

A New Species of the Genus *Tegecoelotes* Ovtchinnikov, 1999 (Araneae: Agelenidae) from Nara Prefecture, Japan

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Abstract A new species of the genus *Tegecoelotes*, from Nara pref., Honshu, Japan, is described under the name of *Tegecoelotes spathaceus* n. sp. The new species can be easily distinguished from all other congeneric species by its broad sword-shaped conductor and large conductor dorsal apophysis in the male palp.

Key words: Taxonomy, morphology, coelotinae, male specimens.

Introduction

The subfamily Coelotinae belonging to the family Agelenidae, mainly distributed throughout Asia, is rich in diversity, and 806 species have been described up to the present (World Spider Catalog, 2024). Of these, the genus *Tegecoelotes* Ovtchinnikov, 1999 indigenous to eastern Asia is a comparatively small group of coelotine spiders, including 16 species distributed in Japan, Korea, northeastern China and Russian Far East. However, the genus is markedly diverse only in Japan, and 13 of these species are endemic (World Spider Catalog, 2024).

A median apophysis of the male palp is rounded and spoon-shaped in most coelotine spiders, while claw-shaped in the genus *Tegecoelotes*. This characteristic is a main morphological difference from other genera (Ovtchinnikov, 1999; Wang, 2002). An epigynal tooth of female genitalia is often large and plate-like in this genus. On the basis of these morphological characteristics, this genus is easily distinguishable from other taxa of the subfamily coelotinae. It

has become clear that the male specimens collected from Nara Prefecture in 2018 have unique genital organs, which are morphologically different from those of all other congeneric species including overseas ones. The conductor of the male palp is large and broadly sword-shaped, and no other *Tegecoelotes* species have this unique characteristic (Okumura *et al.*, 2009, 2011; Okumura, 2019; Wang, 2002; Zhu *et al.*, 2017). It is already known that individual variation is unlikely to occur in male specimens of *Tegecoelotes* with a narrow distribution range (Okumura, 2021). Although only males were collected, it is clear that above the specimens belong to an undescribed species. In this paper, the author describes the new species of the genus *Tegecoelotes* Ovtchinnikov, 1999 from Nara Pref., Honshu, Japan noted above, and shows the morphological differences among congeneric species living in the same or nearby areas. In October 2024, the author attempted to collect female specimens in the location where the male was found, but no new specimens were obtained. Further discovery of females of this species is necessary in the future.

Materials and Methods

Examination and illustration were performed using an Olympus SZX-16 stereomicroscope. In order to examine the genital organs, the left male palp was cut. Photographs were taken using a Canon EOS Kiss X10 digital camera attached to the microscope. Measurements of respective body parts were performed using a micrometer mounted on an ocular lens. All measurements are given in millimeters. Leg measurements are given as total length (femur, patella, tibia, metatarsus, tarsus). Descriptive terminology follows Wang (2002) and Ono (2009). Abbreviations: ALE, anterior lateral eye; AME, anterior median eye; CDA, conductor dorsal apophysis; LTA, lateral tibial apophysis; MOA, median ocular area; PLE, posterior lateral eye; PME, posterior median eye; RTA, retrolateral tibial apophysis. The voucher specimens are deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tsukuba (NSMT), Japan.

Txonomy

Family Agelenidae C. L. Koch, 1837

Subfamily Coelotinae F. O. P. Cambridge, 1893

Tegecoelotes spathaceus n. sp. (Figs. 1, 2, 3A, 3B)



Fig. 1. *Tegecoelotes spathaceus* n. sp., male holotype, dorsal view.

