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NEW RECORDS OF WATER MITES (ACARI: HYDRACHNIDIA) FROM RUNNING WATERS FROM MONTENEGRO AND FYR MACEDONIA (SE EUROPE)

VLADIMIR M. PEŠIĆ

Faculty of Sciences, Department of Biology, University of Montenegro
Cetinjski put bb., YU-81000 Podgorica

Seven species: *Hydrovolzia placophora* (Monti), *Hygrobates foreli* (Lebert), *Atractides fonticolus* (K.Viets), *Atractides inflatus* (Walter), *Atractides tener* Thor, *Mideopsis roztoczensis* Biesadka & Kovalik and *Mundamella germanica* K.Viets, are reported new for the water mite fauna of Yugoslavia; the three species: *Wandesia thori* Schechtel, *Hygrobates norvegicus* (Thor) and *Neumania imitata* Koenike are recorded for the first time for the water mite fauna of Balkan peninsula; first descriptions are given of the deutonymphs of *Mideopsis roztoczensis*. The distribution of all these taxa is presented.

KEY WORDS: Acari; water mites; Crna Gora; Macedonia; running waters.

INTRODUCTION

This paper deals with interesting new records from Montenegro (Yugoslavia) and Macedonia, with particular regard to the fauna of water mites from running waters. In this paper 10 new species are added to the list of water mites known from Yugoslavia, three of them are new for the fauna of Balkan peninsula. The following abbreviations are used: P-1 = palp, first segment; Cx-1 = first coxae; (1/2/3) = 1 male, 2 females, 3 deutonymphs; I-L-6 = Leg I, sixth segment; L = length; W = width; n = number of examined specimens. All material has been deposited in the collection of the author.

RESULTS

***Hydrovolzia placophora* (Monti, 1905)**
Material examined: Yugoslavia: Crna Gora, CG62 Sinjajevina, the Ljevok stream

near village Ljevok at 900 m asl., 28.04.2002, leg. Pešić many specimens.
Distribution: Europe; new for the water mite fauna of Yugoslavia.
Habitat: *H.placophora* is a characteristic species of rheopsammocrenic spring habitats. In Crna Gora and Bulgaria, the species was found in a spring habitat of this type (Pešić, unpublished data), but in the Ljevok stream the species was found in a stream habitat, accompanied by *Hygrobates norvegicus* (Thor) and *Atractides oblongus* (Walter).

***Wandesia thori* Schechtel, 1912**
Material examined: Yugoslavia: Crna Gora, CG74 NP»Biogradska Gora», the Biogradska Rijeka river at 1200 m asl., 24.07.2001, leg. Pešić (0/2/0).
Distribution: *Wandesia thori* is a rare species, reported here for the first time for water mite fauna of Balkan peninsula; rarely found in Poland, Germany, Czech Republic, Switzerland, Austria, Romania?, Spain? and Yugoslavia.
Habitat: The finding in surface waters indicate that *Wandesia thori* could be regarded as the member of the biocoenosis typically living near the contact zone between interstitial and surface waters.

***Hygrobates foreli* (Lebert, 1874)**
Material examined: Yugoslavia: Crna Gora, CG62 Durmitor, the Mlinski Potok stream near the Crno Jezero-lake at 1420 m asl., 22.09.2001, leg. Pešić (2/6/0).
Distribution: *Hygrobates foreli* is a rare species, reported here for the first time for water mite fauna of Yugoslavia.
Habitat: mountain running water pools (CG62).

