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A new species and a new combination of the genus *Sudesna* Lehtinen, 1967 (Araneae: Dictynidae) from China

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Abstract. A new species of *Sudesna* Lehtinen, 1967 is described from China: *S. lingyang* sp. nov. (♂♀, Anhui). A new combination is proposed: *S. zhangmuensis* (Hu, 2001) comb. nov. from *Dictyna* Sundevall, 1833. Detailed descriptions, morphological photos of the new species, and a distribution map of two *Sudesna* species involved in this study are provided.

Keywords. Anhui, Dictynidae, mesh-web spiders.

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Introduction

Sudesna Lehtinen, 1967, is a relatively small genus of the family Dictynidae O. Pickard-Cambridge, 1871 currently comprising 18 known species, with a distribution ranging from India and China through Korea and the Philippines to SW Australia (WSC 2026). *Sudesna* are small spiders (< 5 mm) inhabiting delicate mesh-webs found on the underside of leaves (Fig. 1). They are typically collected by beating leaves (Zhang & Li 2011; Zhang & Wang 2017; Wang *et al.* 2025). The genus was originally established to accommodate four species transferred from the genus *Dictyna* Sundevall, 1833, including *S. anaulax* (Simon, 1908), *S. grammica* (Simon, 1893), *S. grossa* (Simon, 1906) and *S. hedini* (Schenkel, 1936), the latter of which was designated as the type species (Lehtinen 1967; WSC 2026). Since its establishment, *Sudesna* has received relatively little attention from taxonomists. Only two species were described in 2011: *S. circularis* Zhang & Li, 2011 and *S. digitata* Zhang & Li, 2011. And one new combination, *S. flavipes* (Hu, 2001), was established in 2016 (Zhang & Li 2011; Esyunin & Sozontov 2016). This situation has changed dramatically with the recent studies by Wang *et al.* (2025, 2026), which described ten new species all from China, accounting for nearly half of the currently known species in the genus.

In the original description of *Dictyna zhangmuensis* Hu, 2001, the species was initially thought to resemble *Nigma flavescens* (Walckenaer, 1830). However, Esyunin & Sozontov (2016) pointed out

that *D. zhangmuensis* differs from both true species of *Dictyna* Sundevall, 1833 and *Nigma* Lehtinen, 1967 in having widely separated copulatory openings and spermathecae. In this study, we transfer *D. zhangmuensis* to the genus *Sudesna* and propose a new combination: *S. zhangmuensis* (Hu, 2001) comb. nov. Additionally, we identify and describe one new species of *Sudesna* based on recent collections from China (Anhui Province).

Material and methods

Specimens examined in this study were collected in the field using sweep nets. Immediately after collection, specimens were preserved in 85% ethanol. Upon returning to the laboratory, specimens were cleaned and transferred to fresh 85% ethanol for dehydration. After one week, specimens designated for morphological examination were transferred to 75% ethanol for long-term storage. Specimens were examined using an Olympus SZX16 stereo microscope and an Olympus BX53 compound microscope. Photographs were taken with a Canon PowerShot G12 digital camera mounted on an Olympus BX53 compound microscope, and final multifocal images were produced using Helicon Focus 6.0 (https://www.heliconsoft.com). Male palps and female epigynes were examined and photographed after dissection. Epigynes were cleared with pancreatin for approximately four hours before examination. All measurements were obtained using a LEICA M205C stereo microscope. Eye diameters were taken at the widest point. Leg measurements are given as total length (femur, patella, tibia, metatarsus, tarsus). Leg segments were measured on their dorsal sides. All measurements are in millimeters (mm). All analyses of the specimens presented in this study were performed at the College of Life Sciences, Hunan Normal University, China (HNNU). All specimens examined are deposited in the aforementioned institution.

The terminology in the present paper follows Marusik *et al.* (2023) and Wang *et al.* (2025).

