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A NEW SPECIES *BRYODELPHAX ASIATICUS* (TARDIGRADA: HETEROTARDIGRADA: ECHINISCIDAE) FROM MONGOLIA (CENTRAL ASIA)

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***ABSTRACT.* –** A new heterotardigrade, *Bryodelphax asiaticus*, new species, is described from moss samples collected in Mongolia. This new species is similar to the common *Bryodelphax parvulus* Thulin but differs from it mainly by lacking both the spine on the 1st pair of legs and the papilla on the 4th, and by having shorter cirri *A*.

***KEY WORDS.* –** Tardigrada, *Bryodelphax asiaticus*, new species, Mongolia.

INTRODUCTION

There are 40 species and two subspecies of Tardigrada known from Mongolia (Iharos, 1965, 1968, 1973; Maucci, 1988; Kaczmarek et al., 2002; Kaczmarek & Michalczyk, 2003). The genus *Bryodelphax* is relatively small and comprised of only 11 species. Two of them, *Bryodelphax parvulus* Thulin, and *Bryodelphax tatrensis* (Weglarska), are common. The others are known from very few or only one locality. So far, four species of this genus have been found in Asia: *Bryodelphax ortholineatus* (Bartŏs), *Bryodelphax parvulus* Thulin, *Bryodelphax sinensis* (Pilato) and *Bryodelphax tatrensis* (Weglarska) (McInnes, 1994). This paper contains a description, drawings and photomicrographs of a new species, *Bryodelphax asiaticus.*

MATERIAL AND METHODS

Eight specimens of a new species were found in three moss samples collected by Lukasz Kaczmarek from rocks and stones in a *Larix* sp. forest, about 1650 to 1900 m asl. (Chubsugul Region, Chubsugul Nuur National Park).

All specimens were mounted on microscopic slides in Hoyer's medium and examined, measured and drawn using a Phase Contrast Microscope (PCM). Photos were made using a Nomarski Differential Interference Contrast Microscope (DIC) and PCM. All measurements are given in micrometers [μm].

Type material are deposited in the following: Department of Animal Taxonomy and Ecology, A. Mickiewicz University (AMU), Poznań, Poland; collection of L. Michalczyk (CLM) at Jagiellonian University, Poland; and Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research.

SYSTEMATIC ACCOUNT

Bryodelphax asiaticus, new species
(Figs. 1-6)

***Material examined.* –** Holotype – (AMU) moss from rocks 1850 m asl., Chubsugul Region, Chubsugul Nuur National Park, Mongolia, coll. L. Kaczmarek, 29 Jul.2000.

Paratypes – 2 ex. (AMU), moss from rocks 1850 m asl., Chubsugul Region, Chubsugul Nuur National Park, Mongolia, coll. L. Kaczmarek, 29 Jul.2000; 3 ex. (CLM), moss from stone 1900 m asl., Chubsugul Region, Chubsugul Nuur National Park, Mongolia, coll. L. Kaczmarek, 29 Jul.2000; 2 ex. (ZRC), moss from stone 1650 m asl., Chubsugul Region, Chubsugul Nuur National Park, Mongolia, coll. L. Kaczmarek, 29 Jul.2000.

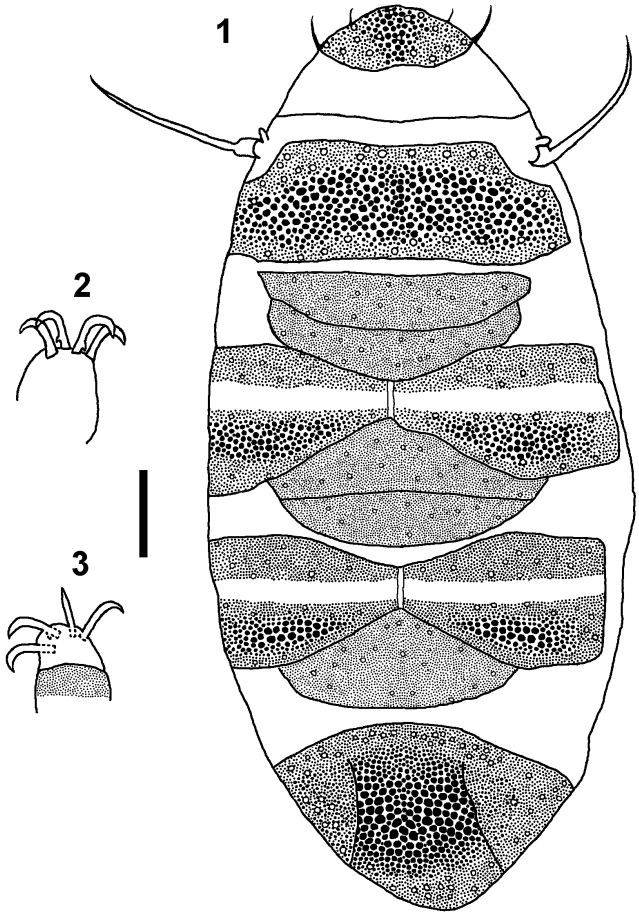
***Description of holotype.* –** Total body length without hind