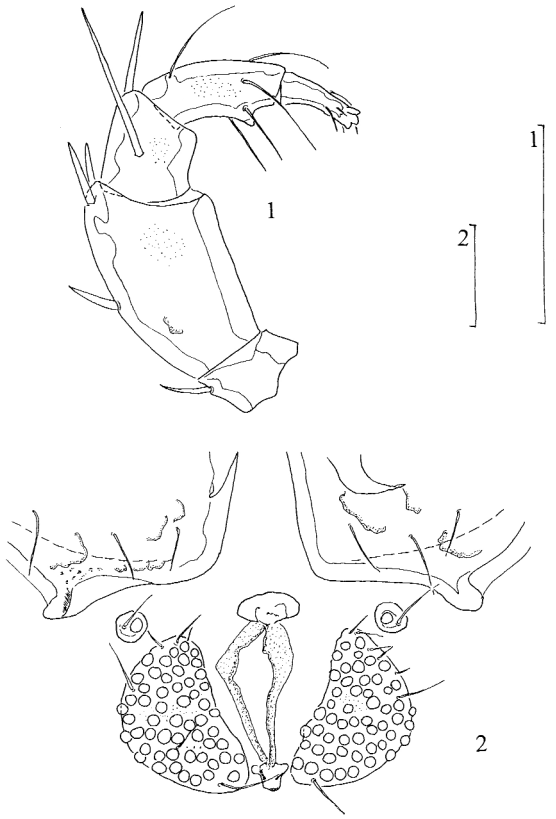
***Hygrobates norvegicus* (Thor, 1897)**
Material examined: Yugoslavia: Crna Gora, CG62 Sinjajevina, the Ljevok stream near village Ljevok at 900 m asl., 28.04.2002, leg. Pešić (7/5/0).
Distribution: *Hygrobates norvegicus* is a rare species, reported here for the first time for water mite fauna of Balkan peninsula.
Habitat: Most of the specimens so far recorded from Calabria and Sicily (GERECKE, 1991) were collected in rheohelocrenic spring habitats. However, our finding in the Ljevok stream indicate that *H.norvegicus* could be regarded as crenophilous rather than crenobiontic.

***Atractides fonticolus* (K.Viets, 1920)**
Material examined: Yugoslavia: Crna Gora, CG30 Fundina, village Rašovići (Podgorica reg.), rheocrenic spring at 600 m asl., 22.02.2000, leg. Pešić (1/1/0); CG47 Rumija, spring "ispod Markovog kamena" 17.03.2001, leg. Pešić (1/0/0); Macedonia: Rašče, without sampling date identification, ex. coll. Georgiev & Petkovski (0/17/1).
Distribution: W Palearctic, absent from British islands and Sweden; new for the fauna of Yugoslavia.
Habitat: Crenobiont or at least crenophilous; only occasionally populations at larger distance from the spring sources (GERECKE in press). This species, in the spring at the Rašovići village, was found accompanied by *Atractides graecus* K. Viets

and *Atractides orghidani* Motas & Tanasachi (PEŠIĆ in press, in press a).

***Atractides inflatus* (Walter, 1925)**
Material examined: Yugoslavia: Crna Gora, CG22 Danilovgrad, rhelocrenic spring of the Rimanić stream near village Martinići, 60 m asl., 07.04.2002, leg. Pešić (0/1/0); Macedonia: MA9 Ohrid, without sampling date identification, leg. Petkovski, ex coll. Georgiev & Petkovski (0/3/0); MA95 Ohrid Lake, without sampling date identification, ex coll. Georgiev & Petkovski (0/2/0).
Distribution: Mediterranean; new for the fauna of Yugoslavia.
Habitat: Running waters; probably estivation at nymphal stages in interstitial habitats, rarely in remnant pools (GERECKE, 1991).

***Atractides tener* (Thor, 1899)**
Material examined: Yugoslavia, Crna Gora, CG58 Komovi, a little stream (tributary of the Šupački Potok stream near village Opasanica), 09.09.2001, leg. Pešić



Figs. 1-2. *Neumania imitata* Koenike 1908, river Zeta near Spuž, female: 1 – palp; 2 – genital field. Scale bars = 0.1 mm.

(1/1/0).
Distribution: Europe; new for the fauna of Yugoslavia.
Habitat: Rhithrobiont. This species, in the little stream near village Opasanica, was found accompanied by *Sperchonopsis verrucosa* (Protz) and *Aturus intermedius* Protz.

***Neumania imitata* Koenike, 1908**
(Figs. 1-2)
Material examined: Yugoslavia, Crna Gora, CG20h, the Zeta river near Spuž at 60 m asl., 08.07.2001, leg. Pešić (0/3/0).
Description. Some additional measurements and characters are:
Female. Idiosoma 871-943 long and 657-871 μm wide (n=3). Integument with chitinous spines. Palps (Fig.1): P-4 shorter than P-2; lateral seta on P-2 in middle of segment; palp 310–312 (n=3) μm in total length; dorsal length (in μm, n=3) and relative length [% total length] (in parentheses) of single segments: P-1 29-31 (9.3-10); P-2 109-111.5 (35-36); P-3 49-53 (15.7-17.1); P-4 73-75 (23.5-24.1); P-5 43.5-46 (14-14.7). Medial margins of Cx-4 straight to concave, posteriorly hooked. Acetabular plates with about 50-58 (n=3) acetabula each side (Fig. 2).
Discussion: LUNDBLAD (1962) described a male and noted 50 acetabula per genital plate; BESSELING (1932) noted about 40, while MAGLIO (1949) noted 60 acetabula.
Distribution: *Neumania imitata* is a rare species, reported here for the first time for Balkan peninsula (K.O.VIETS, 1978); rarely found in France, Germany, Italy and The Netherlands.
Habitat: The species in The Netherlands has been found in natural and canalized lowland streams and canals (SMIT & VAN DER HAMMEN, 2000).

