

A New Whip Spider Species of the Genus *Sarax* Simon, 1892 (Amblypygi: Charontidae) from Thailand

ERIC YTHIER

BYG Taxa, 382 rue des Guillates, 71570 Romanèche-Thorins, FRANCE

*Corresponding author. Eric Ythier (contact@bygtaxa.com)

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ABSTRACT. — A new whip spider species of the genus *Sarax* Simon, 1892 is described based on three specimens collected in Koh Pha Ngan island, Southern Thailand. The new species, *Sarax kosulici* sp. nov., represents the second species of the genus *Sarax* described from Thailand, and the sixth species of Amblypygi reported from the country. The new taxon described here raises the total number of currently recognized species for the genus *Sarax* to 39.

KEYWORDS: Arachnida, taxonomy, morphology, description, Koh Pha Ngan

INTRODUCTION

The genus *Sarax* was established by Simon (1892), having as type species, by original designation, *Sarax brachydactylus* Simon, 1892, described from the Philippines. It is the third most diverse genus of whip spiders (after *Charinus* Simon, 1892 and *Phrynus* Lamarck, 1801) with 38 species described from Africa, Middle East, South Asia, Southeast Asia and Oceania, occurring in a wide range of micro-habitats. This genus belongs to the family Charontidae Simon, 1892, together with four other genera, *Charon* Karsch, 1879, *Catageus* Thorell, 1889 *Charinus* Simon, 1892, and *Weygoldtia* Miranda, Giupponi, Prendini & Scharff, 2018 (Weygoldt, 2000; Harvey, 2003, Miranda et al., 2018, 2021, 2022, 2024; WAC, 2025).

Recent discovery in the island of Koh Pha Ngan, Southern Thailand, of undescribed specimens of *Sarax* has led to the description of a new species, *Sarax kosulici* sp. nov. To date, it is the second species of the genus *Sarax* described from Thailand (together with *Sarax indochinensis* Miranda, Giupponi, Prendini & Scharff, 2021, described from Koh Kut island and also reported from Vietnam and Cambodia). The new species exhibits similarities with some other *Sarax* species occurring in region but can be distinguished by a combination of distinct morphological features. The new taxon described here raises the total number of currently recognized species for the genus *Sarax* to 39, and the total number of Amblypygi species occurring in Thailand to six (WAC, 2025).

MATERIALS AND METHODS

Illustrations and measurements were made with the aid of a Motic SMZ-171 stereo-microscope with an ocular micrometer, together with a digital camera Tucsen HD Lite. All external morphological designation terms follow Miranda et al. (2021). Trichobothrial terminology follows Weygoldt (1970, 2000) and the following abbreviations are used to describe the trichobothria present on distitibia: *bf*, basal frontal; *bc*, basal caudal; *shf*, subbasal frontal; *sc*, caudal series; *sf*, frontal series. The new species described here is compared with its geographically closest congeners using original descriptions. The material studied herein is preserved in 70% ethanol and will be deposited in the collections of the MNHN (Muséum national d'Histoire naturelle, Paris, France).

RESULTS

Taxonomy

Class Arachnida Cuvier, 1812

Order Amblypygi Thorell, 1883

Family Charontidae Simon, 1892

Genus *Sarax* Simon, 1892

Sarax kosulici sp. nov.

(Figs. 1–2)

Type material.— Holotype ♀, Thailand, Koh Pha Ngan island, Panburi village, 9°45'53.42"N 100°3'36.58"E, 82 m a.s.l., close to the sea, secondary forest mixed with coconut trees, collected at night on the ground, 07/VIII/2025 (O. Košulič). Paratypes: one adult ♀ and one immature ♀, same data as holotype. Type material deposited in the collections of the MNHN.