Table 1. Measurements [µm] of selected morphological characters of all found specimens of *Bryodelphax asiaticus*, new species (in the body length order).

CHARACTER	Paratype 1	Paratype 2	Paratype 3	Paratype 4	Paratype 5	**Holotype**	Paratype 6	Paratype 7	MEAN
Body length	118.8	124.5	137.8	141.6	142.5	**147.3**	147.3	171.0	*141.3*
Cirrus *A* length	30.4	32.3	33.3	39.0	34.2	**34.2**	35.2	38.0	*34.6*
Cirrus *externus* length	8.6	9.5	9.5	13.3	11.4	**11.4**	11.4	12.4	*10.9*
Cirrus *internus* length	4.8	5.7	5.7	6.7	5.7	**5.7**	5.7	6.7	*5.8*
Claw of the IV pair of legs length	5.7	6.7	8.6	7.6	7.6	**6.7**	7.6	7.6	*7.2*

legs 147.2. Body transparent, eyes absent. Apart from head appendages, only lateral appendages *A* are present. Cuticle on ventral side of the body covered with very fine, regular granulation. Ventral plates absent. Dorsal plates covered with small granulation, distinctly larger on scapular and terminal plate (especially in the centre of them) and slightly larger irregularly distributed pores. Paired plates divided into two unequal anterior and posterior parts by a transverse stripe without granulation. In posterior parts slightly larger granules then in anterior ones present (Fig. 1 and 4-6). Median plates 1 and 2 divided into two unequal parts (Fig. 1 and 5-6). Median plate 3 undivided and in triangular shape. Granules on median plates distinctly smaller then those on other plates (Fig. 1). Terminal plate without incisions but with two indentations situated laterally. Appendages *A* 34.2 long (23.2% of body length). Internal and external buccal cirri 5.7 and 11.4 long, respectively. Spine on the 1st pair of leg and papilla on 4th absent (Figs. 2-3). Collar on 4th pair of leg without teeth (Fig. 3). Claws of 4th pair of legs 6.6 long. External claws of all legs smooth, internal with very small spur 1.0 long (Figs. 2-3).

Measurements of all specimens (holotype and paratypes) are given in Table 1.



Figs. 1-3. *Bryodelphax asiaticus*, new species; 1 - Dorsal side of the body, 2 – The 1st. leg, 3 – The 4th. leg. Scale bars: 1 = 100 µm; 2-3 = 10 µm.

Fig. 4. *Bryodelphax asiaticus*, new species; Dorsal side of the body (PCM). Scale bar: 4-6 = 100 µm.

***Etymology.* –** The name '*asiaticus*' refers to the continent where the new species has been found.

***Remarks.* –** *Bryodelphax asiaticus*, new species, is the most similar in general appearance to the very common species *B. parvulus* but differs from it by lacking of spine on the 1st pair of legs, papilla on the 4th; shorter cirri *A* (22.2-27.5% of the body length in *B. asiaticus*, new species, and about 25.0-33.0% in *B. parvulus*, according to Dastych, 1988); absence of eyes; shorter claws (*B. asiaticus*, new species, 7.6 long in a specimen 171.0 long and *B. parvulus* 10.0 long in a specimen 155.0 long, according to Dastych, 1988). The new species has also minute granulation on the ventral side of the body which is not mentioned in the description of *B. parvulus*.

