

## **Four new species of the Genus *Clubiona* (Arenea: Clubionidae) from China**

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### **ABSTRACT**

Four new species of spiders of genus *Clubiona* are described from China. They are *Clubiona auberginosa* sp. nov., *C. gongi* sp. nov., *C. leptosa* sp. nov., and *C. tongdaoensis* sp. nov.

Key words: Clubionidae. *Clubiona*, new species, China

### **INTRODUCTION**

Genus *Clubiona* is the largest of the family Clubionidae. As of 1991, 128 species of *Clubiona* were known on the earth (Platnick, 1991).

We found four new species of Clubionidae among specimens collected on 12 August 1982, 12 September 1987, and 28-30 May 1996 and describe them with illustrations in this paper. All type specimens are deposited at the Hunan Biology Research Institute. Measurements are in millimeter. The scales in figures are 0.10 mm

### **DESCRIPTION**

#### ***Clubiona auberginosa* sp. nov. (Figs. 1-2)**

**Measurement:** (Holotype); total length 6.11. Carapace length 2.54, width 1.96; Abdomen length 3.57, width 1.86. Leg I 5.98 (1.86 + 2.23 + 1.13 + 0.76); Leg II 6.29 (1.90 + 2.43 + 1.16 + 0.80); Leg III 5.62 (1.73 + 1.90 + 1.33 + 0.66); Leg IV 8.09 (2.40 + 2.73 + 2.23 + 0.73). Leg

formula 4,2,1,3.

**Holotype:** ♀, Tonodao, Suining County (26.6°N, 110.2°E), 12 Aug. 1982, Zhang Yong-Jing.

**Description:** Female (Holotype): AER recurved. PER slight procurved. AME (0.13) > ALE (0.12); AME-AME (0.10) > AME-ALE (0.06); PME (0.13) > PLE (0.12); PME-PME (0.24) > PME-PLE (0.21).

Carapace pale red brown, media fovea brown, 3 teeth promarginal, 2 teeth retromarginal; maxilla and labium pale brown. Legs yellow brown, with spines, metatarsus and tarsus I, II with brown scopula on the ventral. Abdomen dorsum yellow brown, the lateral sides pale brown. Cardiac pattern rod shape, dark brown, covered with brown long hairs. Five pairs of brown chevron. The venter yellow brown, the middle area with a rectangular pattern. Spinnerets dark brown.

Male: unknown.

**Remarks:** This species is similar to *Clubiona kuanshanensis* Ono, 1994 (Ono, 1994:77, figs. 10-12) by the situation of the intromittent orifices but can be distinguished by the shape of spermatheca. That of the former is aubergine-like, while that of the latter is inverted "T" shaped.

**Distribution:** China (Hunan Province).

**Etymology:** The specific name is derived from its shape of the spermatheca which is similar to eggplant (aubergine).

#### ***Clubiona gongi* sp. nov. (Figs. 3-4)**

**Measurement:** (Holotype): Total length 4.13. Carapace length 2.03, width 1.27. Abdomen length 2.10, width 1.23. Leg I 4.40 (1.23 + 1.87 + 0.83 + 0.47); Leg II 4.60 (1.30 + 1.90 + 0.87 + 0.53); Leg III 4.04 (1.17 + 1.47 + 1.00 + 0.40); Leg IV 5.74 (1.77 + 2.20 + 1.30 + 0.47). Leg formula 4,2,1,3.

**Holotype:** ♀, Sang Eum, Dao county (25.5°N, 111.6°E), 12 Sept. 1987, Gong Lian-Shu.

**Description:** Female (Holotype): AER recurved, PER slight recurved. AME (0.12) = ALE (0.12); AME-AME (0.05) < AME-ALE (0.08); PME (0.11) = PLE (0.11); PME-PLE (0.18). Carapace pale red brown, median fovea dark brown. Sternum yellow brown, its border red brown. Chelicera color as sternum, 3 teeth promarginal, the median one is largest, 2 teeth retromarginal. maxilla and labium red brown, legs yellow brown, with spines. Abdomen dorsum yellow brown, cardiac pattern indistinguishable, chevrons consist of 8 thin waved transverse striates, brown, posterior ones gradual darker than the anterior. Venter yellow brown, spinneretes pale brown.

Male: Unknown.

