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Two new species of genus *Macrothele* (Mygalomorphae, Macrothelidae) from China

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Abstract

Background

The family Macrothelidae Simon, 1892 belongs to the infraorder Mygalomorphae, currently contain two genera and 47 described species from South Europe, Southeast Asia, and Africa.

New information

Two new species of the funnel-web spider genus *Macrothele* Ausserer, 1871 from Yunnan Province, China are described: *Macrothele washanensis* Wu & Yang, sp. n. (♂♀), and *M. wuliangensis* Wu & Yang, sp. n. (♂♀). Detailed descriptions, diagnostic illustrations and distribution map are provided. Type specimens are deposited in the Institute of Entomoceutics Research, Dali University (DUIER).

Keywords

Mygalomorphae, Macrothelidae, taxonomy, morphology, new species

Introduction

The spider family Macrothelidae (Simon 1892) is an important spider group in the infraorder Mygalomorphae. They usually build funnel webs using crevices and cavities in slopes, and sometimes in the deciduous layer. So far, the family have 47 species of two genera reported worldwide (World Spider Catalog 2022), of which 30 species are known from China (Chen et al. 2020, Hu and Li 1986, Lin et al. 2021, Li and Zha 2013, Pocock 1901, Saitô 1933, Shi et al. 2018, Shimojana and Haupt 1998, Song et al. 1999, Tang et al.

2020, Wang et al. 2019, Xu and Yin 2001, Xu et al. 2002, Yang et al. 2019, Yang et al. 2018, Zhu et al. 2000 Tang et al. 2022, Zhu and Song 2000)

We are carrying out a systematic investigation on the Chinese fauna of Macrothelidae and have collected a lot of specimens from Yunnan Province. During this study, two new species were discovered and are described here: *Macrothele washanensis* Wu & Yang, sp. n. and *M. wuliangensis* Wu & Yang, sp. n.

Materials and methods

Specimens were examined and measured with Olympus SZX16 and Leica M205A stereomicroscopes and an Olympus CX33 compound microscope. All specimens examined were preserved in 80% ethanol. The left male palps were examined after dissection and removal from the specimens, and the female genitalia were treated in 10% NaOH for 24 hours to dissolve tissue and examine the vulvae. The distribution map was produced by ArcMap software (version 10.8).

All type specimens are deposited in Institute of Entomocetics Research, Dali University (DUIER). All measurements are in millimeters. Palp and leg measurements are given as: palp total length (femur + patella + tibia + tarsus); leg total length (femur + patella + tibia + metatarsus + tarsus). Abbreviations used are: ALE=anterior lateral eye; AME = anterior median eye; PLE = posterior lateral eye; PME = posterior median eye; MOA = median ocular area, PMS = posterior median spinneret, PLS = posterior lateral spinneret; LI = first leg; LII = second leg; LIII = third leg; LIV = fourth leg.

Taxon treatments

Macrothele washanensis Wu & Yang, sp. n.

Materials

Holotype:

- a. scientificName: *Macrothele washanensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Cangyuan county; municipality: Lincang; verbatimLatitude: 23°14'5"N; verbatimLongitude: 99°17'48"E; year: 2021; month: 5; day: 10; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Zizhong Yang, Yongming You and Jiasen Wei; institutionCode: DUIER-MWa11

Paratype:

- a. scientificName: *Macrothele washanensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Cangyuan county; municipality: Lincang; verbatimLatitude: 23°14'5"N; verbatimLongitude: 99°17'48"E; year: 2021; month: 5; day: 10; individualCount: 5; sex: 2 males, 3 females; lifeStage: adult; recordedBy: Zizhong Yang, Yongming You and Jiasen Wei; institutionCode: DUIER-MWa21-MWa25

Other materials:

- a. scientificName: *Macrothele washanensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Gengma county; municipality: Lincang; locality: Mengjian Town; verbatimLatitude: 23°43'0.772"N; verbatimLongitude: 99°20'14.784"E; year: 2017; month: 9; day: 15; individualCount: 22; sex: 4 males, 18 females; lifeStage: 20 adult, 2 males juveniles; recordedBy: Zizhong Yang, Chenggong Li and Wenjie Zhang; institutionCode: DUIER-MWa26-MWa247
- b. scientificName: *Macrothele washanensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Gengma county; municipality: Lincang; locality: Menglai Town; verbatimLatitude: 23°15'31.90"N; verbatimLongitude: 99°17'22.45"E; year: 2017; month: 7; day: 13; individualCount: 33; sex: 9 males, 24 females; lifeStage: adult; recordedBy: Zizhong Yang, Chenggong Li and Wenjie Zhang; institutionCode: DUIER-MWa248-MWa280