Abbreviations for morphological terms

AA = anterior arm of conductor
ALE = anterior lateral eye
AME = anterior median eye
CD = copulatory duct
CO = copulatory opening
Ct = Ctenidia
Em = embolus
FD = fertilization duct
MOA = median ocular area
PA = posterior arm of conductor
PLE = posterior lateral eye
PME = posterior median eye
RTA = retrolateral tibial apophysis
S = spermatheca
SD = sperm duct
SH = spermathecal heads

Taxonomy

Class Arachnida Lamarck, 1801
Order Araneae Clerck, 1757
Family Dictynidae O. Pickard-Cambridge, 1871
Subfamily Dictyninae O. Pickard-Cambridge, 1871

Genus ***Sudesna*** Lehtinen, 1967

Type species

Dictyna hedini Schenkel, 1936 from Gansu, China.

Diagnosis

Sudesna is separated from *Dictyna* by the following characteristics: 1) the male palpal tibia with two small ctenidia, but lacking a dorsal tibial apophysis (except in *S. circularis* Zhang & Li, 2011 and *S. yangi* Wang, Peng & Zhang, 2025 whose ctenidia absent) (vs a dorsal tibial apophysis present along with 1–4 ctenidia located at the apex of the dorsal tibial apophysis) (cf. Wang *et al.* 2025: fig. 9d–e; Almquist 2007: fig. 272c–d); 2) embolus coiled more than 225° (vs no more than 225°) (cf. Wang *et al.* 2025: fig. 9c; Almquist 2007: fig. 272c); 3) the copulatory openings situated anteriorly and widely separated from each other (vs situated posteriorly and in close proximity to each other) (cf. Wang *et al.* 2025: fig. 9f–g; Almquist 2007: fig. 272h–i); 4) the copulatory ducts tube-like (vs most sac-like) (cf. Wang *et al.* 2025: fig. 9f–g; Almquist 2007: fig. 272h–i); 5) the presence of spermathecal heads laterally (vs absent or indistinct) (cf. Wang *et al.* 2025: fig. 9f–g; Almquist 2007: fig. 272h–i) (Lehtinen 1967; Almquist 2007; Montana *et al.* 2025; Wang *et al.* 2025).

Sudesna lingyang sp. nov.
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Figs 1–4

Venacular name

陵阳苏蛛: Lingyang Suzhu.

Diagnosis

The female of the new species is similar to that of *S. circularis* Zhang & Li, 2011 in having oval spermathecal heads, oblique spermathecae and copulatory openings with their diameter equal to those of the copulatory ducts, but can be distinguished from the latter by the copulatory duct winding wider than long (vs longer than wide), and the spermathecal heads connecting with the distal part of the spermathecae (vs centrally from the middle part in *S. circularis*) (cf. Fig. 2D–F; Zhang & Li 2011: figs 8d–e, 10f–g). Male of the new species resembles that of *S. hedini* in having a hook-like RTAand two ctenidia on the dorsal surface of the male palpal tibia, but it can be distinguished from the latter by the embolus originating at about the 8:00 o'clock position (vs 9:00 o'clock position in *S. hedini*), and the posterior arm of the conductor with a pointed tip (vs. blunt tip in *S. hedini*) (cf. Fig. 3D–F; Wang *et al.* 2025: fig. c–e).

Etymology

The specific epithet is derived from the type locality, noun in apposition.

Type material

Holotype

CHINA • ♀; Anhui Province, Chizhou City, Qingyang County, Lingyang Town, Huangshixi Village; 30°20′36″ N, 117°47′25″ E; 350 m a.s.l.; 15 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1257.

Paratypes

CHINA • 2 ♂♂; same data as for holotype; HNNU, HNU1258 to HNU1259 • 4 ♀♀; same data as for holotype; HNNU, HNU1260 to HNU1263 • 2 ♂♂; Anhui Province, Chizhou City, Qingyang County, Jiuhuashan Town, Jiuhuashan Scenic Area, Dayuan Cultural Park; 30°32′19″ N, 117°47′56″ E; 220 m a.s.l.; 13 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1264 to HNU1265 • 3 ♂♂;



Fig. 1. Microhabitat and habitus of *Sudesna lingyang* sp. nov. in life.