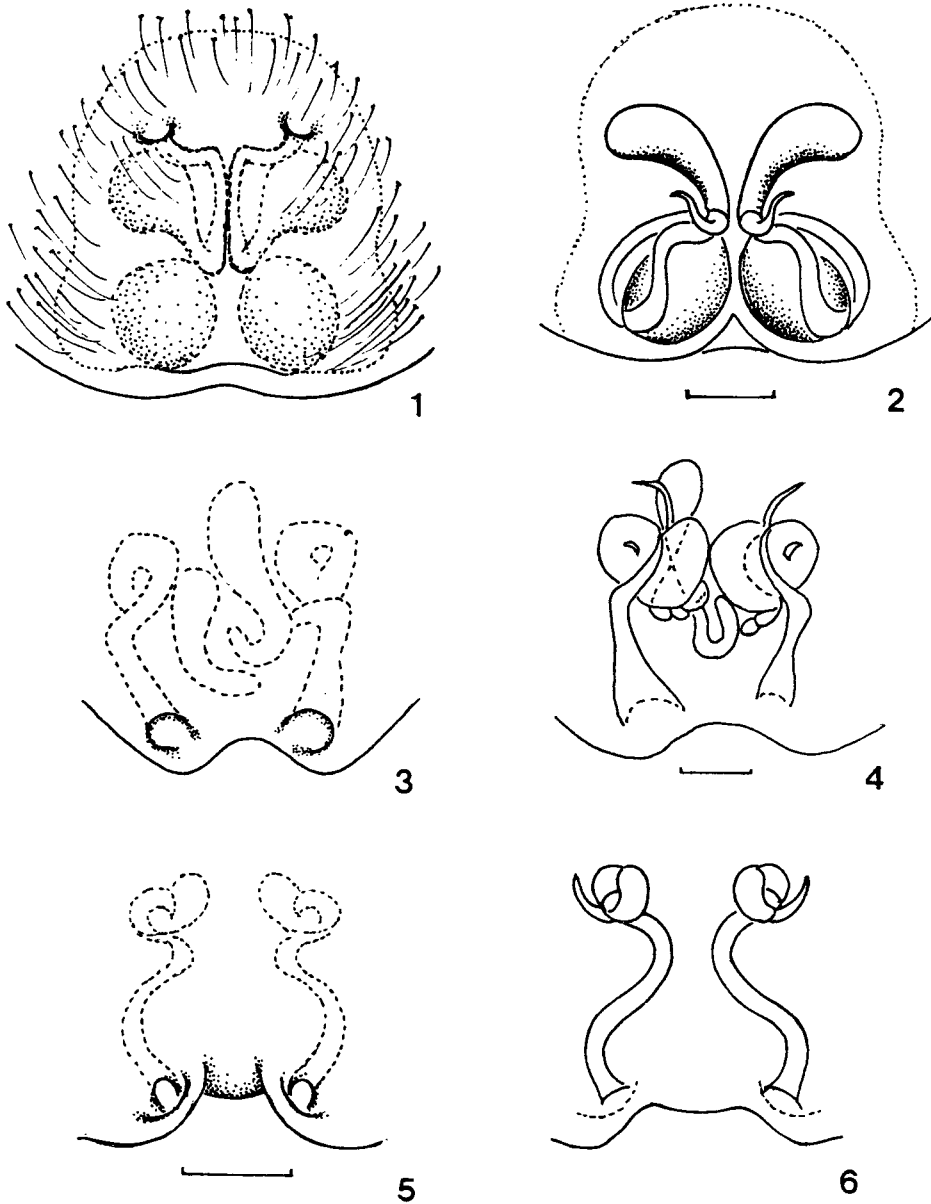
**Remarks:** This new species is allied to *Clubiona fusoides* Zhang, 1992 but can be distinguished by: (1) the body size about one half of the latter; (2) the length and the curvature of copulatory duct.

**Distribution:** China (Hunan Province).

**Etymology:** The specific name is a patronym in honor of the collector Mr. Gong Lian-shu.

#### ***Clubiona leptosa* sp. nov. (Figs. 5-6)**

**Measurement:** (Holotype): Total length 6.17. Carapace length 2.37, width 1.09; Abdomen length 3.80, width 2.30. Leg I 3.49 (1.07 + 1.04 + 0.63 + 0.39); Leg II 3.53 (1.07 + 1.40 + 0.64 + 0.42); Leg III 2.99 (0.93 + 1.10 + 0.63 + 0.33); Leg IV 4.27 (1.23 + 1.50 + 1.17 + 0.37). Leg femula 4,2,1,3.