Description

Male (holotype, DUIER-MWa11, Fig. 1). Total length 12.43 (not including chelicerae and spinnerets): cephalothorax 10.89 long, 6.98 wide; abdomen 8.14 long, 5.64 wide. Carapace dark, gray hairs. Fovea concave. Both eye rows recurved. Eye sizes and inter-distances: AME 0.55, ALE 0.64, PME 0.48, PLE 0.49; ALE-AME 0.14, AME-AME 0.17, ALE-PLE 0.18, PLE-PME 0.07, PME-PME 0.88. Eye area 1.11 long, 2.21 wide. Chelicerae black, with 14 stout promarginal teeth, 8 small retromarginal teeth, and 16 tiny teeth within fang furrow (Fig. 1F). Labium and maxillae chestnut, with grey bristles and patch of cuspules on anterior half part (Fig. 1K); maxillae length 2.58, and cuspules area length 1.45. Sternum with three pairs of sigilla (Fig. 1J). Palp: tibia grey, with four long prolateral spines (Fig. 1G); Embolus 4.81 long, terminal end curved and hook shaped (Fig. 1B-E).

Spines. Leg I: femur with 1 prolateral near base; patella 2 prolateral distally; tibia 2 prolateral, 2 retrolateral, 9 ventral (Fig. 2A); metatarsus with 19 ventral spines (Fig. 2B), and two comb-like organs near distad, among them, each comb-like organ with 2 spines; tarsus with 3 prolateral and 3 retrolateral. Leg II: femur 1 prolateral near distad; patella 2 prolateral; tibia 1 prolateral, and 3 ventral, 1 spine near distad, 2 near basal (Fig. 2C); metatarsus with 1 prolateral, 10 ventral (Fig. 2D), two comb-like organs near distad, among them, each comb-like organ with 2 spines; tarsus with 6 prolateral, 6 retrolateral. Leg III: femur 1 prolateral and 1 retrolateral; patella 2 prolateral, 1 retrolateral; tibia 3 prolateral, 2 retrolateral, and 3 ventral; metatarsus 2 ventral, 4 prolateral, 3 retrolateral, two comb-like organs near distad, among them, prolateral comb-like organ with 2 spines, retrolateral 5; tarsus with 4 prolateral, 5 retrolateral. Leg IV: femur 1 prolateral and retrolateral near distal end; patella with 2 prolateral, 1 retrolateral; tibia with 2 prolateral, 1 retrolateral, 3 ventral near distal end; metatarsus with 2 dorsal, 3 prolateral, 3 retrolateral, 7 ventral, and two comb-like organs near distad, among them, prolateral comb-like organ with 3 spines, retrolateral 6; tarsus with 7 prolateral, 6 retrolateral.

Measurements of palp and legs: palp: 9.63 (2.28, 1.78, 4.34, 1.23) Leg I: 22.78 (6.14, 2.62, 5.04, 5.58, 3.41); Leg II: 25.80 (6.72, 2.94, 5.81, 6.84, 3.49); Leg III: 24.69 (6.14, 2.37, 5.52, 6.93, 3.73); Leg IV: 29.75 (7.37, 2.87, 6.48, 8.68, 4.35). Leg formula: 4132.

Abdomen gray brown, hairy. Spinnerets, PMS one segment, 1.87 long, 0.48 wide, PMS-PMS 0.78; PLS three segments, PLS 10.65 long (3.20, 3.19, 4.26).