Anhui Province, Chizhou City, Qingyang County, Jiuhuashan Town, Jiuhuashan Scenic Area, Zizhu Nunnery; 30°30′00″ N, 117°48′30″ E; 640 m a.s.l.; 14 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1266 to HNU1268 • 1 ♂; Anhui Province, Chizhou City, Qingyang County, Zhubei Town, Dongqiao Village, Cuifeng Temple; 30°31′12″ N, 117°49′48″ E; 700 m a.s.l.; 15 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1269 • 2 ♀♀; Anhui Province, Chizhou City, Qingyang County, Zhubei Town, Dongqiao Village, Cuifeng Temple; 30°31′12″ N, 117°49′48″ E; 700 m a.s.l.; 15 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1270 to HNU1271 • 1 ♂; Anhui Province, Chizhou City, Qingyang County, Jiuhuashan Town, Qingcaowan; 30°30′46″ N, 117°48′10″ E; 664 m a.s.l.; 16 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1272 • 4 ♀♀; Anhui Province, Chizhou City, Qingyang County, Jiuhuashan Town, Qingcaowan; 30°30′46″ N, 117°48′10″ E; 664 m a.s.l.; 16 Oct. 2025; Jinxin Liu and Yecheng Wu leg.; HNNU, HNU1273 to HNU1276.

Description

Female holotype (HNU1257)

Total length 3.75. Carapace 1.17 long, 1.05 wide; abdomen 2.95 long, 2.17 wide (Fig. 2A–C). Carapace pyriform. Cephalic region raised, white, with pair of symmetrically longitudinal grayish patterns. Cervical groove yellowish and radial furrows distinct. Thoracic region white. Fovea concealed beneath anterior margin of abdomen. Eye sizes and interdistances: AME 0.05, ALE 0.08, PME 0.08, PLE 0.08; AME–AME 0.11, AME–ALE 0.10, PME–PME 0.10, PME–PLE 0.13, ALE–PLE 0.03. MOA 0.20 long, anterior width 0.19, posterior width 0.23. Clypeus height 0.08. Chelicerae grayish, with small yellowish lateral condyles, three promarginal and one retromarginal teeth. Endites white, longer than wide. Labium yellowish. Sternum white, with slightly procurved anterior margin, and flat posterior end (Fig. 2C). Calamistrum distinct, occupying about ½ of metatarsus IV in length (Fig. 2G). Leg measurements: I 4.34 (1.38, 0.46, 1.08, 0.87, 0.55), II 4.06 (1.35, 0.41, 0.99, 0.80, 0.51), III 3.11 (0.94, 0.42, 0.60, 0.72, 0.43), IV 3.68 (1.21, 0.44, 0.83, 0.79, 0.41). Abdomen rhomboid, densely covered with white hairs (Fig. 2A–C). Four pairs of apodemes arranged longitudinally along mid-dorsal line of abdomen, each surrounded by green patch; venter grayish, with undivided cribellum. Spinnerets pale white, short.

Epigyne (Fig. 2D–F). Copulatory openings widely separated from each other by approximately 8 × their diameter. Copulatory ducts semitransparent and distinctly coiled, with their diameters equal to those of copulatory openings. Spermathecae three parts: spermathecal heads spherical, connecting spermatheca by relatively short stem; middle part strongly sclerotized; dorsal part oval, weakly sclerotized and paler than middle part, with a membranous appendix attached to middle part ventro-posteriorly. Fertilization ducts originating from middle part of spermathecae, curving laterally and forming semicircular arc.

