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Water mites of the genus Sperchon Kramer (Acari: Hydrachnidia: Sperchontidae) from Turkey, with description of a new species from Taurus Mountains (southern Turkey)

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Water mites of the genus *Sperchon* Kramer (Acari: Hydrachnidia: Sperchontidae) from Turkey, with description of a new species from Taurus Mountains (southern Turkey)

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A new water mite species *Sperchon (Hispidosperchon) serapae* n. sp. is described. The material was collected from a slow-flowing stream during field study on the water mite fauna of the Lakes region in southwestern Turkey. An updated list of hitherto known species of *Sperchon* Kramer from Turkey, including nomenclatural changes and numerous new locality records to the species, is also given.

**Keywords:** Acari; water mites; new species; Sperchontidae; Turkey

**Introduction**

Water mites of the genus *Sperchon* Kramer, 1877 are known from all biogeographic regions except for Australia and Antarctica (Cook 1974). So far, 19 species of *Sperchon* belonging to subgenera *Sperchon* (s.s.), *Hispidosperchon* Thor, 1901 and *Mixosperchon* K. Viets, 1926 have been recorded from Turkey (Özkan 1982, 1989; Boyaci and Özkan 1994, 2007; Smit 1995; Özkan, Erman and Boyacı 1996; Erman and Özkan 2000; Pešić, Ağırbaş and Turan 2007; Aşçı, Bursaƚ and Özkan 2010; Esen, Pešić and Erman 2010; Pešić and Smit 2011).

*Sperchon* Kramer, 1877 with the structure of its integument, surface pattern and shape of gnathosoma is one of most easily diagnosed water mite genera (Bader 1975; Bader and Sepasgosarian 1979). In the presented study, a review of all extant records of *Sperchon* species from Turkey is given. Also, a new *Sperchon (Hispidosperchon)* species is described from southwestern Turkey.

**Materials and methods**

Water mites were collected by hand netting and sorted on the spot from the living material, preserved in Koenike’s fluid and dissected for slide mounting. The holotype and paratype of the new species was deposited in the author’s collection (SDU, Eğirdir Fisheries Faculty, Isparta). The composition of the material is given as: (males/females/deutonymphs). All measurements are given in μm. The following
abbreviations are used: SDU: Süleyman Demirel University, Ac-1 = first acetabulum, Cx-1 = first coxa, Cxgl-4 = coxoglandulare 4, Dc-1–4 = dorsocentralia 1–4, Dgl = dorsoglandulare, %L = relative length, I-L-6 = Leg 1, sixth segment, P-1 = palp, first segment, Vgl = ventroglandulare.

Results

Family SPERCHONTIDAE Thor, 1900
Genus Sperchon Kramer, 1877
Subgenus Sperchon (s.s.) Kramer, 1877
Sperchon (Sperchon) ayyildizi Esen, Pešić, Erman, 2010
Records from Turkey. Bingöl Province (Esen et al. 2010).
Distribution. Turkey.

Sperchon (Sperchon) brevirostris Koenike, 1895
New records. Isparta Province (Boyacı et al. 2010).
Records from Turkey. Erzurum Province (Boyacı and Özkan 2007).
Distribution. Europe.

Sperchon (Sperchon) glandulosus Koenike, 1886
Records from Turkey. Konya Province (as Sperchon fundamentalis, Boyacı and Özkan, 1994), Rize Province (Pešić et al. 2007).
Distribution. Western Palaearctic.

Sperchon (Sperchon) squamosus Kramer, 1879
Records from Turkey. East Anatolia (Özkan 1982); Erzurum Province (Özkan 1989).
Distribution. Western Palaearctic.

Sperchon (Sperchon) thienemanni Koenike, 1907
Records from Turkey. Konya Province (Boyacı and Özkan 1994).
Distribution. Europe, Turkey.

Subgenus Hispidosperchon Thor, 1901
Sperchon (Hispidosperchon) clupeifer Piersig, 1896
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(8/8/0); 17.08.2008, (15/26/0); 14.06.2009, (8/12/0); Köprülü canyon river, 37°28.093' N, 30°55.24' E, 500 m, 21.08.2008, (8/14/0); Çandır, Şihlar brook, 37°28.570' N, 30°58.280' E, 13.06.2008, (5/9/0); Çandır, Sütcüler, Gökbüvet stream, 37°34.010' N, 30°52.630' E, 21.06.2008, (12/15/0); Eğirdir, 17.8.2008, (1/3/0); 14.9.2009, (8/7/0); Sütcüler, Darıbükü stream, 37°29.255' N, 30°59.360' E, 19.8.2008, (5/6/0) (Boyacı et al. 2010).

