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Article

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An updated checklist of water mites from Iran, with description of a new species

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Abstract
This paper presents an updated checklist of the water mites of Iran, including detailed data on their occurrence across the provinces. The revised fauna comprises 209 species belonging to 55 genera within 26 families. Compared to the previous checklist published in 2014, 16 species new to science have been described from Iran, including six cryptic species discovered primarily through DNA barcoding. Concurrently, at least 18 species occasionally reported for the fauna of Iran are excluded from the current checklist due to recent taxonomic and molecular revisions, along with the descriptions of new species, indicating they do not occur in the country. Furthermore, one species new to science, *Hygrobates saboori* **n. sp**., is described, and two species are newly recorded for the Iranian water mite fauna: *Mixobates incurvatus* (Láska, 1954) and *Parabrachypoda orientalis* (Pešić & Esen, 2013). By presenting this updated catalogue, this study resolves taxonomic confusion stemming from outdated nomenclature and taxonomic changes over the last decade, providing a crucial baseline to stimulate further research of the water mites in Iran.

Key words Water mites, checklist, diversity, taxonomy, Iran.

Introduction

The last comprehensive checklist of Iranian water mites was published over a decade ago by Pešić *et al*. (2014), documenting 186 species from 43 genera and 25 families. Over the past decade, numerous new water mite species have been discovered and described from the Western Palearctic, including Iran. This progress is largely driven by the integration of DNA barcoding with morphological methods, a method now widely recognized as a powerful tool for uncovering cryptic species (e.g., Pešić *et al.* 2017, 2020). In this way studies have revealed many previously hidden cryptic species within several water mite groups inhabiting the Western Palearctic region. These advancements have facilitated the revalidation of several taxa while clarifying the geographic distribution of known species—particularly those traditionally treated in older literature as widely distributed (e.g., Pešić *et al*. 2019b). Due to these extensive taxonomic revisions, the previous checklist of Iranian water mites is now outdated.

This paper aims to present an updated, comprehensive checklist of the water mites of Iran. It incorporates the significant progress driven by molecular methods over the last decade and addresses the associated taxonomic changes. To eliminate confusion stemming from outdated nomenclature and

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misidentifications, several species are formally excluded from the fauna of Iran. Furthermore, one species new to science and two species newly recorded for the Iranian water mite fauna are published in this paper.

Materials and methods

Water mites were collected using a hand net and immediately preserved in either Koenike's fluid, or in 96% ethanol for the purpose of molecular analyses. The holotype of the new species will be deposited in Naturalis Biodiversity Center in Leiden (RMNH).

Morphological nomenclature follows Gerecke *et al*. (2016). The following abbreviations are used: Ac = acetabula; Cx-I = first coxae; dL = dorsal length; H = height; I-L-4-6 = fourth to sixth segments of first leg; L = length; mL = medial length; P-1–5 = palp segments 1 to 5; W = width.

Checklist

This updated checklist is based on a comprehensive literature review of articles and species descriptions published until 1 September 2026. It follows the baseline established in the previous checklist series published by Pesic & Saboori (2007) and Pešić *et al*. (2014). The higher classification, nomenclature, and taxonomic authorities for the water mites follow Smit (2020). For each species and subspecies, data on their occurrence in Iranian provinces are provided. The Iranian porovinces are abbreviated as follows: Alborz: AL; Ardabil: AR; Bushehr: BU; Chaharmahal and Bakhtiari: CM; East Azerbaijan: EA; Fars: FA; Gilan: GI; Golestan: GO; Hamadan: HA; Hormozgan: HO; Ilam: IL; Isfahan: ES; Kerman: KE; Kermanshah: BK; Khuzestan: KH; Kohgiluyeh and Boyer-Ahmad: KB; Kurdistan: KD; Lorestan: LO; Markazi: MK; Mazandaran: MN; North Khorasan: NK; Qazvin: QA; Qom: QM; Razavi Khorasan: KV; Semnan: SE; Sistan and Baluchestan: SB; South Khorasan: KJ; Tehran: TE; West Azerbaijan: WA; Yazd: YA; Zanjan: ZA.

Results

Description of new species

***Hygrobates saboori* n. sp**.

https://www.zoobank.org/urn:lsid:zoobank.org:act:22F50D85-9858-4FA5-ADEA-14F96968FA60

Figure 1

Type material — Holotype male, Iran, Fars Province, Esthabanat city, Runiz district, W of Mah Mahfarkhdan village, Mahfarkhdan Head Spring, 29.ix.2007, leg. Bayat, dissected and slide mounted (RMNH).

Diagnosis (Female unknown) — Integument lineated. Anterior margin of genital plate with a small knob-shaped median tip projecting in a deep indentation, genital acetabula small in size, L Ac-1-3 < 100 µm. Ventral margin of P-2 distally forming an obtuse angle, not protruding or forming a projection.

Description. *Male* — Integument lineated. Posteromedial margin of Cx-I triangular (Figure 1A), Cx-IV medial margin nose-like protruding. Anterior margin of genital plate with a small knob-shaped median tip projecting in a deep indentation posterior indentation deep with knob-shaped posteromedial projection (Figure 1B); acetabula arranged in an obtuse triangle. Excretory pore unsclerotized. P-2 ventral margin slightly concave, distally forming an obtuse angle; denticles covering the distal one-third of the ventral margin of P-2 and the distal two-thirds of the ventral margin of P-3; P-4 ventral setae in distal part, close to each other, separation 10 µm.

Measurements — Idiosoma L 1000; coxal field: L 544; Cx-III 662; mL of Cx-I + gnathosoma L 409; distance between lateralmost ends of caudo-lateral Cx-II apodemes, 162. Genital field L/W 225/300, ratio, L Ac-1-3: 69-73, 69-78, 88-92. Palp: total L 593; dL/H: P-1, 42/59; P-2, 163/106; P-3,

109/91; P-4, 213/56; P-5, 66/25; L P-2/P-4 ratio 0.77. Chelicera total L 423, L basal segment 284, L claw 153. Legs: dL of I-L-2-5: 122, 159, 222, 238, 238. dL of IV-L: 171, 175, 269, 370, 371, 331.

Female — unknown.