Male paratype (HNU1258)

Total length 3.72. Carapace 1.79 long, 1.45 wide; abdomen 2.28 long, 1.42 wide (Fig. 3A–C). Cephalic region yellow brown, with pair of symmetrically longitudinal brown patterns. Thoracic region brown. Fovea black, longitudinal, with white lateral margins. Eye sizes and interdistances: AME 0.05, ALE 0.10, PME 0.10, PLE 0.10; AME–AME 0.15, AME–ALE 0.12, PME–PME 0.17, PME–PLE 0.10. MOA 0.25 long, anterior width 0.24, posterior width 0.34. Clypeus height 0.16. Endites brown, longer than wide, with dark distal margins. Labium brown. Sternum brown, with procurved anterior margin, and blunt posterior end (Fig. 3C). Calamistrum distinct, occupying about ½ of metatarsus IV in length (Fig. 2H). Leg measurements: I 6.15 (1.87, 0.58, 1.79, 1.24, 0.67), II 5.94 (1.75, 0.53, 1.70, 1.09, 0.87), III 3.89 (1.24, 0.45, 0.85, 0.82, 0.53), IV 4.22 (1.27, 0.49, 1.11, 0.86, 0.49). Abdomen roughly oval, with posterior fifth being obviously narrower than anterior portion (Fig. 3A–C). Dorsum mixed with light gray and green patterns, also decorated with guanine patches both centrally and laterally; venter pale, with pair of apodemes located before gastric groove. Other characteristics as in female.

