

## Present status of water mite species (Acari, Hydrachnidia) described by Motaş, Tanasachi and Orghidan from Romania

MIRELA CÎMPEAN,<sup>1</sup> KARINA PAULA BATTES<sup>2</sup>

<sup>1</sup> Babeş-Bolyai University, Faculty of Biology and Geology, Department of Taxonomy and Ecology, 5-7 Clinicilor Street, 400006, Cluj-Napoca, Romania, e-mail: mirela.cimpean@ubbcluj.ro

<sup>2</sup> Babeş-Bolyai University, Faculty of Biology and Geology, Department of Taxonomy and Ecology, 5-7 Clinicilor Street, 400006, Cluj-Napoca, Romania, e-mail: karina.battes@ubbcluj.ro

**Keywords** synonym species, valid species, *species dubia*, *species incertae*

**Abstract** The present paper investigates the validity of the water mite species (Acari, Hydrachnidia) described from Romania by Motaş, Tanasachi and Orghidan. The Romanian researchers from the “Emil Racoviţă” Speleology Institute, Romanian Academy, Bucharest, had a prolific activity between 1939 and 1963: among the taxa new to science described by these authors, 34 species and 3 subspecies had their type localities in Romania. More than 50 years later, 23 species and one subspecies described by the team coordinated by Motaş are still valid. 17 of these taxa were found all over Europe, while 7 were not recorded outside Romania until present day.

Obecny status wodopójek (Acari, Hydrachnidia) z Rumunii opisanych przez Motaşa, Tanasachiego i Orghidana

**Słowa kluczowe** gatunki synonimiczne, gatunki obowiązujące, gatunki wątpliwe, gatunki niepewne

**Streszczenie** W niniejszym artykule zbadano aktualność gatunków wodopójek (Acari, Hydrachnidia) opisanych z terenu Rumunii przez Motaşa, Tanasachiego i Orghidana. Główna aktywność rumuńskich badaczy z Instytutu Speleologii “Emil Racoviţă”, Akademii Rumuńskiej w Bukareszcie, przypadła na lata 1939–1963. Wśród nowych gatunków opisywanych przez tych autorów locus typicus 34 gatunków i 3 podgatunków znajdowały się na terenie Rumunii. Ponad 50 lat później, 23 gatunki i jeden podgatunek opisane przez zespół prowadzony przez Motaşa są nadal aktualne. 17 z tych taksonów odnotowano na terenie całej Europy, a 7 innych do dzisiaj stwierdzonych jest jedynie na terenie Rumunii.

### Introduction

Hydrachnidia (the water mites), also called Hydrachnellae or Hydracarina, represents the most important group of freshwater Arachnida, with more than 6,000 species described worldwide (Di Sabatino et al., 2008). The Palaearctic region is one of the best investigated areas, with the highest number of species recorded (1,642 species) (Di Sabatino et al., 2008).

The first Romanian study on water mites (Acari, Hydrachnidia) was conducted in 1923, when Motaş published „Contribution à l'étude des Acariens d'eau douce de Roumanie” (Motaş, 1923). More than 70 scientific papers were published between 1923 and 1972 by Motaş, Tanasachi and Orghidan, dealing with water mites from different environments: rivers, lakes and interstitial habitats.

In 1979, Konnerth-Ionescu published an inventory of all water mite species from Romania, with their exact locations. 267 water mite species and 18 subspecies were listed, from 367 sampling locations considered until then (Konnerth-Ionescu, 1979).

An updated and complemented list of water mite species from Romania was published in recent years. It included 251 species recognized at present in Romania (Cîmpean, 2011).

## Discussions

Between 1939 and 1963, Constantin Motaş, Jeanne Tanasachi (Şoarec before marriage) and Traian Orghidan described 34 species and 3 subspecies new to science in Romania (Table 1) (Motaş, Şoarec, 1939; Şoarec, 1939; Motaş, 1940, 1959; Motaş, Tanasachi, 1944, 1946, 1948a, 1948b, 1960, 1963; Motaş et al., 1946, 1947a, 1947b, 1947c, 1957a, 1957b, 1958; Tanasachi, Orghidan, 1955).

23 water mite species and one subspecies from those described by the team coordinated by Motaş are still valid, according to the Hydrachnidia taxonomic revisions made at an European scale (Table 1).

