

Discovery of the ogre-faced spiders (Aranei: Deinopidae) in Sumatra (Indonesia), with description of a new species

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Abstract

A new species, *Asianopis gorochovi* sp. n. is diagnosed and described from the Sumatra Island based on a single male. The family Deinopidae C. L. Koch, 1850 is recorded from Sumatra for the first time. Detailed description, digital photographs and distributional map are provided.

Keywords

Araneae, *Asianopis*, biodiversity, Sunda Islands

Introduction

Deinopidae C. L. Koch, 1850, known as the ogre-faced spiders, is a small family comprising 67 species in three genera (WSC, 2023). The majority of these spiders are easily recognizable by the giant posterior median eyes and unique hunting tac-

tics: they hold a small but expandable web between the front legs and cast it over their prey (Coddington, 2012). The family is widespread in (sub)tropical regions of the world (WSC, 2023). *Asianopis* Lin & Li, 2020 is the only genus of Deinopidae known from the Indo-Malayan Realm (Lin et al., 2020; WSC, 2023). The genus was established recently by Lin and Li (2020) based on morphological and molecular evidence. Lin and the co-authors revised the Asian species of *Deinopis* MacLeay, 1839 and transferred all of them to *Asianopis* (Lin et al., 2020). Later, Chamberland and the co-authors transferred several more American, African and Australian *Deinopis* species to *Asianopis* (Chamberland et al., 2022). As a result, the distribution of the generotype of Deinopidae turned out to be limited to Americas, while *Asianopis* became the most widespread genus of the family (WSC, 2023). To date, 33 species of *Asianopis* have been described, of which a third are known from the Indo-Malayan Realm (WSC, 2023). Although the ogre-faced spiders are well-represented in south-east Asia, the family has not been reported from Sumatra. During the 2023 expedition to Sumatra, the authors collected a single male belonging to an undescribed species of *Asianopis*. In the present paper, this new species is diagnosed and described in detail, representing the first record of the family from the Sumatra Island.

Materials and methods

The specimen was photographed using an Olympus DP74 camera attached to an Olympus SZX16 stereomicroscope at the Altai State University (Barnaul, Russia). Photographs of the palp and chelicerae were taken in an alcohol-filled dish with white cotton at the bottom. Photographs of general appearance and cephalic part were made after the specimen had been slightly dried. An entire habitus was photographed using a Canon PowerShot SX620 HS. Digital images were montaged using Zerene Stacker software. The distribution map was produced using the online mapping application SimpleMappr (Shorthouse, 2010). All measurements are in millimeters. Lengths of leg segments were measured from the lateral side. Leg measurements are shown as: femur, patella, tibia, metatarsus, tarsus (total length). The terminology and format of description follows Lin et al. (2020) with modifications. The holotype of the new species is deposited in the Institute of Systematics and Ecology of Animals of Siberian Branch of Russian Academy of Sciences (ISEA, Novosibirsk, Russia; curator G.N. Azarkina).

Abbreviations: ALE – anterior lateral eye, AME – anterior median eye, PLE – posterior lateral eye, PME – posterior median eye.

Result

Family Deinopidae C. L. Koch, 1850

Genus *Asianopsis* Lin & Li, 2020

Asianopsis gorochovi sp. n.

<http://zoobank.org/B143BCB2-97B8-4DB5-B61E-A141EF578075>

Figures 1–13

Type material. **Holotype** ♂ (ISEA, 001.8984), INDONESIA: Sumatra Island, North Sumatra Province, Bukit Lawang Village, 3°33'N, 98°07'E, 18–22.02.2023 (A.V. Gorochov, M.M. Omelko, A.A. Fomichev).

Etymology. The specific name is a patronym in honour of our friend, a prominent entomologist and paleontologist, Dr Andrei V. Gorochov (Zoological Institute RAN, Saint Petersburg, Russia) who helped us to organize the 2023 expedition to Sumatra in which the holotype of the new species was collected.

Diagnosis. In having embolic terminal apophysis (*ETA*), the new species is similar to *A. wuchaoi* Lin & Li, 2020 from Yunnan Province of China. The male can be easily distinguished from that of *A. wuchaoi* by the light median band of carapace reaching the fovea only (vs. reaching the posterior carapace edge; cf. Fig. 1 and 13C in Lin et al., 2020), the prominent triangular brow ridges (*BR*) (vs. oval and low; cf. Fig. 4 and 13A in Lin et al. 2020), the distance between PME and bottom edge of the clypeus equal to PME diameter (vs. a quarter less), and the sharply curved terminal apophysis of the embolus (vs. straight; cf. Fig. 10 and 21B in Lin et al. 2020).

