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A new species of *Sahydroaraneus* (Theraphosidae) from Western Ghats of Kerala, India

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Abstract

A new species *Sahydroaraneus sebastiani* sp.nov. is recorded from the Western Ghats of Kerala. It resembles *S. collinus* Pocock 1899 but can be separated from *S. collinus* Pocock 1899 in having spermathecal stalks with uniform diameter ending in a single lobe, while in *S. collinus* Pocock 1899 spermathecal stalks are wider at the bottom, tapering at upper end and possess a bud like single lobe.

Keywords: Taxonomy, *Sahydroaraneus sebastiani*, Chimmony Wildlife Sanctuary, tropical Asia, endemic

Introduction

Mygalomorph spiders of India are poorly studied and represented by only 89 species [1]. Earliest studies of south Indian mygalomorph were conducted by Pocock [2-4] he described nine species of mygalomorph spiders from south India. Gravely [5, 6] contributed significantly in enhancing the knowledge about mygalomorph spiders. Tikader [7] described several new species from south India. Recently Siliwal [8]; Jose & Sebastian [9]; Siliwal & Molur [10]; Mirza [11] also contributed to the study of mygalomorphs.

The family Theraphosidae Thorell, 1870 consisting of 55 species and 11 genera is the dominant spider family among mygalomorphs in India [1, 12]. Mirza & Sanap [13] erected the genus *Sahydroaraneus* to accommodate three species namely *Sahydroaraneus hirsti* Mirza & Sanap 2014, *Sahydroaraneus raja* (Gravely 1915) [5] and *Sahydroaraneus collinus* Pocock 1899 [3]. The genus is endemic to Western Ghats with only three species recorded so far from India. Females of *Sahydroaraneus* Mirza & Sanap, 2014 can be distinguished from related genera like *Heterophriectus* and *Neoheterophriectus* with rastellar tooth being harder and longer compared with smaller rastellar teeth in other genera. Primary apophysis with a basal stalk ending in a thick long black spine differentiates it from the males of both genera [13]. *Sahydroaraneus sebastiani* sp. nov. is described here as a new species from Chimmony Wildlife Sanctuary of Western Ghats, Kerala.

Materials and methods

The specimens were collected from Chimmony Wildlife Sanctuary of Western Ghats, Kerala on 15 December, 2015. They were examined and preserved in 70% alcohol. Measurements are provided in millimeters. Labomed CZM6 stereozoom microscope attached to a Canon EOS 600D digital camera was used for taking photographs with the help of Canon Utility Software. Spermathecae were dissected out and cleared in KOH. Measurements of legs were taken based on left side. Length of palp and leg segments are given as: total [femur - patella- tibia- metatarsus (except palp)- tarsus]. Calibrated ocular micrometer is used for taking measurements of eyes. Total body length excludes chelicerae and tarsal length excludes claws. The identification of the species was done by referring to Mirza & Sanap [13]. The distributional map was produced using online tool available at <https://www.mapcustomizer.com/>.

Result

Taxonomy

Sahydroaraneus sebastiani Jose sp.nov.

(Fig. 1-4)

Type: India, Kerala State, Thrissur District, Chimmony Wildlife Sanctuary, ~800 m elevation. 15 December, 2015, Sunil Jose (Holotype: DMCK 139-2)

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Depository: DMCK 139-2, Archaeological Collections, Deva Matha College, Kuravilangad, Kerala, India.



Fig 1: *Sahydroaraneus sebastiani* Jose sp.nov. Female holotype (DMCK 139) in life, Photo by Sunil Jose K.

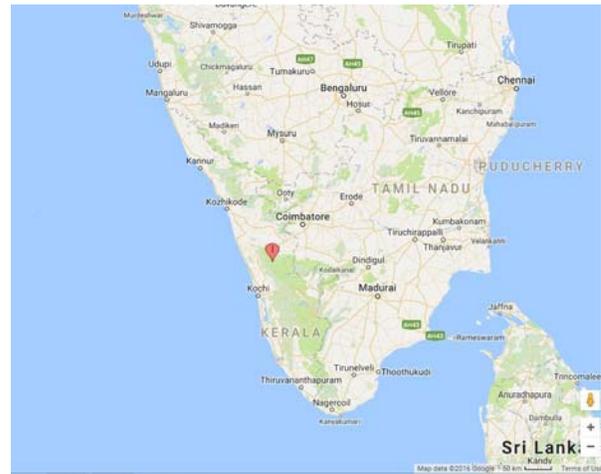


Fig 4: Map showing distribution of *Sahydroaraneus sebastiani* Jose sp.nov.

