






Research article

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Six species of the spider genus *Spinirta* Jin & Zhang, 2020 from southern China (Araneae: Corinnidae)Lu-Yu WANG ^{1,4}, Muhammad IRFAN ^{2,*}, Qian-Le LU ³,
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Abstract. In the current study, six species of the genus *Spinirta* from southern China are recognized, four new species are described: *S. hongyui* Wang, Lu & Z.S. Zhang sp. nov. (♂♀), *S. liuae* Wang, Lu & Z.S. Zhang sp. nov. (♂♀), *S. simianshan* Wang, Lu & Z.S. Zhang sp. nov. (♂♀) and *S. yintiaoling* Wang, Lu & Z.S. Zhang sp. nov. (♂). Females of *S. aviforma* Jin & Zhang, 2020 (♂♀) and *S. quadrata* Jin & Zhang, 2020 (♂♀) are described for the first time. Photos of the body and copulatory organs, as well as the locality map are provided.

Keywords. Description, morphology, new species, redescription, taxonomy.

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Introduction

Corinnidae Karsch, 1880 comprises about 843 species in 74 genera, including 43 species in 10 genera recorded from China (WSC 2023). Currently, *Spinirta* Jin & Zhang, 2020 has 17 species with a wide range of distribution in southern China, including Anhui, Guangxi, Guizhou, Hunan, Hubei, Sichuan,

Jiangxi, Zhejiang Provinces and Chongqing. *Sipinirta* spiders live in a variety of habitats, ranging from deciduous layers, bamboo roots, thickets or canopies (Jin & Zhang 2020; Zhang *et al.* 2023).

While examining the corinnid spiders from southern China, we identified four new species from Guangdong, Yunnan Provinces and Chongqing City. This is the first time that the species of *Sipinirta* have been reported from Guangdong and Yunnan. In addition, the females of *S. aviforma* Jin & Zhang, 2020 and *S. quadrata* Jin & Zhang, 2020 are described here for the first time.

Material and methods

All specimens are preserved in 75% ethanol and were examined, illustrated, photographed and measured using a Leica M205A stereo microscope equipped with a drawing tube, a Leica DFC450 Camera and LAS software (ver. 4.6). Male pedipalps and epigynes were examined and illustrated after they were dissected. Female genitalia were cleared by immersing them in pancreatin (Álvarez-Padilla & Hormiga 2007). Eye sizes were measured as the maximum dorsal diameter. Leg measurements are shown as: total length (femur, patella and tibia, metatarsus, tarsus). All measurements are in millimeters.

Specimens examined here are deposited in the Collection of Spiders, School of Life Sciences, Southwest University, Chongqing, China (SWUC); type specimens of *Sipinirta aviforma* Jin & Zhang, 2020 are deposited at the Museum of Hebei University (MHBHU).

Abbreviations (used in the text)

ALE = anterior lateral eye
AME = anterior median eye
MOA = median ocular area
PLE = posterior lateral eye
PME = posterior median eye

Results

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Corinnidae Karsch, 1880
Genus *Sipinirta* Jin & Zhang, 2020

Chinese name

刺突蛛属

Type species

Sipinirta jinyunshanensis Jin & Zhang, 2020.

Sipinirta aviforma Jin & Zhang, 2020
Figs 1A–B, 2–3, 14

Sipinirta aviforma Jin & Zhang, 2020: 317, figs 3e, 16a–i, 17a–d (♂).

Chinese name

鸟刺突蛛

Differential diagnosis

Female of *Spinirta aviforma* Jin & Zhang, 2020 resembles *S. forcipata* Jin & Zhang, 2020 in having the similar kidney-shaped copulatory openings (Figs 2A, 3C; Jin & Zhang 2020: figs 9g, 10e) but can be distinguished by the posterior margin of epigynal plate relatively narrow and forming an edge in *S. aviforma* (Figs 2A, 3C), vs posterior margin relatively round in *S. forcipata* (Jin & Zhang 2020: figs 9g, 10e); spermathecae separated by a distance half of their diameter in *S. aviforma* (Figs 2A, 3C), vs separated by distance more than spermatheca's diameter in *S. forcipata* (Jin & Zhang 2020: figs 9g, 10e).

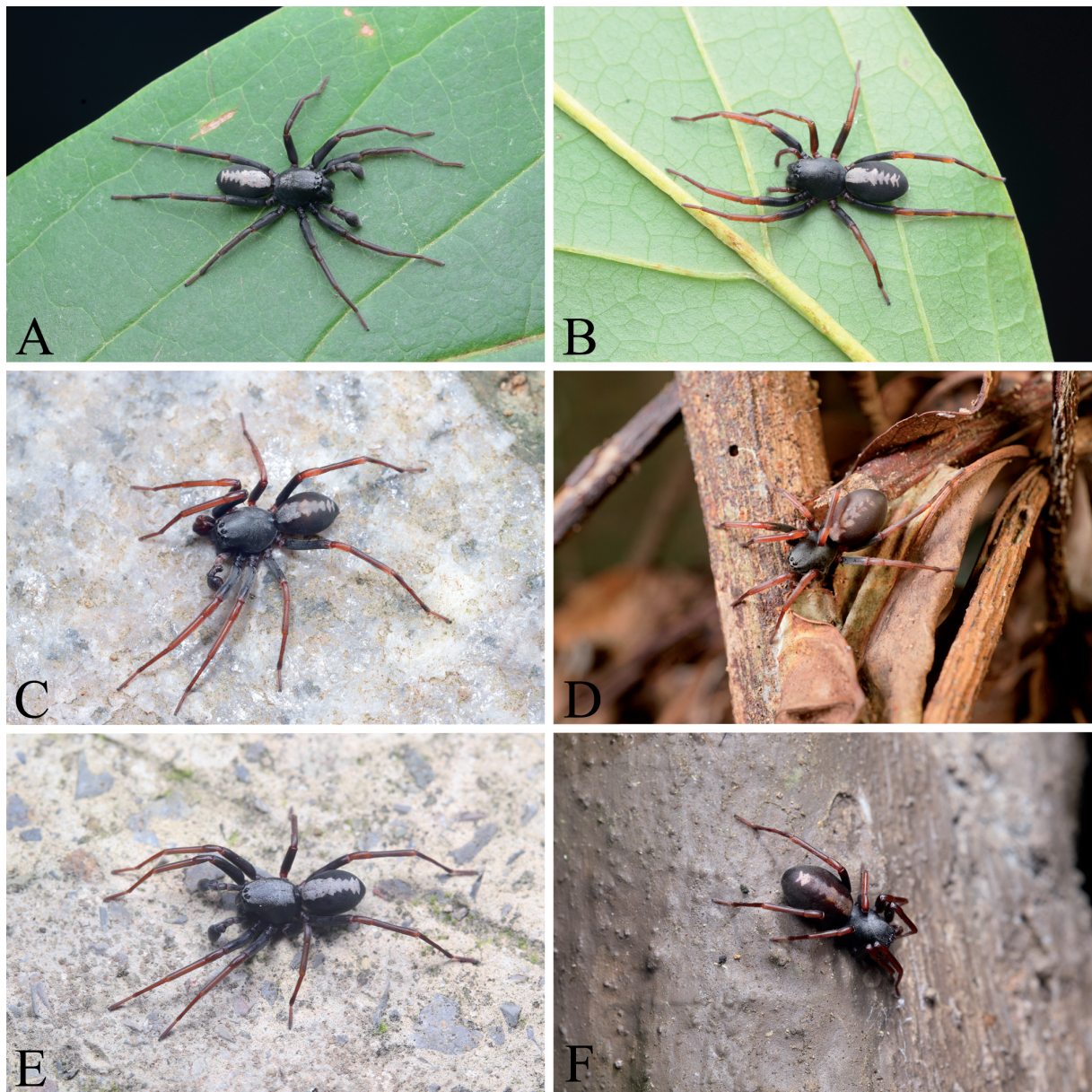


Fig. 1. Photos of living specimens of *Spinirta* Jin & Zhang, 2020. A–B. *S. aviforma* Jin & Zhang, 2020 (A, male; B, female). C–D. *S. liuae* Wang, Lu & Z.S. Zhang sp. nov. (C, male; D, female). E–F. *S. quadrata* Jin & Zhang, 2020 (E, male; F, female). (A–C, E–F photo by Qian-Le Lu, D photo by Jia Liu).

Material examined

Holotype

CHINA • ♂; Chongqing City, Beibei District, Jinyun Mountain Natural Reserve, Banzigou; 29°47'13" N, 106°20'00" E; alt. 518 m; 5 Oct. 2010; H.J. Liu leg.; pitfall traps; MHBUS.

Other material examined

CHINA • 2 ♂♂, 2 ♀♀; Chongqing City, Beibei District, Jinyun Mountain Natural Reserve; 29°49'27" N, 106°23'46" E; alt. 613 m; 1 Oct. 2022; Q.L. Lu leg.; SWU-COSA-01 to 04.

Description

Male (SWU-COSA-01, Figs 1A, 3A)

MEASUREMENTS. Total length 10.73. Prosoma 5.41 long, 4.20 wide; opisthosoma 5.11 long, 3.45 wide. Eye sizes and interdistances: AME 0.38, ALE 0.30, PME 0.32, PLE 0.32; AME–AME 0.17, AME–ALE 0.11, PME–PME 0.28, PME–PLE 0.37, ALE–PLE 0.19. MOA 0.91 long, anterior width 0.91, posterior width 0.93. Clypeus height 0.30.

