

Sperchon (Scutosperchon) akdagensis sp. n. (Acari: Hydrachnidia: Sperchontidae) from Turkey

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Abstract: The structural characteristics, unique features, various organ measurements of males and females of the *Sperchon (Scutosperchon) akdagensis* sp. n. water mite from Turkey are described. In addition, morphological characteristics of the new species are compared with related species.

Key words: water mite; new species; *Sperchon*; Hydrachnidia; Acari; Turkey

Introduction

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 & Sepasgosarian 1979). The number of known species of the genus *Sperchon* from Turkish fauna is 12 (Özkan & Bader 1988; Özkan et al. 1988, 1994; Smit 1995; Erman et al. 2007). *Scutosperchon* Viets, 1926 can be easily differentiated from other subgenera of *Sperchon* because of the whole dorsal plate that completely covers the idisoma, non-papillated integument and its design (Viets 1926, 1936).

Cook (1974) and Bader & Sepasgosarian (1979) proposed synonymization of the subgenus *Scutosperchon* with the subgenus *Hispidosperchon*. Although Lundblad (1956) and Bader & Sepasgosarian (1979) recommended that differentiating *Sperchon* species into subgenera was postponed and any action taken regarding this subject was considered with caution, this recommendation has been ignored and the use of subgenera is common (Viets 1956; Cook 1974; Bader & Sepasgosarian 1979, 1980; Viets K.O. 1987).

Among the *Sperchon* species listed in literature, *Sperchon (Scutosperchon) akdagensis* sp. n. is related to *Sperchon (Scutosperchon) senguni* Özkan, 1982 (Viets 1936; Bader 1975, 1988; Imamura & Nagatsuka 1983; Özkan 1982, 1989; Sabatino et al. 2009).

Material and methods

Water mites were collected, preserved, and prepared according to the methods described by Viets (1936), Cook (1974) and Gerecke (2003). All samples were examined under stereo (Leica MZ60, Germany) and compound microscope (Olym-

pus CX41, Japan) with drawing attachment. All measurements are given in micrometers (µm).

Sperchontidae Thor, 1900

Sperchon Kramer, 1877

Sperchon (Scutosperchon) akdagensis sp. n.

Description. Holotype: male. The size of the body is 720/600 (Figs 1A, B). Preantenniformae distance 296, length of ocularia 304, diameter of eye is 45. The eyes are noticeably pigmented, the frontal organ distinctive and unpigmented, the dorsal chitin is spotted circularly, and the depressions are evenly ordered. Total length of chelicerae is 360; claw length and height 80, 88, respectively (Fig. 1D). The surface of each palp contains uniformly scattered depressions with small spot cavities. Setae on the palp are dagger shaped and not very long (Fig. 1C). The distribution of hairs on palp parts is 0-17-9-3. The length of the appendage on ventral side of P₂ is 64, the P₄ has two marked humps, the chitin protruding on the humps is like a denticle-shaped. The thickness ratio of P₂ : P₃ and P₃ : P₄ is almost two.

The length of palp segments are: dorsal edge 40-224-160-296-48 = 768; ventral edge 40-192-144-160-40 = 576 and heights: 88-168-112-48-32.

The coxae surface has large spot depressions. The coxae lengths are 232-200-216-248, respectively. The size of the genital area is 240/200 and there are a series of fine hairs in the posterior. The pregenital plate is small. The size of the acetabula from anterior to posterior is 64-72-56, respectively. The surface of the genital flaps has small and close spot depressions. The excre-

