



On two wolf spiders from Yintiaoling Nature Reserve of Chongqing, China (Araneae, Lycosidae)

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Abstract

Two spiders of the wolf spider family Lycosidae from high altitude area (>1900 m) of Yintiaoling Nature Reserve are presented here, including a new species, *Trochosa alpina* **sp. nov.** (male, female) and a poorly known species, *Alopecosa pseudocuneata* (Schenkel, 1953). The new species is similar to the Holarctic congener, *T. ruricola* (De Geer, 1778) and *Alopecosa pseudocuneata* is quite similar to the Palearctic species, *Alopecosa cuneata* (Clerck, 1757). Description / redescription, diagnoses, photos and illustrations of these two species are given. Photos of *A. cuneata* are provided for comparison purposes.

Key words: Lycosinae, new species, description, redescription, taxonomy

Introduction

The wolf spider family Lycosidae was established by Sundevall in 1833 and is a relatively ancient family. Currently, Lycosidae includes 2494 species placed in 135 genera (WSC 2025) and it is the fifth largest family of Araneae. In China, there are 35 genera and 346 species recorded presently (personal statistics).

Our extensive survey on Yintiaoling National Nature Reserve in Chongqing, China resulted in 5 genera and 12 species of Lycosidae. Among them, a new species belonging to *Trochosa* is herein illustrated, described, and named *T. alpina* **sp. nov.** Another species, *Alopecosa pseudocuneata* (Schenkel, 1953), whose description of female is outdated and that of male is quite simply given by Zhang, Peng & Zhang (2022) for the first time, is redescribed, together with photos of genitalia and habitus.

Material and methods

All specimens were examined, illustrated, photographed and measured using a Leica M205A stereomicroscope equipped with a drawing tube, a Leica DFC420 camera, and LAS software (Ver. 4.6). Male palps and epigynes were examined and illustrated after dissection. Epigynes were cleared in pancreatin (Álvarez-Padilla & Hormiga 2007). Leg measurements are provided here as: total length (femur, patella and tibia, metatarsus, tarsus). All measurements are in millimeters. Abbreviations used in the text: ALE, anterior lateral eye; AME, anterior median eye; PLE, posterior lateral eye; PME, posterior median eye. Specimens examined are deposited at the School of Life Sciences, Southwest University, China (SWUC). *Alopecosa cuneata* (Clerck, 1757) used to produce images was collected from Shuixigou, Nanshan, Urumchi, Xinjiang of China. Terminology in the article follows Wang *et al.* (2021).

Taxonomy

Trochosa C. L. Koch, 1847

Trochosa alpina sp. nov.

Figs 1A–B, 2, 3

Type material. Holotype male (SWUC-T-LY-18-01), CHINA: Chongqing Municipality, Wuxi County, Yintiaoling Nature Reserve, Guanshan Administrative Station, 31°31'7"N, 109°42'59"E, elev. 1983 m, 8 April 2022, L.Y. Wang *et al.* leg. **Paratypes (11 males and 7 females):** 5 males and 4 females (SWUC-T-LY-18-02~10), same data as holotype; 6 males and 3 females (SWUC-T-LY-18-11~19), Guanshan Administrative Station, 31°31'8"N, 109°43'0"E, elev. 1987 m, 1 April 2023, L.Y. Wang *et al.* leg.

Etymology. The specific name is from the Latin word '*alpinus*', meaning 'alpine', referring to the species distributed in high-altitude areas; adjective.

Diagnosis. The new species resembles *T. ruricola* (De Geer, 1778) (Marusik *et al.* 2020: 486, figs 3e–h, 4f; Dondale & Miller 2020: 16, figs 8–10, 20–23) in having similar conformation of copulatory organs. Males of it can be distinguished by the median apophysis with a blunt and round free end ventrally (Figs 2A, 3C, E) (vs. sharp in *T. ruricola*, Marusik *et al.* 2020: 486, figs 3f–h), the relatively straight anterior side ventrally (Figs 2A, 3C, E) (vs. sinuous in *T. ruricola*, Marusik *et al.* 2020: 486, figs 3f–h). Females can be distinguished by the epigynal hoods almost as long as wide, and curved to each other (Figs 2D, 3I) (vs. longer than wide and not curving towards each other in *T. ruricola*, Dondale & Miller 2020: 16, figs 22–23) and head of spermathecae bilobed, with two subequal branches (Figs 2D, 3I) (vs. one branch distinctly longer than the other in *T. ruricola*, Dondale & Miller 2020: 16, figs 22–23).



