

The genus *Sperchon* Kramer 1877 in Brazil, with the description of a new species, new records and a key to the Neotropical species of the genus (Acari: Hydrachnidia: Sperchontidae)

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Original research

ABSTRACT

A new species of the genus *Sperchon*, *S. pinnatus* **sp. nov.**, is described from Mato Grosso do Sul state, Brazil. Moreover, new records are reported of *S. neotropicus* Cook, 1980 from Brazil. Finally, a key is provided for the Neotropical *Sperchon* species based on the adults. We assigned *S. oaxacensis* Otero-Colina, to *Sperchon* s.s. subgenus based on the presence of papillae on its integument.

Keywords water mites; new taxa; new records; pinnate setae; South America

Zoobank <http://zoobank.org/B8665137-9BE6-4C18-AB5B-5F0C7009CEFD>

Introduction

The genus *Sperchon* Kramer, 1877 is relatively rare in South America: up to now, only five species have been described: *S. brasiliensis* Lundblad, 1939, *S. andinus* Lundblad, 1953, *S. motasi* Lundblad, 1954, *S. gledhilli* K.O. Viets, 1977, *S. neotropicus* Cook, 1980 and *S. quintus* Smit & Pešić, 2024 (Rosso de Ferradás and Fernández 2005; Smit and Pešić 2024). The genus is more common in the Northern Hemisphere, from Europe 19 species are known (Di Sabatino *et al.* 2010), and from North America 21 (Habeeb 1967, 1974; see also Conroy 1991), but we consider that the genus is in need of revision: there are North American species whose descriptions are lacking important information about the venter, palps and/or legs (e.g. *S. avimontis* Habeeb, 1957; *S. neomexicanus* Habeeb, 1963; *S. mugyonensis* Habeeb, 1963), as well as some European species which are currently classified as *species incerta* (e.g. *S. ornatus* Halbert, 1944; *S. hystrix* Komárek, 1921) (Habeeb 1963a, 1963b; Di Sabatino *et al.* 2009). Moreover, recent molecular studies have shown that some *Sperchon* species, such as *S. clupei* Piersig, 1896, and *S. algeriensis* Lundblad, 1942, exhibit high genetic divergence across its populations, suggesting that the different populations may represent distinct species (Pešić *et al.* 2024), while other species, such as *S. amuzgari* Bader & Sepasgosarian, 1979, was resurrected as a distinct species from *S. hispidus* Koenike, 1895 (Pešić *et al.* 2021). Here, we describe the sixth *Sperchon* species from South America, *S. pinnatus* **sp. nov.** New records are given of *S. neotropicus*. Finally, we provide a key for the Neotropical species of the genus.

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Material and methods

The majority of the material was collected by a team of the Laboratório de Ecologia de Bentos (Universidade Federal de Minas Gerais) via kick sampling, with a D-frame sampler and a 500 µm mesh size. *Sperchon neotropicus* from Rio de Janeiro state was collected by a team of Laboratório de Acarologia (Universidade Federal de Minas Gerais) following the same method. The following abbreviations have been used: Cx-I-IV – Coxae I-IV; Cxgl-1-4 – coxoglandularia 1-4; I-IV-leg-1-6 – first to sixth segments of first to fourth leg; L – Length; LEB – Laboratório de Ecologia de Bentos; P-1-5 – first to fifth palp segment; W – Width.

The holotype will be lodged in the Centro de Coleções Taxonômicas da UFMG, Belo Horizonte (CCT-UFMG), paratypes both in CCT-UFMG and Naturalis Biodiversity Center, Leiden (RMNH).

Measurements of leg segments and palp are of the dorsal margin, the venter is measured from the tip of Cx-I till the posterior idiosoma margin.

The specimens described and reported here were fixed in ethanol. Before mounting, they were cleared with Proteinase K and ATL-buffer fluid, then lactic acid 85% for two days, after which the material was preserved in Koenike fluid.

The measurements of P-4 on *S. mexicanus* Cook, 1980 were based on its drawings.

Taxonomy

Family Sperchontidae Thor

Genus *Sperchon* Kramer, 1877

Sperchon pinnatus sp. nov.

Zoobank: [BC3F5F39-66B4-448B-88D6-9F258779FF1C](https://doi.org/10.24349/4ovf-gy3a)

Material examined

Holotype — ♀, 22°31'59" S 53°03'56" W, Paraná River, São Silvério, Batayporã, Mato Grosso do Sul state, Brazil, 2011.

