

THE EUTARDIGRADE GENUS *ASTATUMEN* (PARACHELA: HYPYSIBIIDAE: ITAQUASCONINAE), NEW TO ROMANIA

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Abstract. Two species of the genus *Astatumen* Pilato, 1997 are recorded from Romania for the first time: *Astatumen bartosi* (Weglarska, 1959) collected from Bârnova Forest (Iași county) and *Astatumen trinacriae* (Arcidiacono, 1962) collected from Bârnova Forest and Ceahlău Mountain (Neamț county).

Keywords: *Astatumen bartosi*, *Astatumen trinacriae*, new records, Romanian fauna.

Rezumat: Genul de eutardigrade *Astatumen* (Parachela: Hypsibiidae: Itaquasconinae), nou pentru România. Două specii ale genului *Astatumen* Pilato, 1997, sunt noi pentru fauna României: *Astatumen bartosi* (Weglarska, 1959) colectată din pădurea Bârnova (Județul Iași) și *Astatumen trinacriae* (Arcidiacono, 1962) colectată din pădurea Bârnova și din Masivul Ceahlău (Județul Neamț).

Cuvinte cheie: *Astatumen bartosi*, *Astatumen trinacriae*, semnalări noi, fauna României.

The Phylum Tardigrada (water bears) consists of small micrometazoans (0.05-1.2 mm) which inhabit most of the terrestrial and aquatic (freshwater and marine) environments. Up to now more than 1000 species of tardigrades were described from the whole world (Degma *et al.*, 2012).

In 1964 Ludovic Rudescu reported a total of 136 tardigrade species from different locations of Romania. Concerning the *Itaquascon* genus, he noted that it „could not be found yet” in Romania (Rudescu, 1964). In 2008 Kaczmarek and Michalczyk recorded three new water bears for Romanian fauna (including the genus *Mesocrista* from the subfamily Itaquasconinae). In 1997 Pilato divided the genus *Itaquascon* into two genera: a nominal *Itaquascon* and a new one *Astatumen* (Pilato, 1997). Species belonging to the genus *Itaquascon* and *Astatumen* differ mainly by: presence or absence of stylet supports and short or long buccal tube.

Four moss samples were collected in August 2009 in Bârnova Forest (Iași county) and in May and August 2011 in Ceahlău mountain (Neamț county). Samples were put into paper bags to dry slowly. Tardigrades were extracted putting each sample in water for 24 hours. The water with tardigrades, was examined using a stereomicroscope. All specimens were mounted on microscope slides in Faure`s medium. Microphotographs were made using Phase Contrast Microscope associated with digital camera. Species identification was made based on Ramazzotti and Maucci (1983). All specimens of *Astatumen* are deposited in the Natural History Museum Iași.

Phylum Tardigrada Spallanzani, 1777
Class Eutardigrada Richters, 1926
Order Parachela Schuster, Nelson, Grigarick & Christenberry, 1980
Family Hysibiidae Pilato, 1969
Subfamily Itaquasconinae Rudescu, 1964 *sensu* Pilato 1987
Genus *Astatumen* Pilato, 1997

***Astatumen bartosi* (Weglarska, 1959) (Fig.1A-B)**

Material examined: One specimen from Bârnova Forest: N47°02'30.21'' E27°43'44.68'' (leg. Daniel Adrian Ciobanu).

Short diagnosis: Body length 420.0 µm., colourless, cuticle smooth, eye spots absent. Buccal tube very short (7.2 µm.), pharyngeal tube longer (36.0 µm.). Stylets slender without stylet supports. Pharynx oval (32.0 x 17.0 µm.) with very thin placoids inside. Claws of *Hypsibius* type, different in shape and size. Cuticular bars absent (Fig.1B).