CHELICERAE. With three promarginal and four retromarginal teeth.

LEG MEASUREMENTS. I = 14.21 (3.90, 5.15, 3.19, 1.97); II = 13.43 (3.78, 4.69, 3.11, 1.85); III = 11.56 (3.25, 4.05, 2.69, 1.57); IV = 14.24 (4.27, 5.35, 4.44, 1.80). Leg formula: 4123.

PALP (Fig. 3E–G). For description see Jin & Zhang (2020).

Female (SWU-COSA-02, Figs 1B, 3B)

MEASUREMENTS. Total length 12.30. Prosoma 5.74 long, 4.55 wide; opisthosoma 6.52 long, 4.04 wide. Eye sizes and interdistances: AME 0.37, ALE 0.32, PME 0.32, PLE, 0.34; AME–AME 0.24, AME–ALE 0.12, PME–PME 0.31, PME–PLE 0.38, ALE–PLE 0.21. MOA 0.95 long, anterior width 0.91, posterior width 0.95. Clypeus height 0.32.

LEG MEASUREMENTS. I = 13.96 (4.02, 5.37, 2.84, 1.73); II = 13.22 (3.94, 4.41, 3.11, 1.76); III = 12.57 (3.50, 4.48, 2.98, 1.61); IV = 16.73 (4.25, 5.89, 4.75, 1.84). Leg formula: 4123.

EPIGYNE (Figs 2A, 3C). Copulatory openings kidney-shaped, almost parallel to each other.

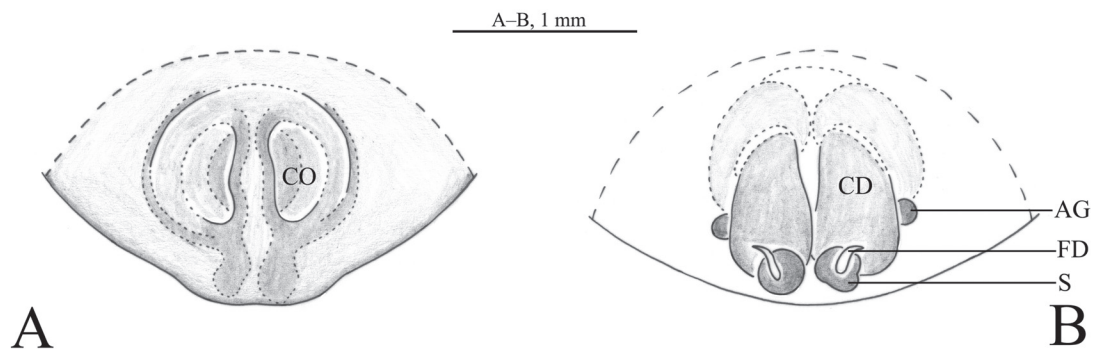


Fig. 2. *Sipinirta aviforma* Jin & Zhang, 2020, ♀ (SWU-COSA-02). **A.** Epigyne, ventral view. **B.** Vulva, dorsal view. Abbreviations: AG = accessory glands; CD = copulatory ducts; CO = copulatory openings; FD = fertilization ducts; S = spermathecae.

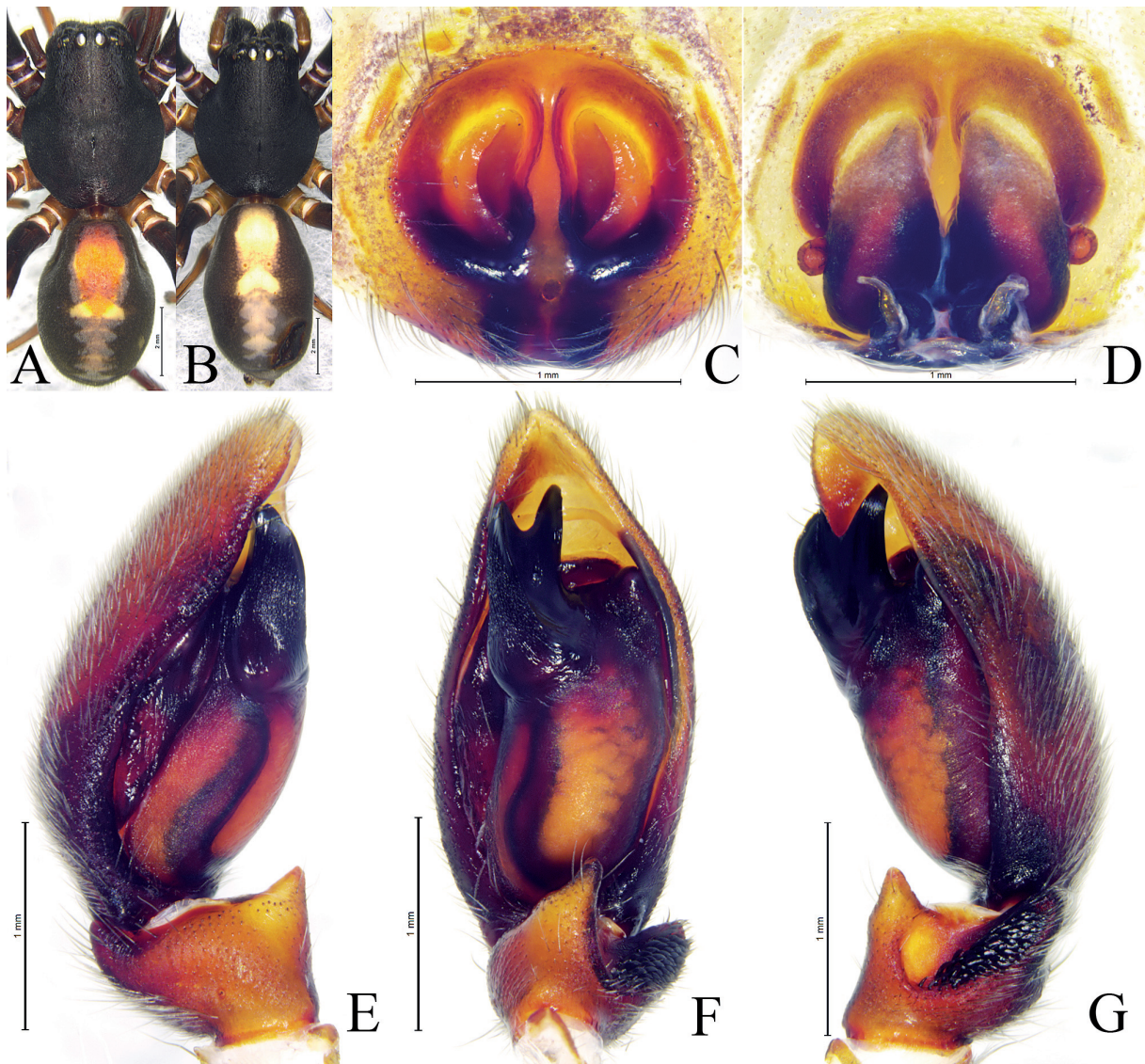


Fig. 3. *Spinirta aviforma* Jin & Zhang, 2020. **A, E–G.** ♂ (SWU-COSA-01). **B–D.** ♀ (SWU-COSA-02). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. **E.** Left male palp, prolateral view. **F.** Same, ventral view. **G.** Same, retrolateral view.

VULVA (Figs 2A, 3D). Copulatory ducts thick, pear-shaped, extending posteriorly, anteriorly with small membranous part; accessory glands small, spherical; spermathecae separated by less than the spermathecae diameter; fertilization ducts large, present above spermathecae.

Distribution

China (Chongqing) (Fig. 14).

Spinirta hongyui Wang, Lu & Z.S. Zhang sp. nov.

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Figs 4–5, 14

Chinese name

鸿宇刺突蛛

Differential diagnosis

Male of *Spinirta hongyui* Wang, Lu & Z.S. Zhang sp. nov. resembles *S. simianshan* Wang, Lu & Z.S. Zhang sp. nov. in having the similar tibial apophyses and somewhat quadrangular embolar apophysis (Figs 4A–B, 5F–G vs Figs 10A–B, 11F–G) but can be distinguished by the embolus tip with blunt end in *S. hongyui* (Figs 4A, 5F), vs retrolateral margin of embolus serrated in *S. simianshan* (Figs 10A, 11F); ventral margin of retrolateral tibial apophysis wavy in *S. hongyui* (Figs 4A, 5F), vs smooth, rounded in *S. simianshan* (Figs 10A, 11F). Female can be distinguished by the atrium septum indistinct in *S. hongyui* (Figs 4A, 5F), vs distinct, dividing atrium into two halves in *S. simianshan* (Figs 10A, 11F); copulatory opening present laterally in *S. hongyui* (Figs 4C, 5C), vs present posteriorly in *S. simianshan* (Figs 10C, 11C); accessory glands present in *S. hongyui* (Figs 4D, 5D), vs absent in *S. simianshan* (Figs 10D, 11D).

