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A NEW GENUS OF ARANEOID SPIDERS (ARANEI: ARANEOIDEA) FROM NORTHERN INDIA

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Summary. A new genus and species of araneoid spiders, *Bharatasoma eskovi* **gen. et sp. n.**, are described based on the holotype female from Himachal Pradesh, northern India. The new genus resembles the Neotropical genus *Chthonos* Coddington, 1986 (Theridiosomatidae) by having tibiae, metatarsi and tarsi of legs I and II armed with prolateral row of stiff (i.e., not flexible) setae forming catching basket, and some other shared characters. The new genus has several characters unknown in other theridiosomatid genera and therefore is placed conditionally in this family. Distribution limits of Theridiosomatidae in the Northern Hemisphere are briefly discussed.

Key words: ray spiders, Theridiosomatidae, taxonomy, new species, Himachal Pradesh.

Ю. М. Марусик. Новый род аранеодных пауков (Aranei: Araneoidea) из северной Индии // Дальневосточный энтомолог. 2023. N 489. С. 1-7.

Резюме. Из штата Химачал Прадеш в Индии по голотипу (самка) описан новый род и вид пауков *Bharatasoma eskovi* **gen. et sp. n.** Новый род похож на неотропический род *Chthonos* Coddington, 1986 (Theridiosomatidae) благодаря пролатеральному ряду неподвижных шипиков на голенях-лапках ног I и II и некоторым другим признакам. В то же время новый род имеет ряд признаков неизвестных в семействе Theridiosomatidae и поэтому отнесен к этому семейству условно. Приведены данные о северной границе распространения семейства Theridiosomatidae.

INTRODUCTION

Araneoidea is the largest superfamily of spiders with at least 20 families (Eskov & Marusik, 2023), constituting over 25% of the extant spider species (WSC, 2023). Theridiosomatidae, with 141 extant species in 20 genera, is a relatively small but globally distributed family (WSC, 2023). The northernmost records of this family lie at 59°N in Norway (Aakra *et al.*, 2016) and Sweden (Almquist, 2005), and 43°N in Asia, in Primorsky Krai in Russia (Marusik, 1989) and Hokkaido in Japan (Ono & Shinkai, 2009). The highest diversity of this family is in China (32 species), followed by Brazil with 23 reported species (WSC, 2023). Two species are known in Russia (Mikhailov, 2013). India, despite its megadiverse fauna, is currently known to harbor only one species, *Wendilgarda assamensis* Fage, 1924 (WSC, 2023).

While sorting material collected in India, I came upon a singleton female strongly resembling *Chthonos* Coddington, 1986, a genus of Theridiosomatidae known exclusively from the Neotropical Realm. Similar to *Chthonos*, the Indian specimen has the first two pairs of legs armed with strong and not flexible setae on the anterior part of tibiae, metatarsi and even tarsi. Detail study of this specimen revealed that it can not be placed in *Chthonos* or any other existing genera of the family due to the presence of several characters not known in Theridiosomatidae. It cannot be placed in any of the 20 families listed in Eskov & Marusik (2023) either. The current placement in Theridiosomatidae is only due to the several characters that are present only in one theridiosomatid genus.

MATERIAL AND METHODS

The specimen was photographed using a Canon EOS 7D camera attached to an Olympus SZX16 stereomicroscope, at the Zoological Museum of the University of Turku. Digital images were stacked using CombineZP and edited using CorelDraw graphic design software. Lengths of leg segments were measured on the dorsal side. All measurements are given in mm. The type material will be deposited in the Zoological Museum of Moscow State University (ZMMU).

TAXONOMY

Genus *Bharatasoma* Marusik, **gen. n.**

<https://zoobank.org/NomenclaturalActs/FCFD321E-DB16-4F34-A131-2535FC239B08>

Type species: *Bharatasoma eskovi* sp. n., here designated.

DIAGNOSIS. The new genus is most similar to *Chthonos* by the presence of prolateral row of strong macrosetae on the tibiae, metatarsi and tarsi of legs I and II (Figs 1, 3B), slightly curved metatarsi I and II (Fig. 1A), setae covering abdomen with chitinized bases (Fig. 2B), leathery abdomen, truncate sternum (Fig. 2A), and