FIGURE 1. Photos of living specimens. A–B. *Trochosa alpina* sp. nov. (A. Male; B. Female); C–D. *Alopecosa pseudocuneata* (Schenkel, 1953) (C. Male; D. Female) (Photos from Qian-Le Lu).

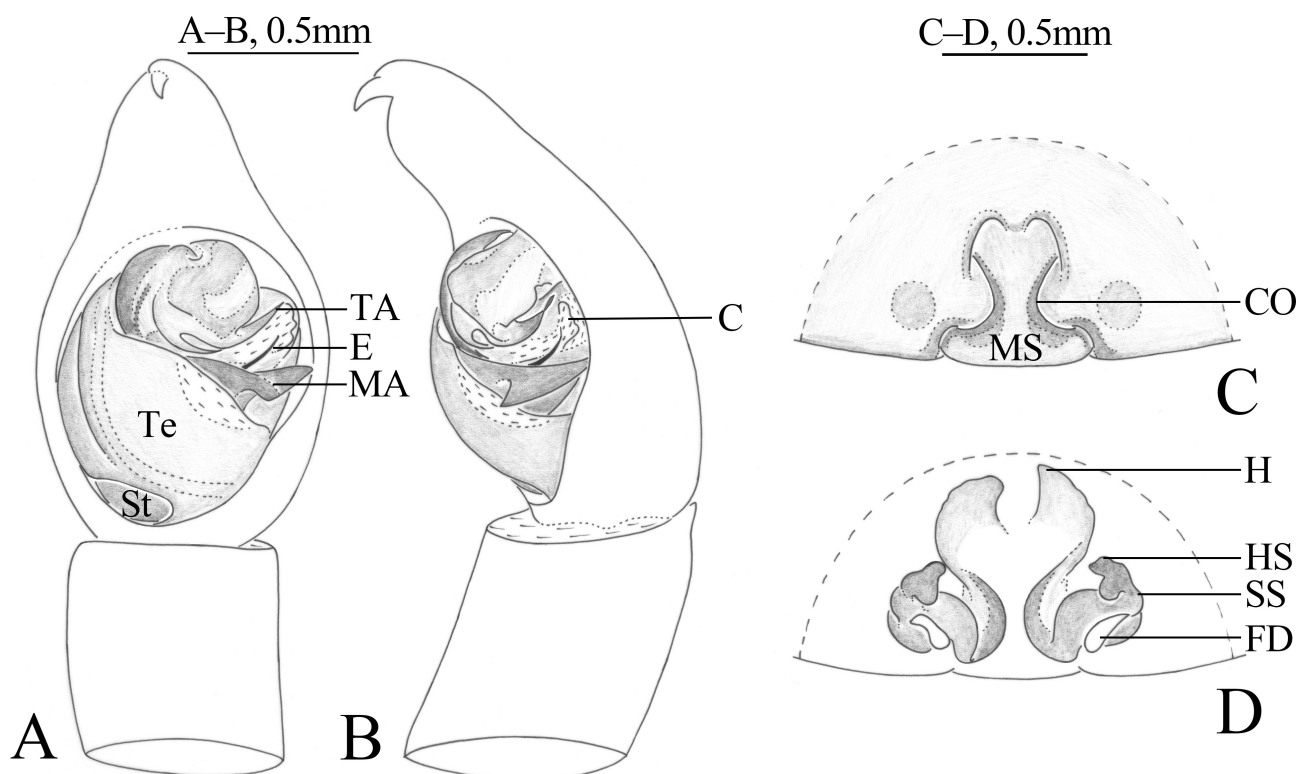


FIGURE 2. *Trochosa alpina* sp. nov., male holotype (A–B) and female paratype (C–D). A. Left male palp, ventral view; B. Same, retrolateral view; C. Epigyne, ventral view; D. Same, dorsal view. Abbreviations: C, conductor; CO, copulatory opening; E, embolus; FD, fertilization duct; H, hood; HS, head of spermathecae; MA, median apophysis; MS, median septum; SS, stalk of spermathecae; St, subtegulum; TA, terminal apophysis; Te, tegulum.