**Figs. 1-6.** 1-2, *Clubiona auberginosa* sp. nov.: 1, epigynum; 2, vulva; 3-4, *Clubiona gongi* sp. nov.: 3, epigynum; 4, vulva; 5-6, *Clubiona leptosa* sp. nov.: 5, epigynum; 6, vulva

**Holotype:** ♀, Tao, Suining County (26.6°N, 110.2°E), 14 Aug, 1982, Zhang yong-jing.

**Description:** Female (Holotype): AER slight recurved, PER slight procurved. AME (0.12) < ALE (0.14); AME = AME (0.05) < AME-ALE (0.06); PME (0.14) > PLE (0.12); PME = PME (0.30) > PME = PLE (0.20). Carapace pale red brown, median fovea red brown, 5 teeth promarginal, the 4th is largest; 4 teeth. maxilla and labium pale red brown. Legs yellow brown, with spines. Abdomen dorsum pale brown. Cardiac pattern indistinguishable, behind it a pair of small brown marks visible.

the venter pale brown. Spinneretes yellow brown. Epigynum very small, a pair of oculatory pores located near the posterior edge. Through the transparent skin, slender copulatory duct and the bean-shaped spermatheca can be seen.

Male: unknown.

**Remarks:** This new species is similar to *Clubiona interjecta* L. Koch, 1879 (Zhang, 1989: 57, figs. 3.18), but can be distinguished by: (1) the curvation of oculatory duct; (2) the shape of spermatheca and (3) two spermathecae of the latter are adjacent, while the former's apart.

**Distribution:** China (Hunan Province)

**Etymology:** The specific name is derived from its small spermatheca and slender ducts. 'Lepto' in Latin means weak and thin.

***Clubiona tongdaoensis* sp. nov. (Figs.7-10)**

**Type specimens:** holotype ♀, allotype ♂, paratypes 3 ♀♀, Tongdao, Dongzu, Autonomaus County (26.2°N, 109.8°E), 1-4 June 1996; 3 ♀♀, Suining County, 28-30 May 1996, Zhang Yong-jing, Yin Chang-Min, Peng Xian-jin.

**Measurement:** Female: Total length 6.18-8.52. Holotype 8.52. Carapace length 3.45, width 2.48; Abdomen length 5.07, width 2.85. Leg I 7.81 (2.20 + 1.52 + 0.94); Leg II 7.89 (2.25 + 3.22 + 1.50 + 0.92); Leg III 6.45 (1.72 + 2.38 + 1.70 + 0.65); Leg IV 9.77 (2.35 + 3.62 + 2.85 + 0.95). Leg formula 4,2,1,3.