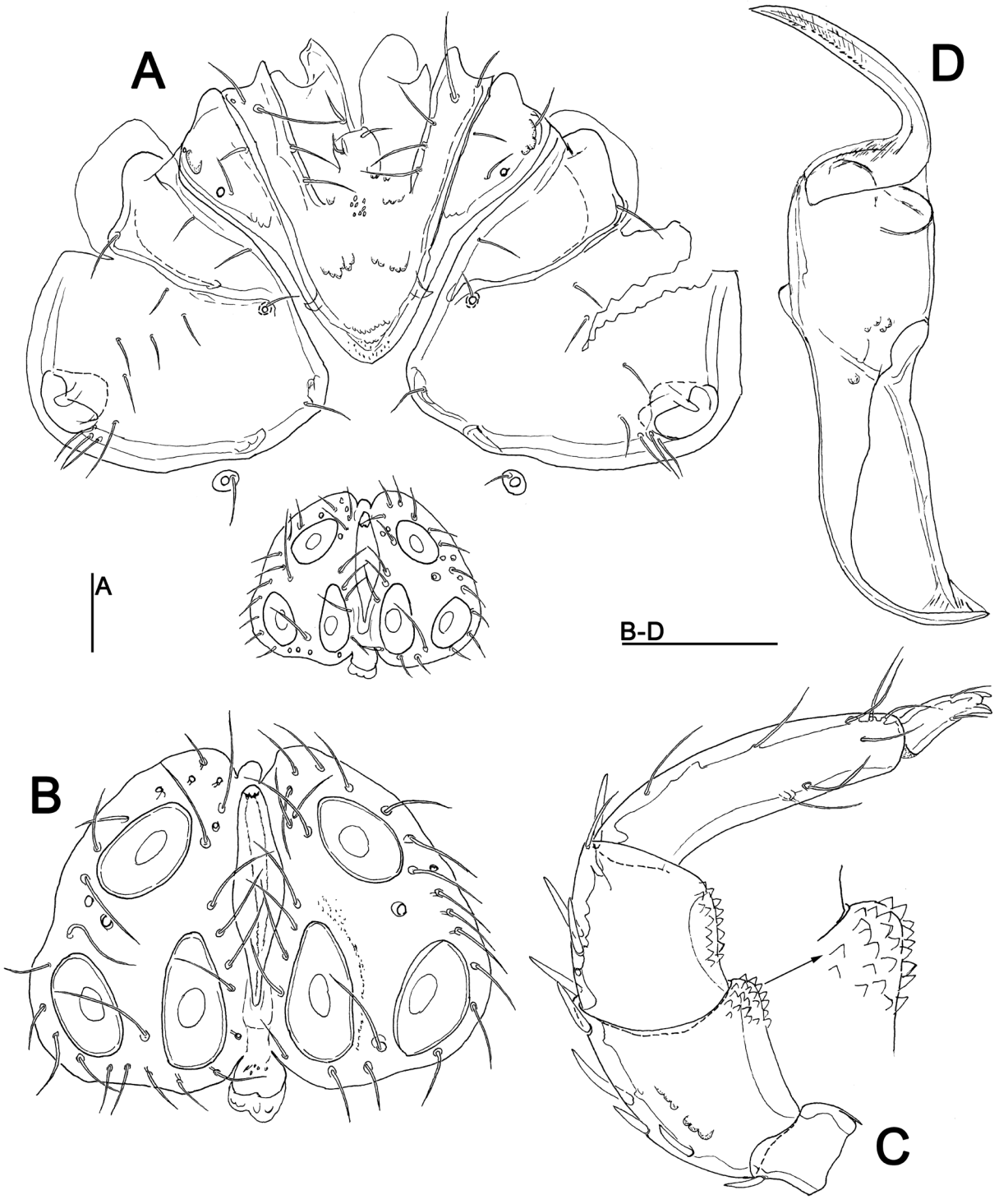


Figure 1. *Hygrobates saboori* **n**. **sp**., ♂ holotype, Mahfarkhdan, Iran: A – coxal and genital field; B – genital field; C – palp (inset: ventrodistal angle of P-2 enlarged at 2x); D – chelicera. Scale bars = 100 μm.

Etymology — The new species is named in honour of my friend and colleague, Prof. Alireza Saboori (Tehran, Iran), in sincere appreciation of his outstanding contributions to the study of Iranian mites and his continuous support of my research on water mites for more than two decades.

Discussion — In regard to the presence of a lineated integument and the shape of the palp—characterized by a straight or slightly concave ventral margin of P-2 that distally forms a right or obtuse angle without distinctly protruding, the new species resembles *Hygrobates anatolicus* Esen & Pešić, 2013, a species known from Anatolia (Esen *et al*. 2013). However, *H. anatolicus* can be easily distinguished from the new species by possessing a small, knob-shaped medial projection that distinctly extends beyond the anterior margin of the male genital plate. Furthermore, it exhibits larger acetabula (L Ac-1–3 > 100 μm) that occupy most of the genital plate surface, and denticles covering two-thirds of the ventral margin of P-2 (see Esen *et al*. 2013).

Distribution — Iran, only know from the type locality.

New Records for Iran

***Mixobates incurvatus* (Láska, 1954)**
Material examined — Iran, Mazandaran Province, Tilikenar, ca. 25 km from Chalus, Warabon, stream in forest (approximately 36.658478° N, 51.202493° E), 17.ix.2005 leg. Pešić, 2♀, 1♀ dissected and slide mounted.
Distribution — Central and Southern Europe, Türkiye.

***Parabrachypoda orientalis* (Pešić & Esen, 2013)**
Material examined — Iran, Golestan Province: Shirabad near Khanbebin, 36.967499º N, 55.027779º E, stream, downstream near the bridge, stream, 27. viii. 2018, leg. Pešić, 1♂, dissected and slide mounted; Aliabad-e Katul, Kaboud-val Waterfall (approximately 36.8755° N, 54.8871° E), 20.viii.2009, 1♂, 1♀, in Koenike fluid.
Distribution — Türkiye, Caucasus.

Checklist of water mites of Iran

The checklist of water mites of Iran is given in Table 2, with annotations to the updated checklist provided in Table 3.

Table 2. Updated checklist of the water mites of Iran. Endemic (End.) species or subspecies are marked with a plus sign (+). Distribution data are given for each Iranian province, alongside references for all records published in the literature. Numbers in the "Notes" column correspond to the detailed annotations provided in Table 3. n/a – not applicable.

	Species	End.	Distribution	References	Notes
Superfamily Stygothrombioidea Thor, 1935					
Family Stygothrombiidae Thor, 1935					
1.	*Stygothrombium* sp.		TE	Pesic *et al*. (2006c)	1
Superfamily Hydrovolzioidea Thor, 1905.					
Family Hydrovolziidae Thor, 1905					
2.	*Bharatavolzia cooki* Schwoerbel & Sepasgosarian, 1980	+	FA	Schwoerbel & Sepasgosarian (1980)	
3.	*Hydrovolzia persica* Bader & Sepasgozarian, 1979	+	MN, TE, FA	Bader & Sepasgozarian (1979)	2
Superfamily Eylaoidea Leach, 1816					
Family Eylaidae Leach, 1815					
4.	*Eylais degenerata* Koenike, 1897		GI	Pesic *et al*. (2007)	
5..	*Eylais extendens* (Müller, 1776)		CM, NK, KV	Sepasgosarian (1999)	
6.	*Eylais hamata* Koenike, 1897		CM, NK, KV	Sepasgosarian (1999)	
7.	*Eylais planipons* Walter, 1924		KE	Asadi *et al*. (2003a); Asadi (2010)	

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	Species	End.	Distribution	References	Notes
Family Limnocharidae Grube, 1859					
8.	*Limnochares crinita* Koenike, 1898		MN	Pešić *et al*. (2004b)	
Superfamily Hydrachnoidea Leach, 1815					
Family Hydrachnidae Leach, 1815					
9.	*Hydrachna cruenta* Müller, 1776		WA, EA, GI	Sepasgosarian (1999)	
10.	*Hydrachna globosa lacerata* Lundblad, 1969		SB	Pešić *et al*. (2012)	
11.	*Hydrachna sepasgozariani* Bader, 1981	+	WA	Bader (1981)	
12.	*Hydrachna sistanica* Pešić, Smit & Saboori, 2012	+	SB	Pešić *et al*. (2012)	
13.	*Hydrachna skorikowi* Piersig, 1900		ES, NK	Pešić *et al*. (2004b, 2023b)	3
14.	*Hydrachna* cf. *vaillanti* K. Viets, 1951		SB	Pešić *et al*. (2012)	
Superfamily Hydryphantoidea Piersig, 1896					
Family Hydrodromidae K. Viets, 1936					
15.	*Hydrodroma despiciens* (Müller, 1776)		GI, MN, BK	Schwoerbel & Sepasgosarian (1978); Pešić *et al*. (2004b, 2008)	
16.	*Hydrodroma pilosa* Besseling, 1940		MN	Pesic *et al*. (2003)	
17.	*Hydrodroma persica* Pešić & Saboori, 2012		FA	Pešić & Saboori (2012)	
18.	*Hydrodroma rheophila* Cook, 1967		MK, FA, KE BK, HO	Schwoerbel & Sepasgosarian 1978; Pesic *et al*. (2003); Pesic & Saboori 2007; Pešić *et al*. (2004b, 2008; 2012); Asadi (2010)	
19.	*Hydrodroma reinhardi* Pesic, 2002		TE	Pesic *et al*. (2003)	
20.	*Hydrodroma torrenticola golestanica* Pešić, Zawal, Saboori & Smit, 2021 Syn. *H. golestanica* Pešić, Zawal, Saboori & Smit, 2021	+	GO	Pešić *et al*. (2021a)	4
Family Hydryphantidae Piersig, 1896					
21.	*Diplodontus silvestrii* (Daday, 1898)		SB	Pešić *et al*. (2012)	
22.	*Diplodontus semiperforatus* (Walter, 1925)		NK	Pešić *et al*. (2023b)	
23.	*Georgella helvetica* (Haller, 1882) syn. *Hydryphantes helveticus* Haller, 1882		GI, BK, NK, KV	"*Hydryphantes helveticus*" Sepasgosarian (1999)	
24.	*Panisus michaeli* Koenike, 1896		n/a	Pesic *et al*. (2005a)	
25.	*Panisus torrenticolus* Piersig, 1898		MN	Pesic *et al*. (2005a)	
26.	*Tadjikothyas connexa* Sokolow, 1948		MN	Pesic *et al*. (2005a)	
27.	*Trichothyas alborzensis* Bader & Sepasgozarian, 1979	+	MN, TE	Bader & Sepasgozarian (1979b); Sepasgosarian (1999); "*T. petrophila*" Pesic *et al*. (2005a)	5
28.	*Iranothyas circularis* (Schwoerbel & Sepasgozarian, 1976) Syn. *Panisopsis circularis* Schwoerbel & Sepasgozarian, 1976	+	ES, MN, FA	Schwoerbel & Sepasgozarian (1976); Sepasgosarian (1999); Pesic *et al*. (2009)	
29.	*Protzia alborziensis* Bader & Sepasgozarian, 1980	+	MN, TE	Bader & Sepasgozarian (1980); Pesic (2005)	
30.	*Protzia cabardinica* (Sokolow, 1940)		HA, LO, YA, MN	"*P. rotunda*" Pesic (2005); Pešić *et al*. (2021b)	6
31.	*Protzia halberti* (Walter, 1920)		MN	Pesic (2005)	
32.	*Protzia iranica* Pešić & Smit, 2021	+	YA	Pešić *et al*. (2021b)	7