Table 1 Water mite species new to science, described by Motaş and his team (the current status, the type localities, the European distribution and the preferred habitats)

No.	Taxa	Species status	Type localities	Distribution	Habitat
1	2	3	4	5	6
1.	<i>Stygothrombium racovitzai</i> (Motaş, Tanasachi, 1946)	<i>Species dubia</i> (Davids et al., 2007). Future material from the Romanian populations is necessary.	The Crişul Repede River in Şuncuiuş village (Motaş, Tanasachi, 1946)	–	–
2.	<i>Tadjikothyas fibulata</i> (Motaş, Tanasachi, 1957)	Valid species	Rheocren spring tributary of Lake Greaca (drained) (Motaş et al., 1957b)	Limnofauna: 12, Y*	Crenophylous (springs and small rivers) (Motaş et al., 1957b; Motaş, 1959)
3.	<i>Dacothyas savulescui</i> (Motaş, 1959)	Valid species	Spring in Comana village, 30 km south from Bucharest (Motaş, 1959)	Limnofauna: 12* Romania	Crenobiont (springs) (Motaş, 1959)
4.	<i>Vietsthyas fonticola</i> (Motaş, Tanasachi, 1957)	A junior synonym to <i>Tartarothyas micrommata</i> Viets, 1934	–	–	–

1	2	3	4	5	6
5.	<i>Lebertia holsatica nitida</i> (Motaş, Tanasachi, 1963)	Non valid subspecies This subspecies is insufficiently defined and agree with <i>L. semireticulata</i> Viets, 1925 (Gerecke, 2009; Di Sabatino et al., 2010)	–	–	–
6.	<i>Torrenticola jeanneli</i> (Motaş, Tanasachi, 1947)	Valid species	The Târlungul Stream (near Satul-Lung village, Braşov county); The Bîrsa Stream, tributary of the Olt River; The Cerna River (Motaş et al., 1947b)	Limnofauna: 4, 5, 7, 10* Central and Southeastern Europe. Only known from a few sites (Di Sabatino et al., 2010)	Low- and middle order streams, only known from hyporheic
7.	<i>Kawamuracarus chappuisi</i> (Motaş, Tanasachi, 1946)	Valid species <i>K. chappuisi</i> was proposed to be a synonym of <i>K. vardaricolus</i> Viets, 1942. A resolution is hampered by the loss of type material of <i>K. chappuisi</i> (Gerecke et al., 2016). Future material from the Romanian populations could solve this discussion.	The Valea Drăganului Stream, tributary of the Crişul Repede River (Bihor county) (Motaş, Tanasachi, 1946)	Limnofauna: 10* Southeastern and eastern Europe, one record from the eastern part of the area covered, Poland (Gerecke et al., 2016)	Interstitial waters of low- and middle order streams
8.	<i>Atractides latipalpis</i> (Motaş, Tanasachi, 1946)	Valid species	The Valea Drăganului Stream, tributary of the Crişul Repede River (Bihor county) (Motaş, Tanasachi, 1946)	Limnofauna: 2, 4, 5, 7, 8, 9, 10, 11, 13, 18* Central and southeastern Europe, United Kingdom (Di Sabatino et al., 2010)	Hyporheobiont