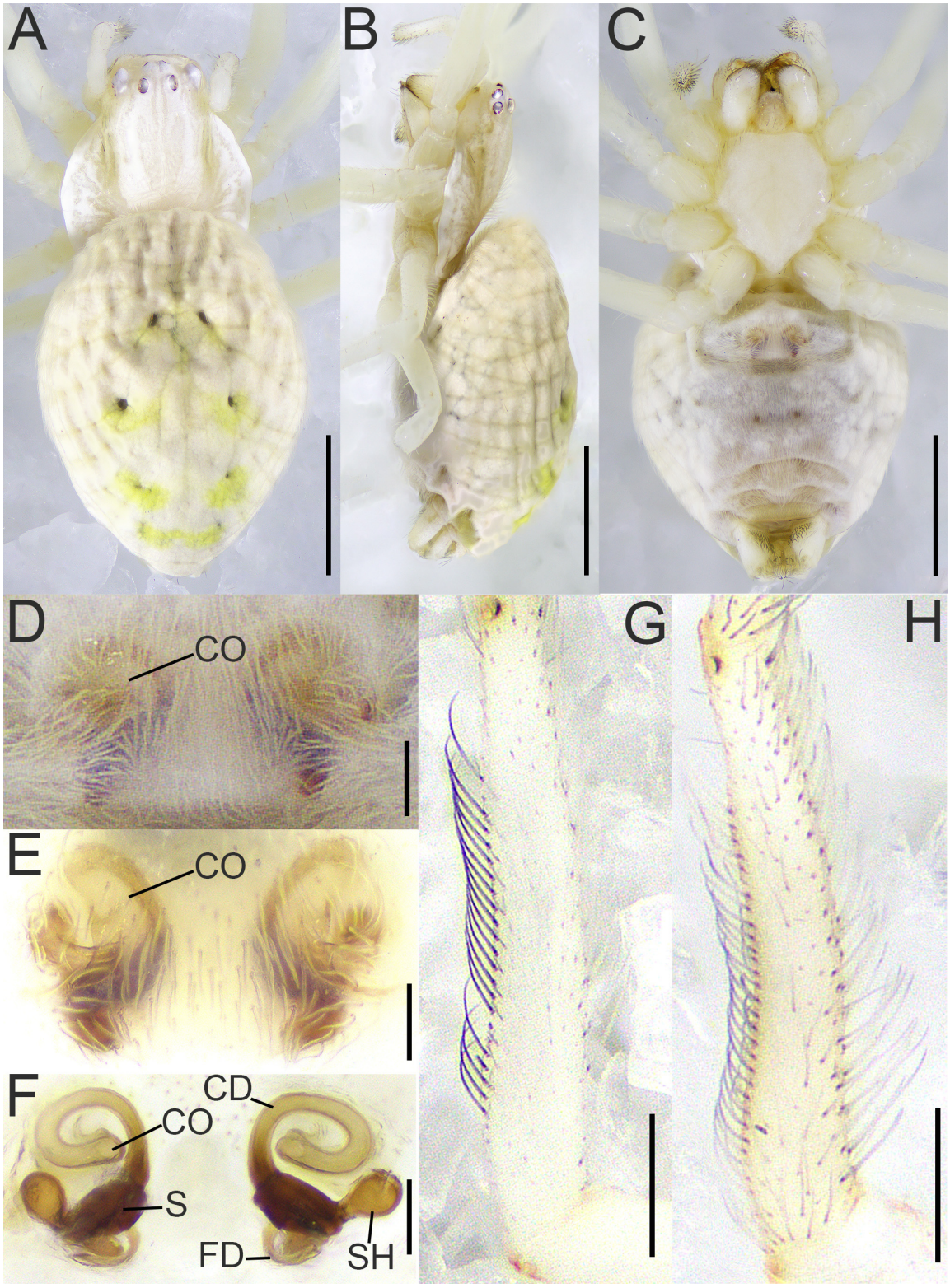

Fig. 2. *Sudesna lingyang* sp. nov. **A–G**. Holotype, ♀ (HNU1257). **H**. Paratype, ♂ (HNU1258). **A–C**. Habitus. **A**. Dorsal view. **B**. Lateral view. **C**. Ventral view. **D–F**. Female genitalia. **D**. Epigyne, ventral view. **E**. Epigyne, ventral view (after dissection). **F**. Vulva, dorsal view. **G–H**. Metatarsi IV, showing calamistrum, prolateral view. Scale bars: A–C = 1 mm; D–F = 0.1 mm; G–H = 0.2 mm. Abbreviations: see Material and methods.