Description. *Male.* Total length 8.54–10.35. Holotype (Fig. 3A) total length 9.26. Carapace 5.15 long, 3.65 wide; opisthosoma 4.24 long, 2.66 wide. Carapace yellow brown. Cervical groove and radial furrows indistinct. Eye sizes and interdistances: ALE 0.32, AME 0.42, PLE 0.15, PME 0.26; ALE–AME 0.34, AME–AME 0.23, PLE–PME 0.05, PME–PME 0.03. Clypeus height 0.16. Chelicerae brown. Endites yellow brown and labium brown. Sternum brown. Legs brown, with black annulation. Leg measurements: I 12.15 (3.50, 4.50, 2.34, 1.81); II 10.92 (3.12, 4.12, 2.13, 1.55); III 10.17 (2.83, 3.26, 2.49, 1.59); IV 14.13 (3.83, 4.40, 4.14, 1.76). Opisthosoma oval, black, hirsute, with distinct heart mark.

Male palp (Figs 2A–B, 3C–G). Median apophysis dark brown, straight and triangular in shape, without protrusion on anterior margin, free end of it blunt in ventral view. Two terminal apophyses unequal in length, with tip end. Embolus slender. Tip of embolus slightly curved anteriorly, resting close to small and membranous conductor.

Female. Total length 12.37–16.85. One of female paratypes (SWUC-T-LY-18-10, Fig. 3B) total length 15.23. Carapace 6.57 long, 4.73 wide; opisthosoma 9.40 long, 6.56 wide. Eye sizes and interdistances: ALE 0.37, AME 0.48, PLE 0.19, PME 0.28; ALE–AME 0.44, AME–AME 0.33, PLE–PME 0.12, PME–PME 0.14. Clypeus height 0.27. Leg measurements: I 13.66 (4.23, 4.80, 2.76, 1.87); II 11.98 (3.61, 4.29, 2.43, 1.65); III 11.99 (3.37, 3.97, 3.05, 1.60); IV 17.23 (4.40, 5.64, 5.04, 2.15). Except for lighter body color compared to male spiders, other features same as those of male.

Epigyne (Figs 2C–D, 3H–I). Two clearly separated hoods almost as long as wide and curved anteriorly towards each other. Median septum narrowest centrally and widest posteriorly. Spermathecae irregular, wider than long; head of spermathecae bilobed, two subequal branches. Fertilization duct originating posteriorly, short and crescent-shaped.

Distribution. Known only from the type locality, Yintiaoling Natural Reserve, Chongqing, China.

Habitat. This species was found in alpine meadows.