***Mundamella germanica* K.Viets, 1913**
(Figs. 3-5)
Material examined: Yugoslavia, Crna Gora, CG20h, the Zeta river near Spuž at 60 m asl., 08.07.2001, leg. Pešić (0/1/0).
Description. Some additional measurements and characters are:
Female: Ventral shield 557 μm long and 556 μm wide; dorsal shield 528 μm long and 450 μm wide. Measurements of mouthparts: gnathosoma 109 μm long; chelicera (Fig. 3) 111.5 μm long. Palps: palp 212 μm in total length, dorsal length (in μm) and relative length [% total length] (in parentheses) of single segments: P-1 31 (14.6); P-2 58 (27.4); P-3 37 (17.4); P-4 67 (31.6); P-5 19 (9). Morphology and setation of palp as in Figure 4. Acetabula - bearing strips fused with the ventral shield (Fig. 5), number of genital acetabula on each side 50-54.
Distribution: *Mundamella germanica* is a rare species; rarely found in Germany, Ireland, Sweden, The Netherlands, France and Greece.
Habitat: lakes, running water pools, springs (SMIT *et al.*, 2000).

***Mideopsis roztoczensis* Biesadka & Kovalik, 1979**
(Figs. 6-8)
Material examined: Yugoslavia, Crna Gora, CG16b the Morača river near Duklja

(Podgorica) at 50 m asl., 10.07.1999, leg. Pešić (3/4/0); CG21h the Zeta river near Spuž at 60 m asl., 18.07.2001, leg. Pešić, many specimens; CG31c the Cijevna river near village Dinoša (Podgorica reg.) at 100 m asl., 14.07.2001 leg. Pešić (1/1/6); CG46a the Cijevna river, after village Dinoša, 100 m asl., 01.10.2000, leg. Pešić (1/1/0).
Distribution: Poland (BIESADKA & KOVALIK, 1979), Sicily (GERECKE in pers.communication), Bosnia and Herzegovina (PEŠIĆ, in press b). It is very likely that this species will sometimes not be recognized and possibly erroneously identified as *M. orbicularis* (Müller) (PEŠIĆ, in press b). New for the fauna of Yugoslavia.
The characteristics of the one deutonymph of *M. roztoczensis* from Crna Gora are as follows: idiosoma length 511.5 µm, width 496 µm; coxae in 2 groups (Fig. 6); length between anterior end of first coxae and posterior end of fourth coxae 265 µm; Cx-1+2 length 157.7µm, Cx-1+2 width 196 µm, Cx-3+4 length 200 µm, Cx-3+4 width 411.5 µm. Palps: chaetotaxy as in Fig. 8; palp 178.7 µm in total length; dorsal length (in µm) and relative length [% total length] (in parentheses) of segments: P-1, 14.1 (7.9); P-2, 48.7 (27.2); P-3, 27.4 (15.3); P-4, 59 (33); P-5, 29.5 (16.5). Provisional genital plates anteriorly fused, with 2 acetabula each. Measurements of the distal segments of the first legs: I-L-5 length 75.6 µm, I-L-6 length 101 µm (Fig. 7).
Habitat: Most frequently in running waters with extended pool areas; 50-800 (in Bosnia) m asl., but preferably at low elevations. Like *Mideopsis crassipes* Soar, *M. roztoczensis* should probably be regarded as elements of the lenitophilous pool fauna.