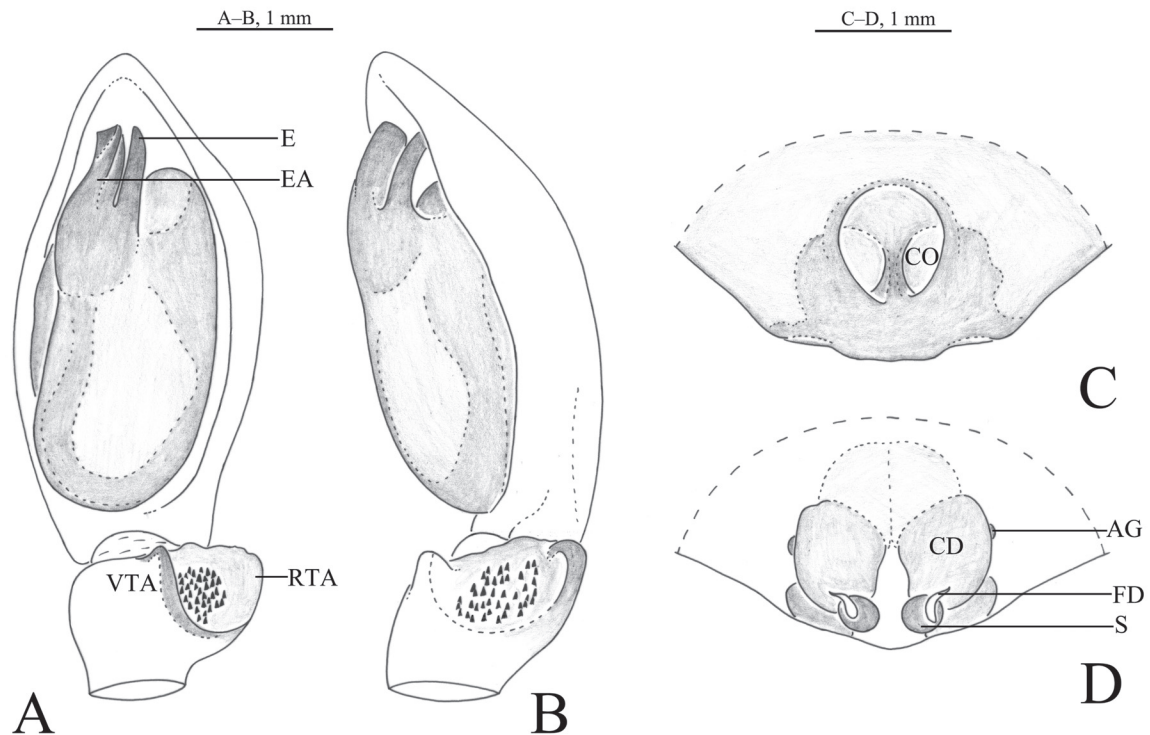


Fig. 4. *Spinirta hongyui* Wang, Lu & Z.S. Zhang sp. nov. **A–B.** Holotype, ♂ (SWUC-T-CO-01-01). **C–D.** Paratype, ♀ (SWUC-T-CO-01-02). **A.** Left male palp, ventral view. **B.** Same, retrolateral view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. Abbreviations: AG = accessory glands; CD = copulatory ducts; CO = copulatory openings; E = embolus; EA = embolar apophysis; FD = fertilization ducts; RTA = retrolateral tibial apophysis; S = spermathecae; VTA = ventral tibial apophysis.

Etymology

The specific name comes from the first name of the collector; noun.

Type material

Holotype

CHINA • ♂; Yunnan Province, Zhaotong City, Weixin County, Houshan; 27°51'34" N, 105°02'14" E; alt. 1640 m; Apr. 2020; H.Y. Chen leg.; SWUC-T-CO-01-01.

Paratype

CHINA • 1 ♀; same collection data as for holotype; SWUC-T-CO-01-02.

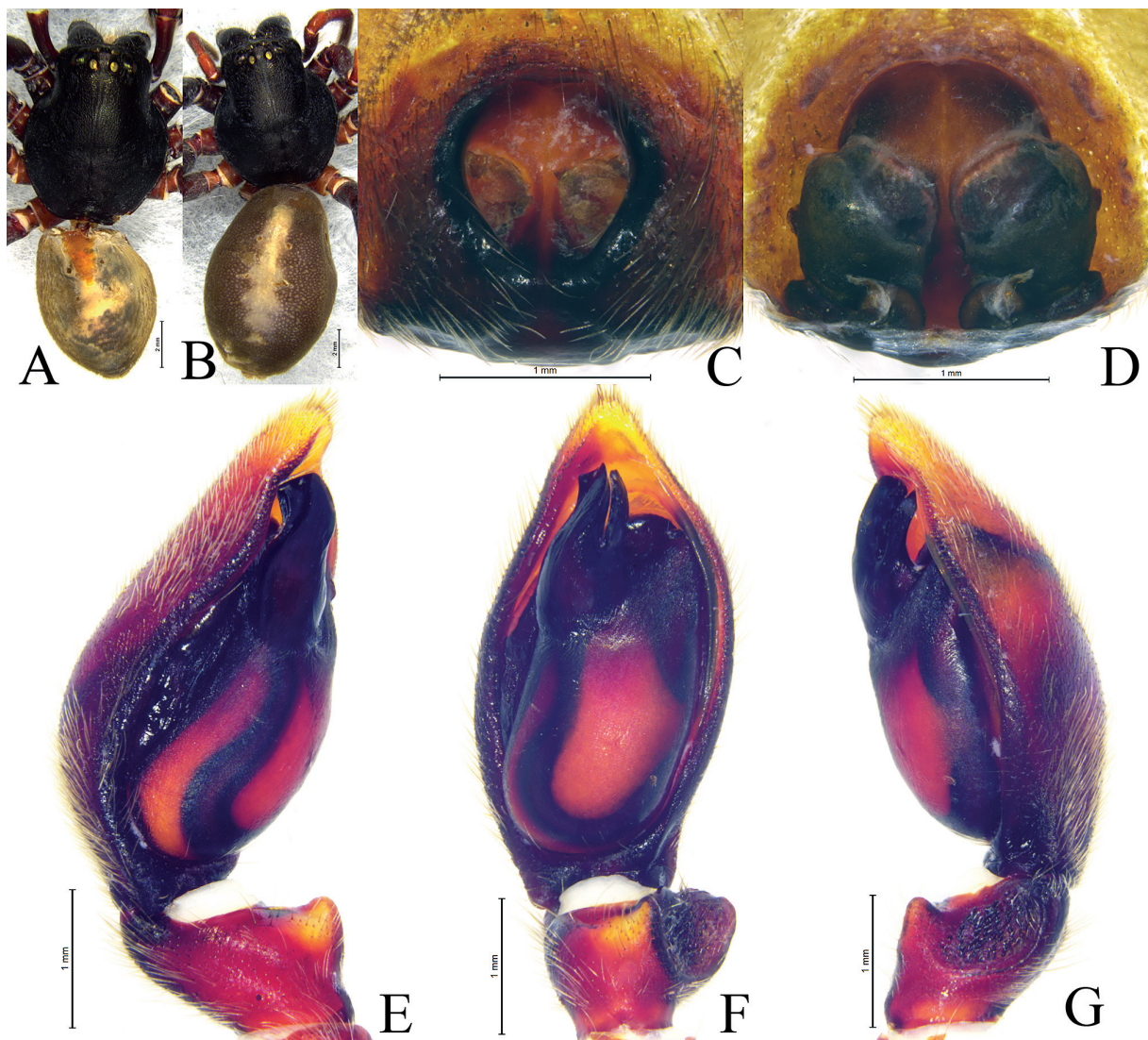


Fig. 5. *Spinirta hongyui* Wang, Lu & Z.S. Zhang sp. nov. **A, E–G.** Holotype, ♂ (SWUC-T-CO-01-01). **B–D.** Paratype, ♀ (SWUC-T-CO-01-02). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. **E.** Left male palp, prolateral view. **F.** Same, ventral view. **G.** Same, retrolateral view.

Description

Male (holotype SWUC-T-CO-01-01, Fig. 5A)

MEASUREMENTS. Total length 14.72. Prosoma 7.73 long, 6.29 wide; opisthosoma 7.10 long, 5.16 wide. Eye sizes and interdistances: AME 0.50, ALE 0.40, PME 0.38, PLE 0.44; AME–AME 0.31, AME–ALE 0.17, PME–PME 0.59, PME–PLE 0.57, ALE–PLE 0.20. MOA 1.34 long, anterior width 1.27, posterior width 1.35. Clypeus height 0.65.

CHELICERAE. With three promarginal and five retromarginal teeth.

LEG MEASUREMENTS. I = 24.24 (6.50, 8.69, 5.84, 3.21); II = 23.73 (6.48, 8.45, 5.92, 2.88); III = 19.82 (5.51, 6.64, 5.03, 2.64); IV lost.

PALP (Figs 4A–B, 5E–G). Ventral tibial apophysis small with blunt tip; retrolateral tibial apophysis outer edge quadrangular in ventral view, ventral surface with relatively sparse short coniform spines; prolateral tibial apophysis triangular. Tegulum retrolateral apex round. Subtegulum with an inclined groove on prolateral surface. Embolus longer than wide, as long as embolar apophysis; embolar apophysis quadrangular in prolateral view, with broad distal end.

Female (paratype SWUC-T-CO-01-02, Fig. 5B)

MEASUREMENTS. Total length 17.76. Prosoma 7.83 long, 6.60 wide; opisthosoma 10.19 long, 6.81 wide. Eye sizes and interdistances: AME 0.49, ALE 0.44, PME 0.39, PLE 0.40; AME–AME 0.28, AME–ALE 0.20, PME–PME 0.58, PME–PLE 0.57, ALE–PLE 0.18. MOA 1.37 long, anterior width 1.28, posterior width 1.36. Clypeus height 0.60.

LEG MEASUREMENTS. I = 21.42 (7.07, 8.10, 4.36, 1.89); II = 23.35 (6.81, 8.13, 5.38, 3.03); III = 19.79 (5.61, 6.61, 4.85, 2.72); IV = 25.18 (6.54, 8.22, 7.60, 2.82). Leg formula: 4123.