1	2	3	4	5	6
9.	<i>Atractides magnirostris</i> (Motaş, Tanasachi, 1948)	<i>Species dubia</i> Possibly synonym to <i>A. acutirostris</i> (Motas, Angelier, 1927) (Gerecke, 2003)	The Sadul Stream, right tributary of the Cibin River (the Olt River catchment area); the Bughea Stream (in Câmpul-Lung), tributary of the Rîul Târgului River (the Argeş River catchment area) (Motaş, Tanasachi, 1948b)	–	–
10.	<i>Atractides microphthalmus</i> (Motaş, Tanasachi, 1948)	Non valid species Species similar with <i>A. denticulatus</i> (Walter, 1947) and possible also with other species of the <i>cisternarum</i> -species group (Di Sabatino et al., 2010). Further investigations on the geographical variation in species of this group are necessary (Gerecke, 2003)	–	–	–
11.	<i>Atractides nodipalpis intermedius</i> (Şoarec, 1939)	<i>Subspecies dubia</i> (Gerecke, 2003)	The Secu Stream, tributary of the Ozana River (the Siret River catchment area) (Şoarec, 1939)	–	–
12.	<i>Atractides phreaticus</i> (Motaş, Tanasachi, 1948)	Valid species	The Rîul Mare Stream, left tributary of the Olt River (near Porumbacul de Sus village); the Sebeş Stream, left tributary of the Olt River; the Bogata Stream, left tributary of the Olt River (Motaş, Tanasachi, 1948b)	Limnofauna: 4, 7, 8, 9, 10* Central and southeastern Europe, southern France (Di Sabatino et al., 2010)	Hyporheobiont
13.	<i>Atractides prosiliens</i> (Motaş, Tanasachi, 1948)	Valid species	The Bughea Stream, tributary of the Rîul Târgului River (the Argeş catchment area) (the Southern Carpathians) (Motaş, Tanasachi, 1948b)	Limnofauna: 10* Romania, doubtful records from Austria and southern France (Di Sabatino et al., 2010)	Hyporheobiont

1	2	3	4	5	6
14.	<i>Atractides pygmaeus</i> (Motaş, Tanasachi, 1948)	Valid species	The Riuşor Stream, tributary of the Dâmboviţa River (the Southern Carpathians) (Motaş, Tanasachi, 1948b)	Limnofauna: 3, 4, 5, 7, 10* the Alps, the Carpathians, Montenegro (Di Sabatino et al., 2010)	Hyporheobiont
15.	<i>Atractides sokolowi</i> (Motaş, Tanasachi, 1948)	Valid species	The Bughea Stream, tributary of the Rîul Târgului River (the Argeş catchment area) (the Southern Carpathians) (Motaş, Tanasachi, 1948b)	Limnofauna: 7, 10* Eastern and southeastern Europe; from area covered recorded in Poland (Di Sabatino et al., 2010)	Rhithrobiont
16.	<i>Atractides szalay</i> (Motaş, Tanasachi, 1948)	A junior synonym to <i>A. oblongus</i> (Walter, 1944)	–	–	–
17.	<i>Atractides elegans</i> (Motaş, Tanasachi, 1948)	<i>Species incertae</i> Species similar with <i>A. orghidani</i> Motaş & Tanasachi, 1960 (Di Sabatino et al., 2010).	The Sadul Stream, right tributary of the Cibin River (the Olt River catchment area) (Motaş, Tanasachi, 1948b)	–	–
18.	<i>Atractides orghidani</i> (Motaş, Tanasachi, 1960)	Valid species	The Virghiş Stream, tributary of the Olt River in Mereşti village (Harghita county) (Motaş, Tanasachi, 1960)	Limnofauna: 3, 5, 6, 9, 10, 13, Y* Romania, Greece, Montenegro, Italy, France, Turkey (Di Sabatino et al., 2010)	Rhithrobiont, hyporheophilous
19.	<i>Feltria mira</i> (Motaş, Tanasachi, 1948)	<i>Species incertae</i> Species similar with <i>F. motasi</i> (Schwoerbel, 1961; Gerecke, 2012; Gerecke et al., 2016)	The Prahova River (near Azuga city) (Motaş, Tanasachi, 1948a)	–	–
20.	<i>Feltria amplexa</i> (Motaş, Tanasachi, 1944)	Valid species (Further investigations are necessary)	Rheocren spring, right tributary of the Valea Rea Stream in Sinaia city (Motaş, Tanasachi, 1944)	Limnofauna: 10*	–
21.	<i>Feltria halberti</i> (Motaş, Tanasachi, 1957)	A junior synonym to <i>F. rouxi</i> (Walter, 1907)	–	–	–
22.	<i>Feltria simionescui</i> (Motaş, Soarec, 1939)	A junior synonym to <i>F. zschokkei</i> (Koenike, 1896)	–	–	–
23.	<i>Forelia aspidiophora</i> (Motaş, 1959)	Valid species (Further investigations are necessary)	The Cocora Stream, left tributary of the Ialomiţa River, near Peştera village (the Bucegi Mountains) (Motaş, 1959)	Limnofauna: 10*	–