Diagnosis

This species is similar to “*Heterophriectus* by the presence of spermathecal stalks with equal diameter throughout with a single lobe on each stalk but *Heterophriectus* is restricted to the Western Ghats of Maharashtra” (Mirza & Sanap, 2014) [13]. It can be separated from *Heterophriectus* by the absence of small thorn setae dividing the tarsal scopulae of third and fourth legs and prolateral coxa without any pyriform setae.

It is similar to *Sahydroaraneus* due to the presence of many long setae on tarsi of fourth leg, single lobed spermathecae; chelicerae with 13 teeth on outer margin, females bear rastellum on prodorsal edge.

S. sebastiani sp.nov. can be separated from *S. collinus* Pocock 1899 by spermathecal stalks with equal diameter ending in a single lobe while in *S.collinus* Pocock 1899 spermathecal stalks are being wider at base and narrow distal end bears a single lobe. Coxae of legs I–II without any stridulatory setae unlike *S. collinus* Pocock 1899.

Description of female holotype DMCK 139-2

Carapace: ratio of length to width 1.54; reddish brown, uniformly covered with grey setae. Fovea as wide as ocular width, slightly procurved. Total length 24 long; Carapace 10.96 long, 7.82 wide; Chelicerae 6 long, 4.50 wide; Abdomen 13.04 long, 5.53 wide; Sternum 5.19 long, 4.73 wide; Labium 2.05 long, 1.21 wide.

Eyes: Eye diameter: ALE, 0.25; AME, 0.22; PLE, 0.19; PME 0.14. Distance between eyes: AME–AME, 0.14; PME–PLE, 0.11; AME–ALE, 0.09; PME–PME, 0.55. Clypeus narrow.

Maxilla: Black setae absent on prolateral face, retro-face reddish smooth, yellowish and glabrous. Anterior corner with several cusps. Posterior margin concave and heel strongly pronounced.

Labium: A band of few cusps in anterior 1/4th of length. Basal groove not deeper, but clearly marked. Labiosternal groove concave containing two distinct sigillae.

Chelicerae: 13 promarginal teeth; rastellum present on prodorsal edge formed of strong black setae.

Sternum: oval, elevated at centre, reddish, covered with fine black setae. Marginal setae longer than others.

Sigilla: three pairs; posterior pair oval, closer to margin, 0.25 diameter, 1.40 apart; middle pair oval, and 0.85 from margin, 0.15 diameter, 2.40 apart; anterior sigilla oval, closer to margin, 0.85 diameter, 2.6 apart.

Legs: formula 4123, prograde; leg and palp measurements: Palp 9.4[3.39, 2.07, 2.81, -, 1.13], I 12.56 [4.04, 2.36, 2.57,



Fig 2: A. Dorsal view of cephalothorax and abdomen; B. Ventral view of sternum, labium, maxillae and abdomen.

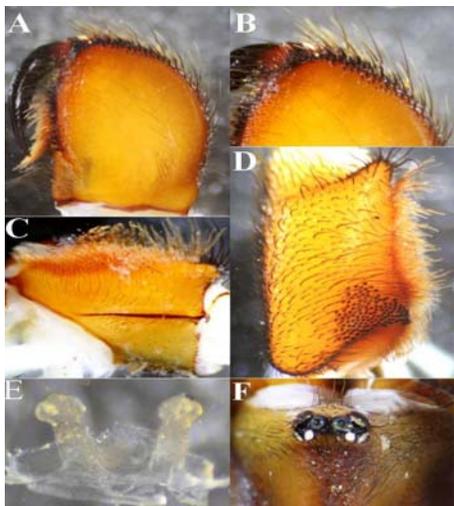


Fig 3: A. Chelicerae; B. Chelicerae prolateral view showing rastellum, C. maxillae; D. maxillae; E. spermathecae, F. Eyes.