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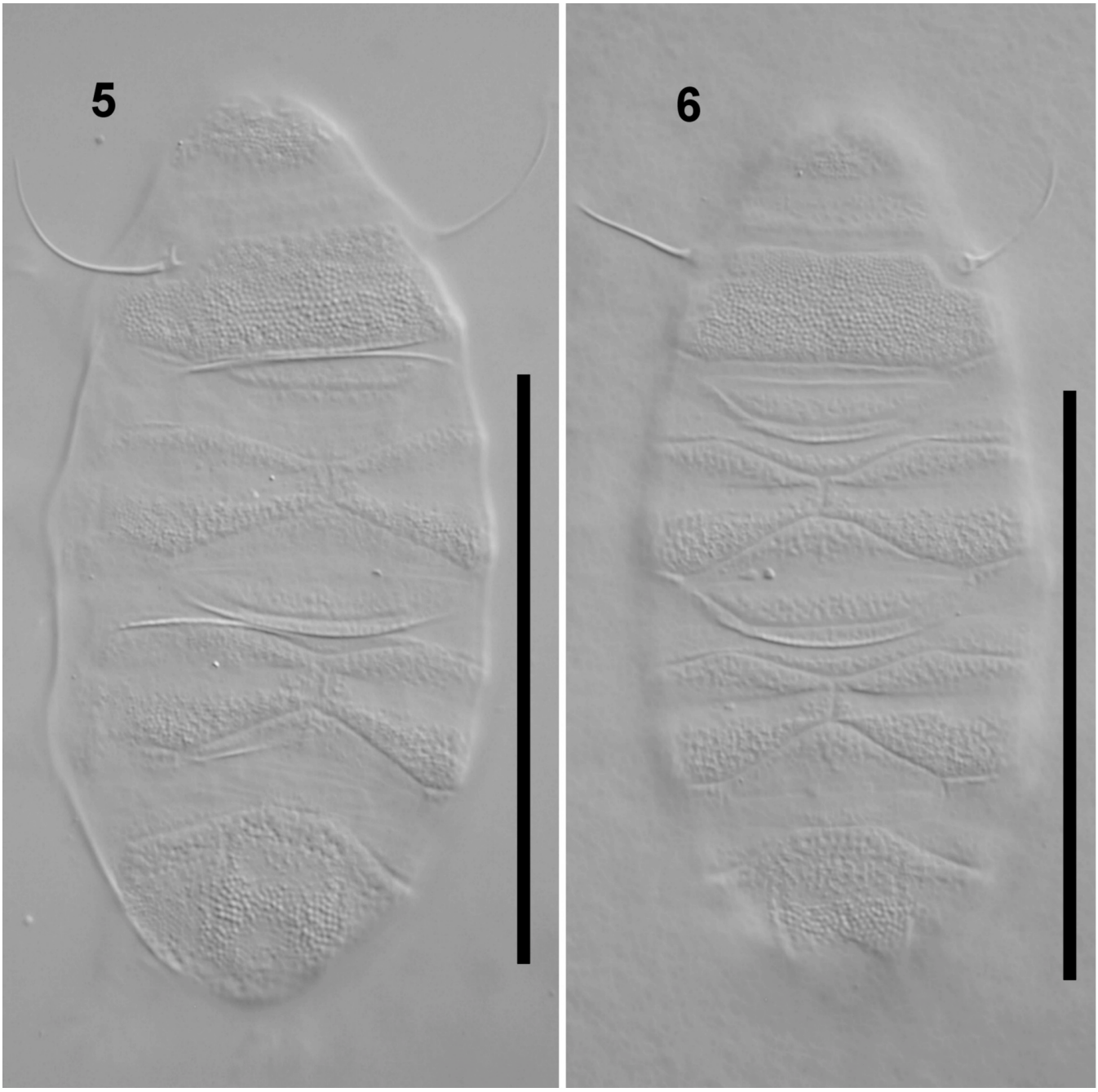

Figs. 5-6. *Bryodelphax asiaticus*, new species; Dorsal side of the body (DIC). Scale bars: 5-6 = 100 µm.

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