

## Notes on the black-and-gold huntsman spider, *Thecticopsis orichalcea* (Simon, 1880), a charismatic Southeast-Asian species (Araneae: Sparassidae: Sparianthinae)

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**Abstract.** The identity of an uncommon and charismatic species of Southeast Asian huntsman spider, often referred to by naturalists and in the pet trade as the black-and-gold huntsman spider, has been ascertained. Through literature review and examination of the holotype, we have established it to be *Thecticopsis orichalcea* (Simon, 1880). Notes on its taxonomy, diagnostic features of both sexes, distribution, and natural history are provided.

**Key words.** araneae, huntsman spider, taxonomy

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### INTRODUCTION

Over the last decade or so, an undetermined species of huntsman spider, often referred to as the black-and-gold huntsman by naturalists in the region, has been recorded sporadically in Singapore, Peninsular Malaysia and Brunei Darussalam (all with voucher specimens). Based on photographic records, the species has also been reported in Sabah, Sarawak and southern Thailand. The spider shows all the diagnostic morphological characters associated with *Thecticopsis* Karsch, 1884, a genus widely distributed in the tropics, with the majority of its 51 valid species residing in Asia (World Spider Catalog, 2022).

In modern literature, habitus images of this species first appeared in a photographic guide to the spiders of Brunei (Koh & Leong, 2013, pg. 248) as *Thecticopsis* sp., and again under the same name in a more recently published photographic guide to the spiders of Borneo (Koh & Bay, 2019, pg. 344). Two cases of envenomation from this unidentified *Thecticopsis* sp. in Peninsular Malaysia were documented by Ismail, Court and Anthonysamy (2019), who also provided photographs showing the external morphology of a male and female from Peninsular Malaysia and noted its purported popularity in the pet trade.

A review of earlier taxonomic literature indicated that a male black-and-gold huntsman from Borneo was first described in 1880 by the French arachnologist Eugène Simon, under the name of *Themeropsis orichalcea*. Simon drew attention to the “brilliant yellow coppery” (“d’un jaune cuireux brillant”) pubescence over its body, which must have inspired the specific epithet “orichalcea” (from the Latin word “orichalcum”, a name of a supposedly precious coppery metal cited in ancient Greek and Roman literature, believed nowadays to be a gold-copper alloy). Simon also provided a detailed description of the male palp, but without any accompanying illustrations.

Two years later, another male black-and-gold huntsman was reported by A.W.M. van Hasselt (1882), based on a specimen collected at Silago (West Sumatra, Indonesia). In this paper, the Dutch arachnologist chronicled his initial uncertainties regarding the species, how he had deliberated on its generic placement, and whether it was new to science. He acknowledged that in his correspondence with Swedish arachnologist Tord Thorell over its identity, Thorell had steered him to look in the direction of the genus *Themeropsis*. Meanwhile, Simon presented van Hasselt with a copy of his “Révision de la famille des Sparassidae (Arachnides)”, in which *Thecticopsis orichalcea* was described. Such interactions helped van Hasselt to conclude that the Sumatran specimen was conspecific with that described by Simon; he proceeded to provide his own detailed description, including the characterisation of its greenish yellow (“viridi sulphurea”) cephalothorax, and a dorsum covered with yellow hairs (“dorso flavido piloso”). The description was supported by illustrations of its palp and eye arrangement.

In his work on Malaysian and Papuan spiders (part four, volume one), Thorell (1890) regarded the *Thecticopsis orichalcea* male identified and detailed by van Hasselt (1882) as a new species, (using *Thecticopsis*, the replacement name for

*Themeropis* proposed in Karsch (1884) naming it *Thecticopis silagensis*, derived from Silago, the name of the locality from where van Hasselt's male specimen was collected. However, Thorell did not provide any diagnosis or description of this purportedly new species. Subsequently, in volume two of the same series (Thorell, 1892), he changed his mind, declaring that *Thecticopis silagensis* was probably synonymous with *Thecticopis orichalcea*. More significantly, in this paper, Thorell described, for the first time, the female of *Thecticopis orichalcea* based on a specimen from Sarawak. In this description, he drew attention to the dense "sulphur-coloured" hairs over the female's cephalothorax and abdomen. Thorell also devoted considerable space describing the female genitalia, but offered no illustrations.