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	Species	End.	Distribution	References	Notes
33.	*Protzia persica* Bader & Sepasgozarian, 1980	+	FA, KE	Bader & Sepasgozarian (1980); Pesic (2005); Asadi (2010)	
34.	*Protzia sepasgosariani* Pesic & Saboori, 2006	+	KJ	Pesic *et al*. (2006a)	
35.	*Protzia zagrosiensis* Bader & Sepasgozarian, 1980	+	HA, CM, MN, ES	Bader & Sepasgozarian (1980); Pesic (2005); Pesic *et al*. (2005b)	
Superfamily Lebertioidea Thor, 1900					
Family Anisitsiellidae Koenike, 1910					
36.	*Nilotonia* (*Dartia*) *boettgeri* Bader & Sepasgozarian, 1980	+	EA	Bader & Sepasgozarian (1980b)	
37.	*Nilotonia* (*Dartia*) *iranica* Pesic, 2005	+	MN	Pesic *et al*. (2005a); Pešić *et al*. (2022a)	
38.	*Nilotonia* (*Dartia*) *vietsi* Bader & Sepasgozarian, 1980		LO	Bader & Sepasgozarian (1980b)	
39.	*Nilotonia* (*Dartonia*) *hormozgana* Pešić, Smit & Saboori, 2012		HO	Pešić *et al*. (2012)	
40.	*Nilotonia* (*Dartonia*) *pinnata* Guo, Jin & Asadi, 2006	+	KE	Guo *et al*. (2006); Asadi (2010)	
41.	*Nilotonia* (*Dartonia*) *rackae* Bader & Sepasgozarian, 1980	+	KV	Bader & Sepasgozarian (1980b)	
42.	*Nilotonia* (*Tadjikodartia*) *emarginata* (Sokolow, 1948) Syn. *N. schwoerbeli* Bader & Sepasgozarian, 1979		MN	Bader & Sepasgozarian (1979c); Panesar (2004)	
43.	*Nilotonia* (*Manotonia*) *persica* Pesic & Saboori, 2006		YA, KE, SB	Pesic & Saboori (2006); Pešić & Vafaei (2009); Asadi (2010)	
Family Lebertiidae Thor, 1900					
44.	*Lebertia* (*Pilolebertia*) *inaequalis* (Koch, 1837)		MN, MK GI, BK	Pesic & Saboori (2007); Pesic *et al*. (2007): Pešić *et al*. (2008)	8
45.	*Lebertia* (*Pilolebertia*) *porosa* Thor, 1900		TE, MK, GI, BK	Pesic & Saboori (2007); Pesic *et al*. (2007): Pešić *et al*. (2008)	9
46.	*Lebertia* (*Lebertia*) *abseta* Guo, Jin & Asadi, 2006 Syn. *L.* (*Pseudolebertia*) *abseta* Guo, Jin & Asadi, 2006	+	KE	Guo *et al*. (2006); Asadi (2010).	
47.	*Lebertia* (*Lebertia*) *glabra* Thor, 1897 Syn. *L.* (*Pseudolebertia*) *glabra* Thor, 1897		TE, KE, MN, CM, HA, BK, LO, NK, KV, EA, WA	Sepasgosarian (1999); Asadi (2010)	
Family Sperchontidae Thor, 1900					
48.	*Sperchon* (*Sperchon*) *afzalipouri* Bader & Sepasgozarian, 1980	+	SE, MN	Bader & Sepasgozarian (1980a); Pesic & Saboori (2007)	
49.	*Sperchon* (*Sperchon*) *fundamentalis* Bader & Sepasgosarian, 1980		TE, MN, KE	Bader & Sepasgosarian (1980c) Asadi *et al*. (2003a); Pešić *et al*. (2004b)	10
50.	*Sperchon* (*Hispidosperchon*) *amuzgari* Bader & Sepasgosarian, 1979		KE, ES, YA, HA, MN, GO	Bader & Sepasgosarian (1979d); Pešić *et al*. (2004b, 2021a, 2023a)	11
51.	*Sperchon* (*Hispidosperchon*) *beckeri* Bader & Sepasgosarian, 1984		TE, MN	Bader & Sepasgosarian (1984); Pešić *et al*. (2004b)	

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	Species	End.	Distribution	References	Notes
52.	*Sperchon* (*Hispidosperchon*) *beneckei* Bader & Sepasgosarian, 1980	+	TE, MN	Bader & Sepasgosarian (1982); Pešić *et al*. (2022a)	12
53.	*Sperchon* (*Hispidosperchon*) *compactilis* Koenike, 1911		FA	Pešić *et al*. (2004b, 2021a)	
54.	*Sperchon* (*Hispidosperchon) khayyami* Pesic, 2004	+	FA	Pešić *et al*. (2004b)	
55.	*Sperchon* (*Hispidosperchon*) *papillosus* Thor, 1901 Syn. *S. bispinosus* Bader & Sepasgosarian, 1982		LO, MN, MK, KE, TE, YA, HA, KV, NK, GO	"*S. bispinosus*" Bader & Sepasgosarian (1982); "*S. bispinosus*" Pešić *et al*. (2004b), Pesic *et al.* (2007); Pesic *et al*. (2004b, 2005b), Pesic & Saboori (2007); Pešić *et al*. (2008, 2021a, 2023a)	13
56.	*Sperchon* (*Hispidosperchon*) *rostratus* Lundblad, 1969		GO	Pešić & Vafaei (2009)	
57.	*Sperchon* (*Hispidosperchon*) cf. *senguni* Özkan, 1982		MN	Pešić & Smit (2011)	
58.	*Sperchon* (*Hispidosperchon*) *setiger* Thor, 1898		KE, ES, FA	Pešić *et al*. (2004b); Asadi (2010)	14
59.	*Sperchon* (*Hispidosperchon*) *tarnogradskii* Sokolow, 1927		KV	Pesic *et al*. (2006a)	
60.	*Sperchonopsis verrucosa* (Protz, 1896)		LO, ES, BK	Pesic & Saboori (2007); Pešić *et al*. (2004b, 2008)	
Family Torrenticolidae Piersig, 1902					
61.	*Monatractides* (*Monatractides*) *aberratus* (Lundblad, 1941)		BK	Pešić *et al*. (2008)	
62.	*Monatractides* (*Monatractides*) cf. *algeriensis* (Lundblad, 1941)		KE	Pesic & Saboori (2004); Asadi (2010)	
63.	*Monatractides* (*Monatractides*) *diplosetus* (Guo, Jin & Asadi, 2006) Syn. *Torrenticola* (*Monatractides*) *diploseta*	+	KE	Guo *et al*. (2006)	
64.	*Monatractides* (*Monatractides*) *kermanshahus* Pešić, Arman, Vafaei & Saboori, 2008		BK, HO	Pešić *et al*. (2008, 2012)	
65.	*Monatractides* (*Monatractides*) *martini* Pešić, Smit & Saboori, 2012	+	HO, SB	Pešić *et al*. (2012)	
66.	*Monatractides* (*Monatractides*) *persicus* Pesic, 2004		TE, MN	Pesic & Saboori (2004); Pešić *et al*. (2021a); "*M. stadleri*" Asadi *et al*. (2010)	15
67.	*Monatractides* (*Monatractides*) *sepasi* (Bader, 1988)	+	MN	Bader (1988); "*M. lusitanicus*" Asadi *et al*. (2010)	16
68.	*Monatractides* (*Monatractides*) *vafaei* Pesic, 2004		TE, MK, BK	Pesic & Saboori (2004); Pesic *et al.* (2005b); Pešić *et al*. (2008)	
69.	*Neoatractides* (*Allotorrenticola*) *calidus* Pešić, Smit & Saboori, 2012	+	HO	Pešić *et al*. (2012)	
70.	*Torrenticola* (*Megapalpis*) *asadiae* Pešić, Smit & Saboori, 2012	+	HO, KH	Pešić *et al*. (2012, 2019a)	
71.	*Torrenticola* (*Megapalpis*) *jasminae* Bader, 1988		MN, KE, HA BK	Bader (1988); Pesic *et al*. (2004c, 2005b, 2006b); Pešić *et al*. (2008); Asadi (2010)	