2.03, 1.56], II 11.52[3.33, 2.13, 2.34, 2.30, 1.42], III 10.71[2.78, 2.01, 2.51, 2.05, 1.36], IV 15.12[4.08, 2.55, 3.89, 3.20, 1.40]

Leg coxae: legs I & II without any pilose setae arranged horizontally above coxal suture; black hairs on the dorso-retrolateral border. Coxae, I-II directed forward, III-IV directed backward.

Scopulae: entire and undivided on all tarsi.

Abdomen: Brown hairs present on dorsal and ventral sides, without exposing cuticle anywhere.

Spermathecae: consist of two seminal receptacles, each with a globular apex.

Etymology: The new species is named after Dr. P.A. Sebastian, Sacred Heart College, Cochin for the valuable contribution he has rendered to the arachnology of Western Ghats.

Natural history: Specimens were collected beneath decaying logs from moist deciduous forests.

Specimens examined: India, Kerala State, Thrissur District, Chimmony Wildlife Sanctuary, ~800 m elevation. 6 December, 2016, Sunil Jose; Holotype: DMCK 139-2; Paratypes: DMCK 139-1, DMCK 139-3, Kakkayam, Kozhikode district.

Discussion

The data on theraphosid spiders found in Western Ghats is very limited. Only a few genera like *Poecilotheria* [2, 3, 14], *Annandaliella* [9], *Thrigmopoeus* [10], *Haploclastus* [1] and *Neoheterophrictus* [13] are recorded from this biologically rich area. This points to the dearth of workers and inadequate attention on the diversity of theraphosid spiders in Western Ghats. *Sahydroaraneus* is a recent addition to the generic checklist of Western Ghats. The present species is the third species of *Sahydroaraneus* recorded from Kerala. It has been collected from Chimmony Wildlife Sanctuary in Thrissur district and Kakkayam in Kozhikode district. Its presence from both north and south of Palghat gap of Western Ghats, indicates a wider geographical range for the species. Among the other known species of *Sahydroaraneus*, *S. hirsti* is reported by Mirza & Sanap 2014 [13] from Thrissur district based on a specimen collected by F.H. Gravely in 1915. They also transferred *S. raja* to this genus due to the presence of distinctly stout and long rastellar teeth. *S. collinus* is known only from a female collected in 1929 from Yercaud in Tamil Nadu. *Sahydroaraneus* species usually lives under rocks or logs that make them invisible during the usual field collections. These may be one reason why they are poorly represented in the collections. They also look very similar to each other so many different species are often neglected by most workers.

Conclusion

Discovery of a new theraphosid species points to the probability of many more undiscovered theraphosid species in the Western Ghats. The theraphosid spiders are under risk of extinction due to their primitive and non migratory nature. Unlike other spiders they don't resort to ballooning for dispersal, hence they restricted to their native sites. The destruction of their natural habitats often leads to their extinction without even known to science. Larger theraphosids like *Poecilotheria* [14] species are illegally smuggled from Western Ghats by pet dealers in Europe and

America. There are lot of websites in the internet for selling these larger theraphosids of India and other countries. Due to their poisonous nature tribal and local people fear them a lot, which also leads to unnecessary killing of these spiders. Documenting the diversity of mygalomorph spiders should be given urgent priority by researchers to enlist all the unknown species of these primitive spiders, otherwise a large number of unknown species will be extinct soon considering the present rate of deforestation.

Nomenclatural acts: This work and the nomenclatural acts it contains have been registered in Zoo Bank. The Zoo Bank Life Science Identifier (LSID) for this publication is: urn:lsid:zoobank.org:pub:urn:lsid:zoobank.org:pub:7C54357B-DD52-4EFC-8BC9-AB3CCC36F304
Internet Archive (added: Mar 12 2016 7:18PM UTC) [http://archive.org/]

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