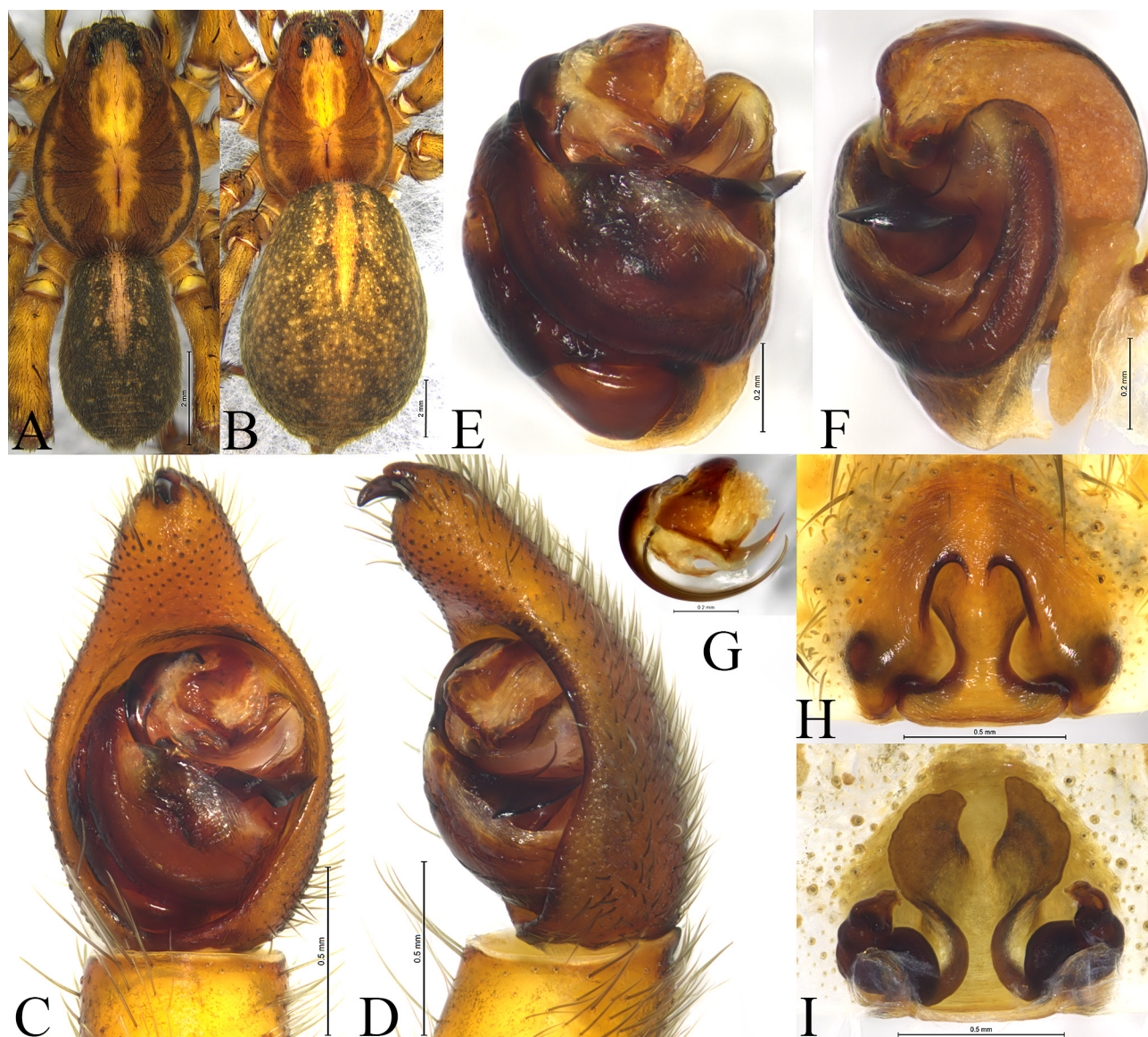


FIGURE 3. *Trochosa alpina* sp. nov., male holotype (A, C–D), male paratype (E–G) and female paratype (B, H–I). A. Male habitus, dorsal view; B. Female habitus, dorsal view; C. Left male palp, ventral view; D. Same, retrolateral view; E. Palp bulb, ventral view; F. Same, retrolateral view; G. Embolus and terminal apophysis, anterior view; H. Epigyne, ventral view; I. Same, dorsal view.

Alopecosa Simon, 1885

Alopecosa pseudocuneata (Schenkel, 1953)

Figs 1C–D, 4, 5

Tarentula pseudocuneata Schenkel, 1953: 79 (juv.).

Tarentula pseudopulverulenta Schenkel, 1963: 318, fig. 182 (♀).

Alopecosa pseudocuneata: Brignoli 1983: 437; Song 1986: 73, figs 1–2 (♀); Song *et al.* 1999: 317, fig. 187N (♀); Zhang *et al.* 2022: 127, figs 90A–H (♂♀).

Alopecosa pseudopulverulenta: Brignoli 1983: 437. (synonymized by Song 1986: 73).

Material examined. China, Chongqing, Wuxi County, Yintiaoling Nature Reserve: 5 males and 1 female, Guanshan Administrative Station, Daguanshan, 31°30'8"N, 109°42'24"E, elev. 2517 m, 9 April 2022, L.Y. Wang *et al.* leg.; 4 males, Hongqi Administrative Station, Maoxuanwo, 31°29'25"N, 109°47'35"E, elev. 2010 m, 11 April 2022, L.Y. Wang *et al.* leg.

Other materials examined: China, Gansu: 1 female, Luqu County, 34°35'09"N, 102°29'36"E, elev. 3110 m, 29 June 2008, Z.Y. Di leg.; 1 male, Liangdang County, Zhangjia Town, Heihe Forest Park, 34°9'45"N, 106°32'33"E, elev. 1562 m, 1 June 2011, L.Y. Wang leg.; **Hebei:** 9 females, Xiaowutai Mt, Shanjiankou, 40°0'1"N, 115°3'51"E, elev. 1300 m, 19–26 July 2012, F. Zhang leg.; **Hubei:** 1 female, Shennongjia Forest District, Shennongding, 31°27'25"N, 110°11'30"E, elev. 2576 m, 23 September 2001, M.S. Zhu leg.; **Shaanxi:** 7 males and 1 female, Zhouzhi County, Taibai Mountain, Yuhuangchi, 33°56'20"N, 107°46'25"E, elev. 3265 m, 4 May 2010, Z.X. Li, L.Y. Wang & K.Y. Xu leg.

Diagnosis. *Alopecosa pseudocuneata* resembles *A. cuneata* (Figs 6A–H, 7B) in having almost the same conformation of copulatory organs, but can be distinguished by the unmodified male tibia I (Fig. 7A) (vs. intumescent in *A. cuneata*, Fig. 7B), stalk of septum as long as width of septal base and not extending to the hood anteriorly (Figs 4C, 5G) (vs. 2 times longer than width and extending to the hood in *A. cuneata*, Fig. 6G).