1	2	3	4	5	6
24.	<i>Albaxona lundbladi</i> (Motaş, Tanasachi, 1947)	Valid species	The Bogata Stream, tributary of the Olt River (the Southern Carpathians) (Motaş et al., 1947b)	Limnofauna: 3, 4, 5, 7, 8, 9, 10, 18, Y* British Isles, central, southern and southeastern Europe (Gerecke et al., 2016)	Hyporheobiont
25.	<i>Paraxonopsis inferorum</i> (Motaş, Tanasachi, 1947)	Valid species	The Târlungul Stream (near Satul-Lung village, Braşov county) (Motaş et al., 1947b)	Limnofauna: 2, 3, 4, 5, 6, 9, 10, 11, 14, 15* Central, eastern and southern Europe (Gerecke et al., 2016)	Hyporheobiont
26.	<i>Paraxonopsis vietsi</i> (Motaş, Tanasachi, 1947)	Valid species	The Cerna River (Herculane) (Motaş et al., 1947b)	Limnofauna: 2, 3, 7, 10, 12* Central and southern Europe (Gerecke et al., 2016)	Hyporheobiont
27.	<i>Erebaxonopsis brevipes</i> (Motaş, Tanasachi, 1947)	Valid species	The Târlungul Stream (near Satul-Lung village, Braşov county); The Cerna River (Herculane) (Motaş et al., 1947b)	Limnofauna: 1, 3, 10* SW Palearctic (Gerecke et al., 2016)	Hyporheobiont
28.	<i>Aturus paucisetus</i> (Motaş, Tanasachi, 1946)	Valid species Future material from the Romanian population is necessary, because after the loss of the holotype, morfological data are mostly based on central European material (Gerecke et al., 2016)	The Crişul Repede River in Şuncuiuş village (Motaş, Tanasachi, 1946)	Limnofauna: 2, 4, 7, 10* Central and southeastern Europe (Gerecke et al., 2016)	Low and middle order streams, preferably in the hyporheic (Gerecke et al., 2016)
29.	<i>Kongsbergia dentate folioligera</i> (Motaş, Tanasachi, 1958)	Valid subspecies (Further investigations are necessary)	The Salătruc Stream, tributary of the Topolog River (Motaş et al., 1958)	Limnofauna: 10*	–
30.	<i>Kongsbergia d-motasi</i> (Motaş, Tanasachi, 1958)	Valid species (Further investigations are necessary)	The Salătruc Stream, tributary of the Topolog River; the Rîul Mare Stream, tributary of the Olt River (Motaş et al., 1958)	Limnofauna: 7, 10*	–
31.	<i>Kongsbergia pectinigera</i> (Motaş, Tanasachi, 1946)	Valid species	The Valea Drăganului Stream and the Crişul Repede River (Bihor county) (Motaş, Tanasachi, 1946)	Limnofauna: 1, 3, 4, 5, 7, 8, 9, 10* Southern Europe, south-central and eastern Europe (Gerecke et al., 2016)	Hyporheobiont

1	2	3	4	5	6
32.	<i>Mideopsis fonticola</i> (Tanasachi, Orghidan, 1955)	<i>Species incertae</i> Species similar with <i>Nudomideopsis latipalpis</i> E. Angelier, 1963 (Gerecke et al., 2016)	Olguţa Gabor's fountain from Ponor village (Hunedoara county) (Tanasachi, Orghidan, 1955)	–	–
33.	<i>Bogatia maxillaris</i> (Motaş, Tanasachi, 1948)	Valid species	The Bogata Stream, left tributary of the Olt River (close to Bogata village) (Motaş, Tanasachi, 1948a)	Limnofauna: 3, 6* Romania, Macedonia and Sicily (Gerecke et al., 2016)	Hyporheobiont
34.	<i>Chappuisides thienemanni</i> (Motaş, 1959)	Valid species (Further investigations are necessary)	The Bogata Stream, tributary of the Olt River; the Riuşorul Stream, tributary of the Dîmboviţa River, near Cîmpulung Muscel; the Dopca Stream, left tributary of the Olt River; the Valea Drăganului River (the Apuseni Mountains); the Valea Sighiştelului Stream (the Apuseni Mountains) (Motaş, 1959)	Limnofauna: 10*	–
35.	<i>Phreatohydracarus mosticus</i> (Tanasachi, Orghidan, 1955)	Valid species	Wells from Ponor village (Hunedoara county) (Tanasachi, Orghidan, 1955)	Limnofauna: 10* Romania	Hyporheobiont
36.	<i>Arrenurus iassiensis</i> (Motaş, 1940)	Valid species (Further investigations are necessary)	Pond on the right bank of the Bahlui River, near Iaşi (Motaş, 1940)	Limnofauna: 16*	–
37.	<i>Arrenurus lundbladianus</i> (Motaş, Tanasachi, 1958)	A junior synonym to <i>A. corsicus</i> (E. Angelier, 1951)	–	–	–

