

# NEW RECORDS OF WATER-MITES (ACARI, HYDRACHNIDIA) BASED ON THE MATERIAL COLLECTED BY T. PETKOVSKI IN CROATIA, INCLUDING A CHECK-LIST OF SPECIES RECORDED IN CROATIA

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New records of water-mites from Croatia are given based on the material collected by T. Petkovski. Nine species are identified, four of which are new for the fauna of Croatia and one species is recorded for the first time in the Balkans. The ecological significance of the new records is briefly discussed.

**Key words:** Acari, water-mites, Croatia, new records, check-list

**Pešić, V. M.: Novi nalazi vodenih grinja (Acari, Hydrachnidia) iz materijala koji je sakupio u Hrvatskoj T. Petkovski, s popisom vrsta vodenih grinja iz Hrvatske. Nat. Croat., Vol. 11, No. 4., 447–453, 2002, Zagreb.**

U radu se daju novi podaci o vodenim grinjama iz Hrvatske, temeljeni na materijalu koji je prikupio T. Petkovski. Određeno je devet vrsta, od čega su četiri nove za hrvatsku faunu, a jedna vrsta je zabilježena prvi put za Balkan. Kratko se raspravlja o ekološkom značaju novih podataka.

**Ključne riječi:** Acari, vodene grinje, Hrvatska, novi nalazi, popis vrsta

## INTRODUCTION

The water-mite fauna of Croatia is still poorly known. K. VIETS (1936) was the first to give a list of 35 water-mite species from Croatia. Later, SCHWOERBEL (1963), on the basis of material collected by T. PETKOVSKI, published four species of water-mites from the Neretva River near Čapljina and from Lokvenica Lake. BESSELING (1957) published three species of water-mites from Kozjak Lake (one of the Plitvička jezera-lakes). A further species (*Nudomideopsis motasi* Petrova) is known from a cave, »Markarova Špilja«, near Ogulin (SMIT *et al.*, 2000).

In this paper, new records of water-mites (*Acari*, *Hydrachnidia*) from Croatia are reported. For each of the nine species collected, the global pattern of distribution is given, followed by the new locality records. In addition, for some species information on habitat preference or taxonomic notes are provided. A check-list of water-mite species (with the bibliographic references) known from Croatia is also given (Appendix 1).

## MATERIAL AND METHODS

Water-mites were collected by hand netting, sorted on the spot from the living material, and conserved in alcohol. Material published in this paper was collected between 1956 and 1958 in Croatia by Dr. TRAJAN PETKOVSKI (a large part of the collection of M. GEORGIEV and T. PETKOVSKI, related to material from Macedonia, will be the subject of a separate paper).

The complete material is labelled and available in the collection of V. M. PEŠIĆ, Podgorica. The indications of number of specimens are given as follows: (males/females/deutonymphs).

## RESULTS

### Systematic catalogue

1. *Hydrodroma despiciens* (MÜLLER, 1776)

Distribution: Cosmopolitan.

New records: CR3 Stara Neretva near Metković, 19.10.1958, ex coll. Georgiev & Petkovski (3/0/0).

Records from the study area: Jadro near Split and the Stobreč stream near Žrnovnica – K. VIETS (1936).

2. *Hydrodroma torrenticola* (WALTER, 1908)

Distribution: Europe.

New records: CR4 Ombla spring (Dubrovačka Rijeka) near Dubrovnik, 22.05.1956, ex coll. Georgiev & Petkovski (1/4/1).

Remarks: *Hydrodroma torrenticola* was recorded for the first time in Croatia. Its occurrence in the Dubrovnik area is not a real surprise, because this species occurs in the river Nudoljska Rijeka near Lastva, Trebinje (Bosnia and Herzegovina) (PEŠIĆ, 2002).

3. *Oxus (Gnaphiscus) setosus* (KOENIKE, 1898)

Distribution: Europe.

New records: CR2 Metković, »Zap« (? western), without sampling date identification, ex coll. Georgiev & Petkovski (0/3/0); CR3 Stara Neretva near Metković, 19.10.1958, ex coll. Georgiev & Petkovski (0/1/0).

Remarks: *Oxus setosus* was recorded for the first time in the Balkan Peninsula.

4. *Oxus (Oxus) angustipositus* K. VIETS, 1908

Distribution: Europe.

New records: CR3 Stara Neretva near Metković, 19.10.1958, ex coll. Georgiev & Petkovski (1/0/0).

Remarks: *Oxus angustipositus* was recorded for the first time in Croatia. The species has a preference for larger water bodies, like canals and lakes.

5. *Hygrobates fluviatilis* (STRÖM, 1768)

Distribution: W-Palearctic.

New records: CR1 Dubrovnik, »Robinzon«, 29.07.1956, ex coll. Georgiev & Petkovski, 131 exp.