Paratypes — 3♂ 3♀ 1 nymph, same data as holotype; 1♂ 1♀ Lagoa Azul, Osvaldo Cruz, São Paulo State 21°36'35.991" S 50°48'20.454" W, 4 Sept. 2010; 1♂, Monções, 20°50'59.98"S 50°04'56.94" W, 2010.

Diagnosis

Coxae small, Cx-III without glandularia, integument papillate, genital field not reaching posterior end of Cx-IV, setae of genital flaps short, distoventral projection of P2 short, legs with pinnate setae.

Description

Females — Integument dorsally and ventrally papillate, glandularia small, lying on the integument (Fig. 1A); Ventral view: Cx-I+II medially distant to each other, Cx-III without glandularia, Cxgl-4 lying medio-posteriorly to Cx-IV (Fig. 1B). Genital field lying anteriorly, not reaching beyond Cx-IV. Ac-1 longish, Ac-2-3 roundish. Setae on genital flaps short (Fig. 1C). Excretory pore surrounded by a sclerotized ring.

Gnathosoma slightly slender, rostrum shorter than gnathosomal base (Fig. 1D). P-1 without setae; P-2 with a short distoventral projection, at its tip bearing two fine setae; P-3 without ventral setae; P-4 longer than P-3, P-4 with a medial slightly developed ventral tubercle, bearing a medial peg-like seta and a distal peg-like, with a slightly enlarged dorsodistal seta (Fig. 1E).

Leg segments slender, I-V-L-1-5 with pinnate dorsal setae, claws slender, bearing clawlets. (Figs. 2A-D).