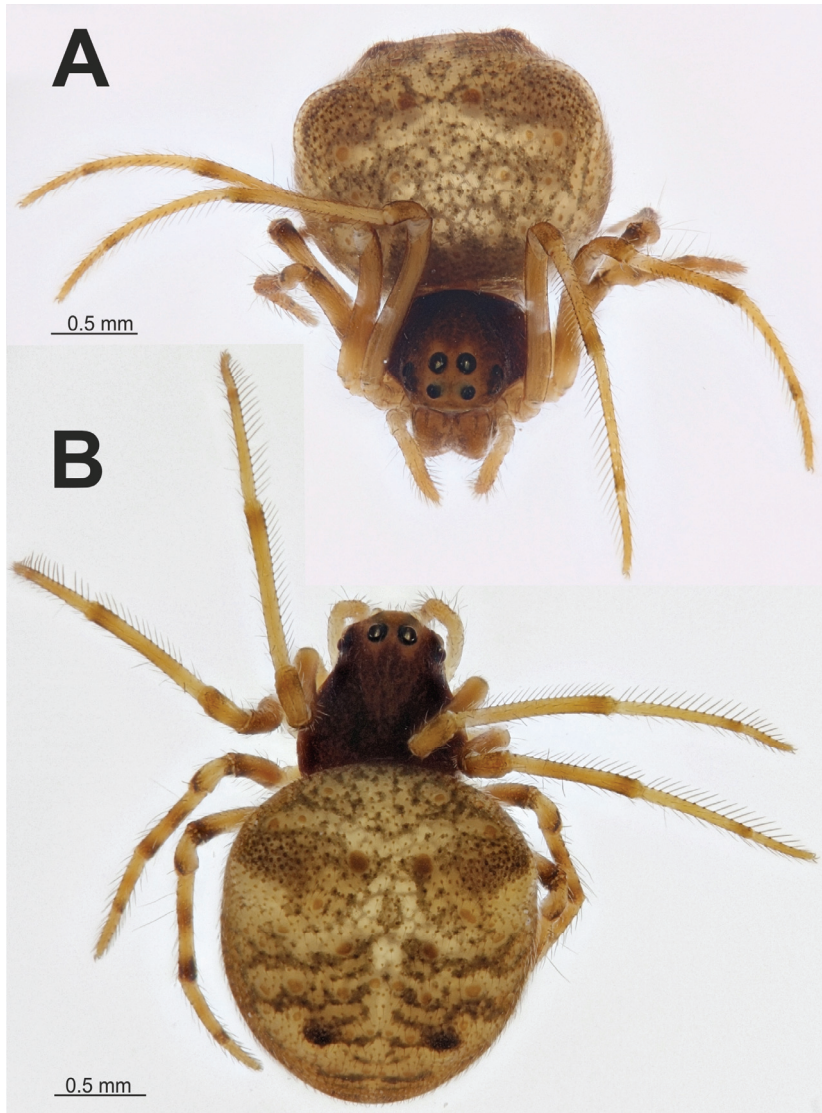


Fig. 1. General appearance of *Bharatasoma eskovi* sp. n., female. A – anterodorsal; B – dorsal.

having 2 pairs of humps on abdomen (Fig. 1A). *Bharatasoma* gen. n. can be distinguished from *Chthonos* and other theridiosomatid genera by the female palp having claw (*vs.* lacking), anterior median eyes spaced by more than 1.4 diameters (*vs.* $1 \leq$), and lacking (or inconspicuous) colulus (Fig. 2B) and the sternal suture (Fig. 2A, *vs.* present). The female of the new genus has bulged epigyne, while in *Chthonos* it is represented by large transversal plate lacking any structures (*cf.* Coddington, 1986: fig. 37).

DESCRIPTION. Same as for species (see below). Leg formula 1243.



Fig. 2. Somatic characters of *Bharatasoma eskovi* sp. n. A – prosoma, ventral; B – abdomen, ventral. Arrows point to the palpal claws. Scale = 0.2 mm.

NOTES. The new genus has several characters shared with other theridiosomatid genera, such as small size (<3 mm), spineless legs, heterogeneous eyes, and metatarsus IV lacking trichobothria. However, it bears several characters that are unknown in Theridiosomatidae, like AME spaced by more than 1.4 diameters (*vs.* $1 \leq$), apparently lacking a colulus (*vs.* present), female palp with claw (*vs.* lacking), and an indistinct sternal suture. Despite the mentioned differences between the new genus and other theridiosomatid genera, I am placing it in Theridiosomatidae because it cannot be placed in any other araneoid family or genus that I know. Indeed, this classification is tentative. Lack of male and additional fresh material does not allow the study and analyze of the complex structure of the bulb.

COMPOSITION. Only the type species.

ETYMOLOGY. Derived from the official Sanskrit name of the country ('Bharata'), combined with 'soma', the last root of the family name. The gender is neuter.

***Bharatasoma eskovi* Marusik, sp. n.**

<https://zoobank.org/NomenclaturalActs/89C84567-4B4A-46A8-8053-F6194A783391>

Figs 1–3

TYPE MATERIAL. Holotype: ♀, **India**: Himachal Pradesh: Patlikuhul Town, 32°07.4' N, 77°08.8' E, 1200 m, 17–23.VI 1999, coll. Y.M. Marusik (ZMMU).

DIAGNOSIS. Same as for the genus.