Records from Turkey. Konya Province (Boyacı 1995), Tokat Province (Bursalı 2002); Kayseri Province (Özkan et al. 1994, 1996), Malatya Province (Esen et al. 2010), Rize Province (Pešić et al. 2007).

Distribution. Western Palaearctic.

**Sperchon (Hispidosperchon) denticulatus Koenike, 1895**

*New records.* Isparta Province: Aksu, Köprüçay river, Başpınar spring, 37°42.830' N, 31°1.53' E, 1400 m, 04.05.2008, (4/2/0).

*Records from Turkey.* Isparta Province (Boyacı and Özkan 2007), Erzurum Province (Boyacı 1995).

*Distribution.* Western Palaearctic.

**Sperchon (Hispidosperchon) akdagensis Aści, 2010**

*Records from Turkey.* Afyon Province (Aści et al. 2010)

*Remarks.* Pešić and Smit (2011) synonymised the species with *S. hibernicus* Halbert, 1944.

*Distribution.* Europe, Turkey.

**Sperchon (Hispidosperchon) hispidus Koenike, 1895**


*Records from Turkey.* Konya Province (Boyacı 1995), East Anatolia, (Özkan 1982b), Erzurum Province (Özkan 1989); Rize Province (Pešić et al. 2007).

*Distribution.* Palaearctic.

**Sperchon (Hispidosperchon) oezkani Esen, Pešić, Erman, 2010**

*Records from Turkey.* Malatya Province (Esen et al. 2010).

*Distribution.* Turkey.

**Sperchon (Hispidosperchon) plumifer Thor, 1902**

*Records from Turkey.* Konya Province (Boyacı 1995)

*Distribution.* Europe.

**Sperchon (Hispidosperchon) rostratus Lundblad, 1969**

*New records.* Isparta Province: 37°45.817' N, 31°2.000' E, 22.06.2001, (2/3/0); Köprüçay river, 37°28.093' N, 30°55.24' E, 18.07.2008, (1/1/0); Çandır, Köprülü canyon, 37°28.093' N, 30°55.24' E, 500 m, 21.08.2008, (10/14/0) (Boyacı et al. 2010).
Records from Turkey. Isparta Province (Boyacı and Özkan 2007), Mersin Province (Smit 1995).

Distribution. Burma, Iran, Turkey.

*Sperchon* (*Hispidosperchon*) *senguni* Özkan, 1982


Records from Turkey. Erzurum Province (Ozkan 1982b).

Distribution. Turkey.

*Sperchon* (*Hispidosperchon*) *setiger* Thor, 1898


Records from Turkey. Konya Province (Boyacı 1995), Amasya and Tokat Provinces (Bursalı 2002), Elazıg Province (Erman and Özkan 2000), Bingöl Province (Esen et al. 2010).

Distribution. Western Palaearctic.

*Sperchon* (*Hispidosperchon*) *serapae* n. sp. (Figures 1, 2)

Diagnosis

Dorsum in male completely covered with a large plate; coarsely structured P-2 with a long ventrodistal projection; shortened P-4 with two well-developed tubercles at the proximal of ventral margin, each bearing a strong and significantly truncated peg-like seta.

Description

*Holotype male.* Integument reticulated in the ventral and dorsal. Body length 725, width 650; a large (645 long, 430 wide) plate covering dorsum completely (Figure 1b); Dgl, 1–4 and three lateral glands on the plate; ventral side without plate. Anterior coxal plates close to each other (but not fused), apodemes not distinct; posterior coxal plates widely separated; Cx-3 without coxoglandulalria; the distance between epimere-1 anterior end and epimere-4 posterior end 400. Genital region narrowed between Cx-3 + 4. Excretory pore without a sclerotised plate; length of genital plates 200; length of Ac-1–3: 65-60-40; Ac-1–2 longish and Ac-3 roundish.
Sperchon serapae n. sp., male (a–d) and female (e): (a) ventral view, (b) dorsal view, (c) palp, (d) gnathosoma, (e) ventral view.

(Figure 1a). Gnathosoma short-nosed, length 254; chelicera total length 320, chelicera basal segment length 250 (Figure 1d), the claw length 88, basal segment/claw ratio 2.84; palp without any denticulation, palp total length 416, dorsal length and relative length (in parentheses, given as % of total length): 23 (5.5), 163 (39), 98 (24), 102 (25), 30 (7.2) = 416, height: 105, 140 (excluding protrusions), 85, 43, 23. The ratio between P-4 and P-2 1.66; P-2 very rough, not pointed at the bottom of the ridge; dorsally with a number of hairs and; P-4 shortened, narrowing to the right
end, its ventral margin proximally with two well-developed tubercles, each bearing a strong, significantly truncated peg-like seta (Figure 1c). Length of leg segments: I-B 63, 59, 96, 153, 147, 150; IV-B 122, 119, 132, 263, 247, 219.