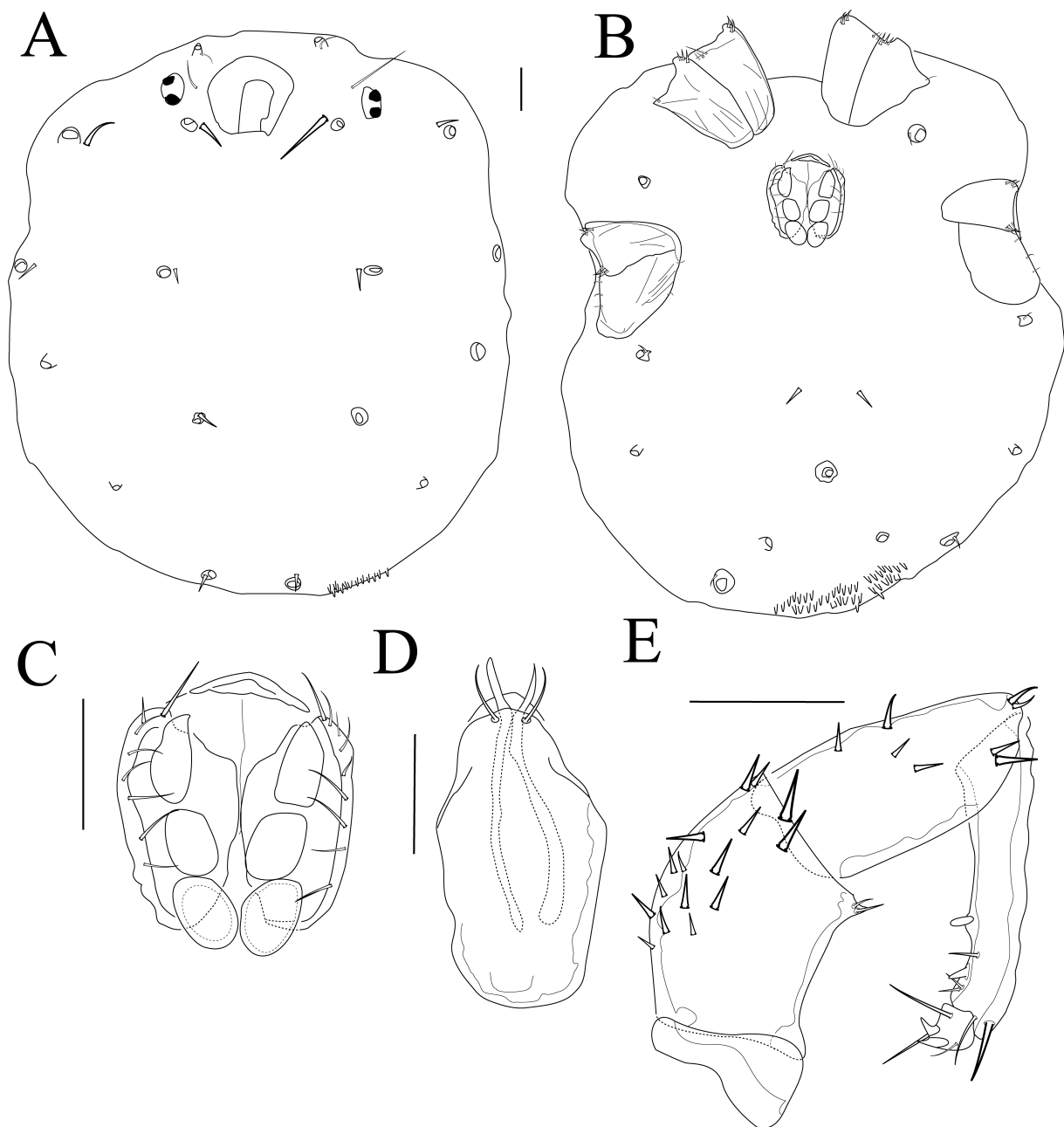


Figure 1 *Sperchon pinnatus* sp. nov., ♀ holotype: A – idiosoma, dorsal view; B – idiosoma, ventral view; C – genital field; D – gnathosoma; E – palp. Scale bars = 100 µm

Males — Dorsal idiosoma similar to female (Fig. 3A); Venter similar to female, but Cxgl-4 are lying more distally (Fig. 3B). Genital field longer ($L = 240$ compared to $L = 186$ on females) and lying more medially, almost reaching beyond Cx-IV (Fig. 3B-C).

Gnathosoma similar to female. Palp shorter, P-3 more slender ($L/H = 2.8$, compared to 2.1 on females) and lacking medial setae, and P-4 comparatively stouter ($L/H = 4.1$, compared to 6 on females) (Fig. 3D).

Legs similar to female.

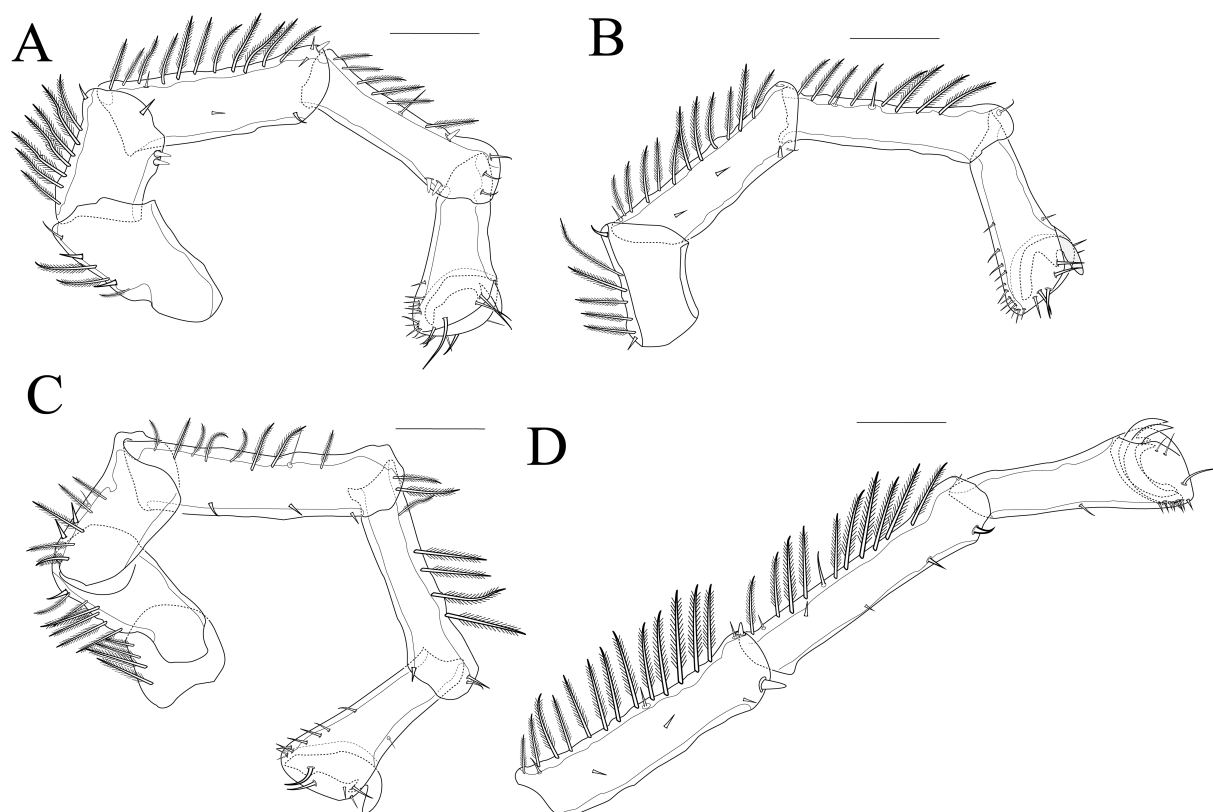


Figure 2 *Sperchon pinnatus* sp. nov., ♀ holotype: A – I-Leg-2-6; B – II-Leg-3-6; C – III-Leg-1-6; D – IV-Leg-4-6. Scale bars = 100 μm