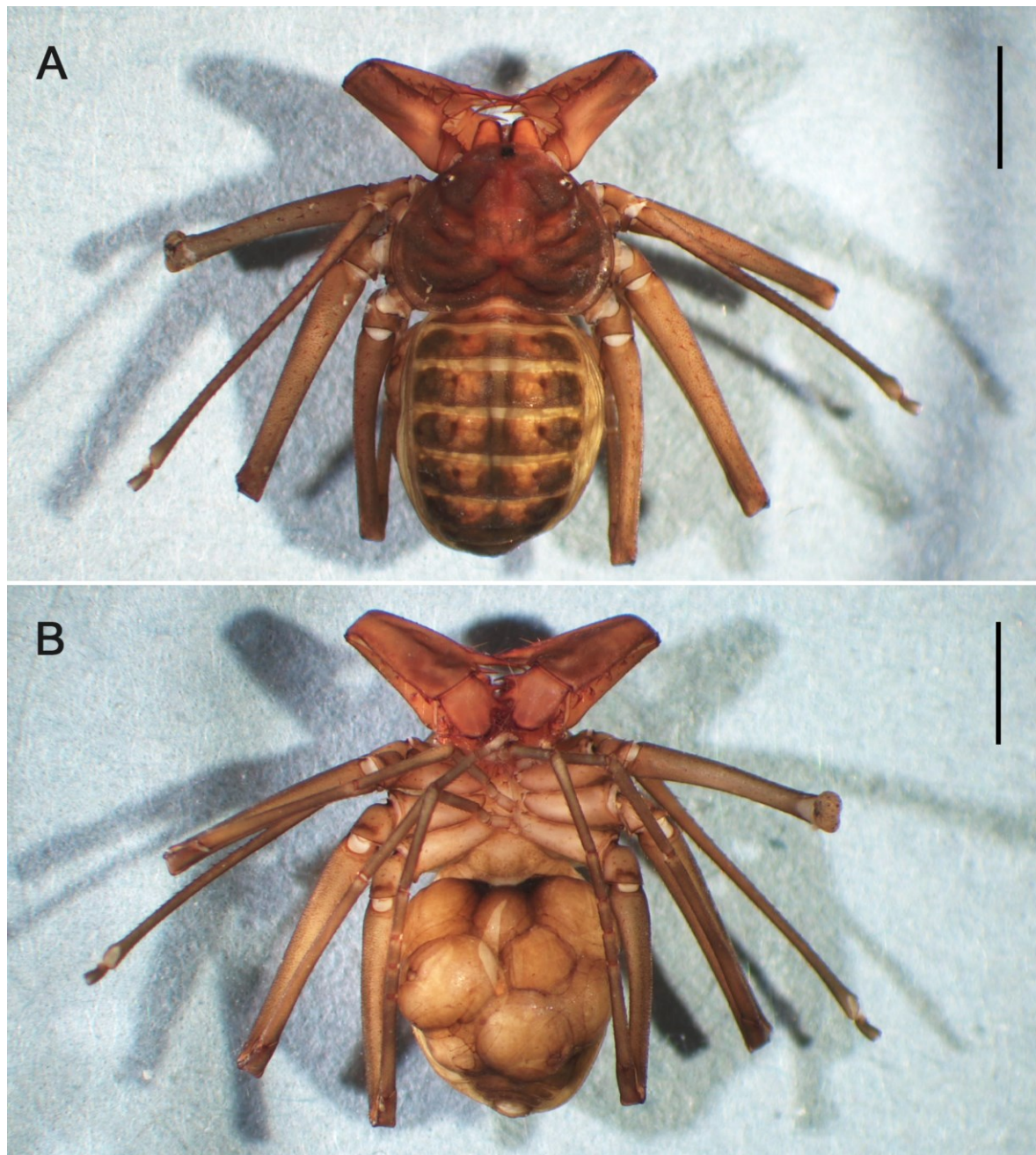


FIGURE 1. *Sarax kosulici* sp. nov., female holotype, habitus A. Dorsal aspect. B. Ventral aspect. Scale bars = 2 mm.

Etymology.— Patronym in honour of Dr. Ondřej Košulič (Mendel University in Brno, Czech Republic), collector of the new species, in recognition of his significant contributions to the study of arachnids in Southeast Asia.

Diagnosis.— The described features (see Description) allow the attribution of the new species to the family Charontidae and the genus *Sarax*. The new species can be distinguished from other *Sarax* species by the following combination of characters: carapace anterior margin rounded; cheliceral basal segment with a small retrolateral tooth, opposite to bifid tooth; cheliceral

claw with four teeth; pedipalp femur with five dorsal spines (four major and one minor) and four ventral spines (three major and one minor); pedipalp patella with five dorsal spines (four major and one minor) and four ventral spines (three major and one minor); pedipalp tarsus with two small dorsal spines; cleaning organ ventrally with 26 setae; tibia of leg I with 23 articles, tarsus with 41 articles with the first article 1.5 times the length of second article; basitibia of leg IV with four pseudo-articles, distitibia with trichobothrium *bc* situated closer to *shf* than to *bf*, and *sc* and *sf* series each with five trichobothria. Male unknown.