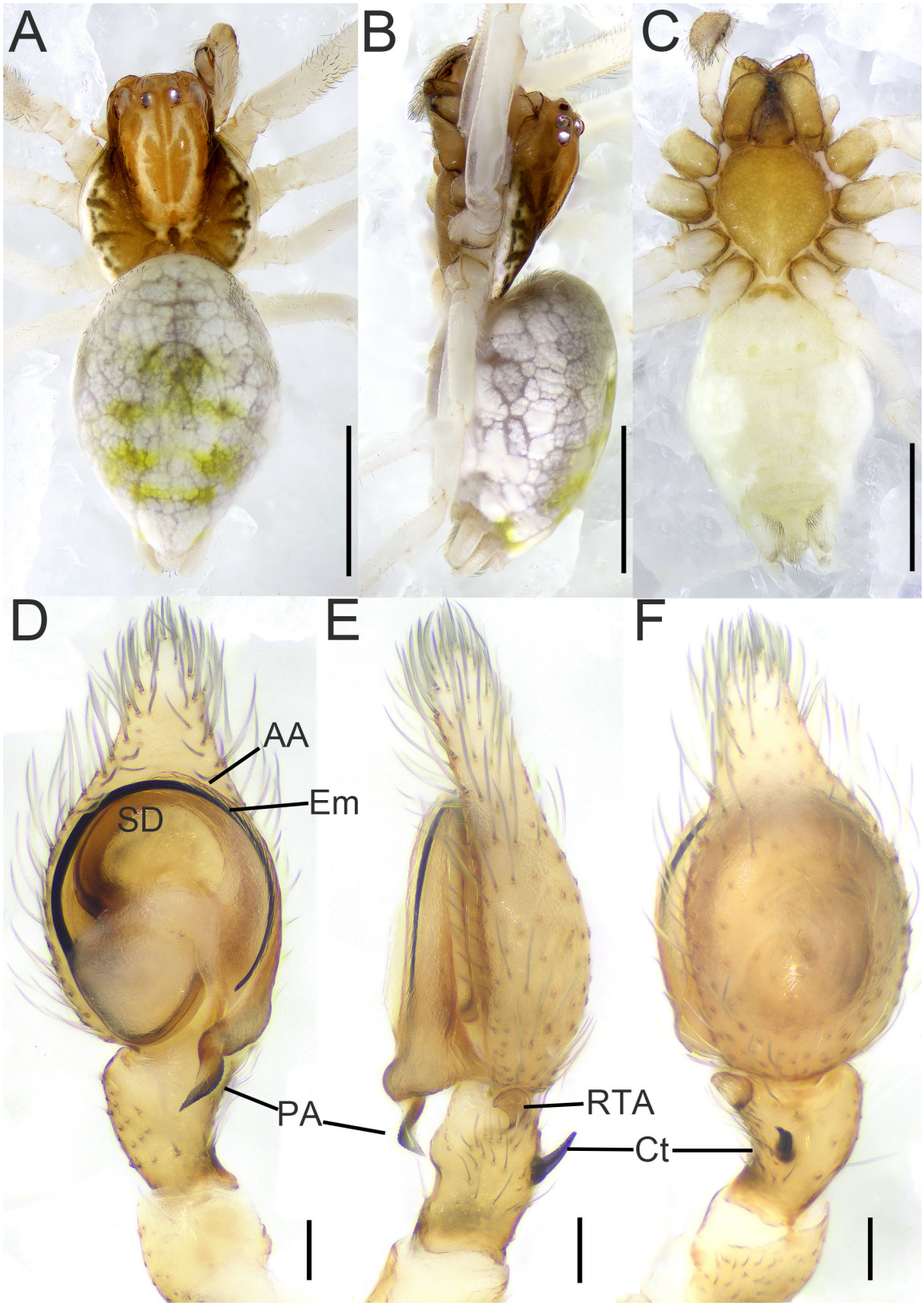

Fig. 3. *Sudesna lingyang* sp. nov., paratype, ♂ (HNU1258). **A–C**. Habitus. **A**. Dorsal view. **B**. Lateral view. **C**. Ventral view. **D–F**. Palpal organs. **D**. Ventral view. **E**. Retrolateral view. **F**. Dorsal view. Scale bars: A–C = 1 mm; D–F = 0.1 mm. Abbreviations: see Material and methods.

Palp (Fig. 3D–F). Tibia dorsally with two ctenidia situated at middle of tibia; RTA sclerotized and hook-like. Sperm duct distinct. Anterior arm of conductor originating at 12:00 o'clock position and widening gradually; posterior arm of conductor slightly twisted with pointed, serrated tip. Embolus originating at approximately 8:00 o'clock position, circling around the bulb for more than ¾ turn and terminating at about 5:00 o'clock position.

Distribution

Known only from the type locality (Anhui, China) (Fig. 4).

Sudesna zhangmuensis (Hu, 2001) comb. nov.
Fig. 4

Dictyna zhangmuensis Hu, 2001: 108, figs 8–27.1–3 (description of female).

"Dictyna" zhangmuensis – Esyunin & Sozontov, 2016: 204, fig. 12 (female, incertae sedis).

Venacular name

樟木苏蛛: Zhangmu Suzhu.