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	Species	End.	Distribution	References	Notes
72.	*Torrenticola* (*Megapalpis*) *khorasanula* Pesic & Saboori, 2006	+	KJ	Pesic *et al*. (2006b)	
73.	*Torrenticola* (*Megapalpis*) *persica* Pesic, 2004		TE	Pesic *et al*. (2004c)	
74.	*Torrenticola* (*Megapalpis*) *thori* (Halbert, 1944)		TE	Pesic *et al*. (2006b)	
75.	*Torrenticola* (*Torrenticola*) *anomala* (Koch, 1837)		LO	Pesic (2004b)	
76.	*Torrenticola* (*Torrenticola*) *amplexa* (Koenike, 1908)		BK	Pesic *et al*. (2006b); Pešić *et al*. (2008)	
77.	*Torrenticola* (*Torrenticola*) *brevirostris* (Halbert, 1911)		MN, TE, BK	Pesic *et al*. (2006b, 2007); Pešić *et al*. (2008)	
78.	*Torrenticola* (*Torrenticola*) *baueri* Bader & Sepasgozarian, 1987		TE, GO, KV	Bader & Sepasgozarian (1987); Pešić *et al*. (2021a, 2023a); "*T. barsica*" Asadi *et al*. (2010), "*T. barsica*" Pesic *et al*. (2006b, 2007)	17
79.	*Torrenticola* (*Torrenticola*) *disabatinola* Pesic, 2024		MN	Pesic *et al*. (2004c)	
80.	*Torrenticola* (*Torrenticola*) *dowlingi* Pešić, 2020		AL	Pešić *et al*. (2020)	
81.	*Torrenticola* (*Torrenticola*) *hormozganensis* Pešić, Smit & Saboori, 2012	+	HO	Pešić *et al*. (2012)	
82.	*Torrenticola* (*Torrenticola*) *irana* Pesic & Saboori, 2006	+	KJ	Pesic *et al*. (2006b)	
83.	*Torrenticola* (*Torrenticola*) *khuzestanica* Pešić, Asadi, Etemadi & Smit, 2019	+	KH	Pešić *et al*. (2019a)	
84.	*Torrenticola* (*Torrenticola*) *nana* Di Sabatino & Gerecke, 2003		BK, KE	Pesic *et al*. (2006b); Pešić *et al*. (2008); Asadi (2010)	
85.	*Torrenticola* (*Torrenticola*) *neoungeri* Pešić, Asadi, Etemadi & Smit, 2019	+	KH	Pešić *et al*. (2019a)	
86.	*Torrenticola* (*Torrenticola*) *saboori* Pesic & Asadi, 2002	+	KE, CM	Pesic & Asadi (2002); Pesic *et al*. (2004c, 2005b); Asadi (2010)	
87.	*Torrenticola* (*Torrenticola*) *ramini* Bader, 1988	+	MN, GO	Bader (1988); Pešić *et al*. (2023a)	
88.	*Torrenticola* (*Torrenticola*) *wiljae* Bader, 1988	+	MN	Bader (1988)	
89.	*Torrenticola* (*Torrenticola*) *ungeri* (Szalay, 1927)		LO, MN, GI, BK	Pesic (2004b); Pesic *et al*. (2006b, 2007); Pešić *et al*. (2008)	
Superfamily Hygrobatoidea Koch, 1842					
Family Aturidae Thor, 1900					
90.	*Albia* (*Albia*) *stationis* Thon, 1899		LO	Pesic (2004b)	
91.	*Albia* (*Dentalbia*) *hyporheica* Pešić, Smit & Saboori, 2012	+	HO	Pešić *et al*. (2012)	
92.	*Aturus barbatulus* K. Viets, 1936		LO, KE	Pesic (2004b); Asadi (2010)	
93.	*Aturus intermedius* Protz, 1900		GO	Pesic *et al*. (2007)	
94.	*Axonopsis* (*Axonopsis*) *hyporheica* Pešić, Smit & Saboori, 2012	+	HO	Pešić *et al*. (2012)	
95.	*Brachypodopsis gereckei* (Pesic, 2004) Syn. *Axonopsis* (*Brachypodopsis*) *gereckei* Pesic, 2004	+	FA	Pesic (2004b)	

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	Species	End.	Distribution	References	Notes
96.	*Brachypodopsis interstitialis* (Pešić, Smit & Saboori, 2012) Syn. *Axonopsis* (*Brachypodopsis*) *interstitialis* Pešić, Smit & Saboori, 2012	+	HO	Pešić *et al*. (2012)	
97.	*Erebaxonopsis brevipes* Motaş & Tanasachi, 1947		FA	Schwoerbel & Sepasgosarian (1980)	
98.	*Haloaxonopsis salina* Pešić, Smit & Saboori, 2012	+	HO, SB	Pešić *et al*. (2012)	
99.	*Hexaxonopsis gloeeri* (Pešić, Smit & Saboori, 2012) Syn. *Axonopsis* (*Hexaxonopsis*) *gloeeri* Pešić, Smit & Saboori, 2012	+	HO, KH	Pešić *et al*. (2012, 2019a)	
100.	*Hexaxonopsis kermanica* (Pešić & Asadi, 2010) Syn. *Axonopsis* (*Hexaxonopsis*) *kermanica* Pešić & Asadi, 2010	+	KE, HO, SB, KH	"*Axonopsis iranica*" Asadi *et al*. (2010), Pešić & Asadi (2010); Pešić *et al*. (2012, 2019a)	
101.	*Hexaxonopsis manoojani* (Pešić & Asadi, 2010) Syn. *Axonopsis* (*Hexaxonopsis*) *manoojani* Pešić & Asadi, 2010	+	KE, HO	Asadi *et al*. (2010); Pešić *et al*. (2012)	
102.	*Javalbia* (*Javalbiopsis*) *persica* Pešić, Smit & Saboori, 2012	+	HO, SB	Pešić *et al*. (2012)	
103.	*Kongsbergia* (*Kongsbergia*) *pectinigera* Motaş & Tanasachi, 1946		MN	Pesic *et al*. (2006c)	
104.	*Kongsbergia* (*Kongsbergia*) *persica* Pesic, 2005		TE	Pesic *et al*. (2005b)	
105.	*Ljania macilenta* Koenike, 1908		MN	Pesic *et al*. (2006c)	
106.	*Parabrachypoda orientalis* (Pešić & Esen, 2013)		GO	This study	
107.	*Navinaxonopsis persica* Pesic, 2004 Syn. *Axonopsis* (*Navinaxonopsis*) *persica* Pesic, 2004		BK	Pesic (2004a)	
108.	*Vicinaxonopsis caspica* (Pesic & Saboori, 2006) Syn. *Axonopsis* (*Vicinaxonopsis*) *caspica* Pesic & Saboori, 2006	+	MN	Pesic *et al*. (2006c)	
109.	*Vicinaxonopsis iranica* (Pešić, Jabaleh & Saboori, 2009) Syn. *Axonopsis* (*Vicinaxonopsis*) *iranica* Pešić, Jabaleh & Saboori, 2009		GO	Pešić *et al*. (2009)	18
Family Feltriidae K. Viets, 1926					
110.	*Feltria* cf. *conjuncta* K.O.Viets, 1955		LA	Pesic *et al*. (2005a)	
111.	*Feltria sepasgozariani* Bader, 1976	+	TE	Bader (1976)	
Family Frontipodopsidae K. Viets, 1931					
112.	*Frontipodopsis* (*Frontipodopsella*) cf. *reticulatifrons* Szalay, 1945		HO	Pešić *et al*. (2012)	
113.	*Frontipodopsis* (*Frontipodopsella*) *reticulatifrons persicus* Schwoerbel & Sepasgosarian, 1980	+	FA	Schwoerbel & Sepasgosarian (1980)	19
Family Hygrobatidae Koch					
114.	*Atractides (Atractides) bakhtiari* Pešić, Asadi & Saboori, 2016	+	CM, NK	"*A. fluviatilis*" Pesic *et al*. (2004a), Pešić *et al*. (2008); Pešić *et al*. (2016, 2021c)	20