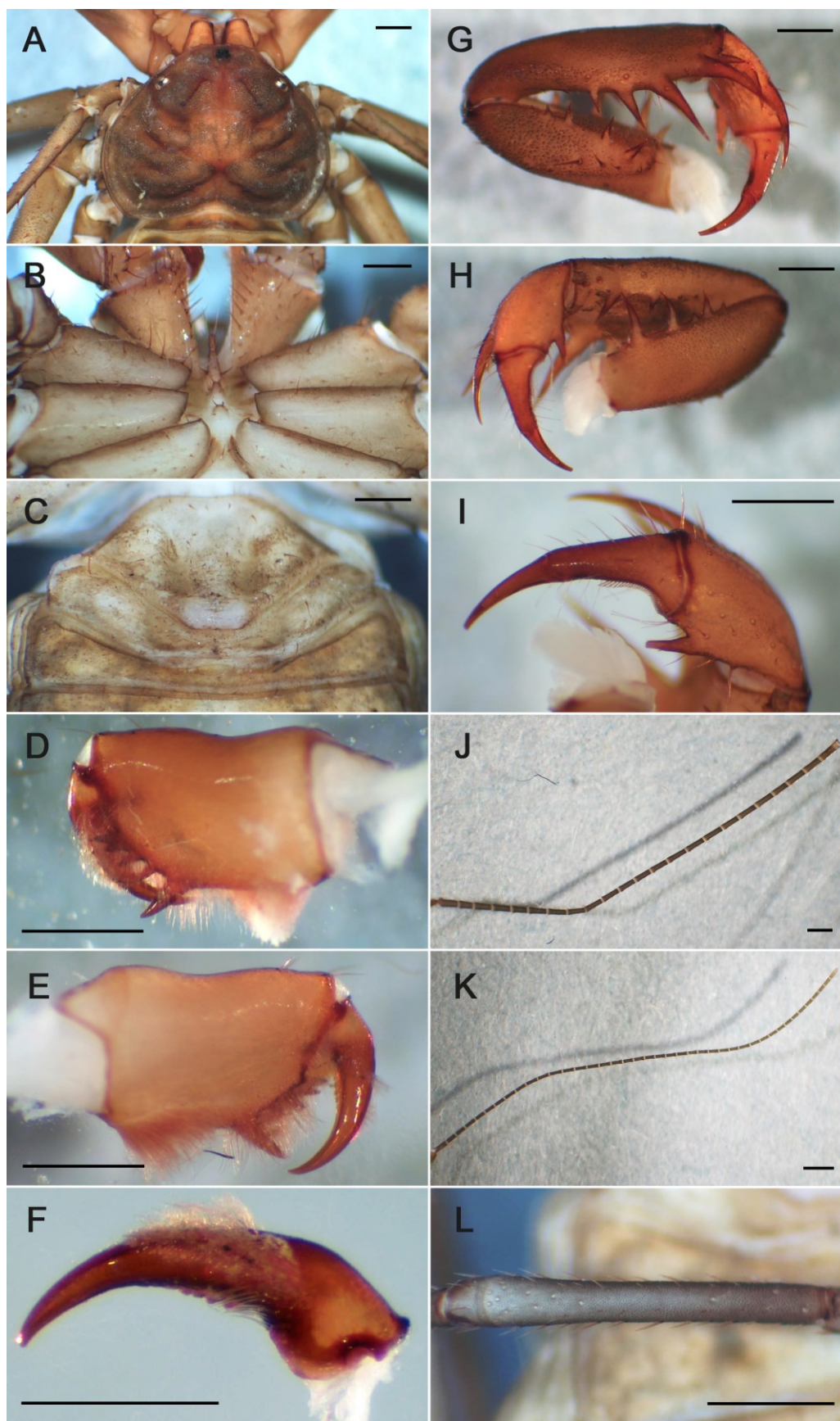


FIGURE 2. *Sarax kosulici* sp. nov., female paratype. **A.** Carapace, dorsal aspect. **B.** Anterior half of sternum and coxae of pedipalps and leg I-II, ventral aspect. **C.** Genital operculum, ventral aspect. **D-E.** Chelicerae, prolateral (**D**) and retrolateral (**E**) aspects. **F.** Cheliceral claw, prolateral aspect. **G-H.** Left pedipalp, dorsal (**G**) and ventral (**H**) aspects. **I.** Left pedipalp tarsus, ventral aspect, showing the cleaning organ. **J-K.** Left leg I, tibia (**J**) and tarsus (**K**). **L.** Left leg IV, distitibia, dorsal aspect, showing the trichobotrial pattern. Scale bars = 0.5 mm.