**Female.** Integument reticulated. Body length 925/765, dorsum not covered with a large plate. Postocularia setae and Dgl-1–4 not on plates, dorsal plates not bearing any glands or hairs (Figure 2a). Dc-2 and Dc-4 larger than Dc-1 and Dc-3. Coxae, mouth parts and legs as described in the male; coxal plates very hairy and longer than in males. Anterior coxal plates (Cx-1 + 2) close to each other (but not fused), apodemes not distinct, posterior coxal plates widely separated; Cx-3 without coxoglandularia; distance between anterior edge of Cx-1 and posterior edge of Cx-4 500. Length of genital plates 225, length of Ac-1–3: 75-90-70 (Figure 1e). Chelicera total length 430, basal segment length 360, claw length 80, basal segment/claw ratio 4.5. Palp identical to that of male, differing only in dimensions; palp total length 560, dorsal length and relative length (in parentheses, given as % of total length): 55 (9,8)-220 (39,2)-130 (23,2)-125 (22,3)-30 (5,3), P2/P/4 ratio 1.75, height 145-210-120-60-25. Length of leg segments: I-L-1–6: 88, 81, 137, 206, 206, 188; IV-L-1–6: 156, 150, 175, 319, 313, 250 (Figure 2b).

**Remarks**

Dorsal shield in males of *S. serapae* n. sp. covers whole body, but ventral plate does not. Palp is rough and stout, P-1 and P-2 shorter than wide. Ventral margin of P-4 proximally has two well-developed tubercles, each bearing a significantly truncated and strong peg-like seta. Among closely related species, the new species is most similar to *S. senguni* in the presence of a long ventrodistal projection on P-2 and large plate completely covering the dorsum in males. The new species differs from *S. senguni* by absence of a large dorsal plate in females and a ventral plate, also the characteristic morphology of the P-4: in *S. senguni* the first ventral tubercles are well-developed and second ventral tubercules are small, but in *S. serapae* peg-like setae of P-4 are larger and significantly truncated.
**Etymology**

The species is named after Serap Boyacı, wife of the author.

**Distribution**

Known only from the type locality in Denizli province (Turkey).

**Material**

Holotype, male dissected and slide-mounted in Hoyer’s fluid, Denizli, Çameli, Gürsu village, a small slow-flowing stream (samples extracted from moss on the stones), 1500 m, 13.03. 2008, leg. Y. Ö. Boyacı. Paratypes: 2 females and 4 males, same data as holotype, dissected and slide mounted in Hoyer’s fluid. Type material is located at the Faculty of Fisheries, SDU, Isparta, Turkey.

*Sperchon (Hispidosperchon) tarnogradskii* Sokolow, 1927


*Records from Turkey.* Bingöl Province (Esen et al. 2010)

*Distribution.* Caucasus, Crimea, Uzbekistan, Iran.

*Sperchon (Hispidosperchon) thori* (Koenike, 1900)

*New records.* Burdur Province: Kemer, Hasanpaşa, 37°21.488′ N, 30°2.876′ E, 1500 m, 09.06.2008, (4 /5/0); Isparta Province: Eğirdir, Pazarköy, Köprüçay River, 37°45.817′ N, 31°2.000′ E, 22.06.2008, (6/8/0) (Boyacı et al. 2010).

*Records from Turkey.* Konya Province (Boyacı 1995)

*Distribution.* Europe.

**Subgenus Mixosperchon K. Viets, 1926**

*Sperchon (Mixosperchon) compactilis* Koenike, 1911

*Records from Turkey.* Konya Province (Boyacı 1995).

*Distribution.* Central and southwestern Europe, North Africa, Turkey, Iran.

*Sperchon (Mixosperchon) longissimus* K. Viets, 1920


*Records from Turkey.* Konya Province (Boyacı and Özkan 1994).

*Distribution.* England, Central and southeastern Europe, Turkey.

*Sperchon (Mixosperchon) papillosus* Thor, 1901

Records from Turkey. East Anatolia (Özkan 1982b), Erzurum Province (Özkan 1989), Elazığ Province (Erman and Özkan 2000), Malatya Province (Esen et al. 2010).

Distribution. Europe, Turkey, Iran.

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References