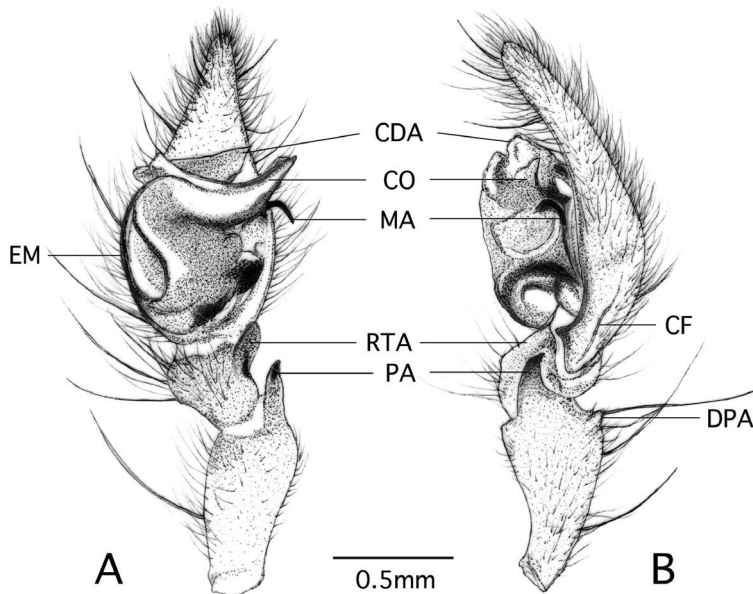


Fig. 2. Male palps of *Tegecoelotes spathaceus* n. sp., holotype (A, B). A, ventral view; B, retrolateral view. Abbreviations: CDA, conductor dorsal apophysis; CF, cymbial furrow; CO, conductor; DPA, dorsal patellar apophysis; EM, embolus; MA, median apophysis; PA, patellar apophysis; RTA, retrolateral tibial apophysis.

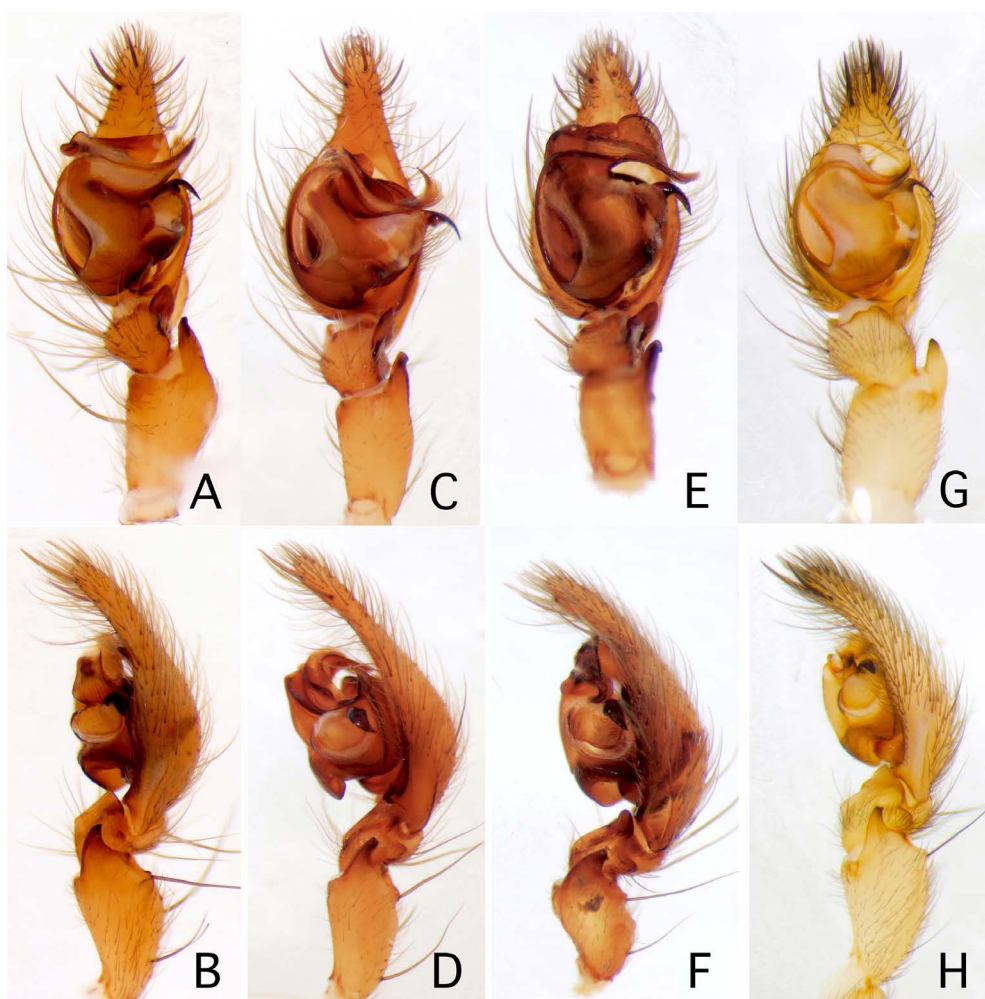


Fig. 3. Comparison of left male palps of four species of *Tegecoelotes*. A, B, *T. spathaceus* n. sp.; C, D, *T. corasides* (Bösenberg & Strand, 1906); E, F, *T. religiosus* (Nishikawa, 2009); G, H, *T. michikoe* (Nishikawa, 1977). A, C, E, G, ventral view; B, D, F, H, retrolateral view.