In his seminal "Histoire naturelle des araignées" Simon (1897) discussed the species briefly, comparing the RTA of its male palp with those of *Thecticopis papuana* and *Thecticopis canescens*. He also illustrated its eye arrangement. The remaining references to this species are found in Reimoser (1929a) and van der Meer Mohr (1930), both of whom noted its presence in Pulau Berhala (Riau Islands, Indonesia), and in the checklists of Roewer (1955) and Bonnet (1959) which listed its distribution as "Sumatra, Pulu Berhala, Borneo".

Taking into account the description and illustrations in early publications by European arachnological pioneers, coupled with its distribution records, it became apparent that the black-and-gold huntsman seen in Southeast Asia might have been described as *Thecticopis orichalcea* (Simon, 1880). The examination of the holotype deposited in the MNHN has allowed us to confirm they are one and the same, and to append additional notes of its taxonomy, current distribution, and natural history.

## MATERIAL & METHODS

Specimens examined are deposited in the Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum, National University of Singapore, Muséum national d'Histoire naturelle (MNHN), Paris, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Selangor (UKMMC), and the Institut Penyelidikan Perhutanan Malaysia/Forest Research Institute Malaysia (FRIM). Abbreviations used: E—embolus; LL—lateral lobes; MS—median septum; RTA—retrolateral tibial apophysis; dRTA—dorsal retrolateral tibial apophysis; vRTA—ventral retrolateral tibial apophysis; SP—spermathecae; TA—tegular apophysis; TP—tegular projection. Measurements listed are for total body length (carapace length + abdomen length) unless otherwise stated.

## TAXONOMY

**Family Sparassidae Bertkau, 1872**  
**Subfamily Sparianthinae Simon, 1897**

***Thecticopis orichalcea* (Simon, 1880)**  
**(Figs. 1–6)**

*Themeropis orichalcea* Simon, 1880: 336 (male); van Hasselt, 1882: 40, pl. 5, f. 3-5 (male).

*Thecticopis silagensis* Thorell, 1890: 34 (male).

*Thecticopis orichalcea* Thorell, 1890: 31; Thorell, 1892: 44 (female); Simon, 1897: 68, 70, f. 60 (male); Reimoser, 1929a: 2; van der Meer Mohr, 1930: 295; Roewer, 1955: 687; Bonnet, 1959: 4419

**Material examined.** Holotype: male (26 mm) (AR16403), Borneo. coll. Cutter; 1 male (27 mm), (JK.21.11.29.0001), Central Catchment Area, SINGAPORE, coll. F. Seow-Choen, 29 November 2021; 1 female (28 mm), (JK.20.08.08.0001), Chek Jawa, Pulau Ubin, SINGAPORE, coll. E. Goh & Law I.S., 8 August 2020; 1 male (26.7 mm, previously published in Ismail et al. (2019) as 22.5 mm), (UKMMC0001), Kuala Pilah, Kampung Terusan, Negeri Sembilan, MALAYSIA, coll. Ahmad Khaldun Ismail (Collector's Index No. AKI 0003), 25 January 2011; 1 female (27.2 mm), (FRIM 2073), Kuala Pilah, Negeri Sembilan, MALAYSIA, coll. Ahmad Khaldun Ismail (Collector's Index No. AKI 0002), 1 November 2010; 1 female (26 mm), (JK.08.12.03.0001), Kampong Rimba, Gadong, BRUNEI DARUSSALAM, coll. J.K.H. Koh, 3 December 2008.