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	Species	End.	Distribution	References	Notes
115.	*Atractides* (*Atractides*) *balneatoris* Pesic & Saboori, 2007 Syn. *Atractides baderi* Schwoerbel & Sepasgozarian, 1976	+	ES, TE	Schwoerbel & Sepasgozarian (1976); Pesic & Saboori (2007)	
116.	*Atractides* (*Atractides*) *biscutatus* Cook, 1967		SB	Pešić *et al*. (2012)	
117.	*Atractides* (*Atractides*) *caspicus* Pešić, Dinipour, Vafaei & Saboori, 2007	+	GI	Pesic *et al*. (2007)	
118.	*Atractides* (*Atractides*) cf. *denticulatus* (Walter, 1947)		KE	Pesic *et al*. (2005b)	
119.	*Atractides* (*Atractides*) *elburzensis* Pešić, Smit & Saboori, 2014	+	MN	Pešić *et al*. (2014, 2021c)	
120.	*Atractides* (*Atractides*) *farsensis* Pešić, Asadi & Saboori, 2016	+	FA	Pešić *et al*. (2016)	
121.	*Atractides* (*Atractides*) *gereckei* Pesic, 2004	+	KE	Pesic *et al*. (2004b); Asadi (2010)	
122.	*Atractides* (*Atractides*) *gorgani* Pešić, Jabaleh & Saboori, 2009	+	GO	Pešić *et al*. (2009)	
123.	*Atractides* (*Atractides*) *hormozganus* Pešić, Smit & Saboori, 2012	+	HO, SB	Pešić *et al*. (2012)	
124.	*Atractides* (*Atractides*) *hyrcaniensis* Pešić, Jabaleh & Saboori, 2009	+	GO	Pešić *et al*. (2009, 2022a)	
125.	*Atractides* (*Atractides*) *inflatus* (Walter, 1925)		GI, ES, MK, KV	Pesic *et al*. (2004a, 2005b, 2006a, 2007)	
126.	*Atractides* (*Atractides*) *iranicus* Pesic & Asadi, 2002	+	KE	Pesic & Asadi (2002); Pesic *et al*. (2004a); Asadi (2010)	
127.	*Atractides* (*Atractides*) *khuzestanicus* Pešić, Asadi, Etemadi & Smit, 2019	+	KH	Pešić *et al*. (2019a)	
128.	*Atractides* (*Atractides*) *kljajici* Pešić, Asadi & Saboori, 2016	+	KE	Pešić *et al*. (2016)	
129.	*Atractides* (*Atractides*) *markaziensis* Pesic, 2004	+	MK, ES	Pesic *et al*. (2004b)	
130.	*Atractides* (*Atractides*) *mossahebii* Pesic, 2004	+	YA, FA, KE, MN	Asadi *et al*. (2003b); Pesic *et al*. (2004a); Asadi (2010); Pešić *et al*. (2022a).	
131.	*Atractides* (*Atractides*) *mirkopesici* Pesic, 2004	+	KE, YA, KJ, SB	Pesic *et al*. (2004a, 2005b, 2006a); Pešić & Vafaei (2009); Asadi 2010	
132.	*Atractides* (*Atractides*) *nahavandii* Schwoerbel & Sepasgozarian, 1976		MN, GO, KV	Schwoerbel & Sepasgozarian (1976); Pesic *et al*. (2004b); Pešić & Vafaei (2009); Pešić *et al*. (2014, 2022a)	
133.	*Atractides* (*Atractides*) *nodipalpis* Thor, 1899 - complex		GI, LO, CM, BK	Pesic *et al*. (2004a); Pesic & Saboori (2007); Pešić *et al*. (2016)	21
134.	*Atractides* (*Atractides*) *nikooae* Pesic, 2004		MK	Pesic *et al*. (2004a)	
135.	*Atractides* (*Atractides*) *kermanensis* Pesic, 2005	+	KE, KJ	Pesic *et al*. (2005c, 2006a); Asadi (2010)	
136.	*Atractides (Atractides) robustus* (Sokolow, 1940)		MN, TE, KE, YA, KV, KJ	Pesic *et al*. (2004a, 2006a); Asadi (2010); Pešić *et al*. (2022a)	

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	Species	End.	Distribution	References	Notes
137.	*Atractides (Atractides) zagrosensis* Pešić, Asadi & Saboori, 2016		CM, KV	"*A.* cf. *lunipes*" Pesic *et al*. (2004a, 2007), Pešić *et al*. (2008); Pešić *et al*. (2016, 2023a)	22
138.	*Atractides* (*Atractides*) *yazdensis* Pešić, Smit & Saboori, 2021	+	YA	"*A. gibberipalpis*" Pešić *et al*. (2004b); Pešić *et al*. (2021c)	23
139.	*Atractides* (*Tympanomegapus*) *acutirostris* (Motaş & C. Angelier, 1927)		GI, MN, ES, BK, FA, KE	Pesic *et al.* (2004b, 2007), Pešić *et al*. (2008); Asadi 2010	
140.	*Atractides* (*Tympanomegapus*) *omanensis* Smit & Pešić, 2010		KE	Pešić *et al*. (2011)	
141.	*Atractides* (*Polymegapus*) *persicus* Pešić & Asadi, 2010		KE	Asadi *et al*. (2010)	
142.	*Atractides* (*Polymegapus*) cf. *polyporus* (K. Viets, 1922)		KJ	Pesic *et al*. (2006a)	
143.	*Hygrobates* (*Hygrobates*) *angustipalpis* K. O. Viets, 1982		GI, TE, MK, GO, NK	Pesic *et al*. (2004b, 2007), Pešić *et al*. (2023a)	
144.	*Hygrobates* (*Hygrobates*) *bucharicus* Sokolow, 1928		GI, MK, LO, KV	Pesic (2004b); Pesic *et al*. (2006a); Pesic *et al*. (2007)	
145.	*Hygrobates* (*Hygrobates*) *calliger* Piersig, 1896 - complex		MN, BK, KE	Pesic *et al*. (2004b, 2005b); Pešić *et al*. (2008); Asadi (2010)	24
146.	*Hygrobates* (*Hygrobates*) *grabowskii* Pešić, Saboori, Zawal & Dabert, 2019	+	GO	Pešić *et al*. (2019c)	
147.	*Hygrobates* (*Hygrobates*) *longiporus* Thor, 1898 - complex		LO, ES	Pešić *et al*. (2004b); Pesic & Saboori (2007)	25
148.	*Hygrobates* (*Hygrobates*) *persicus* Pešić & Asadi, 2017		BK, CM, KE, YA, ZE, ES, MK, MN, HA, FA, LO, GO, NK	Pešić *et al*. (2017)	26
149.	*Hygrobates* (*Hygrobates*) *setosus* Besseling, 1942 - complex		GI, MK	Pešić *et al*. (2004b); Pesic *et al*. (2007)	27
150.	*Hygrobates* (*Hygrobates*) *saboori* **n. sp**.	+		This study	
151.	*Hygrobates* (*Hygrobates*) *thori* Pešić & Smit, 2022		GO	Pešić *et al*. (2022a)	25
152.	*Hygrobates* (*Hygrobates*) *trigonicus* Koenike, 1895 - complex		YA	Pesic & Saboori (2007)	28
153.	*Hygrobates* (*Hygrobates*) *ulii* Pešić, Saboori, Zawal & Dabert, 2019	+	GO	Pešić *et al*. (2019c)	
154.	*Hygrobates* (*Rivobates*) *quanaticola* Schwoerbel & Sepasgozarian, 1976		WA, CM	Schwoerbel & Sepasgozarian (1976); Moradifaradonbeh *et al*. (2015)	
155.	*Iranobates hesabii* Pešić, Smit & Asadi, 2011	+	KE, HO	Pešić *et al*. (2011, 2012)	
156.	*Mixobates incurvatus* (Láska, 1954)		MN	This study	
Family Limnesiidae Thor, 1900					
157.	*Limnesia* (*Halolimnesia*) *diversipes* Pešić, Smit & Saboori, 2012	+	HO	Pešić *et al*. (2012)	
158.	*Limnesia* (*Limnesia*) *fulgida* Koch, 1836		GI, BK	Pesic & Saboori (2007); Pešić *et al*. (2008)	
159.	*Limnesia* (*Limnesia*) *kochi* Smit & Pešić, 2010		KE, HO	Asadi *et al*. (2010); Pešić *et al*. (2012)	