Sarax kosulici sp. nov. can be separated from the morphologically and geographically closest *Sarax* species, namely *S. indochinensis* Miranda, Giupponi, Prendini & Scharff, 2021 from Thailand, *S. rimosus* (Simon, 1901) from Malaysia, Cambodia and Vietnam, *S. sarawakensis* (Thorell, 1888) from Malaysia, Indonesia and Papua New Guinea, *S. tiomanensis*, Giupponi, Prendini & Scharff from Malaysia and *S. singaporeae* Gravely, 1911) from Singapore, by means of the following combination of characters (Fig. 2):

- (i) carapace anterior margin rounded (anteriorly projected in *C. rimosus*);
- (ii) cheliceral basal segment with a small retrolateral tooth, opposite to bifid tooth (no retrolateral tooth in *S. sarawakensis*) and cheliceral claw with four teeth (five in *S. indochinensis*, three in *S. tiomanensis*);
- (iii) pedipalp femur with five dorsal spines (four in *S. sarawakensis* and *S. indochinensis*) and four ventral spines (five in *S. tiomanensis*);
- (iv) pedipalp patella with five dorsal spines (four in *S. indochinensis*) and four ventral spines (three in *S. indochinensis* and *S. tiomanensis*);
- (v) pedipalp tarsus with two small dorsal spines (three in *S. rimosus*) and with cleaning organ ventrally with 26 setae (30–32 in *S. indochinensis*, 28–33 in *S. tiomanensis*);
- (vi) tarsus of leg I with the first tarsal article 1.5 times the length of second article (two times the length of second article in *S. sarawakensis*, equal in length in *S. indochinensis*);
- (vii) basitibia of leg IV with four pseudo-articles (three in *S. rimosus*), distitibia with trichobothrium *bc* situated closer to *shf* than to *bf* (equidistant between *bf* and *shf* in *S. indochinensis*) and *sc* and *sf* series each with five trichobothria (six in *S. singaporeae*).

Description.— Based on female holotype and adult female paratype.

Coloration (in alcohol). General coloration reddish brown to yellowish brown. Prosoma: carapace reddish brown with reddish yellow marks radiating from the fovea. Opisthosoma: tergites yellowish brown with darker pigmentation medially and laterally; sternites yellowish brown. Pedipalps reddish yellow with spines reddish. Legs yellowish brown (Fig. 1).

Carapace. Six anterior setae; anterior margin rounded. Small granules, densely scattered between ocular triads and among sulci; median eyes and median ocular tubercle well developed; lateral eyes well developed; lateral ocular triad well near carapace margin (Fig. 2A).

Sternum. Tritosternum projected anteriorly, long, surpassing the base of pedipalp coxae, with two apical and two median large setae, and two smaller at its base; tetrasternum convex with a pair of large setae in its

apex and three smaller at its base; pentasternum convex, smaller than tetrasternum, with two large setae in its apex and two smaller at its base (Fig. 2B).

Opisthosoma. Oblong, with fine punctuation on tergites; sternites smooth.

Genitalia. Female genital operculum lighter, with short setae posteromedially; gonopods finger-like (Fig. 2C).

Chelicerae. Basal segment with four internal teeth; the proximal one big, two median teeth of about half the length of proximal one; distal tooth about two thirds the length of proximal one, bifid, with distal cusp larger; retrolateral surface of basal segment with a small tooth, opposite to bifid tooth; claw with four teeth (Fig. 2D–F).

Pedipalps. Femur with five dorsal spines (four major and one minor) and four ventral spines (three major and one minor); three small setiferous tubercles between dorsal spine I and proximal margin; a long spine between ventral spine I and proximal margin, two-thirds the length of spine I. Patella with five dorsal spines (four major and one minor) and four ventral spines (three major and one minor); a prominent setiferous tubercle distal to dorsal spine I, one-third the length of spine I; two small setiferous tubercles between ventral spine I and distal margin. Tibia with ventral spine distally and two setae between spine and distal margin. Tarsus with two small dorsal spines, the proximal spine one-third the length of distal spine; cleaning organ with 26 setae in ventral row (Fig. 2G–I).

Legs. Tibia of leg I with 23 articles; tarsus I with 41 articles with the first article 1.5 times the length of second article. Leg IV basitibia with four pseudo-articles, with sclerotized, denticulate margin projecting from apex of articles; trichobothrium *bt* situated medially on last pseudo-article; distitibia with trichobothrium *bc* situated closer to *shf* than to *bf*, and *sc* and *sf* series each with five trichobothria (Fig. 2J–L).

