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New records of water mites (Acari: Hydrachnidia) from Iskar River Valley, Bulgaria

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Abstract. The present study gives new data on a poorly studied group of aquatic organisms – water mites. Six species are recorded for the first time for the Bulgarian fauna and one of them is new for the Balkan Peninsula.

Key words: water mites, Hydrachnidia, Balkan Peninsula.

Introduction

Water mites are the most species-rich group of arachnids occurring in standing and running freshwater habitats, with about 6000 species worldwide, from which 382 species and subspecies in 77 genera are recorded from the Balkans (Pešić *et al.* 2010). In Bulgaria water mite fauna is fairly rich, with 213 species in 56 genera (Pešić *et al.* 2010). First studies here are published by Viets (1926, 1935, 1940) and Petrova (1971, 1976, 1985) published several papers on water mites from surface waters. More recent data are given by Pešić (2006) and Gerecke (2009). There are no comprehensive studies of the water mite fauna in Iskar River. Two species were reported from some of its tributaries (Vladaiska and Dragalevska Rivers) by Petrova (1971). Pešić et al. (2010), in a survey on the current state of knowledge regarding the Balkan Peninsula, give additional data on the water mite fauna of the catchment of Iskar River, consisting 26 species.

Materials and Methods

The field trips for collecting zoological material were carried out during May and June 2015. Hydrobiological samples were collected from 12 sampling localities along Iskar River and some of its tributaries (Beli Iskar River and Cherni Iskar River). Benthic samples were collected from different microhabitats, using a hand net with a mesh size of 200 μm. Water mites were sorted in the field, preserved in Koenike's fluid and mounted on microscopic slides as described in Gerecke *et al.* (2007). Information about species' distribution and habitat preference follows Di Sabatino *et al.* (2010) and Gerecke *et al.* (2016).

Results

The following six species are new for the Bulgarian fauna, one of them – *Torrenticola* (*Torrenticola*) *ischnophallus* Lundblad, 1956 is new for Balkan Peninsula:

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Family Hydryphantidae Piersig, 1896

Hydryphantes (*Hydryphantes*) *armentarius* Gerecke, 1996

Collecting site: Iskar River near Dragoshinovo village, 42°21'58.3"N 23°33'21.5"E, 903 m a.s.l., 2.VI.2015, 1 specimen, leg. L. Lyubomirova, L. Kenderov, P. Mitov (LL, LK, PM).

Habitat/Ecological type: Crenobiont; in weakly flowing rheohelocrenes exposed to sunlight.

Distribution: Italy, Balkan Peninsula.

Remarks: In present study it is found in deeper parts of the river with strong current. Its presence suggests inflow of underground waters nearby the collecting site.

Protzia halberti (Walter, 1920)

Collecting site: Beli Iskar River above Beli Iskar village, 42°14'50.7"N 23°32'26.5"E, 1224 m a.s.l., 2.VI.2015, 1 specimen, leg. LL, LK, PM.

Habitat/Ecological type: Middle-order streams.

Distribution: Ireland, Central Europe, Balkan Peninsula.

Remarks: This species is found in the upper reaches of the river.

Family Torrenticolidae Piersig, 1902

Torrenticola (*Torrenticola*) *ischnophallus* Lundblad, 1956 (Fig. 1.)

Collecting site: Iskar River near Rebarkovo village, 43°06'52.2"N 23°40'48.1"E, 240 m a.s.l., 29.V.2015, 2 male specimens, leg. LL, LK, PM.

Habitat/Ecological type: Higher order streams with fast current on sandy or stony substrata.

Distribution: French Alps, Germany, only recently discovered in Turkey (Esen & Erman, 2014), probably with a wider distribution than actually documented (Di Sabatino et al. 2009).

Remarks: Rare and poorly known species. In present study it is found in fast flowing river section with organic pollution, highly corrected riverbed with a rocky substrate.

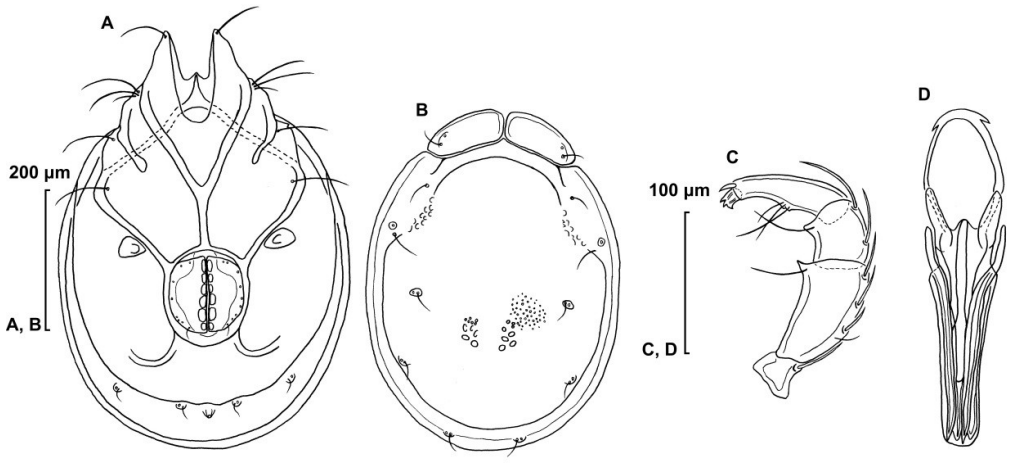

Fig. 1. *Torrenticola ischnophallus* A – idiosoma, ventral side; B – dorsal shield; C – palp; D – ejaculatory complex.