Description. *Male.* Total length 6.79–8.99. One male (Figs 1C, 5A) total length 8.99. Carapace 4.70 long, 3.41 wide; opisthosoma 4.39 long, 2.93 wide. Carapace black brown, longitudinal band yellow brown, sides and eye region darkened. Cervical groove indistinct, radial furrows distinct. Eye sizes and interdistances: AME 0.17, ALE 0.13, PME 0.39, PLE 0.30; AME–AME 0.10, AME–ALE 0.07, PME–PME 0.37, PME–PLE 0.50. Clypeus height 0.42. Chelicerae dark yellow brown. Endites and labium yellow brown. Sternum brown, with black long setae. Legs I and II with black brown femora, patellae and tibiae, remaining segments yellow brown. Legs III and IV brown with black stripes. Leg measurements: I 10.39 (3.08, 3.43, 2.11, 1.77); II 9.30 (2.64, 3.17, 1.95, 1.54); III 8.93 (2.40, 2.95, 2.32, 1.26); IV 12.83 (3.43, 4.00, 3.57, 1.83). Opisthosoma oval, dark yellow brown dorsally and brown ventrally. Heart mark prominent, large, and diamond-shaped.

Male palp (Figs 4A–B, 5C–F). Median apophysis triangular, with tip protruding towards ventral surface and forming long strip. Embolus slender and slightly curved at end. Conductor small and membranous.

Female. Total length 7.09–12.1. One female (Figs 1D, 5B) total length 12.1. Carapace 5.55 long, 3.94 wide; opisthosoma 6.80 long, 4.98 wide. Eye sizes and interdistances: AME 0.16, ALE 0.14, PME 0.40, PLE 0.33; AME–AME 0.14, AME–ALE 0.09, PME–PME 0.45, PME–PLE 0.54. Clypeus height 0.52. Leg measurements: I 10.83 (3.12, 3.78, 2.20, 1.73); II 10.61 (3.03, 3.55, 2.36, 1.67); III 10.34 (2.79, 3.34, 2.48, 1.73); IV 14.60 (3.80, 4.63, 4.02, 2.15). Except for lighter body color compared to male spiders, other features same as in male.