EPIGYNE (Figs 4C, 5C). Atrium large, oval-shaped, longer than wide, with circular slit-like copulatory openings located posteriorly.

VULVA (Figs 4D, 5D). Copulatory ducts 9-shaped, anterior margin partly membranous; accessory glands small, slightly visible in dorsal view; spermathecae round; fertilization duct large, originating from the dorsal margin of spermathecae.

Distribution

Known only from the type locality, Yunnan, China (Fig. 14).

Sipinirta liuae Wang, Lu & Z.S. Zhang sp. nov.

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Figs 1C–D, 6–7, 14

Chinese name

刘氏刺突蛛

Differential diagnosis

Male of *Sipinirta liuae* Wang, Lu & Z.S. Zhang sp. nov. resembles *S. hongyui* sp. nov. in having the similar embolus (Figs 6A–B, 7E–G vs Figs 4A–B, 5E–G) but can be distinguished by the embolus shorter than embolar apophysis in *S. liuae* (Figs 6A–B, 7F–G), vs as long as embolar apophysis in *S. hongyui* (Figs 4A–B, 5F–G); embolar apophysis thumb-shaped in *S. liuae* (Figs 6A–B, 7F–G), vs quadrangular in *S. hongyui* (Figs 4A–B, 5F–G); ventral tibial apophysis large, with rounded tip in ventral view in *S. liuae*

(Figs 6A, 7F), vs triangular in *S. hongyui* (Figs 4A, 5F); retrolateral tibial apophysis ventrally hook-shaped projection in *S. liuae* (Figs 6B, 7G), vs ventrally absent any projection in *S. hongyui* (Figs 4B, 5G). Female can be distinguished from *S. hongyui* by the spermathecae present mid dorsally, separated by a distance two times longer than their diameter in *S. liuae* (Figs 6D, 7D), vs present at posterior end, separated by a distance almost equal to their diameter in *S. hongyui* (Figs 4D, 5D); accessory glands quite visible in *S. liuae* (Figs 6D, 7D), vs slightly visible in *S. hongyui* (Figs 4D, 5D).

Etymology

The specific name comes from the family name of the collector Ms Jia Liu; noun.

Type material

Holotype

CHINA • ♂; Guangdong Province, Shenzhen City, Wutong Mountain, Taishanjian; 22°34'51" N, 114°11'50" E; alt. 341 m; 16 Jan. 2021; J. Liu and Q.L. Lu leg.; SWUC-T-CO-02-01.

Paratype

CHINA • 1 ♀; same collection data as for holotype; SWUC-T-CO-02-02.

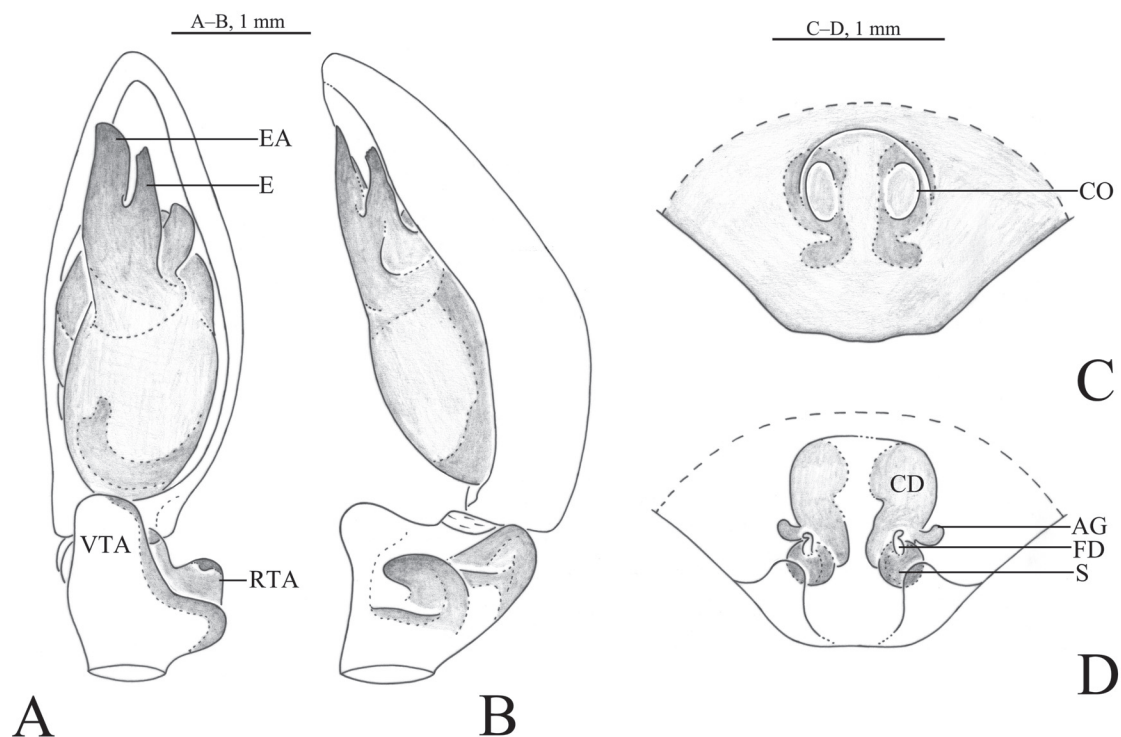


Fig. 6. *Spinirta liuae* Wang, Lu & Z.S. Zhang sp. nov. **A–B.** Holotype, ♂ (SWUC-T-CO-02-01). **C–D.** Paratype, ♀ (SWUC-T-CO-02-02). **A.** Left male palp, ventral view. **B.** Same, retrolateral view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. Abbreviations: AG = accessory glands; CD = copulatory ducts; CO = copulatory openings; E = embolus; EA = embolar apophysis; FD = fertilization ducts; RTA = retrolateral tibial apophysis; S = spermathecae; VTA = ventral tibial apophysis.

Description

Male (holotype SWUC-T-CO-02-01, Figs 1C, 7A)

MEASUREMENTS. Total length 13.12. Prosoma 6.82 long, 5.34 wide; opisthosoma 6.16 long, 3.82 wide. Eye sizes and interdistances: AME 0.45, ALE 0.34, PME 0.36, PLE 0.34; AME–AME 0.23, AME–ALE 0.15, PME–PME 0.36, PME–PLE 0.45, ALE–PLE 0.14. MOA 1.12 long, anterior width 1.06, posterior width 1.13. Clypeus height 0.42.

CHELICERAE. With three promarginal and five retromarginal teeth.

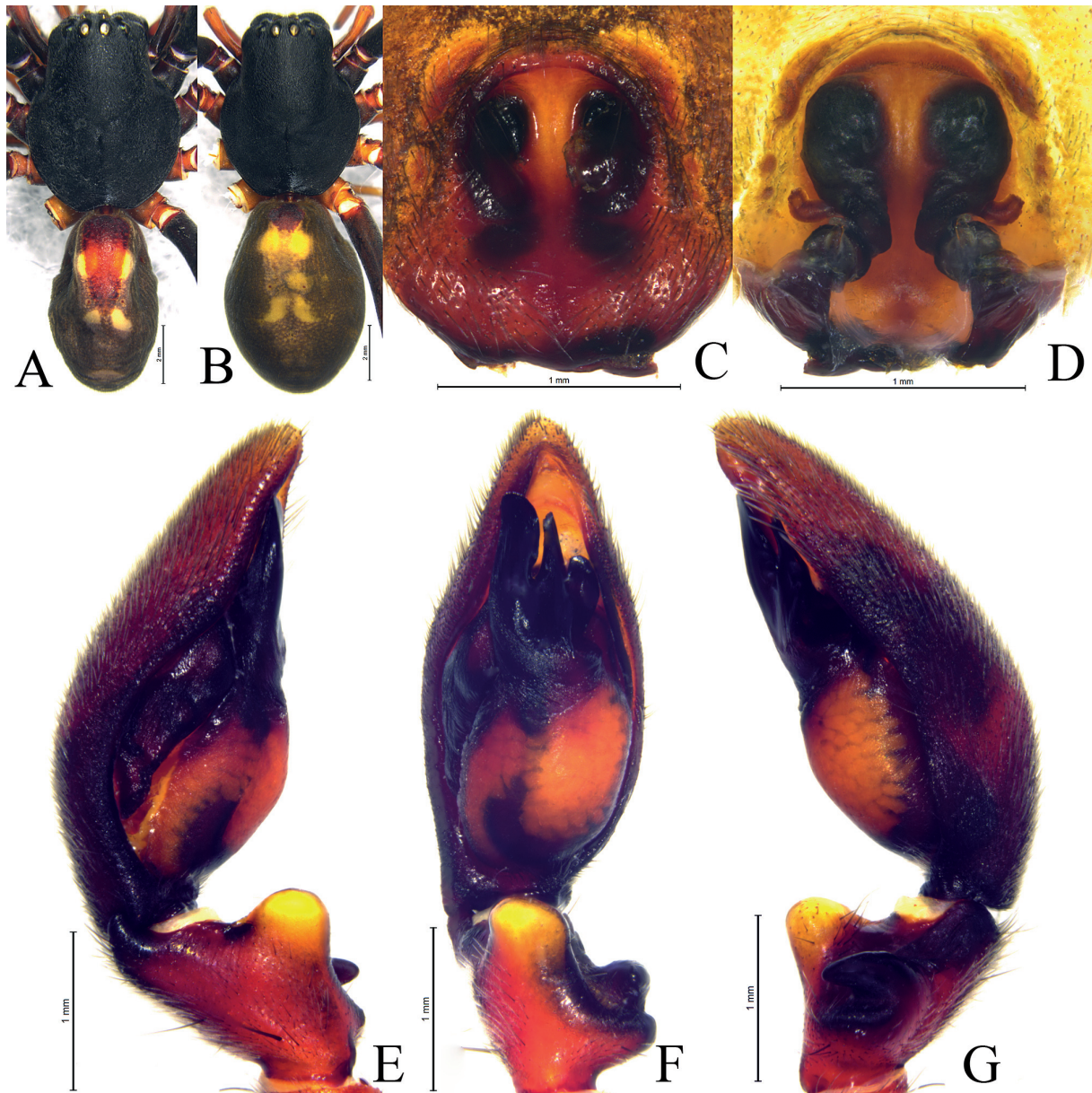


Fig. 7. *Sipinirta liuae* Wang, Lu & Z.S. Zhang sp. nov. **A, E–G.** Holotype, ♂ (SWUC-T-CO-02-01). **B–D.** Paratype, ♀ (SWUC-T-CO-02-02). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. **E.** Left male palp, prolateral view. **F.** Same, ventral view. **G.** Same, retrolateral view.