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	Species	End.	Distribution	References	Notes
160.	*Limnesia* (*Limnesia*) *undulatoides* Davids, 1997		HA	Pešić *et al*. (2004b)	
161.	*Limnesia* (*Limnesia*) *walteri* Migot, 1926		LO, GI, BK	Pesic & Saboori (2007); Pesic *et al*. (2007); Pešić *et al*. (2008)	
162.	*Limnesia* (*Tetralimnesia*) *pinguipalpis* Cook, 1967		KE, HO, SB	Pešić *et al*. (2011); Pešić *et al*. (2012)	
Family Pionidae Thor, 1900					
163.	*Forelia* (*Forelia*) *variegator* (Koch, 1837)		HA, BK, KE	Pešić *et al*. (2004b, 2008); Asadi (2010)	
164.	*Piona alpicola* (Neuman, 1880)		AL	Pešić *et al*. (2022a)	
165.	*Piona damkoehleri* K. Viets, 1930		MN	Pesic & Saboori (2007)	
166.	*Piona pusilla* (Neuman, 1875)		MN, BK	Pešić *et al*. (2004b, 2008)	
167.	*Pionopsis* sp.		MN	Pešić *et al*. (2022a)	29
Family Pontarachnidae					
168.	*Pontarachna persiangulfia* Asadi, Smit & Pešić, 2019	+	HP	Asadi *et al*. (2019)	
Family Unionicolidae Oudemans, 1909					
169.	*Neumania* (*Neumania*) *indentata* Smit & Pešić, 2010		KE	Pešić *et al*. (2011)	
170.	*Neumania* (*Neumania*) *maharashtris* Cook, 1967		KE, HO, SB	Pešić *et al*. (2011, 2012)	
171.	*Neumania* (*Neumania*) *phreaticola* Motaş & Tanasachi		MK	Pesic *et al*. (2005b)	
172.	*Unionicola crassipes* (Müller, 1776)		KD, MN, BK	Hevers (1984); Pesic *et al*. (2004a); Pešić *et al*. (2008)	
173.	*Unionicola gilani* Hevers, 1984	+	GI	Hevers (1984)	
174.	*Unionicola hankoi* Szalay, 1927		LO	Pešić & Vafaei (2009)	
175.	*Unionicola miyazakii* Imamura, 1953		KD, BK	Hevers (1984)	30
Family Lethaxonidae Cook, Smith & Harvey, 2000					
176.	*Lethaxona* (*Lethaxona*) *pygmaea* K.Viets, 1932		CM	Pesic *et al*. (2005b)	
Superfamily Arrenuroidea Thor, 1900					
Family Arrenuridae Thor, 1900					
177.	*Arrenurus* (*Arrenurus*) *affinis* Koenike, 1887		EA	Schwoerbel & Sepasgosarian (1977)	
178.	*Arrenurus* (*Arrenurus*) *albator* (Müller, 1776)		MK	Smit & Pesic (2006)	
179.	*Arrenurus* (*Arrenurus*) *ayyildizi* Erman, 1993		MK	Smit & Pesic (2006)	
180.	*Arrenurus* (*Arrenurus*) *bharatensis* Cook, 1967		SB	Pešić *et al*. (2012).	
181.	*Arrenurus* (*Arrenurus*) *bicuspidator* Berlese, 1885		GI	Schwoerbel & Sepasgosarian (1977)	
182.	*Arrenurus* (*Arrenurus*) *bruzelii* Koenike, 1885		MN, ES, MK	Smit & Pesic (2006)	
183.	*Arrenurus* (*Arrenurus*) *compactus* Piersig, 1884		BK	Schwoerbel & Sepasgosarian (1977)	
184.	*Arrenurus* (*Arrenurus*) *crenatus* Koenike, 1896		HA, KE	Schwoerbel & Sepasgosarian (1977); Asadi *et al*. (2003a); Asadi (2010)	
185.	*Arrenurus* (*Arrenurus*) *cuspidifer* Piersig, 1894		MK	Smit & Pesic (2006)	
186.	*Arrenurus* (*Arrenurus*) *distans* Walter, 1927		MN	Smit & Pesic (2006)	
187.	Arrenurus (*Arrenurus*) cf. *hanskalensis* Erman & Özkan, 1999		MK	Smit & Pesic (2006)	

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	Species	End.	Distribution	References	Notes
188.	*Arrenurus* (*Arrenurus*) *iranicus* Smit & Pešić, 2011	+	SB	Pešić *et al*. (2011)	
189.	*Arrenurus* (*Arrenurus*) *kermanensis* Pešić, Smit & Asadi, 2011		KE	Pešić *et al*. (2011)	
190.	*Arrenurus* (*Arrenurus*) *nielseni* Münchberg, 1935		ES	Smit & Pesic (2006)	
191.	*Arrenurus* (*Arrenurus*) *radiatus* Piersig, 1894		FA	Schwoerbel & Sepasgosarian (1977)	
192.	*Arrenurus* (*Arrenurus*) *suecicus* Lundblad, 1917		MN	Smit & Pesic (2006)	
193.	*Arrenurus* (*Megaluracarus*) *globator* (Müller, 1776)		MN	Smit & Pesic (2006)	
194.	*Arrenurus* (*Micruracarus*) *bifidicodulus* Piersig, 1897		MN	Smit & Pesic (2006)	
195.	*Arrenurus* (*Micruracarus*) *cyprioticus* Smit & Pesic, 2006		KE	Smit & Pesic (2006); Asadi (2010)	
196.	*Arrenurus* (*Micruracarus*) *octagonus* Halbert, 1906		KV	Sepasgosarian (1999); Smit & Pesic (2006)	
197.	*Arrenurus* (*Micruracarus*) *walkanoffi* K. Viets, 1926		GI	Pesic *et al*. (2007)	
198.	*Arrenurus* (*Truncaturus*) *corsicus* (E. Angelier, 1951)		KJ	Pesic *et al*. (2006a)	
199.	*Arrenurus* (*Truncaturus*) *knauthei* Koenike, 1895		MN	Smit & Pesic (2006)	
200.	*Arrenurus* (*Truncaturus*) *minutus* Smit & Pesic, 2006	+	GI	Smit & Pesic (2006)	
201.	*Arrenurus* (*Truncaturus*) *truncatellus* (Müller, 1776)		MN	Smit & Pesic (2006)	
Family Hungarohydracaridae Motaş & Tanasachi, 1959					
202.	*Hungarohydracarus subterraneus* Szalay, 1943		FA	Schwoerbel & Sepasgosarian (1980)	
Family Krendowskiidae K. Viets, 1926					
203.	*Krendowskia levantensis* Smit, 1997		n/a	Pesic & Saboori (2007)	
Family Mideopsidae Koenike, 1910					
204.	*Mideopsis orbicularis* (Müller, 1776)		MN, LO, ES, FA	Sepasgosarian (1999)	
205.	*Mideopsis persicus* Pešić & Saboori, 2015	+	FA	Pešić & Saboori (2015)	
206.	*Mideopsis roztoczensis* Biesiadka & Kowalik, 1979		GI, MN	Pešić *et al*. (2004b), Pešić *et al*. (2007)	
207.	*Xystonotus* (*Xystonotus*) *gereckei* (Asadi & Pešić, 2010) Syn. *Mideopsis* (*Xystonotus*) *gereckei* Asadi & Pešić, 2010	+	KE	Asadi & Pešić (2010)	
Family Momoniidae K. Viets, 1926					
208.	*Stygomomonia* (*Stygomomonia*) *latipes* Szalay, 1943		TE, KE	Pesic *et al.* (2005b); Asadi (2010)	
Family Neoacaridae Motas & Tanasachi, 1947					
209.	*Neoacarus hibernicus* Halbert, 1944		MN	Pesic *et al*. (2006c)	