Description. Male. Total length 16.9. Carapace: 5.5 long, 4.05 wide. Abdomen: 11.4 long, 2.7 wide. Eye sizes and interdistances: AME 0.24, ALE 0.27, PME 0.63, PLE 0.34, AME–AME 0.26, AME–ALE 0.94, PME–PME 0.2, PME–PLE 0.61, AME–PME 0.2. Clypeus height 0.29. Leg measurements: I: 18.2, 2.3, 19.7, 24.7, 6.7 (71.6). II: 15.5, 2.3, 14.2, 13.2, 5.8 (51.0). III: 10.2, 1.8, 7.8, 8.8, 1.7 (30.3). IV: 9.7, 1.8, 8.3, 9.0, 1.2 (30.0). Leg formula: 1234. Coloration (slightly dried specimen). Clypeus dark grey. Areas around AME, ALE and PME covered with white plumose setae. Chelicerae brown-grey, with longitudinal white stripes in frontal and lateral parts. Carapace brown. Cephalic part covered with white plumose setae which form median band running to fovea. On the sides of median band carapace covered with simple black setae forming stripes running from PME to PLE. Simple white setae form stripes on carapace edges. Sternum dark brown, with a longitudinal white stripe of thick setae. Labium completely covered with thick white setae. Endites and coxae brown-grey. Palps brown. Palpal femur with dorsal longitudinal white stripe of plumose setae. Legs brown, bearing simple white setae distally. Abdomen brown-grey dorsally, with a longitudinal dark stripe. Sides of abdomen almost black. Ventral part of abdomen and spinnerets brown-grey.

Male palp as shown in Figs 6–10. Femur twice as long as cymbium. Patella almost as long as tibia. Tibia three times shorter than femur. Cymbium 1.3 times longer than tibia. Cymbial length/width ratio 1.0. Tegulum and sperm duct completely obscured by the embolic coils. Median apophysis (*MA*) consists of two lobes: basal lobe (*BL*) and distal lobe (*DL*). Basal lobe C-shaped, extended along the longitudinal axis of bulb. Distal lobe almost perpendicular to it. Embolic coils cover the whole bulb. Embolus (*Em*) originates at 6 o'clock, coiling ca 2000° around *MA* and ending at 4 o'clock. Terminal part of embolus resembles an edge hook: embolic terminal apophysis bent anteriorly at the 90° angle, apex almost straight and unmodified.

Female unknown.

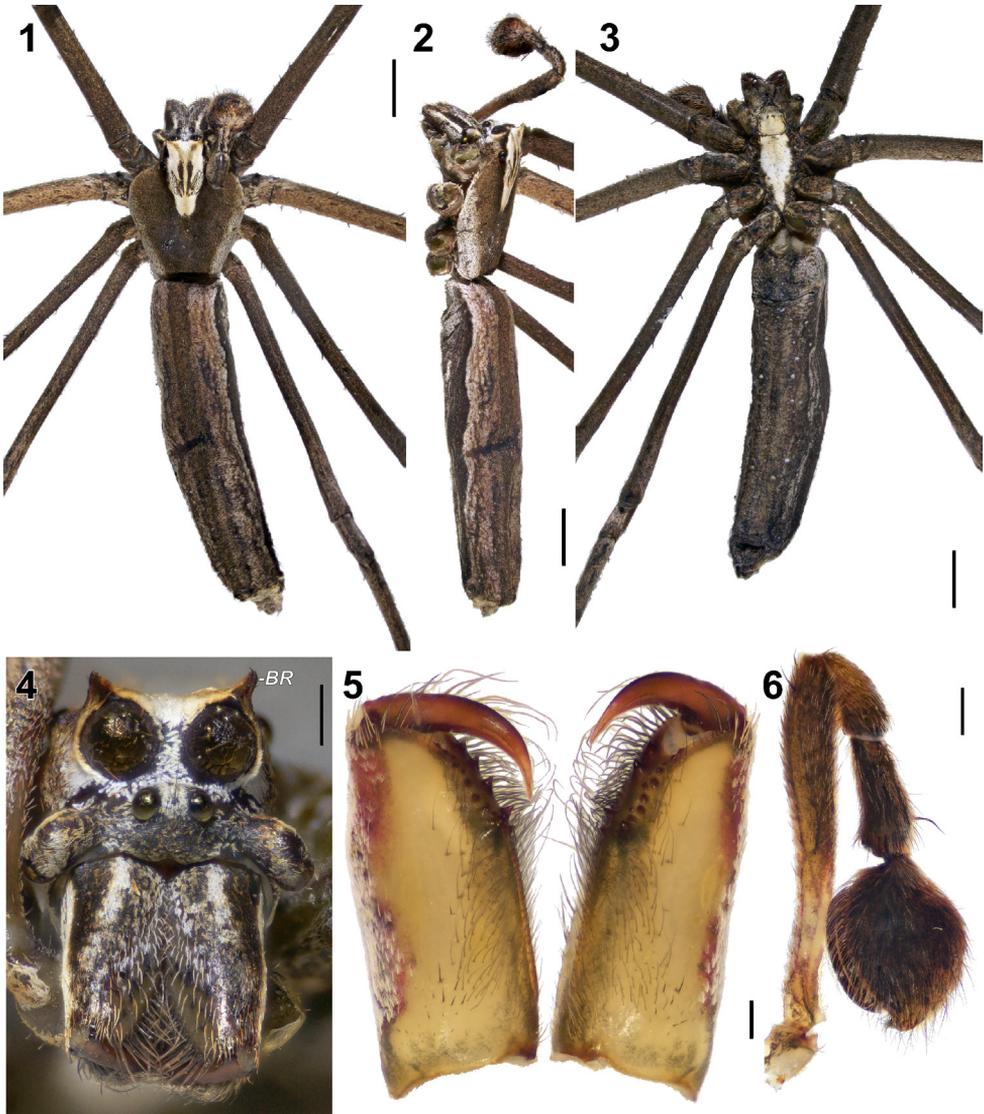
Distribution. Known from the type locality on the Sumatra Island only (Figs 12, 13).