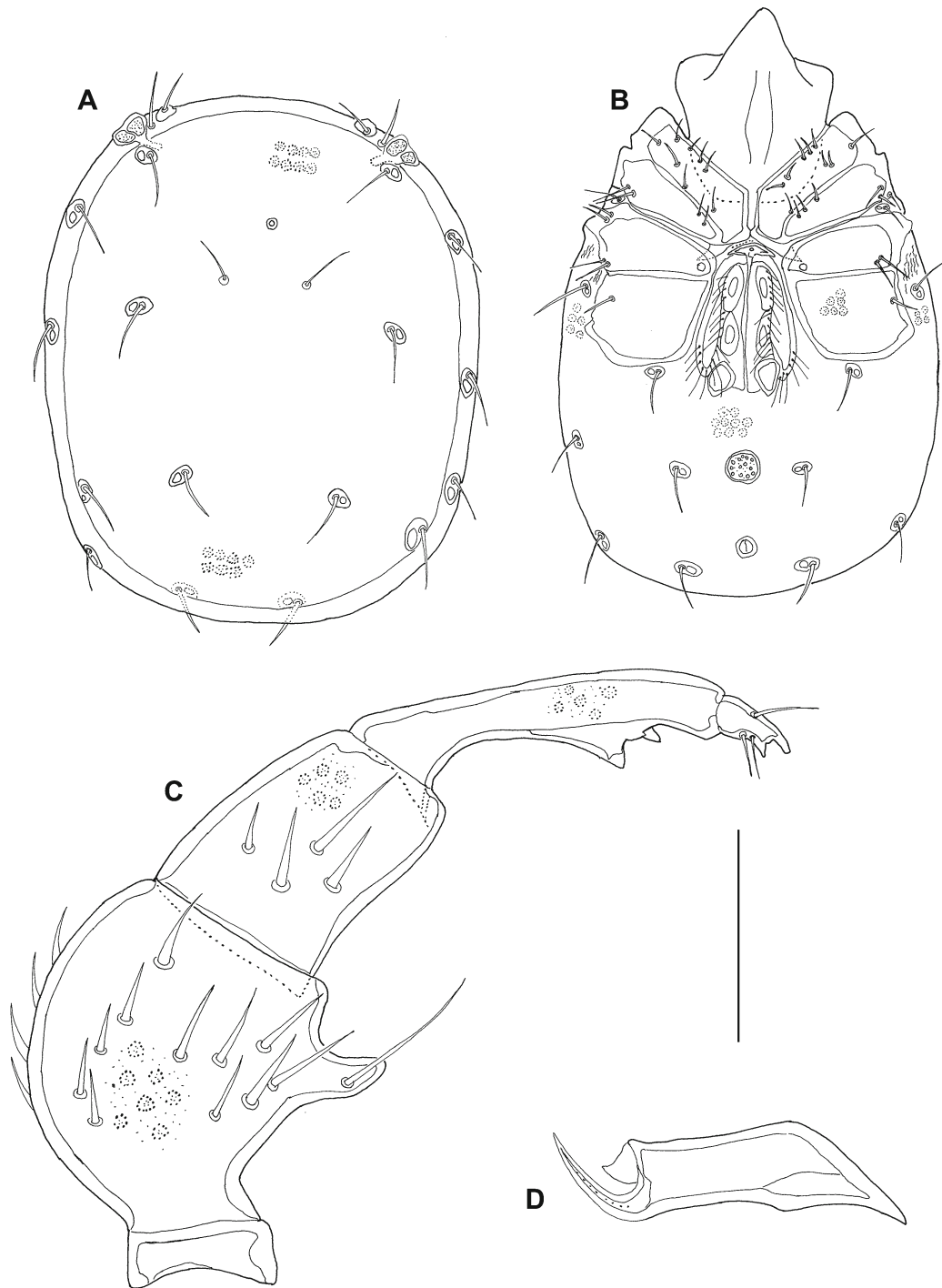


Fig. 1. *Sperchon (Scutosperchon) akdagensis* sp. n., male: A – idiosoma, dorsal view; B – idiosoma, ventral view; C – palp; D – chelicera. Scales 380 μ m (A, B), 230 μ m (C), 270 μ m (D).

tory pore has no chitin ring. Leg I 56-80-88-168-176-152 = 720, leg II 64-96-80-136-184-176 = 736, leg III 48-80-88-144-185-192 = 738, leg IV 96-112-104-192-200-208 = 908. The claws on the last segments of the legs are slightly chunky, not very thick and hook-shaped.

Allotype: female. The size of the body is 760/584 (Figs 2A, B). Preantenniformae distance 320, distance between ocularia 315, eye diameter is 55. The frontal organ is distinctive and unpigmented, the dorsal chitin

is spotted circularly and the depressions are evenly ordered.