**Other material.** 1 male, (RMNH.ARA.5935), Sumatra, Indonesia, coll. van Hasselt. (not examined.)

**Diagnosis.** *Thecticopis orichalcea* may be distinguished from its congeners by its large size (23–27 mm in males; 26–30 mm in females), distinct black-and-gold colouration (Fig. 1), the hamiform (hook-like) apophysis on the vRTA of the male palp (Figs. 2A, 4, 5C–D), and an epigyne with the median septum narrowing towards a truncate posterior margin and lateral lobes that are gently curved throughout, terminating posteriorly in broad triangular tips (Fig. 6).



Fig. 1. *Thelcticopis orichalcea*, colour in life. A, female (26 mm), (JK.08.12.03.0001), Kampong Rimba, Gadong, Brunei Darussalam; B, female (28 mm), (JK.20.08.08.0001), Chek Jawa, Pulau Ubin, Singapore; C, D, male (27 mm), (JK.21.11.29.0001), Central Catchment Area, Singapore. (Photographs by: A, Joseph K H Koh; B, Chris Ang; C, D, Alvin Francis Lok).

**Description. MALE:** Embolus relatively short, basally straight, distal third bent 30 degrees, tip truncate, membranous (Fig. 5A); conductor small, triangular, margins well sclerotised (Fig. 5A); tegular projection present near base of embolus, tongue shaped (Fig. 5A); TA comma shaped, basal half broad, distal half flattened, sharply bent, gradually broadening towards truncate tip (Fig. 5A); large retrolateral shelf on tibia with vRTA and dRTA (Figs. 2A–C, 4, 5B–D); vRTA with short triangular process adjacent to upwardly directed hamiform apophysis, dRTA, flattened, bilobed, lower lobe small, triangular, upper lobe larger, wedge shaped, bent sharply in ventral view (Figs. 2A–C, 4, 5B–D). **FEMALE:** Epigynal field longer than wide; lateral lobes thick, inner margins gently curved, posteriorly with rounded lobe before ending in broadly triangular tips extending directed anteriorly, extending beyond median septum; median septum stout, narrowing gradually towards truncate posterior margin; copulatory ducts short; spermathecae broadly oval, anteriorly knob shaped (Fig. 6).

**Remarks.** *Thelcticopis orichalcea* is distinguished by the large size of adults, distinct black-and-gold colouration, and its copulatory structures as detailed in the diagnosis above. It is likely to be the largest among the 51 described species of *Thelcticopis*. Only 10 *Thelcticopis* species exceed 20 mm in length, with just three, namely, *Thelcticopis vasta* (L. Koch, 1873) (29.5 mm), *Thelcticopis canescens* Simon, 1887 (28.9 mm), *Thelcticopis klossi* Reimoser, 1929b (26.3 mm) falling within the size range for *Thelcticopis orichalcea*. However, *Thelcticopis orichalcea* differs from them significantly in terms of genitalia.

The dense bright yellow hairs covering the carapace and abdomen constitute another diagnostic character. Two other species, namely, *Thelcticopis hercules* (described from Sri Lanka) and *Thelcticopis virescens* (from India) are known to have similarly coloured hairs (Pocock, 1901), but unlike *Thelcticopis orichalcea*, these are also present on the legs in addition to the carapace and abdomen.

The hamiform apophysis on the vRTA of the male palp is perhaps the single most diagnostic feature and does not seem to be shared with any other known species of *Thelcticopis*. It was narrated by Simon in the original description and





Fig. 2. *Thecticopis orichalcea*, holotype male (26 mm) (AR16403). A, right palp, ventral view; B, left palp, ventral view; C, left palp, retrolateral view; D, habitus.

illustrated by van Hasselt (1882; pl. V, fig. 4). In the holotype, the left palp is detached, and the distal half of the hamiform vRTA is clearly broken (Fig. 2B, C), though still present on the right palp (Fig. 2A).