Comments. The placement of the new species in *Asianopis* is confirmed by the following features: the presence of prominent brow ridges (vs. absent in *Deinopis*), the presence of embolic terminal apophysis (vs. absent), the median apophysis subdivided in basal and distal lobes (vs. simple), and not modified femora I (vs. femora enlarged distally).

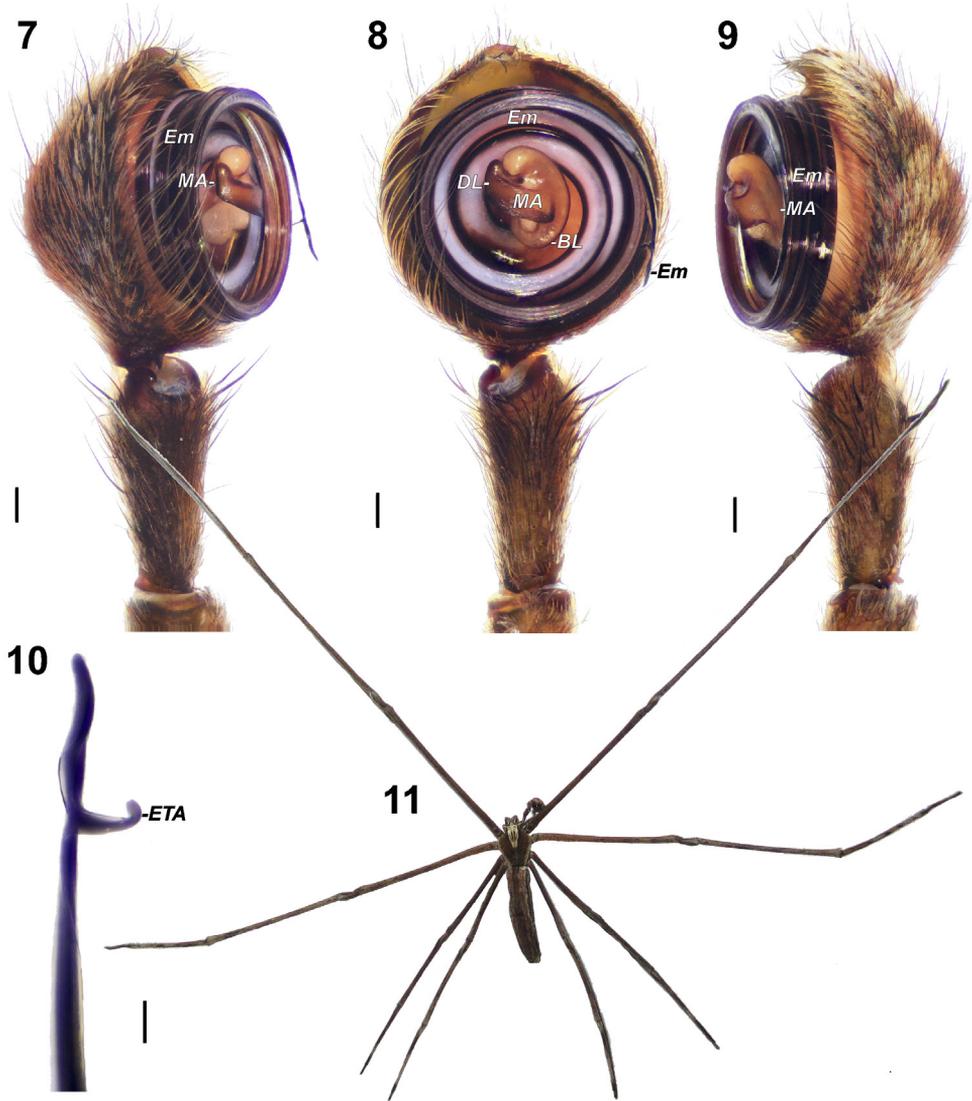
Discussion

With their bizarre appearance, the ogre-faced spiders have recently attracted the attention of arachnologists, being resulted in numerous recent papers (Coddington et al. 2012; Barrion-Dupo & Barrion 2018; Logunov 2018; Lin et al. 2020; Chamberland et al. 2022). However, due to the cryptic lifestyle the spiders remain underexplored. Secretiveness and rarity of Deinopidae has repeatedly been emphasized (Coddington et al. 2012; Chamberland et al. 2022). For example, Coddington and co-authors (2012) argued that despite notoriety and large body size and wide ranges of the ogre-faced spiders, they are unusually rare in collections and in the field. We can confirm this based on our experience during the 2023 field trip to Sumatra. During a month trip, four people collected spiders almost around the clock. Among thousands of the collected spiders, there was just a single specimen of Deinopidae. Due to such rarity, current data on the distribution of ogre-faced spiders in south-east Asia do not reflect the reality. Only two species of Deinopidae are known from the vast territory of Sunda Islands to which Sumatra belongs: *Asianopis