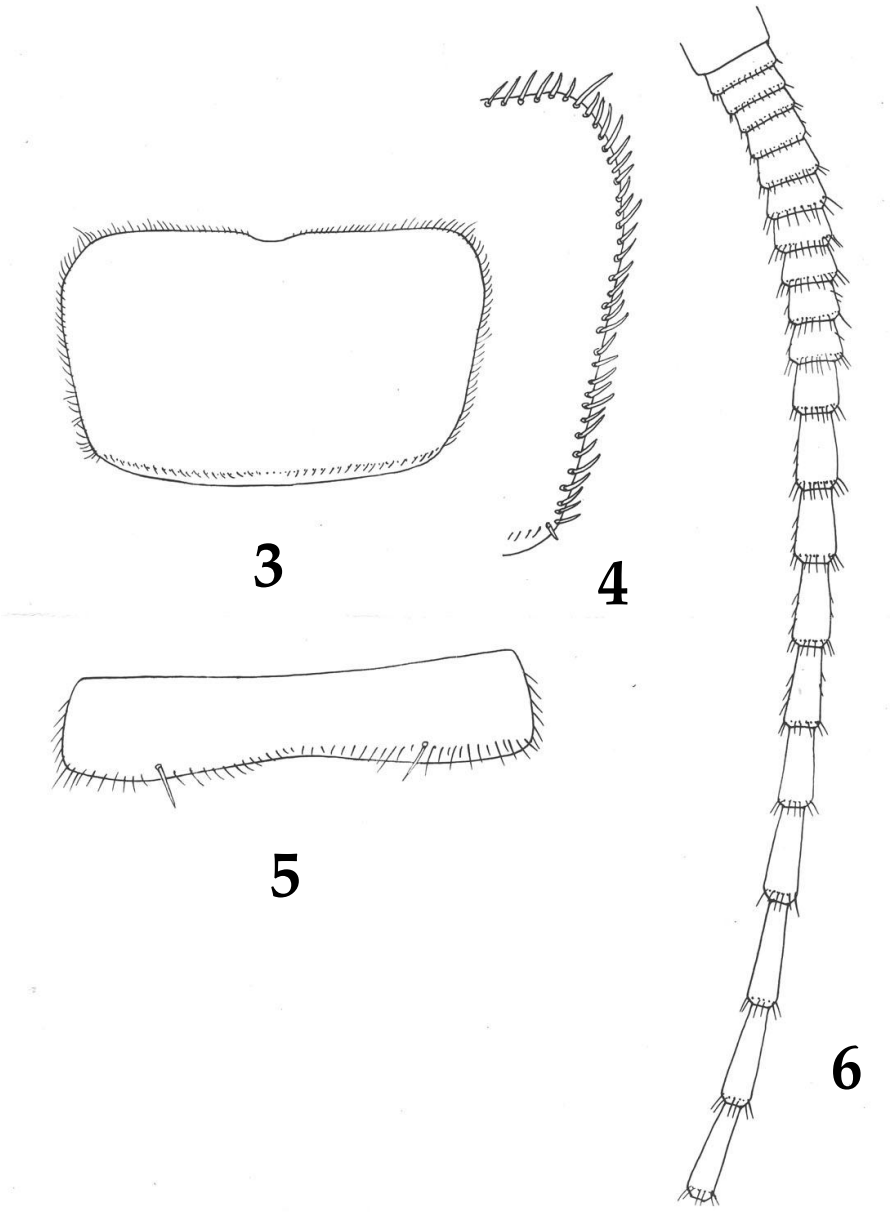
Protonemura microstyla Martynov 1928:27-28, Tabl. II, Figs. 8-11.

Material examined. Minor Caucasus, Trialetzky Range, Bakuriani, 13-20 V 1986, 27 larvae (L. Zhiltzova leg.).

Larva (Figs. 1-6). Length of body 6–8 mm, length of



Figs. 1-2. Larva of *Protonemura microstyla* Martynov. 1. Habitus, dorsal. 2. Apex of male abdomen, ventral.



Figs. 3-6. Larva of *Protonemura microstyla* Martynov. 3. Pronotum of larva, dorsal. 4. Setae of lateral border of pronotum. 5. Setae of hind margin of abdominal tergite. 6. Cercus of larva.

cercus equal to length of abdomen and notum. Larva stocky, brownish, mat, head darker than pronotum. Temporal parts of head weakly projecting behind eyes and bearing a row of short setae (Fig. 1).

Pronotum trapezoid, slightly narrowed backwards, noticeably wider than head, with rounded angles, margins with dense row of very short, blunt setae (Figs. 3-4).

Abdominal segments 1-5 (and possibly 6) divided on tergite and sternite. Femora with dense short setae along hind margin, with long stripe from above.

Wing pads are wide and blunt, with projecting lateral edge in fore part of wing pad. Setae on tergal surface are short and rather dense. Along hind

margin setae are also short, but with two pair of setae slightly longer than others (Fig. 5).

Sternite 9 of male larvae with distinctly outlined subgenital plate, narrowed toward apex (Fig. 2); paraprocts of male larvae triangular and elongated. Abdomen brownish, the same color as other parts of body, with an obscure longitudinal light band medially. Cerci long and thin, approximately 20-segmented, with dense short apical setae (Fig. 6).

Diagnosis. 1) abdominal segments 1-5 divided on tergite and sternite (Segments 1-4 in *P. bifida*); 2) the larva of *P. microstyla* differs from the larva of *P. bifida* by very short blunt setae on pronotum margins, and 3) by short paired setae on hind margin of abdominal tergites.

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