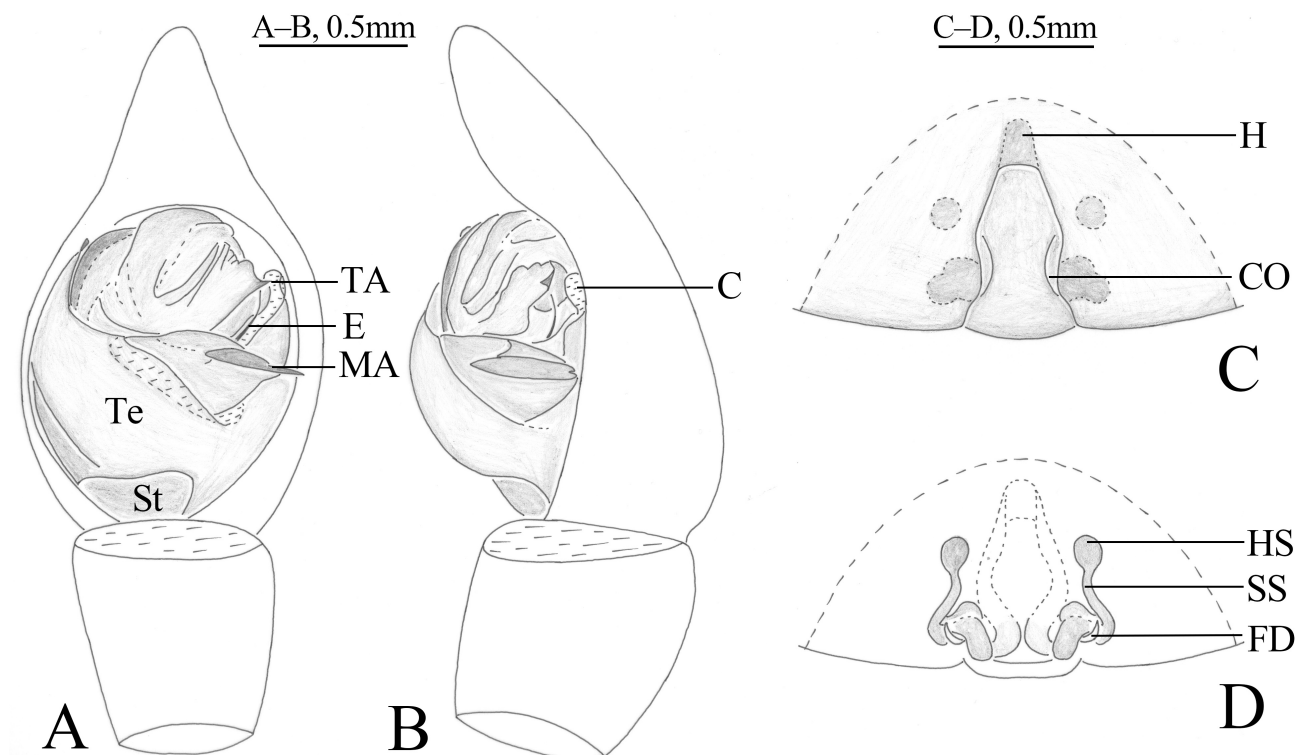


FIGURE 4. *Alopecosa pseudocuneata* (Schenkel, 1953), male (A–B) and female (C–D). A. Left male palp, ventral view; B. Same, retrolateral view; C. Epigyne, ventral view; D. Same, dorsal view. Abbreviations: C, conductor; CO, copulatory opening; E, embolus; FD, fertilization duct; H, hood; HS, head of spermathecae; MA, median apophysis; MS, median septum; SS, stalk of spermathecae; St, subtegulum; TA, terminal apophysis; Te, tegulum.