LEG MEASUREMENTS. I = 20.45 (5.54, 7.37, 4.74, 2.80); II = 19.33 (5.36, 6.69, 4.57, 2.71); III = 16.12 (4.53, 5.29, 3.98, 2.32); IV = 21.86 (5.78, 7.09, 6.36, 2.63). Leg formula: 4123.

PALP (Figs 6A–B, 7E–G). Ventral tibial apophysis large, quadrangular in ventral view, with broad distal end; retrolateral tibial apophysis proximally strongly curved, hook shaped in retrolateral view with blunt tip, rest of it oval, ventrally grooved with relatively sparse coniform spines; prolateral tibial apophysis triangular. Tegulum round in retrolateral view. Subtegulum with an inclined groove on prolateral surface. Embolus shorter than embolar apophysis with serrated tip; embolar apophysis longer than wide with rounded tip.

Female (paratype SWUC-T-CO-02-02, Figs 1D, 7B)

MEASUREMENTS. Total length 13.72. Prosoma 6.50 long, 5.15 wide; opisthosoma 7.04 long, 5.16 wide. Eye sizes and interdistances: AME 0.43, ALE 0.34, PME 0.36, PLE, 0.37; AME–AME 0.21, AME–ALE 0.13, PME–PME 0.36, PME–PLE 0.42, ALE–PLE 0.17. MOA 1.13 long, anterior width 0.99, posterior width 1.03. Clypeus height 0.31.

LEG MEASUREMENTS. I = 18.49 (4.80, 6.89, 4.39, 2.41); II = 18.29 (5.17, 6.42, 4.23, 2.47); III = 14.73 (4.17, 4.81, 3.67, 2.08); IV = 20.66 (5.66, 6.80, 5.91, 2.29). Leg formula: 4123.

EPIGYNE (Figs 6C, 7C). Anterior rim of atrium semicircular, copulatory openings present at the center of atrium.

VULVA (Figs 6D, 7D). Copulatory ducts coiled helically; accessory glands large, tip slightly curved; spermathecae round, located mid dorsally, separated by a distance more than two times of their diameter; fertilization duct large, originating at the anterior margin of spermathecae.

Distribution

Known only from the type locality, Shenzhen, China (Fig. 14).

Spinirta quadrata Jin & Zhang, 2020
Figs 1E–F, 8–9, 14

Spinirta quadrata Jin & Zhang, 2020: 322, figs 3f, 18a–i, 19a–d (♂).

Chinese name

方刺突蛛

Differential diagnosis

Female of *Spinirta quadrata* Jin & Zhang, 2020 can be distinguished from all other congeners by the atrium outline oval, wider than long, and accessory glands absent (Figs 8, 9C–D).

Material examined

CHINA • 1 ♂; Chongqing City, Wuxi County, Shuangyang Township, Yintiaoling Natural Reserve, Hongqi Administrative Station; 31°31'00" N, 109°49'42" E; alt. 1263 m; 16 Aug. 2022; T.Y. Ren leg.; SWUC-COSQ-01 • 2 ♂♂, 1 ♀; Yintiaoling Natural Reserve, Hongqi Administrative Station; 10–11 Aug. 2022; Q.L. Lu leg.; SWUC-COSQ-02 to 04 • 1 ♂, 1 ♀; Wuxi County, Shuangyang Township, Yintiaoling Natural Reserve, Laolingou; 31°32'49" N, 109°51'54" E; alt. 1286.10 m; 11 Aug. 2022; T.Y. Ren leg.; SWUC-COSQ-05, SWUC-COSQ-06 • 1 ♂; Yintiaoling Natural Reserve, Linkouzi; 31°28'28" N, 109°52'40" E; alt. 1289 m; 14 Aug. 2022; Q.L. Lu leg.; SWUC-COSQ-07 • 1 ♀; Yintiaoling Natural Reserve, Linkouzi; 31°28'27" N, 109°52'52" E; alt. 1281 m; 16 Aug. 2022; B. Luo leg.; SWUC-COSQ-08.

Description

Male (SWUC-COSQ-01, Figs 1E, 9A)

MEASUREMENTS. Total length 11.15. Prosoma 5.80 long, 4.57 wide; opisthosoma 5.18 long, 3.65 wide. Eye sizes and interdistances: AME 0.34, ALE 0.30, PME 0.32, PLE 0.33; AME–AME 0.18, AME–ALE 0.13, PME–PME 0.33, PME–PLE 0.36, ALE–PLE 0.15. MOA 0.90 long, anterior width 0.87, posterior width 0.95. Clypeus height 0.43.

CHELICERAE. With three promarginal and five retromarginal teeth.

LEG MEASUREMENTS. I = 16.23 (4.55, 5.72, 3.72, 2.24); II = 14.99 (4.21, 5.12, 3.50, 2.16); III = 12.79 (3.85, 4.30, 3.14, 1.50); IV = 17.72 (4.71, 5.91, 5.01, 2.09). Leg formula: 4123.

PALP (Fig. 9E–G). For description see Jin & Zhang (2020).

Female (SWUC-COSQ-04, Figs 1F, 9B)

MEASUREMENTS. Total length 13.65. Prosoma 5.48 long, 4.37 wide; opisthosoma 7.49 long, 5.59 wide. Eye sizes and interdistances: AME 0.30, ALE 0.28, PME 0.30, PLE, 0.29; AME–AME 0.20, AME–ALE 0.14, PME–PME 0.33, PME–PLE 0.35, ALE–PLE 0.16. MOA 0.83 long, anterior width 0.82, posterior width 0.90. Clypeus height 0.31.

LEG MEASUREMENTS. I = 14.92 (4.31, 5.38, 3.21, 2.02); II = 14.17 (4.22, 4.90, 3.16, 1.89); III = 12.04 (3.57, 4.10, 2.79, 1.58); IV = 17.01 (4.70, 5.74, 4.71, 1.86). Leg formula: 4123.

EPIGYNE (Figs 8A, 9C). Atrium oval, wider than long, copulatory openings located posteriorly deep inside the atrium.

VULVA (Figs 8B, 9D). Copulatory ducts L-shaped, anterior margin partly membranous; accessory glands absent; spermathecae round; fertilization duct large, extending mesally.

Distribution

China (Chongqing, Hubei) (Fig. 14).

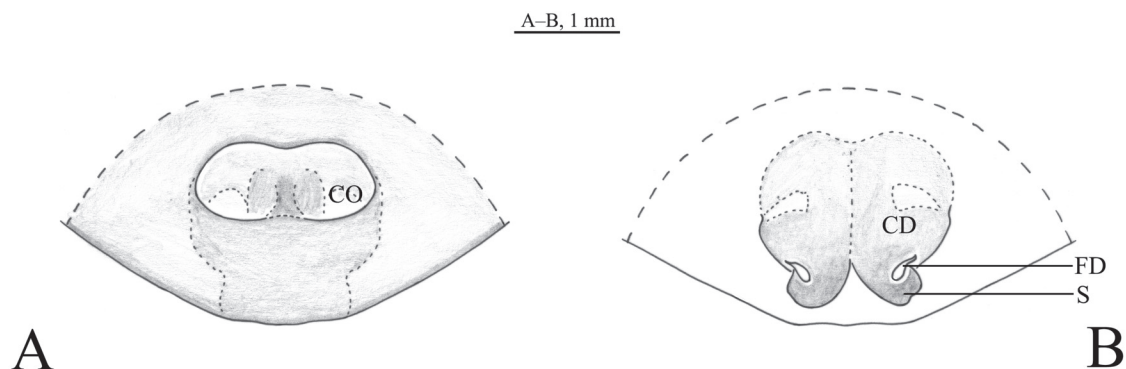


Fig. 8. *Sipinirta quadrata* Jin & Zhang, 2020, ♀ (SWUC-COSQ-04). **A.** Epigyne, ventral view. **B.** Vulva, dorsal view. Abbreviations: CD = copulatory ducts; CO = copulatory openings; FD = fertilization ducts; S = spermathecae.