Records from the study area: Jadro near Split; the Salt Spring near Trogir (K. VIETS, 1936).

6. *Atractides pennatus* (K. VIETS, 1920)

Distribution: Europe (except Fennoscandia and Caucasus).

New records: CR1 Dubrovnik, »Robinzon«, 29.07.1956, ex coll. Georgiev & Petkovski (2/5/0); CR4 Ombla spring (Dubrovačka Rijeka) near Dubrovnik, 22.05.1956, ex coll. Georgiev & Petkovski (0/1/0).

Records from the study area: Jadro near Split; the Stobreč stream; the Brusnica stream; the Lozanjek spring near Brušane (W Gospić, Velebit Mt.) (K. VIETS, 1936).

Remarks: Crenobiont or at least crenophilous; only occasionally populations at any greater distance from the spring sources (GERECKE, in press).

7. *Unionicola (Unionicola) minor* (SOAR, 1900)

Distribution: Europe except Scandinavia.

New records: CR3 Stara Neretva near Metković, 19.10.1958, ex coll. Georgiev & Petkovski (0/3/0)

Remarks: *Unionicola minor* was recorded for the first time in Croatia. It can be considered an indicator of good water quality (SMIT & VAN DER HAMMEN, 2000).

8. *Aturus intermedius* PROTZ, 1900

Distribution: Europe.

New records: CR1 Dubrovnik, »Robinzon«, 29.07.1956, ex coll. Georgiev & Petkovski (1/0/0).

Remarks: *Aturus intermedius* was recorded for the first time in Croatia.

9. *Axonopsis (Hexaxonopsis) serrata* WALTER, 1928

Distribution: Tunisia, Algeria, Portugal, Germany, Czech Republic, Poland, Italy, Bulgaria, Croatia, Yugoslavia (Montenegro).

New records: CR3 Stara Neretva near Metković, 19.10.1958, ex coll. Georgiev & Petkovski (0/1/0).

Records from the study area: Lokvenica Lake (SCHWOERBEL, 1963).

Remarks: SCHWOERBEL (1963) published (on the basis of material in the ex coll. Georgiev & Petkovski) the presence of *Axonopsis serrata* from Lokvenica Lake without sampling date identification and without a number of specimens. Examining the material of the collection of water-mites of Georgiev & Petkovski, we found the species in two samples: the first sample with label »Lokvenica See 8.10.58« including 8 males and 9 females; second sample with label »Lokvenica See 20.9.58 Trajan« consisting of 19 males and 11 females.

## CONCLUSIONS

On the basis of material collected by T. Petkovski, nine species have been identified, four of which, *Hydrodroma torrenticola* (Walter), *Oxus angustipositus* K. Viets, *Unionicola minor* (Soar) and *Aturus intermedius* Protz, are new for the water-mite fauna of Croatia, with one species, *Oxus setosus* (Koenike) being recorded for the first time in the Balkans. The water-mite fauna of Croatia is thus represented by 48 species, belonging to 25 genera.

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## S A Ž E T A K

**Novi nalazi vodenih grinja (Acari, Hydrachnidia) iz materijala koji je sakupio u Hrvatskoj T. Petkovski, s popisom vrsta vodenih grinja iz Hrvatske**

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Novi nalazi vodenih grinja (*Acari, Actinedida*) iz Hrvatske bazirani su na materijalu sakupljenom od strane T. Petkovskog 1956–1958 na nekoliko lokaliteta u primorskom dijelu Hrvatske. Identificirano je devet vrsta vodenih grinja (*Acari, Actinedida*), od čega su četiri vrste: *Hydrodroma torrenticola* (Walter), *Oxus angustipositus* K. Viets, *Unionicola minor* (Soar) i *Aturus intermedius* Protz po prvi put zabilježene za faunu Hrvatske, dok je jedna vrsta, *Oxus setosus* (Koenike), zabilježena kao nova za Balkanski poluotok. Također je dan popis vrsta vodenih grinja Hrvatske. Ukupno je za područje Hrvatske zabilježeno 48 vrsta iz 25 rodova vodenih grinja (*Acari, Actinedida*), što je još uvijek relativno mali broj za područje takvih hidroloških i geomorfoloških karakteristika, što ukazuje na potrebu nastavka daljih istraživanja.