The epigyne closely resembles that of *Thecticopis canescens*, based on illustrations of material collected in the Andaman Islands (Tikader & Sethi, 1990), but differs in having the inner margins of the lateral lobes gently curved throughout (Fig. 6A) (versus sharply bent medially; cf. Tikader & Sethi, 1990: figs. 47, 48) and the median septum narrowing gradually towards the posterior margin (Fig. 6A) (versus median septum uniformly thick in posterior half; cf. Tikader & Sethi, 1990: figs. 47, 48). It should be noted that there is some confusion regarding the female of *Thecticopis canescens*, as the female syntype has not been illustrated. Gravely (1931) illustrated the epigyne of what he considered *Thecticopis canescens* from two different localities in Myanmar (Tavoy and Upper Tenasserim). These differ significantly from each other, and from those of Tikader & Sethi (1990).

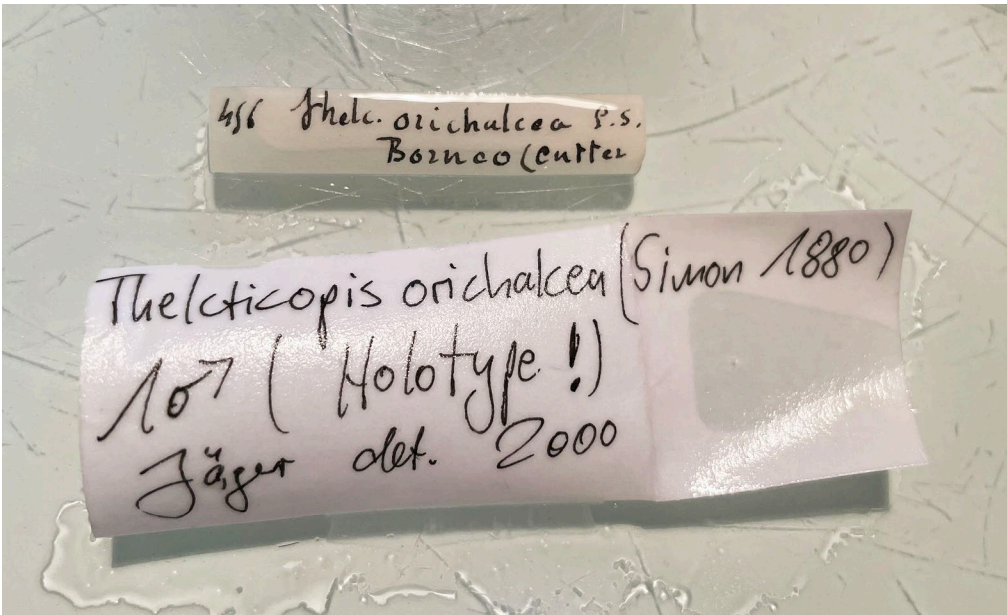


Fig. 3. Labels accompanying *Thelcticopis orichalcea*, holotype male (AR16403).