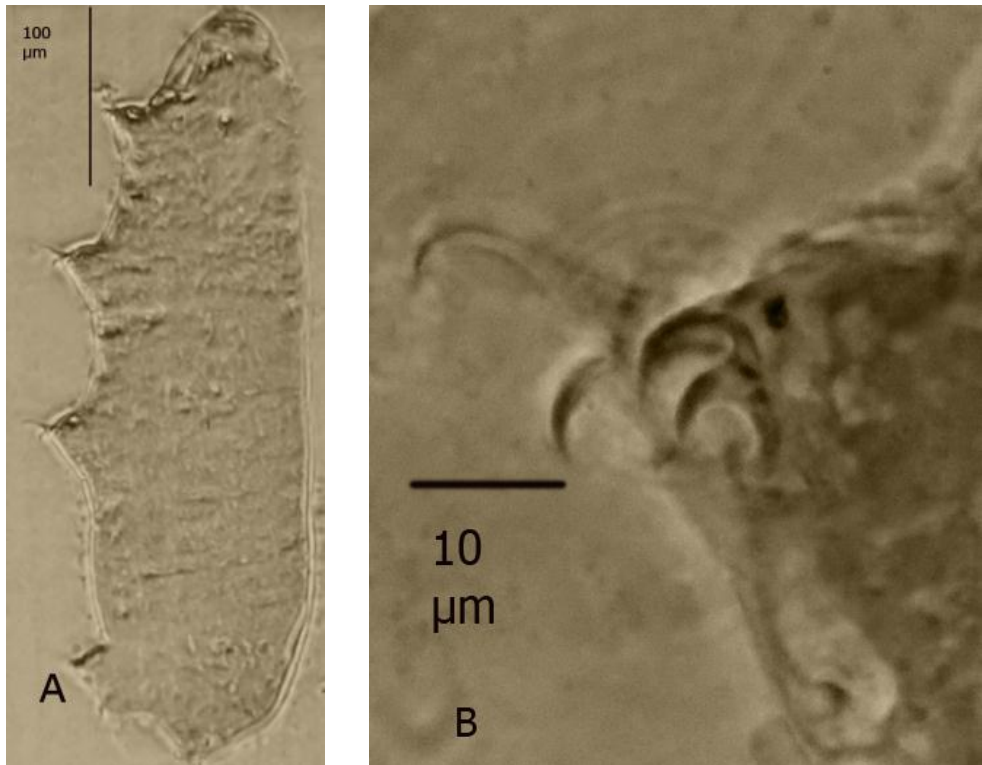


Figure 1. *Astatumen bartosi* (Weglarska, 1959).

Astatumen trinacriae (Arcidiacono, 1962) (Fig. 2A-B, Table 1)

Material examined: Three specimens were collected from: Bârnova Forest: N47°02'30.21" E27°43'44.68" (one specimen) and Ceahlău Mountain: N46°59'48.7" E25°55'02.9" and N46°59'29.3" E25°55'34.9" (two specimens) (leg. Daniel Adrian Ciobanu).

Short diagnosis: Cuticle smooth, colourless, eye spots absent. Buccal tube very short, pharyngeal tube longer (Tab. 1). Stylets slender without stylet supports. Pharynx oval, placoids inside (Tab. 1). Claws of *Hypsibius* type, different in shape and size. Cuticular bars on legs II-III present (Fig.2B).