Female (Fig. 3) Total length 18.38 (not including chelicerae and spinnerets): cephalothorax 11.67 long, 6.66 wide; abdomen 9.11 long, 6.54 wide. Eye sizes and inter-distances: AME 0.52, ALE 0.71, PME 0.50, PLE 0.51; AME-AME 0.26, ALE-AME 0.24, ALE-PLE 0.12, PME-PME 0.91, PLE-PME 0. Eye area 1.13 long, 2.24 wide. Chelicerae brown, with 12 stout promarginal teeth, 11 small retromarginal teeth, and 17 tiny teeth within fang furrow. Labium and maxillae dark yellow, with dark brown bristles and patch of cuspules on anterior half part (Fig. 3C); maxillae area length 2.34, and cuspule area length 1.58. Sternum with three pairs of sigilla (Fig. 3D).

Spines. Leg I: femur with 1 prolateral near distad; patella 1 prolateral; tibia with 1 prolateral; metatarsus with 7 ventral, and two comb-like organs near distad, each comb-like organ with 3 spines; tarsus with 3 prolateral, 4 retrolateral. Leg II: femur 1 prolateral near distad; patella 2 prolateral; tibia 1 prolateral, 2 ventral; metatarsus 1 prolateral, 6 retrolateral, and two comb-like organs near distad, among them, prolateral comb-like organ with 2 spines, retrolateral 4; tarsus with 5 prolateral, three retrolateral. Leg III: femur with 1 dorsal; patella 2 prolateral and 1 retrolateral; tibia 3 prolateral, and 2 retrolateral, 3 ventral distally; metatarsus with 2 dorsal, 5 prolateral, 4 retrolateral, 6 ventral, and two comb-like organs near distad, among them, prolateral comb-like organ with 2 spines, retrolateral 4; tarsus with 5 prolateral, 6 retrolateral. Leg IV: femur 1 prolateral near distad, 1 retrolateral; patella 2 prolateral, 1 retrolateral; tibia 3 prolateral, and 2 retrolateral, 3 ventral near distad; metatarsus with 2 dorsal, three prolateral, 4 retrolateral, 7 ventral, and two comb-like organs near distad, prolateral comb-like organ with 2 spines, retrolateral 2; tarsus with 9 prolateral, 7 retrolateral.

Measurements of palp and legs: palp: 12.07 (3.07, 1.26, 3.54, 4.20); Leg I: 20.65 (5.80, 2.16, 5.31, 4.85, 2.53); Leg II: 21.99 (5.81, 2.36, 5.56, 5.33, 2.93); Leg III: 22.24 (5.39, 2.23, 5.02, 6.33, 3.27); Leg IV: 25.37 (6.24, 2.15, 6.20, 7.54, 3.24). Leg formula: 4312.

Copulatory aperture is thicker at base, proximal end curves inward; receptaculum siminis nearly elliptic (Fig. 3B). Spinnerets: PMS one segment, PMS 2.78 long, 0.58 wide, PMS-PMS 1.63; PLS three segments, PLS 11.11 long (2.91, 3.75, 4.45).

Diagnosis

Males of *Macrothele washanensis* sp. n. resemble those of *Macrothele jinlin* (Yang et al. 2018), but can be distinguished by the palpal bulb that has no protrusion in prolateral view (Fig. 1B); the embolus with terminal end curved and hook-shaped (Fig. 1B-E); the palpal tibia that has no dorsal and four long prolateral spines (Fig. 1G-I). Females of *Macrothele washanensis* sp. n. resemble those of *Macrothele yani* (Xu et

al. 2002) (Shi et al. 2018), but in the new species, the copulatory ducts are shorter, the copulatory aperture is thicker, and the spermathecae are smaller (Fig. 3B).

Etymology

The species epithet is a noun in apposition referring to the type locality.

Distribution

China, Yunnan Province (Cangyuan, Gengma) (Figs 4, 9)

Macrothele wuliangensis Wu & Yang, sp. n.