Torrenticola (*Torrenticola*) *oraviensis* (Laska, 1953) (Fig. 2.)

Collecting sites: Iskar River above Samokov town, 42°17'27.3"N 23°32'12.6"E, 1040 m a.s.l., 2.VI.2015, 1 male specimen, leg. LL, LK, PM.; Iskar River above Eliseina village, 43°04'45.7"N 23°28'19.3"E, 320 m a.s.l., 29.V.2015, 1 male specimen, leg. LL, LK, PM.

Habitat/Ecological type: Low- and middle-order streams.

Distribution: South and south-eastern Europe, Asia Minor.

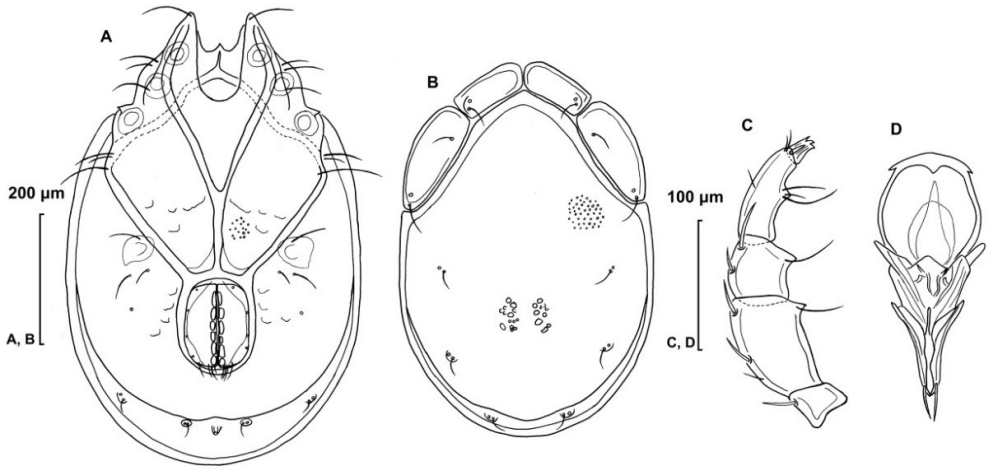

Fig. 2. Torrenticola oraviensis A – idiosoma, ventral side; B – dorsal shield; C – palp; D – ejaculatory complex.

Family Hygrobatidae Koch, 1842

Atractides oblongus (Walter, 1944) (Fig. 3.)

Collecting site: Beli Iskar River above Beli Iskar village, 42°14'50.7"N 23°32'26.5"E, 1224 m a.s.l., 2.VI.2015, 1 female specimen, leg. LL, LK, PM.

Habitat/Ecological type: Rhithrobiont; hyporheophilous.

Distribution: Alps, central Europe, Carpathians, Balkan Peninsula.

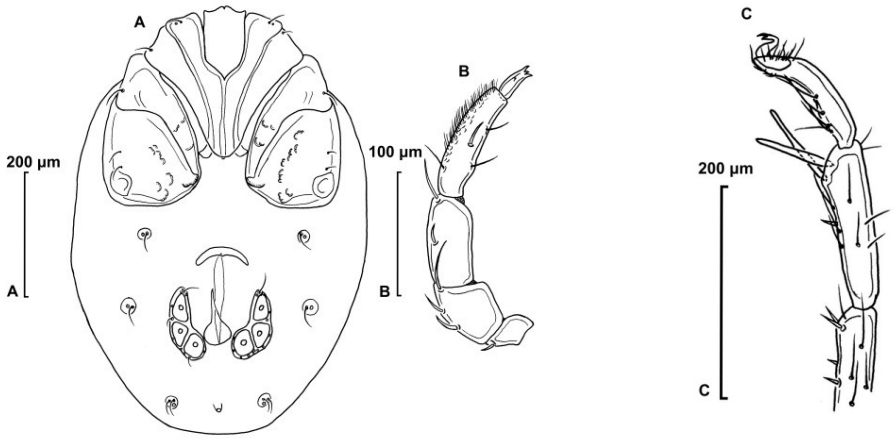

Fig. 3. *Atractides oblongus* A – idiosoma, ventral side; B – palp; C – Leg 1, tibia and tarsus.

Family Pionidae Thor, 1900

Forelia variegator (Koch, 1837)

Collecting site: Iskar River near Dragoshinovo village, 42°21'58.3"N 23°33'21.5"E, 903 m a.s.l., 2.VI.2015, 1 female specimen, leg. LL, LK, PM.

Habitat/Ecological type: In standing (lakes, ponds) and slow running waters.

Distribution: Palaearctic.

Remarks: During this study it is found in riparian area of the river with dense vegetation.

Conclusion

A total of 219 water mite species representing 56 genera, including the new species reported here, are known for Bulgaria. In comparison, on Balkan Peninsula are found 382

species and subspecies in 77 genera. Five of the six water mite species that are newly reported for Bulgaria are found in some of our neighboring countries. This shows the need for further research in the field of water mites.

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