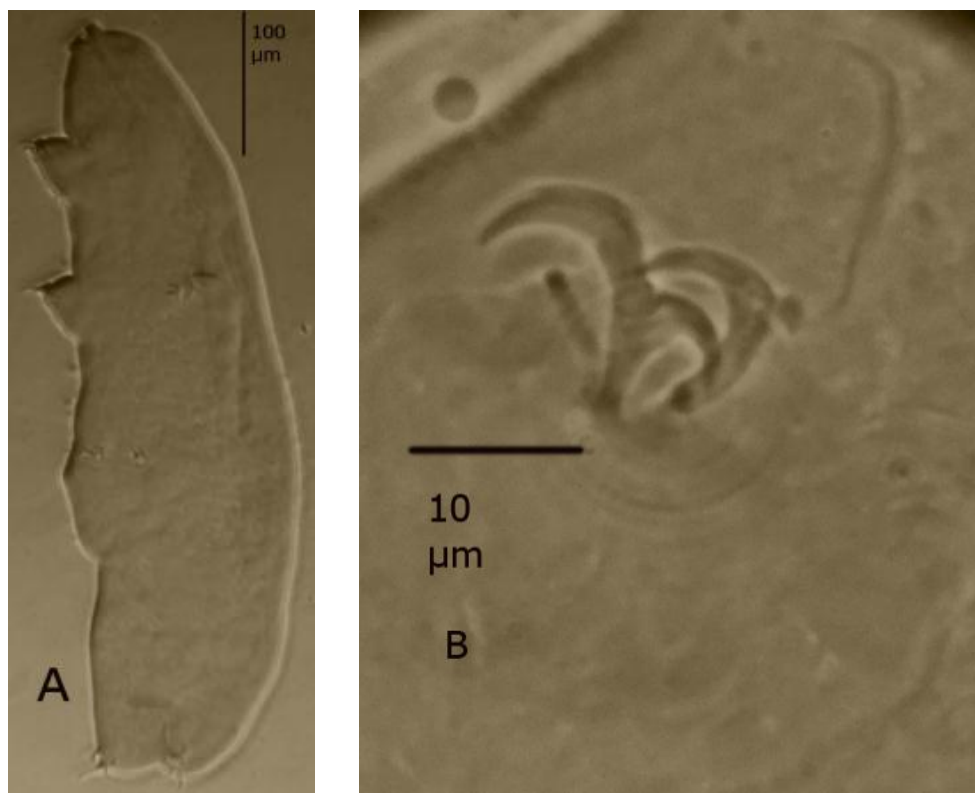


Figure 2. *Astatumen trinacriae* (Arcidiacono, 1962).

Table 1. Measurements of the *Astatumen trinacriae* specimens.

Characters	Specimen I (Bârnova, August 2009)	Specimen II (Ceahlău, May 2011)	Specimen III (Ceahlău, August 2011)
Body length	525.0 μm.	345.0 μm.	360.0 μm.
Buccal tube	10.1 μm.	8.6 μm.	7.2 μm.
Pharyngeal tube	46.8 μm.	40.3 μm.	37.4 μm.
Pharynx	46.1 x 25.9 μm.	30.2 x 21.6 μm.	18.7 x 8.6 μm.

References

- Degma, P., Bertolani, R., Guidetti, R., 2012. Actual checklist of Tardigrada species (2009-2012, Ver. 21: 30-06-2012).<http://www.tardigrada.modena.unimo.it/miscellanea/Actual%20checklist%20of%20Tardigrada.pdf> (accessed September 2012).
- Kaczmarek Ł., Michalczyk Ł. 2008. New records of water bears (Tardigrada, Eutardigrada) from Romania. *Studia Universitatis "Vasile Goldis", Seria Științele Vieții (Life Sciences Series)*, **18**, suppl.
- Pilato G., 1997. *Astatumen*, a new genus of the Eutardigrada (Hypsibiidae, Itaquasconinae). *Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg*, **12**(156): 205-208.
- Ramazzotti, G., Maucii, W., 1983. *The Phylum Tardigrada*. Memorie dell'Istituto Italiano di Idrobiologia Dott. Marco de Marchi, Vol. 41, Istituto italiano di Idrobiologia, Verbania Pallanza, third edition, English translation by Clark W. Beasley, McMurry University, Abilene, Texas 79697, USA, 1995.
- Rudescu, L., 1964. *Tardigrada*. Fauna Republicii Populare Române, vol. 4, Arthropoda, fasc.7, Editura Academiei Republicii Populare Române, București.