

SHORT COMMUNICATION

PLATOCOELOTES POLYPTYCHUS, A NEW SPECIES OF HACKLED MESH SPIDER FROM A CAVE IN CHINA (ARANEAE, AMAUROBIIDAE)

Xiang Xu and Shuqiang Li¹: Institute of Zoology, Chinese Academy of Sciences,
Beijing 100080, P.R. China

ABSTRACT. A new species of hackled mesh spider, *Platocoelotes polyptychus* (Araneae, Amaurobiidae), is described and illustrated based on specimens from Gufengdong Cave, Hunan Province, China.

Keywords: Taxonomy, Oriental region, morphology, caves

During our exploration of the Gufengdong Cave, Liuyang County, Hunan Province, China in 2003 and 2004, we encountered several specimens of a coelotine spider living within the cave. The presence of a posterior apophysis extending from the conductor and the absence of a median apophysis suggests that this new species may be a member of the genus *Platocoelotes* Wang 2002, but the lack of two patellar apophyses, the presence of a short cymbial furrow, and the very different female genitalia suggests that this placement may be incorrect. In fact, this new species is also similar to the members of *Spiricoelotes* Wang 2002 in having a long, linear embolus, a strongly curved patellar apophysis and in having no epigynal teeth, but the presence of the atrial septum, the indistinct spermathecal stalks and bases, the short cymbial furrow, the bifurcated conductor with several apophyses, prevent it from being placed in *Spiricoelotes*. We present here a description of the new species, which we tentatively place in this genus, despite the differences cited above.

Abbreviations used in the text: ALE = anterior lateral eye; AME = anterior median eye; AW = anterior width (of the MOQ); MOQ = median ocular quadrangle; PLE = posterior lateral eye; PME = posterior median eye; PW = posterior width (of the MOQ); RTA = retrolateral tibial apophysis. All measurements are given in millimeters. Eye diameters are taken at the widest point. Leg measurements are shown as: total length (femur, patella, tibia, metatarsus, tarsus). The terms used in the text and figure legends mainly follow Wang (2002). All the type specimens are deposited in the Institute of Zoology, Chinese Academy of Sciences (IZCAS).

Family Amaurobiidae Thorell 1870
Platocoelotes Wang 2002

Type species.—*Coelotes impletus* Peng & Wang, 1997, by original designation.