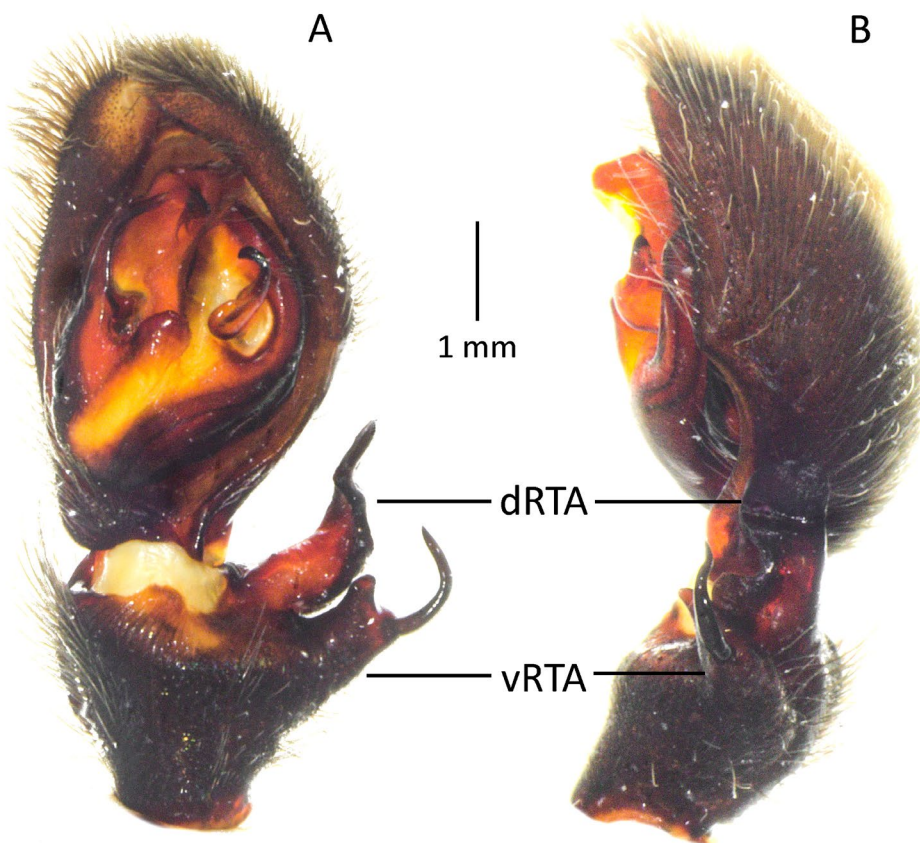


Fig. 4. *Thelcticopis orichalcea*, male (27 mm) (JK.21.11.29.0001), left palp. A, ventral view; B, retrolateral view.