**Appendix 1. List of water-mites species recorded from Croatia**

Family Hydryphantidae Piersig, 1896

*Protzia eximia* (Protz, 1896) – K. Viets (1936)

*Trichothyas petrophila* (Michael, 1895) – »*Lundbladia petrophila*« K. VIETS (1936)

*Paniscus michaeli* Koenike, 1896 – K. VIETS (1936)

Family Hydrodromidae K. Viets, 1936

*Hydrodroma despiciens* (Müller, 1776) – »*Diplodontus despiciens*« K. VIETS (1936); PEŠIĆ (present paper)

*Hydrodroma torrenticola* (Walter, 1908) – PEŠIĆ (present paper)

Family Sperchontidae Thor, 1900

*Sperchonopsis verrucosa* (Protz, 1896) – K. VIETS (1936)

*Sperchon glandulosus* Koenike, 1886 – K. VIETS (1936)

*Sperchon setiger* Thor, 1898 – K. VIETS (1936)

*Sperchon denticulatus* Koenike, 1895 – K. VIETS (1936)

*Sperchon clupeiifer* Piersig, 1896 – K. VIETS (1936)

Family Nilotoniidae K. Viets, 1929

*Nilotonia longipora* (Walter, 1925) – »*Dartiella longipora*« K. VIETS (1936)

Family Lebertiidae Thor, 1900

*Lebertia glabra* Thor, 1897– »*Lebertia lineata*« K. VIETS (1936)

*Lebertia dalmatica* K. Viets, 1936 – K. VIETS (1936)

*Lebertia jadrensis* K. Viets, 1936 – K. VIETS (1936)

*Lebertia saxonica* Thor, 1911 – K. VIETS (1936)

Family Oxidae K. Viets, 1926

*Oxus setosus* (Koenike, 1898) – PEŠIĆ (present paper)

*Oxus angustipositus* K. Viets, 1908 – PEŠIĆ (present paper)

Family Torrenticolidae Piersig, 1902

*Monatractides latissimus* (K. Viets, 1936) – »*Atractides latissimus*« K. VIETS (1936)

*Pseudotorrenticola rhynchota* Walter, 1906 – K. VIETS (1936)

*Torrenticola anomala* (Koch, 1837) – SCHWOERBEL (1963)

Family Hygrobatidae Koch, 1842

*Hygrobates calliger* Piersig, 1896– K. VIETS (1936)

*Hygrobates fluviatilis* (Ström, 1768) – K. VIETS (1936); PEŠIĆ (present paper)

*Atractides robustus* (Sokolow, 1940) – »*Atractides nodipalpis robustus*« SCHWOERBEL (1963)

*Atractides gibberipalpis* Piersig, 1898 – »*Megapus gibberipalpis*« K. VIETS (1936)

*Atractides pennatus* (K. Viets, 1920) – »*Megapus nodipalpis pennata*« K. VIETS (1936); PEŠIĆ (present paper)

*Atractides fonticolus* (K. Viets, 1920) – »*Megapus nodipalpis fonticola*« K. VIETS (1936)

*Atractides nodipalpis* (Thor, 1899) – »*Megapus nodipalpis*« K. VIETS (1936)

*Atractides loricatus* Piersig, 1898 – »*Megapus barsiensis*« K. VIETS (1936)

*Atractides spinipes* Koch, 1837 – »*Megapus spinipes*« K. VIETS (1936)

*Atractides fluviatilis* Szalay, 1929 – »*Megapus nodipalpis fluviatilis*« K. VIETS (1936)

Family Unionicolidae Oudemans, 1909

*Unionicola minor* (Soar, 1900) – PEŠIĆ (present paper)

Family Feltriidae K. Viets, 1926

*Feltria rubra* Piersig, 1898 – K. VIETS (1936)

*Feltria rouxi* Walter, 1907 – »*Feltria rouxi romijni*« K. VIETS (1936)

*Feltria cornuta* Walter, 1927 – K. VIETS (1936)

Family Pionidae Thor, 1900

*Forelia curoipalpis* K. Viets, 1930 – BESSELING, 1957

*Piona disparilis* (Koenike, 1895) – K. VIETS (1936)

Family Aturidae Thor, 1900

*Ljania bipapillata* Thor, 1898 – K. VIETS (1936)

*Axonopsis gracilis* (Piersig, 1903) – K. VIETS (1936)

*Axonopsis serrata* Walter, 1928 – SCHWOERBEL (1963); PEŠIĆ (present paper)

*Aturus intermedius* Protz, 1900 – PEŠIĆ (present paper)

*Aturus scaber* Kramer, 1875 – SCHWOERBEL (1963)

*Aturus crinitus* Thor, 1902 – K. VIETS (1936)

*Aturus karamani* K. Viets, 1936 – K. VIETS (1936)

*Aturus serratus* K. Viets, 1936 – »*Aturus asserculatus serratus*« K. VIETS (1936)

*Kongsbergia materna* Thor, 1899 – K. VIETS (1936)

Family Nudomideopsidae Smith, 1990

*Nudomideopsis motasi* Petrova, 1966 – SMIT *et al.* (2000)

Family Mideopsidae Koenike, 1910

*Mideopsis crassipes* Soar, 1904 – BESSELING, 1957

Family Arrenuridae Thor, 1900

*Arrenurus albator* (Müller, 1776) – BESSELING, 1957