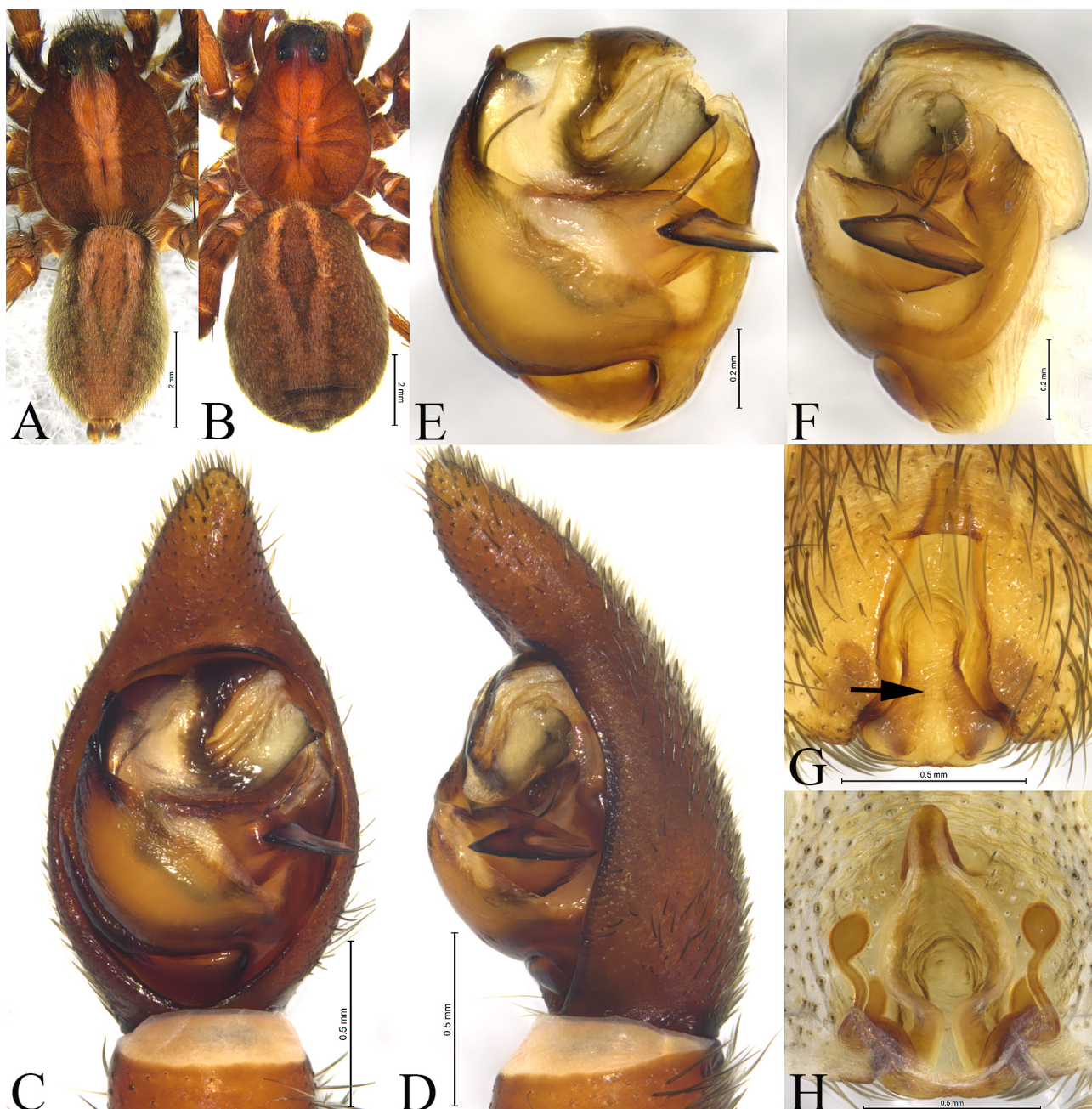


FIGURE 5. *Alopecosa pseudocuneata* (Schenkel, 1953), male (A, C–F) and female (B, G–H). A. Male habitus, dorsal view; B. Female habitus, dorsal view; C. Left male palp, ventral view; D. Same, retrolateral view; E. Palp bulb, ventral view; F. Same, retrolateral view; G. Epigyne, ventral view; H. Same, dorsal view. (arrow indicates median septum)

Epigyne (Figs 4C–D, 5G–H). A prominently trapezoidal hood present mid-anteriorly. Median septum wedge-shaped, length of stalk of septum equal to width of septal base. Stalk of spermatheca slender and twisted; head of spermatheca small and globular. Fertilization duct slender, crescent-shaped.

Distribution. China (Chongqing, Gansu, Hebei, Hubei, Shaanxi).

Habitat. This species was found in alpine meadows.

Remark. Based on its known distribution and our collection in China, *A. cuneata* seems to be distributed in relatively high latitude and low altitude area. While *A. pseudocuneata* usually occurs more southward than *A. cuneata*, from areas with relatively lower latitude but high altitude (more than 2500 m).