Materials

Holotype:

- a. scientificName: *Macrothele wuliangensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Jingdong county; municipality: Puer; verbatimLatitude: 24°31'38"N; verbatimLongitude: 100°47'47"E; year: 2019; month: 5; day: 28; individualCount: 1; sex: male; lifeStage: adult; recordedBy: Zizhong Yang; institutionCode: DUIER-MWI11

Paratype:

- a. scientificName: *Macrothele wuliangensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Jingdong county; municipality: Puer; verbatimLatitude: 24°31'38"N; verbatimLongitude: 100°47'47"E; year: 2019; month: 5; day: 28; individualCount: 18; sex: 3 males, 15 females; lifeStage: 11 adults, 7 males juveniles; recordedBy: Dasong Yang, Yani Tang, Ying Wang and Lei Tao; institutionCode: DUIER-MWI21-MWI218

Other materials:

- a. scientificName: *Macrothele wuliangensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Zhenyuan county; municipality: Puer; verbatimLatitude: 23°52.536'N; verbatimLongitude: 101°08.416'E; year: 2010; month: 7; day: 22; individualCount: 4; sex: 1 male, 3 females; lifeStage: adult; recordedBy: Zizhong Yang and Ping Feng; institutionCode: DUIER-MWI219-MWI222
- b. scientificName: *Macrothele wuliangensis* sp. n.; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Zhenyuan county; municipality: Puer; locality: Gucheng Town; verbatimLatitude: 23°29'52.5"N; verbatimLongitude: 101°10'33.8"E; year: 2017; month: 3; day: 7; individualCount: 4; sex: 4 females; lifeStage: 3 juveniles; recordedBy: Zizhong Yang and Chenghong Li; institutionCode: DUIER-MWI223-MWI226
- c. scientificName: *Macrothele wuliangensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Jingdong county; municipality: Puer; locality: Huashan Town; verbatimLatitude: 24°35'09.4"N; verbatimLongitude: 100°46'35.6"E; year: 2017; month: 3; day: 7; individualCount: 9; sex: 1 male, 8 females; lifeStage: 4 adults, 5 males juveniles; recordedBy: Zizhong Yang, Chenggong Li and Wenjie Zhang; institutionCode: DUIER-MWI227-MWI235
- d. scientificName: *Macrothele wuliangensis*; order: Araneae; family: Macrothelidae; genus: *Macrothele*; country: China; stateProvince: Yunnan; county: Jingdong county;

municipality: Puer; locality: Jingping Town; verbatimLatitude: 24°34'52.4"N;
verbatimLongitude: 100°46'35.9"E; year: 2018; month: 9; day: 14; individualCount: 13;
sex: 13 females; lifeStage: 8 adults, 5 juveniles; recordedBy: Zizhong Yang and Wanping
Li and Shengshuai Liu; institutionCode: DUIER-MWI236-MWI248

Description

Male (holotype, DUIER-MWI11, Fig. 5). Total Length 15.95 (not including chelicerae and spinnerets): cephalothorax 11.43 long, 7.49 wide; abdomen 8.49 long, 4.97 wide. Carapace dark chestnut, gray hairy. Fovea concave. Both eye rows recurved. Eye sizes and inter-distances: AME 0.47, ALE 0.62, PME 0.45, PLE 0.50; ALE-AME 0.15, AME-AME 0.31, ALE-PLE 0.22, PLE-PME 0.05, PME-PME 0.95. Eye area 1.15 long, 2.28 wide. Chelicerae dark, with 13 stout promargin teeth, 12 small retromarginal teeth, 19 tiny teeth with fang furrow (Fig. 5F). Labium and maxillae chestnut, with dark brown bristles and patch of cuspules on anterior half part (Fig. 5J); maxillae length 3.30, cuspules area length 1.48. Sternum chestnut, and with three pairs of sigilla (Fig. 5K). Palp: tibia yellow, with one long and two stout prolateral spines, two stout dorsal spines (Fig. 5G-I); embolus terminal end curved, 4.68 long. (Fig. 5E)

Spines. Leg I: femur with 1 dorsal near distad; tibia 2 prolateral, 3 retrolateral, 10 ventral (Fig. 6A) metatarsus with 16 ventral, 12 ventral on near based (Fig. 6B), and two comb-like organs near distad, among them, prolateral comb-like organ with 2 spines, ventral 2; tarsus 3 prolateral, 4 retrolateral. Leg II: femur with 2 dorsal; patella 2 prolateral; tibia 1 prolateral, 7 ventral (Fig. 6C); metatarsus with 1 prolateral, 7 ventral (Fig. 6D), and two comb-like organs near distad, ventral comb-like organ with 2 spines; tarsus 4 prolateral, 4 retrolateral. Leg III: patella 2 prolateral, 1 retrolateral; tibia 3 prolateral, 1 retrolateral, 4 ventral; metatarsus 2 dorsal, 4 prolateral, 2 retrolateral, 7 ventral, and two comb-like organs near distad, among them, each comb-like organ with 2 spines; tarsus with 7 prolateral, 5 retrolateral. Leg IV: femur with 1 dorsal near basad; patella 2 prolateral, 1 retrolateral; tibia 2 prolateral, 2 retrolateral, 4 ventral; metatarsus 1 dorsal, 4 prolateral, 3 retrolateral, 7 ventral, and two comb-like organs near distad, among them, prolateral comb-like organ with 2 spines, retrolateral 4; tarsus with 7 prolateral, 7 retrolateral.