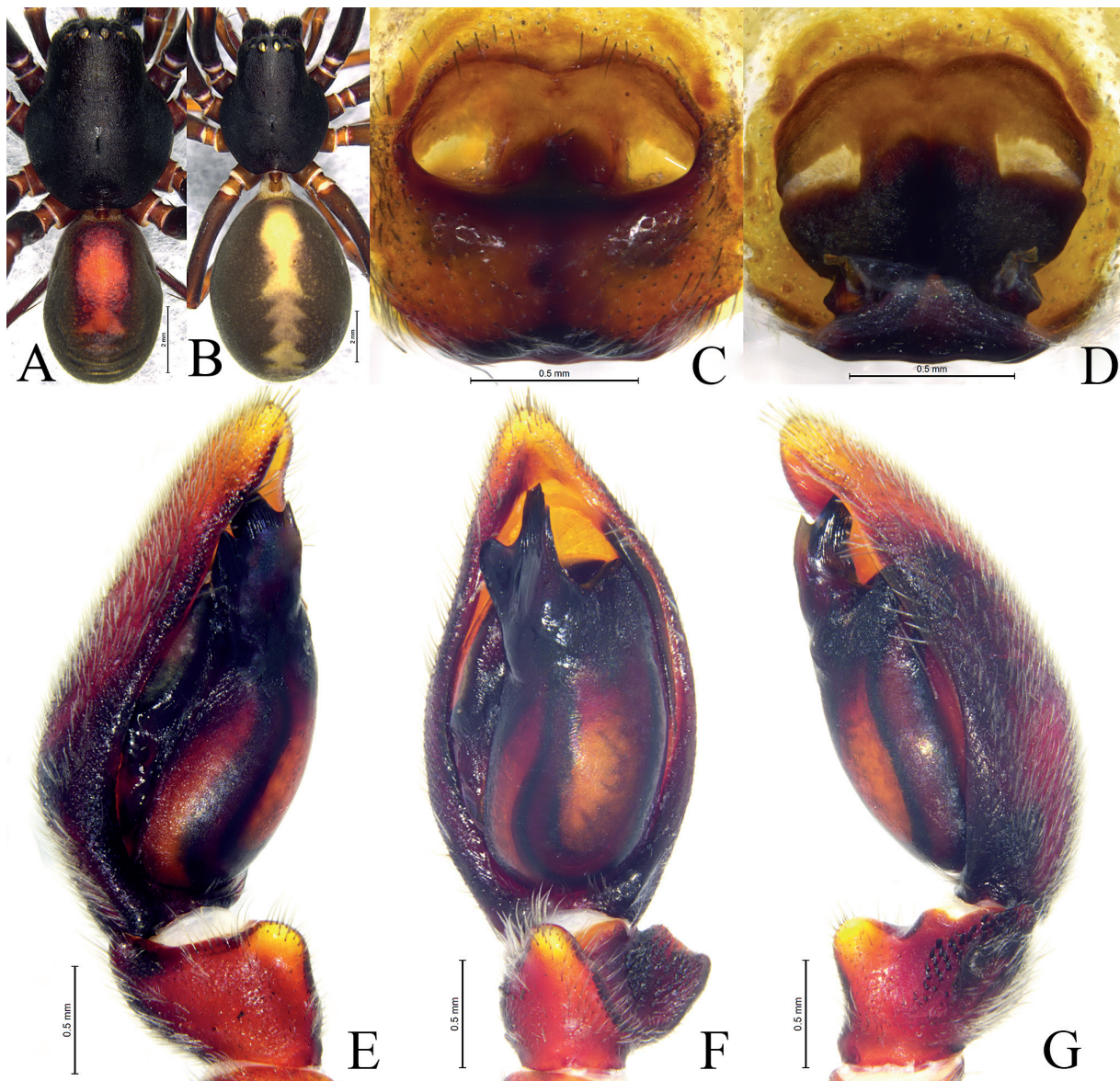


Fig. 9. *Spinirta quadrata* Jin & Zhang, 2020. **A, E–G.** ♂ (SWUC-COSQ-01). **B–D.** ♀ (SWUC-COSQ-04). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. **E.** Left male palp, prolateral view. **F.** Same, ventral view. **G.** Same, retrolateral view.

Spinirta simianshan Wang, Lu & Z.S. Zhang sp. nov.
urn:lsid:zoobank.org:act:8DF6E390-A3E7-4C75-A0D9-8E44440E3290
Figs 6, 10–11, 14

Chinese name

四面山刺突蛛

Differential diagnosis

See diagnosis of *Spinirta hongyui* sp. nov.

Etymology

The specific name derives from the type locality.

Type material

Holotype

CHINA • ♂; Chongqing City, Jiangjin District, Simianshan Natural Reserve, Qinjiagou; 28°37'6" N, 106°23'53" E; alt. 1131 m; 14 Aug. 2022; Z.G. Zhang leg.; SWUC-T-CO-03-01.

Paratypes (3 ♂♂, 6 ♀♀)

CHINA • 1 ♀; same collection data as for holotype; SWUC-T-CO-03-02 • 2 ♀♀; same collection data as for holotype; 3 Sep. 2022; G.Y. Cai leg.; SWUC-T-CO-03-03, SWUC-T-CO-03-04 • 1 ♀; Simianshan Natural Reserve, Zhengtiangou; 28°36'46" N, 106°25'54" E; alt. 1170 m; 4 Aug. 2022; L.Y. Huang leg.; SWUC-T-CO-03-05 • 2 ♂♂; same collection data as for preceding; 15 Aug. 2022; F. Diao leg.; SWUC-T-CO-03-06, SWUC-T-CO-03-07 • 1 ♀; Simianshan Natural Reserve, Zhenzhotan; 28°35'50" N, 106°25'25" E; alt. 1226 m; 15 Aug. 2022; C.Y. Huang leg.; SWUC-T-CO-03-08 • 1 ♀; Simianshan Natural Reserve, Wenjiaci; 28°35'34" N, 106°26'34" E; alt. 1144 m; 15 Aug. 2022; L.Y. Chen leg.; SWUC-T-CO-03-09 • 1 ♂; Simianshan Natural Reserve, Wenjiaci; 28°35'34.27" N, 106°26'34.93" E; alt. 1144 m; 24 Aug. 2022; C.Y. Lin leg.; SWUC-T-CO-03-10.

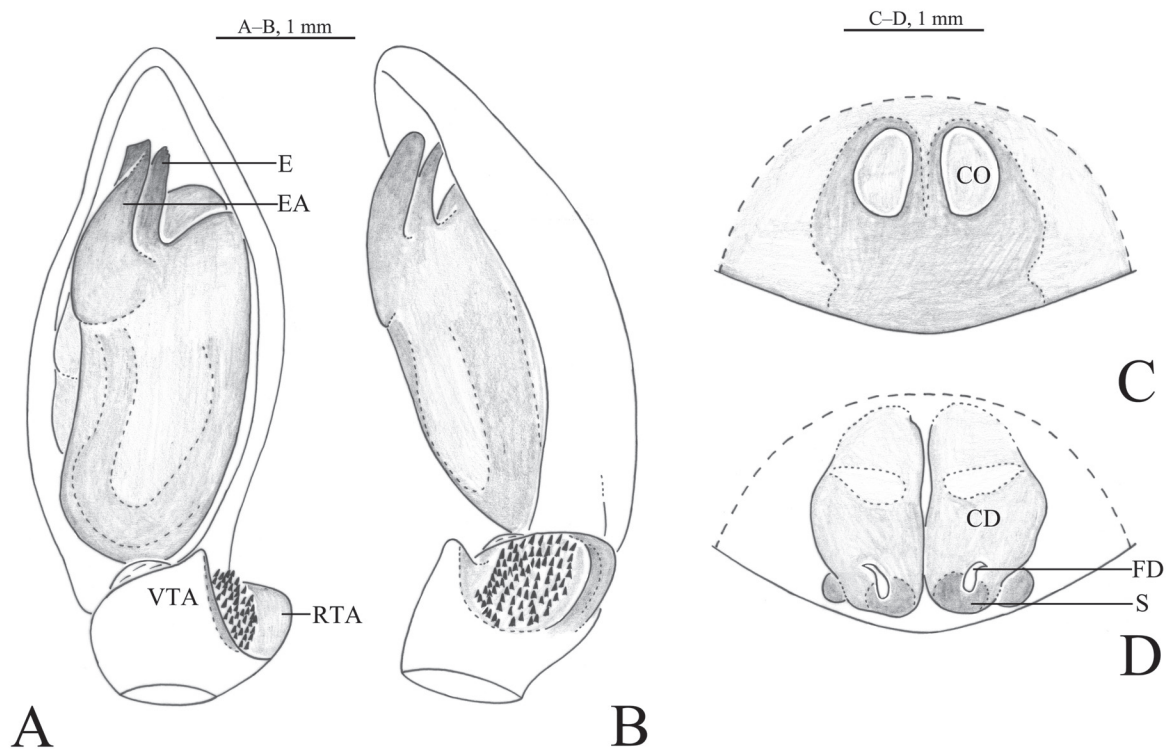


Fig. 10. *Sipinirta simianshan* Wang, Lu & Z.S. Zhang sp. nov. **A–B.** Holotype, ♀ (SWUC-T-CO-03-01). **C–D.** Paratype, ♀ (SWUC-T-CO-03-02). **A.** Left male palp, ventral view. **B.** Same, retrolateral view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. Abbreviations: CD = copulatory ducts; CO = copulatory openings; E = embolus; EA = embolar apophysis; FD = fertilization ducts; RTA = retrolateral tibial apophysis; S = spermathecae; VTA = ventral tibial apophysis.