Measurements

Female (holotype) — Idiosoma L 1105, W 844; distance between anterior end of Cx-I and posterior end of Cx-IV, 656; Cx-III W 192; genital field L 186; pregenital sclerite W 100; Ac-1-3: 70, 56, 66; P-1 dL/H 22/100; P-2 dL/H 171/116; P-3 dL/H 182/87; P-4 dL/H 212/35; P-5 dL/H 40/32. Gnathosoma L 256. Chelicera L 228. I-L-1-6: 80, 164, 198, 226, 210, 202. II-L-1-6: 100, 110, 180, 290, 296, 214. III-L-1-6: 110, 104, 170, 250, 260, 200; IV-L-1-6: 120, 140, 180, 320, 330, 240.

Male (paratype) — Idiosoma L 768, W 664; distance between anterior end of Cx-I and posterior end of Cx-IV, 496; Cx-III W 208; Genital field L 240; pregenital sclerite W 32; Ac-1-3: 88, 56, 72; P-1 dL/H 32/68; P-2 dL/H 122/82; P-3 dL/H 98/35; P-4 dL/H 142/34; P-5 dL/H 30/22. Gnathosoma L 230. Chelicera L 220. I-L-1-6: 90, 110, 150, 240, 220, 170. II-L-1-6: 100, 120, 170, 240, 200, 180. III-L-1-6: 80, 120, 180, 260, 240, 230; IV-L-1-6: 160, 150, 200, 360, 320, 240.

Etymology

Named for the pinnate setae of the legs.

Discussion

The shape of the palp, specially regarding the short distoventral projection on P-2, resembles *S. brasiliensis*, but the new species has a papillate integument, and lacks the ventral setae of P-3. The short distoventral projection of P-2 and the pinnate setae of the legs separates the new species from the other South American *Sperchon* s. s. species, *S. quintus* and *S. oaxacensis*.