Measurements of the female holotype (in mm). Total length 6.63. Carapace: length 2.65; width 3.30. Opisthosoma length 3.98. Pedipalp: femur length 2.30; patella length 2.46; tibia length 1.15; tarsus length 0.66; claw length 0.62. Leg I femur length 9.52. Leg IV: femur length 1.63; basitibia I length 0.51; basitibia II length 0.47; basitibia III length 0.79; distitibia length 1.49; basitarsus length 0.88; other tarsal articles length 0.79.

Distribution.— The new species is only known from the island of Koh Pha Ngan, in Southern Thailand (Fig. 3). The type material was found in a secondary forest mixed with coconut trees, close to the sea.

Ecology.— The species was found at night in a lowland secondary forest close to the sea, mixed with coconut trees and locally affected by slight anthropogenic disturbance. Specimens were observed running on

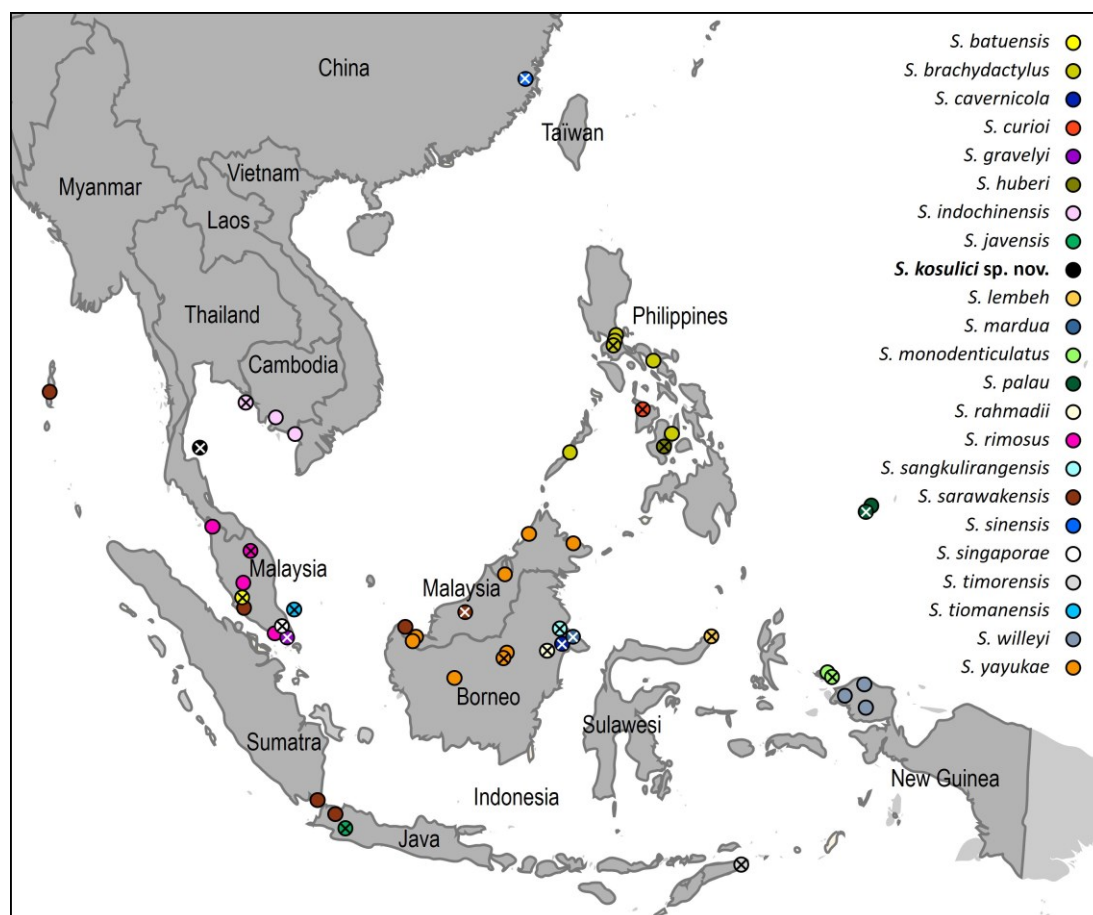


FIGURE 3. Map of Southeast Asia, showing the approximate distribution of the *Sarax* species known from this region (modified from Miranda *et al.*, 2021, 2022). Symbols with a cross showing the type locality in each species (approximate for *S. sarawakensis*).



FIGURE 4. Habitat of *Sarax kosulici* sp. nov. in Koh Pha Ngan island, Thailand.

large shaded rocks in the forest interior (Fig. 4), and one additional individual was collected from a small soil wall along a dusty road within the same secondary forest. No other amblypygid species were detected in the surrounding area.

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