Table 3. Annotations to the updated checklist of the water mites of Iran.

1	Known from a single deutonymph.
2	Erman *et al*. (2010) synonymized both *Hydrovolzia persica* and *H. persica anatolica* Oezkan, 1982 with *H. cancellata* Walter, 1906. However, a recent molecular study by Pešić *et al*. (2025b) resurrected *H. persica* as a valid species distinct from *H. cancellata*.

3	Genetic data indicate that the population of *Hydrachna skorikowi* from northeastern Iran forms a unique cluster (BOLD:AFF6278). It exhibits a high *p*-distance (11.11%) from the population of *H. skorikowi* (BOLD:ACS0797) from the Netherlands and Morocco, indicating the potential presence of a cryptic species within this complex.
4	*Hydrodroma torrenticola* (Walter, 1908) was reported from MN, GI, and KE (Schwoerbel & Sepasgosarian 1978; Pesic *et al*. 2003, 2007; Asadi 2010). These records probably refer to *Hydrodroma torrenticola golestanica*.
5	Pesic *et al*. (2005a) proposed synonymizing *Trichothyas alborzensis* with *T. petrophila* (Michael, 1895). Recently, Esen *et al*. (in press), based on molecular and morphological evidence, resurrected *T. alborzensis* as a valid species distinct from *T. petrophila.*
6	Pesic (2005) synonymized *Protzia cabardinica* with *P. rotunda* (Walter, 1908). Later on, Pešić *et al*. (2021b) resurrected *P. cabardinica* as a valid species distinct from *P. rotunda* based on congruent molecular and morphological evidence.
7	Pesic (2005) initially reported this species as *Protzia rotunda*, but subsequently described it as a new species, *P. iranica*.
8	*Lebertia inaequalis* represents a species aggregate. According to Gerecke *et al*. (2025), BIN BOLD:ADF6223, to which specimens collected near the type locality belong, should be defined as the nominotypical BIN. The latter BIN is known from Germany, the Netherlands, Greece, Montenegro, and Russia. Clarifying the taxonomic status of populations from Iran requires a comprehensive, molecularly based, Palearctic-wide revision of this species complex.
9	*Lebertia porosa* represents a species aggregate (Tyukosova *et al*. 2022). Specimens from the type locality were shown to belong to BIN BOLD:ACQ9049, which is restricted to Europe. Clarifying the taxonomic status of populations from Iran requires a more extensive, molecularly based, Palearctic-wide revision of this species complex.
10	Esen *et al*. (2010) proposed synonymizing *Sperchon fundamentalis* with *S. glandulosus* Koenike, 1886. This synonymy was later on rejected by Pešić *et al*. (2025a), who resurrected *S. fundamentalis* as a valid species. Therefore, *S. glandulosus* Koenike, 1886 should be excluded from the checklist of Iran.
11	Asadi *et al*. (2010) proposed synonymizing *Sperchon amuzgari* with *S. hispidus* Koenike, 1895. Subsequently, a molecular and morphological study by Pešić *et al*. (2021a) resurrected *S. amuzgari* as a valid species distinct from *S. hispidus.* The old records of the *S. hispidus* from for LO, MK (Sepasgosarian 1999; Pesic *et al*. 2007, Pesic & Saboori 2007) likely refer to *S. amuzgari.*
12	Asadi *et al*. (2010) synonymized *Sperchon beneckei* with *S. algeriensis* Lundblad, 1942, a species originally described from North Africa (Lundblad 1942) and subsequently recorded from many sites in the central and western Mediterranean area (Di Sabatino *et al*. 2010). Recently, Pešić *et al*. (2024) emphasized that a high genetic distance of 15.4% between Iberian populations of *S. algeriensis* and the specimen from Iran suggests that *S. beneckei* is a distinct species; its synonymization with *S. algeriensis* should therefore be rejected.
13	Pešić *et al*. (2021a) demonstrated that specimens from northern Iran morphologically matching *Sperchon bispinosus* Bader & Sepasgosarian, 1982 belong molecularly to the *S. papillosus* / *S. compactilis* genetic lineage. *Sperchon bispinosus* was originally described from Karaj (Tehran Province) by Bader & Sepasgosarian (1982), but was later on synonymized with *S. papillosus* by Asadi *et al*. (2010). Further studies integrating additional molecular markers and comprehensive sampling are necessary to clarify the taxonomy of the *S. papillosus* / *S. compactilis* complex.
14	Molecular analysis revealed that the sequence obtained from the newly collected specimen of *Sperchon setiger* from North Khorasan form a distinct BIN (BOLD:AFF9625). The latter clusters together with *S. setiger* BINs from Türkiye (BOLD:AGH7686) and the Netherlands (BOLD:ACR9834).
15	Asadi *et al*. (2010) synonymized this species with *Monatractides stadleri* (Walter, 1924). Subsequently, a molecular and morphological study by Pešić *et al*. (2021a) resurrected *M. persicus* as a valid species distinct from *M. stadleri*. The latter species, known from Western and Central Europe, should be excluded from the checklist of Iran.
16	Asadi *et al*. (2010) proposed synonymizing *Monatractides sepasi* with *M. lusitanicus* (Lundblad, 1956). When synonymizing these two species, the former authors noted that *M. lusitanicus* might represent a complex of very similar species. They highlighted that in view of other species within this complex (e.g., *M. fridericianus* Di Sabatino & Gerecke, 2003 from northern Greece), the "arising question of genetic isolation and the taxonomic position of Iranian *lusitanicus*-like *Monatractides* can be addressed only by the application of molecular methods." Recently, during a survey in eastern Türkiye (Pešić & Esen, in prep.), we collected and barcoded a male specimen matching the description of *M. sepasi*. It forms a distinct lineage (BOLD:AGO5551). Therefore, at the current level of knowledge, we propose to resurrect *M. sepasi* as a valid species pending a comprehensive, Palearctic-wide analysis of this complex using DNA barcoding.