The surface of each palp contains uniformly scattered depressions with small spot cavities. Setae on the palps are dagger shaped and not very long (Fig. 2C). P₄ has two marked humps which have a chitin protruding like a denticle shaped Total length of chelicerae is 360, claw length and height 80, 88, respectively (Fig. 2D). The length of palp segments are: dorsal edge 52-240-200-280-43 = 815; ventral edge 56-160-185-230-56 =

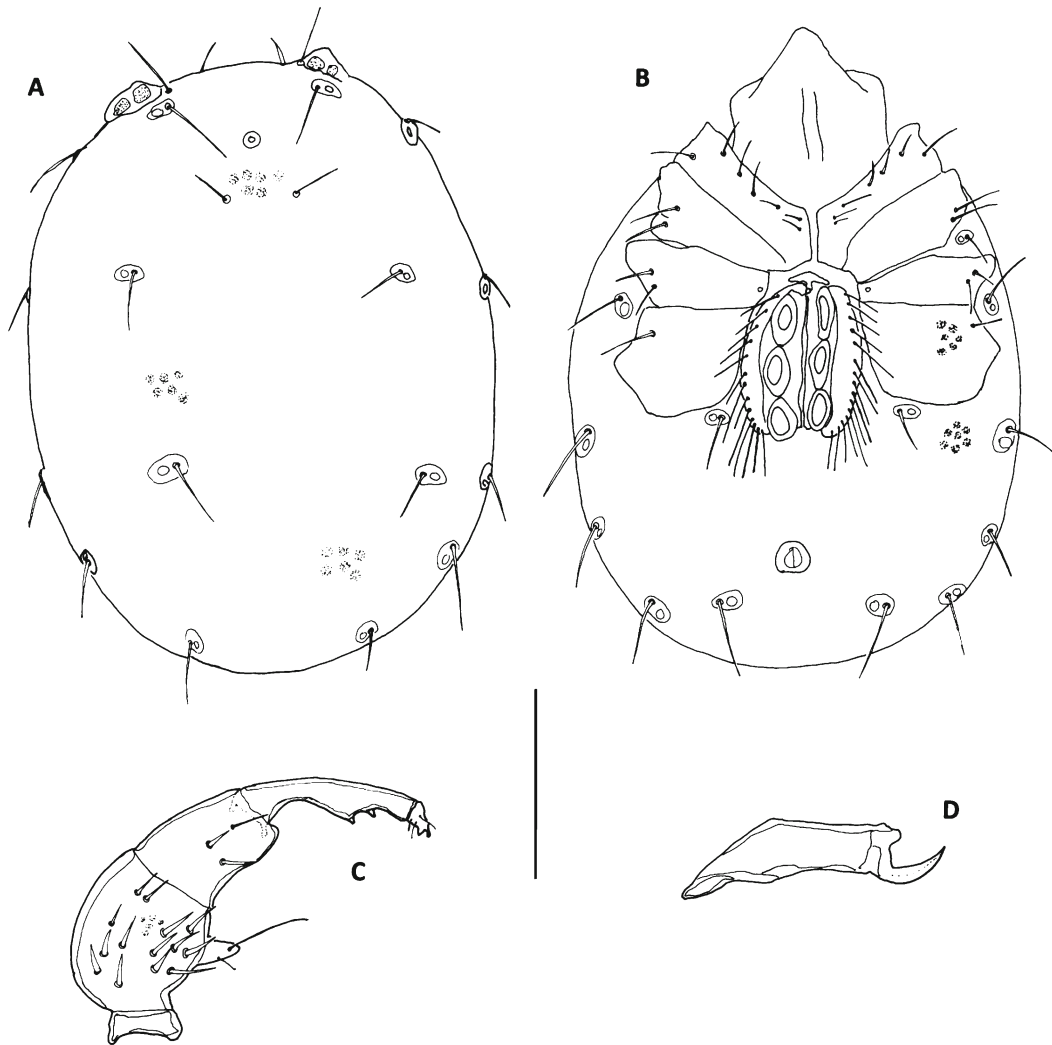


Fig. 2. *Sperchon (Scutosperchon) akdagensis* sp. n., female: A – body, dorsal view; B – body, ventral view; C – palp; D – chelicera. Scales 345 μ m (A, B), 230 μ m (C), 250 μ m (D).