Measurements of palp legs: palp: 12.30 (5.07, 1.62, 4.60, 1.01); Leg I: 22.44 (6.04, 2.77, 5.04, 5.82, 2.77); Leg II: 23.40 (6.09, 2.05, 5.62, 6.29, 3.35); Leg III: 22.77 (5.99, 2.46, 4.92, 6.06, 3.34); Leg IV: 27.76 (6.99, 2.64, 6.11, 8.44, 3.58). Leg formula: 4231.

Abdomen black, hairy. Spinnerets: PMS one segment, 1.84 long, 0.45 wide, PMS-PMS 0.86; PLS three segments, PLS 10.35 long (3.29, 3.55, 3.51).

Female (Fig. 7). Total length 19.67 (not including chelicerae and spinnerets): cephalothorax 8.95 long, 6.77 wide; abdomen 8.92 long, 5.18 wide. Eye sizes and inter-distances: AME 0.58, ALE 0.70, PME 0.50, PLE 0.56; AME-AME 0.17, ALE-AME 0.13, ALE- PLE 0.16, PLE-PME 0.03, PME-PME 0.99. Eye area 1.20 long, 2.50 wide. Chelicerae chestnut, with 13 stout promargin teeth, 8 small retromarginal teeth, 20 tiny teeth with fang furrow. Labium and maxillae lightly yellow, with dark brown bristles and

patch of cuspules on anterior half part (Fig. 7C); maxillae length 3.49, cuspules area length 2.15. Sternum yellow, with three pairs of sigilla (Fig. 7D).

Spines. Leg I: patella with 1 prolateral; tibia 2 ventral; metatarsus 6 ventral, and two comb-like organs near distad, each comb-like organ with 2 spines; tarsus 6 prolateral, 5 retrolateral. Leg II: patella 1 prolateral; tibia 1 prolateral, 2 ventral; metatarsus 1 prolateral, 7 ventral, and two comb-like organs near distad, each comb-like organ with 3 spines; tarsus 5 prolateral spines, 5 retrolateral. Leg III: patella 2 prolateral, 1 retrolateral; tibia 4 prolateral, 2 retrolateral, 4 ventral distally; metatarsus 3 dorsal, 5 prolateral, 3 retrolateral, 8 ventral, and two comb-like organs near distad, among them, prolateral comb-like organ with 3 spines, retrolateral 5; tarsus 8 prolateral, 7 retrolateral. Leg IV: patella 1 prolateral near distally, 1 retrolateral; tibia 2 prolateral, 2 retrolateral, 2 ventral distal; metatarsus 2 dorsal, 4 prolateral, 5 retrolateral, 8 ventral, and two comb-like organs near distad, among them, prolateral comb-like organ with 4 spines, retrolateral 5; tarsus with 9 prolateral, 8 retrolateral.

Measurements of palp and legs: palp: 13.52 (4.54, 1.68, 3.23, 4.07); Leg I: 18.86 (5.46, 2.79, 3.79, 4.19, 2.63); Leg II: 21.53 (6.77, 2.76, 4.49, 4.86, 2.65); Leg III: 23.00 (6.55, 3.47, 4.86, 5.13, 2.99); Leg IV: 22.94 (5.70, 3.10, 5.13, 6.37, 2.64). Leg formula: 4312.