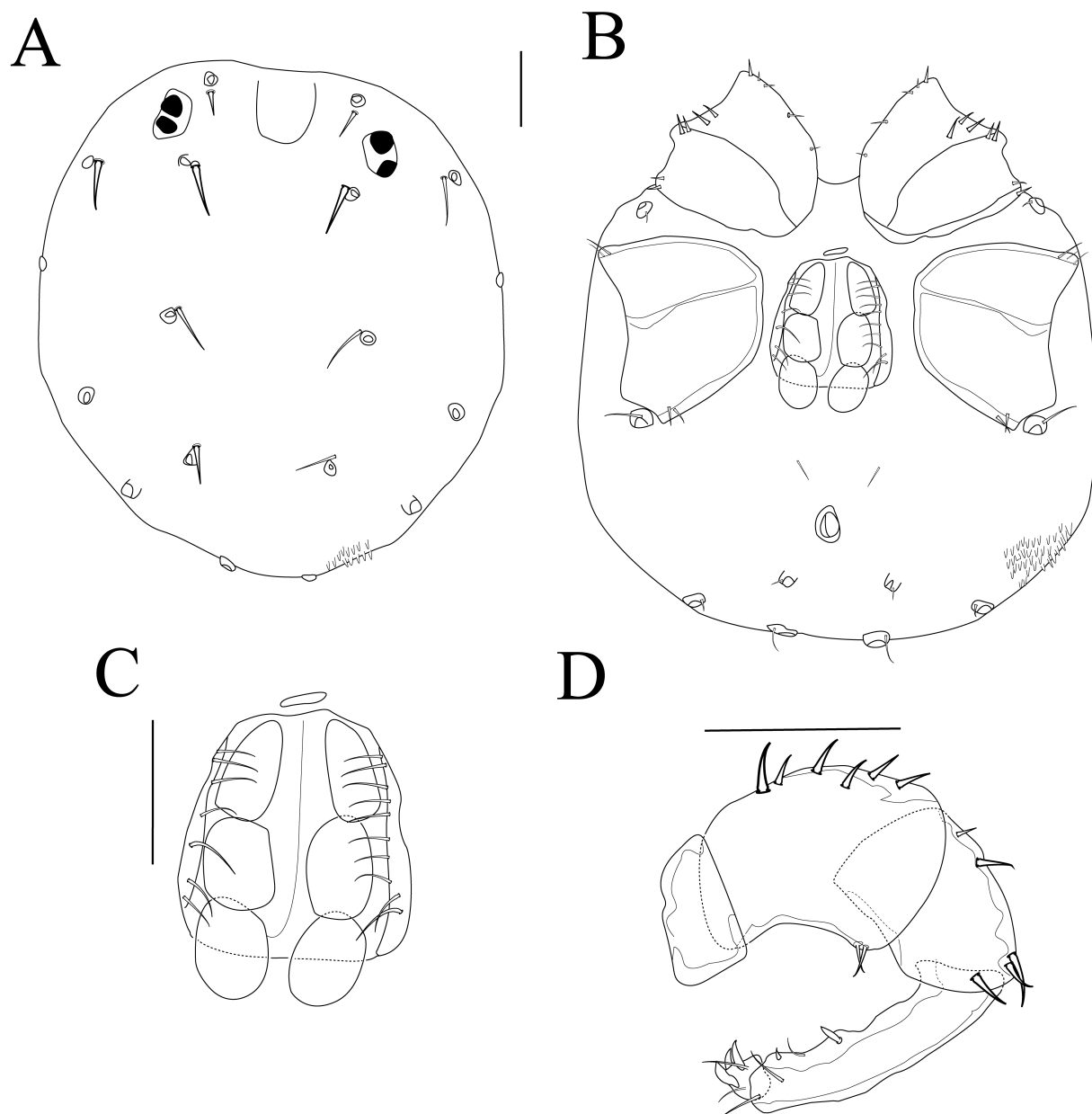


Figure 3 *Sperchon pinnatus* sp. nov., ♂ paratype: A – idiosoma, dorsal view; B – idiosoma, ventral view; C – genital field; D – palp. Scale bars = 100 μm

Sperchon neotropicus Cook, 1980

New records

Rio De Janeiro State. 0/1/0, Campo Belo River, Itatiaia National Park, 44°40'36" W, 22°23'08" S, 2350m, 22. Nov. 2022. **Paraná State.** 4/4/0, 23°04'42.92" S 53°08'12.94" W, 14. Sept. 2011; **São Paulo State.** 0/1/0, Monções, 20°50'59.98" S 50°04'56.94" W, 2010. **Mato Grosso do Sul State.** 0/1/0 Paraná river, Porto XV de Novembro, 21°41'38.761" S 52°07'38.207" W, Sept. 2013; 1/2/0 Vila Formosa, Anaurilândia 21°54'0.01" S 52°36'07.751" W, 2013.

Distribution

Previously reported from Veracruz and Coahuila states, Mexico, and on Buenos Aires province, Argentina (Cook 1980); Catamarca and Tucumán provinces in Argentina and Vallegrande, Bolivia (Fernandez and Achem 2024). These are the first records of this species in Brazil.

Key to the Neotropical *Sperchon* species based on adults

1. A pigmentless median eye present *S. pontifex* Otero-Colina, 1987
— Median eye absent 2
2. Integument papillated (*Sperchon* s.s.) 3
— Integument reticulated (*Hispidosperchon*) 5
3. Pinnate setae on legs, distoventral projection of P-2 short *Sperchon pinnatus* sp. nov.
— Simple setae on legs, distoventral projection of P-2 relatively long 4
4. Papillae short, medial setae of P-2 absent *S. quintus* Smit & Pešić, 2024
— Papillae very pronounced, P-2 with medial setae *S. oaxacensis* Otero-Colina 1987
5. Ventral peg-like setae of P-3 absent 6
— Ventral peg-like seta of P-3 present 7
6. Thickened seta of P-3 lying medio-dorsally; distoventral projection of P-2 relatively long, glands present on the third coxae *S. gledhilli* K.O. Viets, 1977
— Peg-like setae of P-3 lying medially; distoventral projection of P2 short; glands absent on the third coxae *S. brasiliensis*
7. Ventral seta of P-3 lying on posterior end of segment *S. motasi* Lundblad, 1954
— Ventral seta of P-3 lying medially or posteriorly, but not on the end of the segment 8
8. Claws simple *S. andinus* Lundblad, 1953
— Claws with clawlets 9
9. Thickened ventral seta of P-3 lying medially, most anterior ventral seta of P-4 located medioanteriorly, P-2 and P-4 slender (P-2 L/H = 2; P-4 L/H = 9.5) .. *S. mexicanus* Cook, 1980
— Thickened ventral seta of P-3 lying medio posteriorly most anterior ventral seta of P-4 located medially, P-2 and P-4 stout (P-2 L/H = 1.4; P-4 L/H = 4.7)
..... *S. neotropicus* Cook, 1980

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