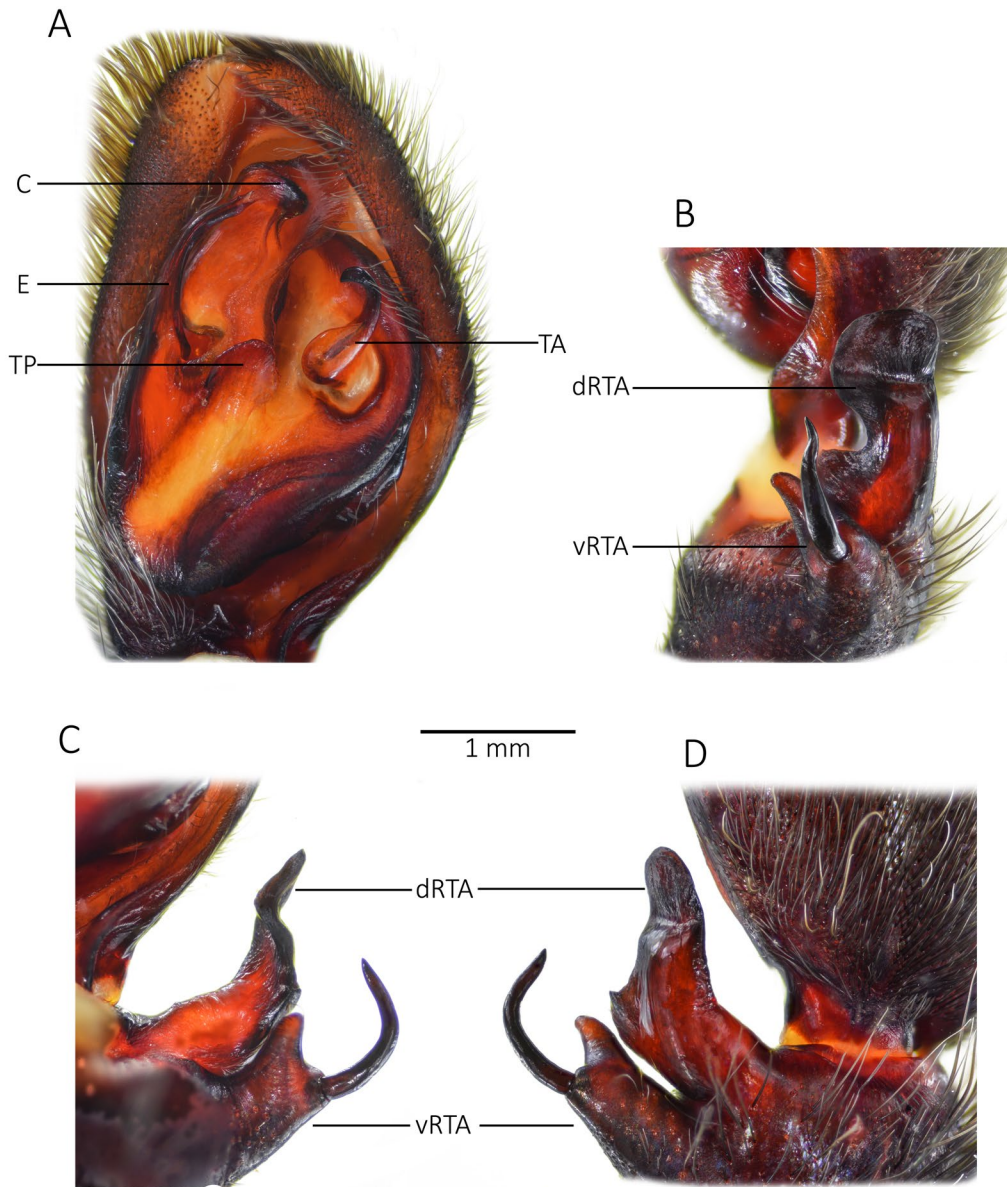


Fig. 5. *Thelectopis orichalcea*, male (27 mm) (JK.21.11.29.0001), left palp. A, C, ventral view; B, retrolateral view; D, dorsal view.

## DISCUSSION

**Distribution.** In first describing the species, Simon (1880) indicated that the holotype male was collected from “Borneo” without specifying a more precise location. It is clear from subsequent papers, as well as recent collections and photographic records, that while the species is uncommon, it is widespread in Southeast Asia. Within Borneo, it has been documented in Brunei, Sabah, and Sarawak. It can be found in Peninsular Malaysia, at least in Negeri Sembilan. It also occurs in Indonesia (Silago in West Sumatra; Pulau Berhala in the Riau Islands) and in the southern provinces of Thailand. In Singapore, it has been recorded in the Central Catchment Nature Reserve, Pulau Ubin, and Pulau Tekong (Lim & Chua, 2015).

**Colouration.** The dense mat of vibrant yellow hairs on the body is a conspicuous clue in identifying this spider, especially live specimens. However, two issues should be noted. First, these characteristic hairs are easily lost and can sometimes be largely missing even in living spiders, especially on the carapace (Fig. 1A). Second, preserved specimens tend to become discoloured. Although Simon did use the words “brilliant yellowish coppery” in describing the hairs, the emphasis was the coppery lustre (hence epithet “orichalcea” as explained in the Introduction). It is probable that Simon’s specimen could have been preserved for some time before he examined and described it; by then the hairs might have faded from a bright yellow to a subdued coppery sheen (compare Figs. 1C and 2D). The descriptions from van Hasselt (1882) and Thorell (1892) are closer to those seen in fresh specimens (“greenish-yellow” and “sulphur coloured” respectively).