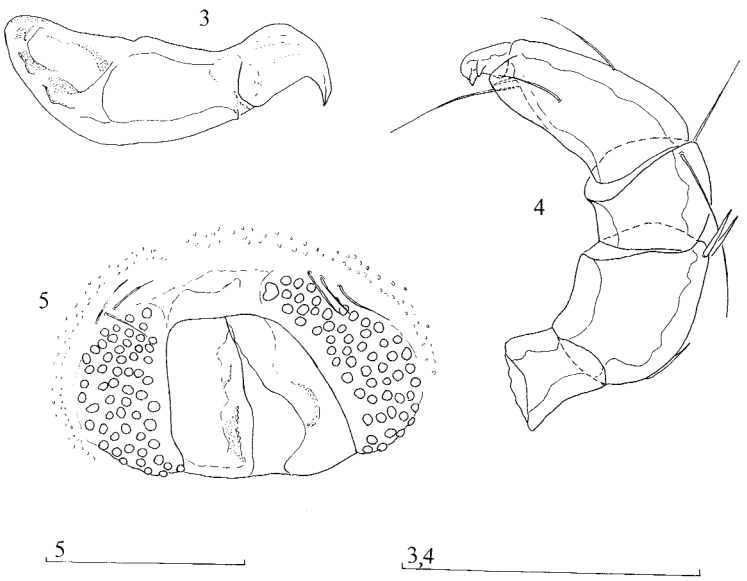


Fig. 3-5. *Mundamella germanica* K.Viets 1913, river Zeta near Spuž, female: 3 – chelicerae; 4 – palp; 5 – genital field. Scale bars = 0.1 mm.

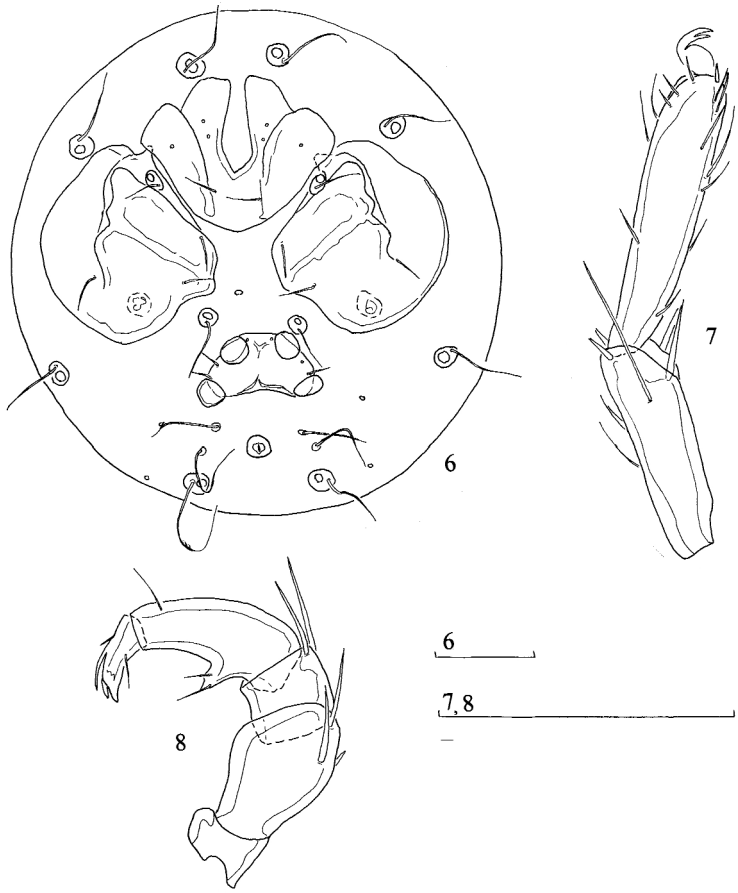


Fig. 6-8. *Mideopsis roztoczensis* Biesadka & Kovalik, 1979, the Cijevna river near village Dinoša, deutonymph: 6 – idiosoma ventral; 7 – I-Leg-5/6; 8 – palp. Scale bars = 0.1 mm

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V. PEŠIĆ: New records of wather mites from Montenegro &FYR Macedonia

НОВИ НАЛАЗИ ВОДЕНИХ ГРИЊА (ACARI: HYDRACHNIDIA) ИЗ ТЕКУЋИХ ВОДА ЦРНЕ ГОРЕ И МАКЕДОНИЈЕ (ЈУГОИСТОЧНА ЕВРОПА)

ВЛАДИМИР М. ПЕШИЋ

И з в о д

Седам врста водених грињa (Acari: Hydrachnidia): *Hydrovolzia placophora* (Monti), *Hygrobates foreli* (Lebert), *Atractides fonticolus* (K.Viets), *Atractides inflatus* (Walter), *Atractides tener* Thor, *Mideopsis roztoczensis* Biesadka & Kovalik и *Mundamella germanica* K.Viets, регистроване су по први пут за фауну Југославије док су три врсте: *Wandesia thori* Schechtel, *Hygrobates norvegicus* (Thor) и *Neumania imitata* Koenike, регистроване по први пут за фауну водених грињa Балканског полуострва; дат је први опис деутонимфе *Mideopsis roztoczensis* Biesadka & Kovalik.

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