Receptacula inward bending and droplet shaped, Copulatory duct long (Fig. 7B). Spinnerets: PMS one segment, 1.94 long, 0.59 wide, PMS-PMS 1.05; PLS three segments, 12.00 long (3.33, 3.94, 4.73)

Diagnosis

The new species is similar to the *Macrothele washanensis* sp. n., but can be distinguished from it by the thicker embolus (Fig. 5E), the slightly smaller basal haematodocha (Fig. 5B-D); the palpal tibia with one long and two stout prolateral spines, and two stout dorsal spines (Fig. 5G-I); the relatively longer copulatory duct, which is uniform in thickness from base to end, and the larger spermathecae (Fig. 7B).

Etymology

The specific name refers to the type locality and is a noun in apposition.

Distribution

China, Yunnan Province (Jingdong, Zhenyuan) (Figs 8, 9)

Acknowledgements

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References

- Chen H, Jiang X, Yang Z (2020) Two new species of the genus *Macrothele* of China (Araneae, Macrothelidae). Journal of Guangxi Normal University (Natural Science Edition) 38 (1): 114-119. <https://doi.org/10.16088/j.issn.1001-6600.2020.01.015>
- Hu J, Li F (1986) On two species of *Macrothele* from China (Araneae: Dipluridae). Acta Zootaxonomica Sinica 11: 35-39.
- Lin Y, Yan X, Li SQ, Ballarin F, Chen H- (2021) Five new species of *Macrothele* Ausserer, 1871 from China (Araneae, Macrothelidae). ZooKeys 1052: 1-23. <https://doi.org/10.3897/zookeys.1052.68623>
- Li S, Zha Z (2013) *Macrothele* spiders from Xishuangbanna rainforest of Yunnan, China (Araneae, Hexathelidae). Acta Zootaxonomica Sinica 38: 776-783.
- Pocock RI (1901) On some new trap-door spiders from China. Proceedings of the Zoological Society of London 70 (2): 207-215. <https://doi.org/10.1111/j.1469-7998.1901.tb08540.x>
- Saitô S (1933) Notes on the spiders from Formosa. Transactions of the Sapporo Natural History Society 3: 1-15.
- Shi J, Yang Z, Zhao Y, Yang Z (2018) The first description on the male of *Macrothele yani*, and supplemental descriptions of female (Araneae: Macrothelidae). Acta Arachnologica Sinica 27 (2): 103-107. <https://doi.org/10.3969/j.issn.1005-9628.2018.02.003>
- Shimojana M, Haupt J (1998) Taxonomy and natural history of the funnel-web spider genus *Macrothele* (Araneae: Hexathelidae: Macrothelinae) in the Ryukyu Islands (Japan) and Taiwan. Species Diversity 3: 1-15. <https://doi.org/10.12782/specdiv.3.1>
- Simon E (1892) Histoire naturelle des araignées. Deuxième édition. Tome Premier. Roret, Paris, 1-256 pp. <https://doi.org/10.5962/bhl.title.51973>
- Song D, Zhu M, Chen J (1999) The spiders of China. Hebei of Science and Technology Publishing House, 640 pp.
- Tang Y, Zhao Y, Yang Z (2020) Three new species of the funnel-web spider genus *Macrothele* from the Southwest China (Mygalomorphae: Macrothelidae). Zootaxa 4822 (1): 127-137. <https://doi.org/10.11646/zootaxa.4822.1.8>
- Tang Y, Wu Y, Zhao Y, Yang Z (2022) Description of a new genus and two new species of the funnel-web mygalomorph (Araneae: Mygalomorphae: Macrothelidae) from China with notes on taxonomic amendments. Zootaxa 5125 (5): 513-535. <https://doi.org/10.11646/zootaxa.5125.5.3>
- Wang Y, Li Y, Yang Z (2019) A new species of genus *Macrothele* (Araneae: Macrothelidae) from China. Acta Arachnologica Sinica 28 (2): 109-112. <https://doi.org/10.3969/j.issn.1005-9628.2019.02.005>
- World Spider Catalog (2022) World Spider Catalog. Version 23.5. Natural History Museum Bern. <http://wsc.nmbe.ch>. Accessed on: 2022-7-03.