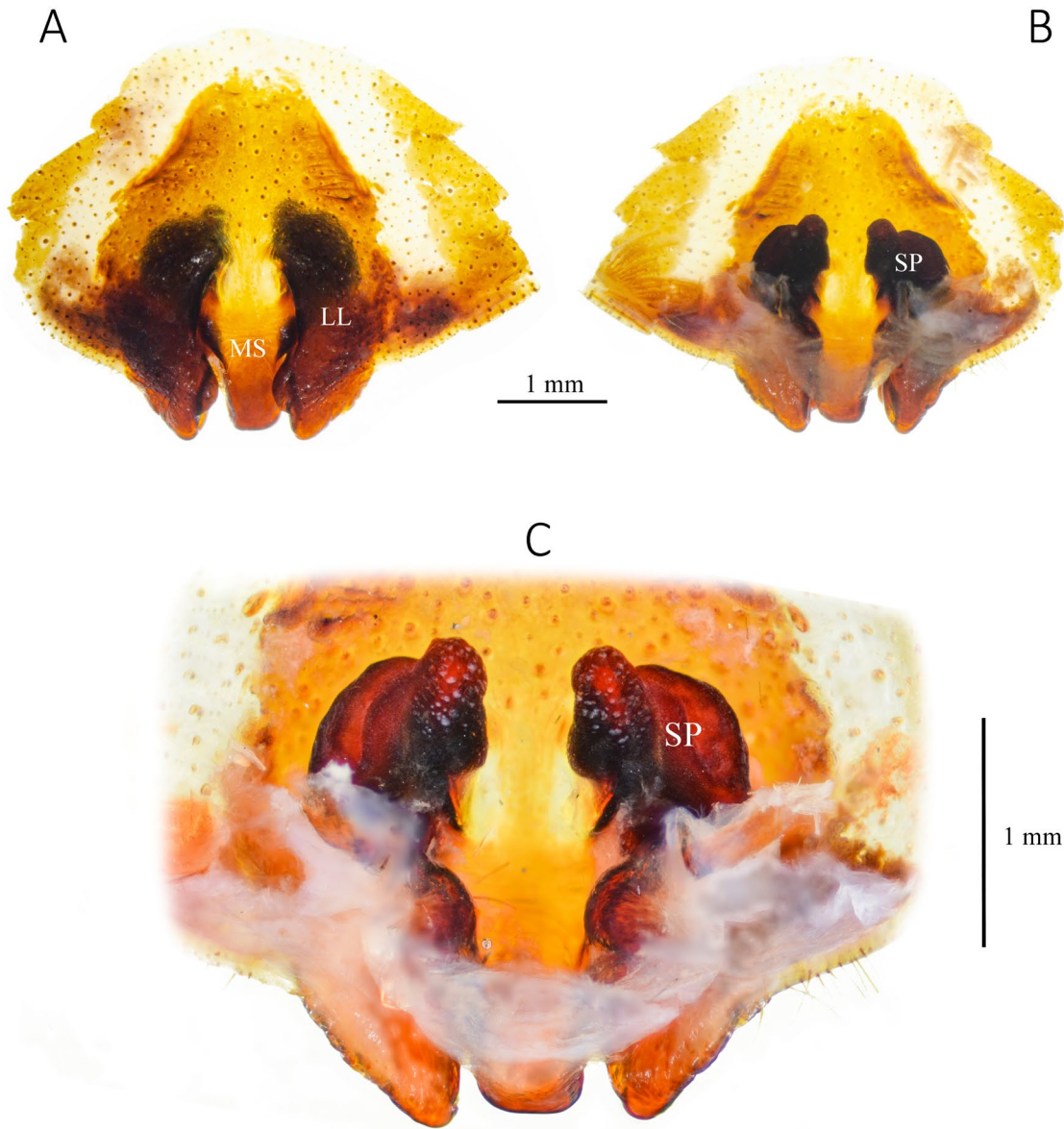


Fig. 6. *Thelctipis orichalcea*, female (26 mm), (JK.08.12.03.0001), epigyne. A, ventral view; B, C, dorsal views.

**Behaviour.** Both males and females of this species are quick to strike a defensive posture when disturbed; legs I and II are raised, and the chelicerae splayed, with drops of venom at the tips often visible (Fig. 1D). They apparently bite readily. The clinical effects of the bite of *Thelctipis orichalcea* are well-documented by Ismail, Court and Anthonysamy (2019) based on two cases of envenomation in Peninsular Malaysia. These include local swelling and acute pain, with joint and neck ache also noted.

**Natural history.** They are most often observed at night on low vegetation in forests, but occasionally inside houses, gardens, man-made structures around forest edges. In captivity, one specimen (JK.21.11.29.0001) built a retreat by stitching two adjoining leaves together with silk.

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