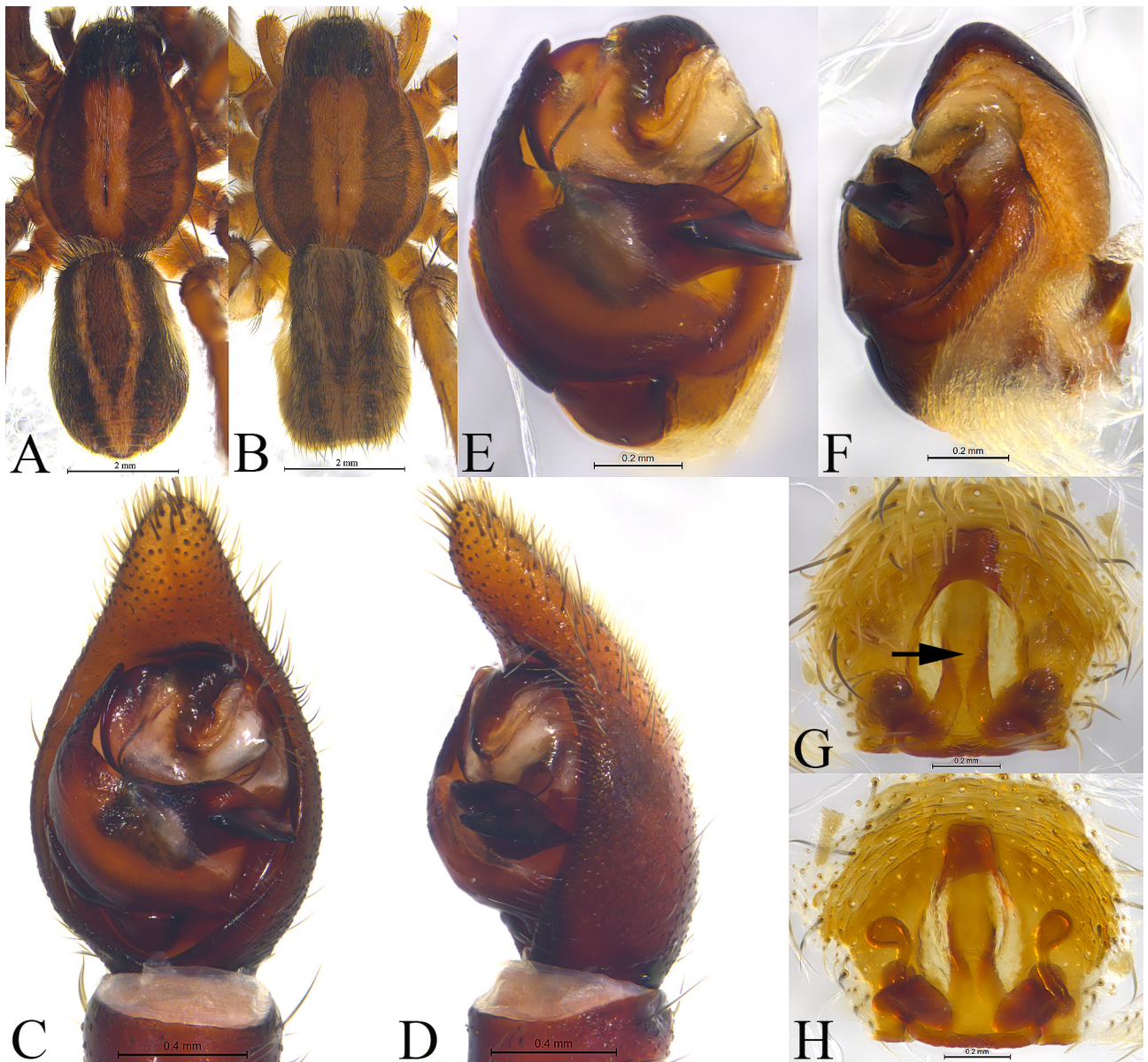


FIGURE 6. *Alopecosa cuneata* (Clerck, 1757). A. Male habitus, dorsal view; B. Female habitus, dorsal view; C. Left male palp, ventral view; D. Same, retrolateral view; E. Palp bulb, ventral view; F. Same, retrolateral view; G. Epigyne, ventral view; H. Same, dorsal view. (arrow indicates median septum)



FIGURE 7. Male leg I of *Alopecosa* spp. A. *Alopecosa pseudocuneata* (Schenkel, 1953); B. *Alopecosa cuneata* (Clerck, 1757) (arrow indicates intumescent tibia)

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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>
- Brignoli, P.M. (1983) *A catalogue of the Araneae described between 1940 and 1981*. Manchester University Press, 755 pp.
- Dondale, C.D. & Miller, P. (2020) Taxonomic problems in the genus *Trochosa* (Araneae: Lycosidae). *American Arachnology*, 85, 16–22.
- Marusik, Y.M., Nadolny, A.A. & Koponen, S. (2020) Redescription of *Trochosa urbana* (Araneae: Lycosidae) with notes on its distribution. *Arachnology*, 18 (5), 482–489, supplement figs. 1–5.
<https://doi.org/10.13156/arac.2020.18.5.482>
- Schenkel, E. (1953) Chinesische Arachnoidea aus dem Museum Hoangho-Peiho in Tientsin. *Boletim do Museu Nacional do Rio de Janeiro*, New Series, Zoology, 119, 1–108.
- Schenkel, E. (1963) Ostasiatische Spinnen aus dem Muséum d'Histoire naturelle de Paris. *Mémoires du Muséum National d'Histoire Naturelle de Paris*, Series A, Zoology, 25, 1–481.
- Song, D.X. (1986) A revision of the Chinese wolf spiders of the genus *Alopecosa* described by Schenkel (Araneae: Lycosidae). *Sinozoologia*, 4, 73–82.
- Song, D.X., Zhu, M.S. & Chen, J. (1999) *The spiders of China*. Hebei Science and Technology Publishing House, Shijiazhuang, 640 pp.
- Sundevall, C.J. (1833) *Conspectus Arachnidum*. C. F. Berling, Londini Gothorum, 39 pp.
- Wang, L.Y., Lu, T., Cai, D.C., Barrion, A.T., Heong, K.L., Li, S.Q. & Zhang, Z.S. (2021) Review of the wolf spiders from Hainan Island, China (Araneae: Lycosidae). *Zoological Systematics*, 46 (1), 16–74.
<https://doi.org/10.11865/zs.2021102>
- WSC (2025) *World Spider Catalog. Version 26*. Natural History Museum Bern, Bern. Available from: <http://wsc.nmbe.ch> (accessed 29 April 2025)
<https://doi.org/10.24436/2>
- Zhang, F., Peng, J.Y. & Zhang, B.S. (2022) *Spiders of Mt. Xiaowutai*. Science Press, Beijing, 387 pp.