\* Information from the database based on data published by Viets (1978) in *Limnofauna Europaea*, updated in 1.09.2016 and published on [watermite.org](http://watermite.org) (2017) (1: Iberian Peninsula, 2: The Pyrenees, 3: Italy, 4: The Alps, 5: Dinaric Western Balkan, 6: Hellenic Western Balkan, 7: Eastern Balkan, 8: Western Highlands, 9: Central Highlands, 10: The Carpathians, 11: Hungarian Lowlands, 12: Pontic Province, 13: Western Lowlands, 14: Central Lowlands, 15: Baltic Province, 16: Eastern Lowlands, 18: Great Britain, Y: Israel, Turkey, Syria).

However, 6 out of the 24 valid taxa need further investigations, since holotype and paratype specimens are missing: *Feltria amplexa* (Motaş, Tanasachi, 1944), *Forelia aspidiophora* (Motaş, 1959), *Kongsbergia dentate folioligera* (Motaş, Tanasachi, 1958), *Kongsbergia d-motasi* (Motaş, Tanasachi, 1958), *Chappuisides thienemanni* (Motaş, 1959), *Arrenurus iassiensis* (Motaş,

1940). These species were not classified during the latest European revision (Davids et al., 2007; Di Sabatino et al., 2010; Gerecke et al., 2016), but they are still considered valid in the databases, according to information published by K.O. Viets (1978), updated in 1.09.2016 and posted on watermite.org (2017).

Table 1 depicts updated information on the European distribution of valid water mite species described by the team coordinated by Motaş, together with the habitats they inhabit and the type localities they were described from.

Recent studies reported the following species in Romania: *Kawamuracarus chappuisi* and *Aturus paucisetus* in the Crişul Repede River (Pavelescu, Cîmpean, 2002–2003); *Phreatohydracarus mosticus* and *Atractides* cf. *latipalpis* in the Arieş River (Moldovan et al., 2011); *Torrenticola jeanneli* in the Someşul Cald River (Cîmpean, 2011).

The number of new species described by the team coordinated by Motaş versus the number of valid species during the 24 years (1939–1963) is depicted in Figure 1. The highest number of new described species was in 1948 (10), with 5 valid at present.

Four water mite species were proposed as candidates for the European Red List: *Tadjikothyas fibulata*, *Kawamuracarus chappuisi*, *Chappuisides thienemanni* and *Phreatohydracarus mosticus* (Cîmpean, 2014). Two species might need protection and could join the list, due to their restricted distribution: *Dacothyas savulescui* and *Atractides prosiliens*.

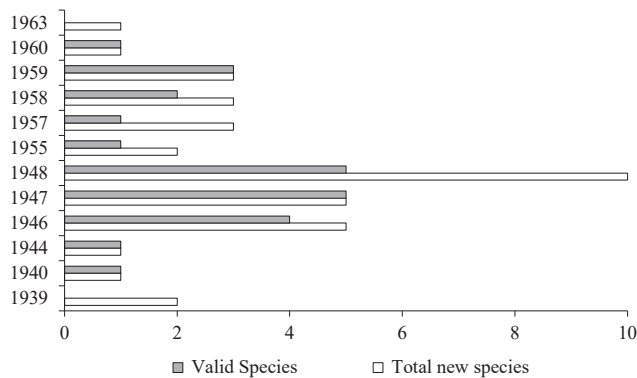


Figure 1. Total new versus valid water mite species (Acari, Hydrachnidia) described by Motaş, Tanasachi and Orghidan from Romania

Since several holotype and paratype specimens are missing, further investigations are mandatory for some water mite species, by revisiting the sampling regions.