DESCRIPTION. Female. Total length 2.75. Carapace 1.1 long, 0.95 wide; sternum 0.57 long and wide, truncate posterior width almost ½ of anterior one; abdomen 2.0 long, 1.8 wide. Labium slightly wider than maxillae'; about 2.5 times wider than long. Clypeus 0.11 high, AME 0.09, AME–AME 0.14, PME 0.11, PME–PME 0.07; lateral eyes subequal in size, as large as AME, PME largest. Chelicera with 3 promarginal teeth.

Carapace dark brown with light brown cephalic part; sternum variegated, with light brown median part and dark brown to black marginal bands; labium and maxillae dark brown basally and yellowish distally. Legs light brown-yellow, with dark proximal parts, tibiae III and IV with median dark ring; palps yellowish, with small claw. Femora, tibiae, metatarsi and tarsi of legs I–II with prolateral row of stiff setae forming catching basket. Metatarsi I and II roundly bent. Leg length as shown below in Table 1.

Table 1. Leg length of *Bharatasoma eskovi* sp. n. (in mm).

Legs	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.0	0.35	1.0	0.86	0.5	3.71
II	0.96	0.34	0.86	0.79	0.35	3.3
III	0.66	0.27	0.47	0.43	0.29	2.12
IV	0.93	0.3	0.64	0.5	0.31	2.68

Abdomen chitinized (tegument tough), with 2 pairs of low humps; light with pattern composed of dark transversal stripes, covered with sparse setae and small round scuta, each seta with sclerotized base. Venter with anterior white bands composed of guanine granules. Book lungs sclerotized, with extension to postgastral part of abdomen. Anterior median spinnerets with dark basal segment.

Epigyne as in Fig. 3A, domed, epigynal plate oval, 1.3 times wider than long, anterior part strongly sclerotized; top of plate with kind of septum surrounded by weakly membranized cuticle forming 'heart'-shaped figure, posterior with pair of strongly chitinized round structures.

NOTE. Endogyne was not studied because of the tough abdominal cuticle and the risk of destroying the epigyne of the holotype.

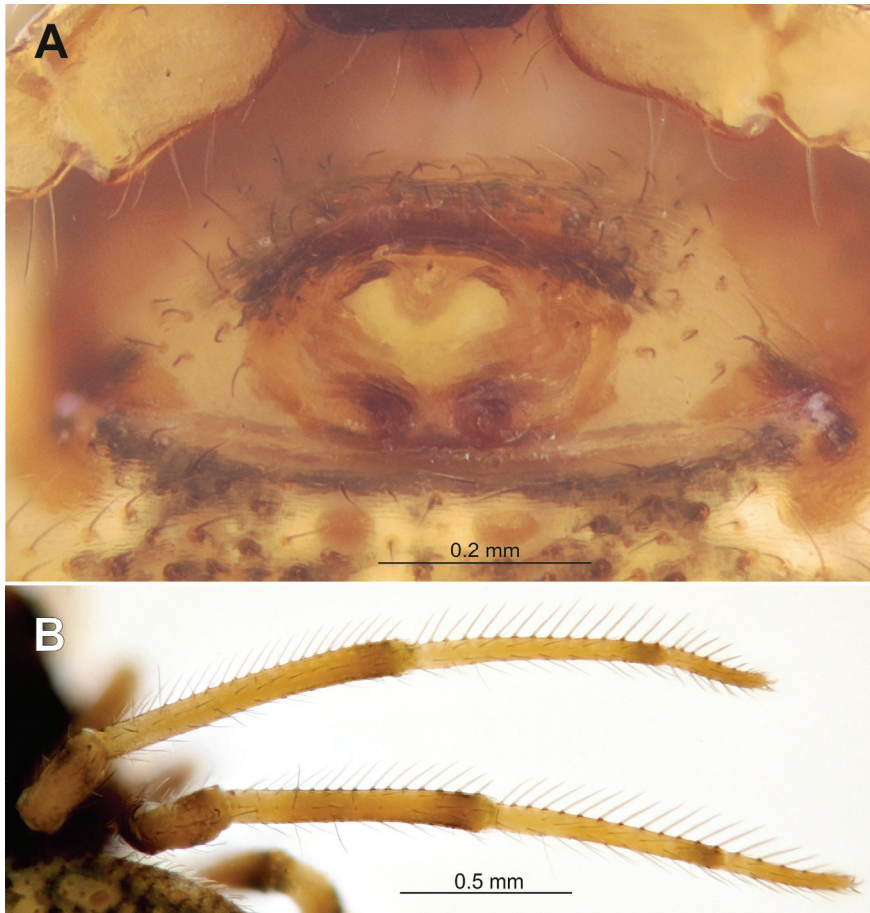


Fig. 3. *Bharatasoma eskovi* sp. n. A – epigyne; B – leg I and II.

ETYMOLOGY. The species name is a patronym in honour of Kirill Y. Eskov (Moscow, Russia), who brought the taxonomic position of this species into my attention.

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