(Japanese name: Gojo-yamayachigumo)

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Type material: Holotype ♂, Nakabara, Otocho, Gojo City, Nara Pref., 13 November 2018, K. Kumada leg. (NSMT-Ar 26076). Paratype: 1 ♂, Sakamoto, Otocho, Gojo City, Nara Pref., 13 November 2018, K. Kumada leg. (NSMT-Ar 26077).

Distribution: Nara Pref., Japan. (Fig. 4)

Etymology: The trivial name, an adjective, is derived from the Latin meaning wide sword-

shaped and refers to the large and broad conductor of the male palp.

Diagnosis: The conductor of male palp of *Tegecoelotes spathaceus* n. sp. is large and broadly sword-shaped, different from all other species. The three species, *T. mizuyamae* Ono, 2008, *T. echigonus* Nishikawa, 2009, and *T. otomo* Nishikawa, 2009, also have large conductor, but the morphology of each species is overall rounded and not sword-shaped (Okumura *et al.*, 2009). *Tegecoelotes spathaceus* n. sp. resembles *T. michikoe* (Nishikawa, 1977) in having the membranous CDA, but can be distinguished

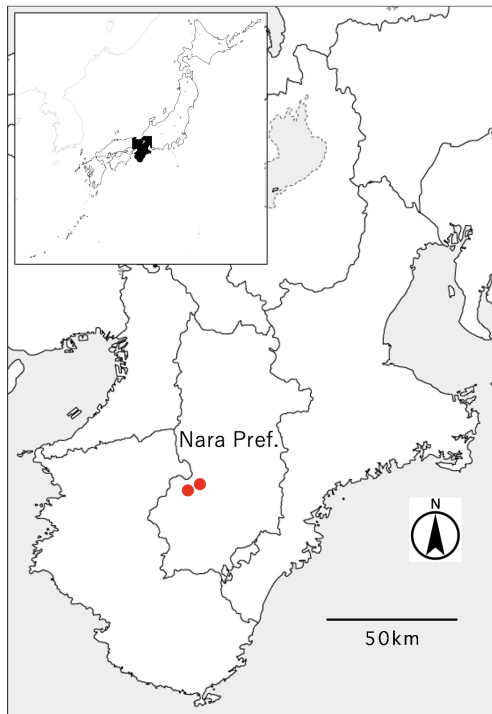


Fig. 4. Collection localities of *Tegeocoelotes spathaceus* n. sp.

from the latter species by the following: The CDA of *Tegeocoelotes spathaceus* n. sp. is thin and fan-shaped, while that of *T. michikoeae* is rounded and has a tiny protrusion; the size and shape of the conductor are also quite different from one another. There is no clear CDA in the male palp of other *Tegeocoelotes* species. As described above, the shape of male palp of the new species is very unique. There are three other congeneric species, *T. corasides* (Bösenberg & Strand, 1906), *T. religiosus* (Nishikawa, 2009) and *T. michikoeae*, living in the same area or in nearby regions, but the new species is clearly distinct from all of them (Fig. 3). Although a female specimen has not yet been obtained, the new species can be easily distinguished from other species just by the males.

Description. Male holotype: Total length 7.84, carapace 3.54 long, 2.43 wide; abdomen 4.30 long, 2.68 wide; sternum 1.80 long, 1.52 wide. Eye sizes; AME 0.13, ALE 0.18, PME 0.16, PLE 0.16. Distances between eyes; AME-AME 0.05,

AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.12, AME-PME 0.15, ALE-PLE 0.05. MOA; anterior width 0.31, posterior width 0.45, length 0.44. Leg measurements: I: 13.33 (3.21, 1.25, 3.16, 3.68, 2.03); II: 11.10 (2.89, 1.17, 2.38, 2.96, 1.70); III: 9.90 (2.71, 1.04, 2.10, 2.80, 1.25); IV: 13.37 (3.45, 1.15, 3.08, 4.01, 1.68).

Palp (Figs. 2, 3A, 3B): patella thick and three times as long as tibia, patellar apophysis short and slightly curved, a tiny protrusion (dorsal patellar apophysis) also on the dorsal side of patella, tibia short, RTA small, LTA almost reduced, cymbial furrow one-fourth of cymbial length, conductor broad and sword-shaped, gently curving overall, CDA large fan-shaped, median apophysis hook-shaped with a circular structure at the lower part, embolus flagelliform.

Chelicera: promargin and retromargin with three teeth.

Coloration: carapace yellowish brown, with median furrow and indistinct radial flecks, dorsum of abdomen grayish brown with unclear chevrons, and light gray line in median anterior portion, sternum yellowish brown and lateral portion black, labium yellowish brown, chelicerae and maxillae brown, legs yellowish brown with ring flecks on femur of the second to fourth legs and tibia of the third to fourth legs.

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