## Acknowledgements

We are thankful to Dr Reinhard Gerecke (Germany) and one anonymous referee for their careful work and valuable suggestions.



## References

- Cîmpean, M. (2011). *Studiul taxonomic și ecologic asupra comunităților de acarieni acvatici (Acari, Hydrachnidia) din bazinul de drenaj al râului Someșul Mic și rolul acestor organisme ca indicatori ai calității apei*. Presa Universitară Clujeană.
- Cîmpean, M. (2014). A review of the water mites (Acari, Hydrachnidia) from protected areas of Romania. *North-western Journal of Zoology*, 10 (Suppl. 1), 67–77.
- Davids, C., Di Sabatino, A., Gerecke, R., Gledhill, T., Smit, H., Van Der Hammen H. (2007). *Acari: Hydrachnidia*. In: R. Gerecke (ed.), *Süßwasserfauna Mitteleuropas, 7/2-1, Chelicerata, Acari I* (pp. 241–376). München: Spektrum Elsevier.
- Di Sabatino, A., Smit, H., Gerecke, R., Goldschmidt, T., Matsumoto, N., Cicolani, B. (2008). Global diversity of water mites (*Acari, Hydrachnidia; Arachnida*) in freshwater. *Hydrobiologia*, 595, 303–315.
- Di Sabatino, A., Gerecke, R., Gledhill T., Smit, H. (2010). Chelicerata: Acari II. *Süßwasserfauna von Mitteleuropa, 7/2-2 (I-IX)*, 1–134.
- Gerecke, R. (2003). Water mites of the genus *Atractides* Koch, 1837 (Acari: Parasitengona: Hygrobatidae) in the western Palaearctic region: A revision. *Zoological Journal of the Linnean Society*, 138 (2–3), 141–378.
- Gerecke, R. (2009). Revisional studies on the European species of the water mite genus *Lebertia* Neuman, 1880 (Acari: Hydrachnidia: Lebertiidae). *Abhandlungen der Senckenberg Gesellschaft für Naturforschung*, 566, 1–144.
- Gerecke, R. (2012). Studies on European *Feltria* species (Acari: Hydrachnidia: Feltriidae). *Stuttgarter Beiträge zur Naturkunde A, Neue Serie* 5, 13–47.
- Gerecke, R., Gledhill, T., Pešić, V., Smit, H. (2016). Chelicerata: Acari III. *Süßwasserfauna von Mitteleuropa*, 7 (2–3), 1–429.
- Konnerth-Ionescu, A. (1979). Conspectus des Hydrachnelles (Acari) de la Roumanie. *Travaux du Museum d'Histoire Naturelle «Grigore Antipa»*, 20, 85–120.
- Moldovan, O.T., Levei, E., Banciu, M., Banciu, H.L., Marin, C., Pavelescu, C., Brad, T., Cîmpean, M., Meleg, I., Iepure, S., Povară, I. (2011). Spatial distribution patterns of the hyporheic invertebrate communities in a polluted river in Romania. *Hydrobiologia*, 669, 63–82.
- Motaş, C. (1923). Contribution à l'étude des Acariens d'eau douce de Roumanie. *Ann. sci. Univ. Jassy*, 12 (3–4), 261–275.
- Motaş, C. (1940). Un *Arrenurus* nouveau trouvé dans les environs de Jassy. *Hommage à la Mém. du Prof. Al. Slatineanu, Jassy*, 1–7.
- Motaş, C. (1959). *Descrierea a trei Hidracarieni noi*. Acad. Republ. Pop. Rom. Omagiu lui Traian Savulescu cu prilejul împlinirii a 70 de ani.
- Motaş, C., Şoarec, J. (1939). Sur deux *Feltria* nouvelles trouvées dans les Carpates Orientales et sur les caractères sexuels secondaires dans le genre *Feltria* Koen. 1892. *Memoriile Secțiunii Științifice, Academia Română, București*, 15 (2), 29–43.
- Motaş, C., Tanasachi, J. (1944). Hydracariens des Carpates Roumaines (Massif de Bucegi et Alpes de Transylvanie). *Memoriile Secțiunii Științifice*, 19 (7), 241–256.
- Motaş, C., Tanasachi, J. (1946). Acariens phréaticoles de Transylvanie. *Notat. biolog.*, 4 (1–3), 1–63.
- Motaş, C., Tanasachi, J. (1948a). Diagnoses de trois nouvelles Hydrachnelles phréaticoles de Roumanie. *Ann. scient. Univ. Jassy*, 31, 146–151.
- Motaş, C., Tanasachi, J. (1948b). Espèces nouvelles et connues du genre *Megapus* Neuman (Hydrachnelles) trouvées dans les eaux souterraines. *Ann. scient. Univ. Jassy*, 31, 152–169.