Description

Male (holotype SWUC-T-CO-03-01, Fig. 11A)

MEASUREMENTS. Total length 18.13. Prosoma 8.88 long, 6.78 wide; opisthosoma 8.87 long, 5.31 wide. Eye sizes and interdistances: AME 0.62, ALE 0.44, PME 0.47, PLE 0.46; AME–AME 0.27, AME–ALE 0.15, PME–PME 0.51, PME–PLE 0.60, ALE–PLE 0.16. MOA 1.42 long, anterior width 1.36, posterior width 1.41. Clypeus height 0.59.

CHELICERAE. With three promarginal and five or six retromarginal teeth.

LEG MEASUREMENTS. I = 27.49 (7.69, 9.57, 6.48, 3.75); II = 26.13 (7.33, 9.14, 6.21, 3.45); III = 31.51 (5.73, 7.26, 5.46, 3.06); IV = 27.38 (7.05, 9.12, 8.32, 2.89). Leg formula: 1423.

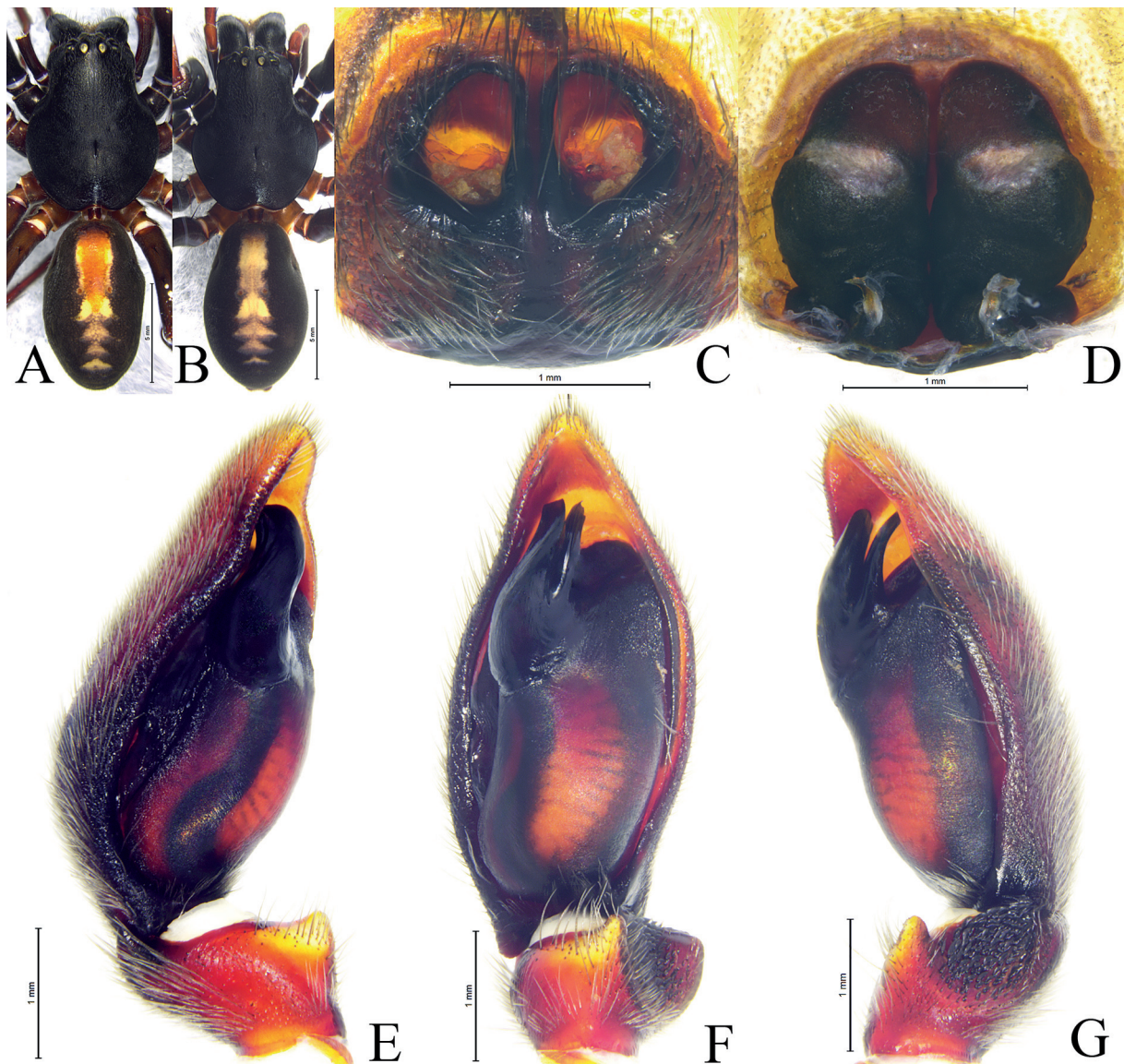


Fig. 11. *Spinirta simianshan* Wang, Lu & Z.S. Zhang sp. nov. **A, E–G.** Holotype, ♂ (SWUC-T-CO-03-01). **B–D.** Paratype, ♀ (SWUC-T-CO-03-02). **A.** Male habitus, dorsal view. **B.** Female habitus, dorsal view. **C.** Epigyne, ventral view. **D.** Vulva, dorsal view. **E.** Left male palp, prolateral view. **F.** Same, ventral view. **G.** Same, retrolateral view.

PALP (Figs 10A–B, 11E–G). Ventral tibial apophysis small with blunt tip; retrolateral tibial apophysis outer edge triangular in ventral view, ventral surface with relatively several short coniform spines; prolateral tibial apophysis triangular. Tegulum round in retrolateral view. Embolus as long as embolar apophysis, with serrated tip; embolar apophysis quadrangular in prolateral view, with broad, rounded tip.

Female (paratype SWUC-T-CO-03-02, Fig. 11B)

MEASUREMENTS. Total length 19.26. Prosoma 9.19 long, 7.09 wide; opisthosoma 9.59 long, 6.02 wide. Eye sizes and interdistances: AME 0.53, ALE 0.45, PME 0.44, PLE, 0.48; AME–AME 0.39, AME–ALE 0.19, PME–PME 0.57, PME–PLE 0.70, ALE–PLE 0.28. MOA 1.39 long, anterior width 1.37, posterior width 1.38. Clypeus height 0.62.

LEG MEASUREMENTS. I = 25.38 (7.17, 9.20, 5.70, 3.31); II = 24.41 (7.04, 8.87, 5.34, 3.16); III = 21.04 (5.83, 7.17, 5.26, 2.78); IV = 26.80 (6.99, 8.95, 7.99, 2.87). Leg formula: 4123.

EPIGYNE (Figs 10C, 11C). Atrium large, oval, divided with septum; copulatory openings inside the atrium located posteriorly.

VULVA (Figs 10D, 11D). Copulatory ducts longer than wide; accessory glands absent; spermathecae round; fertilization duct large, originating at anterior margin of spermathecae.

Distribution

Known only from the type locality, Simianshan Natural Reserve, Chongqing, China (Fig. 14).

Sipinirta yintiaoling Wang, Lu & Z.S. Zhang sp. nov.

urn:lsid:zoobank.org:act:49356C27-E5FC-4D24-BC88-1DB415A30FCC

Figs 12–14

Chinese name

阴条岭刺突蛛

Differential diagnosis

Male of *Sipinirta yintiaoling* Wang, Lu & Z.S. Zhang sp. nov. resembles *S. hongyui* sp. nov. in having the similar quadrangular embolar apophysis (Figs 12, 13B–D vs Figs 4A–B, 5F–G) but can be distinguished by the ventral tibial apophysis tip rounded in *S. yintiaoling* (Figs 12, 13B–D), whereas somewhat triangular in *S. hongyui* (Figs 4A–B, 5E–G); retrolateral tibial apophysis tip rounded in ventral view in *S. yintiaoling* (Figs 12, 13C–D), whereas wavy in *S. hongyui* (Figs 4A–B, 5F–G).

Etymology

The specific name derives from the type locality.

Type material

Holotype

CHINA • ♂; Chongqing City, China, Chongqing City, Wuxi County, Shuangyang Township, Matang Village, Yintiaoling Natural Reserve; 31°28'21.40" N, 109°50'47.75" E; alt. 1393 m; 10 Sep. 2022; Y.B. Zhu leg.; SWUC-T-CO-04-01.

Paratypes

CHINA • 5 ♂♂; same collection data as for holotype; SWUC-T-CO-04-02 to 06.

Description

Male (holotype SWUC-T-CO-04-01, Fig. 13A)

MEASUREMENTS. Total length 15.04. Prosoma 7.78 long, 5.92 wide; opisthosoma 7.18 long, 4.95 wide. Eye sizes and interdistances: AME 0.49, ALE 0.41, PME 0.38, PLE 0.41; AME–AME 0.28, AME–ALE 0.15, PME–PME 0.45, PME–PLE 0.47, ALE–PLE 0.18. MOA 1.16 long, anterior width 1.11, posterior width 1.20. Clypeus height 0.52.

CHELICERAE. With three promarginal and five retromarginal teeth.

LEG MEASUREMENTS. I = 23.36 (6.23, 8.44, 5.46, 3.23); II = 22.31 (6.15, 7.74, 5.34, 3.08); III = 18.88 (5.22, 6.24, 4.85, 2.57); IV = 24.12 (6.04, 8.06, 7.05, 2.97). Leg formula: 4123.