- Xu X, Yin C (2001) A new species of the genus *Macrothele* from China (Araneae: Hexathelidae). *Journal of Natural Science of Hunan Normal University* 24: 65-66,72.
- Xu X, Yin C, Griswold CE (2002) A new species of the spider genus *Macrothele* from the Gaoligong Mountains, Yunnan, China (Araneae: Hexathelidae). *Pan-Pacific Entomologist* 78: 116-119.
- Yang Z, Zhao Y, Zhang C, Yang Z (2018) Two new species of the genus *Macrothele* from the southwest of China (Mygalomorphae: Macrothelidae). *Acta Arachnologica Sinica* 27 (2): 96-102. <https://doi.org/10.3969/j.issn.1005-9628.2018.02.002>
- Yang Z, Zhao Y, Yang Z (2019) Two new species of the genus *Macrothele* from the southwest of China (Mygalomorphae: Macrothelidae). *Journal of Dali University* 4 (06): 45-47+101.
- Zhu M, Song D (2000) Review of the Chinese funnel-web spiders of the genus *Macrothele*, with descriptions of two new species (Araneae: Hexathelidae). *Raffles Bulletin of Zoology* 48: 59-64.
- Zhu M, Li T, Song D (2000) A new species of the genus *Macrothele* (Araneae: Hexathelidae) from China. *Journal of Hubei University* 20: 358-361.

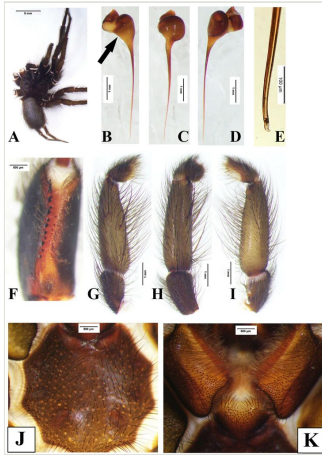


Figure 1.

Macrothele washanensis sp. n., male holotype. **A.** Male body, dorsal view; **B.** Embolus, prolateral view; **C.** Same, ventral view; **D.** Same, retrolateral view; **E.** Same, the end; **F.** Left chelicerae, ventral view; **G.** Left palp tibia, prolateral view; **H.** Same, dorsal view; **I.** Same, retrolateral view; **J.** Sternum; **K.** Maxillae and labium.

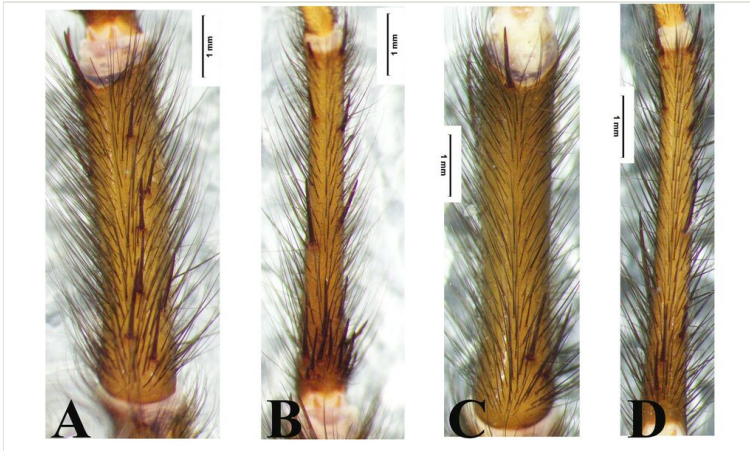


Figure 2.

Macrothele washanensis sp. n., Left leg I and leg II. **A.** leg tibia I, ventral view; **B.** leg metatarsus I, ventral view; **C.** leg tibia II, ventral view; **D.** Same, leg metatarsus II, ventral view.

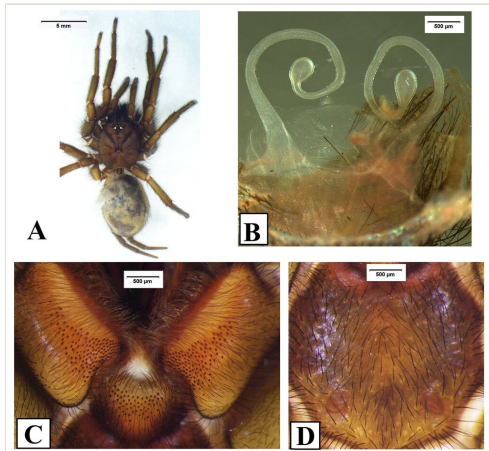


Figure 3.