17	Asadi *et al*. (2010) proposed synonymizing *Torrenticola baueri* with *T. barsica* (Szalay, 1933). Subsequently, a molecular and morphological study by Pešić *et al*. (2021a) resurrected *T. baueri* as a valid species distinct from *T. barsica*. The latter species should be excluded from the checklist of Iran
18	Recently Esen *et al*. (2026) reported this species from Eastern Türkiye and provided the first description of the female.
19	This subspecies was described from a single female collected in northern Iran. Recently, molecular studies by Pešić *et al*. (2023d) of Balkan populations and by Pešić *et al*. (2025b) of populations from eastern Türkiye revealed the presence of several distinct lineages within the *Frontipodopsis reticulatifrons* morphotype. This highlights the need for a comprehensive, molecularly based, Palearctic-wide revision of this complex to clarify the taxonomic status of the Iranian taxa.
20	Pešić *et al*. (2016) described this species based on a single male specimen that had previously been assigned to *Atractides fluviatilis* (Szalay, 1929) by Pesic *et al*. (2004a). Consequently, the latter species should be excluded from the Iranian fauna.
21	*Atractides nodipalpis* represents a species aggregate. The nominotypical *A. nodipalpis* BIN (BOLD:ACR0209) is known to be restricted to Europe. Previous records from Iran likely refer to *A. concavus* Pešić & Smit, 2021—a species within the *A. nodipalpis* complex with a wide distribution in Anatolia that reaches its easternmost distributional limits in Cyprus (Pešić *et al.* 2026)—or to a new, undescribed cryptic species within this complex. During our water mite survey in 2017, we collected and barcoded two females belonging to the *nodipalpis* complex in northern Iran (from a stream on the Chalus–Karaj road). DNA barcoding reveals that the sequences obtained from these specimens form two distinct BINs: BOLD:AED3548 and BOLD:AEI1810, respectively. The closest BINs to these Iranian lineages belong to *A. concavus* (BOLD:AEK3669 and BOLD:AGH5609) from Türkiye, which differ from the Iranian BINs by a *p*-distance of more than 7.0%. This moderately large *p*-distance indicates the potential presence of an undescribed cryptic species from Iran closely allied with *A. concavus*.
22	Pešić *et al*. (2016) described this species based on specimens that had previously been assigned to *Atractides* cf. *lunipes* Lundblad, 1956 by Pesic *et al*. (2004b). Consequently, the latter species should be excluded from the Iranian checklist. Recently, Pešić *et al*. (2023a) showed that specimens from northeastern Iran and southwestern Türkiye belong to the same BIN (BOLD:AFF9958), indicating that this species has a wide distribution.
23	Pešić *et al*. (2021c) described this species based on male specimens that had previously been assigned to *Atractides gibberipalpis* Piersig, 1898 by Pesic *et al*. (2004b). Consequently, the presence of the latter species in Iran should be considered doubtful, and it is formally excluded from the checklist.
24	*Hygrobates calliger* represents a species aggregate (Pešić *et al*. 2022b). Previous records of this species probably refer to one of the recently described species within this complex known from neighboring countries (e.g., *H. ponticus* from eastern Türkiye), or it is likely that the Iranian populations represent an undescribed cryptic species.
25	*Hygrobates longiporus* is a species complex (Pešić *et al*. 2022a). The typical specimens of this species, originally described from Norway, probably belong to BIN BOLD:AEB8359 (known from Norway, Bulgaria, Türkiye, Italy, Switzerland, Germany, Austria, Albania, Greece, Czechia, Montenegro, Slovakia, and Russia). Records from Iran likely refer to *Hygrobates thori* Pešić & Smit, 2022—a species recently described from northern Iran and eastern Türkiye (Pešić *et al*. 2022a)—and/or an undescribed cryptic species. Pešić *et al*. (2023c) suggested that this species should be removed from the list of species occurring in Türkiye.
26	The old records of *Hygrobates fluviatilis* (Ström, 1768) from Iran (Asadi *et al*. 2003a, 2009; Pesic *et al*. 2004b, 2006a) refer to three newly described species within this species complex (*H. persicus*, *H. grabowskii*, and *H. ulii*). Consequently, *H. fluviatilis* should be removed from the checklist of Iran, as already suggested for Türkiye by Pešić *et al*. (2023c).
27	*Hygrobates setosus* belongs to the *H. nigromaculatus*/*setosus* species aggregate. The true *H. setosus* BIN (BOLD:AAM1668) is known to be restricted to northern and western Europe. Previous records of this species from Iran may refer to one of the recently described and widely distributed species within this complex (e.g., *H. limnocrenicus* Pešić, 2020), or likely the Iranian populations represent an undescribed cryptic species. Therefore, *H. setosus* should be excluded from the checklist of Iran.
28	*Hygrobates trigonicus* is a species complex (Pešić *et al*. 2021d, 2023c). The specimens of the typical *H. trigonicus* belong to one of two distinct European clusters within this species that exhibit genetic distances exceeding the intraspecific level (Pešić *et al*. 2021d). The records from Iran, which currently lack barcode evidence, might refer either to one of the two recently described species from eastern Türkiye—*H. neotrigonicus* Pešić & Esen, 2022 and *H. crypticus* Pešić, Esen & Smit, 2023—or to a new cryptic species within the *trigonicus* complex. Pešić *et al*. (2023c) suggested that *H. trigonicus* should be removed from the checklist of Türkiye.

29	The single deutonymph from northern Iran forms a unique BIN (BOLD:AED2425). The *p*-distance between this BIN and its nearest neighbour (BOLD:AET1848, which includes specimens of *Pionopsis lutescens* (Hermann, 1804) from Montenegro) was estimated at 7.34%, indicating the need for a taxonomic revision of the *P. lutescens* complex to resolve potential undescribed cryptic species.
30	*Unionicola miyazakii* was originally described from the Ibi River, Gifu, Japan (Imamura 1953). However, given the vast geographical distance, the taxonomic status of the Iranian populations warrants verification through additional sampling and subsequent molecular analyses.

Overview of the checklist

The updated species list of the water mites of Iran includes 209 species, belonging to 55 genera within 26 families (Table 2). The most diverse subfamily is Hygrobatidae, with 43 species, which also contains the genus with the highest species richness, *Atractides*, with 29 species. The next most diverse families are Torrenticolidae (29 species), followed by Arrenuridae (25 spp.) and Aturidae (20 spp.). Compared to the latest checklist published in 2014, 16 species new to science have been described from Iran; among these, six were discovered using molecular methods.

The following taxa were previously reported from Iran but are formally excluded from the current checklist due to recent taxonomic updates and the description of new species: *Protzia rotunda* (Walter, 1908), *Trichothyas petrophila* (Michael, 1895), *Sperchon glandulosus* Koenike, 1886, *S. hispidus* Koenike, 1895, *Torrenticola barsica* (Szalay, 1933), *Monatractides stadleri* (Walter, 1924), *M. lusitanicus* (Lundblad, 1956), *Hygrobates fluviatilis* (Ström, 1768), *Atractides fluviatilis* (Szalay, 1929), *A. gibberipalpis* Piersig, 1898 and *A. lunipes* Lundblad, 1956. Moreover, *Lebertia inaequalis* (Koch, 1837), *L. porosa* Thor, 1900, *Atractides nodipalpis* (Thor, 1899), *Hygrobates calliger* Piersig, 1896, *H. longiporus* Thor, 1898, *H. setosus* Besseling, 1942, and *H. trigonicus* Koenike, 1895 are represented by species complexes; however, because the nominotypical species does not occur in Iran, they should also be removed from the list.

The monotypic genus *Iranobates* Pešić, Smit & Asadi, 2011, and 73 species (34.9%, representing more than one-third of the total fauna) are endemic to Iran (Table 2). The genera *Atractides* (17 spp.; 58.6% endemism rate) and *Torrenticola* (9 spp.; 45% endemism rate) include the highest number of endemic species.

A comparison of the water mite fauna of Iran with adjacent countries and other regions in the Palearctic indicates that the Iranian fauna (209 species) is less rich than that of Türkiye (335 species; Erman *et al*. 2010, 2019), India (292 species; Pešić 2026), and the Balkans (426 species and subspecies; Pešić *et al*. 2025c). This disparity likely reflects a pronounced 'Wallacean shortfall' and uneven collection efforts. While research in the Balkan Peninsula and Türkiye has benefited from decades of sustained, systematic regional mapping conducted by locally based scientists, most data on the Iranian fauna are the result of time-restricted expeditions. Consequently, many unique aquatic habitats across Iran remain entirely unstudied or severely under-sampled.

Furthermore, genetic assessment of the Iranian water mite fauna using DNA barcoding remains highly deficient and has been the subject of only a limited number of studies (e.g., Pešić *et al*. 2017, 2019c, 2020, 2021a, 2022a, 2023a). In this context, a total of 117 barcodes of water mite species collected from Iran are currently represented in the BOLD database (publicly accessible through BOLD Dataset https://dx.doi.org/10.5883/DS-TRIRHYD). Future research on Iran's fauna must aim for comprehensive coverage using integrated molecular tools. By presenting an updated checklist of Iranian water mite species, this study resolves taxonomic confusion stemming from outdated nomenclature and provides a crucial baseline to stimulate further research of water mites in this region.

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