PALP (Figs 12, 13B–D). Tibial ventral hump small with blunt tip; retrolateral tibial apophysis outer edge rounded in ventral view, ventral surface with relatively several short coniform spines; prolateral tibial apophysis triangular. Tegulum retrolateral round. Subtegulum longer than wide. Embolus longer than embolar apophysis, with blunt tip; embolar apophysis quadrangular in ventral view, with broad distal end.

Female
Unknown.

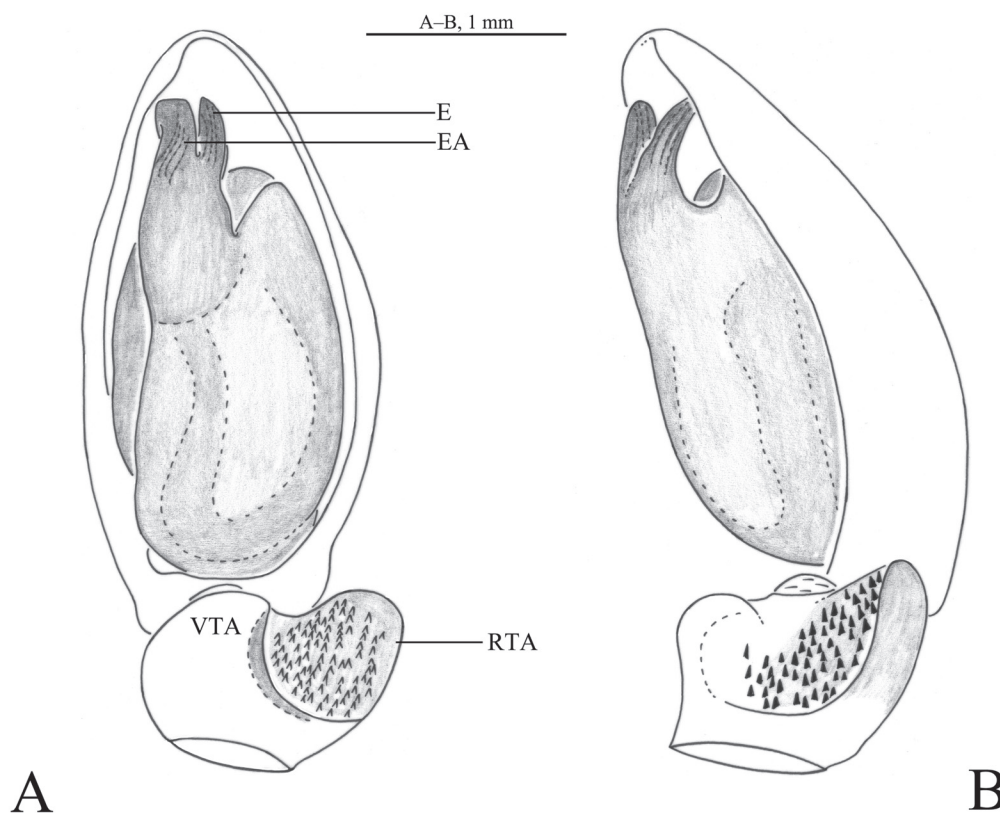


Fig. 12. *Spinirta yintiaoling* Wang, Lu & Z.S. Zhang sp. nov., holotype, ♂ (SWUC-T-CO-04-01). **A.** Left male palp, ventral view. **B.** Same, retrolateral view. Abbreviations: E = embolus; EA = embolar apophysis; RTA = retrolateral tibial apophysis; VTA = ventral tibial apophysis.



Fig. 13. *Spinirta yintiaoling* Wang, Lu & Z.S. Zhang sp. nov., holotype, ♂ (SWUC-T-CO-04-01). **A.** Male habitus, dorsal view. **B.** Left male palp, prolateral view. **C.** Same, ventral view. **D.** Same, retrolateral view.

Distribution

Known only from the type locality, Simianshan Natural Reserve, Chongqing, China (Fig. 14).

Discussion

Jin & Zhang (2020) established *Spinirta* to accommodate nine species and one new combination from Chongqing Municipality, Guizhou, Hubei, Hunan, Sichuan, and Zhejiang provinces. Until now, the distribution of the species of *Spinirta* has been documented in Sichuan, Chongqing, Hubei, Hunan, Anhui, Zhejiang, Guizhou, Guangxi, Jiangxi, and Fujian. However, this paper reports two new species of *Spinirta* for the first time from Guangdong and Yunnan provinces, indicating that the majority of the species live in mountainous areas of southern China. In order to obtain a more precise estimate of the actual number of species in *Spinirta*, it is still necessary to conduct an extensive survey in areas that have not yet been explored in southern China.

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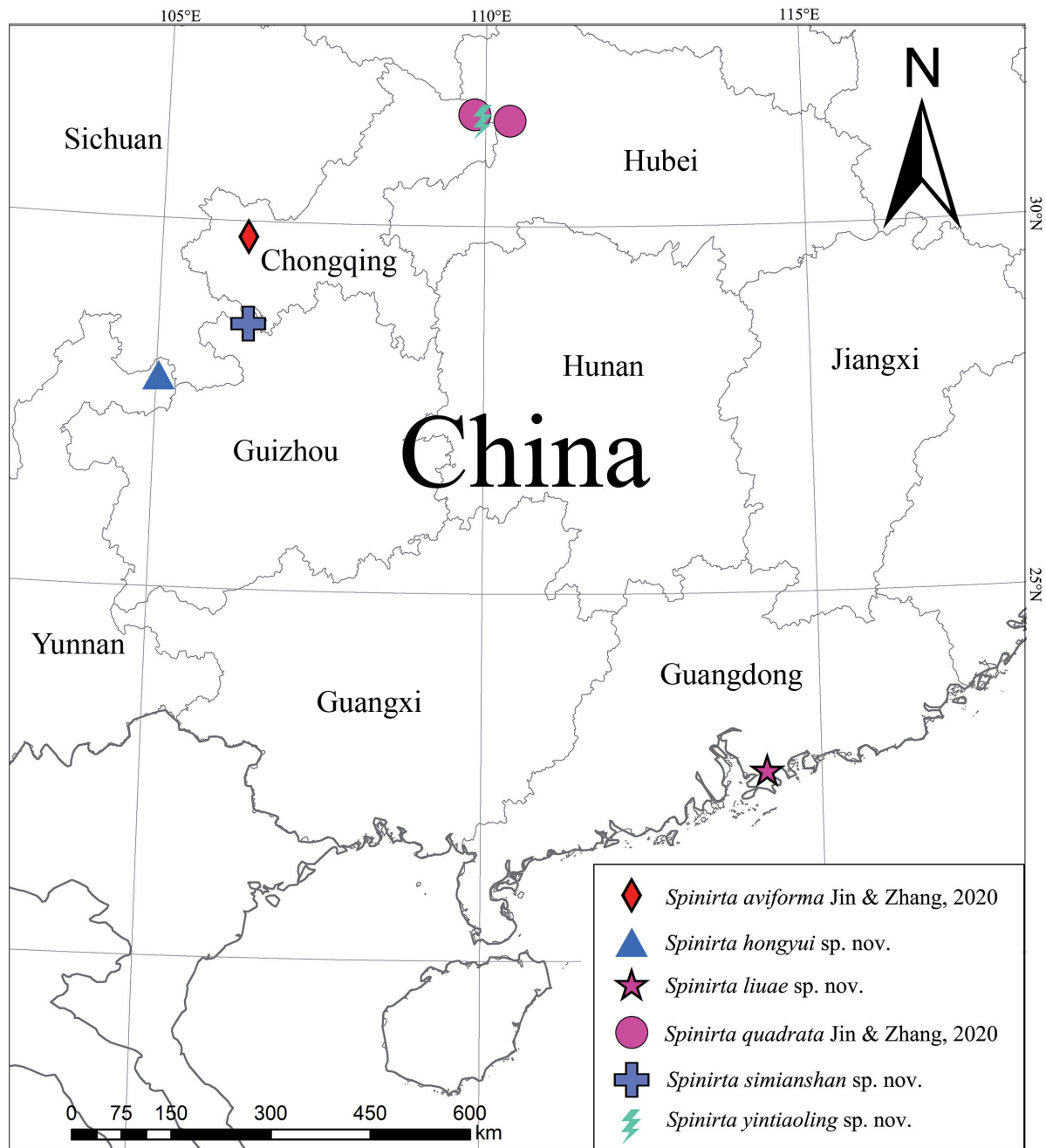


Fig. 14. Distribution records of six species of *Spinirta* Jin & Zhang, 2020 in China.

References

- Álvarez-Padilla F. & Hormiga G. 2007. A protocol for digesting internal soft tissues and mounting spiders for scanning electron microscopy. *Journal of Arachnology* 35 (3): 538–542. <https://doi.org/10.1636/Sh06-55.1>
- Jin C. & Zhang F. 2020. *Spinirta* gen. nov., a new dark sac spider genus from southern China (Araneae: Corinnidae). *Zootaxa* 4838 (3): 301–330. <https://doi.org/10.11646/zootaxa.4838.3.1>

World Spider Catalog. 2023. *World Spider Catalog. Version 23.0*. Natural History Museum Bern. Available from <http://wsc.nmbe.ch> [accessed 8 Feb. 2023].

Zhang L., Jin C. & Zhang F. 2023. Three new *Sipinirta* species from China (Araneae, Corinnidae), with the first description of the male of *S. leigongshanensis* Jin & Zhang, 2020. *Zootaxa* 5231 (4): 445–458. <https://doi.org/10.11646/zootaxa.5231.4.6>

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