687 and heights 120-235-140-70-24. The coxae lengths are (I–IV) 256-208-200-280, respectively. The size of the genital area is 240-176 and there are a series of fine hairs in the posterior side. The sizes of the acetabula from anterior to posterior are 80-64-56, respectively. The surface of the genital flaps has small and close spot depressions. Leg I 50-110-100-140-160-170 = 730, leg II 60-100-90-140-150-160 = 700, leg III 65-110-90-150-180-200 = 795, leg IV 100-120-100-200-200-206 = 926.

Paratype: male. It is observed that the structural characteristics of the paratype are very similar to the holotype. Some morphometric data are as follows: size of the body 710/620, preantenniformae distance 300, distance between ocularia 315. Total length of chelicerae is 340. The length of palp segments are: dorsal edge 50-210-190-270-40 = 760, ventral edge 50-150-180-220-40 = 640 and heights 120-230-140-60-20. Size of hump in P_2 is 60. The coxae lengths are (I–IV) 240-230-220-240, respectively. The size of the genital area is 240 and there are a series of fine hairs in the posterior side. The sizes of the acetabula from anterior to posterior are 70-70-60, respectively. The surface of the

genital flaps has small and close spot depressions. Leg I 70-100-110-160-160-200 = 800, leg II 80-120-110-170-180-180 = 840, leg III 70-100-110-170-200-210 = 860, leg-IV 120-150-120-210-240-230 = 1070.

Material examined. **Holotype** – male; **allotype** – female; **paratype** – 1 male (07.08.2006). Samples were collected from algae in Akçay River (Akdağ, Sandıklı, Afyonkarahisar, 38°16' N, 29°58' E), Turkey. The types are preserved in the collection of Dr. Ferruh Aşçı in Afyon, Kocatepe University Faculty of Science and Letters, Biology Department.

Etymology. The name of the species was produced from its capture area.

Differential diagnosis. *Sperchon (Scutosperchon) akdagensis* sp. n. can easily be differentiated from *Sperchon (Scutosperchon) senguni* Özkan, 1982 by the presence of a single dorsal plate with large spot depressions, small plate between the genital area and excretory pore of the males, the checkered pattern of the integument, the shapes of P_2 and P_4 , the presence of large spot depressions on the coxae surface.

Sperchon (Scutosperchon) senguni

Dorsal plate surface is smooth.
There is no platelet between the genital area and anus in male.
Integument surface is smooth and punctuated.
There is a hair at the tip of the lower extension of P₂.
The emboli on hump in P₄ are nail shaped.

Only the outer edge of IV with spot depressions.
Body size 690/550.
Capitulum length/height 254/ (175).
Chelicera (claw) 270 (85).
Distribution of hairs on palp parts; P II 22, P III 11, P IV 2
Upper length of palps 42-156-135-188-42 = 563
Lower length of palps 37-93-146-135-29 = 376
Height of palp parts 80-148-106-50-24
Leg I 58-76-76-148-138-148 = 644
Leg II 58-64-85-143-159-164 = 673
Leg III 58-64-85-159-170-175 = 711
Leg IV 117-101-111-154-170-186 = 839

Sperchon (Scutosperchon) akdagensis sp. n.

Dorsal plate surface has large spot depressions.
There is a platelet between the genital area and anus in male.
Integument surface is partitioned and has a reticular pattern.
There is a hair in the lower half of the extension of P₂.
The emboli on hump in P₄ are short, thick and blunt tipped and dentical shaped.

The whole surface of coxae with spot depressions.
720/600
400 (240)
360 (80)
P II 17, P III 9, P IV 3
40-224-160-296-48 = 768
40-192-144-160-40 = 576
88-168-112-48-32
56-80-88-168-176-152 = 720
64-96-80-136-184-176 = 736
48-80-88-144-184-192 = 736
96-112-104-192-200-208 = 912

The dorsal plate in the examined specimens covers the whole body. The structures of P₂ and P₄ closely resemble *S. (S.) senguni*. The comparisons of the two species are given below.

The above comparisons show that all the measurements of organs belonging to our samples are larger than those of *S. (S.) senguni*.

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