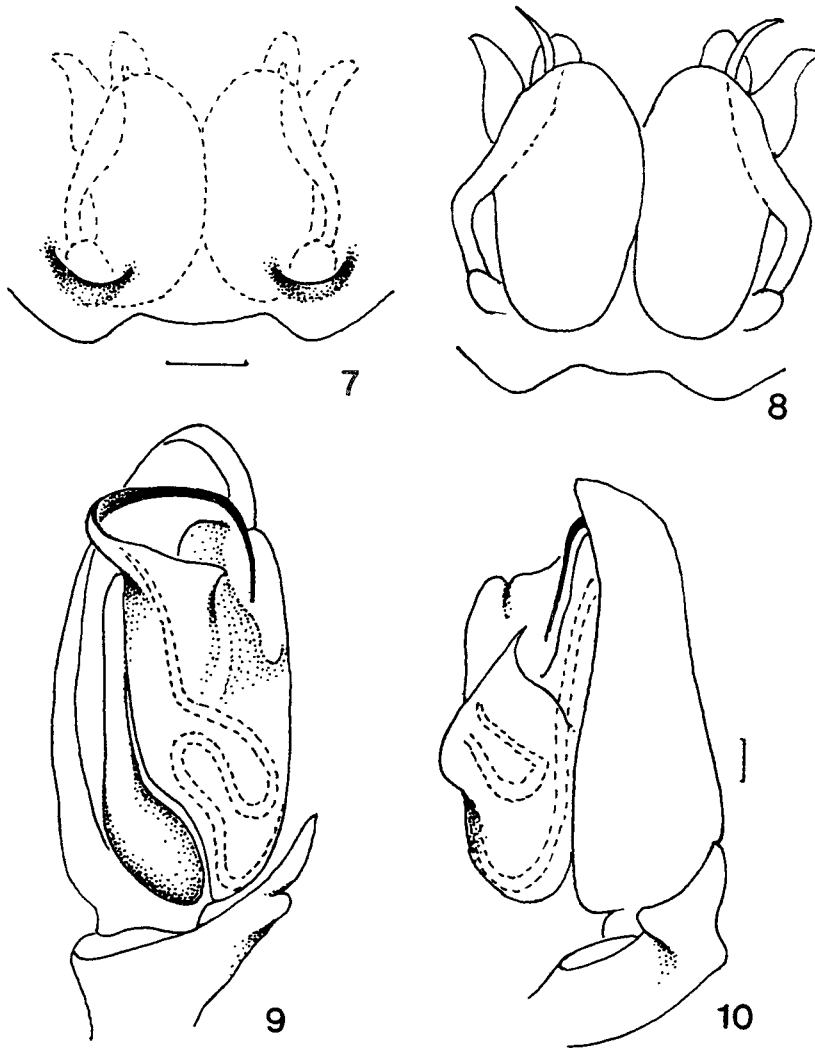
Male (Allotype): Total length 6.45. Carapace length 2.90, width 2.08; Abdomen length 3.55, width 1.62. Leg I 7.38 (2.50 + 2.24 + 1.82 + 0.82); Leg II 8.11 (2.35 + 2.92 + 1.96 + 0.88); Leg III 6.87 (2.15 + 2.22 + 1.92 + 0.58); Leg IV 9.82 (2.55 + 3.58 + 2.95 + 0.74). Leg formula as female.

**Description:** Female: AER recurved, PER slight procurved. Holotype: AME (0.20) < ALE (0.24); AME-AME (0.13); PME (0.22) = PLE (0.22); PME-PME (0.43) > PME-PLA (0.34). Carapace red brown, with 6 teeth promarginal, the 1st is smallest, the 5th the largest, 2 teeth retromarginal, as large as the promarginal 5th. Maxilla and albiun red brown. Legs yellow brown with spines. Abdomen dorsum dark brown. Legs yellow brown with spines. Abdomen dorsum dark brown, dotted with many irregular pale brown spots. Cardiac mark and 6 chevron pale brown. The venter gray brown, 2 lateral pale gray thin longitudinal striates lined from epigostric groove to spinnerets yellow brown. Spermatheca large, ellipsoid, copulatory pore situated near the post edge of epigynum. Male: AER recurved, PER slight procurved. Allotype AME (0.16) < ALE (0.20); AME-AME (0.10) > AME-ALE (0.09); PME (0.17) = PLE (0.17); PME = PME (0.31) > PME = PLE (0.26). The coloration and pattern are similar to that of female. But the teeth chelicera are different, there are 5 teeth promarginal, the 4th tooth largest, 1st-3rd teeth very small, no teeth retromarginal.

**Remarks:** This new species is similar to *Clubiona meosta* Banks, 1890 (Zhang, 1989:55, figs. 2.17), but can be distinguished from the latter by:(1) the spermatheca larger, (2) without a denticle near the base of embolus and (3) the tibial apophysis smaller and shorter.

**Distribution:** China (Hunan Province).

**Etymology:** The specific name is derived from its type locality.



**Figs. 7-10.** *Clubiona tongdaoensis* sp. nov.: 7, epigynum; 8, vulva; 9, palp organ, mesal view; 10, palp organ, retromarginal view

## REFERENCE

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### 중국산 거미 *Clubiona*속(거미목: 염낭거미과)의 4신종

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### 적 요

중국의 Hunan지역에서 채집한 염낭거미과(Araneae: Clubionidae)의 염낭거미속(*Clubiona*)에 속하는 4신종, *Clubiona auberginosa* sp. nov., *C. gongi* sp. nov., *C. leptosa* sp. nov., *C. tonodaensis* sp. nov.을 기재하여 보고 발표한다.