- Motaş, C., Tanasachi, J. (1960). Une nouvelle espèce phréaticole du genre *Atractides* Koch (Acari) recueillie dans la Région autonome Magyare (R. P. Roumaine). *Vestnik Českoslov. Zool., Spol.*, 24 (4), 342–345.
- Motaş, C., Tanasachi, J. (1963). Hydrachnellae freaticae din bazinul Vîrghisului. (Hydrachnellae phréatiques du bassin du Vîrghis Région de Mureş-Autonome Hongroise). *Lucrările Institutului de Speologie «E. Racovitza», 1–2* (1962–1963), 311–340.
- Motaş, C., Tanasachi, J., Orghidan, T. (1946). Un Hydracarien nouveau de la Roumanie: *Frontipodopsis transylvanica* n. sp. *Bull. sect. scient. Acad. Roumaine.*, 29 (1), 29–34.
- Motaş, C., Tanasachi, J., Orghidan, T. (1947a). Un nouveau Hydracarien phréaticole recueilli en Transylvanie. *Bull. sect. scient. Acad. Roumaine*, 29 (5), 303–307.
- Motaş, C., Tanasachi, J., Orghidan, T. (1947b). Diagnoses de quelques nouveaux Hydracariens phréatiques de Roumanie. *Bull. sect. scient. Acad. Roumaine*, 29 (8), 506–512.
- Motaş, C., Tanasachi, J., Orghidan, T. (1947c). Hydracariens phréatiques de Roumanie. *Notat. biolog., Bucureşti*, 5 (1–3), 1–67.
- Motaş, C., Tanasachi, J., Orghidan, T. (1957a). Über einige neue phreatische Hydrachnellae und über Phreatobiologie, ein neues Kapitel der Limnologie. *Abh. naturw. Ver. Bremen*, 35 (1), 101–122.
- Motaş, C., Tanasachi, J., Orghidan, T. (1957b). Sur un hydracarien nouveau de la sous-famille des *Thyasinae* (*Placothyas fibulata* n. g. n. sp.) et sur l'homologie des formations cuticulaires dans ce groupe. *Ark. Zool.*, 2 (11–12), 167–185.
- Motaş, C., Tanasachi, J., Orghidan, T. (1958). Hydrachnelles phréatiques de la R. P. Roumaine. *Vestnik Českoslov. Zool. Spol.*, 22 (4), 293–333.
- Pavelescu, C., Cîmpean, M. (2002–2003). Preliminary study on oligochaetes (Annelida, Oligochaeta) and water mites (Acari, Hydrachnidia) from hyporheic zones of the Crişul Repede River (Romania). *Travaux de l'Institut de Spéologie "É. Racovitza"*, 41–42, 149–158.
- Şoarec, J. (1939). Contribuție la studiul Hidracarienilor din România-Carpații orientali. *Memoriile Secțiunii Științifice, Academia Română* (Seria III) 14, 363–373.
- Tanasachi, J., Orghidan, T. (1955). Hidracarieni orbi din apele freaticae. *Bul. Științ., Sect. Biol., Agronom., Geol., Geogr.*, 7 (2), 369–381.
- Viets, K.O. (1978). Hydracarina. In: Illies, J. (ed.), *Limnofauna Europaea* (pp. 154–181).
- Watermite.org. 2017. European Water mite Research – A website informing on water mite research in Europe. Retrieved from: <http://www.watermite.org>.

**Cite as:** Cîmpean, M., Battes, K.P. (2018). Present status of water mite species (Acari, Hydrachnidia) described by Motaş, Tanasachi and Orghidan from Romania. *Acta Biologica*, 25, 59–68. DOI: 10.18276/ab.2018.25-05.