¹ Corresponding author. E-mail: lisq@ioz.ac.cn

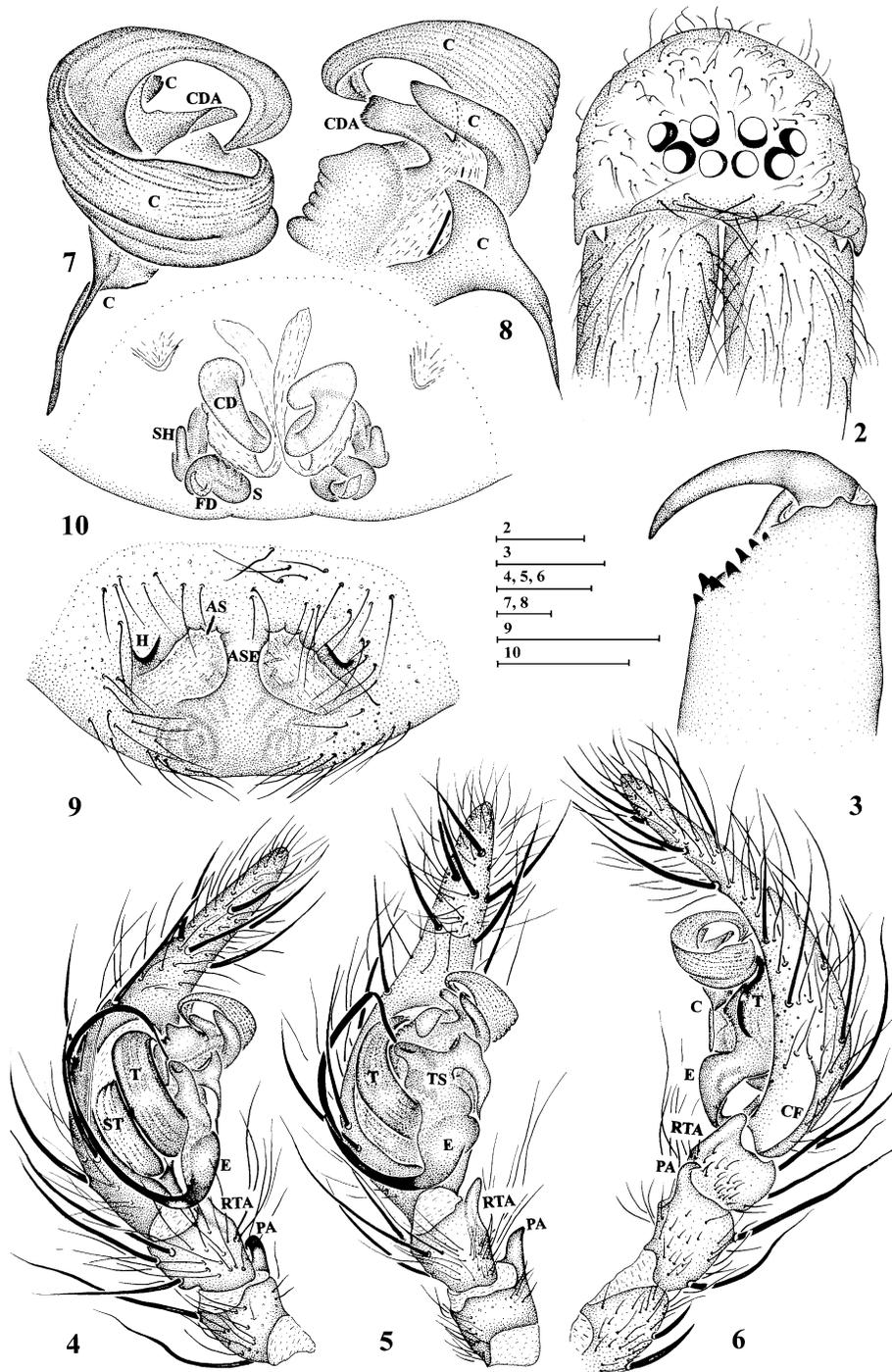
Remarks.—The genus *Platocoelotes* was erected and revised by Wang (2002, 2003) and includes five species: *P. impletus* (Peng & Wang 1997), *P. icohamatooides* (Peng & Wang 1997), *P. icohamatus* (Zhu & Wang 1991), *P. kailiensis* Wang 2003, and *P. lichuanensis* (Chen & Zhao 1998). The genus is currently confined to China.

Platocoelotes polyptychus new species Figs. 1–10

Material examined.—CHINA: *Hunan Province*: Holotype male, Gufengdong Cave, Gaoping Town, Liuyang County (28.1° N, 113.6° E), China, 31 February 2004, Xiang Xu (IZCAS). Paratypes: 1 female and 5 males, same locality as holotype; 1 female, same locality as holotype, 8 October 2003, Shuqiang Li, Guo Tang and Yufa Luo (IZCAS).



Figure 1.—*Platocoelotes polyptychus* new species: a juvenile spider on a stalactite within Gufengdong Cave.



Figures 2–10.—*Platocoelotes polyptychus* new species. 2. Male, eye, anterior view; 3. Male, chelicera, ventral view; 4. Male palp, prolateral view; 5. Male palp, ventral view; 6. Male palp, retrolateral view; 7. Male, conductor, retrolateral view; 8. Male, conductor, prolateral view; 9. Female, epigynum; 10. Female, vulva. Scale lines: 0.5 mm (Figs 2–6, 9, 10); 0.1 mm (Figs 7, 8). Abbreviations: AS = atrial slit; ASE = atrial septum; C = conductor; CD = copulatory duct; CDA = conductor dorsal apophysis; CF = cymbial furrow; E = embolus; FD = fertilization duct; H = hood; PA = patellar apophysis; RTA = retrolateral tibial apophysis; S = spermathecae; SH = spermathecal head; ST = subtegulum; T = tegulum; TS = tegular sclerite.