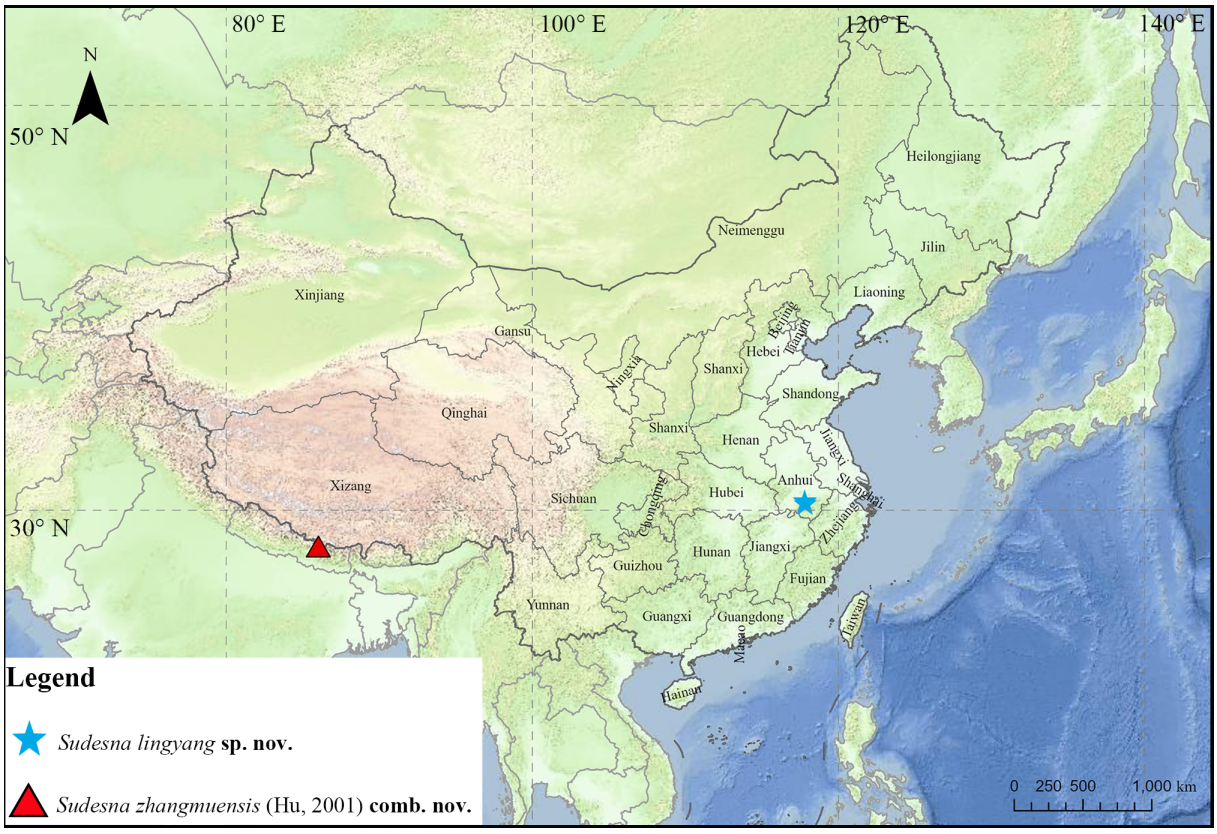

Fig. 4. Distribution map of two species of *Sudesna* Lehtinen, 1967 involved in this study.

Type material

Holotype

CHINA • ♀; Xizang Autonomous Region, Rikaze City, Nielamu County, Zhangmu Town, Zhangmu Port; 27°40′ N, 85°40′ E; 2250 m a.s.l.; 9 Sep. 1984; Aihua Li leg. (not examined).

Diagnosis

According to the original illustrations in Hu (2001), the female of *Sudesna zhangmuensis* (Hu, 2001) comb. nov. is similar to that of *S. yangi* Wang, Peng & Zhang, 2025 in having clavate spermathecae and widely separated copulatory openings (nearly two times their diameters from each other), but can be distinguished from the latter by clavate spermathecal heads with indistinct stems (vs spherical, distinct stems in *S. yangi*), and short and almost not curved fertilization ducts (vs relatively long and strongly curved in *S. yangi*) (cf. Hu 2001: figs 8–27. 3; Wang *et al.* 2025: figs 13d–e, 14 f–g).

Description

See Hu 2001: 108–109 for the description of the female. Male unknown.

Remarks

According to the original illustrations of *Dictyna zhangmuensis* Hu, 2001, the characters of this species conform to the diagnosis of the genus *Sudesna*: 1) the copulatory openings situated anteriorly and widely separated from each other; 2) the copulatory ducts tube-like; 3) spermathecal heads present (Hu 2001: figs 8–27.3). Therefore, we transfer this species from *Dictyna* to *Sudesna* and *S. zhangmuensis* (Hu, 2001) comb. nov. is proposed.