Macrothele washanensis sp. n., female paratype. **A.** Female, body, dorsal view; **B.** Genitalia, ventral view; **C.** Maxillae and labium; **D.** Sternum.

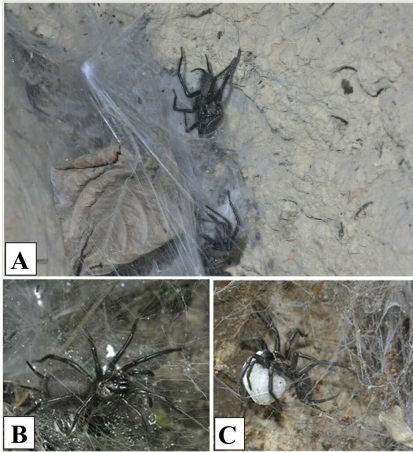


Figure 4.

Macrothele washanensis sp. n. **A.** Spider shelter and spiders; **B.** Living female; **C.** Female spider with eggs.

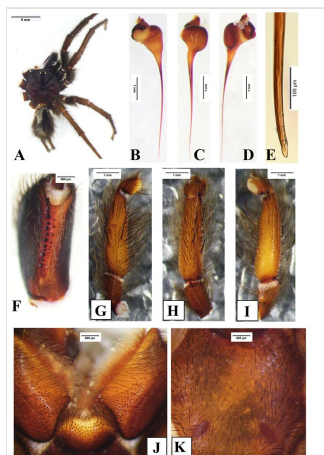


Figure 5.

Macrothele wuliangensis sp. n., male holotype. **A.** Male body, dorsal view; **B.** Embolus, prolateral view; **C.** Same, ventral view; **D.** Same, retrolateral view; **E.** Same, the end; **F.** Left chelicerae, ventral view; **G.** Left palp tibia, prolateral view; **H.** Same, dorsal view; **I.** Same, retrolateral view; **J.** Sternum; **K.** Maxillae and labium.



Figure 6.

Macrothele wuliangensis sp. n., Left leg I and leg II. **A.** leg tibia I, ventral view; **B.** leg metatarsus I, ventral view; **C.** leg tibia II, ventral view; **D.** leg metatarsus II, ventral view.

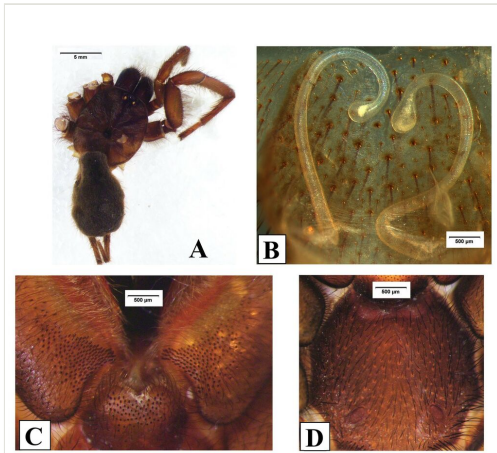


Figure 7.

Macrothele wuliangensis sp. n., female paratype. **A** Female, body, dorsal view; **B** Genitalia, ventral view; **C** Maxillae and labium; **D** Sternum.

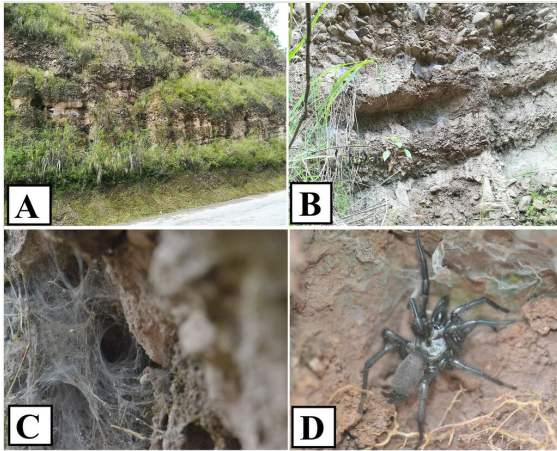


Figure 8.

Macrothele wuliangensis sp. n. **A** Microhabitat; **B** Spider shelter; **C** Web; **D** Living female.



Figure 9.

Distribution records of two new species in China.