Etymology.—The species name refers to the crinkly surface of the conductor.

Diagnosis.—Males can be distinguished from other *Platocoelotes* by the presence of only one patellar apophysis, the short cymbial furrow, and the long, slender, strongly bifurcated conductor. The female is diagnosed by the short epigynum, the anteriorly situated epigynal hoods, and the very different vulva (Figs. 9–10).

Description.—*Male (holotype)*: Total length 8.50. Carapace 4.40 long, 3.00 wide; abdomen 4.10 long, 2.20 wide. Carapace light yellow. Eye measurements (Fig. 2): AME 0.13; ALE 0.18; PME 0.15; PLE 0.15; AME–AME 0.05; AME–ALE 0.08; PME–PME 0.13; PME–PLE 0.15; MOQL 0.38, AW 0.35, PW 0.43; Clypeus 0.20. Chelicerae with 2 promarginal teeth and 5 retromarginal teeth (Fig 3). Leg measurements: I 17.00 (4.30 + 1.40 + 4.30 + 4.30 + 2.70); II 15.40 (3.90 + 1.40 + 3.60 + 4.00 + 2.50); III 15.15 (3.90 + 1.30 + 3.35 + 4.25 + 2.35); IV 20.05 (5.05 + 1.45 + 4.65 + 6.00 + 2.90). Male palp with sharply curved patellar apophysis; RTA with distal end extended beyond tibia; lateral tibial apophysis absent; cymbial furrow short, conductor distinctly bifurcated, with numerous shallow grooves on the surface and posteriorly extended wing-like apophysis; conductor dorsal apophysis flat; embolus posterior in origin, long, linear; median apophysis absent (Figs 4–8).

Female (paratype): Total length 8.50. Carapace 4.40 long, 2.90 wide; abdomen 4.10 long, 2.60 wide. AME 0.13; ALE 0.18; PME 0.15; PLE 0.15; AME–AME 0.08; AME–ALE 0.10; PME–PME 0.15; PME–PLE 0.15; MOQL 0.35, AW 0.33, PW 0.45; Clypeus 0.30. Chelicerae with 3 prolateral teeth and 5 retrolateral teeth. Leg measurements: I 15.80 (4.20 + 1.50 + 3.80 + 3.80 + 2.50); II 14.80 (4.00 + 1.40 + 3.40 + 3.70 + 2.30); III 13.70 (3.60 + 1.30 + 3.00 + 3.80 + 2.00); IV 18.30 (4.70 +

1.40 + 4.30 + 5.30 + 2.60). Epigynum without epigynal teeth; atrium with atrial septum; hoods situated anteriorly; spermathecae strongly convoluted, with indistinct stalks and bases; spermathecal heads thumb-shaped, situated laterally; copulatory ducts long, looped (Fig 9–10).

Distribution.—Known only from the type locality, a cave situated in Hunan Province. Based on the light body color, *Platocoelotes polyptychus* is considered to be troglitic, but further study will be necessary.

ACKNOWLEDGMENTS

The authors are indebted to Dr Xinping Wang (University of Florida, Florida, USA) for comments on this paper. This study was supported by the National Natural Sciences Foundation of China (NSFC-30270183, 30370263, 30310464, 30470213, 30499341), by the National Science Fund for Fostering Talents in Basic Research (NSFC-J0030092), by the Beijing Natural Science Foundation (6052017) and partly also by the Kadoorie Farm and Botanic Garden, Hong Kong Special Administrative Region, China.

LITERATURE CITED

- Wang, X.P. 2002. A generic-level revision of the spider subfamily Coelotinae (Araneae, Amaurobiidae). *Bulletin of the American Museum of Natural History* 269:1–150.
- Wang, X.P. 2003. Species revision of the coelotine spider genera *Bifidocoelotes*, *Coronilla*, *Draconarius*, *Femoracoelotes*, *Leptocoelotes*, *Longicoelotes*, *Platocoelotes*, *Spiricoelotes*, *Tegecoelotes*, and *Tonsilla* (Araneae: Amaurobiidae). *Proceedings of the California Academy of Sciences* 54: 499–662.

Manuscript received 13 October 2004, revised 15 August 2005.