Distribution

Known only from the type locality (Xizang, China) (Fig. 4).

Discussion

Of the species currently recognized in the genus *Sudesna*, seven (including the new combination proposed in this study) were originally assigned to *Dictyna*. Even now, some species currently classified in *Dictyna* could potentially be transferred to *Sudesna*. For example, *Dictyna kosiorowiczi* Simon, 1873 (Bosselaers 2018: figs 8–10) exhibits characteristics consistent with those of *Sudesna*. However, *D. kosiorowiczi* occurs in Europe, which is far outside the known range of *Sudesna*. Therefore, we have opted to follow a conservative approach and tentatively maintain the current taxonomic status for these taxonomically ambiguous species, postponing any formal revision to future studies. Their definitive taxonomic status will be confirmed through integrative molecular and morphological validation once sufficient specimens become available.

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References

Almquist S. 2007. Swedish Araneae, part 2 – families Dictynidae to Salticidae. *Insect Systematics & Evolution* 63 (2006 Supplement): 285–601.

Bosselaers J. 2018. Spiders (Arachnida, Araneae) of the Gavarres (Catalonia, Spain) and the adjacent coastal region-part I: 2012–2013. *Newsletter of the Belgian arachnological Society* 33 (Supplement): 1–103.

Esyunin S.L. & Sozontov A.N. 2016. On a New Eurasian Species of *Dictyna* Sundevall, 1833 (Aranei: Dictynidae), with Taxonomic Notes on Poorly Known Palaearctic *Dictyna* Species. *Arthropoda Selecta* 25 (2): 199–206. https://doi.org/10.15298/arthsel.25.2.06

Hu J.L. 2001. *Spiders in Qinghai-Tibet Plateau of China*. Henan Science and Technology Publishing House, Henan, China.

Lehtinen P. T. 1967. Classification of the cribellate spiders and some allied families, with notes on the evolution of the suborder Araneomorpha. *Annales Zoologici Fennici* 4: 199–468.

Marusik Y.M., Mikhailov K.G. & Zamani A. 2023. The first case of an abnormally developed bulb in Dictynidae, and the first case of a malformed conductor in spiders (Arachnida: Aranei). *Arthropoda Selecta* 32 (4): 455–458. https://doi.org/10.15298/arthsel.32.4.09

Montana K.O., Cala-Riquelme F., Crews S.C., Gorneau J.A., Al-Jamal A.M., Alequín L.D., Spagna J.C., Ballarin F. & Esposito L.A. 2025. Tailor's drawer no more: a reappraisal of the spider family Dictynidae O. Pickard-Cambridge, 1871 sensu lato. *Zoological Journal of the Linnean Society* 204 (2): zlaf007. https://doi.org/10.1093/zoolinnean/zlaf007

Wang L.Y., Peng X.J. & Zhang Z.S. 2025. Six new species and a new synonym of the mesh-web spider genus *Sudesna* Lehtinen, 1967 (Araneae, Dictynidae) from China. *ZooKeys* 1234: 127–149. https://doi.org/10.3897/zookeys.1234.145300

Wang L.Y., Zhang Z.S. & Xu Y.Q. 2026. Review of the mesh-web spider genus *Sudesna* Lehtinen, 1967 (Araneae, Dictynidae) from Xizang, China. *ZooKeys* 1278: 287–304. https://doi.org/10.3897/Zookeys.1278.187037

WSC 2026. World Spider Catalog. Ver. 27. Natural History Museum Bern. Available from http://wsc.nmbe.ch [accessed 5 Jun. 2026]. https://doi:10.24436/2

Zhang Z.S. & Li S.Q. 2011. On four new canopy spiders of Dictynidae (Araneae) from Xishuangbanna rainforest, China. *Zootaxa* 3066: 21–36. https://doi.org/10.11646/Zootaxa.3066.1.2

Zhang Z.S. & Wang L.Y. 2017. *Chinese spiders illustrated*. Chongqing University Press, Chongqing, China.

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