celebensis* (Merian, 1911) and *A. dumogae* (Merian, 1911). Both species were described from Sulawesi (=Celebes) Island and can be synonymous with each other (Lin et al., 2020). The first species was described from the male, and the second from the female. The present record of Dinopidae from Sumatra lies thousands of kilometers away from the closest known localities of these spiders in Vietnam (ca 1700 km), south-eastern India (ca 2200 km) and Sulawesi Island (ca 2600 km) (Lin et al. 2020). Thereby, the new discovery fills a large gap in the distribution of ogre-faced spiders.

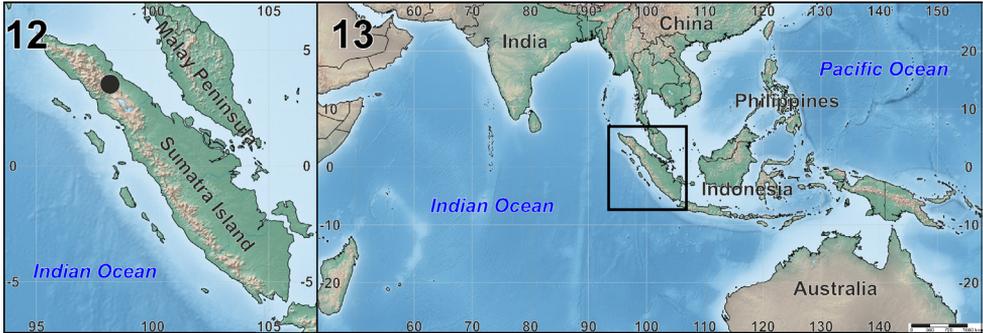
It is highly likely that a large number of Deinopidae species in Sumatra, Kalimantan and Andaman Islands, as well as from Malay Peninsula, will be discovered in future.



Figures 1–6. *Asianopis gorochovi* sp. n.: 1 – habitus, dorsal; 2 – ditto, lateral; 3 – ditto, ventral; 4 – cephalic part, anterior; 5 – chelicerae, posterior; 6 – whole male palp. Abbreviation: BR – brow ridge. Scale bars: 1–3=2 mm, 4, 6=0.5 mm, 5=0.2 mm.



Figures 7–11. *Asianopsis gorochovi* sp. n.: 7 – male palp, prolateral; 8 – ditto, ventral; 9 – ditto, retrolateral; 10 – tip of embolus; 11 – whole habitus, dorsal. Abbreviations: *Em* – embolus, *BL* – basal lobe, *DL* – distal lobe, *ETA* – embolic terminal apophysis, *MA* – median apophysis. Scale bars: 7–9=0.2 mm, 10=0.05 mm.



Figures 12–13. Collecting locality in Sumatra (Indonesia): the frame on Fig. 13 refers to the content of Fig. 12.

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